BAOFENG

www.baofengradio.us

DUAL BAND/DUAL DISPLAY RADIO

OPERATING MANUAL

BF-F9V2+

PREFACE

Thank you for purchasing the BF-F9V2+ Amateur Portable Radio from Baofeng Radio US, the official Baofeng distributor in the United States.

The BF-F9V2+ is a dual band/dual display radio made to combine extensive functionality with unmatched reliability. This intuitive radio will help you deliver secure, instant, and reliable communications with utmost efficiency. Please read this manual carefully before you use the device. The information presented herein will help you maximize the functionality and performance of your radio.

LICENSE/LEGAL INFORMATION

Table of Contents

Safety Information

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

- This device should be serviced by qualified technicians only.
- Do not modify or alter the radio for any reason.
- Use only BAOFENG supplied or BAOFENG approved batteries and chargers.
- Do not use a radio that has a damaged antenna. Contact with a damaged antenna may result in a minor burn.
- Turn off the radio prior to entering any area with explosive and/or flammable materials.
- Do not charge the battery in a location containing explosive and/or flammable materials.
- Avoid electromagnetic interference and/or compatibility conflicts by turning off the radio in any area where posted notices instruct you to do so.
- Turn off the radio prior to boarding an aircraft. Any use of a radio within an aircraft must be in accordance with airline regulations or crew instructions.
- Turn off the radio prior to entering a blast area.
- For vehicles with air bags, do not place the radio on the air bag deployment area.
- Do not expose the radio to direct sunlight for extended periods of time, nor place it close to any source of heat.
- When transmitting, hold the radio vertically with the microphone 3 to 4 centimeters away from your lips. Keep the antenna at least 2.5 centimeters away from your body when transmitting.

Features and Functions

Below are some of the major features and functions of the BF-F9V2+ portable radio:

- Dual-band handheld transceiver with display LCD
- DTMF encoding
- Commercial FM radio receiver
- Allows storage of up to 105 programmable DCS codes and 50 CTCSS privacy codes
- Allows storage of up to 128 memory channels
- Voice Operated Transmission (VOX) functionality
- Alarm functionality
- Allows selection between Broadband (Wide) & Narrowband (Narrow) modes
- Allows user to toggle between High, Medium, and Low power consumption modes (8W vs 5W vs 1W)
- Display illumination and programmable keypad
- Function that causes keypad button presses to emit a beeping sound
- Dual Watch & Dual Reception
- Selectable Frequency Steps (2.5/5/6.25/10/12.5/20/25/50 kHz)
- Frequency offset functionality for repeater access
- Battery saving functionality
- Programmable timer transmission
- Frequency scan mode functionality
- Function Busy Channel Lock
- Built-in RX CTCSS/DCS scan
- Built-in LED flashlight
- Allows for PC programmability through use of USB cable (optional accessory)
- Level Threshold Squelch adjustability
- Cross band reception/transmission
- End of Transmission Tone functionality
- Built-in keypad lock

Getting Started

Initial Setup

What's In the Box

This radio comes shipped with the following items in the box:

Radio Body

Antenna

Lithium-Ion Battery Pack

Charging Cable & Adapter

Belt Clip

Wrist Strap

Lapel Microphone

Charging Stand

User Guide

Optional Accessories

Car Charging Cable & Adapter

Speaker Microphone Attachment

USB Connecting Cable

Assembly

Antenna

This device is fitted with a Male SMA connector. To mount the antenna (Female SMA Connector), align the two connectors and turn the antenna clockwise until it stops.

- When installing the antenna, install it by holding the base and turning.
- If an external antenna is used, ensure that the 'SWR' is about 1.5:1 or less to avoid damage to the transceiver's transistors.
- Holding the antenna with your hand or wrapping the outside may cause subpar operation of the transceiver.
- Never transmit from the device without an antenna.

Belt Clip

On the back of the radio, above the battery, there are two parallel screws. Remove these and align them so that they go through the holes on the belt clip as they are screwed back into the radio body to securely affix the belt clip.

Install the belt clip at the rear of the battery compartment cover as shown in the figure to the right.

Do not use glue to affix the screws onto the battery clip. Application of glue may cause damage to the casing of the battery.

Battery

Before attaching or removing the battery make sure the radio is turned off by turning the power/volume knob all the way counter-clockwise.

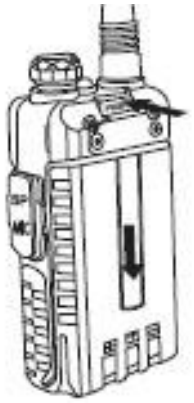
Installation

To attach the battery, ensure the battery is parallel and in good contact with the aluminum chassis. The battery bottom is about 1 to 2 centimeters below the bottom of the radio's body.

Align the battery with the guide rails on the radio chassis and slide it upwards until it clicks into place.

The battery latch at the bottom locks the battery in place.

Removal



Ensure the radio is off before removing the battery.

To remove the battery, press the battery release above the battery pack and slide the battery downward.

After sliding the battery down a few centimeters, the battery can be removed from the radio body.

External Headset

Plug the external micro-headset connector into the jack of 'SP & MIC' of the transceiver as shown in the figure on the right.

Charging and Battery Maintenance

Charging the Battery

Follow the steps below to set up and use the charger:

1. Plug the end of the power adapter into the charger base.
2. Plug the power adapter into an electrical wall socket.
3. Place the radio or battery in the charging slot on the charger.
4. Make sure the contact plates of the battery are making contact with the charger. Ensure that the radio fits snugly into the dock. When the red LED stays on, the radio is charging.
5. The radio is fully charged once the LED on the charger stays green. Please remove the radio after it is fully charged to avoid over-charging the battery.

Charger LED Codes

Charging Status	**LED Indication**
Standby (no-load)	Red LED flashes while Green LED glows
Charging	Red LED glows solidly
Fully Charged	Green LED glows solidly
Error	Red LED flashes while Green LED glows

Battery Maintenance

The battery for the radio comes uncharged from the factory. Please charge it for at least four to five hours before starting to use the radio.

- Use only batteries that are approved by the original manufacturer.
- 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 the Life of the Battery

- Only charge batteries in normal room temperatures.
- When charging a battery attached to the radio, turn the radio off for a faster charge.
- Do not unplug the power to the charger or remove the battery and/or radio before it has finished charging.
- Never charge a wet battery.
- Batteries wear out over time. If there is a considerably shorter operating time with the radio, please consider purchasing a new battery.
- Battery performance is reduced when temperatures are below freezing. When working in cold environments, it is recommended to keep a spare battery at hand, preferably inside a jacket or in a similar location in order to keep the battery warm.
- Dust can interfere with the contacts on the battery. If necessary wipe the contacts with a clean cloth to ensure proper contact with radio and charger.

Storage

Fully charge the battery before storing the device for a prolonged period of time in order to prevent damage from over-discharge.

To avoid severe capacity degradation of the battery while in long time storage, please cycle the battery at least every six (6) months.

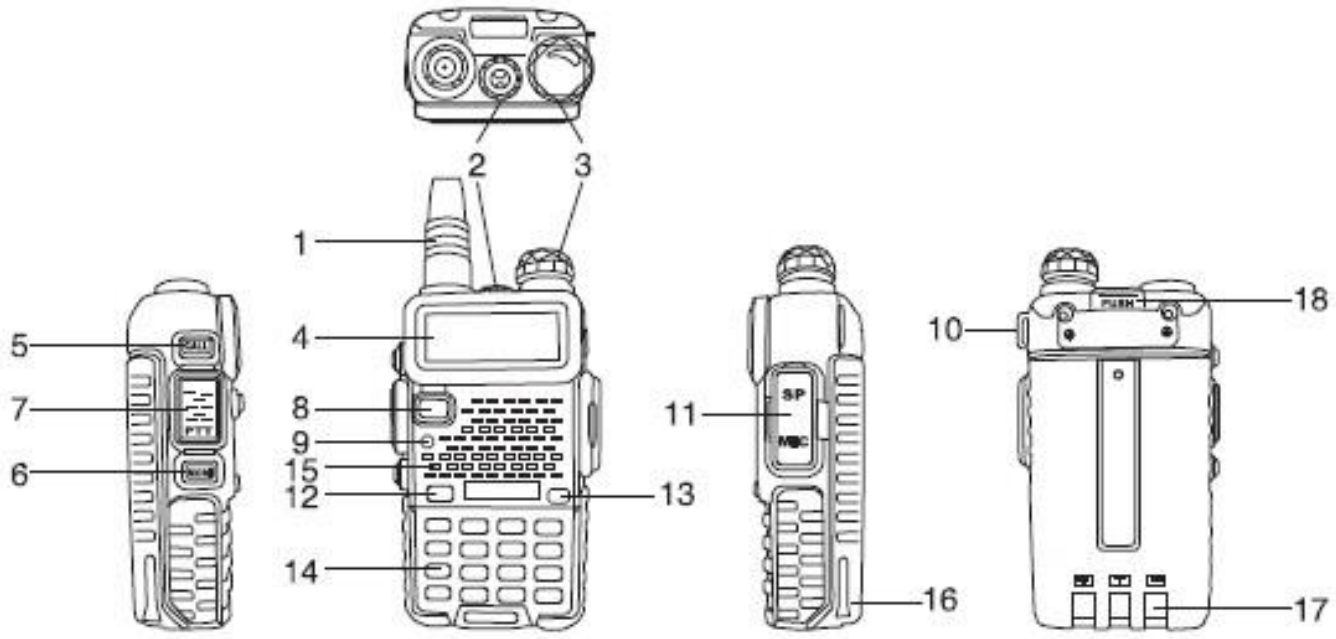
Store the batteries in a cool and dry place, never above normal room temperatures.

In Case of Exposure to Water

If the battery has become wet, remove it from the radio, dry with a towel, and put it in a plastic bag that contains a handful of dry rice. Tie the bag up and let it sit overnight. The rice should absorb any remaining moisture in the battery.

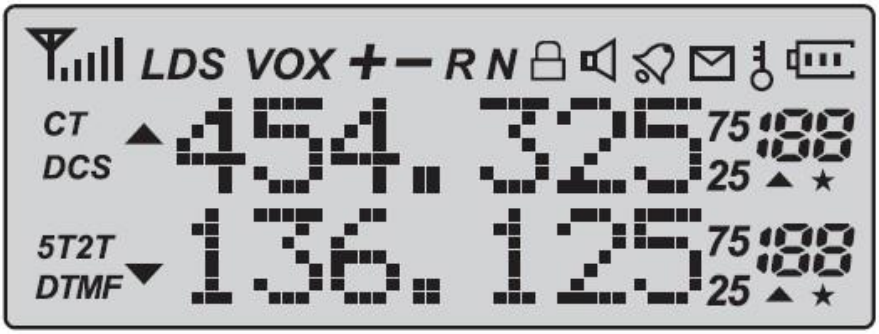
Getting to Know the Radio

Radio Overview



1. Antenna	10. Strap Buckle
2. Flashlight	11. Accessory Jack
3. Volume Knob (On/Off Switch)	12. A / B Button (Frequency Display Switch)
4. LCD Display	13. Band Button (Not Present on Recent Models)
5. CALL Button	14. Numeric Keypad
6. MONI Button	15. Speaker & Microphone
7. PTT Button	16. Battery Pack
8. VFO / MR Button (Frequency Mode/ Channel Mode)	17. Battery Contacts
9. LED Indicator	18. Battery Remove Button

The Main Display



The Baofeng BF-F9V2+ Display

Icon	Description
188	Memory Channel
75/25	Least Significant Modifiers
CT	CTCSS enabled
DCS	DCS enabled
+ -	Frequency Offset Shift Direction if Enabled
S	Dual Watch/Dual Reception if Enabled
VOX	VOX Function if Enabled
R	Reverse Function if Enabled
N	Narrowband Enabled
	Battery Level Indicator
	Keypad Lock Function if Enabled
L	Low Transmit Power Mode if Enabled
▲▼	Active Band or Channel
	Signal Strength Meter

Battery Level Indicator

When the battery level indicator has no black bars showing, it means the battery is close to depletion. To warn the user of this, the radio will start beeping periodically as well as flashing the backlight of the display, indicating that the battery needs to be changed.

Status LED

The status LED has a very simple and traditional design. When a signal is received, it turns green, when transmitting, it turns red, and is off when in standby.

Side Button 1 – Call (Broadcast FM and alarm)

Press [CALL] momentarily to start the broadcast FM receiver. Another momentary press turns the broadcast FM receiver off.

Press and hold to [CALL] activate the alarm function. Press again to turn it off.

Side Button 2 – MONI (Monitor and Flashlight)

Press [MONI] momentarily to turn on the LED flashlight. Another momentary press turns the flashlight off.

Press and hold [MONI] to monitor the signal. This will open up the squelch and permit listening to the unfiltered signal.

VFO / MR – Mode Button

Pressing [VFO/MR] switches between Frequency (VFO) Mode and Memory (MR) Mode.
Memory mode is sometimes also referred to as Channel mode.

To save frequencies to channel memory the radio must be in Frequency (VFO) mode.

A / B – Select Button

The [A/B] button switches between A (upper) and B (lower) displays. The frequency or channel on the selected display becomes the active listening and transmit frequency or channel.

Note: To save frequencies to channel memory the radio must be set to use the A display.

Numeric Keypad

The Baofeng BF-F9V2+ hand-held transceiver comes standard with a full numeric keypad.

The numeric buttons have their secondary function printed on them. The 

and 

buttons also have secondary functions, scan and keypad lock respectively.

Pound Button

In channel mode the [POUND] button also acts as a transmit power shortcut button. While in channel mode, press [POUND] to change between High and Low transmit power. Please note that the transmit power stored to memory for that channel is not altered permanently, it affects only the current session. Switching to another channel or another operating mode will reset transmit power to the setting stored in the channel's memory.

Keypad Lock

The Baofeng BF-F9V2+ includes a keypad lock feature that locks out all buttons except for the three on the side of the radio.

To enable or disable the keypad lock, press and hold the [POUND] button for about two seconds. Automatic keypad locking can also be enabled through the menu so that the radio automatically locks the keypad after ten seconds.

Star Button

A quick press of the [STAR] button enables the reverse function.

When listening to broadcast FM, a momentary press will start the scanning function. Scanning in broadcast FM will stop as soon as an active station is found.

To enable the scanner, press and hold the [STAR] button for two seconds.

Menu and Function Buttons

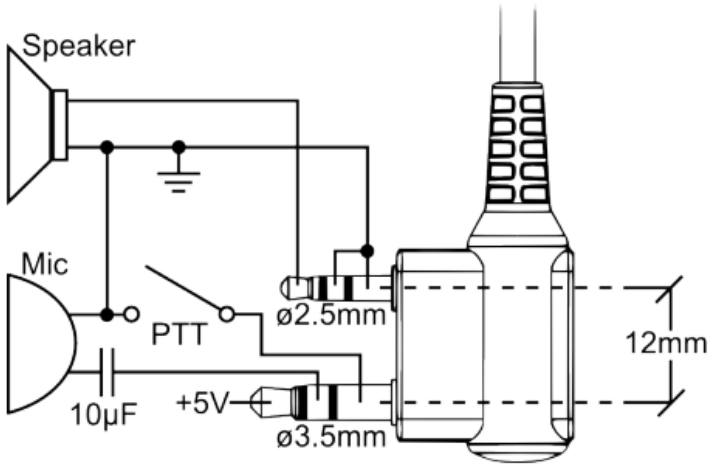
The MENU button is used to access the menu and to confirm menu options.

The ▲ and ▼ buttons are used to navigate through the menu items, as well as to select channels, and to step up or down in frequency (depending on operating mode).

The EXIT button is used to exit menus and cancel menu options.

Accessory Jack

The accessory jack on the Baofeng BF-F9V2+ is a Kenwood compatible two pin design.



The Kenwood 2-pin connector has one 3.5mm TRS plug, and one 2.5mm TS plug, with 12mm of space in between.

To attach accessories such as headsets, speaker, microphones, or USB PC cables, align the connectors and push the plugs in fully. Ensure the radio is turned off before attaching any accessories.

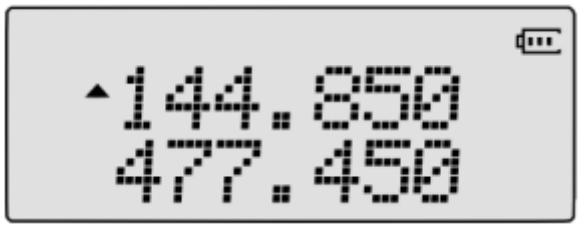
Basic Use

Power and Volume

Before the power is turned on, ensure that the battery and antenna are both attached, as described in the *Initial Setup* section.

Turning the Unit On

To turn the unit on, rotate the volume/power knob clockwise until a “click” sound is heard. If the radio powers on correctly, there should be an audible double beep, and the display and backlight should turn on, looking something like picture below:



Turning the Unit Off

Turn the volume/power knob counter-clock wise all the way until a “click” sound is heard. The unit is now off.

Adjusting the Volume

To turn up the volume, turn the volume/power knob clock-wise.

To turn the volume down, turn the volume/power knob counter-clock-wise. Be careful not to turn the knob too far, as you may accidentally turn the radio off.

A good way to adjust volume is by using the monitor function, enabled from the [MONI] button below the [PTT] button, to more accurately and easily adjust the volume by adjusting it to the un-squelched static sound.

Making a Call

Press and hold the [PTT] button on the left side of the radio body to transmit. Hold the device's microphone approximately 3-5 cm from your mouth while transmitting. When the PTT button is released, the device will go back to receive mode.

Channel Selection

There are two modes of operation on this radio: Frequency Mode (VFO) and Channel/Memory Mode (MR). Both modes are detailed below.

Frequency Mode (VFO)

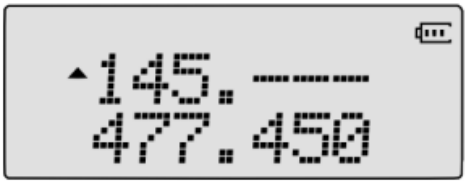
While in Frequency Mode (VFO), navigating up and down the frequency band is done by using the [UP] and [DOWN] buttons. Each press of the button will increment or decrement the frequency according to the frequency step that has been set on the transceiver. Frequency step can be set in the menu. See the Menu Function & Description chart or the Menu Definitions section for more details.

Frequencies can be input directly using the numeric keypad with kilohertz accuracy, however, the radio will round up to the nearest frequency that corresponds to the frequency step setting. For example, when a frequency is input with greater than 1kHz resolution (such as 145.6875 as shown in the example below), always round your input upwards.

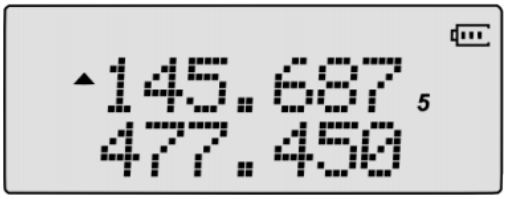
For the following example, assume a 12.6 kHz frequency step.

Entering the frequency 145.6875 MHz on Display A

1. Use the [VFO/MR] button to switch to Frequency (VFO) mode.
2. Press [A/B] button until the black arrow appears next to the upper display (Display A).
3. Enter [1] [4] [5] on the numeric keypad, it should look something like this:



4. When entering the final four digits, note that only three decimals can be entered on the keypad. If 6875 is typed, it won't work as the last digit is omitted.
5. By rounding 145.6875 up to 145.6880, the frequency can now be entered.
6. Enter [6] [8] [7] on the numeric keypad, it should look something like this:



Note: Just because programming is enabled in a channel does not mean authorization is granted for use of that frequency.

Transmitting on frequencies without authorization is illegal, and in most jurisdictions is a serious offence. If caught transmitting without a license, fines can be levied, and in some cases jailtime.

However, in most jurisdictions it is legal to listen. Contact your local regulatory entity for further information on what laws, rules and regulations apply in your area.

Channel Mode (MR)

The use of Channel (MR) mode is dependent on having previously programmed in some channels for use. To learn how to program channels, reference Section 4, Subsection G *Programming* in this manual.

Once the channels are programmed and ready, the [UP] and [DOWN] buttons can be used to navigate between channels.

Note: If you have channels programmed with Transmit power set to Low, you can use the [POUND] button to momentarily switch over to high power if you're having trouble getting through.

Advanced Topics

For a complete reference on menu items, see section IV: Menu Definitions.

Note: For radios set to Memory Mode (MR) the following menu items will not take effect:
STEP, TXP, W/N, CTCSS, DCS, S-CODE, PTT-ID, BCL, SFT-D, OFFSET, MEM-CH, BAND.

Using the Menu System

Basic Use

Procedure: Using the Menu with Arrow Buttons

1. Press the [MENU] button to enter the menu.
2. Use the [UP] and [DOWN] to navigate between menu items.
3. Once the desired menu item is found, press [MENU] again to select that menu item.
4. Use the [UP] and [DOWN] buttons to select the desired parameter.
5. When the parameter is selected you want to set for a given menu item, you can press the [MENU] button to confirm the setting or press the [EXIT] button to reset that menu item and exit the menu system.
6. To exit out of the menu at any time, press the [EXIT] button.

Using Shortcuts

Every menu item has a numerical value associated with it, and these numbers can be used for direct access of any given menu item. To see which numerical value is associated with each menu item, go to Section IV: Menu Definitions. The top ten most common features are also the top menu functions, and these are printed on the keypad for easy reference.

Procedure: Using the Menu with Shortcuts

1. Press the [MENU] button to enter the menu.
2. Use the numerical keypad to enter the number of the menu item.
3. To enter the menu item, press the [MENU] button.
4. For entering the desired parameter, the arrow buttons can be used to scroll through options, or use the numerical shortcuts to access specific menu items.
5. When the parameter you want to set for a given menu item is selected, the [MENU] button can be pressed to confirm the setting or press the [EXIT] button to reset that menu item and exit the menu system.
6. To exit out of the menu at any time, press the [EXIT] button.

Scanning

The Baofeng BF-F9V2+ features a built in scanner for VHF and UHF bands. When in Frequency (VFO) mode, the scanner will scan in steps according to the set frequency step. In Channel (MR) mode it will scan the saved channels.

To enable the scanner, press and hold the [SCAN] button for about two seconds.

Press any button to exit scanning mode.

Scanning Modes

The scanner is configurable to one of three ways of operation: Time, Carrier, or Search.

Procedure: Setting Scanner Mode

1. Press the [MENU] button to enter the menu.
2. Enter [1] [8] on the numeric keypad to enter scanner mode.
3. Press the [MENU] button to select.
4. Use the [UP] and [DOWN] buttons to select scanning mode.
5. Press the [MENU] button to confirm and save.
6. Press the [EXIT] button to exit the menu.

Time Operation

In Time Operation mode (TO), the scanner stops when it detects a signal, and after a preset amount of time, it resumes scanning.

Carrier Operation

In Carrier Operation mode (CO), the scanner stops when it detects a signal, and resumes scanning only when the signal is lost.

Search Operation

In Search Operation mode (SE), the scanner stops when it detects a signal.

To resume scanning during each of these modes, press and hold the [SCAN] button.

Tone Scanning

You can scan for CTCSS tones and DCS codes on active frequencies in frequency mode.

To scan for CTCSS or DCS on active channels, follow these steps:

Procedure: Tone Scanning

1. Press the [MENU] button to enter the menu.
2. Enter either of the following on the numeric keypad.
    a. Enter [1] [0] on the numeric keypad to scan for DCS codes.
    b. Enter [1] [1] on the numeric keypad to scan for CTCSS sub-tones.
3. Press the [MENU] button to select.
4. Press the [SCAN] button momentarily.
5. CT or DCS will start flashing in the display as the radio starts scanning. Once it finds a tone or code in use, it will beep and stop flashing, indicating that a tone or code has been found.
6. Press the [SCAN] button to confirm.
7. Press the [EXIT] button to exit the menu.

Dual Watch / Dual Reception

One of the unique capabilities on the Baofeng BF-F9V2+ radio is the ability to monitor two channels at once. This is accomplished by a feature in the radio known as Dual Watch, which allows the radio to switch between two frequencies at a fixed interval, despite it only containing one receiver. The Dual Watch functionality also allows the ability to lock the transmit frequency to one of the two channels it monitors. **Note:** While in Dual Watch mode, certain functions are not available. The below functions are disabled when Dual Watch is active.

- Reverse function
- Usage of [POUND] button to switch between high and low transmit powers in channel mode
- Saving of duplex channels

To enable the Dual Watch function, follow the steps below:

Procedure: Enabling or Disabling Dual Watch Mode

1. Press the [MENU] button to enter the menu.
2. Enter [7] on the numeric keypad to get to Dual Watch.
3. Press the [MENU] button to select.
4. Use the [UP] and [DOWN] buttons to enable or disable Dual Watch mode.
5. Press the [MENU] button to confirm.
6. Press the [EXIT] button to exit the menu.

Whichever one of the A or B channels goes active first will be the default one to transmit on. This can be problematic when listening to a frequency that does not permit transmission from the device. To assist with this, there is a menu option to enable locking the transmitter to either the A or B channel, as per the selection. Please see below for steps on how to activate this:

Procedure: Locking the Dual Watch Transmit Channel

1. Press the [MENU] button to enter the menu.
2. Enter [3] [4] on the numeric keypad to get to TDR-AB.
3. Press the [MENU] button to select.
4. Use the [UP] and [DOWN] buttons to select either A (upper) or B (lower) displays.
5. Press the [MENU] button to confirm.
6. Press the [EXIT] button to exit the menu.

Note: To momentarily override the lock without having to setting the menu option to OFF, press the [A/B] button an instant before pressing the [PTT] button.

DTMF

DTMF stands for Dual-Tone Multi-Frequency. Basically DTMF is an advanced signaling method that uses dual sinusoidal signals for any given code. A good example of DTMF in use is a touch tone telephone system. In two-way radio systems, DTMF is mainly used for automation systems and for remote control. For example, DTMF can be used to remotely activate repeaters by transmitting a specific sequence of numbers.

Table: 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 BF-F9V2+ allows for full implementation of DTMF. The numerical and the [SCAN] and [LOCK] buttons correspond to the matching DTMF tones. The numeric buttons correspond to the same DTMF tones, but to access the A, B, C, & D codes, the [MENU], [UP], [DOWN], and [EXIT] buttons are used, respectively.

To send DTMF codes, press the buttons corresponding to the message you want to send while holding down the [PTT] button. See below for the mapping of DTMF tones to the keypad.

A	B	C	D
1	2	3	*
4	5	6	0
7	8	9	#

Selective Calling

When working with large groups of people on the same channel, there tends to be a lot of crowding in terms of transmissions. To counteract this crowding, there are several methods of blocking out extra or unwanted transmissions. There are two forms of selective calling available in two-way radio systems: Group Calling & Individual Calling.

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

Individual calling, also known as paging, is a one-to-one form of communication. Every radio is programmed with a unique ID code, and only by sending out a matching code can you get that radio to open up to your transmissions. A good example of this is a cellular phone.

The Baofeng BF-F9V2+ features three different group calling methods:

- CTCSS
- DCS
- Tone-burst (1750Hz)

The Baofeng BF-F9V2+ does not feature any form of individual calling at this time.

Note: Using group calling features does NOT mean that others won't be able to listen in on your transmissions. These features only provide a way to filter out unwanted incoming transmissions. Any communications sent out while using these features will still be heard by anyone not employing filtering options of their own.

CTCSS

CTCSS settings are accessed from the menu with shortcuts 11 for R-CTCS and 13 for T-CTCS.

For a full list of available CTCSS codes and corresponding sub-tone frequencies, see the CTCSS Table in the Technical Specifications section near the end of this manual.

Procedure: Setting up CTCSS

1. Press the [MENU] button to enter the menu.
2. Enter [1] [1] on the numeric keypad to get to Receiver CTCSS (R-CTCS).
3. Press the [MENU] button to select.
4. Enter the desired CTCSS sub-tone frequency in hertz on the numeric keypad.
5. Press the [MENU] button to confirm and save.
6. Enter [1] [3] on the numeric keypad to get to Transmitter CTCSS (T-CTCS).
7. Press the [MENU] button to select.
8. Enter the desired CTCSS sub-tone frequency in hertz on the numeric keypad.
9. Press the [MENU] button to confirm and save.
10. Press the [EXIT] button to exit the menu.

To turn CTCSS off, follow the same procedure but enter [0] for steps 4 and 8 instead of entering a sub-tone frequency.

DCS

DCS settings are accessed from the menu with shortcuts 10 for R-DCS and 12 for T-DCS.

For a full list of available DCS codes and corresponding sub-tone frequencies, see the DCS Table in the Technical Specifications section near the end of this manual.

Procedure: Setting up DCS

1. Press the [MENU] button to enter the menu.
2. Enter [1] [0] on the numeric keypad to get to Receiver DCS (R-DCS).
3. Press the [MENU] button to select.
4. Enter the desired DCS sub-tone frequency in hertz on the numeric keypad.
5. Press the [MENU] button to confirm and save.
6. Enter [1] [2] on the numeric keypad to get to Transmitter DCS (T-DCS).
7. Press the [MENU] button to select.
8. Enter the desired DCS sub-tone frequency in hertz on the numeric keypad.
9. Press the [MENU] button to confirm and save.
10. Press the [EXIT] button to exit the menu.

To turn DCS off, follow the same procedure but enter [0] for steps 4 and 8 instead of entering a sub-tone frequency.

1750Hz Tone Burst

To send out a 1750Hz tone burst, press the [A/B] button (or [BAND] button on some older models) while holding down the PTT button.

This feature also works even when they keypad lock is enabled on the radio.

Customization

The Baofeng BF-F9V2+ allows for customization of both the power-on message (via the Baofeng PC software), and the backlight color during the three states of transmission (Transmit, Receive, and Standby).

Display

The LCD on the Baofeng BF-F9V2+ is backlit by multi-color LEDs, the color of which can be pre-set from the menu system into a variety of colors.

To change the colors, follow the steps below:

Procedure: Changing the Backlight Color

1. Press the [MENU] button to enter the menu.
2. Enter one of the following on the numeric keypad:
    a. [2] [9] to change the Standby color.
    b. [3] [0] to change the Receive color.
    c. [3] [1] to change the Transmit color.
3. Press the [MENU] button to select.
4. Use the [UP] and [DOWN] buttons to select the desired color.
5. Press the [MENU] button to confirm and save.
6. Press the [EXIT] button to exit the menu.

To change how long the backlight stays on, follow these steps:

Procedure: Setting Backlight Time-Out duration

1. Press the [MENU] button to enter the menu.
2. Enter [6] on the numeric keypad to get to the Backlight Time-Out settings.
3. Press the [MENU] button to select.
4. Use the [UP] and [DOWN] buttons to increase or decrease the amount of time the backlight stays on.
5. Press the [MENU] button to confirm and save.
6. Press the [EXIT] button to exit the menu.

Power-On Message

The power-on message can only be customized via the Baofeng PC software. For more information, see the section "Programming" for details on how to install, set-up, and use the software.

The following instructions are written assuming that the Baofeng software has already been installed and is running and that the Baofeng radio is connected to the PC that is running the Baofeng software.

Procedure: Setting the Power-On-Message

1. Click the "Other" button on the menu bar. This should trigger the opening of a dialog box titled "Other".
2. In the box titled "Power On Message", there are two text fields representing the lines on the LCD screen. Enter the desired text in the fields.
3. Click the "Write" button to write the changes to the radio.
4. On the radio itself, ensure that menu item 38 is set to MSG.

Note: The BF-F9V2+ can only display 7 characters per line.

Programming

Memory channels are a simple and efficient way to store the most commonly used frequencies so they can be quickly accessible for later use.

The Baofeng BF-F9V2+ has the capability to store up to 128 memory slots that can hold any of the following information:

- Receive/Transmit Frequencies
- Transmit Power Settings
- Group Signaling Information
- Bandwidth
- ANI/PTT-ID Settings
- 6 Character Alphanumeric Channel Name

Manual Programming

When programming channels in VFO mode, it is important to remember that only the frequency displayed on the upper channel (A) can be saved. To create a new channel, start by switching the radio to Frequency (VFO) mode using the [VFO/MR] button. When in Frequency (VFO) mode, select the desired receive frequency using the numeric keypad. Next, use the menu system to configure any additional details for the channel that you want to store to the radio's memory (Examples Include: Transmit Power, Bandwidth, CTCSS or DCS, etc.)

For more information on how to use the Menu, see the chapter titled "Using the Menu System".

Simplex Channels

To save a Simplex channel, please follow the steps below:

Procedure: Saving (Programming) a Simplex Channel to Memory

1. Press the [MENU] button to enter the menu.
2. Enter [2] [7] on the numeric keypad to get to MEM-CH.
3. Press the [MENU] button to select.
4. Use the [UP] and [DOWN] buttons to select a memory channel, or enter it in directly on the numeric keypad.
5. Press the [MENU] button to confirm.

Press [EXIT] to switch to Channel (MR) mode with the button to test the new channel. To name the channel, you must connect the radio with the Baofeng PC software.

Duplex Channels

The following instructions assume that a duplex channel has been set up in VFO mode on the upper display and that VFO mode is still active.

Procedure: Saving (Programming) a Duplex Channel to Memory

1. Press the [MENU] button to enter the menu.
2. Enter [2] [7] on the numeric keypad to get to MEM-CH.
3. Press the [MENU] button to select.
4. Use the [UP] and [DOWN] buttons to select a memory channel, or enter it in directly on the numeric keypad.
5. Press the [MENU] button to confirm.
6. Press the [SCAN] button to activate reverse mode. If this does not work, enter the frequency manually.
7. Enter [2] [7] on the numeric keypad to get to MEM-CH.
8. Press the [MENU] button to select.
9. Use the [UP] and [DOWN] buttons to select a memory channel, or enter it in directly on the numeric keypad.
10. Press the [MENU] button to confirm.

Computer Programming

This section assumes that the Baofeng software is installed on your PC.

Attaching the Programming Cable

Ensure that the radio is off before attaching the cable. To attach the cable, uncover the accessory port behind the rubber flap on the right side of the radio body, align the connectors and push in firmly. Attach the USB connector to the computer and start the programming software, then turn on the radio.

Baofeng Software

Note: When first opening up the Baofeng programming software, the language may default to Chinese. To change the language to English, go to the second rightmost menu. This will open a list of available languages to select, including English.

When starting the Baofeng programming software, the Channel Information window will show. This is where channel information for memory channels can be entered. If the Channel Information window doesn't appear automatically, it can be shown by going to *Edit -> Channel Information*.

Before adding channels, go to *Communication* to select the port the cable is attached to. Next go to *Program -> Read from Radio* and click *Read* to read in any existing channel information on the radio. This is an effective way to test the connection of the programming cable. If the read is successful the LED on the radio will start flashing red indicating that the radio is transmitting data to the computer.

Channel Information Window: Column Definitions

Channel -> Channel number.

Band -> Displays what Frequency Band is active.

RX Frequency -> Receive Frequency.

TX Frequency -> Transmit Frequency. Defaults to the Receive Frequency.

CTCSS/DCS Dec -> Receiver CTCSS or DCS. Defaults to OFF.

CTCSS/DCS Enc -> Transmitter CTCSS or DCS. Defaults to OFF.

TX Power -> Transmit power. Defaults to HIGH.

W/N -> Wideband or Narrowband operation. Defaults to W for Wideband.

PTT-ID -> Enables and sets position of PTT-ID. Defaults to OFF.

BusyLock -> Busy Channel Lock-out. Defaults to OFF.

Scan_Add -> Add to scanner list. When enabled the channel is included in scanning mode. Defaults to ON.

SigCode -> Signal Code, group ID for the channel. Defaults to 1.

CH-Name -> Channel name.

To add a new channel, go to the row for the channel number you want to edit and follow these steps:

Procedure: Adding a Channel

1. Click in the *RX Frequency* field and enter the receiving frequency.
2. Click on the *TX Frequency* field and the rest of the row should fill automatically with default values (except for *CH – Name*, which will remain blank)
    a. If adding a duplex channel, the transmit frequency can be directly entered here.
3. Add or edit any of the information for the channel as needed.
    a. An optional 6-character channel name can be entered in the *CH-Name* field.

To finalize any programming, go to *Program -> Write to Radio* and then click *Write*. If successful, the radio will start to flash green indicating that it is receiving data. When all data has been sent from the computer, the radio will restart itself.

Radio to Radio Cloning

The Baofeng BF-F9V2+ is capable of cloning between radios. This means if there is one radio configured in a certain manner, the settings can be cloned onto another radio to ensure it is exactly the same. This is done by connecting a Reference (Master) radio to a Copy (Slave) radio by hooking a cable between the two and copying the information over.

Procedure: Cloning Radios

1. Attach the cloning cable to both the Reference and Copy radios by inserting the adapters into each radio's respective accessory cable ports.
2. Turn on the Copy radio (the radio that is being cloned to).
3. Turn on the Reference radio (the radio that is being cloned from) while holding down the [MONI] button.
4. The Reference radio should show *COPYING* in the display, and if the connection is successful, the LED will start flashing red to indicate data transfer. The Copy radio's LED should be flashing green at the same time to indicate that it is receiving data.
5. When the LEDs on both radios turn off, the radios will restart, and the cloning operation will be completed.

How-To and Setup Guides

Repeaters

A radio repeater is usually an automated transceiver in a specific fixed location. Mounted high up on hills, mountains, or tall buildings, repeaters take one signal and relay it, usually after amplifying it greatly. This enables usage of a small low-powered handheld two-way transceiver such as the Baofeng BF-F9V2+ to transmit to greater distances.

A radio repeater is an automated transceiver (device that can transmit and receive) in a fixed location. Usually mounted high up on hill tops or on tall buildings, but sometimes they operate within buildings for internal use. A repeater takes one signal and relays it, usually after amplifying it by orders of magnitude. This can be very handy, as this enables the use of a small low powered handheld two-way transceiver such as the Baofeng BF-F9V2+ to reach great distances.

A common type of repeater is the duplex repeater. A duplex repeater transmits and receives simultaneously, but on different frequencies. To utilize this specific type of repeater, the radio has to be capable of transmitting and receiving on different frequencies on the same memory channel. This kind of repeater is used by setting the receive frequency of the radio to the output frequency of the repeater, and the transmit frequency of the radio to the input frequency of the repeater. The transmit frequency may not always be explicitly stated, as many radios use a specific offset relative to the receive frequency. The Baofeng BF-F9V2+ handles repeater setup in this fashion, by specifying frequency offset rather than transmit frequency.

The following instructions assume knowledge of transmit and receive frequencies that your specified repeater employs, as well as authorization to use it.

Automatic Number Identification (ANI)

In most dispatch environments it is common to have a system that allows radios to automatically identify themselves to the dispatcher. This is known as Automatic Number Identification (AIN), or PTT-ID, due to the radio sending a data burst containing the ID code at the beginning or end of a transmission. The Baofeng BF-F9V2+ uses DTMF signaling to enable ANI implementation.

Procedure: Setting ANI/PTT-ID Code

1. Attach the radio to the computer and open the Baofeng PC software. See "Computer Programming" section for more details.
2. In the *Edit* menu, select *DTMF*. This will open up a window called *DTMF Encode/Decode*.
3. Go to the *Program* menu, select *Read from Radio* and the *Read from Radio* window will open.
4. Click the *Read* button. The status LED on the radio will flash red indicating the transmission of data.
5. Locate the box named ANI Code and enter any relevant ANI code details into this text field.
    a. If group ID codes are used instead of personal ID codes, it is possible to enter up to 15 of them in the list on the left in the *DTMF Encode/Decode* window. These can be assigned on a channel by channel basis in the *Channel Information* field.
6. Check the Press *PTT to Send* box to transmit ID prior to regular transmission.
7. Check the Release *PTT to Send* box to transmit ID after regular transmission.
8. In the *Program* menu, select *Write to Radio* and the *Write Data to Radio* window will open.
9. Click the *Write* button. The status LED on the radio will flash green indicating that it's receiving data.

To fully enable ANI settings, there are a few more steps. The directions below assume that the radio is still connected to the PC, and that the software is running.

Procedure: Enabling/Disables/Configuring ANI Settings

1. In the *Edit* menu, select *Optional Features*. This will open up a window called *Optional Features*.
2. Go to the *Program* menu, select *Read from Radio* and the *Read from Radio* window will open.
3. Click the *Read* button. The status LED on the radio will flash red indicating the transmission of data.
4. Use the PTT-ID drop-down list to select the position of both the ANI data burst; BOT (Beginning of Transmission), EOT (End of Transmission), or BOTH. To turn ANI off completely, select OFF from the drop-down list.
5. In the *Program* menu, select *Write to Radio* and the *Write Data to Radio* window will open.
6. Click the *Write* button. The status LED on the radio will flash green indicating that it's receiving data.

After these two procedures, the radio should be set up for ANI.

Application Specific Setup

Commercial Radio Setup

Follow these instructions to set the radio to Narrowband mode:

1. Press the [VFO/MR] button to enter frequency mode.
2. Press the [MENU] button to enter the menu.
3. Enter [5] on the numeric keypad.
4. Press [MENU] to select.
5. Use the [UP] and [DOWN] buttons to select between Wide and Narrow bands.
6. Press the [MENU] button to confirm and save.
7. Press the [EXIT] button to exit the menu.

Amateur Radio Setup

In contrast with Commercial radio operators, who often need very specific requirements to be compatible with a very specific radio implementation, amateur radio operators tend to need the broadest possible settings in order to be compatible with as many systems as possible. This basically implies turning off all the extraneous features that you typically might need for a commercial setup.

In a typical Amateur radio setup the following settings would be recommended:

• Set bandwidth to Wide (menu item 5).

• Turn DCS and CTCSS off (menu items 10 through 13).

• Turn ANI, DTMFST, S-CODE, PTT-ID off and PTT-LT to 0ms (menu items 15 through 17 and 19 through 20).

• Turn off Squelch Tail Elimination (STE) features (menu items 35 through 37).

• Turn roger beep (ROGER) off (menu item 39).

Troubleshooting Guide

Problem	Possible Cause / Solution
The radio does not start.	The battery may be low. Either replace the battery with a charged battery or proceed to charge the battery. The battery may not be installed correctly. Try removing the battery and reattaching it.
The battery is draining quickly.	Ensure the battery is fully charged before use. If the battery continues to drain at a quick pace, its life may have come to an end and it may need replacing.
The receiving indicator LED lights up but the speaker is not emitting any sound.	Make sure the volume setting isn't too low by turning the knob up further. If there is still no sound, ensure that the CTCSS undertones or the DCS codes are programmed to be the same as the other people you are trying to communicate with.
While transmitting, other people are not receiving my communications.	Ensure that the CTCSS undertones or the DCS codes are programmed to be the same as the other people you are trying to communicate with. If this continues, ensure that you are not out of broadcasting range from the rest of the people in your group, or that your signal is not being impeded by your local surroundings.
In standby mode, my transceiver transmits without the PTT button being pressed.	Ensure that the VOX setting on your radio is not set to be too sensitive. VOX setting 1 is the highest setting, and 10 is the lowest.
The radio is receiving transmissions from users other than the ones I wish to communicate with.	Ensure you are on the same frequency as those who you are trying to communicate with. Ensure that the CTCSS undertones or the DCS codes are programmed to be the same as the other people you are trying to communicate with.
Communications with other users is very low quality.	Ensure that you are not out of broadcasting range from the rest of the people in your group, or that your signal is not being impeded by your local surroundings.
If your radio is still having problems, contact Baofeng Radio US for support: **http://baofengradio.us/contacts/**	

Menu Function and Description Chart

Menu	Function/Description	Available Settings
0	SQL (Squelch Level)	0-9
1	STEP (Frequency Step)	2.5/5/6.25/10/12.5/20/25/50kHz
2	TXP (Transmit Power)	HIGH/MEDIUM/LOW
3	SAVE (Battery Saver)	OFF/1/2/3/4
4	VOX (Voice Operated Transmission)	OFF/0-10
5	W/N (Wideband/Narrowband)	WIDE/NARR
6	ABR (Display Illumination Time Length)	OFF/1/2/3/4/5s
7	TDR (Dual Watch/Dual Reception)	OFF/ON
8	BEEP (Keypad Beep Sound)	OFF/ON
9	TOT (Transmission Timer)	15/30/45/60.../585/600seconds
10	R-DCS (Reception Digital Coded Squelch)	OFF/D023N...D754I
11	R-CTS (Reception Continuous Tone Coded Squelch)	67.0Hz...254.1Hz
12	T-DCS (Transmission Digital Coded Squelch)	OFF/D023N...D754I
13	T-CTS (Transmission Continuous Tone Coded Squelch)	67.0Hz...254.1Hz
14	VOICE (Voice Prompt)	OFF/ON

15	ANI (Automatic Number Identification) Can only be configured by PC software.	
16	DTMFST (The DTMF tone of transmitting code.)	OFF/DT-ST/ANI-ST/DT+ANI
17	S-CODE (Signal Code) Can only be configured by PC software.	1,…,15 groups
18	SC-REV (Scan Resume Method)	TO/CO/SE
19	PTT-ID (press or release the PTT button to transmit the signal code)	OFF/BOT/EOT/BOTH
20	PTT-LT (delay the signal code sending)	0,…,30ms
21	MDF-A (In channel mode, display channel A) Note: channel display name can only be configured by PC software.	FREQ/CH/NAME
22	MDF-B (In channel mode, display channel A) Note: channel display name can only be configured by PC software.	FREQ/CH/NAME
23	BCL (Busy Channel Lockout)	OFF/ON
24	AUTOLK (Keypad Locked Automatically)	OFF/ON
25	SFT-D (Direction of Frequency Shift)	OFF/+/-
26	OFFSET (Frequency Shift)	00.000…69.990
27	MEMCH (Stored in Memory Channels)	000,…127
28	DELCH (Delete a Memory Channel)	000,…127
29	WT-LED (display illumination color during standby)	OFF/BLUE/ORANGE/PURPLE

30	RX-LED (display illumination color during reception)	OFF/BLUE/ORANGE/PURPLE
31	TX-LED (display illumination color during transmission)	OFF/BLUE/ORANGE/PURPLE
32	AL-MOD (Alarm Mode)	SITE/TONE/CODE
33	BAND (Band Selection)	VHF/UHF
34	TX-AB (transmitting selection while in dual watch reception mode)	OFF/A/B
35	STE (Tail Tone Elimination)	OFF/ON
36	RP_STE (Tail tone elimination in communication through repeater)	OFF/1,2,3…10
37	RPT_RL (Delay the tail tone of repeater)	OFF/1,2,3…10
38	PONMGS (Boot Display Message)	FULL/MGS
39	ROGER (Tone End of Transmission)	ON/OFF
40	RESET (Restore to Default Settings)	VFO/ALL

Menu Definitions

Menu Item	Shortcut	Description
SQL	0	Carrier **SQ**ue**L**ch: Mutes the speaker of the transceiver in the absence of a strong signal. Squelch is either OFF or one of 9 levels. The higher the level, the stronger the signal must be in order to un-mute the speaker.
Availability: Global		
Settings/Notes		
0 – 9 Default: 5 VHF: 0 = Open 1 - 9 ≈ 0.10µV UHF: 0 = Open 1 ≈ 0.10µV 2 ≈ 0.12µV 3 ≈ 0.13µV 4 ≈ 0.15µV 5 ≈ 0.18µV 6 ≈ 0.20µV 7 ≈ 0.23µV 8 ≈ 0.26µV 9 ≈ 0.30µV Note: The CALL button (FM or ALARM) is not functional when menu 0 = 0		
Menu Item	**Shortcut**	**Description**
STEP	1	Frequency **STEP** (Khz): Selects the amount of frequency change in VFO/Frequency mode when scanning or pressing the [▲] or [▼] buttons.
Availability: VFO/Frequency Mode, Separate VFO A & B Settings		
Settings/Notes		
(≤ BFB290) 2.5K [0] | 5.0K [1] | 6.25K [2] | 10.0K [3] | 12.5K [4] | 25.0K [5] Default: 2.5K (≥ BFB291) 2.5K[0] | 5.0K[1] | 6.25K[2] | 10.0K[3] | 12.5K[4] | 20.0K[5] | 25.0K[6] | 50.0K[7] Default: 2.5K		

Menu Item	Shortcut	Description
TXP	2	Transmit (TX) Power: Selects between HIGH, MEDIUM, and LOW transmitter power when in VFO/Frequency mode. Use the minimum transmitter power necessary to carry out the desired communications.
Availability: MR/Channel Mode (Read Only), VFO/Frequency Mode, Separate VFO A & B Settings, Stored in Channel		
Settings/Notes		
HIGH [0] | MEDIUM [1] | LOW [2] Default: HIGH HIGH: ≈ 8 watts MEDIUM: ≈ 5 watts LOW: ≈ 1 watt Note: When TXP is set to LOW, an 'L' is indicated in the status display. Note: The power level can be toggled in MR/Channel mode by tapping the [POUND] button.		
Menu Item	**Shortcut**	**Description**
SAVE	3	Battery **SAVE**: Selects the ratio of sleep cycles to awake cycles (1:1, 2:1, 3:1, 4:1). The higher the number the longer the battery lasts. When enabled, a word or two might be missed when the frequency being monitored becomes active.
Availability: Global		
Settings/Notes		
OFF [0] | 1 | 2 | 3 | 4 Default: 3 Note: When SAVE is not set to OFF and 'ABR' is ≥ 9, pulsing may be heard when the radio returns to FM broadcast reception		

after being interrupted.

Menu Item	Shortcut	Description
VOX	4	**V**oice **O**perated Transmission (T**X**): When enabled it is not necessary to push the [PTT] button on the transceiver. Adjust the gain level to an appropriate sensitivity to allow smooth transmission.
Availability: Global		
Settings/Notes		
OFF [0] | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 Default: OFF Note: When VOX is not set to OFF, 'VOX' is indicated in the status display.		

Menu Item	Shortcut	Description
WN	5	**W**ideband / **N**arrowband: Wideband (25 kHz bandwidth) or narrowband (12.5 kHz bandwidth).
Availability: MR/Channel Mode (Read Only), VFO/Frequency Mode, Separate VFO A & B Settings, Stored in Channel		
Settings/Notes		
WIDE [0] | NARR [1] Default: WIDE Emission: 16K0F3E / 11K0F3E (W/N) Deviation: ≤ ±5 kHz / ≤ ±2.5 kHz (W/N) Note: When WN is set to NARR, an 'N' is indicated in the status display.		

Menu Item	Shortcut	Description
ABR	6	**A**utomatic **B**ack Light Shutoff Time**R**: Length of time the display is illuminated in seconds.
Availability: Global		
Settings/Notes		
(≤ BFB291) OFF [0] | 1 | 2 | 3 | 4 | 5 Default: 5 (≥ BFB293) OFF [0] | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 Default: 5 Note: The ABR setting also sets the delay before the radio returns to FM broadcast reception after being interrupted. Note: When 'ABR' is ≥ 9 and SAVE is not set to OFF, pulsing may be heard when the radio returns to FM broadcast reception after being interrupted. Note: ABR can be set to 24 using CHIRP.		
Menu Item	**Shortcut**	**Description**
TDR	7	Dual Watch/**T**ransceiver **D**ual **R**eception: Monitor [A] and [B] at the same time by scanning between them. The display with the most recent activity ([A] or [B]) becomes the selected display.
Availability: Global		
Settings/Notes		
OFF [0] | ON [1] Default: ON Note: When TDR is set to ON, an 'S' is indicated in the status display. Note: The selected display can be forced back to [A] or [B] using menu 34. Note: TDR should be set to OFF when manually programming. Note: TDR is inhibited while memory scanning is in operation.		

Menu Item	Shortcut	Description
BEEP	8	Keypad **BEEP**: Allows audible confirmation of a button press.
Availability: Global		
Settings/Notes		
OFF [0] | ON [1] Default: ON		
Menu Item	**Shortcut**	**Description**
TOT	9	Transmission **T**ime-**O**ut **T**imer: This feature provides a safety switch which limits transmission time to a programmed value. This will enable battery conservation by preventing excessively-long transmissions, and in the event of a stuck PTT button (possibly due to a radio becoming wedges between two things), it can prevent interference to other users and excessive battery depletion.
Availability: Global		
Settings/Notes		
15 [0] – 600 [39] in 15 second steps (see TOT Table) Default: 60 Note: The red TX LED begins to flash 10 seconds before the timeout limit is reached. Note: (TIMEOUT-15)/15=[n]		

Menu Item	Shortcut	Description
R-DCS	10	**R**eceive **- D**igital **C**oded **S**quelch (DCS): Mutes the speaker of the transceiver in the absence of a specific low level digital signal. If the station you are listening to does not transmit this specific signal, you will not hear anything.
Availability: MR/Channel Mode (Read Only), VFO/Frequency Mode, Separate VFO A & B Settings, Stored in Channel		
Settings/Notes		
OFF [0] | see DCS Table Default: OFF Note: When R-DCS is not set to OFF, 'DCS' is indicated to the left of the upper channel display. Note: Setting R-DCS sets menu 11 to OFF. Note: Recommended setting is OFF.		
Menu Item	**Shortcut**	**Description**
R-CTCS	11	**R**eceive **- C**ontinuous **T**one **C**oded **S**quelch System (CTCSS): Mutes the speaker of the transceiver in the absence of a specific and continuous sub-audible signal. If the station you are listening to does not transmit this specific and continuous signal, you will not hear anything.
Availability: MR/Channel Mode (Read Only), VFO/Frequency Mode, Separate VFO A & B Settings, Stored in Channel		
Settings/Notes		
OFF [0] | see CTCSS Table Default: OFF Note: When R-CTCS is not set to OFF, 'CT' is indicated to the left of the upper channel display. Note: Setting R-CTCS sets menu 10 to OFF. Note: Recommended setting is OFF.		

Menu Item	Shortcut	Description
T-DCS	12	**T**ransmit - **D**igital **C**oded **S**quelch (DCS): Transmits a specific low level digital signal to unlock the squelch of a distant receiver (usually a repeater).
Availability: MR/Channel Mode (Read Only), VFO/Frequency Mode, Separate VFO A & B Settings, Stored in Channel		
Settings/Notes		
OFF [0] | see DCS Table Default: OFF Note: When T-DCS is not set to OFF, 'DCS' is indicated to the left of the upper channel display (requires TX or 'reverse' mode). Note: Setting T-DCS sets menu 13 to OFF.		
Menu Item	**Shortcut**	**Description**
T-CTCS	13	**T**ransmit **C**ontinuous **T**one **C**oded **S**quelch System (CTCSS): Transmits a specific and continuous sub-audible signal to unlock the squelch of a distant receiver (usually a repeater).
Availability: MR/Channel Mode (Read Only), VFO/Frequency Mode, Separate VFO A & B Settings, Stored in Channel		
Settings/Notes		
OFF [0] | see DCS Table Default: OFF Note: When T-CTCS is not set to OFF, 'CT' is indicated to the left of the upper channel display (requires TX or 'reverse' mode). Note: Setting T-CTCS sets menu 12 to OFF.		

Menu Item	Shortcut	Description
VOICE	14	**VOICE** Prompt: Allows audible voice confirmation of a button press.
Availability: Global		
Settings/Notes		
(≤ BFB238) OFF [0] | ON [1] Default: ON (≥ BFB251) OFF [0] | ENG [1] | CHI [2] Default: CHI Note: Not all voice prompts are easily understandable. Not all button presses have a voice prompt.		
Menu Item	**Shortcut**	**Description**
ANI-ID	15	**A**utomatic **N**umber **I**dentification **– ID**: Displays the ANI code that has been set by software. This menu can not be used to change it. The ANI-ID is sent when the alarm is activated and menu 32 = CODE
Availability: MR/Channel Mode (Read Only)		
Settings/Notes		
N/A		

Menu Item	Shortcut	Description
DTMFST	16	**DTMF S**ide **T**ones: Determines when DTMF Side Tones can be heard from the transceiver speaker.
Availability: Global		
Settings/Notes		
OFF [0] | DT-ST [1] | ANI-ST [2] | DT+ANI [3] Default: DT+ANI OFF: No DTMF Side Tones are heard. DT-ST: Side Tones are heard only from manually keyed DTMF codes. ANI-ST: Side Tones are heard only from automatically keyed DTMF codes. DT+ANI: All DTMF Side Tones are heard. Note: Requires the transceiver to be in transmit mode. Note: The mic can pick up the side tone and if the volume loud enough, it will overdrive and/or distort the transmitted DTMF tones. Note: (≤ BFB231) [MENU]=A, [▲]=C, [▼]=B, [EXIT]=D (†) Note: (≥ BFB238) [MENU]=A, [▲]=B, [▼]=C, [EXIT]=D (†) Note: (≥ BFS311) [MENU]=A, [▲]=B, [▼]=C, [EXIT]=0 (†) The Side Tone heard for 'D' is '0' (zero) but 'D' is sent over-the-air		

Menu Item	Shortcut	Description
S-CODE	17	PTT-ID (**S**ignal-**CODE**) Selection: Selects 1 of 15 signal codes. The signal codes are programmed with software and are up to 5 DTMF signals each.
Availability: MR/Channel Mode (Read Only), VFO/Frequency Mode, Separate VFO A & B Settings, Stored in Channel		
Settings/Notes		
1 [0] | 2 [1] | 3 [2] | 4 [3] | 5 [4] | 6 [5] | 7 [6] | 8 [9] | 9 [8] | 10 [9] | 11 [10] | 12 [11] | 13 [12] | 14 [13] | 15 [14] Default: 1 Note: Menu 19 must be enabled for an S-CODE to be transmitted.		
Menu Item	**Shortcut**	**Description**
SC-REV	18	**SC**an-**REV**ive/Resume Method: TO [0] | CO [1] | SE [2] Default: TO
Availability: Global		
Settings/Notes		
TO: Time Operation - scanning will resume after a fixed time has passed. CO: Carrier Operation - scanning will resume after the active signal disappears. SE: Search Operation - scanning will not resume.		

Menu Item	Shortcut	Description
PTT-ID	19	When to Send **PTT-ID**
Availability: MR/Channel Mode (Read Only), VFO/Frequency Mode, Stored in Channel		
Settings/Notes		
OFF [0] | BOT [1] | EOT [2] | BOTH [3] Default: OFF OFF: No ID is sent. BOT: The selected S-CODE is sent at the Beginning of Transmission. EOT: The selected S-CODE is sent at the End of Transmission. BOTH: The selected S-CODE is sent at the BOT and the EOT. Note: Select S-CODE using menu 17. Note: Recommended setting is OFF.		
Menu Item	**Shortcut**	**Description**
PTT-LT	20	**PTT**-**L**agged **T**ransmission (PTT-ID Delay in milliseconds): Length of time after [PTT] is pressed until PTT-ID is transmitted
Availability: Global		
Settings/Notes		
(≤ BFB290) 0 – 30 Default: 5 (≥ BFB291) 0 – 50 Default: 5 Note: Requires menu 19 to be enabled.		

Menu Item	Shortcut	Description
MDF-A	21	**M**emory **D**isplay **F**ormat - [**A**]
Availability: Global		
Settings/Notes		
CH [0] | NAME [1] | FREQ [2] Default: NAME CH: Displays the channel number. NAME: Displays the channel name. Names must be entered using software. A channel without an assigned name with have the channel number displayed. FREQ: Displays programmed Frequency.		
Menu Item	**Shortcut**	**Description**
MDF-B	22	**M**emory **D**isplay **F**ormat - [**B**]
Availability: Global		
Settings/Notes		
CH [0] | NAME [1] | FREQ [2] Default: FREQ CH: Displays the channel number. NAME: Displays the channel name. Names must be entered using software. A channel without an assigned name with have the channel number displayed. FREQ: Displays programmed Frequency.		

Menu Item	Shortcut	Description
BCL	23	**B**usy **C**hannel **L**ock-Out: Disables the [PTT] button on a channel that is already in use. The transceiver will sound a beep tone and will not transmit if the [PTT] button is pressed when a channel is already in use.
Availability: MR/Channel Mode (Read Only), VFO/Frequency Mode, Stored in Channel		
Settings/Notes		
OFF [0] | ON [1] Default: OFF		

Menu Item	Shortcut	Description
AUTOLK	24	**AUTO**matic Keypad **L**oc**K**: When ON, the keypad will be locked if not used in 8 secs. Pressing the [POUND] button for 2 seconds will temporarily unlock the keypad.
Availability: Global		
Settings/Notes		
Note: When the keypad is locked, a '╥O' symbol is indicated in the status display Note: The keypad lock only locks the buttons on the front face of the BF-F9V2+. It does not lock the [CALL] button, the [PTT] button or the [MONI] button.		

Menu Item	Shortcut	Description
SFT-D	25	Frequency **S**hi**FT** – **D**irection: Enables access of repeaters in VFO/Frequency Mode.
Availability: VFO/Frequency Mode, Stored in Channel		
Settings/Notes		
OFF[0] | + [1] | - [2] Default: OFF OFF: TX = RX (simplex) +: TX will be shifted higher in frequency than RX -: TX will be shifted lower in frequency than RX Note: When SFT-D is set to +, a '+' is indicated in the status display (VFO/Frequency mode only) Note: When SFT-D is set to -, a '-' is indicated in the status display (VFO/Frequency mode only) Note: Used with menu 26 to access repeaters in VFO/Frequency mode (+ and - only) Note: SFT-D is not required when storing repeater frequencies into channels		

Menu Item	Shortcut	Description
OFFSET	26	Frequency Shift/**OFFSET** (MHz): Specifies the difference between the TX and RX frequencies.
Availability: VFO/Frequency Mode, Stored in Channel		
Settings/Notes		
00.000 - 69.990 in 10 kHz steps Default: 00.600 Note: Used with menu 25 to access repeaters in VFO/Frequency mode Note: Typical ham offsets are: VHF = 00.600 UHF = 05.000 Note: OFFSET is not required when storing repeater frequencies into channels		

Menu Item	Shortcut	Description
MEM-CH	27	**CH**annel Programming: This menu is used to either create new or modify existing channels (000 through 127) so that they can be accessed from MR/Channel Mode. The behavior of menu 27 changes depending on whether the target channel is empty or has been previously programmed (see below).
Availability: VFO/Frequency Mode		
Settings/Notes		
000 – 127 Default: 000 Note: Programming must be done in [A] VFO Empty Target Channel: The RX and TX frequencies of the target channel are set to the [A] VFO frequency. The settings of the following menus are also saved into the target channel. This essentially creates a fully operational simplex channel. Menu 2 – TXP: Transmit Power Menu 5 – WN: Wideband / Narrowband Menu 10 - R-DCS: Digital Coded Squelch (DCS) - Receive/Decode Menu 11 - R-CTCS: Continuous Tone Coded Squelch System (CTCSS) - Receive/Decode Menu 12 - T-DCS: Digital Coded Squelch (DCS) - Transmit/Encode Menu 13 - T-CTCS: Continuous Tone Coded Squelch System (CTCSS) - Transmit/Encode Menu 17 - S-CODE: PTT-ID DTMF Code Selection Menu 19 - PTT-ID: When to Send PTT-ID Menu 23 – BCL: Busy Channel Lockout Previously Programmed Target Channel: The TX frequency of the target channel is set to the [A] VFO frequency. The settings of the following menus are also saved into the target channel. Uses for this can be to update a newly created 'simplex' channel into a 'repeater' channel or a 'cross-band' channel. Another use would be to add, change or remove a TX DCS code or TX CTCSS tone. Menu 12 - T-DCS: Digital Coded Squelch (DCS) - Transmit/Encode Menu 13 - T-CTCS: Continuous Tone Coded Squelch System (CTCSS) - Transmit/Encode Note: When the TX frequency differs from RX frequency, a '+-' is indicated in the status display. Note: TDR should be set to OFF when manually programming. Note: It is recommended to check above menu settings to ensure no modifications from previous programming are left over.		

Menu Item	Shortcut	Description
DEL-CH	28	**DEL**ete/Erase Memory **– Ch**annel: This menu is used to erase the programmed information from the specified channel (000 through 127) so that it can either be programmed again or be left empty.
Availability: Global		
Settings/Notes		
000 – 127 Default: 000		
Menu Item	**Shortcut**	**Description**
WT-LED	29	Standby (**W**ai**T) -** Back Light **LED** Color: Display Illumination Color
Availability: Global		
Settings/Notes		
OFF [0] | BLUE [1] | ORANGE [2] | PURPLE [3] Default: PURPLE		

Menu Item	Shortcut	Description
RX-LED	30	Receive (**RX**) - Back Light **LED** Color: Display Illumination Color
Availability: Global		
Settings/Notes		
OFF [0] | BLUE [1] | ORANGE [2] | PURPLE [3] Default: BLUE		
Menu Item	**Shortcut**	**Description**
TX-LED	31	Transmit (**TX**) - Back Light **LED** Color: Display Illumination Color
Availability: Global		
Settings/Notes		
OFF [0] | BLUE [1] | ORANGE [2] | PURPLE [3] Default: ORANGE		

Menu Item	Shortcut	Description
AL-MOD	32	**AL**arm **– MOD**e
Availability: Global		
Settings/Notes		
SITE [0] | TONE [1] | CODE [2] Default: TONE SITE: Sounds alarm through the radio speaker only TONE: Transmits a cycling tone over-the-air CODE: Transmits '119' (911 in reverse?) followed by the ANI code over-the-air Note: Recommended setting is SITE		
Menu Item	**Shortcut**	**Description**
BAND	33	**BAND** Selection: In VFO/Frequency mode, sets [A] or [B] to the VHF or UHF band.
Availability: MR/Channel Mode (Read Only), VFO/Frequency Mode, Separate VFO A & B Settings, Stored in Channel		
Settings/Notes		
VHF [0] | UHF [1] Default: VHF Note: When transitioning from VHF to UHF or from UHF to VHF, the selected band's low frequency limit becomes the displayed frequency (the original 'scratch' frequency is lost)		

Menu Item	Shortcut	Description
TDR-AB	34	**T**ransceiver **D**ual **R**eception - [**A**]/[**B**] Display Priority: When enabled, priority is returned to selected display once the signal in the other display disappears.
Availability: Global		
Settings/Notes		
OFF[0] | A [1] | B [2] Default: OFF Note: Requires menu item 7 to be enabled		
Menu Item	**Shortcut**	**Description**
STE	35	Transceiver - **S**quelch **T**ail **E**limination: This function is used eliminate squelch tail noise between BF-F9V2+s that are communicating directly (no repeater). Reception of a 55 Hz or 134.4 Hz tone burst mutes the audio long enough to prevent hearing any squelch tail noise.
Availability: Global		
Settings/Notes		
OFF [0] | ON [1] Default: ON Note: When enabled and T-DCS is set to OFF the radio sends a 55 Hz tone for about 1/4 second when the PTT button is released. Note: When enabled and T-DCS is not set to OFF the radio sends a 134.4 Hz tone for about 1/4 second when the PTT button is released. Note: Set to OFF before communicating through a repeater. Note: Recommended setting is OFF.		

Menu Item	Shortcut	Description
RP-STE	36	**R**e**P**eater - **S**quelch **T**ail **E**limination: This function is used eliminate squelch tail noise when communicating through a repeater.
Availability: Global		
Settings/Notes		
OFF [0] | 1 – 10 Default: 5 Note: Requires use of a repeater utilizing this feature. Note: Used with menu 37 Note: Recommended setting is OFF		
Menu Item	**Shortcut**	**Description**
RPT-RL	37	**R**e**P**ea**T**er - **R**etard Squelch Tail E**L**imination Tail Tone (X100 milliseconds): Length of time after [PTT] is released until STE tail tone is transmitted
Availability: Global		
Settings/Notes		
OFF [0] | 1 – 10 Default: OFF Note: Used with menu 36 Note: Recommended setting is OFF		

Menu Item	Shortcut	Description
PONMSG	38	**P**ower **ON** **M**e**S**sa**G**e: Controls the behavior of the display when the transceiver is turned on.
Availability: Global		
Settings/Notes		
FULL [0] | MSG [1] Default: FULL FULL: Performs an LCD screen test at power-on MSG: Displays a 2-line power-on message Note: The power-on message must be edited with the Baofeng software		
Menu Item	**Shortcut**	**Description**
ROGER	39	**ROGER** Beep: Sends an end-of-transmission tone to indicate to other stations that the transmission has ended.
Availability: Global		
Settings/Notes		
OFF [0] | ON [1] Default: OFF Note: Recommended setting is OFF		

Menu Item	Shortcut	Description
RESET	40	**RESET** to Firmware Default Settings
Availability: Global		
Settings/Notes		
VFO [0] | ALL [1] Default: ALL VFO: Resets all menus to firmware default and sets the [A] and [B] VFO frequencies to firmware default. ALL: Resets all menus to firmware default, sets the [A] VFO frequency to the VHF band low limit and the [B] VFO frequency to the UHF band low limit, erases all channels and programs channel 0 to 136.025 MHz and channel 127 to 470.625 MHz		

Technical Specifications

GENERAL

Specification	Value
Frequency Range (MHz)	65 - 108 (RX Only) 136 - 174 (RX/TX) 400 – 480 (RX/TX)
Memory Channels	128
Frequency Stability	2.5ppm
Frequency Step (kHz)	2.5 / 5 / 6.25 / 10 / 12.5 / 25
Antenna Impedance	50 Ohm
Operating Temperature	-20°C to +60°C
Supply Voltage	7.4
Consumption	≤ 75mA (standby) 380mA (reception) ≤ 1.4A (transmission)
Mode of Operations	Simplex or Semi-Duplex
Duty Cycle	03 / 03 / 54 minutes (RX / TX / Standby)
Dimensions (mm)	58 x 110 x 32
Weight (g)	214

TRANSMITTER

Specification	Value
RF Power	4W/1W
Type of Modulation	FM
Emission Class	16KΦF3E (Wideband) / 11KΦF3E (Narrowband)
Maximum Deviation	≤±5 kHz (Wideband) / ≤±2.5 kHz (Narrowband)
Spurious Emissions	<-60 dB

RECIEVER

Specification	Value
Receiver Sensitivity	0.2 μ V (at 12 dB *SINAD*)
Intermodulation	60 dB
Audio Output	1000 mW
Adjacent Channel Selectivity	65 / 60 dB

DCS Table

Number	Code	Number	Code	Number	Code	Number	Code	Number	Code
1	D023N	22	D131N	43	D251N	64	D371N	85	D532N
2	D025N	23	D132N	44	D252N	65	D411N	86	D546N
3	D026N	24	D134N	45	D255N	66	D412N	87	D565N
4	D031N	25	D143N	46	D261N	67	D413N	88	D606N
5	D032N	26	D145N	47	D263N	68	D423N	89	D612N
6	D036N	27	D152N	48	D265N	69	D431N	90	D624N
7	D043N	28	D155N	49	D266N	70	D432N	91	D627N
8	D047N	29	D156N	50	D271N	71	D445N	92	D631N
9	D051N	30	D162N	51	D274N	72	D446N	93	D632N
10	D053N	31	D165N	52	D306N	73	D452N	94	D645N
11	D054N	32	D172N	53	D311N	74	D454N	95	D654N
12	D065N	33	D174N	54	D315N	75	D455N	96	D662N
13	D071N	34	D205N	55	D325N	76	D462N	97	D664N
14	D072N	35	D212N	56	D331N	77	D464N	98	D703N
15	D073N	36	D223N	57	D332N	78	D465N	99	D712N
16	D074N	37	D225N	58	D343N	79	D466N	100	D723N
17	D114N	38	D226N	59	D346N	80	D503N	101	D731N
18	D115N	39	D243N	60	D351N	81	D506N	102	D732N
19	D116N	40	D244N	61	D356N	82	D516N	103	D734N
20	D122N	41	D245N	62	D364N	83	D523N	104	D743N
21	D125N	42	D246N	63	D365N	84	D526N	105	D754N

CTCSS Table

Number	Tone (Hz)	Number	Tone (Hz)	Number	Tone (Hz)	Number	Tone (Hz)	Number	Tone (Hz)
1	67.0	11	94.8	21	131.8	31	171.3	41	203.5
2	69.3	12	97.4	22	136.5	32	173.8	42	206.5
3	71.9	13	100.0	23	141.3	33	177.3	43	210.7
4	74.4	14	103.5	24	146.2	34	179.9	44	218.1
5	77.0	15	107.2	25	151.4	35	183.5	45	225.7
6	79.7	16	110.9	26	156.7	36	186.2	46	229.1
7	82.5	17	114.8	27	159.8	37	189.9	47	233.6
8	85.4	18	118.8	28	162.2	38	192.8	48	241.8
9	88.5	19	123.0	29	165.5	39	196.6	49	250.3
10	91.5	20	127.3	30	167.9	40	199.5	50	254.1

WARRANTY CERTIFICATE

<table>
<tr><td colspan="4">WARRANTY CERTIFICATE</td></tr>
<tr><td colspan="2">Brand:</td><td>Model no.:</td><td>Serial no.:</td></tr>
<tr><td colspan="4">Name of purchaser:</td></tr>
<tr><td colspan="2">Address:</td><td colspan="2" rowspan="5">Seal and name of the dealer:</td></tr>
<tr><td>City:</td><td>Zip code:</td></tr>
<tr><td>Province/State:</td><td>Tel no.:</td></tr>
<tr><td>Date of purchase:</td><td></td></tr>
<tr><td colspan="2">WARNING: Warranty is valid provided it is complete and properly filled in legibly and clearly present the seal and name of the dealer and have attached the bill proof of purchase of equipment.</td></tr>
</table>

Please see conditions of warranty on the next page

The device described in this Certificate is guaranteed for a period of TWO YEARS from the date of sale to the final user. This Warranty Certificate is unique and not transferable and may not be reissued. Substitution of the product, or any product component thereof shall not extend the guarantee.

The warranty covers the replacement of all parts that are defective in materials or components used in the manufacturing and/or assembly of the device.

The warranty does not cover any faults caused by accident, improper installation and use, improper connection to a power source other than the included, or claims due to deterioration in the external appearance of the device due to normal use, nor claims pertaining to the amount or condition of the accessories packaged with the device. Checking the accessories is the responsibility of the purchaser at the time of purchasing the device.

The warranty does not cover rechargeable batteries even if they are part of the equipment purchased as they are considered consumables. Any impairment must be reported within a period of fifteen days from the date of purchase.

The warranty is voided when any of the following conditions are met:

1. Devices that have been manipulated by another or by anyone other than authorized service provider.

2. Equipment and accessories in which the serial number has been altered, deleted, filed, or in any way become unreadable.

3. Use of the product other than as intended.

To make use of the warranty, it is necessary to provide the dealer or any Authorized Service Provider the following items:

1. The defective device.

2. Any accessories included with the device.

3. The Warranty Certificate, filled out in its entirety.

4. Original invoice/receipt clearly identifying the device and its date of purchase.

5. Description of any faults the device may have.

The warranty terms contained in this Certificate of Guarantee do not exclude, modify or restrict the statutory rights of the buyer by virtue of the laws in force at the time of purchase, but are added to them.

SOURCES

Adapted from the following sources:

http://baofengradio.us/

http://www.miklor.com/uv5r/

http://www.baofengradio.com/en/

RELATED PRODUCTS

Check out our other related products and affiliate companies:

Foscam

Foscam IP Cameras are part of a generation of advanced high quality remote monitoring IP network cameras which are bridging the gap between powerful capabilities, ease of use and affordability. The Foscam Indoor FI8910W and FI8918W as well as Outdoor FI8904W and FI8905W Wireless IP Cameras are designed to deliver live video and audio to your computers over the local network or Internet via a web browser, smartphone (e.g., Iphone/Blackberry) or third party video recording software (e.g,. Blue Iris, WebcamXP, VLC, etc). With their self-contained and compact designs, Foscam Wireless IP cameras allow you to remotely monitor your home, your kids, and your place of work.

http://foscam.us

Amcrest

Amcrest security systems are part of a generation of advanced high quality remote monitoring and video security systems which are bridging the gap between powerful capabilities, ease of use and affordability. Amcrest security camera systems are designed to record and deliver live video and audio to you anywhere in the world. With their high quality and robust design, Amcrest security cameras allow you to securely monitor your home, small business or medium to large enterprise.

http://amcrest.com

Accumed

AccuMed is part of a generation of advanced high quality health care products which are bridging the gap between innovation, ease of use and affordability. The number of health conscious consumers, are increasing exponentially every day, and AccuMed is here to cater to all of them with our safe and effective medical products! Our varying ranges of health care products provide benefits to everyone from the young, to the young at-heart.

http://accumed.com