

**Qixiang Electron Science & Technology Co., Ltd.**  
**[www.qxdz.cn](http://www.qxdz.cn)**

# **D868**

## **USER'S MANUAL**

# THANK YOU!

Thank you very much for choosing our transceiver. The transceivers provide you with reliable, clear and efficient communication service.

This transceiver introduces innovative DMR digital processing system to achieve high-fidelity voice processing with multiple groups, communication encryption, call security, great stability and reliability.

This transceiver includes both analog and DMR digital communication with CTCSS/DCS encode/decode function. It can do private call, group call, all-call and multi-call type digital communication. The D868 is a cost-effective, Multi-functional, professional DMR digital transceiver . We are convinced that you will be satisfied with this transceiver's quality and functions. For your full comprehension of the various functions and maintenance, please read the user manual before use.

User manual Applied to:

D868 VHF FM Transceiver (standard)

## SAFETY TRAINING INFORMATION



our Qixiang Electron Science& Technology Co., Ltd radio generators RF electromagnetic during transmit mode. This radio is designed for and classified as "Occupational 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. This radio is NOT intended for use by the "General Population" in an uncontrolled environment. This radio has been tested and complies with the FCC RF exposure limits for "Occupational Use Only". In addition, our Qixiang Electron Science& Technology Co., Ltd radio complies with the following Standards and Guidelines with regard to RF energy and electromagnetic energy levels and evaluation of such levels for exposure to humans:

- IEEE Std. 1528:2013 and KDB447498, Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields.
- American National Standards Institute (C95.1-1992), IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz.
- American National Standards Institute (C95.3-1992), IEEE Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields- RF and Microwave.



The information listed above provides the user with the information needed to make him or her aware of RF exposure, and what to do to assure that this radio operates with the FCC RF exposure limits of this radio.

## Electromagnetic Interference/Compatibility

During transmissions, Qixiang Electron Science& Technology Co., Ltd radio generates RF energy that can possibly cause interference with other devices or systems. To avoid such interference, turn off the radio in areas where signs are posted to do so. DO NOT operate the transmitter in areas that are sensitive to electromagnetic radiation such as hospitals, aircraft, and blasting sites.

## Occupational/Controlled Use

The radio transmitter is used in situations in which persons are exposed as consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure.

## Attention:

This radio complies with IEEE and ICNIRP exposure limits for occupational/controlled RF exposure environment at operating duty factors of up to 50% and is authorized by the FCC for occupational use only. An appropriate warning label is affixed to all units. In order to comply with RF exposure requirements, a minimum distance of 2.5cm must be maintained when held-to-face, and body-worn operations are restricted to the approved original accessories (belt clip). Do not use this device when antenna shows obvious damages

This product is compliance to FCC RF Exposure requirements and refers to FCC website <https://apps.fcc.gov/oetcf/eas/reports/GenericSearch.cfm> search for FCC ID:T4KD868V to gain further information include SAR Values.

# SAFETY INFORMATION FOR USER

The transceiver is excellently designed with advanced technology. Please observe the following precautions to perform your obligation, prevent personal injury and ensure the safety of transceiver usage.

1. Keep the transceiver and accessories away from children.
2. Please do not try to open or modify the transceiver without permission, non-professionals process may also cause damage.
3. Please use assorted battery and charger to avoid damage.
4. Please use assorted antenna to ensure the communication distance.
5. Please do not expose the transceiver to long period of direct sunlight, nor place it close to heat appliances.
6. Please do not put the transceiver in excessively dusty or humid areas.
7. Do not use harsh chemicals, cleaning solvents to clean the transceiver.
8. Do not transmit without antenna.
9. When using this transceiver, we recommend transmitting for 1 minute then receiving for 4 minutes. Continuous transmitting for long time or working in high power will heat the back of the transceiver. Do not place the transceiver's hot back close to any surface of plastic.
10. If any abnormal odor or smoke detected coming from the transceiver, turn off the power and take off the battery pack and its case. Then contact local dealers.
11. We and our distributors will offer safety/RF exposure trainings to the users after purchasing the

## **ATTENTION:**

**All tips above apply to accessories of your transceiver. If any device can not work normally, please contact local dealers.**

**If you use any accessories made by other companies, our Company does not guarantee the operability and safety of the transceiver.**

## ◦ CONTENTS

|                                                     |           |
|-----------------------------------------------------|-----------|
| <b>UNPACKING .....</b>                              | <b>1</b>  |
| Supplied Accessories .....                          | 1         |
| <b>STANDARD ACCESSORIES.....</b>                    | <b>2</b>  |
| Standard Accessories .....                          | 2         |
| <b>BATTERY INFORMATION .....</b>                    | <b>3</b>  |
| Charging Operation.....                             | 3         |
| Charger Applied .....                               | 3         |
| Notice for Charging Battery.....                    | 3         |
| How to Charge .....                                 | 4         |
| Normal Charging Tips .....                          | 6         |
| How to Store the Battery.....                       | 6         |
| <b>PREPARATION .....</b>                            | <b>8</b>  |
| Installing / Removing the Battery .....             | 8         |
| Installing / Removing the Antenna .....             | 8         |
| Installing / Removing the Belt Clip .....           | 9         |
| Installing the Additional Speaker/ Microphone ..... | 9         |
| Installing/ Removing the Hand Strap .....           | 10        |
| <b>GETTING ACQUAINTED.....</b>                      | <b>11</b> |
| <b>SUMMARY .....</b>                                | <b>14</b> |
| Power on the radio.....                             | 14        |

## ◦ CONTENTS

|                                                                  |    |
|------------------------------------------------------------------|----|
| Adjust Volume .....                                              | 14 |
| LED Indicator .....                                              | 14 |
| Alert Tone .....                                                 | 14 |
| Receive and make a digital call .....                            | 15 |
| Selecting a zone .....                                           | 15 |
| Selecting a Radio Channel, Subscriber ID, or Group ID .....      | 15 |
| Receiving and Responding to a Radio Call .....                   | 15 |
| Receiving and Responding to a Group Call .....                   | 15 |
| Receiving and Responding to a Private Call .....                 | 16 |
| Receiving an All Call .....                                      | 17 |
| Making a Radio Call .....                                        | 17 |
| Making a Group Call .....                                        | 17 |
| Making a Private Call .....                                      | 18 |
| Making a All Call .....                                          | 18 |
| Making a Group or Private Call with the One Touch Call key ..... | 19 |
| Text Message setup .....                                         | 19 |
| Sending preset Text Message .....                                | 19 |
| Encryption On/Off .....                                          | 20 |
| Digital Emergency Alarm .....                                    | 20 |
| Lone Work .....                                                  | 21 |

## ◦ CONTENTS

|                                                                        |           |
|------------------------------------------------------------------------|-----------|
| Scan .....                                                             | 21        |
| Scan lists .....                                                       | 21        |
| Scan .....                                                             | 21        |
| Starting and stopping Scan .....                                       | 22        |
| Priority Scan .....                                                    | 22        |
| Responding to a call during scan .....                                 | 22        |
| Setting .....                                                          | 23        |
| Setting the Squelch Level .....                                        | 23        |
| Setting the Power Level .....                                          | 23        |
| Turning the Voice Operating Transmission (VOX) Feature On or Off ..... | 24        |
| Turn on/ off radio tune/ alert tone. ....                              | 24        |
| Battery Capacity Enquiry .....                                         | 25        |
| <b>TROUBLE SHOOTING GUIDE.....</b>                                     | <b>26</b> |
| <b>TECHNICAL SPECIFICATIONS .....</b>                                  | <b>27</b> |

## ◦ UNPACKING

Carefully unpack the transceiver. We recommend you to identify the items listed in the following table before discarding the packing material. If any items are missing or have been damaged during shipment, please contact your dealer immediately.

### 《《 Supplied Accessories

| Item                | Number                | Quantity |
|---------------------|-----------------------|----------|
| Antenna             | QA13V(136-174MHz) etc | 1        |
| Li-ion Battery Pack | QB-44L                | 1        |
| Battery Charger     | QBC-44L               | 1        |
| AC Adaptor          | QPS-01                | 1        |
| Belt Clip           | BC09                  | 1        |
| Hand Strap          | GS01                  | 1        |
| Instruction Manual  |                       | 1        |

## ◦ STANDARD ACCESSORIES

### ((( Standard Accessories



Antenna\*1  
QA13V (136-174MHz)



Li-ion Battery Pack  
(2000mAh) QB-44L



Charger  
QBC-44L



AC Adaptor  
(12V/500mA) QPS-01



Belt Clip  
BC09



Hand Strap  
GS01



Instruction  
Manual

**\* Note: For frequency band of antenna, please refer to label indicated in the bottom of the antenna.**

**\* Note: Car Charger and QBC-44L Charger should be used together.**

## ◦ BATTERY INFORMATION

### ((( Charging Operation

The battery pack is not charged at the factory; please charge it before use.

Charging the battery pack for the first time or after extended storage (more than 2 months) may not bring the battery pack to its normal operating capacity. The peak operating capacity of the battery will be reached after two or three charge/discharge cycles. The battery pack life is over when its operating time decreases even though it is fully and correctly charged and should be replaced.

### ((( Charger Applied

Please use the specific charger provided by our company. Other chargers may cause explosion and personal injury. After installing the battery pack, if the radio displays low battery with red flashing lamp or voice prompt, please charge the battery.

### ((( Notice for Charging Battery

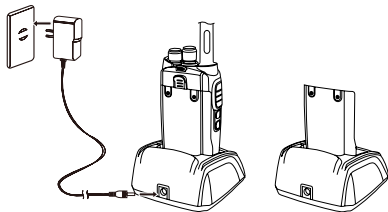
- ▼ Do not short the battery terminals or throw the battery into fire. Never attempt to remove the casing from the battery pack, we show no responsibility on any results caused by modifying freely without permission of our factory.
- ▼ The ambient temperature should be between 5°C and 40°C while charging is in progress. Charging outside this range may not fully charge the battery.
- ▼ Always switch OFF the transceiver before charging, otherwise it will interfere with correct charging.
- ▼ To insure correct charging, do not cut off the power or take out the battery during charging.
- ▼ Do not recharge the battery pack if it is already fully charged. This may shorten the life of the battery pack or damage the battery pack.
- ▼ Do not charge the battery or transceiver if it is damp. Dry it before charging to avoid danger.

## ◦ BATTERY INFORMATION

**WARNING:** If the battery terminals short circuit, it will generate a lot of heat and possibly a fire. When using or storing the radio (or just the battery), keep keys and other metal objects away from the battery terminal contacts.

### 《《 How to Charge

1. Plug the AC adapter into the AC outlet, and then plug the cable of the AC adapter into the DC jack located on the back of the charger. The indicator lights orange (1s) and then goes out indicating it is ready to charge.
2. Plug the battery or transceiver equipped with battery into the charger. Make sure that the battery terminals are in contact with the charging terminals well. The indicator light turns to twinkling red, meaning pre-charging begins.
3. After pre-charging for about 5 minutes, the indicator light will stop twinkling, meaning charging begins.
4. It takes approximately 4 hours to fully charge the battery. When the lamp lights green, the charging is finished. Remove the battery or the transceiver equipped with battery from socket.



## ◦ BATTERY INFORMATION

**NOTE:** When charging a power-on transceiver equipped with battery, the indicating lamp will not turn into green to show the fully charged status. Only when the transceiver is switched off, can the lamp indicate normally. The transceiver consumes energy when it is power-on, and the charger can not detect the voltage when the battery has been fully charged. So the charger will charge battery constant voltage and fail to indicate correctly whether the battery has been charged fully.

### 5. Charging Process

| Charging Status                                            | Indicator Status                       |
|------------------------------------------------------------|----------------------------------------|
| Standby (Self-examine lights orange 1second when power on) | None                                   |
| Pre-charging (Pre-charging stage)                          | Red light twinkles for about 5 minutes |
| Charging (Charge in a constant current)                    | Lights red for about 4 hours           |
| Fully charged (Charge in a constant voltage)               | Lights green                           |

### 6. LED Indicator:

| STATUS | Self-Examine<br>When Power on | No Battery | Pre-charging                           | Charge<br>Normally | Fully<br>Charged | Trouble                         |
|--------|-------------------------------|------------|----------------------------------------|--------------------|------------------|---------------------------------|
| LED    | Orange<br>(for 1 second)      | None       | Red Light<br>Twinkles<br>for 5 Minutes | Red                | Green            | Red twinkles<br>for a long time |

**NOTE:** Trouble means battery heating, battery short-circuit or charger short-circuit.

## ◦ BATTERY INFORMATION

### ((( Normal Charging Tips

1. **Self- Examination:** When charging, orange light twinkles for 1 second and goes out, which means the charger has passed its self-examination and it can charge the battery normally. If the light remains orange or the red light twinkles, it means the charger can not pass its self-examination or charge the battery.
2. **Trickle Pre-Charging:** If red light twinkles when battery is inserted into the charger, it means the remnant voltage is low and the charger is trickle-charging the battery (Pre-Charging Status). The charger will automatically turn into normal charging when the battery reaches a certain electric quantity, and if the red light stops twinkling, it means the remnant voltage meets a certain electric quantity, and the charger will charge the battery normally.

**NOTE:** Trickle charging (Pre-Charging Status) time can not beyond 30 minutes. If the indicating lamp still twinkles after 30-minute trickle-charging, it means that the charger can not charge the battery. Please check whether the battery or charger is damaged.

### ((( How to Store the Battery

1. If the battery needs to be stored, keep it in status of 80% discharged or higher.
2. It should be kept in low temperature and dry environment.
3. Keep it away from hot places and direct sunlight.

## ◦ **BATTERY INFORMATION**

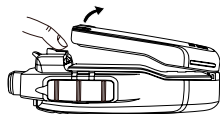
### **WARNING:**

- ▼ Do not short circuit battery terminals.
- ▼ Never attempt to remove the casing from the battery pack.
- ▼ Never assemble the battery in dangerous surroundings, spark may cause explosion.
- ▼ Do not put the battery in hot environment or throw it into fire, it may cause explosion.

## ◦ PREPARATION

### ((( Installing / Removing the Battery

1. Match the two grooves of the battery pack with the corresponding guides on the back of the transceiver, and then push it.
2. Press the battery pack until the release latch on the top of the transceiver locks. After hearing a “click” sound, the battery has been locked.
3. To remove the battery pack, slide up the release latch and remove the pack away from the transceiver.



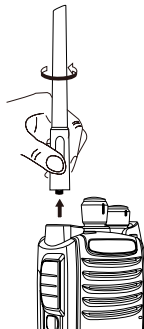
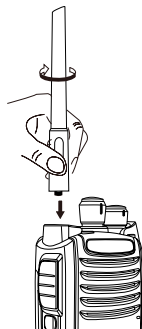
### ((( Installing / Removing the Antenna

#### ■ Installing the Antenna:

Screw the antenna into the connector on the top of the transceiver by holding the antenna at its base and turning it clockwise until secure.

#### ■ Removing the Antenna:

Turn the antenna anticlockwise to remove it.

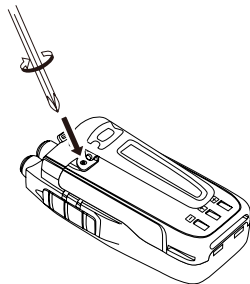


## ◦ PREPARATION

### ((( Installing / Removing the Belt Clip

#### ■ Installing the Belt Clip:

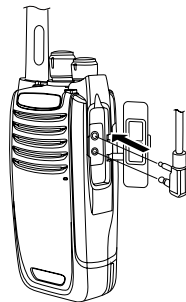
Place the belt clip to the corresponding grooves on the back of the transceiver and secure with the provided screws.



### ((( Installing the Additional Speaker/ Microphone

Open the MIC-SP jack cover and then insert the Speaker/Microphone plug into MIC-SP jack.

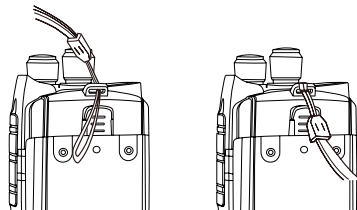
**NOTE:** When use the additional speaker/ microphone will influence the waterproof of the transceiver. The user need buy Speaker/Microphone by themselves.



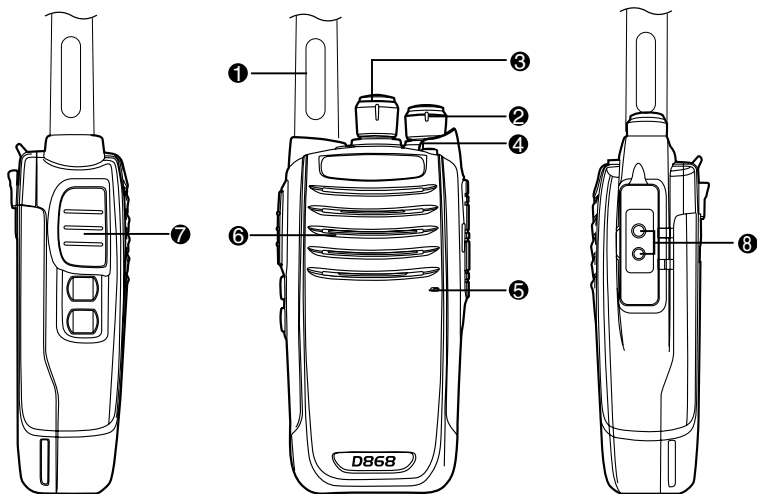
## ◦ PREPARATION

### ((( Installing/ Removing the Hand Strap

Slide the loop of the hand strap through the eyelet on the upper rear of the transceiver, then pull the entire hand strap through the loop to secure the hand strap in place and lastly tighten the hand strap.



## ◦ GETTING ACQUAINTED



## ◦ GETTING ACQUAINTED

### ❶ Antenna

### ❷ POWER / VOLUME Switch:

Turn clockwise to switch on the transceiver, and turn anticlockwise till hearing “click” to switch off the transceiver. After switching on the transceiver, turn clockwise to increase the volume and anticlockwise to decrease the volume.

### ❸ Channel Selector Knob

Turn the selector knob to select desired channel. Turn clockwise to increase channel, anticlockwise to decrease channel.

### ❹ Indicator

Indicates different working status

### ❺ MIC

### ❻ Speaker

### ❼ PTT Key

When you are making a call, please press and hold this key to speak into the microphone. Release the key to receive.

### ❽ External Microphone / Speaker Jack

## ◦ GETTING ACQUAINTED

Side key:

- |                           |                           |
|---------------------------|---------------------------|
| 1. Unassigned             | 10. One Touch Access 6    |
| 2. All Alert Tones On/Off | 11. Scan On/Off           |
| 3. High/Low power         | 12. Tight/ Normal Squelch |
| 4. Monitor                | 13. Privacy On/Off        |
| 5. One Touch Access 1     | 14. VOX On/Off            |
| 6. One Touch Access 2     | 15. Zone Toggle           |
| 7. One Touch Access 3     | 16. Battery Indicator     |
| 8. One Touch Access 4     | 17. Lone Work On/Off      |
| 9. One Touch Access 5     | 18. Emergency Call        |

## ◦ SUMMARY

### (((Power on the radio

Power on the radio: Turn on the radio by turning the Power/Volume switch clockwise till a click is heard, and you will hear a Power up beep if the dealer has set it. The radio is now in Rx mode.

### (((Adjust Volume

Rotate the Power/Volume knob to adjust the volume. Turn clockwise to increase the volume and counterclockwise to decrease the volume.

### (((LED Indicator

LED indicator shows the transceiver work state.

Red LED turns on- Transceiver is transmitting.

Green LED turns on- Transceiver is power on or receiving, or check the signal.

### (((Alert Tone

Alert tone indicates the radio state or the data receive response.

Continuous Tone: Continue pronouncing until end.

Cycle Tone: Depend on the radio preset time to pronounce the tone by cycle. The tone will automatic turn on, off and repeat.

Repeat Tone: Repeat the tone until user turn off it.

Moment Tone: pronounce a short tone, the time is defined by the radio itself.

## ◦ FUNCTION INTRODUCTION

### ((( Receive and make a digital call

#### **1. Selecting a zone**

A zone is a group of channels. Your radio supports 2 zones, with a maximum of 16 channels per zone, total 32 channels.

1. Press zone key.
2. You can hear a confirmed alert tone, that's mean the radio already switch from zone 1 to zone 2, or you can hear an unconfirmed alert tone, that's means the radio already switch from zone 2 to zone 1.

#### **2. Selecting a Radio Channel, Subscriber ID, or Group ID**

Once the required zone is preset, turn the channel knob to select the channel, subscriber ID, or group ID.

#### **3. Receiving and Responding to a Radio Call**

Once the channel, subscriber ID or group ID is preset, you can proceed to receive and respond to calls.

When the radio in TX, the red LED turns on . When the radio in RX, then green LED turns on.

- Analogue RX: Receive same carrier and matched signaling to turn on the SQ.
- Digital RX: When receive correct call with matched ID, the radio will turn on the speaker to receive and hear the voice from other party.

#### **4. Receiving and Responding to a Group Call**

To receive a Group Call, your radio must be configured as part of that group.

## ○ FUNCTION INTRODUCTION

1. The green LED turns on.
2. Hold the radio vertically 1 to 2 inches ( 2.5 to 5.0cm) from your mouth. If the channel Free Indication feature is enabled, you will hear a short alert tone the moment the transmitting radio releases the [PTT] key, indicating the channel is free for you to respond.
3. Press [PTT] key to respond to the call, the red LED turns on.
4. Wait for the Talk Permit Tone to finish(if enabled) and speak clearly into the Microphone.
5. Release [PTT] key to listen
6. If there is no voice activity for a predetermined period of time, the call ends.

### **5.Receiving and Responding to a Private Call**

A Private Call is a call from an individual radio to another individual radio. There are two types of Private Calls. The first type is where a radio presence check is performed prior to setting up the call. The other type sets up the call immediately.

Procedure:

1. The green LED turns on.
2. Hold the radio vertically 1 to 2 inches ( 2.5 to 5.0cm) from your mouth. If the channel Free Indication feature is enabled, you will hear a short alert tone the moment the transmitting radio releases the [PTT] key, indicating the channel is free for you to respond.
3. Press [PTT] key to respond to the call, the red LED turns on.
4. Wait for the Talk Permit Tone to finish(if enabled) and speak clearly into the Microphone.
5. Release [PTT] key to listen
6. If there is no voice activity for a predetermined period of time, the call ends.
7. You hear a short tone. The call ended.

## ◦ FUNCTION INTRODUCTION

### 6.Receiving an All Call

An All Call is a call from an individual radio to every radio on the channel. It is used to make important announcements requiring the user's full attention.

When you receive an All Call:

1. A Tone sounds and the Green LED turns on.
2. If there is no voice activity for predetermined period of time, the call ends. If the Channel Free Indication feature is enabled, you will hear a short alert tone the moment the transmitting radio release the [PTT] button, indicating the channel is now available for use. You can not respond to an All Call.

**NOTE:** the radio stops receiving the All Call if you switch to a different channel while receiving the call. During an All Call, you will not be able to use any key functions until the call ends.

### 7.Making a Radio Call

You can select a channel, subscriber ID, or group by Using:

- The Channel Selector Knob

### 8.Making a Group Call

To make a call to a group of users, your radio must be configured as part of that group.

1. Turn the Channel Selector Knob to select the channel with the active group name or ID.
2. Hold the radio vertically 1 to 2 inches (2.5 to 5.0 cm) from your mouth.

## ○ FUNCTION INTRODUCTION

3. Press the [PTT] key to make the call. The Red LED turns on.
4. Wait for the Talk permit Tone to finish ( if enabled) and speak clearly into the microphone.
5. Release the [PTT] key to listen. When the target radio responds, the green LED turns on.
6. If the Channel Free Indication feature is enabled, you will hear a short alert tone the moment the target radio releases the [PTT] key, indicating the channel is free for you to respond. Press the [PTT] key to respond. Or If there is no voice activity for a predetermined period of time, the call ends.

### **9.Making a Private Call**

1. Turn the Channel Selector Knob to select the channel with the active subscriber ID.
2. Hold the radio vertically 1 to 2 inches (2.5 to 5.0 cm) from your mouth.
3. Press the [PTT] key to make the call. The Red LED turns on.
4. Wait for the Talk Permit Tone to finish ( if enabled) and speak clearly into the microphone.
5. Release the [PTT] key to listen. When the target radio responds, the green LED turn on.
6. If the Channel Free Indication feature is enabled, you will hear a short alert tone the moment the target radio release the [PTT] key, indicating the channel is free for you to respond. Press the [PTT] key to respond. Or If there is no voice activity for a predetermined period of time, the call ends.
7. You hear a short tone.

### **10.Making a All Call**

This feature allows you to transmit to all users on the channel.

1. Turn the channel selector Knob to select the channel with the active All Call group ID.
2. Hold the radio vertically 1 to 2 inches (2.5 to 5.0 cm) from your mouth.

## ◦ **FUNCTION INTRODUCTION**

3. Press the [PTT] key to make the call. The Red LED turns on.
4. Wait for the Talk Permit Tone to finish ( if enabled) and speak clearly into the microphone. USers on the channel can not respond to an All Call.

### **11.Making a Group or Private Call with the One Touch Call key**

The one Touch Call feature allows you to make a Group or Private call to a predefined ID easily. You can ONLY have one ID assigned to a One Touch Call key.

Press the One Touch Call key to make a Group or Private Call to the predefined ID.

1. Hold the radio vertically 1 to 2 inches (2.5 to 5.0 cm) from your mouth.
2. Press the [PTT] key to make the call. The Red LED turns on.
3. Wait for the Talk Permit Tone to finish ( if enabled) and speak clearly into the microphone.
4. Release the [PTT] key to listen. When the target radio responds, the green LED turns on.
5. If the channel Free Indication feature is enabled, you will hear a short alert tone the moment the target radio releases the [PTT] key, indicating the channel is free for you to respond. Press the [PTT] key to respond. Or If there is no voice activity for a predetermined period of time, the call ends.

## **Text Message setup**

### **Sending preset Text Message**

## ○ FUNCTION INTRODUCTION

You can sending the Text Message by key, maximum predefined 50 Text messages.

1. Press the One Touch Call key to send a predefined Text message to a predefined ID.
2. Red LED turns on.
3. If the message is sent, two "click" sounds. If the message is not sent, a low tone sounds.

### ((( Encryption On/Off

Under standby mode, press "Encryption On/Off " key, and it will switch the transceiver to encryption mode. Other transceivers on the same frequency can not understand the call. Repeat the operation to turn off the encryption function.

**NOTE:**This operation is only valid in digital mode and only transceivers using the same secret key can communicate with each other. The transceiver can support 16 groups of 4 byte secrete key.

### ((( Digital Emergency Alarm

#### **Alarm type**

Disabled: Radio can not transmit an emergency alarm, but it can receive the emergency alarm signal from other radios.

Regular: Radio transmits an alarm signal with audio.

Silent: Radio transmits an alarm signal without any audio, the receiver radio starts an alarm. There

## ◦ FUNCTION INTRODUCTION

will be no response (call) from the target radio unless you press the PTT button to initiate the call.

Silent w/Voice: Radio transmits an alarm signal and is able to receive an incoming call without any audio until you press PTT button to initiate or response to the call.

Turn on/off Emergency mode by " Emergency On/Off " key.

### (((Lone Work

Turn on/off by " Lone Work On/Off" key, in order to make sure the holder is safety when the radio in lone work mode. While transceiver in lone work state, the transceiver will send alert tone to remind the user when the predetermined working time is reached, and you need press " Lone Work" key to state in a safe condition, otherwise the transceiver will in automatic alarm mode.

### (((Scan

#### 1.Scan lists

Scan lists are created and assigned to individual channels/groups. Your radio scans for voice activity by cycling through the channel/group sequence specified in the scan list for the current channel/group.

Your radio can support up 250 scan lists, with a maximum of 16 members in a list.

### (((Scan

When you start a scan, your radio cycles through the scan list looking for voice activity. The LED blinks Orange while in scan mode.

## ○ FUNCTION INTRODUCTION

There are two ways of initiating scan:

- Main Channel Scan( Manual): Your radio scans all the channels/groups in your scan list. On entering scan, your radio may depending on the settings, automatically start on the last scanned "active" channel/group or on the channel where scan was initiated.
- Auto Scan ( Automatic): Your radio automatically starts scanning when you select a channel/group that has Auto Scan enabled.

### **2.Starting and stopping Scan**

1. Press the scan key, or turn channel knob to select an automatic activity channel.
2. The LED blinks orange when Scan is enabled, you can hear a confirm sound.  
Or the LED turns off when Scan is disabled, you will hear an unconfirmed sound.

### **3.Priority Scan**

When radio set with the priority channels, it allows to enable the priority scan function, the priority scan mode is cycle scan method, it will scan the priority channel each time after scan a common channel.

### **4.Responding to a call during scan**

During scan, your radio stay at activity channel/communication group.

The radio stays on that channel for a time period knows as "hang time".

1. Hold the radio vertically 1 to 2 inches (2.5 to 5.0 cm) from your mouth. If the channel Free Indication feature is enabled, you will hear a short alert tone the moment the target radio release the [PTT] key, indicating the channel is free for you to respond.
2. Press [PTT] key during hang time, red LED turns on.

## ◦ **FUNCTION INTRODUCTION**

3. Wait for the Talk Permit Tone to finish ( if enabled) and speak clearly into the microphone.
4. Release [PTT] key to listen.
5. If you do not respond within hang time, the radio returns to scanning other channels/Setting group.

### **Setting**

#### **1.Setting the Squelch Level**

You can adjust your radio's squelch level to filter out unwanted calls with low signal strength or signals with high background noise.

Settings: Normal is the default. Tight filters out ( unwanted) calls and/ or background noise. However, calls from remote locations may also be filtered out.

1. Press " Tight/Normal squelch" key.
2. The radio is in deep squelch when you hear a short confirm alert tone, Or you will hear an unconfirmed alert tone that's mean the radio in Normal squelch.

#### **2. Setting the Power Level**

You can customize your radio's power setting to high or low for each channel.

Settings: High enables communication with radios located at a considerable distance from you. Low enables communication with radio in closer proximity.

1. Press " High/Low power" key.
2. You will hear a confirm alert tone, that's mean the radio use low power for transmitting. Or you can hear a unconfirmed alert tone, that's mean the radio use high power for transmitting.

## ○ FUNCTION INTRODUCTION

### 3. Turning the Voice Operating Transmission (VOX) Feature On or Off

This feature allows you to initiate a hands-free voice activated call on a channel. The radio automatically transmits for a period, whenever the microphone detects voice.

Pressing the PTT key during radio operation will disable VOX. To re-enable VOX, do one of the following:

Turn the radio off and powering it on again. Or change the channel via the Channel Selector Knob, OR Following the procedure below.

**NOTE: Turn this feature on or off limited to radios with this function enabled. Check with your dealer or system administrator for more information.**

1. Press "Vox On/Off" key, turn on or turn off this function.
2. If the permission call alert tone is active, you can use the touch key to send the call. Wait for the Talk Permit Tone to finish ( if enabled) and speak clearly into the microphone.

### 4. Turn on/ off radio tune/ alert tone.

If need, you can enable or disable all radio's tune and alert tone ( except for incoming emergency alert tone)

1. Press "All Alert Tone On/Off" key.
2. You will hear a confirm alert tone, that's mean turn on all tune and alert tone function, or you will hear an unconfirmed alert tone, that's mean turn off all tone and alert tone.

## ◦ **FUNCTION INTRODUCTION**

### **5.Battery Capacity Enquiry**

You can check battery capacity.

Setup: The yellow LED turns on means the battery is in charging, the green LED turns on means battery capacity is full.

Press " Battery Indicator" key and check the battery capacity by BEEP alert tone.

high power : 3 beeps

middle power: 2 beeps

low power : 1 beep

very low power : low beeps

## ◦ TROUBLE SHOOTING GUIDE

| Problem                                                   | Corrective Action                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-----------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| No power                                                  | A. The battery may be depleted. Recharge or replace the battery.<br>B. The battery may not be installed correctly. Remove the battery and instal it again.                                                                                                                                                                                                                                                                                   |
| Battery power dies shortly after charging.                | The battery life is finished. replace the battery pack with a new one.                                                                                                                                                                                                                                                                                                                                                                       |
| No sound after using earphone for a while                 | Earphone jack is broken. Please contact local dealers to repair.                                                                                                                                                                                                                                                                                                                                                                             |
| Cannot talk to or hear other members in your group        | <ul style="list-style-type: none"><li>• Make sure the frequency and CTCSS code are same with other members of the group.</li><li>• Check whether your radio in the communicate range.</li><li>• Check whether set as digital mode, frequency is set right.</li><li>• Check whether set right color code and encryption group.</li><li>• Check whether set right transmitting contact list or receiving group list in digital mode.</li></ul> |
| Receiving voice from the other party but can not transmit | <ul style="list-style-type: none"><li>• Please change the CTCSS, then need change all radios CTCSS code in the group.</li></ul>                                                                                                                                                                                                                                                                                                              |

## TECHNICAL SPECIFICATIONS

| General               |                                           |
|-----------------------|-------------------------------------------|
| Frequency Range       | Digital: 136-174MHz<br>Analog: 136-174MHz |
| Channel Capacity      | 32 channels                               |
| Channel Spacing       | 12.5KHz                                   |
| Phase-locked Step     | 5KHz, 6.25KHz                             |
| Operating Voltage     | 7.4V DC $\pm 20\%$ /(2000mAh)             |
| Frequency Stability   | $\pm 2.5$ ppm                             |
| Operating Temperature | -20°C ~ +55°C                             |
| Size                  | 128×61×40mm (with battery pack)           |
| Weight                | 247g (with battery pack, antenna)         |

| Receiving Part               |                                                    |
|------------------------------|----------------------------------------------------|
| Sensitivity(12dB SINAD)      | $\leq 0.35\mu\text{V}$                             |
| Digital Sensitivity          | 0.3uV/-117.4dBm (BER 5%)<br>0.7uV/-110dBm (BER 1%) |
| Adjacent Channel Selectivity | $\geq 60\text{dB}$                                 |
| Intermodulation              | $\geq 60\text{dB}$                                 |

|                    |                    |
|--------------------|--------------------|
| Spurious Rejection | $\geq 70\text{dB}$ |
| Blocking           | 84db               |
| Hum & Noise        | $\geq 40\text{dB}$ |
| Audio Distortion   | $\leq 5\%$         |
| Audio Power Output | 1000mW/16Ω         |

| Transmitting Part           |                                                            |
|-----------------------------|------------------------------------------------------------|
| Power Output                | Digital:1W/5W, Analog:1W/5W                                |
| Modulation limit            | $\pm 2.5\text{KHz}@12.5\text{KHz}$                         |
| Adjacent Channel Power      | $\geq 60\text{dB}$                                         |
| Hum & Noise                 | $\geq 36\text{dB}$                                         |
| Spurious Emission           | $\leq -36\text{dB}$                                        |
| Digital Emission Designator | 12.5KHz ( data ) 7K60FXD<br>12.5KHz ( data+voice ) 7K60FXW |
| Analog Emission Designator  | FM 12.5KHz:11K0F3E                                         |
| Audio Distortion            | $\leq 5\%$                                                 |
| Error rate                  | $\leq 3\%$                                                 |
| Digital Data rate           | 9600bps                                                    |