FrSky RX8R PRO

FrSky RX8R PRO 2.4G ACCST 8/16CH SBUS Telemetry Receiver Instruction Manual

Model: RX8R PRO

1. Introduction

The FrSky RX8R PRO is an advanced 8/16 channel telemetry receiver designed for use with FrSky ACCST 2.4GHz transmitters. This receiver features redundancy support, higher precision PWM output, lower latency, and enhanced anti-interference performance, making it suitable for various RC applications. This manual provides essential information for proper setup, operation, and maintenance of your RX8R PRO receiver.

2. Key Features

- Support redundancy function for enhanced reliability.
- Higher precision deviation of PWM output.
- Lower latency on the PWM output compared to previous models.
- Strong anti-interference performance, particularly against ignition noise.
- Smart Port enabled, supporting telemetry data transmission.

3. Product Overview

Familiarize yourself with the physical layout and connections of the RX8R PRO receiver.

Image 1: Top view of the FrSky RX8R PRO receiver, showing the F/S button, LED indicator, Smart Port, and servo/SBUS output pins.

Image 2: Angled view of the FrSky RX8R PRO receiver, highlighting the servo pin headers and antenna connections.

Image 3: Detailed diagram of the FrSky RX8R PRO receiver, illustrating the F/S button, LED, Smart Port, SBUS OUT, SBUS IN, and 8 PWM channel outputs.

4. Specifications

Specification	Value
Dimension	25mm x 26.6mm x 14.2mm (L*W*H)
Weight	14.8g
Number of Channels	16CH (1-8CH PWM or 9-16CH PWM from conventional channel outputs, 1-16CH from SBUS)
RSSI Output	Analog DC 0~3.3V
Operating Voltage Range	3.5V~10V
Operating Current	100mA@5V
Operating Range	Full range (>1.5km)
Firmware	Upgradeable
Servo Frame Rate	9ms (HS—High-Speed Mode) / 18ms (FS—Normal Speed Mode)
Compatibility	FrSky transmitters/transmitter modules in D8/D16 mode

5. Setup

5.1. Binding Procedure

Binding is the process of wirelessly linking the receiver to your FrSky transmitter. Ensure your transmitter is in D16 mode for optimal performance with the RX8R PRO.

1. Turn on your FrSky transmitter and navigate to the Model Setup menu.
2. Select the D16 mode (or D8 mode if specifically required for your setup, though D16 is recommended for RX8R PRO).
3. Choose the "Bind" option on your transmitter. The transmitter will emit a beeping sound, indicating it is in bind mode.
4. While holding down the F/S (Fail-Safe) button on the RX8R PRO receiver, connect power to the receiver. The red LED on the receiver will illuminate, indicating it is in bind mode.
5. Once the binding process is successful, the red LED on the receiver will turn off, and the green LED will illuminate, indicating a successful bind. The transmitter will also stop beeping.
6. Disconnect power from the receiver, then turn off your transmitter.
7. Reconnect power to the receiver (without holding the F/S button). The green LED should now be solid, confirming the receiver is bound and receiving a signal from the transmitter.
8. Turn on your transmitter. The green LED on the receiver should remain solid.

Note: *If the binding fails, ensure your transmitter firmware and receiver firmware are compatible. Refer to the FrSky website for the latest firmware updates and compatibility information.*

5.2. Wiring Connections

The RX8R PRO offers multiple output options for connecting to your flight controller or servos.

- **PWM Outputs (Channels 1-8):** Connect individual servos or other PWM-controlled devices to these pins. Channels 1-8 provide direct PWM output.

- **SBUS OUT:** Connect to a flight controller that supports SBUS input for a single-wire connection carrying all 16 channels.
- **SBUS IN:** Used for redundancy setups, allowing connection of a second receiver (e.g., another RX8R PRO or an XSR) to provide a backup signal.
- **Smart Port (S.Port):** Connect telemetry sensors or other Smart Port compatible devices. This port also allows for firmware updates.
- **Power (VCC/GND):** Connect a stable power source within the operating voltage range (3.5V-10V).

Always ensure correct polarity when connecting power to avoid damage to the receiver.

6. Operating Instructions

Once bound and correctly wired, the RX8R PRO receiver operates by receiving control signals from your FrSky transmitter and transmitting telemetry data back to the transmitter.

- **Normal Operation:** With the transmitter and receiver powered on, the green LED on the receiver should be solid, indicating a stable connection.
- **Telemetry:** Ensure your transmitter is configured to display telemetry data. The RX8R PRO will automatically send data such as RSSI (Received Signal Strength Indication) and receiver voltage back to the transmitter. Additional sensors connected to the Smart Port will also transmit their data.
- **Fail-Safe:** It is crucial to set up fail-safe on your transmitter. In case of signal loss, fail-safe ensures that your model's servos move to predefined positions (e.g., throttle to zero, control surfaces neutral) to prevent uncontrolled flight. Refer to your transmitter's manual for fail-safe setup instructions.
- **Redundancy:** If using the redundancy feature with a second receiver connected to SBUS IN, the system will automatically switch to the receiver with the stronger signal in case of signal degradation from the primary receiver.

7. Maintenance

To ensure the longevity and reliable performance of your RX8R PRO receiver, follow these maintenance guidelines:

- **Antenna Placement:** Ensure antennas are mounted at a 90-degree angle to each other and away from carbon fiber, metal, or other conductive materials that can shield the signal. Do not cut or modify the antenna wires.
- **Environmental Protection:** Protect the receiver from moisture, dust, and extreme temperatures. Consider using heat shrink or a protective case in harsh environments.
- **Firmware Updates:** Periodically check the FrSky website for firmware updates. Updating the receiver firmware can improve performance, add new features, or address compatibility issues. Use the Smart Port for firmware updates.
- **Cable Management:** Secure all wiring to prevent accidental disconnections or interference with moving parts.

8. Troubleshooting

Problem: Receiver does not bind.
Solution:

- Ensure the transmitter is in D16 mode (or D8 if applicable) and in bind mode.
- Verify the F/S button on the receiver is held down while connecting power during the bind process.

- Check for firmware compatibility between the transmitter and receiver. Update firmware if necessary.
- Ensure the receiver is receiving adequate power (3.5V-10V).
- Try binding at a closer distance to the transmitter.

Problem: No signal/Green LED not solid after binding.
Solution:

- Confirm the transmitter is powered on and operating on the correct model memory.
- Re-bind the receiver to the transmitter.
- Check antenna connections and placement.
- Ensure no strong local interference sources are present.

Problem: Servos not responding or erratic behavior.
Solution:

- Verify all servo connections are correct (signal, positive, negative).
- Check the power supply to the servos and receiver.
- Ensure the correct channel mapping is set on your transmitter.
- Inspect for physical damage to servos or wiring.

Problem: Telemetry data not displayed.
Solution:

- Ensure the Smart Port connection is secure.
- Verify telemetry sensors are correctly connected and functioning.
- Check your transmitter's telemetry setup menu to ensure sensors are discovered and displayed.
- Confirm the receiver firmware supports telemetry for your specific transmitter model.

9. Warranty and Support

For warranty information, technical support, or further assistance, please contact FrSky directly through their official website or authorized distributors. Keep your proof of purchase for warranty claims.
FrSky Official Website: www.frsky-rc.com