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› iFlight ELRS Nano Receiver 2.4GHz User Manual

## iFlight ELRS Nano

# iFlight ELRS Nano Receiver 2.4GHz User Manual

## 1. INTRODUCTION

The iFlight ELRS Nano Receiver is a compact and high-performance 2.4GHz ExpressLRS receiver designed for FPV micro drones and racing quadcopters. It offers extreme range and a high packet rate for minimal latency, crucial for responsive flight control. Its small form factor and lightweight design make it ideal for space-constrained builds. The receiver incorporates temperature-compensated crystal oscillators to ensure stable and accurate frequencies, unaffected by temperature variations.

### Package Contents:

- 1 x ExpressLRS Nano Receiver
- 1 x 70mm IPEX Antenna
- 3 x Connection Cables

## 2. SETUP AND INSTALLATION

This section guides you through the physical installation and initial setup of your iFlight ELRS Nano Receiver.

### 2.1 Physical Connection

Connect the receiver to your flight controller using the provided cables. Ensure correct polarity and pin assignments. The receiver operates on a 5V input voltage and uses the CRSF protocol for communication.

- **GND:** Ground connection.
- **5V:** Power input (5 Volts).
- **TX:** Transmitter data output from receiver (connects to RX on flight controller).
- **RX:** Receiver data input to receiver (connects to TX on flight controller).

The antenna connects to the IPEX connector on the receiver. Ensure it is securely attached and positioned away from carbon fiber frames or other conductive materials for optimal signal reception.

# 2.4GHz RX with 70mm Antenna



Image: The iFlight ELRS Nano Receiver with its 70mm IPEX antenna attached. The receiver board shows the FCCID and pin labels (GND, 5V, TX, RX).



Image: A diagram illustrating the dimensions (10mm x 13mm) and pinout of the iFlight ELRS Nano Receiver, showing the RX, TX, 5V, and GND pads.

## 2.2 Firmware and Binding

The receiver comes pre-flashed with ExpressLRS iFlight 2.4GMHz Nano RX firmware. To bind the receiver to your ExpressLRS transmitter module, follow these general steps:

1. Power on your flight controller with the ELRS Nano Receiver connected.
2. Power cycle the receiver three times rapidly. This will put the receiver into binding mode, indicated by a rapidly flashing LED.
3. On your ExpressLRS transmitter module, initiate the binding process. Refer to your transmitter module's manual for specific instructions.
4. Once bound, the LED on the receiver will turn solid, indicating a successful connection.

For firmware updates or advanced configuration, visit the official ExpressLRS project website or iFlight's support page for the latest firmware and tools.

## 3. OPERATING INSTRUCTIONS

Once the receiver is successfully bound to your transmitter, it will establish a reliable radio link. Ensure your flight controller is configured to use the CRSF protocol for receiver input.

- **Telemetry:** The ELRS Nano Receiver supports telemetry, allowing you to monitor signal quality (RSSI/LQ) and other flight data on your transmitter screen. Ensure telemetry is enabled in your flight controller and transmitter settings.

- **Signal Quality:** Always perform a range check before flying, especially after any changes to your setup. Maintain a clear line of sight between your transmitter and the drone for optimal performance.

## 4. MAINTENANCE

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Proper maintenance ensures the longevity and reliable operation of your ELRS Nano Receiver.

- **Physical Inspection:** Regularly inspect the receiver and antenna for any signs of damage, such as bent pins, frayed antenna wires, or cracked solder joints.
- **Antenna Placement:** Ensure the antenna is securely mounted and positioned to minimize interference and maximize signal reception. Avoid bending the antenna excessively or placing it near power wires or motors.
- **Cleaning:** Keep the receiver free from dust, dirt, and moisture. Use a soft, dry brush or compressed air for cleaning. Avoid using liquids.
- **Firmware Updates:** Periodically check the iFlight or ExpressLRS official websites for new firmware releases. Updating firmware can provide performance improvements, new features, or bug fixes.

## 5. TROUBLESHOOTING

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If you encounter issues with your ELRS Nano Receiver, consider the following troubleshooting steps:

- **No Signal/No Link:**
  - Verify all connections (GND, 5V, TX, RX) are correct and secure.
  - Ensure the receiver is properly bound to your transmitter. Re-attempt the binding process if necessary.
  - Check that your flight controller is configured for CRSF protocol and the correct UART port.
  - Confirm your transmitter module is powered on and operating on the correct frequency.
- **Poor Range/Intermittent Signal:**
  - Inspect the antenna for damage or improper placement. Ensure it is not shielded by carbon fiber or other components.
  - Check for sources of electrical interference near the receiver or antenna.
  - Ensure your transmitter's power output is set appropriately.
- **Receiver Not Powering On:**
  - Verify the 5V and GND connections from the flight controller are providing power.
  - Check for any short circuits or physical damage to the receiver board.

For persistent issues, consult the ExpressLRS community forums or iFlight's official support channels.

## 6. SPECIFICATIONS

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Feature	Detail
Brand	iFlight
Model Name	ELRS Nano
Frequency Bands	2.4GHz

Telemetry Power	12.3dbm (17mW 2.4G)
Dimensions	10mm x 13mm
Weight	0.5g
Antenna Connector	IPEX
Antenna Length	70mm
Input Voltage	5V
Protocol	CRSF
Firmware	ExpressLRS iFlight 2.4GMHz Nano RX (2.4G)
Special Features	Extended Range, High Packet Rate, Temperature-compensated crystal oscillators
Material	Plastic

## 7. WARRANTY AND SUPPORT

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For detailed warranty information regarding your iFlight ELRS Nano Receiver, please refer to the official iFlight website or contact your point of purchase. Warranty terms typically cover manufacturing defects but may not cover damage resulting from improper installation, misuse, or modification.

For technical support, firmware updates, or additional resources, please visit the official iFlight website or the ExpressLRS project website. You can also reach out to iFlight customer service through their provided contact channels.