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HGLRC HGLRC ELRS 2.4G Receiver

HGLRC ELRS 2.4GHz ExpressLRS RX Nano Module User Manual

Model: HGLRC ELRS 2.4G Receiver

1. Introduction

This manual provides comprehensive instructions for the installation, operation, and maintenance of your HGLRC ELRS 2.4GHz ExpressLRS RX Nano Module. This high-performance receiver is designed for minimal latency and enhanced responsiveness, ensuring a smoother and more reliable control experience for various applications.

Key features include:

- **High Refresh Rate:** Ensures minimal latency, enhanced responsiveness, and a smoother, more reliable control experience.
- **Compact Design:** Space-efficient form factor for constrained installations without performance compromise.
- **Dual Installation:** Solderable/plug-in options enable flexible installation and detachment.
- **Durable Construction:** Built to endure tough environments, ensuring long-lasting performance across various applications.
- **Widely Used:** Compatible with various systems, can be easily integrated into different settings to meet different user needs.



Figure 1: HGLRC ELRS 2.4GHz RX Nano Module with included antennas and wiring harness.

2. Setup

2.1. Installation Options

The HGLRC ELRS 2.4G Receiver offers flexible installation options, supporting both direct soldering and plug-in connections. This allows for convenient integration into various flight controllers and systems.

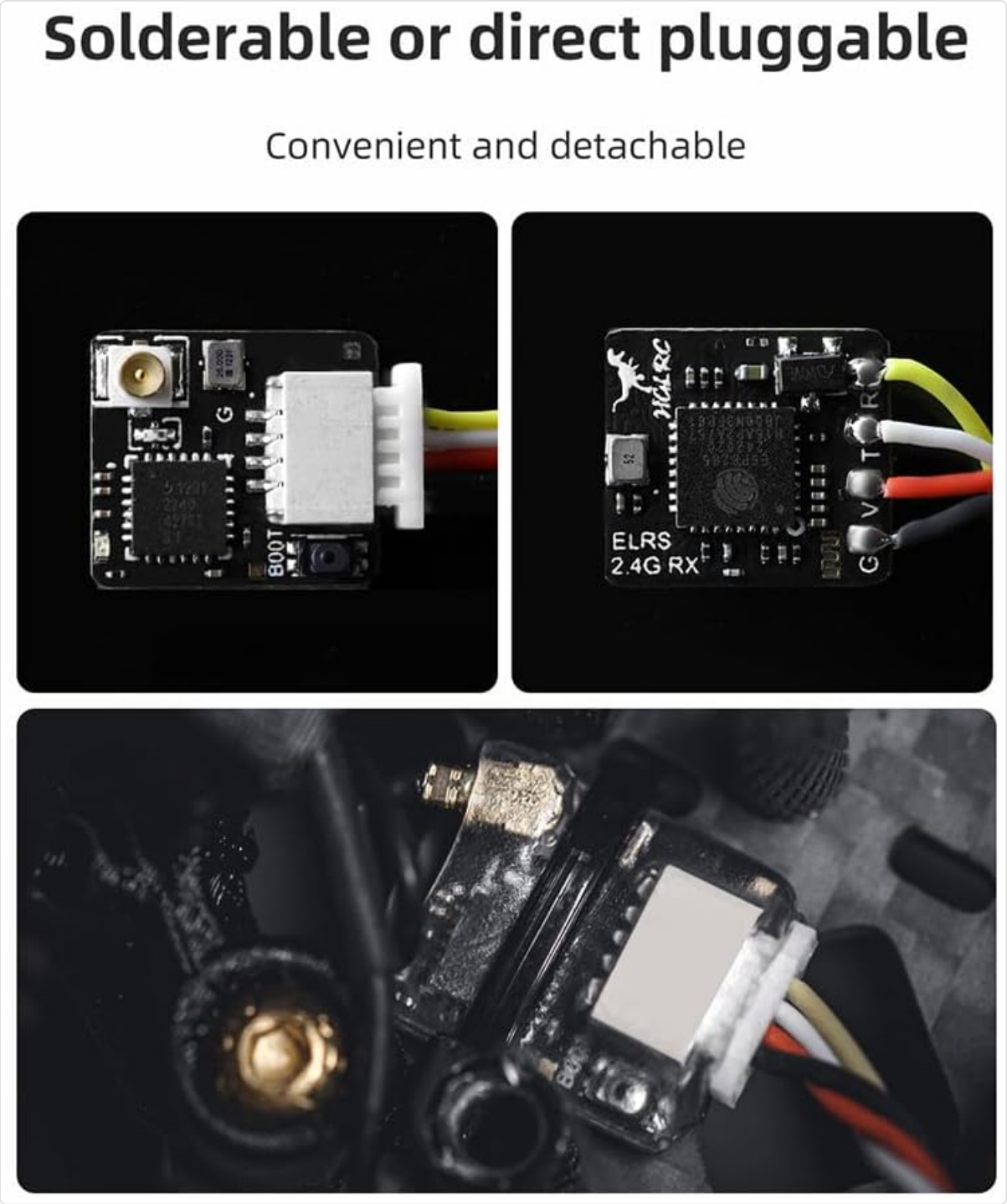


Figure 2: The receiver module supports both direct soldering and plug-in connections for versatile installation.

2.2. Wiring Diagram

Proper wiring is essential for the correct function of the receiver. Refer to the diagram below for connecting the receiver to your flight controller. Ensure that the voltage (5V), ground (GND), transmit (TX), and receive (RX) lines are connected to the corresponding pins on your flight controller.

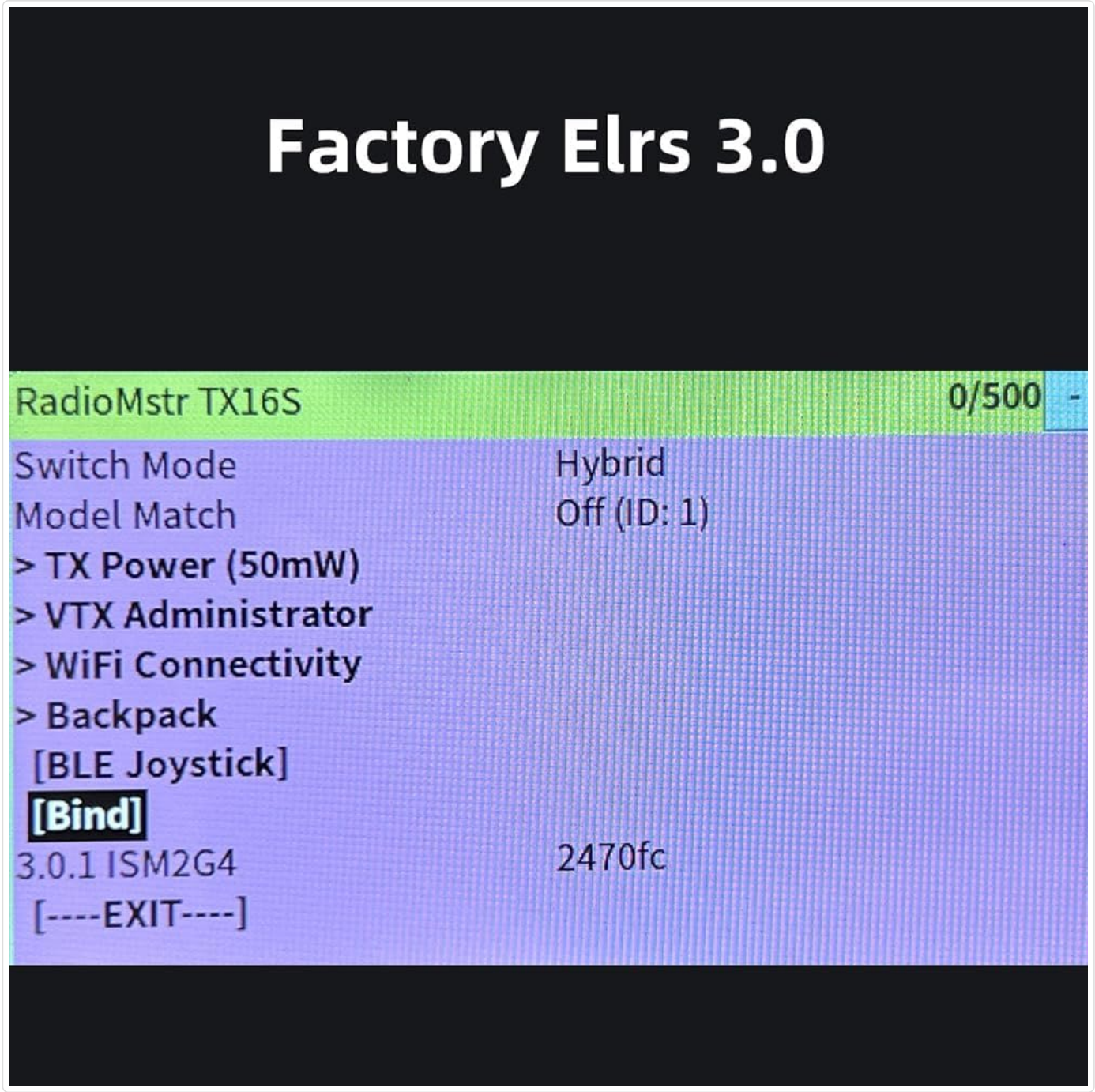


Figure 3: Wiring diagram for connecting the HGLRC ELRS 2.4G Receiver to a flight controller. Note the color coding for 5V (red), GND (black), TX (yellow), and RX (white/green).

2.3. Binding Procedure

To establish communication between your receiver and transmitter, follow these binding steps:

1. Power on the receiver. The LED on the receiver will flash at intervals of 1.5 seconds and then flash twice quickly after the third power-on. This indicates the receiver has entered binding mode.
2. On your remote control, enter the ELRS LUA script.
3. Click the "BIND" option within the LUA script to initiate the binding process.
4. Once successfully bound, the receiver's LED will turn solid, indicating a stable connection.



Figure 4: Example of a radio transmitter screen showing the ELRS LUA script interface for binding.

3. Operating

Once the receiver is successfully installed and bound to your transmitter, it will continuously receive control signals. Ensure your flight controller is configured to interpret these signals correctly. The high refresh rate of the ELRS module provides a responsive and precise control link.

For optimal performance, ensure your transmitter's ELRS module firmware matches the receiver's firmware version. Regular checks of the connection status via your flight controller's OSD or configuration software are recommended.

4. Maintenance

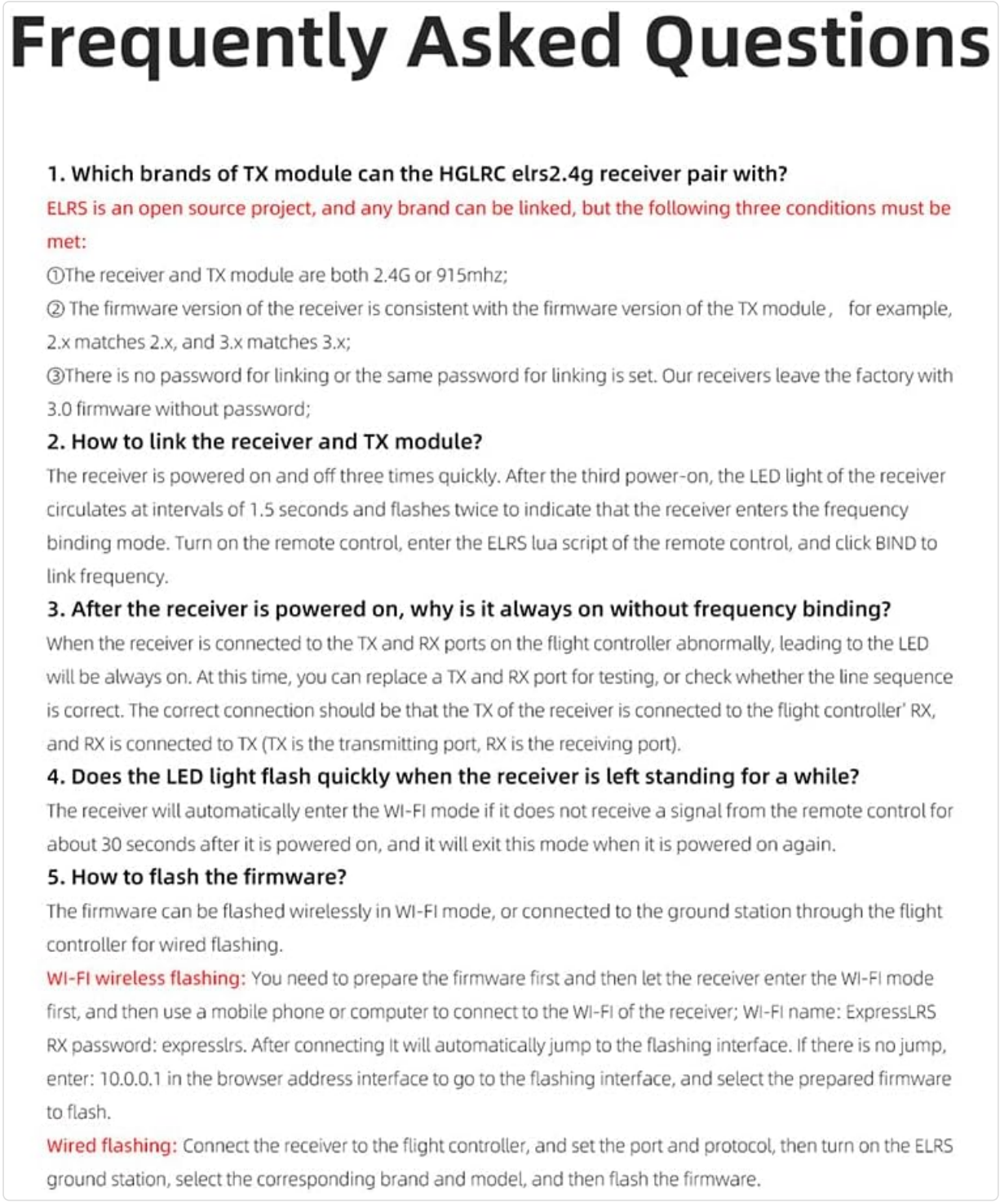
The HGLRC ELRS 2.4G Receiver is built for durability. To ensure its longevity and reliable performance, consider the following maintenance tips:

- **Physical Inspection:** Periodically inspect the module and its connections for any signs of damage, loose wires, or corrosion.
- **Cleanliness:** Keep the module free from dust, dirt, and moisture. Use a soft, dry brush or compressed air for cleaning. Avoid using liquid cleaners.
- **Antenna Care:** Ensure the antenna is securely attached and not bent or damaged. A damaged antenna can significantly reduce range and signal quality.
- **Firmware Updates:** While not strictly maintenance, keeping the firmware updated can improve performance and compatibility. Refer to the troubleshooting section for firmware flashing instructions.

5. Troubleshooting

This section addresses common issues and their solutions. For more detailed troubleshooting, refer to the official ExpressLRS

documentation or HGLRC support resources.



Frequently Asked Questions

1. Which brands of TX module can the HGLRC elrs2.4g receiver pair with?

ELRS is an open source project, and any brand can be linked, but the following three conditions must be met:

①The receiver and TX module are both 2.4G or 915mhz;

② The firmware version of the receiver is consistent with the firmware version of the TX module， for example, 2.x matches 2.x, and 3.x matches 3.x;

③There is no password for linking or the same password for linking is set. Our receivers leave the factory with 3.0 firmware without password;

2. How to link the receiver and TX module?

The receiver is powered on and off three times quickly. After the third power-on, the LED light of the receiver circulates at intervals of 1.5 seconds and flashes twice to indicate that the receiver enters the frequency binding mode. Turn on the remote control, enter the ELRS lua script of the remote control, and click BIND to link frequency.

3. After the receiver is powered on, why is it always on without frequency binding?

When the receiver is connected to the TX and RX ports on the flight controller abnormally, leading to the LED will be always on. At this time, you can replace a TX and RX port for testing, or check whether the line sequence is correct. The correct connection should be that the TX of the receiver is connected to the flight controller' RX, and RX is connected to TX (TX is the transmitting port, RX is the receiving port).

4. Does the LED light flash quickly when the receiver is left standing for a while?

The receiver will automatically enter the WI-FI mode if it does not receive a signal from the remote control for about 30 seconds after it is powered on, and it will exit this mode when it is powered on again.

5. How to flash the firmware?

The firmware can be flashed wirelessly in WI-FI mode, or connected to the ground station through the flight controller for wired flashing.

WI-FI wireless flashing: You need to prepare the firmware first and then let the receiver enter the WI-FI mode first, and then use a mobile phone or computer to connect to the WI-FI of the receiver; WI-FI name: ExpressLRS RX password: expresslrs. After connecting it will automatically jump to the flashing interface. If there is no jump, enter: 10.0.0.1 in the browser address interface to go to the flashing interface, and select the prepared firmware to flash.

Wired flashing: Connect the receiver to the flight controller, and set the port and protocol, then turn on the ELRS ground station, select the corresponding brand and model, and then flash the firmware.

Figure 5: Frequently Asked Questions (FAQ) for the HGLRC ELRS 2.4G Receiver.

5.1. Common Issues and Solutions

1. **Which TX module can the HGLRC ELRS 2.4G receiver pair with?**

   ELRS is an open-source project, and any brand can be linked, but the following three conditions must be met:

   - The receiver and TX module are both 2.4G or 915MHz.
   - The firmware version of the receiver is consistent with the firmware version of the TX module (e.g., 2.x matches 2.x, 3.x matches 3.x).
   - There is no password for linking or the same password for linking is set. Our receivers leave the factory with 3.0 firmware without a password.

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   The firmware can be flashed wirelessly in Wi-Fi mode, or connected to the ground station through the flight controller for wired flashing.

   Wi-Fi wireless flashing: You need to prepare the firmware first and then let the receiver enter the Wi-Fi mode first, and then use a mobile phone or computer to connect to the Wi-Fi of the receiver. The Wi-Fi name is "ExpressLRS RX" and the password is "expresslrs". After connecting, it will automatically jump to the flashing interface. If there is no jump, enter 10.0.0.1 in the browser address interface to go to the flashing interface, and select the prepared firmware to flash.

   Wired flashing: Connect the receiver to the flight controller, and set the port and protocol. Then turn on the ELRS ground station, select the corresponding brand and model, and then flash the firmware.

6. Specifications

Feature	Detail
Model Number	HGLRC ELRS 2.4G Receiver
Product Dimensions	1 x 1 x 0.19 inches
Item Weight	0.422 ounces
Manufacturer	HGLRC
Country of Origin	China
Recommended Age	14 years and up

7. Warranty and Support

7.1. Warranty Information

Specific warranty details for the HGLRC ELRS 2.4GHz ExpressLRS RX Nano Module are not provided in this manual. Please refer to the official HGLRC website or your point of purchase for comprehensive warranty terms and conditions.

7.2. Customer Support

For technical assistance, troubleshooting beyond this manual, or other inquiries, please visit the official HGLRC website or contact their customer support channels. Always provide your product model number (HGLRC ELRS 2.4G Receiver) and a detailed description of your issue when seeking support.

You can often find additional resources, firmware updates, and community forums on the manufacturer's official website:HGLRC Official Store on Amazon

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