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BAOFENG UV-21R

BaoFeng UV-21R Ham Radio User Manual

Comprehensive guide for your BaoFeng UV-21R Dual Band 2-Way Radio.

1. Introduction

The BaoFeng UV-21R is an advanced dual-band handheld ham radio designed for reliable long-range communication. It features a 1.77" TFT large screen, full keyboard, and supports various functions including VOX, FM radio, and NOAA weather channels. This manual provides detailed instructions for setting up, operating, maintaining, and troubleshooting your UV-21R radio.

What's in the Box



The BaoFeng UV-21R package typically includes the following components:

- 2XRadio Body
- 2xBattery&2XType-C Cable&1XUS Base Charger
- 2xOriginal Antenna&2X High Gain Orange Antenna
- 2xBelt Clip&1XOrange Programming Cable
- 2xLanyard&2XManual

The BaoFeng UV-21R is suitable for a wide range of activities, from outdoor adventures like mountaineering, hiking, biking, and skiing, to professional uses in construction and security, and even for casual camping and fishing trips. Its

robust design and long-range capabilities make it a versatile communication tool.



The image shows the BaoFeng UV-21R radios being used in various outdoor and professional settings, highlighting their versatility and long-range communication capabilities for different occasions.

2. Setup Guide

2.1 Battery Installation and Charging

The UV-21R radio uses a rechargeable Lithium-Ion battery. Ensure the battery is fully charged before first use.



The image illustrates the two primary charging methods: direct Type-C cable charging and using the provided charging base. The Type-C port is conveniently located on the back of the battery, allowing for charging via power banks, laptops, or car chargers. The base charger provides a stable dock for charging.

Battery Installation:

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

Charging Methods:

- **Type-C Charging:** Connect the provided Type-C cable directly to the port on the battery. This allows for flexible charging from various USB power sources like power banks, car chargers, or laptops.
- **Base Charger:** Place the radio with the battery installed into the charging base. Ensure the charging contacts align. Connect the base charger to a power outlet. The indicator light on the charger will show the charging status.

2.2 Antenna Attachment

Proper antenna attachment is crucial for optimal performance and range.



This image highlights the difference between a standard antenna and the included 39CM High Gain Orange Antenna, which significantly improves communication range by approximately 30%. The flexible nature of the high-gain antenna and its female connector are also shown.

1. Screw the desired antenna (either the original or the high-gain orange antenna) clockwise onto the antenna connector at the top of the radio until it is finger-tight. Do not overtighten.
2. Ensure a secure connection for clear transmission and reception.

3. Operating Instructions

3.1 Basic Controls and Display



This diagram labels the key components and controls of the UV-21R radio, such as the Power/Volume switch, PTT (Push-to-Talk) key, Menu key, Navigation keys, and the 1.77" TFT large screen display.

Key Controls:

- **Power/Volume Switch:** Rotate clockwise to turn on and increase volume; counter-clockwise to decrease volume and turn off.
- **PTT (Push-to-Talk) Key:** Press and hold to transmit; release to receive.
- **MENU Key:** Access the radio's menu system for settings and functions.
- **Navigation Keys:** Use the up/down arrows to navigate menu options and adjust values.
- **A/B Key:** Switch between the upper (A) and lower (B) frequency displays for dual watch operation.
- **VFO/MR Key:** Switch between Frequency Mode (VFO) and Channel Mode (MR).

Display Information:

The 1.77" TFT color display shows current frequency, channel number, signal strength (RSSI), battery level, and various function indicators.

3.2 Channel and Frequency Management

The UV-21R supports 999 channels and dual-band operation (UHF/VHF).

- **Channel Mode (MR):** Use the VFO/MR key to switch to channel mode. Use navigation keys to select stored channels.
- **Frequency Mode (VFO):** Use the VFO/MR key to switch to frequency mode. Directly input frequencies using the keypad.
- **Private Call (CTCSS/DCS):** The radio supports 50 CTCSS tones and 210 DCS codes to ensure privacy and reduce interference. These can be set via the menu.

3.3 Wireless Frequency Copy

The UV-21R features a convenient 2-second wireless frequency copy function, allowing you to quickly match frequencies with another radio.



This image demonstrates the "2 Seconds Copy Frequency" feature, showing the UV-21R's display and a table of frequencies being copied from another radio. This function allows for quick and easy frequency synchronization.

1. Power on your UV-21R radio.
2. Press the "2" key on the keypad to enter the SEEK function. The display will show "SEEK".
3. Press and hold the PTT button on the other radio you wish to copy the frequency from.
4. While the other radio is transmitting, press "MENU" on your UV-21R to confirm the frequency copy.
5. Once copied, switch to channel mode, and the display will show the other person's frequency, allowing you to communicate.

3.4 VOX Function (Voice Operated Transmit)

The VOX function allows for hands-free operation by automatically transmitting when it detects your voice.

- Access the VOX setting through the radio's menu.
- Adjust the VOX sensitivity level to suit your environment and voice volume.
- When VOX is enabled, you do not need to press the PTT button to transmit.

3.5 FM Radio Function

The UV-21R includes an FM radio function, allowing you to listen to local broadcast stations.

- Activate the FM function via the menu or a dedicated key (if available).
- Scan for available FM stations or manually input frequencies.

3.6 NOAA Weather Channels

Stay informed about severe weather conditions with the integrated NOAA Weather Channel function.



This image shows the UV-21R's display with a NOAA weather alert, indicating its capability to receive weather information to help users prepare for hazards. The radio can access 10 NOAA Weather Stations.

- Access the NOAA weather channels through the radio's menu.
- The radio can receive alerts and broadcasts from 10 NOAA Weather Stations, providing timely weather information.

3.7 Flashlight Function

The built-in LED flashlight provides convenience in low-light conditions.

- Activate the flashlight via a dedicated key or menu option.

3.8 Product Overview Video

For a visual guide on the features and capabilities of the BaoFeng UV-21R, please watch the official product video below.

Your browser does not support the video tag.

Official product video showcasing the BaoFeng UV-21R Ham Radio's features, including its upgrade from the UV-5R, multiple functionalities, 2-second frequency copy, high-gain antenna, dual charging methods, flashlight, and NOAA weather channel integration. This video provides a comprehensive visual overview of the radio's capabilities and included accessories.

4. Maintenance

4.1 Cleaning

- Wipe the radio's surface with a soft, damp cloth. Do not use harsh chemicals or abrasive cleaners.
- Ensure the charging contacts on the battery and charger are clean and free of debris.

4.2 Battery Care

- Avoid fully discharging the battery frequently to prolong its lifespan.
- Store the radio and battery in a cool, dry place when not in use.
- If storing for extended periods, charge the battery to about 50% capacity.

4.3 Environmental Protection

The UV-21R features an IP54 waterproof design, offering protection against dust and splashing water. While it can withstand rain or snow, it is not designed for submersion.

5. Troubleshooting

Common Issues and Solutions:

Problem	Possible Cause	Solution
Radio does not power on.	Low or dead battery; improperly installed battery.	Charge the battery; ensure battery is correctly installed.
No signal or poor reception.	Antenna not properly attached; out of range; incorrect frequency/channel.	Check antenna connection; move closer to other radios; verify frequency/channel settings.
Cannot transmit.	PTT button not pressed; low battery; transmit lockout enabled.	Press PTT firmly; charge battery; check menu settings for transmit lockout.
Audio is distorted or too low.	Volume too low; squelch level too high; interference.	Adjust volume; lower squelch level; move away from sources of interference.

Programming Software (CHIRP)

The BaoFeng UV-21R supports programming via CHIRP software, which allows for advanced customization of channels and settings. A programming cable is included in the full kit.



This image confirms that the UV-21R radio supports programming using CHIRP software. Users can connect the radio to a computer via the programming cable to manage frequencies and settings, specifically using the UV-17Pro settings within CHIRP.

For detailed instructions on using CHIRP, please refer to the software's documentation or online resources. Ensure you select the correct model (UV-17Pro compatible) within CHIRP for the UV-21R.

6. Specifications

Below are the technical specifications for the BaoFeng UV-21R radio:

Feature	Detail
Brand	BAOFENG
Model Number	UV-21R
Item Weight	2.88 pounds (approx. 1.3 kg for the pack)
Package Dimensions	16.5 x 4.84 x 4.65 inches
Batteries	1 Lithium Ion batteries required. (included)
Color	Orange
Number of Channels	999
Special Features	Long Range, Rechargable, Battery Saver Mode, Keypad Lock, Emergency Alarm
Frequency Range	VHF UHF
Talking Range Maximum	5 Mile (approx. 8 km)
Tuner Technology	UHF VHF
Voltage	7.4V (DC)
Water Resistance Level	Water Resistant

7. Warranty Information

The product specifications indicate a warranty period. Please refer to the product packaging or the manufacturer's official website for the most accurate and up-to-date warranty details. Typically, BaoFeng products come with a 1-year limited warranty covering manufacturing defects.
Extended protection plans may be available for purchase separately. Please check with your retailer for options.

8. Support

For further assistance, technical support, or inquiries regarding your BaoFeng UV-21R radio, please utilize the following resources:

- **Manufacturer's Website:** Visit the official BAOFENG website for product updates, FAQs, and support contact information.
- **Retailer Support:** Contact the retailer from whom you purchased the product for return or exchange policies.
- **Online Communities:** Many amateur radio communities and forums offer valuable advice and troubleshooting tips for BaoFeng radios.

You can also visit the BAOFENG Store on Amazon for more product information and support resources.

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