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Radtel RT-470X

Radtel RT-470X Multi-Bands Ham Radio

User Instruction Manual

Model: RT-470X

1. Introduction

The Radtel RT-470X is a versatile multi-band handheld ham radio designed for reliable communication across various frequency ranges. It integrates advanced features such as NOAA weather reception, dual Push-To-Talk (PTT) buttons, and a convenient USB-C charging port. This manual provides essential information for setting up, operating, maintaining, and troubleshooting your RT-470X radio to ensure optimal performance and longevity.

2. What's in the Box

- 1x Radio Body
- 1x Battery 2600mAh
- 1x USB-C Charger cable
- 1x AC adapter
- 1x Original Dual Band Antenna
- 1x Belt clip
- 1x User manual
- Additional: 1x Programming Cable
- Additional: 1x Speaker mic
- Additional: 1x Air band Antenna



Figure 1: Radtel RT-470X Radio and Included Accessories. This image displays the main radio unit alongside its standard accessories, including the 2600mAh battery, USB-C charging cable, AC adapter, original dual band antenna, belt clip, speaker microphone, and an additional air band antenna.

3. Key Features

3.1 Multi-Band Transmit & Receive

The RT-470X supports a wide range of frequencies for both transmission and reception, including 144-148MHz (RX/TX) and 420-450MHz (RX/TX). It also features extensive receive-only capabilities across 18-108MHz, 108-136MHz AM (Air Band), 136-630MHz UHF/VHF, 840-999MHz UHF, and 66-108MHz FM radio bands.



Figure 2: Multi-Band Capabilities. This graphic illustrates the various frequency bands the RT-470X can transmit and receive on, highlighting its broad spectrum coverage.

3.2 Air Band Reception

Listen to air traffic communications on the 108-136MHz AM frequency band. Please note that while the radio can receive these frequencies clearly, it cannot transmit on them.



Figure 3: Air Signal Reception. The image shows the radio's display with air band frequencies, emphasizing its receive-only capability for aviation signals.

3.3 One-Key Frequency Copy (Auto Frequency Capture)

This innovative feature allows the RT-470X to quickly copy another radio's frequency and CTCSS/DCS tone. This enables immediate communication without manual programming, provided the two radios are within 1 meter distance.



Figure 4: Wireless Frequency Copy. This visual demonstrates the radio's ability to wirelessly seek and replicate frequencies from another device for quick setup.

3.4 NOAA Weather Receiver

Stay informed about severe weather conditions with the integrated NOAA U.S. Weather Channel receiver. This feature is particularly useful for outdoor activities, allowing you to receive weather alerts anytime.



Figure 5: NOAA Weather Alerts. The image shows the radio displaying weather information, emphasizing its utility for receiving severe weather forecasts, especially outdoors.

3.5 Advanced Functions

The RT-470X includes 256 storage channels (128x2 groups) and supports a range of advanced functions: Voice Scrambler, VOX (Voice-Operated Transmit), Scan, TOT (Time-Out Timer), Voice prompt, DTMF (Dual-Tone Multi-Frequency), Dual Standby, and Firmware Update capability. It also features a Roger beep Frog Sound and an FCC ID: 2AZSA-RT470X.



Figure 6: RT-470X Feature Overview. This image highlights various advanced features of the radio through a set of descriptive icons.

3.6 Dual PTT Support

The radio features dual Push-To-Talk (PTT) buttons. When the PF2 key is configured as PTTB, you can simply press the PTT key to transmit on the upper frequency, and pressing the PF2 key will initiate transmission on the lower frequency.

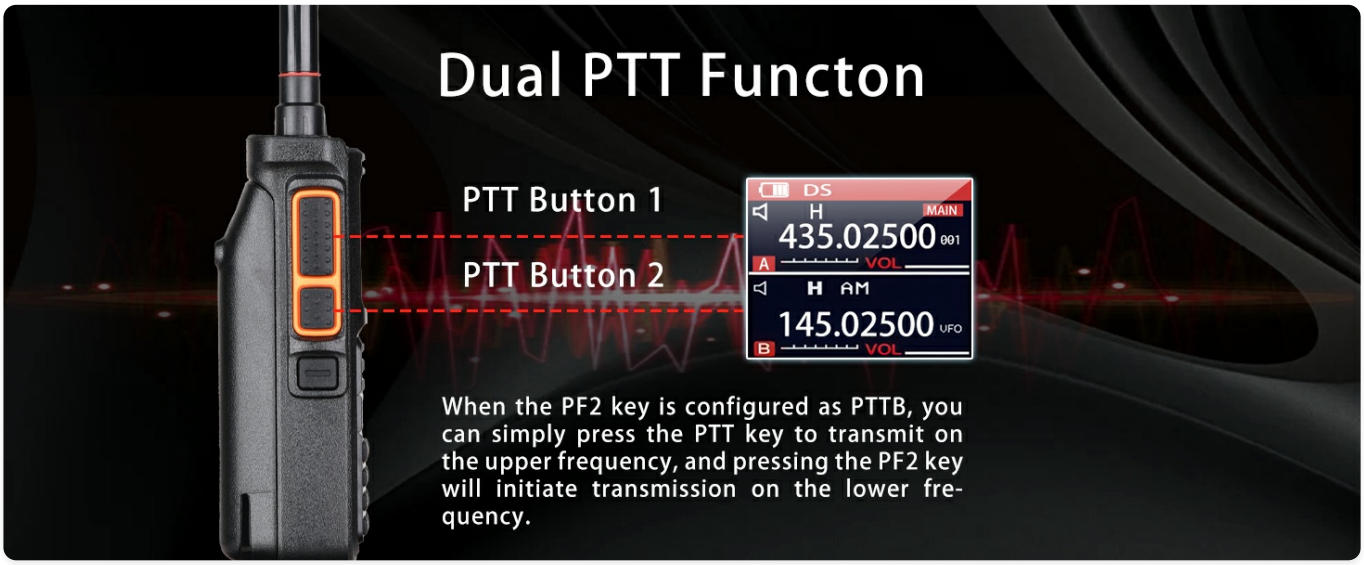


Figure 7: Dual PTT Functionality. This image clearly shows the two PTT buttons and explains how they enable simultaneous operation on different frequencies.

3.7 1.77" TFF Colorful Screen

The radio is equipped with a 1.77-inch TFF (Thin Film Transistor) colorful screen, providing a simpler and clearer display for enhanced readability and user experience.



Figure 8: Clear TFF Screen. This image highlights the radio's vibrant and easy-to-read display, showcasing its various on-screen indicators and functions.

3.8 Type-C Charging

The RT-470X supports convenient Type-C charging directly on the battery. An included USB-C charging cable allows for flexible charging options, including car chargers, power banks, and wall chargers.

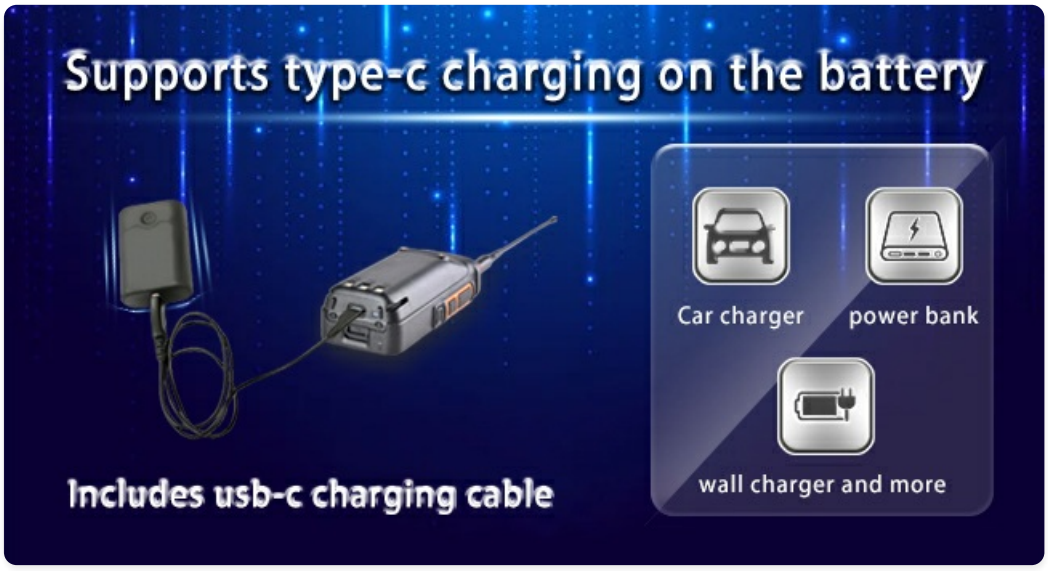


Figure 9: Versatile Type-C Charging. This image illustrates the radio's USB-C charging capability, emphasizing its compatibility with various power sources.

4. Setup

4.1 Battery Installation and Charging

1. Align the 2600mAh Lithium Ion battery with the battery compartment on the back of the radio.
2. Slide the battery into place until it clicks securely.
3. To charge, connect the provided USB-C cable to the port on the battery pack and plug the other end into the AC adapter or a compatible USB-C power source.
4. The charging indicator on the radio or battery will show charging status.

4.2 Antenna Attachment

1. Screw the desired antenna (Original Dual Band or Air Band Antenna) clockwise onto the antenna connector at the top of the radio until it is finger-tight. Do not overtighten.

4.3 Speaker Mic and Programming Cable Connection

1. Open the protective cover on the side of the radio to reveal the accessory ports.
2. Insert the speaker mic or programming cable into the corresponding ports. Ensure a firm connection.

5. Operating Instructions

5.1 Power On/Off

- To power on, rotate the power/volume knob clockwise until you hear a click.
- To power off, rotate the power/volume knob counter-clockwise until you hear a click.

5.2 Frequency Selection and Channel Mode

- Use the keypad to directly input frequencies in VFO (Variable Frequency Oscillator) mode.
- Press the 'VFO/MR' button to switch between VFO mode and Channel mode. In Channel mode, use the up/down arrow keys to navigate through stored channels.

5.3 Transmitting (PTT) and Receiving

- To transmit, press and hold the main PTT button on the side of the radio. Speak clearly into the microphone. Release the PTT button to receive.
- For dual PTT functionality, configure the PF2 key as PTTB in the menu. Press the main PTT for the upper frequency and PF2 for the lower frequency.

5.4 NOAA Weather Scan

- To activate NOAA weather scan, hold down the '*' (star) and back arrow keys simultaneously. The radio will begin scanning for active NOAA weather stations.

5.5 FM Radio

- The radio can receive FM broadcast frequencies (66-108MHz). Refer to the full user manual for specific instructions on switching to FM radio mode.

5.6 Voice Scrambler Function

- Activate the voice scrambler function through the radio's menu to encrypt your transmissions for privacy.

5.7 VOX (Voice-Operated Transmit)

- Enable VOX in the menu for hands-free transmission. The radio will automatically transmit when it detects your voice. Adjust VOX sensitivity as needed.

5.8 Scanning

- The radio supports frequency scanning. Refer to the full user manual for detailed instructions on setting up and initiating frequency scans.

5.9 Adjusting Power Levels

- The RT-470X offers High, Middle, and Low power output selections. Adjust the power level via the menu to conserve battery life or extend range as required.

6. Programming

The Radtel RT-470X offers multiple programming modes for advanced users:

- **CPS Programming:** Use the provided programming cable and dedicated Computer Programming Software (CPS) for comprehensive configuration of channels, frequencies, and features.
- **Chirp Programming:** The radio is compatible with Chirp software, offering an alternative for programming and managing settings.
- **Keypad Programming:** Basic settings and frequency input can be done directly via the radio's keypad.



Figure 10: Programming Modes. This image visually represents the three different methods available for programming the RT-470X radio.

Firmware Updates: The RT-470X supports firmware updates, allowing you to add new features or improve existing performance. Instructions for firmware updates are typically provided by the manufacturer.



Figure 11: Updatable Firmware. This image highlights the radio's capability for firmware upgrades, which can enhance its features and performance over time.

7. Specifications

Specification	Value
Model Number	RT-470X
Item Weight	1.42 pounds
Product Dimensions	2.3 x 7.2 x 7.6 inches
Batteries	1 Lithium Ion batteries required (included)
Number of Channels	256 (128x2 groups)

Frequency Range (TX/RX)	144-148MHz / 420-450MHz
Receiver Frequencies	18-108MHz, 108-136MHz AM, 136-630MHz UHF/VHF, 840-999MHz UHF, 66-108MHz FM
Talking Range Maximum	5 Kilometer
Tuner Technology	AM/FM
Voltage	7.4 Volts
Water Resistance Level	Not Water Resistant

8. Maintenance

- **Cleaning:** Use a soft, damp cloth to clean the radio's exterior. Avoid harsh chemicals or abrasive cleaners.
- **Battery Care:** To prolong battery life, avoid overcharging and fully discharging the battery frequently. Store the battery in a cool, dry place when not in use for extended periods.
- **Antenna Care:** Ensure the antenna is securely attached but do not overtighten. Avoid bending or stressing the antenna excessively.
- **Storage:** Store the radio in a dry, dust-free environment away from extreme temperatures.

9. Troubleshooting

- **No Power:** Check if the battery is properly installed and charged. Ensure the power knob is turned on.
- **Cannot Transmit/Receive:** Verify that the correct frequency or channel is selected. Check antenna connection. Ensure the battery has sufficient charge.
- **Poor Audio Quality:** Adjust volume. Check speaker mic connection if in use. Ensure you are within range of the transmitting station.
- **Programming Issues:** Ensure the programming cable is correctly connected and the correct software (CPS or Chirp) is being used. Refer to the software's specific instructions.

10. Warranty and Support

The Radtel RT-470X comes with a 1-month warranty from the date of purchase. For warranty claims, technical support, or further assistance, please contact Radtel Direct, the seller, through your purchase platform or visit the official Radtel store.

Radtel Store: Visit the Radtel Store on Amazon

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