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› [RotorLogic](#) /

› [RadioMaster DBR4 Dual Band Dual Channel Xross Gemini ExpressLRS Receiver User Manual](#)

RotorLogic DBR4

RadioMaster DBR4 Dual Band Dual Channel Xross Gemini ExpressLRS Receiver User Manual

Model: DBR4

1. INTRODUCTION

The RadioMaster DBR4 is a dual-band, dual-channel Gemini receiver designed for use with the Nomad module. It supports simultaneous reception of 2.4GHz and 900MHz signals across two dual-band sections. This design enhances interference rejection and signal reliability by processing two data streams concurrently. The DBR4 is intended for advanced remote control applications, particularly FPV drones, requiring robust and stable signal communication.

2. PACKAGE CONTENTS

Verify that all items are present in the package:

- DBR4 receiver unit
- 2.4 GHz wire antennas (quantity: 2)
- 900 MHz wire antennas (quantity: 2)
- Accessory pack (includes necessary cables or connectors)

3. KEY FEATURES

- **Dual Band Operation:** Supports ExpressLRS Gemini 2.4GHz and ExpressLRS Gemini 868/900MHz simultaneously.
- **Dual Channel Design:** Two dual-band sections for enhanced signal reception and interference rejection.
- **Antenna Configuration:** Four discrete antennas for optimal arrangement and signal diversity.
- **Mounting:** Standard 20 x 20mm mounting holes for integration into various platforms.
- **Telemetry:** Telemetry RF power up to 2x 100mW.
- **Refresh Rate:** Maximum receive refresh rate of 500Hz (with 1000Hz anticipated in ExpressLRS V3.4); minimum refresh rate of 50Hz.
- **Voltage:** Working voltage range of DC 4.5 - 8.4V.
- **Weight:** Approximately 2.70g without antennas, 5.30g with antennas.

4. SETUP INSTRUCTIONS

4.1. Physical Installation

Mount the DBR4 receiver securely onto your FPV drone or other compatible device using the 20x20mm mounting holes. Ensure proper orientation as per your flight controller's requirements and space availability.

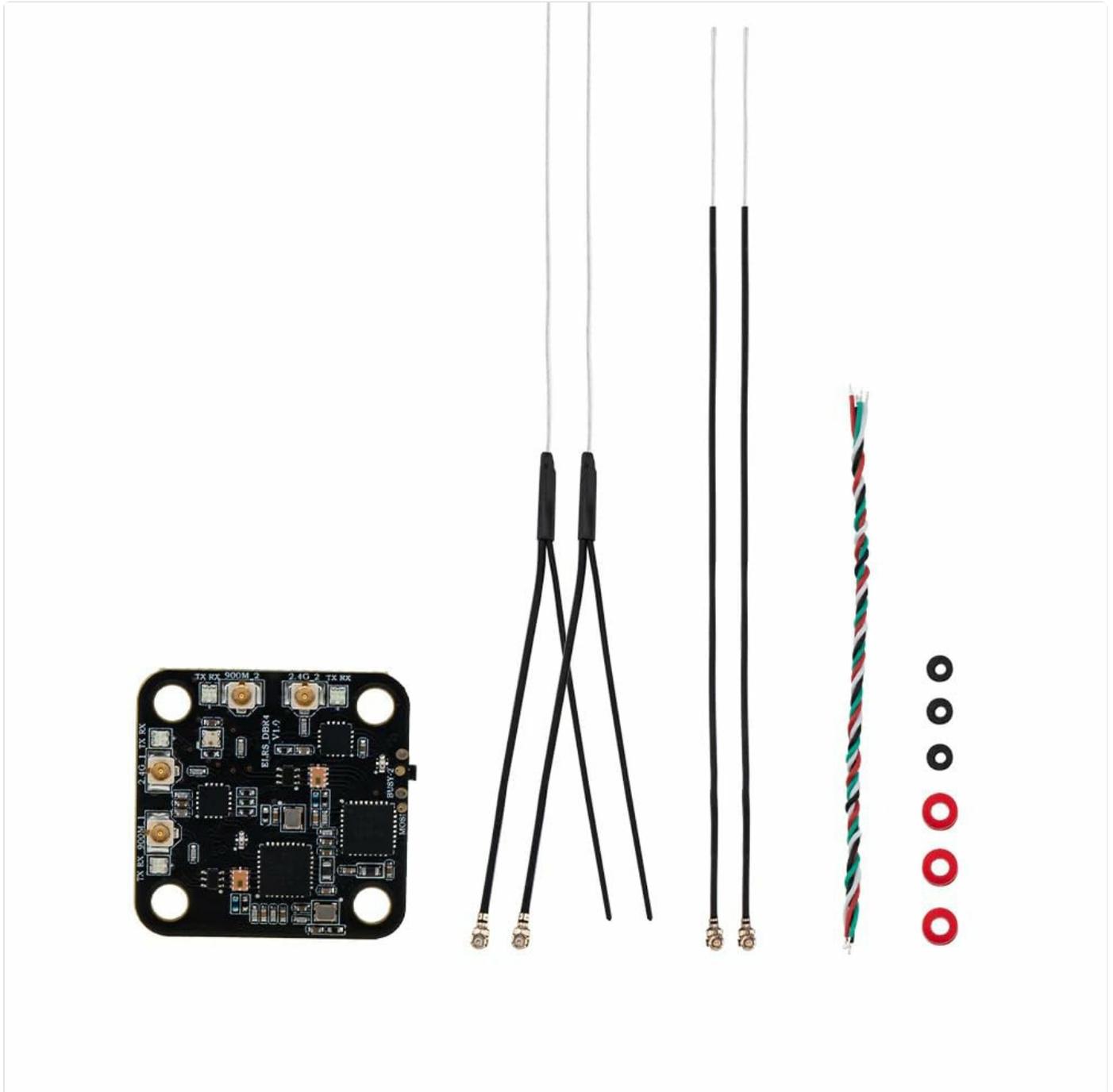


Image 1: The RadioMaster DBR4 receiver unit, showing its compact size and antenna connectors. This image illustrates the physical appearance of the receiver before installation.

4.2. Antenna Connection

Connect the provided 2.4 GHz and 900 MHz wire antennas to their respective ports on the DBR4 receiver. Arrange the four discrete antennas to maximize signal diversity and minimize interference. Avoid placing antennas directly against carbon fiber or other conductive materials.

4.3. Wiring to Flight Controller

Connect the DBR4 receiver to your flight controller using the appropriate wiring diagram for your specific flight controller

and ExpressLRS setup. Typically, this involves connecting power (VCC, GND), and serial communication (TX, RX) lines. Refer to your flight controller's manual for specific UART connections.

4.4. Firmware and Binding

The DBR4 receiver operates with ExpressLRS firmware. Ensure your receiver and transmitter module are running compatible ExpressLRS firmware versions.

1. **Firmware Update:** If necessary, update the receiver firmware using the ExpressLRS Configurator. Connect the receiver to your computer via a USB-to-UART adapter or through passthrough if supported by your flight controller.
2. **Binding:** Put your ExpressLRS transmitter module into binding mode. Power on the DBR4 receiver. The receiver should automatically enter binding mode if it does not detect a valid link. Once bound, the LED on the receiver will indicate a successful connection (refer to ExpressLRS documentation for specific LED patterns).

For detailed instructions on firmware flashing and binding, please consult the official [ExpressLRS documentation](#).

5. OPERATING INSTRUCTIONS

5.1. Power On

Once installed and bound, power on your FPV drone or device. The DBR4 receiver will establish a connection with your ExpressLRS transmitter module.

5.2. Signal Monitoring

Monitor your signal quality and RSSI (Received Signal Strength Indicator) through your flight controller's OSD (On-Screen Display) or ground station software. The dual-band, dual-channel design of the DBR4 provides robust signal integrity, especially in environments with potential interference.

5.3. Telemetry

The DBR4 supports telemetry, allowing your transmitter to receive data back from the receiver, such as RSSI, link quality, and potentially flight controller data. Ensure telemetry is enabled and configured correctly in your ExpressLRS setup.

6. MAINTENANCE

- **Physical Inspection:** Regularly inspect the receiver and antennas for any physical damage, loose connections, or wear.
- **Cleaning:** Keep the receiver free from dust, dirt, and moisture. Use a soft, dry brush or compressed air for cleaning. Avoid using liquid cleaners.
- **Firmware Updates:** Periodically check the official ExpressLRS website for new firmware releases. Updating firmware can provide performance improvements, new features, and bug fixes.
- **Antenna Placement:** Ensure antennas remain securely mounted and positioned for optimal signal reception.

7. TROUBLESHOOTING

- **No Link/Binding Issues:**
 - Verify that both the receiver and transmitter module are running compatible ExpressLRS firmware versions.
 - Ensure the binding phrase is correctly set on both devices.
 - Check wiring connections for power and serial data.
 - Try re-flashing the receiver firmware.

- **Poor Range/Signal Loss:**

- Inspect antennas for damage or improper connection.
- Review antenna placement to ensure they are clear of obstructions and conductive materials.
- Check for local RF interference sources.
- Ensure transmitter power output is set appropriately.

- **Telemetry Not Working:**

- Confirm telemetry is enabled in your ExpressLRS configuration.
- Check wiring between the receiver and flight controller for correct TX/RX connections.

For further assistance, refer to the comprehensive [ExpressLRS troubleshooting guide](#) or community forums.

8. SPECIFICATIONS

Model	DBR4
Frequency Bands	ExpressLRS Gemini 2.4GHz, ExpressLRS Gemini 868/900MHz
Telemetry RF Power	Max 2x 100mW
Antennas	4 Discrete antennas (2x 2.4GHz, 2x 900MHz wire antennas)
Mounting Holes	20 x 20mm
Receive Refresh Rate	50Hz (Min) - 500Hz (Max), 1000Hz coming soon in ExpressLRS V3.4
Working Voltage	DC 4.5 - 8.4V
Weight (without antennas)	2.70g
Weight (with antennas)	5.30g
Product Dimensions	Approximately 1 x 1 x 0.1 inches
Manufacturer	RadioMaster
Brand	RotorLogic

9. WARRANTY AND SUPPORT

For specific warranty information, please refer to the terms and conditions provided by your retailer at the time of purchase or contact the manufacturer, RadioMaster, directly.

For technical support and further inquiries, you may visit the [RotorLogic Store on Amazon](#) or the official RadioMaster website.

