RADIOMASTER RP4TD-M

Radiomaster RP4TD-M ExpressLRS 2.4GHz Mini True Diversity Receiver User Manual

MODEL: RP4TD-M

Brand: RADIOMASTER

Introduction

This user manual provides essential information for the proper setup, operation, and maintenance of your Radiomaster RP4TD-M ExpressLRS 2.4GHz Mini True Diversity Receiver. Please read this manual thoroughly before using the product to ensure safe and optimal performance.

The RP4TD-M is a compact and lightweight true diversity receiver designed for optimal performance in various remote control applications. It leverages 'Gemini' technology for superior interference mitigation and features dual-channel 2.4GHz radios for exceptional signal sensitivity and signal-to-noise ratio.

Safety Information

Always refer to this instruction manual before use. Improper handling or operation can lead to damage to the product or other equipment. Ensure all connections are secure and correct before powering on. Keep the device away from moisture, extreme temperatures, and strong electromagnetic fields.

What's in the Box

- 1 * RP4TD-M ExpressLRS 2.4GHz Diversity Receiver
- 1 * CRSF wire
- 3 * Heat-Shrinkable Tube
- 2 * 65mm 2.4GHz T Antenna (Installed on receiver)
- 1 * User Manual



Image: Contents of the RP4TD-M package, showing the receiver, CRSF wire, heat-shrinkable tubes, and two T-antennas.

Product Features

- Mini size true diversity Gemini receiver.
- Class leading SNR and RSSI performance.
- Built-in TCXO (temperature compensated crystal oscillator).
- Optimized PCB design for better heat dissipation.
- Upgraded antenna with greater durability and performance.
- 2 x 10mW RF Telemetry power output.
- Compatible with all 2.4GHz ExpressLRS modules and transmitters with built-in 2.4GHz ExpressLRS.

Specifications

Item	RP4TD-M ExpressLRS 2.4GHz Mini True Diversity Receiver
Type	ISM

MCU	ESP32
RF Chip	SX1281 x 2
Antenna	65mm 2.4GHz T Antenna x 2
Frequency Range	2.4GHz
Maximum Refresh Rate	500Hz / F1000Hz
Telemetry RF Power	Max 2x 10mW
Working Voltage	DC 5.0V
Wifi Updates	Yes
Weight	1.00g [Without antennas] / 3.30g [With antennas]
Dimension	18.10 x 16.0mm
Firmware Version	ExpressLRS V3.4.3 pre-installed
FW Target	RadioMaster RP4TD-M 2400 RX
Bus interface	CRSF



Image: The RP4TD-M receiver without antennas, weighing 1.00g on a digital scale.

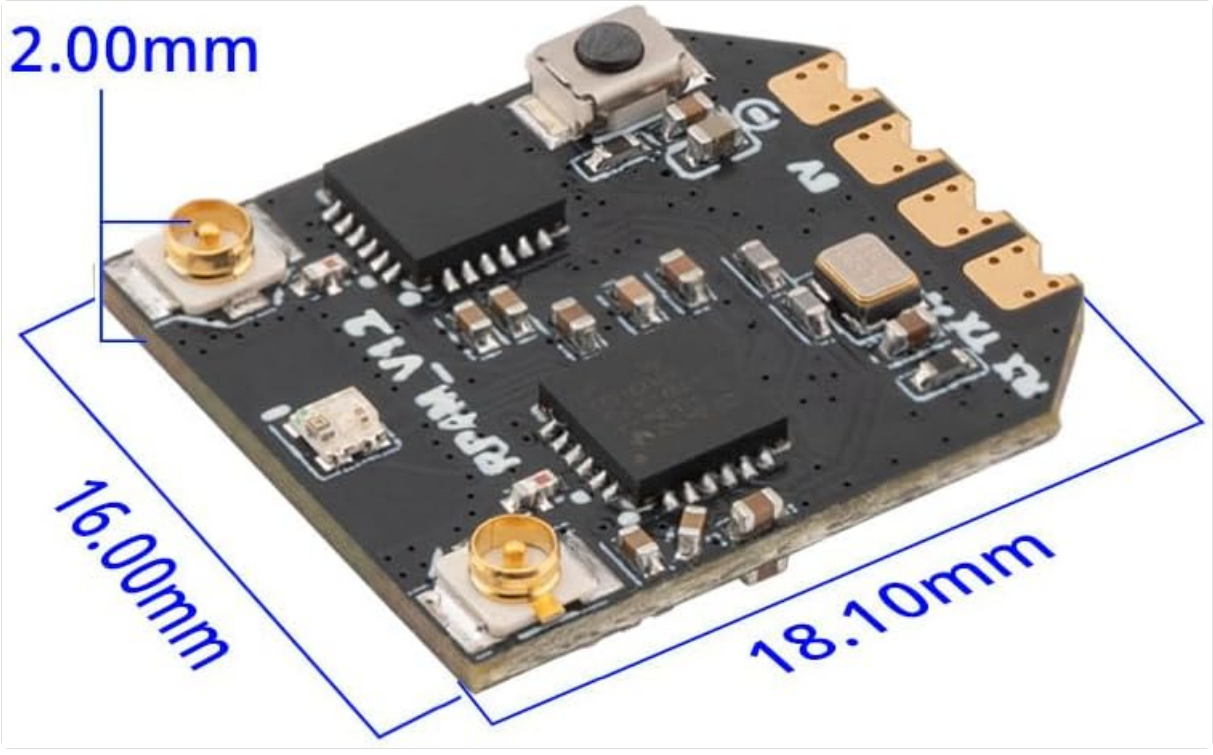


Image: Diagram showing the dimensions of the 65mm T-antenna, indicating a total length of 79mm and antenna element length of 65mm.

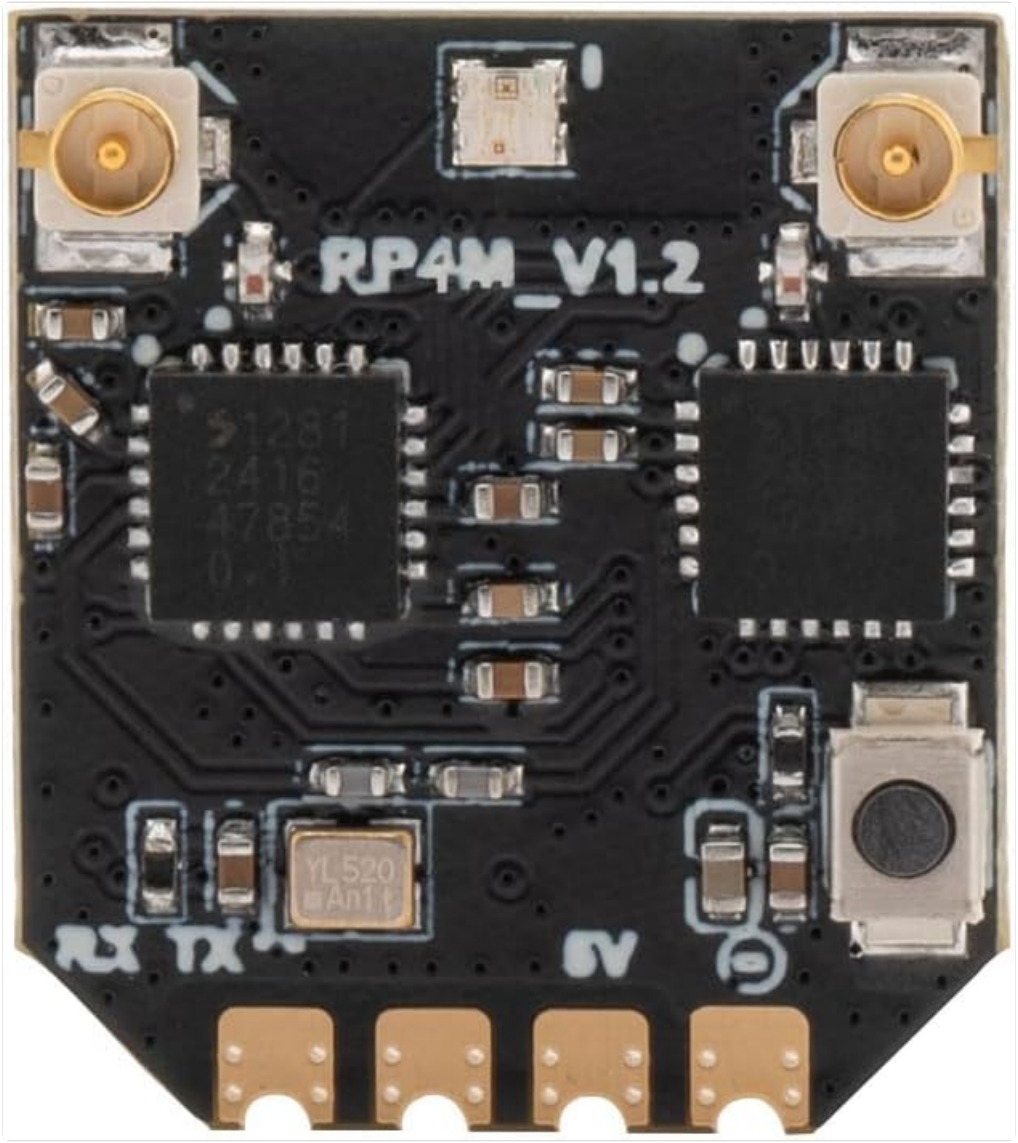


Image: Detailed close-up of the RP4TD-M receiver's circuit board, highlighting the dual RF chips (SX1281) and antenna connectors.

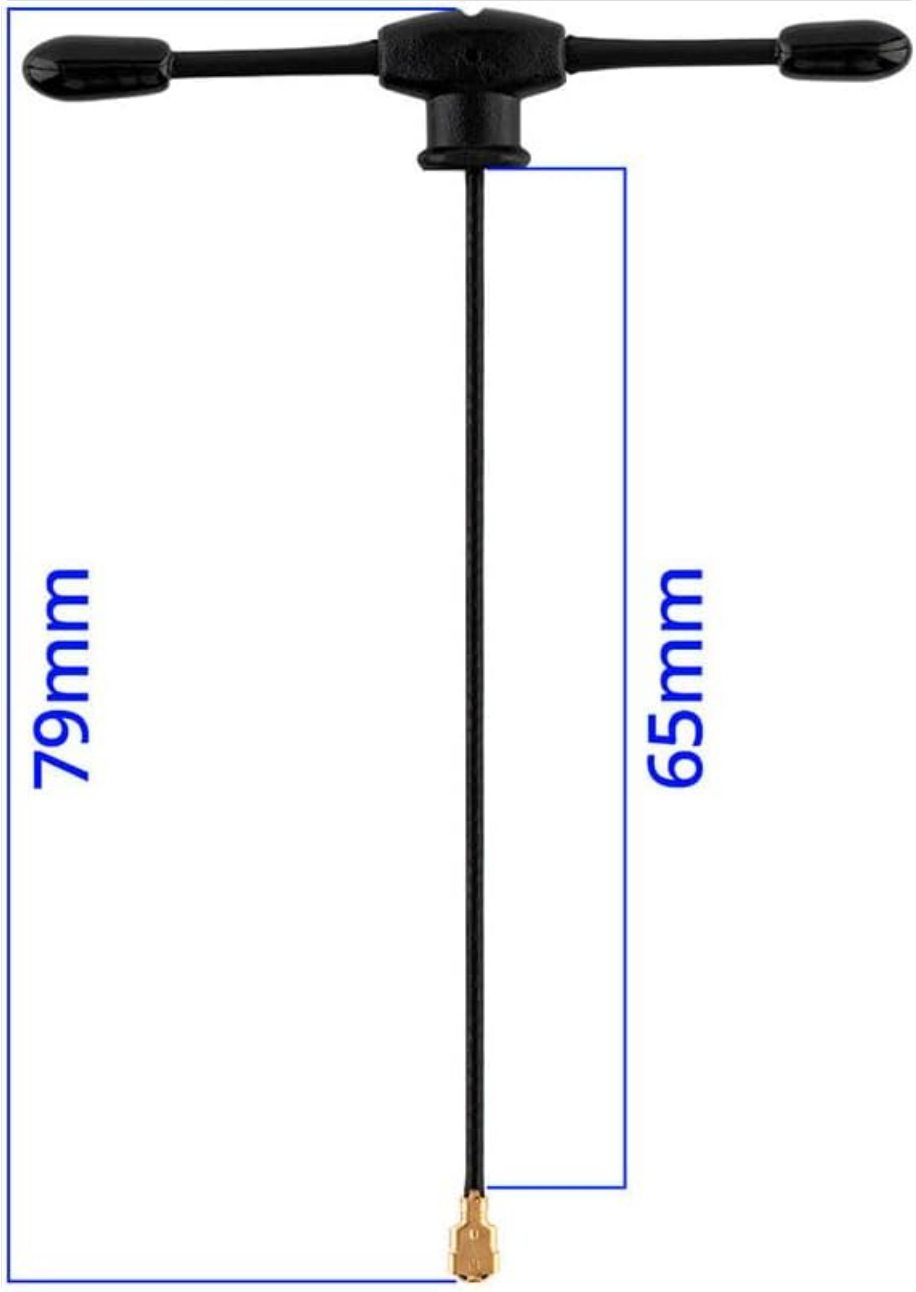


Image: Diagram illustrating the dimensions of the RP4TD-M receiver board, measuring 18.10mm by 16.00mm.

Setup

1. Physical Connection

Connect the RP4TD-M receiver to your flight controller or other compatible device using the provided CRSF wire. Ensure correct polarity and pin assignments (typically VCC, GND, TX, RX for CRSF). The receiver operates on DC 5.0V.



Image: The RP4TD-M receiver with its two T-antennas connected, alongside the CRSF wire and heat-shrink tubes, illustrating the components for physical setup.

2. Antenna Installation

The two 65mm 2.4GHz T Antennas are pre-installed on the receiver. Ensure they are positioned correctly for optimal signal reception, typically at a 90-degree angle to each other for diversity.



Image: The RP4TD-M receiver with both T-antennas connected and positioned, ready for installation.

3. Binding (Pairing)

The RP4TD-M receiver comes with ExpressLRS V3.4.3 firmware pre-installed. To bind the receiver to your ExpressLRS transmitter module or built-in ExpressLRS transmitter, follow the standard ExpressLRS binding procedure:

1. Power on the receiver. It should enter binding mode (LED flashing rapidly) if not already bound.
2. On your ExpressLRS transmitter, initiate the binding process.
3. Once bound, the receiver's LED will turn solid.

For detailed binding instructions specific to your ExpressLRS transmitter, refer to its user manual or the official ExpressLRS documentation.

4. Firmware Updates (Optional)

The RP4TD-M supports WiFi updates. To update the firmware, power on the receiver and connect to its WiFi hotspot (usually named "ExpressLRS RX" or similar) using a computer or mobile device. Navigate to the provided IP address (e.g., 10.0.0.1) in your web browser to access the update interface. Ensure you select the correct firmware target: *RadioMaster RP4TD-M 2400 RX*.

Operating

Once successfully bound and connected, the RP4TD-M receiver will provide a stable CRSF bus interface for communication with your flight controller. The dual SX1281 RF chips and true diversity design ensure robust signal reception.

Telemetry

The receiver supports telemetry output with a maximum RF power of 2x 10mW. This allows for real-time feedback of signal quality (RSSI, LQ) and other flight controller data to your compatible ExpressLRS transmitter.

Maintenance

- **Cleaning:** Use a soft, dry cloth to clean the receiver. Avoid using liquids or solvents.
- **Antenna Care:** Ensure antennas are not bent sharply or damaged. Damaged antennas can significantly reduce range and signal quality.
- **Storage:** Store the receiver in a dry, cool environment, away from direct sunlight and dust.
- **Heat Dissipation:** The optimized PCB design aids in heat dissipation. Ensure adequate airflow around the receiver when installed, especially in enclosed spaces.

Troubleshooting

- **Receiver Not Binding:**
  - Ensure your transmitter is running a compatible ExpressLRS firmware version (V3.x.x).
  - Verify the receiver is powered correctly (DC 5.0V).
  - Check if the receiver is entering binding mode (rapidly flashing LED).
  - Confirm the correct binding phrase is set on your transmitter if applicable.
- **No Signal/Poor Range:**
  - Check antenna connections and ensure they are not damaged.
  - Verify antenna placement for optimal diversity.
  - Ensure no obstructions are blocking the signal path.
  - Check for local interference sources.
- **Receiver LED Solid but No Control:**
  - Verify CRSF wiring to the flight controller (TX/RX swapped?).
  - Ensure the flight controller firmware is configured for CRSF protocol.

Warranty and Support

This product is covered by a limited manufacturer's warranty against defects in materials and workmanship. Please retain your proof of purchase for warranty claims. For detailed warranty terms and conditions, refer to the official RADIOMASTER website or contact your retailer.

For technical support, troubleshooting assistance, or further inquiries, please visit the official RADIOMASTER website or contact their customer service department. You may also find helpful resources and community forums online for ExpressLRS related questions.

Manufacturer: Greathobby RC

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Ask a question about this manual

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page's manual context to help answer it.

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After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. Privacy details.

Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question