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FrSky 03021848

FrSky R9 SX Enhanced R9 Series Access OTA Long Range Receivers User Manual

Model: 03021848

Introduction

This manual provides comprehensive instructions for the installation, operation, and maintenance of your FrSky R9 SX Enhanced R9 Series Access OTA Long Range Receiver. The R9 SX is an enhanced version of the R9 Slim series, designed for long-range applications. It features 3-pin servo connectors for 6 full PWM channels and a dual-antenna design for robust signal reception. Its lightweight protective shell includes a multi-use 6-pin plug for advanced functions such as signal redundancy, telemetry feedback, and external battery detection. This receiver offers flexibility, allowing 6 PWM channels to be converted to 4 PWM channels, with channels 5 and 6 configurable as alternative S.Port and SBUS outputs via the 6-pin port. The enhanced design ensures durability and, when paired with the latest ACCESS firmware, unlocks the full potential of the ACCESS protocol.

Safety Information

Please read and understand all safety warnings and precautions before operating this product. Failure to do so may result in injury or damage to the product or other property.

- Always ensure proper polarity when connecting power to the receiver. Incorrect polarity can cause permanent damage.
- Operate the receiver within its specified voltage range.
- Keep the receiver away from moisture, dust, and extreme temperatures.
- Ensure antennas are properly installed and positioned for optimal signal reception.
- Regularly check all connections for secure fitment.
- This product is intended for users aged 14 years and up.

Product Overview

The FrSky R9 SX receiver is designed for long-range radio control systems, offering enhanced features and robust performance.



Figure 1: Front view of the FrSky R9 SX receiver with its dual antennas. This image shows the compact size and the general layout of the receiver unit.



Figure 2: Top-down view of the FrSky R9 SX receiver, highlighting the channel labels (CH1-CH6/SBUS OUT) and the LED indicator. This view provides a clear look at the port designations.



Figure 3: Side view of the FrSky R9 SX receiver, detailing the 3-pin servo connectors for channels 1 through 6. This perspective emphasizes the physical connection points for servos and other peripherals.



Figure 4: Overhead view of the FrSky R9 SX receiver with its dual antennas fully extended. This illustrates the recommended antenna orientation for optimal signal reception.



Figure 5: Angled view of the FrSky R9 SX receiver from the side with the servo connectors, providing a clear perspective of the connection ports and the overall compact design.

Key Features:

- ACCESS protocol and supports OTA (Over-The-Air) functions.
- 900MHz/868MHz long-range capability with low latency.
- Enhanced and durable design.
- 6 standard servo connectors (default PWM channels).
- Switchable CH5/CH6 into S.Port/SBUS Output channels.
- Support for S.Port / F.Port (Configurable in OpenTX / FrOS menu).
- Signal redundancy function.
- External battery detection.
- Detachable Ipex1 connector antenna.
- Compatibility with R9M Lite/ R9M Lite Pro / R9M 2019 with ACCESS firmware.

Setup

Follow these steps for initial setup of your R9 SX receiver.

1. **Binding the Receiver:**
    - Ensure your FrSky transmitter (e.g., R9M Lite/ R9M Lite Pro / R9M 2019) is updated with ACCESS firmware.
    - Power on your transmitter and navigate to the Model Setup menu.
    - Select the external RF module (R9M) and choose the ACCESS protocol.
    - Select the [Bind] option. The transmitter will emit a binding tone.
    - Connect power to the R9 SX receiver while holding down the F/S button on the receiver. The LED on the receiver will flash rapidly, indicating it is in bind mode.

- Once the binding process is complete, the receiver's LED will turn solid green. Power cycle both the transmitter and receiver.

2. **Antenna Installation:**
   - The R9 SX uses detachable Ipex1 connector antennas. Carefully connect the antennas to the receiver's ports.
   - For optimal performance, position the two antennas at a 90-degree angle to each other. Avoid placing them near carbon fiber or metal parts that could shield the signal.
3. **Servo and Peripheral Connections:**
   - Connect your servos to the appropriate PWM channels (CH1-CH6) on the receiver.
   - If using S.Port or SBUS output, configure CH5/CH6 as alternative outputs via your transmitter's OpenTX/FrOS menu and connect to the 6-pin port.
   - For external battery detection or signal redundancy, utilize the multi-use 6-pin plug as per your specific setup requirements.

Operating

Once set up, the R9 SX receiver operates seamlessly with your FrSky ACCESS-enabled transmitter.

- **Power On Sequence:** Always power on your transmitter first, then the receiver. When powering off, disconnect power from the receiver first, then turn off the transmitter.
- **Signal Monitoring:** The receiver's LED provides status indication. A solid green LED indicates a good signal. Refer to your transmitter's telemetry screen for real-time signal strength (RSSI) and other telemetry data.
- **OTA (Over-The-Air) Firmware Updates:** With ACCESS firmware, you can update the receiver's firmware wirelessly via your compatible FrSky transmitter. Refer to your transmitter's manual for detailed OTA update procedures.
- **Failsafe Function:** It is crucial to set up failsafe on your receiver. In case of signal loss, failsafe ensures that your model's controls move to a predetermined safe position (e.g., throttle to idle, control surfaces neutral). Consult your transmitter's manual for failsafe setup instructions.

Maintenance

Proper maintenance ensures the longevity and reliable performance of your R9 SX receiver.

- **Cleaning:** Use a soft, dry cloth to clean the receiver. Avoid using solvents or abrasive cleaners.
- **Storage:** Store the receiver in a cool, dry place, away from direct sunlight and extreme temperatures.
- **Inspection:** Periodically inspect the receiver for any signs of physical damage, loose connections, or frayed antenna wires. Replace damaged components immediately.
- **Firmware Updates:** Keep the receiver's firmware updated to the latest version to benefit from performance improvements and bug fixes. Check the official FrSky website for new firmware releases.

Troubleshooting

If you encounter issues with your R9 SX receiver, refer to the following common problems and solutions.

Problem	Possible Cause	Solution

Problem	Possible Cause	Solution
Receiver does not bind.	Incorrect binding procedure, incompatible firmware, or transmitter not in bind mode.	Ensure both transmitter and receiver have ACCESS firmware. Follow the binding steps precisely. Verify transmitter is in bind mode.
Loss of signal/intermittent connection.	Poor antenna placement, damaged antennas, interference, or range issues.	Check antenna orientation and ensure they are not shielded. Inspect antennas for damage. Test in a different location to rule out interference. Verify range with your transmitter.
Servos not responding.	Incorrect servo connection, receiver not powered, or binding issue.	Verify servo connections are correct (signal, positive, negative). Ensure receiver is powered and bound to the transmitter. Check transmitter output settings.
Telemetry data not displayed.	Telemetry not enabled, incorrect port configuration, or firmware issue.	Ensure telemetry is enabled on your transmitter. If using S.Port/F.Port, verify correct configuration. Update firmware on both receiver and transmitter.

Specifications

Feature	Detail
Model	R9 SX
Item Model Number	03021848
Dimensions	6.26 x 4.65 x 0.51 inches (Package)
Weight	0.88 ounces
Channels	6 PWM (default), 4 PWM + S.Port/SBUS (configurable)
Frequency	900MHz/868MHz
Protocol	ACCESS (supports OTA)
Antenna	Dual, Detachable Ipex1 connector
Features	Signal redundancy, Telemetry feedback, External battery detection
Recommended Age	14 years and up

Warranty and Support

FrSky products are manufactured to high quality standards. For warranty information and technical support, please refer to the official FrSky website or contact your authorized dealer.

- **Official Website:** For the most up-to-date information, firmware downloads, and support resources, please visit the official FrSky website.
- **Technical Support:** If you encounter issues that cannot be resolved using this manual, please contact FrSky customer support or your local distributor for assistance.
- **Product Registration:** Consider registering your product on the FrSky website to receive important updates and support.

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