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FC CE 0678 ① RoHS

Two Way Radio

UV-5R & GT-3 Series

User Manual
Bedienungsanleitung
Mode d'emploi
Manuale di istruzioni
Manual de instrucciones

V1.0

Safety Information

The following safety precautions should always be observed during operation, service and repair of this equipment.

● This equipment shall be serviced by qualified technicians only.
● Do not modify or taper with the radio for any reason.
● Do not use any portable radio with a damaged antenna. If a damaged antenna comes into contact with your skin, a minor burn can result.
● Turn off your radio prior to entering any area with explosive and/or flammable materials.
● Do not charge your battery in an area with explosive or flammable materials.
● Turn off the radio before boarding an aircraft. Any use of the radio must be in accordance with airline regulations or crew instructions.
● Do not place the radio over an air bag area or in the air bag deployment area for vehicles equipped with an air bag.
● Do not expose the radio to direct sunlight over a long period of time, nor place it close to any heat source.

FCC Warning

Operation is subject to the following two conditions:
● This device may not cause interference.
● This device must accept any interference, including interference that may cause undesired operation of the device.

RF Exposure Compliance Statement and Operating Instructions

The device has been tested against the SAR limit (1.6W/kg). The highest SAR value reported under this standard during product certification for use at the Face up is 0.885W/kg and when properly worn on the body is 0.997W/kg. This device was tested for typical operations.

The device only supports simplex-mode and transmitting is no more than the rated duty cycle factor of 50% of the time. For hand-held operation, the radio should be held at least 25mm from the user's face. The use of belt clips, holsters and similar accessories should not contain metallic components in its assembly. The use of accessories that do not satisfy these requirements may not comply with RF exposure requirements, and should be avoided. Use only the supplied or an approved antenna.

Table of Contents

Part I: Getting Start

Chapter 1. - What's in the Box

1 x BAOFENG Radio

1 x 1800mAh Li-ion Battery / 3800mAh Li-ion Battery

1 x UV Band Antenna

1 x Desktop Charger

1 x Adapter

1 x Original Earpiece

1 x Wrist Strap

1 x Belt Clip

1 x User Manual

Chapter 2. - Charging and Battery Maintenance

Charging the Battery

The battery should be fully charged before initial use. Optimum battery efficiency will be achieved after three full battery charge and discharge cycles.

The charger and battery are fitted with matching notches so that the battery can be charged when removed from the radio. This allows you to charge a separate battery while using the radio.

The radio should be POWERED OFF during the charge cycle if the radio is inserted into the charger.

Charger LED Codes

LED Codes	States
Flashing	Standby (charger empty), the charger works normally.
Red LED	Charging
Green LED	Charging is complete.

Battery Maintenance

At the beginning the battery is provided fully charged from the factory, but it would be naturally consumed during transportation. Please fully charge the battery before using your radio the first time.

● Use only batteries approved by Baofeng.

● Never attempt to disassemble the battery pack.

● Do not expose the battery to fire or intense heat.

● Dispose of batteries in accordance with local recycling regulations.

Prolonging Your Battery's Life

● Before charging is completed, do not unplug the power to the charger or remove the battery.

● Only charge the battery in normal room temperatures.

● Battery's performance will be reduced in low or freezing temperatures. When working in cold environments, it is suggested to carry a spare battery, inside your jacket or in a similar location in order to keep the battery warm.

● Dust can interfere with the connection between the battery and the radio. If necessary wipe the contacts with a clean dry cloth to ensure proper contact between the radio and battery.

● Never charge or use a battery which is wet or damaged.

If your battery has become wet, remove it from the radio, wipe it dry with a towel or soft tissue, and put it in a sealed plastic bag with a handful of dry rice for at least 24 hours allowing the dry rice to absorb any moisture.

This method may only be effective against minor splashes (light rain for instance). A radio whose internal components exposed to moisture may be permanently ruined.

Battery Storage

In order to prevent damage from over-discharge, the battery must be stored with a partial charge. (80% charge is a good guideline). This radio uses a lithium-based battery and an 80% charge is recommended.

This level minimizes age-related capacity loss while keeping the battery in operating conditions and allowing for some self-discharge. Always remove the battery from the radio when storing.

Chapter 3. - Introduction to Buttons

BAOFENG Radio, overview
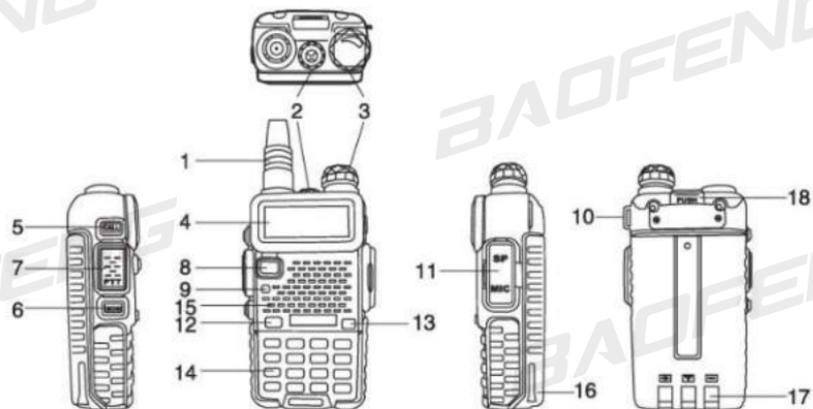
1. Antenna	10. Strap Buckle
2. Flashlight	11. Accessory Jack
3. Knob (ON/OFF,volume)	12. A/B key (frequency display switches)
4. LCD	13. BAND Key (band switches)
5. SK - Side Key1/CALL (radio,alarm)	14. Keypad
6. SK - Side Key2/MONI (flashlight,monitor)	15. SP. & MIC.
7. PTT Key (push-to-talk)	16. Battery Pack
8. VFO/MR (frequency mode/channel mode)	17. Battery Contacts
9. LED Indicator	18. Battery Remove Button

Please make sure to install the antenna and the battery is fully charged when you start using the radio.

The Main Display

BAOFENG Radio, display
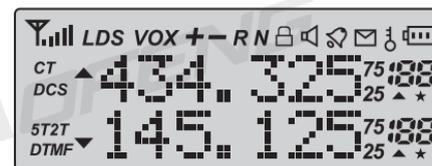
LCD icon summary

Icon	Description	Icon	Description
188	Memory channel	R	Reverse function enabled
25 75	Frequency Least significant modifiers.	N	Narrowband enabled
CT	CTCSS enabled	🔋	Battery level indicator
DCS	DCS enabled	🔒	Keypad lock enabled
+−	Frequency shift direction (Offset)	L	Low Power Enabled
★	Channel Scan Enabled		High Power enabled When X7 not Displayed.
S	Dual watch enabled	▲ ▼	Indicates active band or channel.
VOX	VOX enabled	📶	Squelch Open/Close Indicator

Battery Level Indicator

When the battery level indicator reads 🔋 the battery is depleted. At this point, the radio will start beeping periodically as well as flashing the backlight of the display and when voice prompts are enabled, a "Low Voltage" announcement will be heard, indicating that you need to change your battery or put your radio in the charger.

Side key 1 - CALL (Broadcast FM and Alarm Selection Button)

Press the CALL button momentarily to start the broadcast FM receiver. Another momentary press turns the broadcast FM receiver off. If a signal is received on the active frequency or channel while you are listening to the broadcast FM, the squelch will be activated to that frequency (as if scanning) and the squelch will remain activated until the signal goes away; it will then switch back to broadcast FM.
Press and hold the MONI button to activate the alarm function. Press MONI (a short press) again to turn it off.

Side key 2 - MONI (Monitor and Flashlight)

Press MONI momentarily to turn on the LED flashlight. Another momentary press will cause the flashlight LED to flash. Another momentary press turns the flashlight off.
Press MONI and hold to monitor the signal of the selected channel A or B. This will turn off the squelch so you can listen to the unfiltered signal.

VFO / MR - Mode Key

Pressing VFO/MR switches between Variable-frequency oscillator (VFO) Mode and Memory (MR) mode. Memory mode is sometimes also referred to as Channel mode. Variable-frequency oscillator (VFO) mode allows the frequency to be entered manually by pressing the digits of the numeric keypad.
To save frequencies to channel memory you must first be in Variable-frequency oscillator (VFO) mode.

A / B Select Key

The A/B key switches between the A (upper) and B (lower) seven character displays. The frequency or channel on the selected display becomes the active listening and transmit frequency or channel.
To save frequencies to channel memory you must first be on the A display.

Numeric Keypad

The BAOFENG Radio comes standard with a full numeric keypad.

BAOFENG Radio, keypad

The numeric keys have their secondary function printed on them (in reality, it's the settings menu shortcuts, more on that in Chapter4, Working the Menu System).
The SCAN and # keys, on the other hand, have actual secondary functions, scan and keypad lock respectively.
In channel mode, # also acts as a transmit power shift key. While in channel mode, momentarily pressing # to change between High and Low transmit power. Do note that this does not alter the transmit power stored to memory for that channel; it only affects the current transmit power. (Switching to another channel or another operating mode including broadcast FM) will reset transmit power to what's stored in the channel's memory.)

Keypad Lock

The BAOFENG Radio features a keypad lock that locks out all keys except for the three side keys.
To enable or disable the keypad lock, press and hold the # key for about two seconds.
You can also enable the keylock so that the radio automatically locks the keypad after ten seconds from the Settings menu, see Chapter 4, Working the Menu System.

Star * Key

A short momentary press of the key enables the reverse (R) function (see Chapter 11 Repeaters). When listening to broadcast FM a momentary press will start scanning the Broadcast FM Radio station frequencies. Scanning in Broadcast FM will stop as soon as an active station is found, regardless of the scanner resume method in the device settings menu.
To enable the scanner, press and hold the *SCAN key for about two seconds. See Chapter 5, Scanning for details.

Accessory Jack

The accessory jack on the BAOFENG Radio is a Kenwood compatible two (2)-pin design.

To attach accessories such as headsets, speaker-microphones or programming cables, align the connectors and fully push in.

Part II: Basic Functions

Chapter 4. - Basic Use

Power and Volume

Before turn the power on, make sure you have attached the battery and antenna as described in Chapter 1, Initial Setup.

Turning the Unit On

To power the radio on, simply rotate the volume/power knob clockwise until you hear a "click". If your radio powers on correctly there should be an audible double beep after about one second and the display will show a message or flash the LCD depending on settings for about one second (see "38 PON MSG - Power On Message" in Appendix B' Menu definitions). Then it will display a frequency or channel. If the Voice prompt is enabled, the voice will announce "frequency mode" or "channel mode".

First power-on, display

```
   ▲ 144.850
     477.450
```
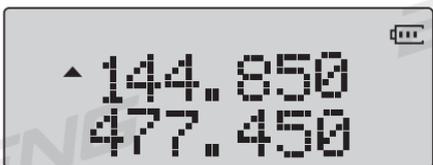
You can get additional information about your radio when you turn it on by holding down miscellaneous keys as you turn it on.

Turning the Unit Off

Turn the volume/power knob counter-clock wise all the way until you hear a "click". The radio will be off.

Adjusting the Volume

To turn up the volume, turn the volume/power knob clock-wise. Be careful not to turn it too far, as you may inadvertently turn your radio off.

By using the monitor function, enabled from the ⬛MONI key below the PTT, you can more easily adjust your volume by adjusting it to loudness of the un-squelched static.

Making a Call

Press PPT——sending signal
Release TT——receiving signal
When transmitting, keep the radio's microphone 3-4 centimeters away from your mouth, and keep the antenna up and at lease 5 centimeters away from the body.

Variable Frequency Oscillator (VFO) Mode

In Variable Frequency Oscillator (VFO) mode you can navigate up and down the band by using the ⬛ and ⬛ keys. Each press will increment or decrement your frequency according to the frequency step you've set your transceiver to in the radio settings. For details on how to set the frequency step on your transceiver see Chapter 4, Working the menu system and the section called "1 STEP - Frequency Step1" in Appendix B, Menu definitions.

You can also input frequencies directly on your numeric keypad with kilohertz accuracy. However, the radio will floor (round) to the nearest frequency that corresponds to your frequency step, in other words, when you input frequencies with greater than 1kHz resolution (such as 145.6875 MHz in the example below), always round your input up.

The following example assumes the use of a 12.5kHz frequency step

Entering the frequency 145.6875 MHz on display A

1. Use the [VFO/MR] key to switch to Variable Frequency Oscillator (VFO) mode.
2. Press [A/B] until the [▲] appears next to the upper display (display A).
3. Enter [1 STEP] [4 VOX] [5 W/N] on the numeric keypad, it should look something like this:

Partially entered frequency input

```
▲ 145.---
  477.450
```

4. Now, for the final four digits. Note that you can only enter three decimals on the keypad, if you type 687 it won't work. So how do you get the fourth and final digit 5 in there? By rounding 145.6875 up to 145.6880 MHz, an alternative is entering 145.675, and then pressing the [▲] key once to move it up to 145.6875.
   Enter [6 ABR] [8 BEEP] [8 BEEP] on the numeric keypad, if all went well the display should look something like this:

Successful frequency input

```
▲ 145.687 5
  477.450
```

Just because you can program in a channel does not mean you're automatically authorized to use that frequency. Transmitting on frequencies you're not authorized to operate on is illegal, and in most jurisdictions a serious offense. If you get caught transmitting without a license you can and will get fined, and in a worst case scenario sent to jail.
However, it is legal in most jurisdictions to listen. Contact your local regulatory body for further information on which laws, rules and regulations apply to your area.

Memory/Channel (MR) Mode

The use of Memory/Channel (MR) mode is dependent on actually having programmed in some memory channels to use. To find out more on how to program channels see Chapter 10, Programming.
Once you have channels programmed and ready, you can use the [▲] and [▼] keys to navigate between channels.

If you have channels programmed with Transmit power set to Law, you can use the [# ⌐] key to temporarily switch over to high power if you're having trouble getting through.

Quick Start Guide

For a complete reference on available menu items and parameters, see Appendix B, Menu definitions.

If your radio is set to Memory/Channel (MR) mode. The following menu items will not take any effect: STEP, TXP, W/N, CTCSS, DCS, S-CODE, PTT-ID, BCL.SFT-D, OFFSET, MEM-CH, BAND

1. Press the [MENU] key to enter the menu.
2. Use the [▲] and [▼] keys to navigate between menu items.
3. Once you find the desired menu item, press [MENU] again to select that menu item.
4. Use the [▲] and [▼] keys to select the desired parameter value.
5. When you've selected the parameter you want to set for a given menu item;
   a. To confirm your selection, press [MENU] and it will save your setting and bring you back to the menu setting you just edited.
   b. To cancel your changes, press the EXIT button on the keypad and it will reset that menu item and bring you out of the settings menu completely.
6. To exit out of the menu at any time, press EXIT the key.

Using Settings Menu Short-cuts

As you may have noticed if you looked at Appendix B, Menu definitions, every menu item has a numerical value associated with it. These numbers can be used for direct access of any given Settings menu item.
The parameters values also have a number associated with them, see Appendix B, Menu definitions for details.

Using the menu with short-cuts

1. Press the MENU key to enter the menu.
2. Use the numerical keypad to enter the number of the menu item.
3. To edit that menu item, press the MENU key.
4. To enter the desired parameter value, you have two options:
   a. Use the arrow keys as we did in the previous section. Or:
   b. Use the numerical keypad to enter the numerical short-cut value.
5. And just as in the previous section;
   a. To confirm your selection, press MENU and it will save your setting and bring you back to the menu setting you just edited.
   b. To cancel your changes, press EXIT and it will reset that menu item and bring you out of the Settings menu completely.
6. To exit out of the Settings menu at any time, press the EXIT key.
7. All further examples and procedures in this manual will use the numerical menu shortcuts.

Chapter 5. - Scanning

The BAOFENG Radio features a built in scanner for the VHF and UHF bands. When in Variable Frequency Oscillator (VFO) mode it will scan in steps according to your set frequency step. In Memory/Channel (MR) mode it will scan through your saved channels.
Dual Watch is inhibited while scanning.
To enable the scanner, press and hold the */SCAN key for about two seconds. Press any key to exit scanning mode.

Scanning Modes

The scanner is configurable to one of three ways of operation: Time Operation(TO), Carrier Operation (CO) or Search Operation (SE) , each of which is explained in further details in their respective section below.

Setting Scanner Mode

1. Press the MENU key to enter the menu.
2. Enter 1STEP 8BEEP on your numeric keypad to navigate to the Settings Menu item number 18 (SC-REV) to edit the scanner mode .
3. Press the MENU key to select.
4. Use the ▲ and ▼ keys to select scanning mode.
5. Press the MENU key to confirm and save.
6. Press the EXIT key to exit the menu.

Time Operation

In Time Operation (TO) mode, the scanner stops when it detects a signal, and after a factory pre- set time out, it resumes scanning.

Carrier Operation

In Carrier Operation (CO) mode, the scanner stops when it detects a signal, and after a factory preset time with no signal it resumes scanning.

Search Operation

In Search Operation (SE) mode, the scanner stops when it detects a signal.
To resume scanning you must press and hold the SCAN key again.

Scanning a Frequency Range (VFO Mode)

The BAOFENG Radio can scan the entire selected frequency range in a Band in increments of the saved step settings saved in the Setting Menu number 1 Step. The increment is in ranges from 2.5 kHz to 50 kHz depending on what value you have saved.

Setting scanning range

1. Press and Hold SCAN for about 2 seconds.
2. The Radio will begin to scan the entire frequency range for the band selected (VHF or UHF).

Scanning Your Selected Channels (Channel Mode)

The BAOFENG Radio can scan your saved programmed memory channels.

Scanning channels

1. Press and Hold SCAN for about 2 seconds to start scanning.
2. All saved channels will be scanned.

Chapter 6. - Dual Watch

In certain situations, the ability to monitor two channels simultaneously can be a valuable asset.
The BAOFENG Radio features Dual Watch functionality with the ability to scans between two frequencies at a fixed interval and to option to lock the transmit frequency to one of the two channels, A or B, being monitored.

Enabling or disabling Dual Watch mode

1. Press the MENU key to enter the menu
2. Enter 7TDR on the numeric keypad to get to Dual Watch.
3. Press MENU to select.
4. Use the ▲ and ▼ keys to enable or disable.
5. Press the MENU key to confirm.
6. Press the EXIT key to exit the menu.

Due to the way the BAOFENG Radio is constructed, whenever one of the A or B Frequencies.
(VFO/MR) goes active, it will default to transmit on that channel. This behavior can be inconvenient, especially when monitoring a frequency, you should not transmit on. There is a menu option available to lock the transmitter to either the A or B channel.

Locking the Dual Watch transmit channel

1. Press the MENU key to enter the menu.
2. Enter 3SAVE 4VOX on the numeric keypad to get to the TDR-AB menu item.
3. Press MENU to select.
4. Use the ▲ and ▼ keys to select A (upper) or B (lower) display channel.

5. Press the MENU key to confirm.
6. Press the EXIT key to exit the menu.

If you want to momentarily override the lock without having to set the menu option to OFF, you can do so by pressing the A/B key an instant before pressing the PTT.

Chapter 7. - DTMF

DTMF (Dual-Tone Multi-Frequency) is an in-band signaling method using dual sinusoidal signals for any given code. Originally developed for telephony systems, it has proved a very versatile tool in many other areas.
In two-way radio systems, DTMF is most commonly used for automation systems and remote control. A common example would be in amateur radio repeaters where some repeaters are activated by sending out a DTMF sequence (usually a simple single-digit sequence).

DTMF frequencies and corresponding codes

	1209 Hz	1336 Hz	1477 Hz	1633 Hz
697 Hz	1	2	3	A
770 Hz	4	5	6	B
852 Hz	7	8	9	C
941 Hz	*	0	#	D

The BAOFENG Radio has a full implementation of DTMF, including the A, B, C and D codes. The numerical keys, as well as the ✱SCAN and # keys correspond to the matching DTMF codes as you would expect The A, B, C and D codes are accessible by pressing MENU, ▲, ▼, and EXIT keys respectively.
To send DTMF codes, press the key(s) corresponding to the DTMF frequency(ies) you want to send while holding down the PTT key.

If you have the keypad lock enabled on your radio, you can still send DTMF tones without having to unlock your radio.

Chapter 8. - Selective Calling

Sometimes when you're working with larger groups of people using the same channel, communication can get very crowded or disorderly. To minimize this problem, several methods of blocking out unwanted transmissions on your frequency have been developed. In general, there are two forms of selective calling in two-way radio systems: Group calling, and individual calling.

Group calling, as the name suggest, is a one-to-many form of communication. Every radio in your working group is configured the same way and any single radio will make contact with every other radio in the group.

The BAOFENG Radio features three different ways of group calling

● CTCSS
● DCS
● Tone-burst (1000Hz, 1450HZ, 1750Hz)

The BAOFENG Radio does not feature any form of individual calling.

Using these features does NOT mean that others won't be able to listen in on your transmissions.
They only provide a method to filter out unwanted incoming transmissions. Any communications mode while using these features will still be heard by anyone not employing filtering options of their own.
Also, you cannot change the CTCSS or DCS settings while in memory (MR) mode.

CTCSS and 1750Hz tone-burst are also popular methods among amateur radio operators to open up repeaters.

CTCSS

CTCSS is set with menus 11 R-CTCS and 13 T-CTCS.
For a complete list of available CTCSS codes and corresponding sub-tone frequencies, see Table C.2,"CTCSS Frequencies" in Appendix C, Technical specifications.

CTCSS setup how-to

1.Press the MENU key to enter the menu.
2. Enter 1 STEP 1 STEP on the numeric keypad to get to receiver CTCSS.
3. Press MENU to select.
4. Enter desired CTCSS sub-tone frequency in hertz on the numeric keypad.

5. Press MENU to confirm and save.
6. Enter 1 STEP 3 SAVE on the numeric keypad to go to transmitter CTCSS.
7. Press MENU to select
8. Enter desired CTCSS sub-tone frequency in hertz on the numeric keypad. Make sure it's the same frequency as the one you entered for receiver CTCSS.
9. Press MENU to confirm and save.
10. Press EXIT to exit the menu system.

To turn CTCSS off, follow the same procedure but set it to off with the 0 SQL key instead of selecting a CTCSS sub-tone frequency.

For more operation details, see the section called"11- Receiver CTCSS" and the section called"13- Transmitter CTCSS" in Appendix B, Menu definitions.

DCS

DCS is set with menus 10 R-DCS and 12 T-DCS.
For a complete list of available DCS codes, see Table C.1, "DCS Codes" in Appendix C, Technical specifications.

DCS setup how-to

1. Press the MENU key to enter the menu.
2. Enter 1 STEP 0 SQL on the numeric keypad to get to receiver DCS.
3. Press MENU to select.
4. Enter desired DCS code on the numeric keypad.
5. Press MENU to confirm and save.
6. Enter 1 STEP 2 TXP on the numeric keypad to go to transmitter DCS.
7. Press MENU to select.
8. Enter desired DCS code on the numeric keypad. Make sure it's the same code as the one you entered for receiver DCS.
9. Press MENU to confirm and save.