

## **User Safety Information**

For safe and effective use of this walkie-talkie, please read the following safety information.

1. Keep the walkie-talkie and all its parts and accessories out of the reach of children.
2. Do not attempt to disassemble the walkie-talkie. Handling by unauthorized personnel may damage the walkie-talkie.
3. Use the provided battery pack and charger to avoid damaging the walkie-talkie.
4. Use the provided antenna to avoid shortening the communication range.
5. Do not expose the walkie-talkie to sunlight for extended periods or in overheated areas.
6. Do not store the walkie-talkie in dusty or humid areas.
7. Do not use strong chemicals, detergents, or strong cleaning agents to clean the walkie-talkie.
8. Do not transmit without an antenna installed.
9. If you notice any unusual odor or smoke emitting from the walkie-talkie, immediately turn off the power and contact your dealer.
10. Do not short-circuit the battery terminals or dispose of the battery in fire.

## **Notice**

All of the above recommendations apply equally to your radio and its accessories. If they are not functioning properly, please contact your dealer immediately.

We can not guarantee the safety or operation of your radio if accessories or parts not manufactured or sold by us are used.

## **Instructions**

### **1. Installing and Removing the Battery Pack**

Installation: Align the battery pack with the back of the radio, then push the battery pack and radio upward until the release latch on the radio base engages.

Removal: To remove the battery pack, push down on the release latch on the bottom of the radio and slide the battery pack out of the radio.

### **2. Using the Charger**

Plug the adapter into the charger base. Connect the adapter to a 220V to 110V outlet. The green light will flash once. Place the battery pack or radio with the battery pack attached into the charger base. The charger light will flash once, then turn red. When fully charged, it will turn green.

### **3. Installing the Antenna**

Connect the antenna to the radio antenna head. Secure the antenna base to the radio, rotating the antenna counterclockwise until secure.

### **4. Installing the Back Clip**

Attach the back clip to the back cover of the radio.

## **Operating Instruction**

### **Power On/Off**

Turn the Power/Volume knob clockwise to turn on the radio. You will hear a tone and the current channel number will be announced. To turn off the radio, turn the Power/Volume knob counterclockwise until you hear a click.

### **Volume Adjustment**

Turn the Power/Volume knob clockwise to increase the volume; turn it counterclockwise to decrease it.

### **Channel Selection**

Turn the channel switch to select the desired channel. If the voice announcement function is enabled, the current channel number will be announced.

## PTT Buttons 1 and 2

To transmit, press this button and speak into the microphone, keeping your mouth 3 to 8 cm away from the radio. Release this button to receive.

## Side Button Functions

Side Buttons 1 and 2(short and long press) can be customized using the radio programming software. Functions include: None, Scan, FM Radio, Alarm, Zone+, Zone-, Monitor, and Power Switch. You can customize your desired functions using the radio programming software.

## Key Operation

|                    |                                                                                                                              |
|--------------------|------------------------------------------------------------------------------------------------------------------------------|
| <b>MENU</b>        | Menu Select/Confirm key:Activates menu mode and selects items within the menu.                                               |
| <b>VFO/MR</b>      | Short Press the VFO/MR key to switch between frequencies and channel modes. This switch only works when a channel is active. |
| <b>▲ Up Key</b>    | Press and hold for more than 2 seconds for fast forward movement; changes scan direction in scan mode.                       |
| <b>▼ Down Key</b>  | Press and hold for more than 2 seconds for fast backward movement; changes scan direction in scan mode.                      |
| <b>◀ Left Key</b>  | Press and hold for more than 2 seconds for fast forward movement; changes scan direction in scan mode.                       |
| <b>▶ Right Key</b> | Press and hold for more than 2 seconds for fast backward movement;changes scan direction in scan mode.                       |
| <b>EXIT</b>        | Exit/Clear Key(clears entered information in input mode.)                                                                    |
| <b>A/B Key</b>     | Press and hold the A/B key to switch between operating frequency bands.                                                      |
| <b>0-9 Key</b>     | Used to edit text messages and set frequencies.                                                                              |
| <b>#SCAN Key</b>   | Press and hold to enter contact settings. Press and hold to enter scan mode.                                                 |
| <b>*Key</b>        | Press and hold the [*] key to toggle the on/off key.                                                                         |

## Low Battery Warning

The low battery warning alerts you when the battery needs to be charged or replaced. If the radio is operating with low battery, a voice prompt will sound every 10 seconds. If the voice announcement function is disabled, a "beep, beep, beep" sound will sound, and the indicator light will flash red, prompting the user to replace or recharge the battery pack.

## Scan Add/Delete

This radio features the Scan Add and Delete functions, allowing you to easily monitor calls on desired channels. This function can be programmed using computer programming software. Simply click "Add" or "Delete" for the corresponding channel under the "Scan Add" column.

**Note:** Clicking "Add" for a channel scan indicates that the radio will scan that channel when it enters the scan state. Clicking "Delete" for a channel scan indicates that the radio will not scan that channel when it enters the scan state. (The scanning function can only be enabled if two or more optional functions are checked and Scan is selected in the key settings.)

## Alarm

This unit defaults to remote alarm mode, which transmits a signal on the transmit frequency. Other devices using the same frequency and sub-audio frequency receive the alarm signal, alerting the receiver to urgent information such as the transmitter's need for assistance.

Specific operation: Set the side button to Alarm. A short press of this button will directly enter alarm mode, with a continuous alarm tone. To exit alarm mode, simply press the [PTT] button.

### **Programming Protect**

It is for protecting your frequency and sub-audio frequency data from others and protecting your and your customers' information. Specific settings can be configured using the programming software.

### **Channel Group**

This unit features channel grouping. The program software can be used to divide the channel into 16 groups. Groups are typically switched using the side buttons 1 and 2 (Zone+, Zone-). Each group has 16 fixed channels, and channels are switched by rotating the channel potentiometer.

### **End Tone Elimination**

When communicating with other radios, if there's a tail tone after receiving a signal, you can select 55,120, or 180 Hz to eliminate it (most radios on the market use these three tones).

### **TOT**

The timer prevents one person from transmitting too long and using the same channel. The timer can be set via the programming software (off, 30 seconds, 60 seconds, 90 seconds, etc.). If you transmit continuously until the timer expires, the radio will stop transmitting and emit a long warning tone. To stop the warning tone, release the [PTT] switch. Press the [PTT] switch again to resume transmitting.

### **Menu Description**

Press the [MENU] button to enter the menu and the [EXIT] button to exit each level. The menu has 7 options:

#### **I. Overall Settings**

1. Squelch Level: 0~9 Levels
2. Power Saving Ratio: Off, 1:1, 1:2, 1:3
3. Voice Announcement: On/Off
4. Menu Language: Chinese/English
5. Backlight Selection: Always On, Auto 10s, Auto 20s, Auto 30s
6. Prompt Tone: On/Off
7. Key Lock Setting: Manual/Auto
8. Transmit Timeout: OFF, 30S, 60S, 90S, 120S, 150S, 180S, 210S
9. Channel Name: On/Off
10. Time Zone: UTC+5:00...UTC+12:00, UTC-1:00...UTC-12:00
11. Step Frequency: 2.5K, 5K, 6.25K, 10K, 12.5K, 20K, 25K, 50K, 100K
12. Operating Mode: Public Network Only, Digital Only, Dual Mode
13. Walkie-Talkie Prompt Tone: On/Off
14. Repeater: On/Off
15. Repeater Audio: On/Off
16. Dual Watch: On/Off
17. PF1 Short Press: None, Scan, Radio, Alarm, Zone +, Zone -, Monitor, Power Switch
18. PF1 Long Press: None, Scan, Radio, Alarm, Zone +, Zone -, Monitor, Power Switch
19. PF2 Short Press: None, Scan, Radio, Alarm, Zone +, Zone -, Monitor, Power Switch
20. PF2 Long Press: None, Scan, Radio, Alarm, Zone +, Zone -, Monitor, Power Switch

#### **II. Channel Settings**

- 1: Channel List

- a:View
- b>Edit
  - b1:Channel Type:Analog,Digital
  - b2:Receive Frequency
  - b3:Transmit Frequency
  - b4:Power:Low,Medium,High
  - b5:Offline On/Off
  - b6:Busy Lock On/Off
  - b7:Receive Mute Code
    - (Digital:Color Code 0-15)
  - b8:Transmit Mute Code
    - (Digital:Time Slots 1 and 2)
  - b9:Wideband and Narrowband
    - (Digital:Receive Group List:None, Group 1,Group 2,Group 3,Group 4)
  - b10:Digital:Transmit Contacts
  - b11:Digital:Voice Encryption
- c>Delete

## 2:VFO A

## 3:VFO B

- a:View
- b>Edit
  - b1:Channel Type: Analog, Digital
  - b2:Receiv Frequency
  - b3:Transmit Frequency
  - b4:Power: Low, Medium, High
  - b5:Offline On/Off
  - b6:Busy Lock On/Off
  - b7:Receive Mute Code
    - (Digital: Color Code 0-15)
  - b8:Transmit Mute Code
    - (Digital: Time Slots 1 and 2)
  - b9:Broadband/Narrowband
    - (Digital: Receive Group List: None, Group 1, Group 2, Group 3, Group 4)
  - b10:Digital: Transmit Contact
  - b11:Digital: Voice Encryption

## 4:Create New Channel

### III.Contacts

#### 1.Contact List

- a: View
- b: Send Message

c: Edit   Alias   Number   Save

d: Supplementary Services   Activate   Remote Kill   Remote Monitoring

e: Delete

## 2.Create Contact

2.1: Type: Individual Call, Group Call

2.2: Alias

2.3: Number

2.4: Save

## 3.View DMR ID

### IV.Call Log

1)Dialed      Calls List    Delete All

2)Received    Calls List    Delete All

3)Missed      Calls List    Delete All

### V.Short Messages

1)Create

2)Outbox

3)Inbox

### VI.Unit Information

View the serial number, date, and firmware version.

### Public Network Mode Settings

1. Settings (Same as Overall Settings)

2. Group Selection

3. Member Selection

4. Device Information (IMEI Number)

### Sub-Audio Tone

This radio features 50 standard analog sub-audio tone modules, plus non-standard sub-audio tones within the range of 60.0 to 260 Hz, which can be entered using the numeric keypad. It also features 105 digital sub-audio tones, plus non-standard digital sub-audio tones within the range of D000 to D777, which can be entered using the numeric keypad (configurable via the computer programming software).

Some channels may have pre-set QT/DQT signal codes. The QT/DQT signal is a sub-audible tone that allows you to ignore (not listen to) calls from third parties using the same channel.

When you receive a QT/DQT signal that is different from the one configured on your radio, you will not hear it. Similarly, your transmitted signals can only be heard by those whose QT/DQT signals match the one configured on your radio.

**Note:** While using a QT/DQT sub-audio tone can protect you from unwanted calls, it does not guarantee that your calls are private.

### Voice Encryption Explained

There are three types of voice encryption: ARC (10-digit encryption), AES128 (32-bit encryption), and AES256 (64-bit encryption). A total of 32 encryption groups can be configured. To encrypt voice, select the desired channel and click More on the far right to enter the settings interface. Once there, find Voice Encryption and select the 32 digits corresponding to the 32 encrypted data groups.

## **Private Calls**

1. Click "Basic Settings" on the left side of the programming software. In the Settings screen, select your local ID. The corresponding call sign will automatically appear.
2. Click "Contacts" on the left side to enter the interface. Click Add. Set the call type to Individual Call and confirm to close the pop-up window. Click "More" on the right side of the channel you want to set. In "Transmit Contact," select the contact name (e.g., CALL1) in the "Transmit Contact" field. Click Confirm to close the pop-up window and write the data.
3. On the other device you want to call individually, click "Basic Settings" on the left side of the programming software. In the Settings screen, select your local ID. The corresponding call sign will automatically appear. Click "Contacts" on the left to enter the interface, then click Add. Set the call type to Individual Call and confirm to dismiss the pop-up window. Click "More" on the right next to the channel you want to set to enter the interface. In "Sending Contacts," select the contact's name and code, such as CALL2. Click Confirm to close the pop-up window and write the data.

## **Group Call**

1. Open the frequency programming software and click "Contacts" on the left to enter the interface. Click Add to add as many members as you want, change the call type to Group Call, and click Confirm to dismiss the pop-up window. Click the Receiving Group list and select the group you want to join, such as Group Call 1. In the "Available Members" list, check the members you want to join. These members will automatically appear in the "Selected Members" list. Only when they are in the same "Selected Members" list can they call each other. Click Confirm to dismiss the pop-up window.
2. Click "More" on the right next to the channel you want to set. In "Transmit Contact," select any contact name, such as CALL1. In "Receiving Group," select the group you want to join. Click Confirm to close the pop-up window and write the data.

## **All Call**

Open the programming software. Click "Contacts" on the left, set the call type to All Call, and click Confirm to close the pop-up window. Click "More" on the right next to the channel you want to set. In "Transmit Contact," select All call. Click Confirm to close the pop-up window and write the data you've configured. Enter the data to complete the configuration.

## Technical Specification

### General Specification

|                     |                                           |
|---------------------|-------------------------------------------|
| Frequency range     | POC+UHF:400-470MHz<br>LTE Band 2/4/5/7/66 |
| Channel capacity    | 16channel                                 |
| Channel space       | 12.5KHz                                   |
| Voltage             | 7.4V                                      |
| Battery type        | Li-ion battery                            |
| Working temperature | -30℃~+60℃                                 |
| Antenna impedance   | 50Ω                                       |
| Audio power         | ≥500mW                                    |
| Dimension           | 135×55×33mm (Antenna not included)        |

### Receiver

|                                   |                            |
|-----------------------------------|----------------------------|
| Analog sensitivity                | 0.35μV/-116dBm (20dB SINA) |
|                                   | 0.22μV/-120dBm (Type)      |
| Digital sensitivity               | 0.3μV/-117.4dBm (BER 5%)   |
|                                   | 0.7μV/-110dBm (BER 1%)     |
| Co channel interference rejection | ≥-12dB                     |
| Channel selectivity               | TIA603C:65dB ETS1:60dB     |
| Response suppression              | TIA603C:75dB ETS1:70dB     |
| Audio output power                | ≥500mW                     |
| Audio distortion                  | ≤3% (Type)                 |
| Audio response                    | =1dB-3dB                   |

### Transmitter

|                                |                                 |
|--------------------------------|---------------------------------|
| TX power                       | HI:5W                           |
|                                | MID:3W                          |
|                                | LO:1W                           |
| Frequency stability            | ±1.0ppm                         |
| Ad-channel power               | 60dBm@12.5KHz                   |
| FM modulation                  | 12.5KHz@11KOF3E                 |
| Modulation Deviation           | 2.5KHz                          |
| Digital Protocol               | ETSITS 102361-1-2-3             |
| Vocoder Type                   | DVSI                            |
| Modulation BER(Bit Error Rate) | ≤5%                             |
| 4FSK Digital Mode              | 12.5KHz (Only digital):7K60FXD  |
|                                | 12.5KHz (Digital+voice):7K60EXE |

### Announce

we endeavors to achieve the accuracy and completeness of this manual, but it is still not perfect for any possible omissions or printing errors. All the above is subject to be updated without prior notice.

## **FCC Warning Statement**

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 condition that this device does not cause harmful interference.

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 including received 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 receiver.
- Connect the equipment into 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.

SAR tests are conducted using standard operating positions accepted by FCC with the device transmitting at its highest certified power level in all tested frequency bands, although the SAR is determined at the highest certified power level, the actual SAR level of the device while operating can be well below the maximum value. Before a new model is available for sale to the public, it must be tested and certified to the FCC that it does not exceed the exposure limit established by the FCC. Tests for each product are performed in positions and locations as required by the FCC. For body worn operation, this device has been tested and meets the FCC RF exposure guidelines when used with and accessory designated for this product or when used with and accessory that contains no metal. To maintain compliance with FCC RF exposure guidelines, hold the transmitter and antenna at least 1 inch (2.5 centimeters) from your face and speak in a normal voice, with the antenna pointed up and away from the face.

**WARNING:** MODIFICATION OF THIS DEVICE TO RECEIVE CELLULAR RADIOTELEPHONE SERVICE SIGNALS IS PROHIBITED UNDER FCC RULES AND FEDERAL LAW.