



blackbox™  
2-way radios

# User Manual

*for Blackbox+ Series*



## **Thank You**

We appreciate you purchasing Blackbox™ two-way radios. We believe that the quality and function of this product is the best available today.

Cost-effective portable + Series radios are the result of Blackbox's pursuing high quality and high performance, ergonomic design, reliable quality and stable performance. + Series ensures you clear communication under any circumstances.

Please read this manual before you use the radio.

## **Safety**

Please switch off the radio before entering a potentially explosive or flammable environment.

Do not change or charge battery pack in a potentially explosive or flammable environment.

Do not use damaged antenna. Damaged antenna may cause burns.

Do not disassemble the radio.

Do not put the radio within the possible range of an air bag in a car.

Do not expose the radio to direct sunlight or near heating devices for a long time.

If you carry the radio on the body, please keep the antenna 2 inches away from the body when transmitting.

## Unpack and Check

Before use, we recommend that you check the packing and identify the items listed below. If any damages have occurred during shipment, please contact your local dealer.

| Items    | Radio | Antenna | Battery | Belt Clip | Charger w/adaptor |
|----------|-------|---------|---------|-----------|-------------------|
| Quantity | 1     | 1       | 1       | 1         | 1                 |

Note: For frequency band of antenna, please refer to the label on the bottom of the antenna.

## Get Acquainted

### Battery Information

Please charge with Blackbox™ branded battery; Charging with other types of batteries may cause explosion, personal injury, or cause radio to become defective.

#### Note:

1. Do not short-circuit the battery terminals or dispose the battery into fire. Do not disassemble the battery casing.
2. Charging should be done in -0°C ~45°C environment. If temperature is beyond the range, the battery may not be fully charged.
3. Please turn off the radio before charging.
4. It is best to fully drain the battery prior to charging, then fully charge it each time.
6. Do not charge when the battery or radio is wet. Dry it with cloth to avoid possible electric shock.

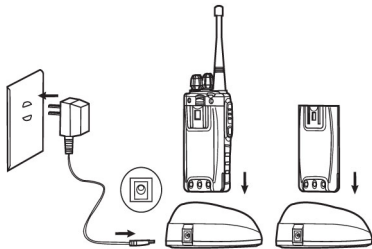
**Warning:**

Please prevent the battery electrode from contacting with any metal conductors such as jewels or keys.

**Charging Steps:**

Please charge as follows:

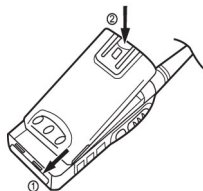
1. Connect the adapter with the charger.
2. Plug the adapter into an AC outlet.
3. The charger is ready for charging if the indicator lights red for one second and goes off. If the indicator flashes, the charger is not ready.
4. Place the battery into the charger slot.
5. The indicator lights red when charging. If the battery power is too low, the indicator flashes. The battery is first trickle charged and turns to normal charging automatically.
6. The battery is fully charged when indicator light is green. The charger stops charging automatically.

**Precautions in Charging**

The battery is not charged in factory. Please charge the battery before initial use or after longtime storage. Repeat charging 2 or 3 times and the battery will reach normal capacity. Please change or charge the battery if the power is low. If the battery power consumes quickly after a normal charge, the battery life is finished. Please replace the battery pack.

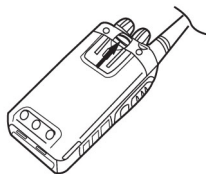
## Installing and removing

### Installing/Detaching the Battery



#### Installing the Battery

Match the guides of the battery pack with the corresponding grooves at the bottom of radio and insert the battery pack. Then press downward battery pack until the release latch locks.



#### Removing of Battery:

Before removing, make sure that the radio is switched off. Pull the release latch outwards and slide the battery away from the radio.

### Installing/Removing the Antenna

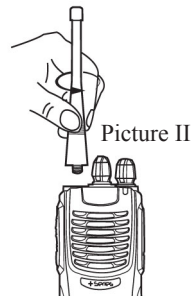
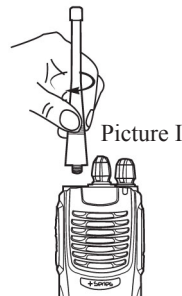
#### Installing the Antenna (Picture I)

Screw the antenna into the connector at the top of the radio by holding the bottom of the antenna, and turn it clockwise until secure.

#### Removing the Antenna (Picture II)

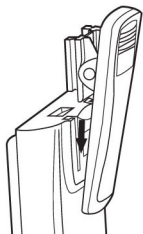
Screw the antenna off counter clockwise by holding the bottom of antenna.

[www.blackboxradios.com](http://www.blackboxradios.com)

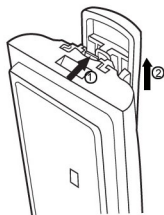


## Installing/Removing Belt Clip

Picture III



Picture IV



### Installing Belt Clip ( Picture III)

Match the grooves of belt clip with those on the rear of radio and press the belt clip downwards until it is locked.

### Removing Belt Clip (Picture IV)

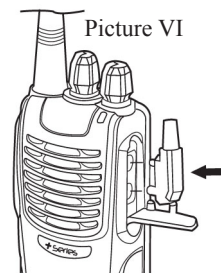
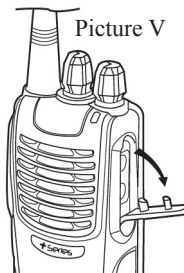
Use your nail or a tool to lift the metal spring piece in the belt clip from topside and pull the belt clip upward from the battery pack.

Note:

1. To use belt clip, please install the belt clip onto the battery before the installing of battery pack.
2. Remove the battery from the radio before the removing of belt clip.

## Installing external Earphone/Microphone

1. Uncover the Earphone/Microphone pad. (Picture V)
2. Plug the Earphone/Microphone into the jacks of connector. (Picture VI)



## Over View

### ① Antenna

### ② The Indicator

The indicator lights red when transmitting; lights green when receiving; flashes red when the battery power is low; flashes green when scanning.

### ③ Power/Volume Switch

Turn it clockwise to switch on the radio until a click is felt. Rotate it to adjust volume after turn on the radio. Turn it counter clockwise to switch off the radio until a click is felt.

### ④ Channel Selector

Rotate it to select operating channel from 1~15+S. When changing channel, the radio will announce the selected channel number if the Channel annunciation is ON.

### ⑤ Speaker

### ⑥ PTT (Push-To-Talk)

Press and hold PTT button to make a call; release it to receive.

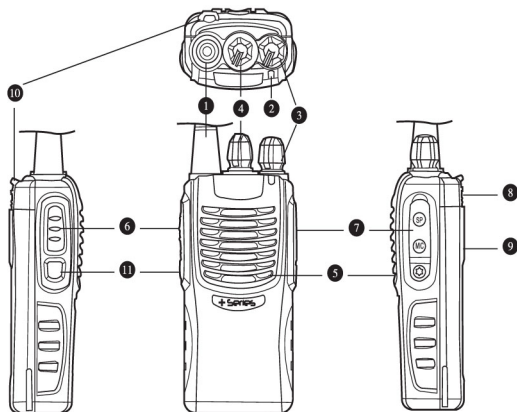
### ⑦ MIC-SP Jack/ Data Port.

To connect the earphone/microphone or data cable

### ⑧ Top Cover

### ⑨ Battery Release Latch

Li-ion Battery





## Over View (continued)

### ⑩ Strap Hole

To be used with hand strap.

### ⑪ Programmable key

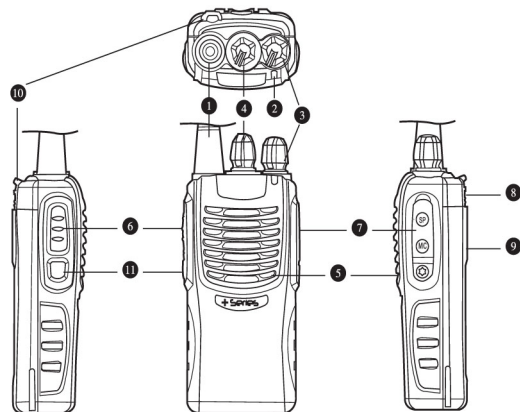
The press mode and its function can be programmed by PC software.

Note: The press duration and corresponding function

The original default setting:

Short Press (0.5s): Monitor

Long Press (1.5s): Announce Battery Power



## **Basic Operation**

### **Switch ON/OFF**

Switch on the radio by turning the Power/Volume switch clockwise until a click is felt. At the same time, a voice indication of the current channel is heard.

To switch off the radio, turn the Power/Volume switch counter clockwise until a click is felt.

### **Volume Adjustment**

Rotate the Power/Volume switch to adjust volume when the radio is turned on.

### **Channel Selecting**

Rotate the channel knob to select operating channel from 1~15+S, according to the numbers or symbols on the bottom of Channel Knob or channel annunciation.

### **Make a Call**

Press and hold PTT button, then speak into the microphone with normal voice. Please keep your mouth 2-6 inches from the front of the radio.

Note: 1. Press PTT button and indicator lights red, the radio begins to transmit.  
2. When indicators flashes red, it means the battery voltage is low. The radio can not transmit.

## Auxiliary Functions

### PC Programming



1. Visit [blackboxradios.com](http://blackboxradios.com) to download standard software.
2. Turn off the radio and connect it and PC with programming cable.
3. Install and run the software. Then turn on the radio. Use the software to set parameters of the radio.
4. For information of parameters setting, please view the HELP text of the software.

Programming Cable Required

### Key Function Programming

Programmed Key can be set as normal key (only one function) or long key & short key (two functions). Many operations including monitor, monitor momentary, squelch off, squelch off momentary, VOX, announce battery power and emergency alert through presetting.

Note:

Normal key can be programmed with only one function.

Long key & short key can be programmed with two functions.

Long Press Duration: The default is 1.5s.

Short Press Duration: The default is 0.5s.

The duration can be set by you according to your needs or habits.

Optional programming:

### **Monitor**

To turn on signaling squelch, press programmed key with a “beep” sound. Press the key again to quit with two “beeps”. This is to monitor signals that are inaudible due to the CTCSS/CDCSS squelch.

### **Monitor Momentary (only can be set as long key or normal key)**

Press and hold the programmed key to turn on signal squelch. Release it to quit this function. This is to monitor signals that are inaudible due to the CTCSS/CDCSS squelch at any time.

### **Squelch Momentary**

To turn on both squelch and signaling squelch, press programmed key with a “beep” sound. Press the key again to quit with two “beep” sounds. This is to receive weak signals and help adjust the volume when no signals are received.

### **Squelch off Momentary (only can be set as long key or short key)**

Press and hold the programmed key to turn on both squelch and signal squelch. Release it to quit turn off both of them. This is to receive weak signals and help adjust the volume when no signals are received.

### **Emergency Alert (only can be set as long key)**

Press and hold the programmed key until the radio enters emergency mode. You can choose local alarm, or sending ENI or background noise.

### **VOX**

VOX allows you to transmit with your normal voice without pressing PTT. VOX is turned on if you press the programmed key and hear a “beep”. Press the key again with two “beep” sounds to turn off VOX.

### **Announce Battery Power**

Press the programmed key, you will hear “Please charge battery”, “one”, “two”, three” to indicate the current battery level of very low, low, satisfactory, or high respectively. “3” means the battery power is full. Charge the battery if you hear “Please charge battery”.

**Scan**

The scan function should be preset by the PC programming. (The default setting of S channel is normal operating channel.)

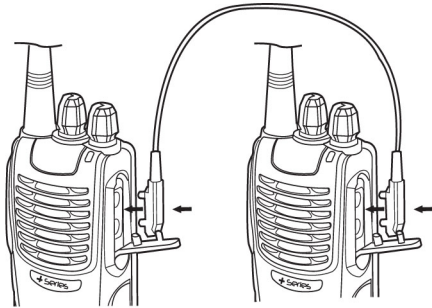
1. Rotate the channel knob to the S channel and the radio begins scanning. The indicator flashes green during scanning.
2. To stop scanning, rotate the channel knob to other channel.

**Two-Tone (encode & decode)**

This function can be preset by the PC programming. With this function, the radio can call corresponding radios.

1. Press and hold PTT, and press programmed key to transmit corresponding 2 Tone code on the channel.
2. A “beep” will be heard when the signal is received. And the indicator flashes until auto reset time ends.

## Wired Clone



1. Connect host radio and sub radio with Clone Cable. Make sure that the radios are turned off.
2. Press and hold programmed key on host radio, then turn on the host radio. The indicator flashes red twice, which means the host radio is ready for cloning.
3. Turn on sub radio as usual.
4. Press PTT on host radio, and the indicator flashes green twice, which means the Clone function of sub radio has been turned on. To turn off the Clone function of the sub radio, press PTT again and the indicator flashes red twice. (If you skip Step 4, the Clone function of sub radio is OFF.)
5. Press programmed key on host radio, and the indicator flashes red. The cloning begins. The indicator goes out when the cloning is finished. Otherwise, the indicator lights green if the cloning fails.

## Specification

### General

|                                 |  |
|---------------------------------|--|
| Frequency Range                 | VHF: 136~174MHz                        |
|                                 | UHF:430-470MHz: 400-440MHz: 470-512MHz |
| Channel Capacity                | 16 (15+S)                              |
| Channel Spacing                 | 25.0kHz / 12.5kHz                      |
| Frequency Stability             | ±2.5PPM                                |
| Operating Temperature           | -25~+55°C                              |
| Antenna Impedence               | 50Ω                                    |
| Operating Voltage               | 7.4V                                   |
| Dimension                       | (W×H×D) 2.165" × 4.37" × 1.26"         |
| Weight (with antenna & battery) | 232g                                   |
| Battery                         | 1300mAh(Li-ion Battery)                |

### Transmitter:

|                        |                       |
|------------------------|-----------------------|
| RF Power (H/L)         | UHF: 4W/1W VHF: 5W/1W |
| Modulation Type        | 16kΦF3E/ 8kΦF3E       |
| Modulation Limiting    | ±5kHz / ±2.5kHz       |
| FM Distortion          | <5%                   |
| Residential FM         | -45dB / -40dB         |
| Adjacent Channel Power | -70dB / -60dB         |
| Spurious & Harmonics   | ≤-36dBm               |

### Receiver:

|                                |                |
|--------------------------------|----------------|
| Sensitivity                    | 0.22uV/ 0.25uV |
| Adjacent Channel Selectivity   | 70dB/60dB      |
| Intermediation Reject Ratio    | 65dB           |
| Spurious Response Reject Ratio | 70dB           |
| S/N                            | 45dB/ 40dB     |
| Audio Power Output             | 600mW          |
| Audio Distortion               | ≤5%            |

## Warranty and Return Policy 2008 / 2009

Defects in material or workmanship under normal use and service, items will be repaired or replaced free of charge from 1 Year from date code on product. Simply contact your salesperson for repair or replacement.

Blackbox Radios warrants all products against **manufacturer's** defects as long as the product is still under warranty. The forgoing warranty is limited and is not applicable to: (i) normal wear and tear; (ii) defects or damage caused by misuse, accident (including without limitation collision, fire and the spillage of food or liquid), neglect, abuse, alteration, unusual stress, modification, improper or unauthorized repair, installation, alteration, wiring, or testing, improper storage, use in an unapproved device or if the serial number has been removed; (iii) use not in accordance with the documentation; and (iv) damage caused by the equipment with which the product is used. Visible physical damage invalidates warranty. Incomplete product kits will not be accepted for replacement or repair.

Shipment errors must be reported within **3 days** of receipt of goods in order to get replacements.

Blackbox Radios does not accept returns on custom orders. All custom orders are final. Items may only be returned for credit if they are unused, in original packaging and purchased within the last thirty (30) days. There will be a 20% restocking fee to ALL items returned for credit that meet the above stipulations. **Blackbox Radios does not issue refunds** and we reserve the right to not issue credits.

### Non-Warranty Repairs

Blackbox Radios standard labor rate is \$60.00 an hour with a minimum requirement of thirty minutes. This does not apply to water-damaged units. If a water-damaged unit is deemed repairable, the fee may be up to \$85.00 per unit. The cost of parts varies and is in addition to the labor chargers. Radio Programming fees are set at \$5.00 per unit. All goods repaired will require a signature for authorization to do the labor.

#### RETURN TO CUSTOMER (RTC ITEMS)

Items returned that are deemed "non manufacturers defect," have the date code missing, or are not within the proper warranty time-period may be repaired with a labor fee at the sole discretion of Blackbox Radios. Items deemed "RTC" are not covered under Blackbox Radios, warranty policy and the customer will be responsible for paying the shipping costs to return the products back to the customer. If the customer does not want to receive the RTC items and pay the shipping costs, Blackbox Radios will dispose of the products.

By returning a product for repair, the owner grants Blackbox Radios permission to open and disassemble the product as required for evaluation. In all cases, Blackbox Radios has sole responsibility for determining the cause and nature of failure, and Blackbox Radios determination with regard thereto shall be final.

Customers pay for shipping to and from Blackbox Radios, the cost of the non-warranty repair will require payment in the form of Visa, MasterCard, American Express or COD. Customers with open account status may be billed directly, if a purchase order for the repairs and shipping is issued. If the customer does not approve the repairs through issuing a purchase order, the customer will be responsible for paying the freight charges to ship the product back.



## **FCC NOTICE:**

**This device complies with Part 15 and Part 90 of the FCC Rules and is listed.**

Operational is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment generates RF energy and if not installed or used in accordance with the instructions, may cause harmful interference to radio communications and other devices . there is no guarantee that interference will not occur ,If this equipment does cause harmful interference which can be determined by turning the equipment on or off or transmitting momentarily ,the user is encouraged to try to correct the interference by one or more of the following methods:

by one or more of the following measures:

- Reorient or relocate the receiving antenna.  
Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit that is different from that to the receiver is connected.
- Consult the dealer or an experienced radio/TV/communications technician

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