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BAOFENG UV-21R

Baofeng UV-21R Dual Band Handheld Two-Way Radio User Manual

Model: UV-21R

Introduction

This user manual provides comprehensive instructions for the operation, maintenance, and troubleshooting of your Baofeng UV-21R Dual Band Handheld Two-Way Radio. Please read this manual thoroughly before using the device to ensure proper functionality and safety.
The Baofeng UV-21R is a professional-grade dual-band handheld radio designed for long-range communication. It features a robust design, Type-C charging, wireless frequency copy, VOX function, FM radio, and NOAA weather channels, making it suitable for various outdoor and professional applications.

What's Included

The following items are included in your Baofeng UV-21R package:

- 1 x Radio Body
- 1 x Battery
- 1 x 21CM Antenna
- 1 x 39CM Antenna
- 1 x Belt Clip
- 1 x Type-C Charging Cable
- 1 x US Plug
- 1 x Lanyard
- 1 x User Manual (this document)
- 1 x Screwdriver



Image: Baofeng UV-21R radio with all included accessories, including two antennas, charging cables, belt clip, and earpiece.

Product Overview



Image: Detailed diagram of the Baofeng UV-21R radio highlighting key components such as antenna, flashlight, power/volume switch, PTT key, menu key, FM/monitor key, speaker, NXIT key, navigation keys, and headset jack.

The Baofeng UV-21R features a large 1.77-inch color display for clear channel information and power status. It is designed for ease of use and durability.

Setup

1. Battery Installation and Charging

The radio requires 2 Lithium Ion batteries (included). Ensure the battery is properly seated and securely attached to the radio body.

The UV-21R offers two charging methods:

- **Type-C Charging:** The Type-C charging port is located on the back of the battery. Connect the provided Type-C cable to the battery and a USB power source (e.g., car charger, power bank, laptop, or wall adapter).
- **Base Charging:** Place the radio with the battery installed into the charging base. Connect the US plug to the charging base and a power outlet.



Image: Illustration of the two charging methods for the Baofeng UV-21R: direct Type-C cable connection to the battery and traditional charging via the desktop base.



Image: Close-up of the Baofeng UV-21R showing the USB Type-C charging port, emphasizing its compatibility with various USB power sources like car chargers and power banks.

2. Antenna Installation

Screw the desired antenna (21CM or 39CM high-gain) clockwise onto the antenna connector at the top of the radio until it is finger-tight. Do not overtighten.



Image: The Baofeng UV-21R with its 39CM high-gain antenna, illustrating how it enhances signal and communication range. A flexible antenna and the female connector are also shown.

Operating Instructions

1. Power On/Off and Volume Control

Rotate the Power/Volume switch (top knob) clockwise to turn on the radio and increase volume. Rotate counter-clockwise to decrease volume and turn off the radio.

2. Channel Selection

Use the Up/Down navigation keys to scroll through the 999 available channels. The large color display will show the current channel information.



Image: Close-up of the Baofeng UV-21R's 1.77-inch color display, showing frequency information and menu options, highlighting its improved visual experience.

3. Push-to-Talk (PTT)

Press and hold the PTT key on the side of the radio to transmit. Release the PTT key to receive.

4. VOX Function (Voice Operated Exchange)

The VOX function allows for hands-free operation. When activated, the radio will automatically transmit when it detects your voice, eliminating the need to press the PTT button. Refer to the on-screen menu for VOX activation and sensitivity settings.

5. Wireless Frequency Copy

This feature allows you to easily copy the frequency of another ham walkie-talkie without computer programming.

1. Power on your walkie-talkie and press the "2" key. The display will show "SEEK".
2. Press and hold the PTT button on the other walkie-talkie to transmit its frequency. Your UV-21R will search for the frequency.
3. Once found, press "MENU" to confirm.
4. Switch to channel mode. The display will now show the other person's frequency, and you can begin communicating.



Image: Step-by-step visual guide demonstrating the wireless frequency copy feature of the Baofeng UV-21R, showing two radios and the display during the copying process.



Image: A visual representation of the wireless frequency copy function, showing radio waves connecting two Baofeng UV-21R units, indicating seamless frequency sharing.

6. FM Radio Function

The radio includes an FM radio function, allowing you to listen to local radio programs. Activate this feature via the menu or a dedicated FM button if available.

7. NOAA Weather Channels

The UV-21R supports 10 NOAA weather stations, providing access to weather alerts and forecasts. This feature is crucial for outdoor activities and emergency preparedness.



Image: The Baofeng UV-21R displaying weather information, with graphics indicating NOAA weather station access and a warning about an approaching hurricane, emphasizing its utility for weather monitoring.



Image: The Baofeng UV-21R radio with lightning bolts around it, symbolizing its NOAA weather function and ability to receive weather alerts.

8. Private Call (CTCSS/DCS)

The radio supports 50 CTCSS tones and 210 DCS codes for storing channels, which helps ensure more private calls and reduces interference from other users on the same frequency.



Image: A hand holding the Baofeng UV-21R, with icons indicating CTCSS/DCS support and 999 channels, highlighting its privacy and channel capacity features.

Programming Guide

The Baofeng UV-21R can be programmed using a computer and the CHIRP software. This allows for advanced customization of channels, frequencies, and other settings.

Steps for PC Programming:

1. **Connect the Radio:** Open the rubber cover on the side of the radio to reveal the programming cable port. Connect the programming cable to the radio and the USB end to your computer.
2. **Download CHIRP Software:** Visit the official CHIRP website (chirpmicro.radio) to download and install the latest version of the CHIRP software. Ensure you download the correct installer for your operating system.
3. **Launch CHIRP and Configure:** Open the CHIRP software. Go to the "Radio" menu and select "Download From Radio".
4. **Select Port and Model:** In the communication dialog, choose the correct COM port for your programming cable. For the radio model, select "Baofeng" as the Vendor and "UV-17Pro" as the Model. The UV-21R uses the UV-17Pro driver for programming.
5. **Download Data:** Click "OK" to start downloading the current configuration from your radio. This will populate the CHIRP interface with your radio's existing settings.
6. **Edit Settings:** Modify the channel frequencies, tones (CTCSS/DCS), power levels, and other parameters as needed within the CHIRP software.
7. **Upload Data:** Once you have made your desired changes, go to the "Radio" menu and select "Upload To Radio". Confirm the upload to write the new settings to your UV-21R.

Your browser does not support the video tag.

Video: Baofeng UV-21R Programming Guide. This video demonstrates the step-by-step process of connecting the radio to a computer, downloading and installing the CHIRP software, selecting the correct radio model (UV-17Pro), and reading/writing data to the radio for custom programming.



Image: Visual confirmation that the Baofeng UV-21R supports CHIRP software for programming, showing the radio connected to a laptop with the CHIRP interface open and the UV-17Pro model selected.

Maintenance

- Keep the radio clean by wiping it with a soft, damp cloth. Do not use harsh chemicals or abrasive cleaners.
- Ensure all ports (charging, headset) are covered when not in use to prevent dust and moisture ingress.
- Store the radio in a dry, cool place away from direct sunlight and extreme temperatures.
- Regularly check the antenna connection for tightness.

Troubleshooting

Problem	Possible Cause	Solution
Radio does not power on.	Low or dead battery; incorrect battery installation.	Charge the battery; ensure battery is properly seated.
Cannot transmit or receive.	Incorrect frequency/channel; antenna not connected; PTT not pressed.	Verify frequency/channel; attach antenna securely; press PTT firmly.
Poor audio quality.	Low signal strength; incorrect squelch setting; damaged speaker/mic.	Move closer to other radio; adjust squelch; contact support if hardware issue.
Programming issues with CHIRP.	Incorrect COM port; wrong radio model selected; driver issues.	Verify COM port in Device Manager; select "UV-17Pro" model; reinstall programming cable drivers.

Specifications

Feature	Detail
Brand	BAOFENG
Model Number	UV-21R

Feature	Detail
Color	Gray
Number of Channels	999
Frequency Range	VHF UHF (Tri-band: 137-174Mhz, 400-520Mhz, 220-270Mhz + FM & NOAA)
Talking Range Maximum	3-5 Miles
Battery Type	Lithium Ion (2 required, included)
Voltage	7.4V
Charging Methods	Type-C USB & Base Charger
Water Resistance Level	IP54 (Water Resistant)
Special Features	Emergency Alarm, Long Range, VOX, FM Function, Wireless Frequency Copy, NOAA Weather Channels, CTCSS/DCS
FCC Certification	FCC ID: 2AJGM-UV21

Warranty & Support

The product comes with a 1-year warranty. For technical support, troubleshooting assistance, or warranty claims, please contact BAOFENG customer service through your original point of purchase or refer to the contact information provided in your product packaging.
For additional resources and software updates, please visit the official CHIRP website:chirpmicro.radio

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