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radtel RT-4D

Radtel RT-4D DMR Radio User Manual

Dual Band Dual Mode Analog Digital Two Way Radio

1. Introduction

The Radtel RT-4D DMR Radio is a cutting-edge communication device designed for versatility and performance. It features 1024 channels, dual UHF/VHF band support, and seamless switching between analog and digital modes. With dual time slot capability and support for Tier 1+2, this radio offers robust and reliable communication for various applications.

1.1. What's in the Box

Upon unboxing your Radtel RT-4D, please verify that all components are present:

- 1x Radtel RT-4D Radio Unit
- 1x Programming Cable
- 1x Earpiece
- 1x Dual Band Antenna
- 1x 3500mAh Li-ion Battery
- 1x Desktop Charger
- 1x USB-C Cable
- 1x Belt Clip
- 1x English User Manual (this document)



Image 1.1: Radtel RT-4D Radio with its complete set of accessories, including the radio unit, dual-band antenna, programming cable, earpiece, battery, desktop charger, USB-C cable, and belt clip.

2. Safety Information

Please read and understand all safety precautions before operating the Radtel RT-4D radio. Failure to comply with these warnings may result in injury, damage to the radio, or voiding of the warranty.

- **Battery Safety:** Use only the specified battery and charger. Do not short-circuit, incinerate, or disassemble the battery. Dispose of batteries properly.
- **Antenna Care:** Do not touch the antenna during transmission. Avoid using the radio with a damaged antenna, as it may

cause minor burns.

- **Interference:** Turn off the radio in areas where two-way radios are prohibited, such as hospitals, aircraft, or near blasting sites.
- **Water Exposure:** This device is not water-resistant. Avoid exposure to rain, moisture, or submersion in water.
- **Cleaning:** Use a soft, dry cloth for cleaning. Do not use harsh chemicals or solvents.
- **Servicing:** Do not attempt to repair the radio yourself. Refer all servicing to qualified personnel.

3. Product Overview

The Radtel RT-4D features a robust design with intuitive controls for ease of use. Familiarize yourself with the radio's components and their functions.

3.1. Radio Components

- **Antenna:** For transmitting and receiving signals.
- **Power/Volume Knob:** Turns the radio on/off and adjusts volume.
- **Channel/Menu Knob:** Navigates channels or menu options.
- **PTT (Push-to-Talk) Button:** Press and hold to transmit, release to receive.
- **Side Keys:** Customizable for various functions (e.g., monitor, alarm).
- **LCD Display:** Shows channel, frequency, mode, battery status, and other indicators.
- **Keypad:** For direct frequency input, channel selection, and menu navigation.
- **Speaker/Microphone:** For audio output and input.
- **Accessory Jack:** For connecting earpiece or programming cable.
- **Battery Pack:** Provides power to the radio.

4. Setup and Initial Use

4.1. Battery Installation

1. Align the battery pack with the grooves on the back of the radio.
2. Slide the battery pack upwards until it clicks into place.
3. To remove, press the battery release latch (if present) and slide the battery downwards.

4.2. Charging the Battery

Before first use, fully charge the battery. The radio comes with a desktop charger and a USB-C cable.

1. Connect the USB-C cable to the desktop charger and a power source.
2. Place the radio (with battery installed) or just the battery into the charging slot of the desktop charger.
3. The charging indicator light will show the charging status (e.g., red for charging, green for fully charged).

4.3. Attaching the Antenna

1. Screw the dual band antenna clockwise onto the antenna connector on top of the radio until it is finger-tight. Do not overtighten.

4.4. Attaching the Belt Clip

1. Align the belt clip with the screw holes on the back of the radio.
2. Secure the belt clip using the provided screws.

5. Operating Instructions

5.1. Powering On/Off and Volume Adjustment

- **Power On:** Rotate the Power/Volume knob clockwise until you hear a click.
- **Power Off:** Rotate the Power/Volume knob counter-clockwise until you hear a click.
- **Volume Adjustment:** Rotate the Power/Volume knob to increase (clockwise) or decrease (counter-clockwise) the audio volume.

5.2. Channel Selection and Frequency Input

- **Channel Mode:** Use the Channel/Menu knob to scroll through the 1024 available channels.
- **VFO Mode (Frequency Mode):** Use the keypad to directly input desired frequencies. Press the V/M key to switch between Channel and VFO modes.

5.3. Dual Band and Dual Mode Operation

The RT-4D supports dual band (UHF/VHF) and dual mode (Analog/Digital) operation.



Image 5.1: The Radtel RT-4D supports both DMR Digital and Analog handheld radio modes, offering versatile communication options.

- **Band Switching:** The radio automatically operates on the selected frequency's band (VHF: 136-174 MHz, UHF: 400-470 MHz). It also supports 108-136 MHz for aviation AM reception and 136-520 MHz RX for analog.
- **Mode Switching:** The radio can automatically detect and switch between Analog and Digital (DMR) modes based on the received signal or programmed channel settings.
- **Dual Time Slot (Tier 1 & 2):** In DMR mode, the radio supports dual time slot functionality, allowing two simultaneous conversations on a single frequency.



Image 5.2: The RT-4D features 2-time slot digital/analog signal compatibility, enabling high/low power switching and strong penetration for reliable communication.

5.4. Making Calls (DMR Mode)

The RT-4D supports various call types in DMR mode:

- **Single Call:** Direct communication with a specific radio ID. The radio supports up to 2000 Digital Call Contacts.
- **Group Call:** Communication with a predefined group of radios. The radio supports up to 256 Receive Group Lists.
- **All Call:** Broadcast message to all radios within range.



Image 5.3: The Radtel RT-4D offers multiple calling choices including Single Call (add friend, call alone), Group Call (create calling group for all members), and All Call (up to 500 contacts).

5.5. Special Features

- **NOAA Weather Forecast:** Access NOAA weather channels for real-time weather updates.
- **FM Radio:** Enjoy FM broadcast radio reception.
- **SMS Text Messaging:** Send text messages to other RT-4D radios.
- **Digital Encryption:** The radio includes 256 Voice Encryption Keys (ARC/AES-128/AES-256 methods) to enhance communication privacy and prevent cross-interference.

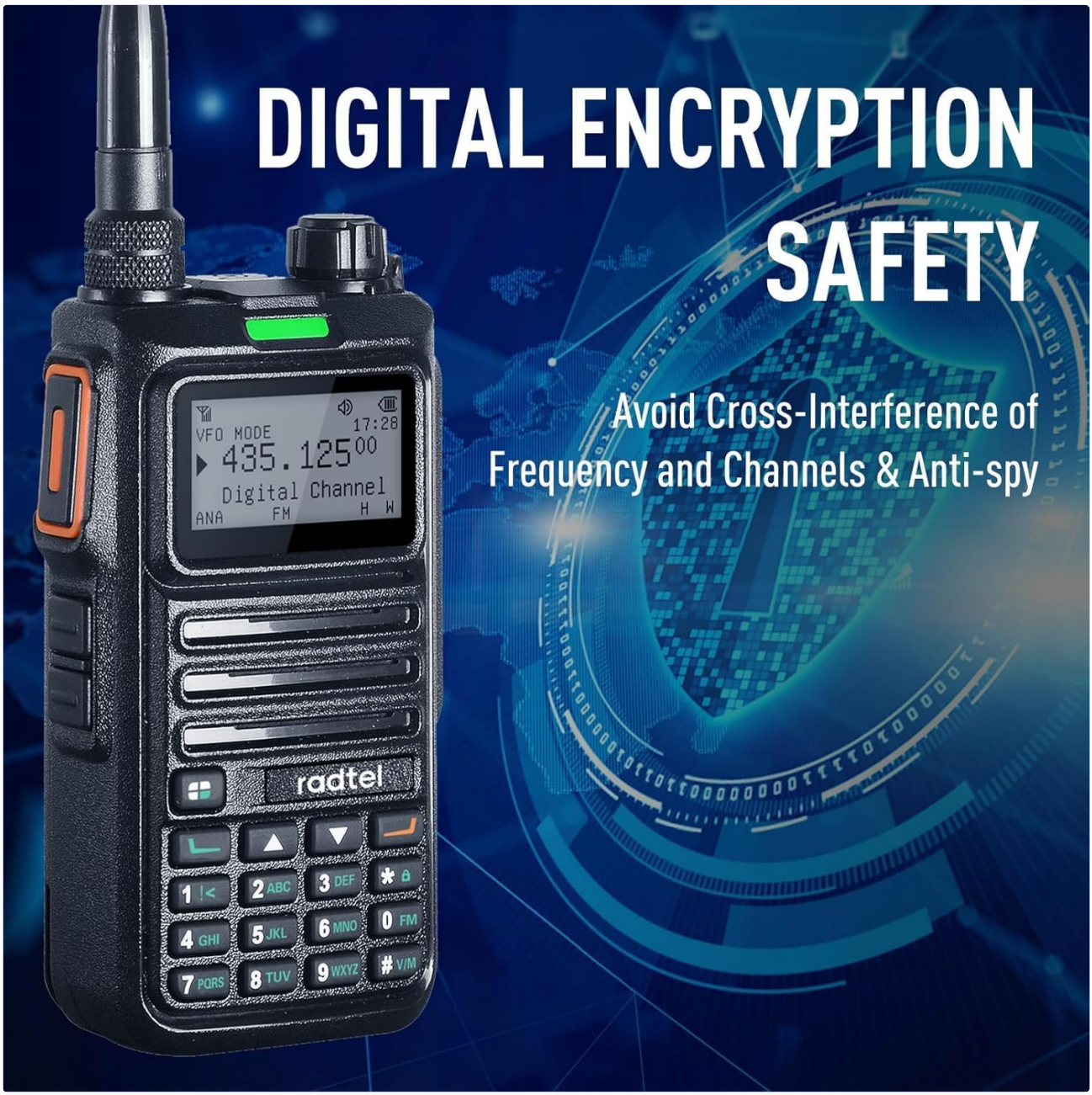


Image 5.4: The RT-4D features digital encryption for enhanced safety, helping to avoid cross-interference of frequency and channels, and providing anti-spy capabilities.

- **Spectrum Functions** / **TX Test:** Test signals of different frequencies.

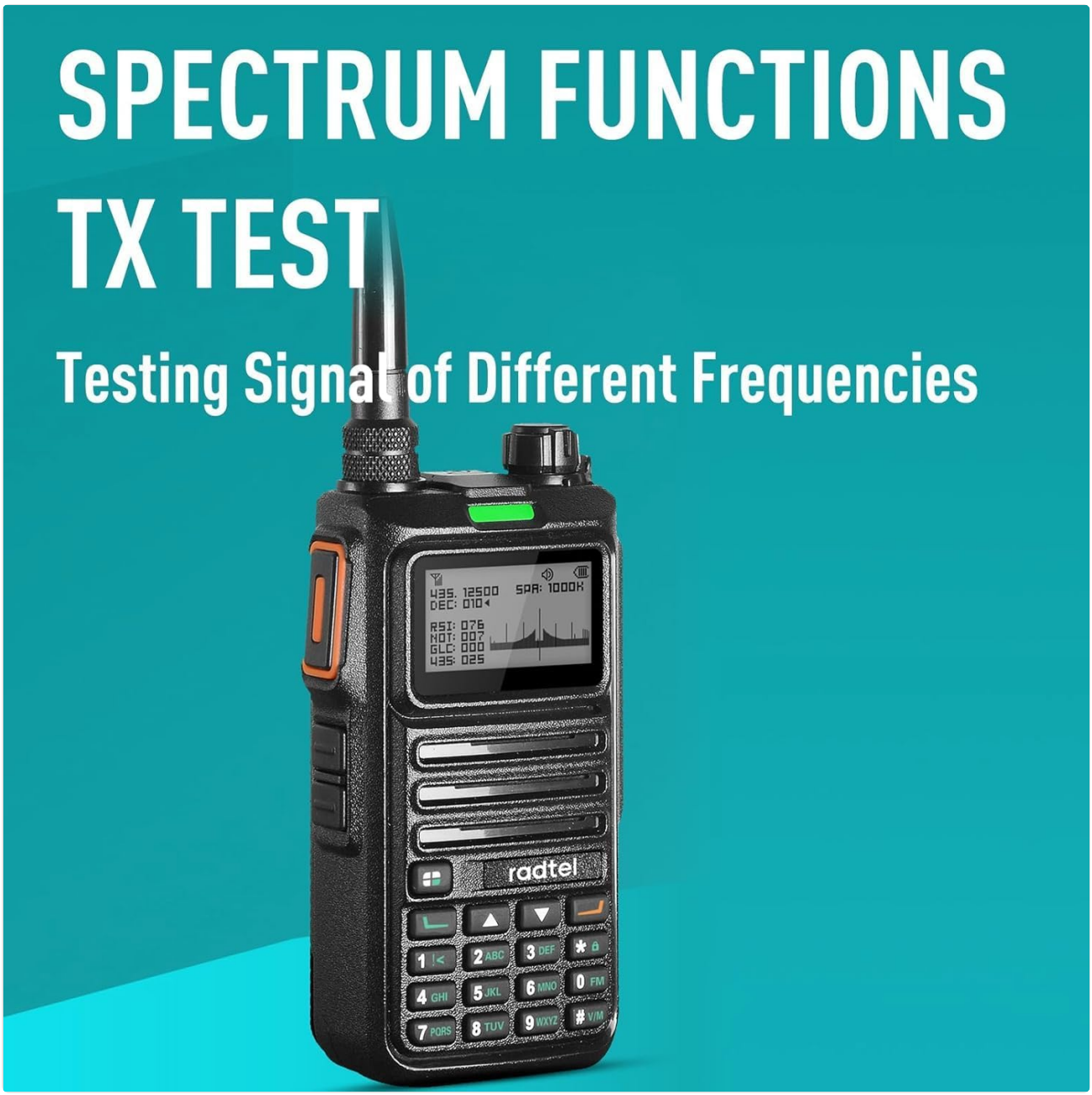


Image 5.5: The Radtel RT-4D includes spectrum functions and TX test capabilities for testing signals across different frequencies.

- **One-key Frequency Measurement (Analog):** Quickly measure frequencies in analog mode.
- **One-Click Detecting Remote Sub-Tone Decoding:** Quick matching and decoding of sub-tones.



Image 5.6: The RT-4D offers one-click detecting remote sub-tone decoding for quick matching and decoding of signals.

- **Customizable Side Key and Keypad Functions:** Program the side keys and keypad for quick access to frequently used functions.
- **Dual-frequency Standby:** Monitor two frequencies simultaneously.
- **Aviation Band Reception:** Receive signals on the aviation band (108-136 MHz AM).

6. Maintenance

6.1. Cleaning the Radio

To maintain the radio's appearance and performance:

- Wipe the surface with a soft, lint-free cloth.
- For stubborn dirt, dampen the cloth slightly with water. Do not use chemical cleaners or abrasive solvents.

6.2. Battery Care

- Avoid fully discharging the battery frequently, as this can reduce its lifespan.
- Store the battery in a cool, dry place when not in use for extended periods.

- If the battery will not be used for a long time, charge it to about 50% before storing.

7. Troubleshooting

If you encounter issues with your Radtel RT-4D, refer to the table below for common problems and solutions.

Problem	Possible Cause	Solution
Radio does not power on.	Battery is low or not installed correctly.	Charge the battery or re-install it properly.
No sound from speaker.	Volume is too low; Squelch level too high; Earpiece connected.	Increase volume; Adjust squelch; Disconnect earpiece.
Cannot transmit or receive.	Incorrect frequency/channel; Antenna not attached; Out of range.	Verify frequency/channel; Attach antenna securely; Move closer to other radios.
Poor audio quality.	Weak signal; Interference; Damaged antenna.	Check signal strength; Move away from interference sources; Replace antenna if damaged.

If the problem persists after trying these solutions, please contact customer support.

8. Specifications

Feature	Detail
Model Number	RT-4D
Item Weight	1.1 pounds (approx. 0.5 kg)
Product Dimensions	1.18 x 1.97 x 4.33 inches (approx. 3 x 5 x 11 cm)
Batteries	1 Lithium Ion battery required (3500mAh included)
Number of Channels	1024
Frequency Range	VHF: 136-174 MHz, UHF: 400-470 MHz (RX: 108-136 MHz AM, 136-520 MHz Analog)
Talking Range Maximum	5 Kilometers (approx. 3.1 miles)
Tuner Technology	UHF/VHF
Voltage	7.4 Volts
Water Resistance Level	Not Water Resistant
Digital Call Contacts	2000
Receive Group Lists	256
Voice Encryption Keys	256 (ARC/AES-128/AES-256)

9. Warranty and Support

9.1. Warranty Information

The Radtel RT-4D DMR Radio comes with a **1-Year Warranty** from the date of purchase. This warranty covers manufacturing defects and malfunctions under normal use. It does not cover damage caused by misuse, accidents, unauthorized modifications, or exposure to water.

For returns or exchanges, please refer to the retailer's return policy, which typically allows for returns within 30 days of purchase.

9.2. Customer Support

For technical assistance, troubleshooting beyond this manual, or warranty claims, please contact Radtel customer support. You can often find support contact information on the official Radtel website or through the seller from whom you purchased the product.

Visit the official Radtel Store for more information and support resources: Radtel Store on Amazon

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Model: RT-4D

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