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FrSky Archer Plus GR8

FrSky Archer Plus GR8 Receiver User Manual

Comprehensive instructions for setup, operation, and maintenance.

1. Introduction

This manual provides detailed instructions for the installation, configuration, and operation of the FrSky Archer Plus GR8 Receiver. The Archer Plus series receivers offer enhanced RF performance, dual protocol support (ACCESS and ACCST D16), and an upgraded variometer for precise altitude and vertical speed feedback. Please read this manual thoroughly before using the receiver to ensure proper function and safety.

2. Key Features

- **Enhanced Anti-RF-Interference:** Provides more robust RF performance, including improved interference resistance during spark ignition processes.
- **Smart-Matched ACCESS & ACCST D16 Modes:** Automatically matches the RF protocol during the binding process with your radio.
- **Basic Black-Box Function:** Records essential flight data such as power and signal-related information.
- **Upgraded Variometer Sensor:** Delivers more accurate and quicker altitude and vertical speed data, with improved vario audio feedback (requires FrSky ACCESS enabled transmitter).
- **8 High-Precision PWM Channel Ports:** Offers precise control for multiple servos or other devices.
- **SBUS Out Port:** Supports 16 or 24 channel modes for expanded control capabilities.
- **Signal Redundancy (SBUS In):** Allows the GR8 to function as a primary receiver in a redundant setup when connected to another FrSky receiver with an SBUS Out port.
- **Full Control Range with Telemetry:** Supports S.Port or FBUS for comprehensive telemetry data.
- **Over-The-Air (OTA) FW Update:** Enables convenient firmware updates without physical connection.
- **External Battery/Device Voltage Detection:** Monitors external voltage via AIN2 port.
- **Dual Detachable Antennas:** Ensures optimal antenna reception and range.

3. Specifications

- **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:** 3.5V - 10V
- **Operating Current:** <65mA@5V
- **Operating Range:** >2km (Full range) (*Range may vary based on local conditions.)
- **Variometer Measurement Range:**
  - Altimeter Range & Resolution: -700m to 10000m & 0.1m
  - Vertical Speed Range: ±10m/s
- **Voltage Measurement Range via AIN2 (External device):** 0-35V (Battery Voltage Divider Ratio: 1:10)
- **Antenna Connector:** IPEX4
- **Compatibility:** FrSky 2.4GHz ACCESS / ACCST D16 capable transmitters
- **Product Dimensions:** Approximately 54mm x 20mm x 10mm (Length x Width x Height)
- **Item Weight:** Approximately 0.704 ounces (20 grams)

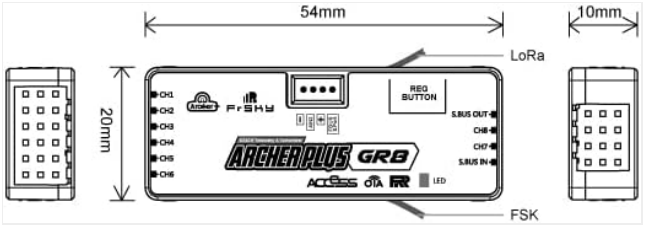


Figure 3.1: Diagram illustrating the dimensions of the FrSky Archer Plus GR8 receiver, showing approximate measurements of 54mm in length, 20mm in width, and 10mm in height. It also labels the antenna types (LoRa and FSK) and the location of the bind button.

4. Setup

4.1. Receiver Overview



Figure 4.1: Top view of the FrSky Archer Plus GR8 receiver, showing the PWM channel outputs (CH1-CH6), SBUS OUT, SBUS IN, CH7, CH8, LED indicator, and the bind button. The dual detachable antennas are also visible.



Figure 4.2: Angled view of the FrSky Archer Plus GR8 receiver, providing a clearer perspective of the various ports and the compact design.

4.2. Binding Procedure

The Archer Plus GR8 receiver supports both ACCESS and ACCST D16 protocols. The RF protocol is automatically matched during the binding process.

1. Turn on your FrSky transmitter and navigate to the Model Setup menu.
2. Select the desired RF protocol (ACCESS or ACCST D16) and put the transmitter into bind mode.
3. Connect power to the GR8 receiver while holding down the F/S (Fail-Safe) button (also known as the bind button). The LED on the receiver will flash, indicating it is in bind mode.
4. On the transmitter, select "Bind". The receiver's LED will illuminate solid green, indicating successful binding.
5. Power cycle both the transmitter and receiver to exit bind mode and confirm connection.

Note: For ACCESS protocol, ensure your transmitter firmware is up to date. Some features may require specific ACCESS or ETHOS firmware versions.

4.3. Connections

- **PWM Channels (CH1-CH8):** Connect servos or other PWM-controlled devices to these ports. Channels 1-6 are clearly labeled, while CH7 and CH8 are located near the SBUS ports.
- **SBUS Out:** Provides a single serial output for up to 16 or 24 channels, depending on the mode. Connect to flight controllers or other SBUS-compatible devices.
- **SBUS In:** Used for signal redundancy. Connect an SBUS Out from another FrSky receiver to this port to create a redundant receiver setup.
- **AIN2 Port:** Used for external voltage detection. Connect a voltage sensor or battery voltage divider (1:10 ratio) to monitor external battery voltage (0-35V).
- **Antennas:** Ensure both detachable IPEX4 antennas are securely connected and positioned for optimal signal reception. Avoid placing antennas near metal objects or carbon fiber.

5. Operation

5.1. Channel Modes

The Archer Plus GR8 operates in two main channel modes:

- **8 High-precision PWM & 16 SBUS Channels Mode:** Provides 8 direct PWM outputs and 16 channels via SBUS.
- **8 High-precision PWM & 24 SBUS Channels Mode:** Provides 8 direct PWM outputs and 24 channels via SBUS.

The specific mode is typically configured on your FrSky transmitter during model setup.

5.2. FBUS Protocol

The FBUS protocol simplifies wiring by allowing multiple telemetry devices (e.g., XACT servos, ADV Sensors) to be connected in series, reducing the number of cables required. Refer to your transmitter's manual for FBUS setup and configuration.

5.3. Variometer Function

The integrated high-precision variometer provides real-time altitude and vertical speed data. When paired with an ACCESS-enabled FrSky transmitter, it offers accurate and quick vario audio feedback, assisting pilots in thermal soaring or maintaining altitude.

5.4. Black-Box Function

The basic Black-Box function records critical flight data, such as power and signal-related parameters. This data can be useful for post-flight analysis and troubleshooting. Consult your transmitter's manual or FrSky documentation for instructions on accessing and interpreting Black-Box data.

6. Maintenance

6.1. Over-The-Air (OTA) Firmware Update

The Archer Plus GR8 receiver supports Over-The-Air (OTA) firmware updates. This allows you to update the receiver's firmware wirelessly using your FrSky ACCESS-enabled transmitter, eliminating the need for physical connection to a computer.

1. Download the latest firmware for the Archer Plus GR8 from the official FrSky website (www.frsky-rc.com).
2. Copy the firmware file to the SD card of your FrSky ACCESS transmitter.
3. Follow the OTA update instructions provided in your transmitter's manual to initiate the wireless firmware update process for the receiver.
4. Ensure the receiver remains powered and within range of the transmitter throughout the update process.

Caution: Do not interrupt power to the receiver or transmitter during an OTA update, as this may corrupt the firmware and render the receiver inoperable.

7. Troubleshooting

- **Receiver Not Binding:**
  - Ensure the receiver is powered correctly and the bind button is held during power-up.
  - Verify that the transmitter is in bind mode and the correct RF protocol (ACCESS/ACCST D16) is selected.
  - Check for firmware compatibility between the transmitter and receiver. Update firmware if necessary.
- **Loss of Signal/Range Issues:**
  - Inspect antennas for damage and ensure they are securely connected to the IPEX4 connectors.
  - Optimize antenna placement, keeping them away from carbon fiber, metal, and other electronic components.
  - Check for potential sources of RF interference in the operating environment.
  - Ensure the receiver is receiving adequate power within its specified voltage range.
- **No Telemetry Data:**
  - Confirm that telemetry is enabled on your transmitter.
  - Verify correct wiring for S.Port or FBUS connections.
  - Ensure all telemetry sensors are properly connected and configured.
- **Incorrect Variometer Readings:**
  - Ensure the receiver is mounted in a location free from airflow disturbances or pressure changes caused by the

model's movement.
    - Calibrate the variometer if an option is available in your transmitter's settings.

For further assistance, please refer to the official FrSky website or contact FrSky technical support.

8. Safety Information

- Always operate your RC model in a safe and responsible manner.
- Ensure all connections are secure and correct before each flight.
- Regularly inspect the receiver and antennas for any signs of damage.
- Do not operate your RC model near power lines, crowds, or restricted airspace.
- Keep the receiver away from moisture, extreme temperatures, and strong vibrations.
- Only use genuine FrSky components and accessories.

9. Warranty and Support

FrSky products are designed and manufactured to high-quality standards. For warranty information, technical support, and the latest product updates, please visit the official FrSky website:
www.frsky-rc.com
You can also find FAQs, firmware downloads, and contact information for customer service on their website.

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