FrSky Archer Plus R8

FrSky Archer Plus R8 Receiver Instruction Manual

Model: Archer Plus R8

1. Introduction

The FrSky Archer Plus R8 receiver is an advanced 8-channel receiver designed for remote control (RC) applications. It features enhanced anti-RF-interference capabilities, supports both ACCESS and ACCST D16 protocols, and includes a Black-Box function for basic flight data recording. This manual provides detailed instructions for the proper setup, operation, and maintenance of your Archer Plus R8 receiver.

2. Safety Instructions

- Always ensure your transmitter and receiver are properly bound before flight.
- Perform a range check before each flight session to verify signal integrity.
- Never operate your RC model near power lines, crowds, or restricted airspace.
- Keep the receiver away from moisture, dust, and extreme temperatures.
- Ensure all wiring connections are secure and correct to prevent short circuits or malfunctions.
- Disconnect the battery from the receiver when not in use.

3. Product Overview

3.1 Key Features

- Enhanced anti-RF-interference capability.
- Supports both ACCESS and ACCST D16 protocols with smart matching.
- Black-Box function for basic flight data recording (Power & Signal related).
- 8 high-precision PWM channels.
- Full-range signal strength with dual detachable antennas.
- Supports signal redundancy (SBUS In).
- Full control range with telemetry (S.Port or FBUS).

- Over-The-Air (OTA) FW update capability.
- External battery/device voltage detection via AIN2.

3.2 Package Contents

The package typically includes:

- FrSky Archer Plus R8 Receiver Unit
- Connection Cables
- Instruction Manual (this document)

Please inspect the package contents upon receipt to ensure all items are present and undamaged.

3.3 Receiver Layout

Image: Top view of the FrSky Archer Plus R8 receiver, highlighting the PWM channels (CH1-CH6), SBUS OUT, CH7, CH8, and SBUS IN ports, along with the LED indicator and antenna connections.

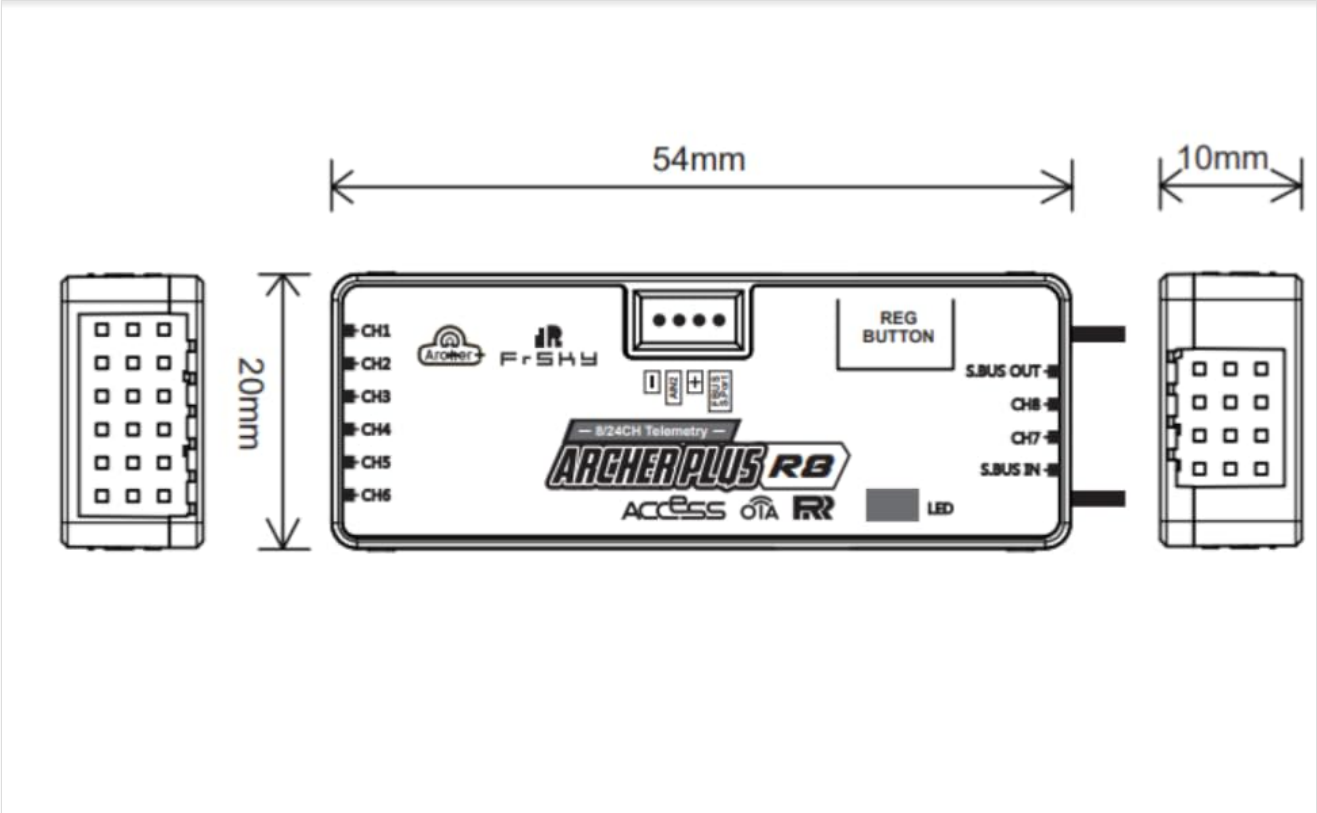

Image: Technical diagram showing the dimensions of the Archer Plus R8 receiver (54mm length, 20mm width, 10mm height) and the location of the REG button, PWM channels, SBUS ports, and antenna connections.

4. Specifications

Parameter	Value
Number of Channels	8/24 channels (8 High-precision PWM & 16 SBUS channels Mode / 8 High-precision PWM & 24 SBUS channels Mode)
Operating Voltage Range	3.5 - 10V
Operating Current	<65mA@5V
Operating Range	>2km (Full range)
Voltage Measurement Range (AIN2)	0-35V (Battery Voltage Divider Ratio: 1:10)
Antenna Connector	IPEX4
Compatibility	FrSky 2.4GHz ACCESS / ACCST D16 capable transmitters
Product Dimensions	5 x 2 x 3 inches (approximate, refer to diagram for precise measurements)
Item Weight	0.16 ounces

5. Setup

5.1 Binding Process (Registration and Binding)

The Archer Plus R8 receiver supports both ACCESS and ACCST D16 protocols. The RF protocol is automatically

matched during the binding process.

1. **Registration:**
    - Turn on your transmitter and navigate to the RF System menu.
    - Select the appropriate external or internal RF module (e.g., ACCESS or ACCST D16).
    - Choose the 'Register' option.
    - Press and hold the REG button on the receiver while connecting the battery. The Green and Red LEDs on the receiver will illuminate, indicating registration mode.
    - Select 'Register' on your transmitter. The Green and Red LEDs on the receiver will flash, indicating successful registration.
    - Power off the receiver.
2. **Binding:**
    - Select the receiver (e.g., RX1) and choose the 'Bind' option on your transmitter.
    - Connect the battery to the receiver. The Green and Red LEDs will illuminate.
    - Select 'Bind' on your transmitter. The Green LED will turn on and the Red LED will turn off, indicating successful binding.
    - Power off the receiver and then power it on again. The Green LED should be solid, indicating normal operation.

Image: Screenshot of a transmitter's RF System menu, displaying options for binding mode, RX selection (RX1, RX2, RX3), and Failsafe settings. This interface is used for initiating the registration and binding process.

5.2 Wiring Connections

- **PWM Channels (CH1-CH8):** Connect your servos or other PWM-controlled devices to the corresponding channels.
- **SBUS OUT:** Provides a single serial output for all channels, suitable for flight controllers or other SBUS-compatible devices.
- **SBUS IN:** Allows the R8 to function as a primary receiver in a redundant setup when connected to another FrSky receiver with an SBUS Out port.
- **FBUS:** The FBUS protocol enables seamless pairing with multiple telemetry devices (e.g., XACT servos, ADV Sensors) and simplifies build setup.
- **AIN2:** Used for external battery or device voltage detection (0-35V, 1:10 divider ratio).

5.3 Antenna Installation

The Archer Plus R8 features dual detachable antennas. For optimal reception and range, ensure the antennas are mounted at a 90-degree angle to each other and away from carbon fiber, metal, or other conductive materials that could shield the signal. Avoid bending the antenna tips excessively.

6. Operating

6.1 LED Status Indicators (ACCESS)

The receiver's LED indicators provide visual feedback on its current status:

LED State (ACCESS)

Green LED	Red LED	Status
On	On	Register
Flash	Flash	Register successfully
On	On	Bind
On	Off	Bind successfully
On	Off	Working normally
Off	On	Failsafe

Image: Table detailing the meaning of different Green and Red LED combinations for ACCESS protocol, including states for Register, Register successfully, Bind, Bind successfully, Working normally, and Failsafe.

6.2 Telemetry

The Archer Plus R8 supports telemetry via S.Port or FBUS. Telemetry allows you to monitor real-time data from your model, such as receiver voltage, signal strength (RSSI), and external sensor data, directly on your transmitter screen.

- **S.Port:** Smart Port is FrSky's proprietary full-duplex digital transmission interface, allowing for two-way communication with S.Port enabled sensors.
- **FBUS:** FBUS simplifies wiring by allowing multiple FBUS-compatible devices to be connected in series, reducing the number of cables required for telemetry.

6.3 Over-The-Air (OTA) Firmware Update

The receiver supports OTA firmware updates, allowing you to update the receiver's firmware wirelessly via your compatible FrSky transmitter. Refer to your transmitter's manual for specific instructions on performing OTA updates.

6.4 Black-Box Function

The integrated Black-Box function records basic flight data, primarily related to power and signal. This data can be useful for diagnosing issues or analyzing flight performance. Access and manage this data through your

transmitter's menu.

Image: Screenshot of a transmitter's menu displaying 'Flight Data Record' options, including various reset functions for power on, RF, wake up, unbinding, linkup, and brown out detection. This menu is used to manage the Black-Box function.

6.5 Range Check

Before each flight, perform a range check to ensure adequate signal strength. This is typically done by placing the transmitter in range check mode (which reduces RF power) and walking a specified distance away from the model while monitoring telemetry data (e.g., RSSI).

Image: Screenshot of a transmitter's display showing 'Range Check' results, including 2.4G RX, 2.4G VFR, 2.4G RSSI, 900M RX, 900M VFR, and 900M RSSI values. This indicates the signal quality during a range test.

7. Maintenance

- **Cleaning:** Keep the receiver clean and free from dust, dirt, and debris. Use a soft, dry cloth for cleaning. Avoid using solvents or harsh chemicals.
- **Storage:** Store the receiver in a dry, cool environment, away from direct sunlight and extreme temperatures.
- **Firmware Updates:** Regularly check the FrSky website for the latest firmware updates for your receiver. Keeping the firmware updated ensures optimal performance and access to new features.
- **Antenna Inspection:** Periodically inspect the antennas for any damage, kinks, or frayed wires. Replace damaged antennas immediately.

8. Troubleshooting

- **Receiver Not Binding:**
  - Ensure the transmitter is in the correct RF mode (ACCESS or ACCST D16) and the receiver is in registration mode.
  - Verify the distance between the transmitter and receiver during binding (usually close proximity is best).
  - Check for firmware compatibility between the transmitter and receiver.
- **No Signal/Intermittent Signal:**
  - Perform a range check to confirm signal integrity.
  - Check antenna placement and ensure they are not obstructed or damaged.
  - Inspect all wiring connections for looseness or damage.

- Ensure no other 2.4GHz devices are causing interference.

- **LED Not Indicating Normal Operation:**
  - Refer to the LED Status Indicators table in Section 6.1 to diagnose the issue.
  - Re-bind the receiver if the LED indicates a binding issue.
- **Telemetry Data Not Displaying:**
  - Ensure telemetry is enabled on your transmitter.
  - Verify S.Port or FBUS connections are correct.
  - Check for compatible telemetry sensors if applicable.

9. Warranty and Support

For warranty information and technical support, please refer to the official FrSky website or contact your authorized FrSky dealer. Keep your proof of purchase for warranty claims.