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BLACK BOX GO! UHF Business Digital and Analog 2-Way Radio User Manual

Contents

BLACK BOX

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OVERVIEW

- 2 Slot SImplex
- MotoTRBO Tler II & Hytera Compatible
- IP56 Water Resistant
- 32 Channels
- 2,000 mAh Battery
- Motorola M1 Radlo Connector

GO Quick Start

Perform the following steps to assemble your handheld radio:

- Charge the battery.
- Install the battery.
- Install the antenna.
- Install the belt clip.
- Turn on the radio.
- Select a channel.
- Install your audio accessory (if needed).
- Adjust the volume.

Charging the Battery

The radio is powered by a Li-Ion battery. To protect the battery from damage and comply with the warranty conditions, you can use only the charger provided with the battery for charging. To maximize battery performance, it is recommended to charge the battery for 10 to 12 hours before the first use.

Installing the Battery

Align the battery with the battery slot on the rear side of the radio. Push the battery into the slot until it is fastened. Before removing the battery, turn off the radio first. Press the battery fastener, and then remove the battery.

Installing the Antenna

Turn off the radio, place the antenna into the installation hole, and turn the antenna clockwise. To remove the antenna, turn the antenna anticlockwise. Before removing the antenna, ensure that you have turned off the radio and removed the universal interface cover. To replace the antenna, use a specified antenna to replace the old one. Otherwise, your radio may be damaged.

Installing the Belt Clip

Align the screw holes on the belt clip with those on the rear side of the radio, and fasten the belt clip with screws.

Turning On the radio
Turn the volume/power knob clockwise until you hear a click sound. The radio gives a short beep sound, indicating that the radio is successfully turned on.

Selecting a Channel
Simply look at the knob with the numbers and rotate until you land onto the group channel you desire. You should also hear the Voice Enunciation through the speaker or earpiece of which channel you are on.

Installing an Audio Accessory
Remove the protective cover on the side of the radio and plug in your earpiece or headset.

Adjusting the Volume
Turn the volume knob clockwise to turn up the volume. To turn down the volume, turn the knob anticlockwise. Be careful if you are wearing an audio accessory!
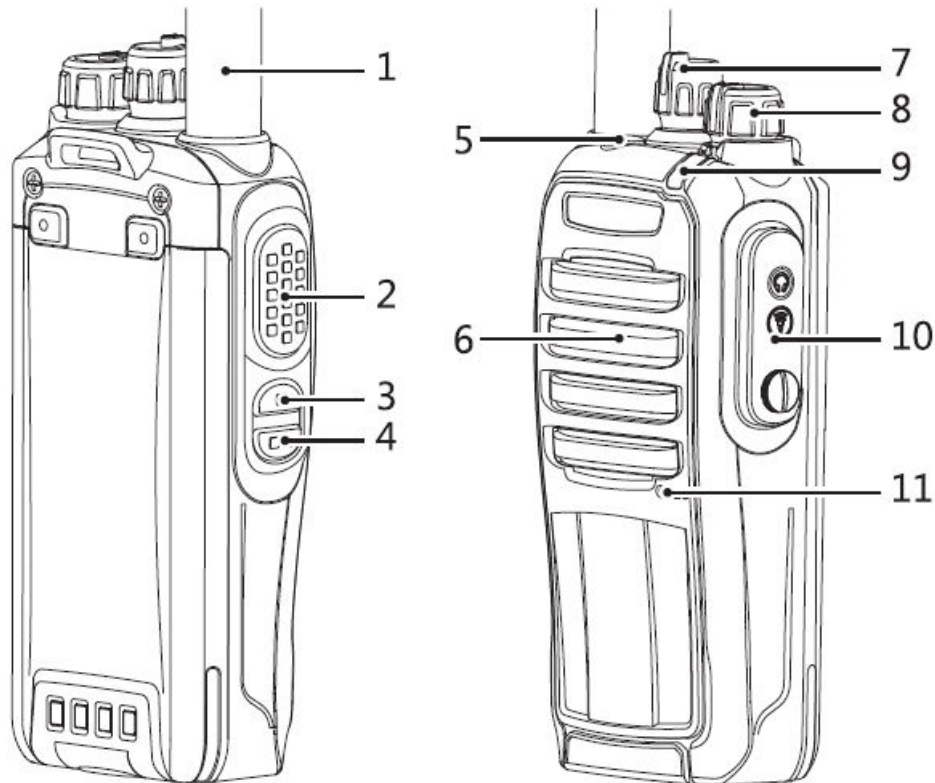
Radio Control

Please read the following carefully:

- radio control options
- Programmable buttons
- PTT button
- 2 Slot Simplex
- MotoRBO Tier II & Hytera Compatible
- IP56 Water Resistant
- 32 Channels
- 2,000 mAh Battery
- Motorola M1 Radio Connector

NO. Feature

1. Antenna
2. PTT button
3. Side button PF1
4. Side button PF2
5. Side button PF3
6. Speaker
7. Channel Selector Knob
8. Power / Volume Knob
9. LED Indicator
10. SP/MIC cover
11. Microphone

Note: The button marked with an asterisk means a programmable button.

Programmable Buttons

Your agent can set a programmable button to a shortcut button for a function or channel or call group in accordance with the duration for which the button is pressed:

- Press: means pressing a button and immediately releasing the button.
- **Note:** This radio can't press and hold the buttons to change the function.

Assignable radio Functions

- **Emergency call:** initiates or cancels an emergency alarm or call.
- **Monitoring:** monitors any activities in a selected analog channel.
- **One-press call:** initiates a predefined private call, group call, or short message by pressing one button.
- **Scanning:** enables or disables scanning.

- **VOX:** enables or disables the VOX function.
- **Zone:** changes the current zone of the radio. This radio has 2 groups.
- **Power level:** switches between transmitting power levels.
- **Kill** / **Stun:** Remote to close and forbid the radio.
- **Revive:** Remote to open and revive the radio.
- **Remote Monitor:** Remote to monitor the radio
- **Talk around:** Turn ON / OFF this function.
- **Radio check:** Check whether the target radio is in the working state.

PTT Button

Each channel can be configured as a digital channel.

- During a call, if you press the PTT button, the radio transmits signals to other radios in the call. Press and hold the PTT button to talk. Release the PTT button to listen to other members in the call. When you press the PTT button, the microphone is activated.
- If there is no existing call, you can press the PTT button to initiate a call (for details, refer to the Initiate a Call section). If the call admission tone function is activated, wait until the short prompt tone ends.
- During a call, if the "idle channel prompt" function is enabled (preprogrammed by your agent), when the target radio (that receives your call) releases the PTT button, you will hear a short prompt tone, indicating that the channel becomes idle, and you can respond.
- If the existing call is interrupted (for example, when you receive an emergency call), you will hear an idle channel prompt tone. You can disable the "idle channel prompt" function by disabling the tone/prompt function (for details,refer to the Enable or Disable the Tone/Prompt Function section).
- To switch between digital channels, turn the knob.

Status Indicators

You can learn about radio operation through the following: LED indicator. Prompt tone.
LED Indicator
The LED indicator indicates the operation of the radio.

- If the indicator is lit red, it indicates that the radio is transmitting signals, sending messages, encryption calling, or data.
- If the indicator is lit green, it indicates that the radio is being turned on, or receiving a call, messages, encryption calling, or data.
- If the indicator is lit orange, it indicates the radio is scanning.

NOTE: You can turn ON/OFF some LED indicators via programmed software: transmitting, receiving, scanning state, switch channel, turn on radio, carrier wave, call hang up.

Prompt Tone
Prompt tones can help you learn about the radio status or response to data receiving.

- **Digital mode private call prompt tone:** Press PTT, radio gives a "di" tone.

- **Digital mode group calls prompt tone:** Press PTT, radio gives a "di" tone.
- **Analog mode calls prompt tone:** Press PTT, radio doesn't give a "di" tone.
- **Call roger prompt tone:** Radio gives a "du" tone.
- **Keypad prompt tone:** Radio gives a "di" tone.
- **Turn on the radio prompt tone:** Radio gives a continuous tone.
- **Switch channel prompt tone:** Radio gives two "den" tones.
- **Forbid transmitting prompt tone:** Radio gives "den" tones continuously until the user releases the PTT to stop transmitting.
- **Low battery prompt tone:** The radio gives low battery tones continuously. You can program the time via software.

Receive and Initiate a Call

- You can use your Radio after learning how to configure the Radio.
- Get familiar with the basic call function as follows:
- Select a zone…
- Select a channel, a user ID, or a call group ID…
- Receive and respond to a call…
- Initiate a call…

Select a Zone
A zone defines a channel group. The Radio supports a maximum of two zones, and each zone supports a maximum of 16 channels.
Perform the following steps:

1. Press the pre-programmed zone button.
2. If you see the LED indicator flash green, it indicates that the Radio is local the zone 1. If you see theLED indicator flash red, it indicates that the Radio is local zone 2. Same time, Radio dial speak the local zone NO.

Select a Channel, a User ID, or a Call Group ID
After selecting a zone (if there are multiple zones), you can turn the channel selection knob to select a channel, a user ID, or a call group ID.
Receive and Respond to a Call
After selecting a channel, a user ID, or a call group ID, you can receive or respond to a call. When the Radio is transmitting signals, the LED indicator is lit red. When the Radio is receiving signals, the LED indicator is lit green.
Receive and Respond to a Group Call
To receive a call from a user group, you must configure the call group on the Radio.

1. When Radio receives the call, the LED indicator is lit green.
2. Hold the Radio vertically, and keep it about 1 to 2 inches (2.5 to 5.0 cm) away from your mouth. Press the PTT button to respond to the call. The LED indicator is lit red.
3. Release the PTT button to listen to other members in the call.
4. If no one talks within a specified period, the call ends.

Receive and Respond to a Private Call
A private call means a call that a single Radio initiates to another Radio. When you receive a private call, perform the following steps:

1. When Radio receives the call, the LED indicator is lit green.
2. Hold the Radio vertically, and keep it about 1 to 2 inches (2.5 to 5.0 cm) away from your mouth. Press the PTT button to respond to the call. The LED indicator is lit red.
3. Release the PTT button to listen to other members in the call.
4. If no one talks within a specified period, the call ends.

Receive a General Call
A general call means a call that a single Radio initiates to all the Radios on the same channel. A general call is used to issue an important announcement. When you receive a general call, perform the following step:

1. When Radio receives the call, Radio gives a prompt tone (If you activity this tones), and the LED indicator is lit green.
2. If no one talks within a specified period, the call ends.

Note:

1. You can't reply a general call.
2. When you receive a general call, if you switch to another channel, the Radio stops receiving the general call. During a general call, you cannot use any programmable button until the call ends.

Initiate a Call
You can use either of the following buttons to select a channel, a user ID, or a call group ID:

- Channel selection knob
- Pre-programmed button for a one-press call

Note: Radio has to activate the Encryption function on the channel, or else Radio can't transmit the Encryption data. Only matching encryption/ decryption devices will function.

Initiate a Call with the Channel Selection Knob Initiate a Group Call
To initiate a group call, you must join a call group on the Radio. Perform the following steps:

1. Turn the channel selection knob, and use an activated call group ID for selecting a channel.
2. Hold the Radio vertically, and keep it about 2-6 inches away from your mouth.
3. Press the PTT button to initiate a call. The LED indicator is lit red. Then speak into the microphone.
4. Release the PTT button to listen. When a target Radio responds, the LED indicator lights green.
5. If no one talks within a specified period, the call ends. Initiate a Private Call

Perform the following steps:

1. Turn the channel selection knob, and use an activated user ID for selecting a channel.
2. Hold the Radio vertically, and keep it about 1 to 2 inches (2.5 to 5.0 cm) away from your mouth.
3. Press the PTT button to initiate a call. The LED indicator is lit red. Then speak to the microphone.
4. Release the PTT button to listen. When the target Radio responds, the LED indicator is lit green.
5. If no one talks within a specified period, the call ends.

Initiate a General Call
This function enables you to transmit signals to all the users on the same channel. You must enable this function on your Radio before using this function.
Perform the following steps:

1. Turn the channel selection knob, and use an activated general call group ID for selecting a channel.
2. Hold the Radio vertically, and keep it about 1 to 2 inches (2.5 to 5.0 cm) away from your mouth.
3. Press the PTT button to initiate a call. The LED indicator is lit red. Then speak to the microphone.

Note:
Other users receiving the general call cannot respond to the call. Initiate a One-Press Group Call or Private Call The one-press call function enables you to call a predefined group ID or user ID by pressing one button. This function can be assigned to a press operation you can assign only one ID to one programmable button. There are multiple programmable buttons for the one-press call function. Perform the following steps:

1. Press a pre-programmed button to call a predefined group ID or user ID.
2. Hold the Radio vertically, and keep it about 1 to 2 inches (2.5 to 5.0 cm) away from your mouth.
3. Press the PTT button to initiate a call. The LED indicator is lit red. Then speak to the microphone.
4. Release the PTT button to listen. When a target Radio in the call responds, the LED indicator is lit green.
5. If no one talks within a specified period, the call ends. When a private call ends, you will hear a short prompt tone.

Advanced Functions

- You can use the following advanced functions:
- TDMA DMO 2 time slots
- Scan list…
- Scanning…
- SMS…
- Set the power level
- VOX
- Talk around
- Remote monitor
- Remote alarm
- Remote kill

TDMA DMO (Direct mode operation) 2 times slots
DMO 2 times slots will make one frequency point that can be used for two channels at the same time. It will save the frequency resources.

Scan List
You can create a scan list and assign it to a single channel or call group. The radio scans the channel or calls the group queue in the list on a cycle basis to check whether someone is speaking on the current channel. The Radio supports a maximum of 3 scan lists, and each list supports a maximum of 16 members.
Scanning
When you start scanning, the Radio scans the pre-programmed scan list on a cycle basis to check whether someone is speaking on the current channel. The LED indicator is flashing red.
Scanning modes
Automatic scanning (automatically): When you select a channel or call group for which automatic scanning is

enabled, the Radio automatically starts scanning.
Start and Stop Scanning
Perform the following steps:

1. Press the pre-programmed scan button. Or turn the channel selection knob to select a channel for which
   automatic scanning is enabled.
2. When scanning is started, the LED indicator is flashing orange.

When scanning is stopped, the LED indicator is not lit.
When the Radio detects an active channel The Radio stops at the detected active channel or call group. The
Radio stays on this channel for a pre-programmed duration call "idle time".
Perform the following steps:

1. Within idle time, hold the Radio vertically, and keep it about 1 to 2 inches (2.5 to 5.0 cm) away from your mouth.
   Press the PTT button within the idle time. The LED indicator is lit red..
2. Release the PTT button to listen.
3. If you do not respond within the idle time, the Radio continues to scan other channels or call groups

Send a Predefined Short Message
You can use a pre-programmed button to send a short message predefined by your agent. This Radio can pre-
programmed a maximum of 5 messages.
Perform the following steps:

1. Press a pre-programmed button to send a predefined short message to a predefined ID.
2. The LED indicator is lit red.
3. If the Radio gives two chirps, it indicates that the message is successfully sent. If the Radio gives a low-pitch
   prompt tone, it indicates that the message fails to be sent.

Set the Power Level
You can set the power level for each channel. If a high power level is set, the Radio can communicate with Radios
at a far distance. If a low power level is set, the Radio can communicate only with Radios at a close distance.
Perform the following steps:

1. Press the pre-programmed power level button.
2. If you just hear a "di" prompt tone, it indicates that the Radio operates at a high power level. If you hear two "di"
   prompt tones, it indicates that the Radio operates at a low power level.

Enable or Disable the VOX Function
This function enables you to initiate a hands-free call. The Radio automatically transmits signals within the
specified period, regardless of when the microphone with the VOX function detects voice.
Note:
The following operations are limited to the Radios on which the VOX function is activated. For details, contact your
agent or system administrator.
Perform the following steps:

1. Press the pre-programmable VOX button to enable or disable the VOX function.
2. Speak to the microphone clearly.

Talk around

When the repeater doesn't work, or without the communication range of the repeater, but within the communication range of other Radios, you can activate this function to communicate with other Radios.
Perform the following steps:
Press the pre-programmable talk around button to switch the mode between the repeater and talk around.

FCC Caution

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. This device complies with part 15 of the FCC Rules. Operation 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.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

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

This radio is designed for and classified as "Occupational/Controlled Use Only", meaning it must be used only during the course of employment by individuals aware of the hazards, and the ways to minimize such hazards; NOT intended for use in an General population/uncontrolled environment. DO NOT operate the radio without a proper antenna attached, as this may damage the radio and may also cause you to exceed RF exposure limits. Aproper antenna is the antenna supplied with this radio by the manufacturer or an antenna specifically authorized by the manufacturer for use with this radio. DO NOT transmit for more than 50% of total radio use time, more than 50% of the time can cause RF exposure compliance requirements to be exceeded. This transmitter may operate with the antenna(s) documented in this filing in Push-to-Talk and body-worn configurations. RF exposure compliance is limited to the specific belt-clip and accessory configurations as documented in this filing and the separation distance between the user and the device or its antenna shall be at least 2.5 cm.

Frequency	136-174 mhz
Channel Capacity	32
Normal Operating Voltage	7.4V
Operating Temperature	-25℃~+60℃
Store Temperature	-40℃~+85℃
Weight	9. 5 oz With Standard Li-ion battery
Dimensions :H x W x D(mm)	113.5X54X33.5 With Standard Li-ion battery
Dust-protection and water resistant	IP56
Battery Life in 5/5/90 Operating Mode	
2,000 mAh Standard Li-ion battery	Analog: 14hrs Digital:18 hrs

Receiver

Frequency	136-174 mhz
Channel Spacing	12.5KHz
Frequemcy Stability	+/- 1.5ppm
Analog Sensitivity	0.28uV/-116dBm(20dB SINAD) 0.22uV/-120dBm(Type)
Digital Sensitivity	0.28uV/-117.4dBm(BER5%) 0.5uV/-110dBm(BER1%)
Intermodulation	TIA603C: 65dB ETSI: 60dB
Adjacent Channel Selectivity	TIA603C: 60dB@12.5KHz ETSI: 60dB@12.5KHz
Co-Channel rejection	12dB@12.5KHz
Spurious Response rejection	TIA603C: 65dB ETSI: 65dB
Conducted spurious emission	-57dBm@<1GHz, -47dBm@>1GHz
Bioking	84dB
Rated Audio Power	1W
Audio Response	+1dB~-3dB
Rated Audio Distortion	3%(Type)

Transmitter

Frequency	136-174 mhz
Channel Spacing	12.5KHz
Frequency Stability	+/- 1.5ppm
Power	Low Power: 1W, High Power: 5W
Hum and Noise	-40dB@12.5KHz
Conducted,radiated spurious emission	-36dBm@<1GHz, -30dBm@>1GHz
Adjacent Channel Power	-60dB@12.5KHz
Adjacent Transient Channel Power	-50dB@12.5KHz
FM Modulation Mode	12.5KHz: 11K0F3E
4FSK Digital Mode	12.5KHz(data only):7K60FXD 12.5KHz(data+voicc):7k60FXE
Modulation Maximum Deviation	2.5KHz@12.5KHz
Nonactive Slot Power	-57dB
Audio Response	+1dB~-3dB
Audio Distortion	3%(Type)
Digital Protocol	ETSI TS 102 361-1,-2,-3
Vocoder Type	AMBE+2™

Documents / Resources

USER MANUAL	**BLACK BOX GO! UHF Business Digital and Analog 2-Way Radio** [pdf] User Manual U7GGOVHF, GO UHF Business Digital and Analog 2-Way Radio, Business Digital and Analog 2-Way Radio, Digital and Analog 2-Way Radio, 2-Way Radio, Radio