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FrSky TD R10

FrSky TD R10 Receiver User Manual

Model: TD R10

1. Introduction

This manual provides essential instructions for the safe and effective use of your FrSky TD R10 receiver. Please read this manual thoroughly before operating the device to ensure proper setup, optimal performance, and to prevent damage. Keep this manual for future reference.

2. Product Overview and Features

The FrSky TD R10 is a high-performance, long-range receiver designed for remote control applications. It features dual-band operation and a triple antenna design for enhanced signal reliability.

Key Features:

- Simultaneous working dual-band TD mode (2.4GHz & 900MHz) for robust communication.
- Triple antenna design for multi-directional coverage, ensuring stable signal reception.
- Integrated Black Box function for flight data recording.
- Built-in voltage sensor for real-time monitoring of power supply.
- 4ms Race Mode with Telemetry for low-latency control and data feedback.
- Extended control range, capable of up to 50KM to 100KM.
- Over-The-Air (OTA) firmware update capability for convenient upgrades.
- 10 Configurable Channel Ports:
  - CP1: PWM / SBUS Out / FBUS / S.Port / SBUS In
  - CP2-10: PWM / SBUS Out / FBUS / S.Port
- Compatibility with FrSky Tandem series transmitters and TD protocol capable RF modules.



Figure 1: Front view of the FrSky TD R10 receiver, illustrating the port labels and antenna connections.



Figure 2: Top-down view of the FrSky TD R10 receiver, highlighting the pin headers for channel connections and the three attached antennas.

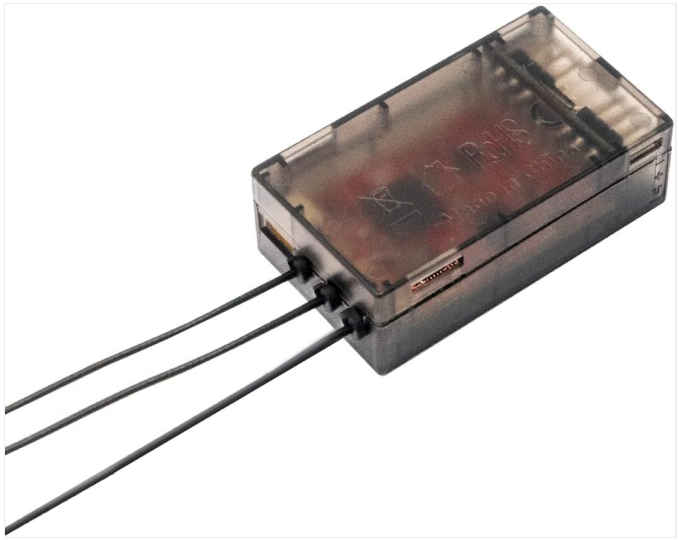


Figure 3: Side view of the FrSky TD R10 receiver, displaying the transparent casing and the secure routing of the antenna wires.

3. Specifications

Specification	Value
Model	TD R10
Dimensions (L*W*H)	46.5 x 26.3 x 14.7 mm
Weight	16.6 g

Specification	Value
Operating Voltage Range	3.5 - 10V DC
Operating Current	≤180mA @ 5V
Frequency	2.4GHz & 900MHz
Number of Channels	10 (Configurable)
Antenna Type	Triple (2x External 2.4G IPEX1, 1x External 900M IPEX1)
Control Range	Up to 50-100 KM
Port Current Capacity (Instantaneous)	5A
Port Current Capacity (Continuous)	3A
Compatibility	FrSky Tandem series transmitters & TD protocol capable RF modules

4. Setup

4.1. Antenna Installation

Ensure all three antennas are securely connected to their respective IPEX1 connectors on the receiver. Position the antennas to achieve optimal signal reception, typically at 90-degree angles to each other for multi-directional coverage. Avoid placing antennas near conductive materials or large metal objects that could obstruct the signal.

4.2. Power Connection

Connect the receiver to a stable power source within the specified operating voltage range of 3.5-10V DC. Observe correct polarity to prevent damage to the receiver.

4.3. Channel Connections

Connect your servos or other control devices to the appropriate channel ports (CP1-CP10) on the receiver. Refer to your flight controller or device manual for specific wiring diagrams. Port CP1 offers multiple output options including PWM, SBUS Out, FBUS, S.Port, and SBUS In, while CP2-CP10 offer PWM, SBUS Out, FBUS, and S.Port.

4.4. Binding Procedure

To establish communication between the TD R10 receiver and your FrSky Tandem series transmitter or TD protocol capable RF module, follow these general binding steps:

1. Power on your transmitter and navigate to the model setup menu.
2. Select the binding option for your TD protocol module.
3. Power on the TD R10 receiver while holding down the F/S (Fail-Safe) button. The LED on the receiver should indicate binding mode (refer to your transmitter's manual for specific LED indications).
4. Once the binding process is complete, the receiver's LED will indicate a successful connection.
5. Power cycle both the transmitter and receiver to confirm the binding.

5. Operating Instructions

5.1. Dual-Band Operation

The TD R10 receiver operates simultaneously on both 2.4GHz and 900MHz frequencies, providing enhanced signal redundancy and reliability. This dual-band system automatically manages signal switching to maintain the strongest possible

link.

5.2. Race Mode

For applications requiring minimal latency, activate the 4ms Race Mode through your compatible FrSky Tandem transmitter. This mode optimizes the communication speed for competitive use.

5.3. Telemetry

The built-in voltage sensor and S.Port/FBUS capabilities allow for real-time telemetry data transmission back to your transmitter. This includes receiver voltage, signal strength, and other sensor data if connected. Configure telemetry settings via your transmitter's menu.

5.4. Black Box Function

The integrated Black Box function records flight data, which can be useful for analysis and troubleshooting. Consult the FrSky website or your transmitter's manual for instructions on accessing and interpreting Black Box data.

6. Maintenance

6.1. Firmware Updates

FrSky regularly releases firmware updates to improve performance and add new features. Utilize the Over-The-Air (OTA) update function via your compatible transmitter or connect the receiver to a computer using a FrSky USB adapter to update the firmware. Always download firmware from the official FrSky website.

6.2. Physical Care

Keep the receiver clean and free from dust, dirt, and moisture. Avoid exposing it to extreme temperatures or direct sunlight for prolonged periods. Regularly inspect antenna connections for any signs of wear or damage.

7. Troubleshooting

7.1. No Signal / Loss of Control

- Verify that the receiver is correctly bound to the transmitter.
- Check all power connections to ensure the receiver is receiving adequate voltage.
- Inspect antenna placement and ensure they are not obstructed or damaged.
- Confirm that the transmitter's RF module is active and operating on the correct protocol.
- Check for potential interference sources in the operating environment.

7.2. Incorrect Channel Output

- Ensure servos or devices are connected to the correct channel ports.
- Verify channel mapping and settings in your transmitter.
- Perform a factory reset on the receiver if necessary (refer to FrSky documentation for specific procedure).

7.3. Telemetry Data Issues

- Confirm telemetry is enabled in your transmitter settings.
- Check S.Port/FBUS connections if external sensors are used.
- Ensure the receiver firmware is up to date.

8. Warranty and Support

FrSky products are manufactured to high standards. For warranty information, technical support, or further assistance, please visit the official FrSky website or contact your authorized FrSky dealer. Keep your proof of purchase for warranty claims.
Official FrSky Website: www.frsky-rc.com

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