

# **User Manual**

## **DP586**

### **DMR Two Way Radio**

We are very grateful for your purchasing Kirisun brand DMR Two Way Radio produced by Kirisun Communications Co., Ltd.

We believe Kirisun two-way radio, which always incorporates the latest technology, can bring great convenience to your life and work. We also believe that the quality and function of Kirisun two-way radio can meet your demands for reliable communication.

## Notice to user

### ◆ Copyright

Kirisun and our authorized partners own the intellectual property of all the parts of this product (include accessories). Any design and materials may not be modified, copied, extracted or translated without the authorization of Kirisun or its authorized parities.

Due to the update or modification of the product, Kirisun owns the right to change the specifications of software and hardware described in this manual without further notice. Specifications and information contained in this manual are for reference only.

### ◆ Safety Information

#### Compliance with RF Exposure Standards

Your radio is designed and tested to comply with a number of national and international standards and guidelines (listed below) regarding human exposure to radio frequency electromagnetic energy. This radio complies with the IEEE and ICNIRP exposure limits for occupational/controlled RF exposure environment at operating duty factors of up to 50% transmitting. In terms of measuring RF energy for compliance with the IEEE and ICNIRP exposure limits, your radio radiates measurable RF energy only while it is transmitting (during talking), not when it is receiving (listening) or in standby mode.

Your radio complies with the following of RF energy exposure standards and guidelines

Institute of Electrical and Electronic Engineers (IEEE) C95.1-1992

Institute of Electrical and Electronic Engineers (IEEE) C95.1-1999 Edition

International Commission on Non-Ionizing Radiation Protection (ICNIRP) 1998

### ◆ Using the designated accessories

Use the antenna, battery, adapter or charger supplied or sold by Kirisun only, or otherwise it causes damage to the product.

If you want to purchase or replace the accessories, please contact your local dealer or Kirisun.

### ◆ Area restrictions

1. To avoid of the problems caused by electromagnetic interference or electromagnetic compatibility, turn off the radio in any facilities where posted notices instruct you to do so, such as hospital and other health care facilities. Turn off the radio when on board an aircraft, if instructed to do so.
2. In the vehicle with an air bag, do not place the radio in the area over an air bag or in the air bag deployment area.
3. Turn off the radio before entering any area with a potentially explosive atmosphere or blasting caps.



4. Do not operate the radio, disassemble or charge the battery in the potentially flammable and explosive atmosphere (such as gas station, coal gas station, etc.).
5. Do not place the radio under the direct sunlight or near the area with heating devices.
6. Do not place the radio in the area with great dust, moisture or drips, or on the unstable surface.

#### ◆ Operating Attentions

##### Antenna

Do not use any portable radio that has a damaged antenna. If a damaged antenna comes into contact with your skin, a minor burn can result.

##### Batteries

All batteries can cause property damage and/or bodily injury, such as burns, if a conductive material such as jewelry, keys, or beaded chains touches exposed terminals. The conductive material may complete an electrical circuit (short circuit) and become quite hot. Excessive care in handling any charged battery, particular when placing it inside a pocket, purse, or other container with metal objects. To reduce the potentially damage, do not expose the battery in the fire, or disassemble and extrude the battery.

To realize the best performance of the battery, change the battery once a year.

##### Maintenance

Do not disassemble the radio by yourself. This product can only be maintained by the professional technicians.

Contact us or your local dealer for help if you want to re-develop or modify the radio.



## FCC Statement

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 1: 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, 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.

NOTE 2: Any changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

**SAR warning**

Output power listed is rated conducted. This device must be restricted to work-related operations only in an Occupational/Controlled RF exposure environment and must operate with a duty factor not exceeding 50%. 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 user and the device or its antenna shall be at least 2.5 cm. All qualified end-users of this device must have the knowledge to control their exposure conditions and/or duration to comply with occupational/controlled Exposure limit and requirements. The highest reported SAR values for Face-held, body-worn and simultaneous transmission conditions are 3.408 W/Kg, 3.531 W/Kg and 3.717 W/Kg respectively.

This device contains Bluetooth, BLE and Two Way Radio transmitters.

**Warning!:** This portable radio generates RF electromagnetic energy 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.

## Technical Parameters

### PMR:

Operation Frequency Range: 400 to 470MHz

Rated Output Power: High Power: 4W / Low Power: 1W

Modulation Type: Analog: FM / Digital: 4FSK

Channel Separation: Analog: 12.5kHz

Digital: 12.5kHz

### Bluetooth:

Supported Type: Bluetooth 4.2 EDR+BLE

Modulation: EDR: GFSK,  $\pi/4$ QPSK, 8DPSK / BLE: GFSK

Operation Frequency: 2402 to 2480MHz

Channel Number: EDR: 79 / BLE: 40

Channel Separation: EDR: 1MHz / BLE: 2MHz

### GPS:

Modulation: MSK

Operation Frequency: 1575.42MHz

## Waste Electrical and Electronic Equipment recycling



This symbol on the product or its packaging indicates that this product must not be disposed of as household or commercial waste. Some countries have set up collection and recycling systems for waste electrical and electronic products. By ensuring that this product and its packaging is disposed of correctly, you will help prevent potentially negative consequences for the environment and human health, and help conserve natural resources. Please dispose of your waste product according to your national and local regulations. Contact your service provider or Kirisun for information about disposing of this product in your region of the world.

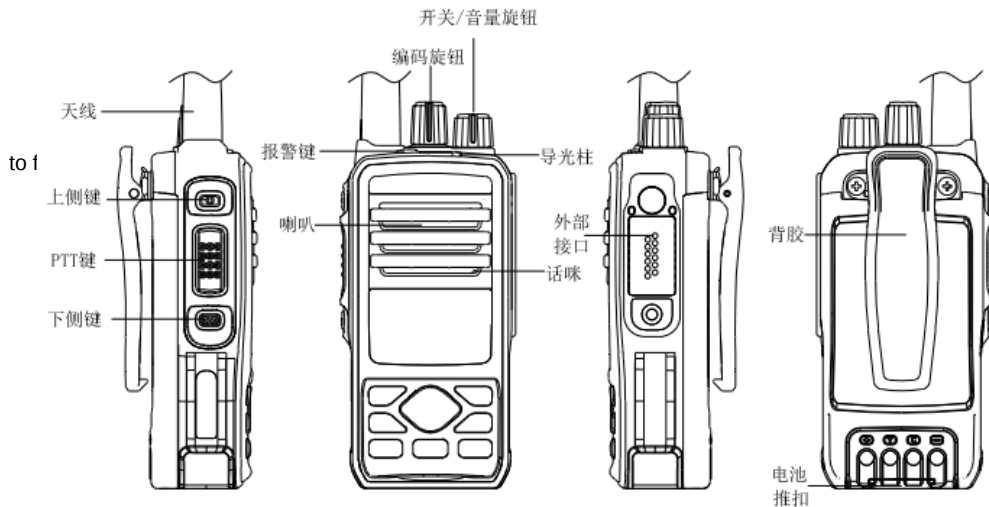
### Disposing of batteries

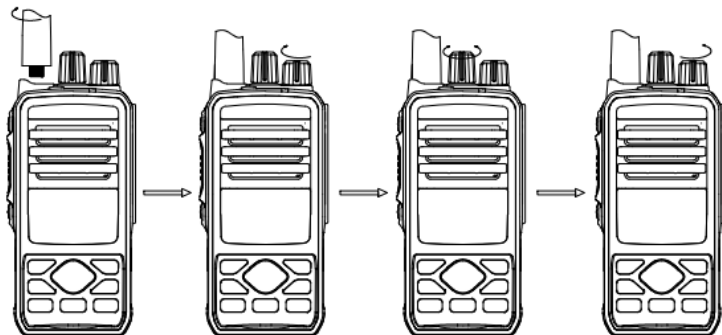


Your radio is supplied with a rechargeable lithium-ion battery. This symbol on the battery and its packaging indicates that it must not be disposed of with household or commercial waste. Please dispose of your waste batteries according to your national and local regulations. Contact your service provider or Kirisun about recycling batteries in your region of the world.

## US Markets

## DP586 Quick Reference





## Contents

|                                                                       |                  |
|-----------------------------------------------------------------------|------------------|
| <b>CAUTION .....</b>                                                  | <b>错误!未定义书签。</b> |
| <b>TECHNICAL PARAMETERS.....</b>                                      | <b>7</b>         |
| <b>RESTRICTIONS FREQUENCIES ARE VALID FOR THE EUROPEAN COUNTRY ..</b> | <b>错误!未定义书签。</b> |
| <b>RESTRICTIONS ARE VALID FOR THE EUROPEAN COUNTRY.....</b>           | <b>错误!未定义书签。</b> |
| <i>Disposing of batteries .....</i>                                   | <i>8</i>         |
| <i>FCC radiation exposure statement.....</i>                          | <i>错误!未定义书签。</i> |
| <b>1 UNPACKING AND CHECKING .....</b>                                 | <b>14</b>        |
| 1.1 SUPPLIED ACCESSORIES .....                                        | 14               |
| <b>2 BATTERY INFORMATION .....</b>                                    | <b>15</b>        |
| 2.1 NOTICE.....                                                       | 15               |
| 2.2 BATTERY CHARGING.....                                             | 16               |
| <b>3 ATTACHING THE ACCESSORIES .....</b>                              | <b>18</b>        |

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|          |                                                                                          |           |
|----------|------------------------------------------------------------------------------------------|-----------|
| 3.1      | ATTACHING/DETACHING THE BATTERY .....                                                    | 18        |
| 3.2      | ATTACHING/DETACHING THE ANTENNA .....                                                    | 19        |
| 3.1      | ATTACHING/DETACHING THE BELT CLIP .....                                                  | 19        |
| 3.2      | WHEN DETACHING, LOOSEN THE TWO SCREWS ON THE BELT CLIP AND REMOVE THE<br>BELT CLIP. .... | 20        |
| 3.3      | ATTACHING THE MICROPHONE .....                                                           | 20        |
| <b>4</b> | <b>INTRODUCTION .....</b>                                                                | <b>22</b> |
| <b>5</b> | <b>PROGRAMMABLE KEYS .....</b>                                                           | <b>24</b> |
| 5.1      | PROGRAMMABLE KEYS .....                                                                  | 24        |
| 5.2      | LED INDICATION .....                                                                     | 26        |
| <b>6</b> | <b>BASIC OPERATION.....</b>                                                              | <b>27</b> |
| 6.1      | POWERING ON/OFF THE RADIO .....                                                          | 28        |
| 6.2      | SELECTING THE CHANNEL .....                                                              | 28        |



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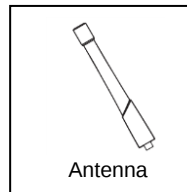
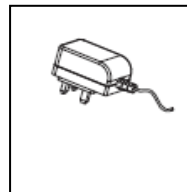
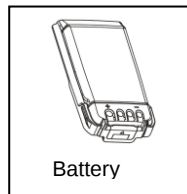
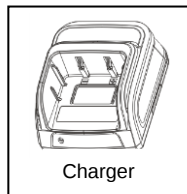
|          |                                          |           |
|----------|------------------------------------------|-----------|
| 6.3      | ADJUSTING THE VOLUME.....                | 28        |
| 6.4      | INITIATING A CALL .....                  | 28        |
| 6.5      | RECEIVING .....                          | 29        |
| 6.6      | REPLYING TO THE CALL.....                | 29        |
| <b>7</b> | <b>FEATURES AND OPERATION .....</b>      | <b>30</b> |
| 7.1      | TOT (TIME-OUT-TIMER) .....               | 30        |
| 7.2      | CHANNEL SCAN .....                       | 30        |
| 7.3      | INITIATING A CALL DURING SCAN.....       | 31        |
| 7.4      | PRIORITY SCAN.....                       | 31        |
| 7.5      | KILL AND UNKILL .....                    | 31        |
| 7.6      | EMERGENCY .....                          | 32        |
| 7.7      | ENABLING COLOR CODE ON DIGITAL MODE..... | 33        |
| <b>8</b> | <b>TROUBLESHOOTING.....</b>              | <b>34</b> |

## 1 Unpacking and Checking

Please carefully open the box, and check if the accessories listed below are contained in the package.  
For any missed or damaged item, please contact your local dealer for solution.

### 1.1 Supplied Accessories

| Material      | Quantity |
|---------------|----------|
| Radio         | 1        |
| Charger       | 1        |
| Power Adaptor | 1        |
| Battery       | 1        |
| Belt Clip     | 1        |
| Antenna       | 1        |
| Strip         | 1        |



|             |   |
|-------------|---|
| User Manual | 1 |
| Radio       | 1 |

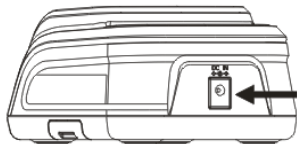
## 2 Battery Information

### 2.1 Notice

The battery is not charged before delivery, so please charge the battery for your first use. If the battery is not used for a long time or the battery is used up, please charge it before use. Charge/discharge for twice or three times alternately to achieve its optimal performance. For low battery, please charge it or replace it.

Note:

- ◆ Do not cause any short circuit on the battery or throw the battery into fire.
- ◆ When attaching the battery to the radio for charging, please make sure the radio is powered off to guarantee it can be fully charged.
- ◆ Do not leave the radio or battery on the charger after it is fully charged. Unnecessary constant



charging will shorten the battery life.

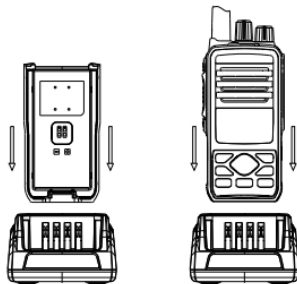
◆ Do not put the fully-charged battery back to the charger for re-charging, or it may shorten the battery life.

◆ Please try to keep the battery in an indoor environment at around 25°C. The battery may get easily spoiled after being kept in the environment below -10°C for a long time.

◆ In temperature higher than 35°C or below -10°C, the dischargeable power of the battery may decrease due to the physical property of lithium battery.

## 2.2 Battery Charging

- (1) Plug the power adaptor in the proper socket of AC power.
- (2) Plug the cable of the power adaptor at the back of the socket, and the
- (3) Plug the battery or radio in the charger.
- (4) Make sure that the battery is in proper contact with the charger termin
- (5) After the battery is charged for 6 hours, the red light goes out, in charged.



(6) When the green indicator glows, keep the battery on the charger for 1-2 hours before taking it out so as to achieve the optimal performance.

(7) Take out the power adaptor from the socket of AC power output.

**Note:**

- ◆ The battery is not charged before delivery from the factory, so please charge the battery before your first use.
- ◆ Kirisun KB-75A lithium-ion can be used for this radio.
- ◆ If the battery which is stored for over 2 months or a new battery is charged for the first time, it should be charged repeatedly to gain full battery capacity. The battery should be at least charged once every three months.
- ◆ When the battery is fully charged or the battery power is above the level of low power alert, do not charge the battery, or it may affect the battery life and performance. Please take out the battery from the charger after it is fully charged.
- ◆ When the radio enters the state of low voltage alarm, please charge the battery before using it and do not force to power on the radio in case that the battery life and performance is impaired.
- ◆ There is protection circuit inside KB-75A lithium battery. The power supply will be cut off in state of

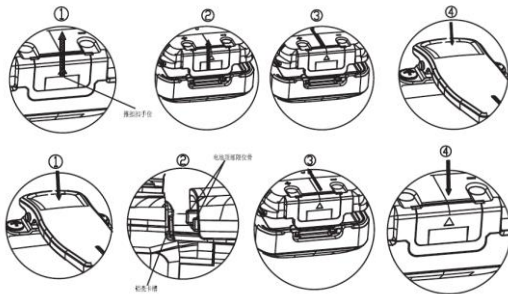
low power, and when you charge it in the charger, the indicator will glow after 1-5 minutes.

### 3 Attaching the Accessories

#### 3.1 Attaching/Detaching the Battery

##### ◆ Attaching the Battery

- (1) Slightly press the top of the belt clip as shown in ①;
- (2) Align the battery with the battery installation base at the back and insert the battery as shown in ②.
- (3) Slide the battery along the direction as shown in ③ until the battery is fit into the right position.
- (4) Slightly press the battery top as shown in ④ until the battery is locked by the latch.



##### ◆ Detaching the battery

- (1) For detaching the battery, please first turn off the radio.

- (2) Slide the battery latch along the direction as shown in ① to bounce the battery as shown in ②.
- (3) Slide to take out the battery along the direction as shown in ③. If there is belt clip, slightly press the belt clip top as shown in ④ and slide the battery along the direction as shown in ③ to take out the battery.

**Note:**

- ◆ Do not throw the battery terminals with short circuit or battery into fire.
- ◆ Do not remove the battery case without permission.

### 3.2 Attaching/Detaching the Antenna

For attaching the antenna, put the antenna's end with screw thread into  
Turn the antenna clockwise until it is fixed.

For detaching the antenna, turn it counter-clockwise.



### 3.1 Attaching/Detaching the Belt Clip

Align the two screws on the belt clip with the screw holes at the back of the radio.

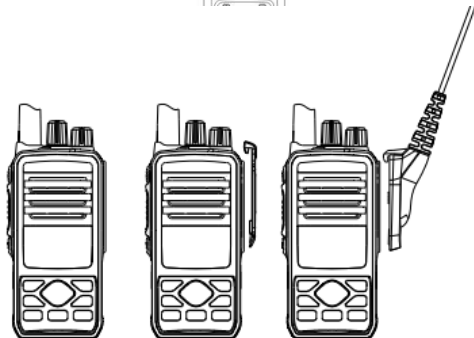
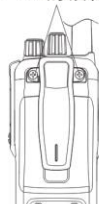
Use two 2.5x6.5 machine screws.

3.2 When detaching, loosen the two screws on the belt clip and remove the belt clip.

### 3.3 Attaching the Microphone

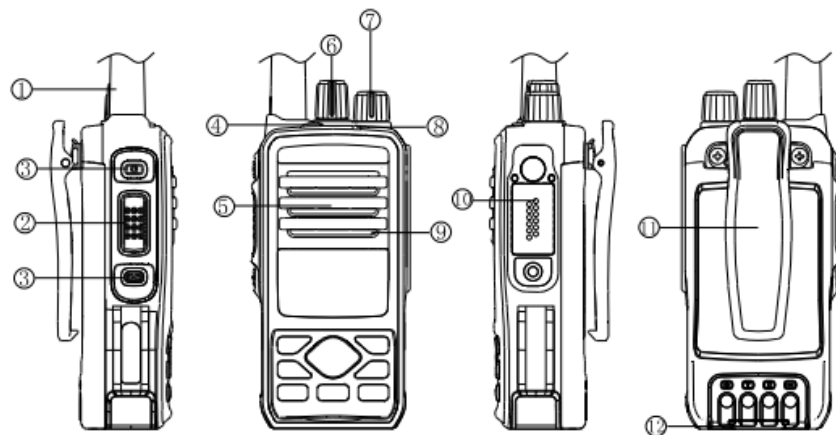
Open the earphone cover plate on the right and connect the earphone cable to the port.

M2.5\*6.5的锁背夹螺丝





## 4 Introduction



| No. | Part Name                                                                                                | No. | Part Name                                                                                                                                                                                                |
|-----|----------------------------------------------------------------------------------------------------------|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | Antenna                                                                                                  | 7   | Power/Volume Knob<br>Turn it clockwise to turn on the radio. For turning off the radio, turn it counter-clockwise until a click is heard.<br>When the radio is on, rotate the knob to adjust the volume. |
| 2   | PTT key<br>Press this key to initiate a call and talk                                                    | 8   | LED Indicator<br>Red indicator means the radio is transmitting, green means receiving and when the red indicator flashes, it means power shortage.                                                       |
| 3   | Side key (programmable key)<br>This key can be set with different features by dealer. Please refer to "5 | 9   | Microphone<br>Voice input                                                                                                                                                                                |

|   |                                                         |    |                                                                                       |
|---|---------------------------------------------------------|----|---------------------------------------------------------------------------------------|
|   | Programmable Keys” for further details                  |    |                                                                                       |
| 4 | Alarm Key                                               | 10 | External port<br>Open the cover plate and connect the external speaker and microphone |
| 5 | Speaker<br>Voice output.                                | 11 | Belt Clip                                                                             |
| 6 | Channel Knob<br>Rotate the knob to select channel 1-16. | 12 | Battery Latch                                                                         |

## 5 Programmable Keys

### 5.1 Programmable Keys

To suit the operation habits of customer, programmable keys (side keys) are available and can be set by dealer as shortcut key.

**Note:**

Short Press: press and release quickly.

Long Press: press and hold for a while (press duration can be set by programming software)

| No. | Programmable Feature | Application                                                                                                                                                    |
|-----|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | None                 | No feature                                                                                                                                                     |
| 2   | High/Low Power       | Switch to high and low power                                                                                                                                   |
| 3   | Monitor              | If the current analogue channel has CTCSS, press this key and switch to carrier squelch mode to cancel CTCSS; press it again to go back to the original state. |
| 4   | Emergency            | Starts the emergency feature. Used for seeking help in emergency.                                                                                              |
| 5   | Emergency Exit       | Exits the emergency state.                                                                                                                                     |
| 6   | Squelch on/off       | Enable/Disable squelch feature. Used for receiving the weak signals on the analogue channel.                                                                   |

|    |                      |                                                                                                   |
|----|----------------------|---------------------------------------------------------------------------------------------------|
| 7  | Squelch Level        | Adjusts the signal strength required when receiving.                                              |
| 8  | Scan                 | Enable/Disable scan feature and listens to the communication activities on other channels.        |
| 9  | Alert Tone on/off    | Enable/disable all the alert tones.                                                               |
| 10 | Zone Selection       | Press this key to switch among different zones. The zones are programmed by programming software. |
| 11 | Repeater/Talk around | Enable/disable Repeater feature.                                                                  |
| 12 | Nuisance Delete      | Deletes the channel which is useless from the scan list.                                          |

## 5.2 LED Indication

| State | Operation |
|-------|-----------|
|-------|-----------|

|                       |                                                                                                         |
|-----------------------|---------------------------------------------------------------------------------------------------------|
| Glows red             | Transmitting                                                                                            |
| Glows green           | Receiving                                                                                               |
| Flashes red           | Low battery                                                                                             |
| Flashes green         | Channels are being scanned                                                                              |
| Flashes orange        | Digital call hang time and it will exit when the hang time is up                                        |
| Glows orange          | Blank channel which is not available. Switch to other channel to exit.                                  |
| Flashes red quickly   | The programming software is reading the parameters available for configuration                          |
| Flashes green quickly | The programming software is writing the parameters which is available for configuration into the radio. |

## 6 Basic Operation

## 6.1 Powering on/off the Radio

When the radio is off, rotate the power/volume knob clockwise until a click is heard to power on the radio. When the radio is on, rotate the power/volume knob counter-clockwise until a click is heard to turn off the radio.

## 6.2 Selecting the Channel

When the radio is on, rotate the channel selector knob to select channels.

## 6.3 Adjusting the Volume

When the radio is on, rotate the power/volume knob clockwise to increase the volume and counter-clockwise to decrease the volume.

## 6.4 Initiating a Call

Press PTT button to initiate a call to the default contact on the current channel when it is digital channel. The default contact on the current channel can be programmed by dealer.



## 6.5 Receiving

When the radio receives RF signal on the current channel and reaches squelch start level, the green LED glows to indicate that carrier is received.

When the current channel is digital channel and when it received private call, group call or all call, the radio will output the voice from the channel.

When the channel is analogue channel and when it received analogue signals with CTCSS matching the one on this channel (or there is no CTCSS set on the channel), the radio will output voice from the channel.

## 6.6 Replying to the Call

When the current channel is digital channel and after a call is received, press PTT button within the call hang time to reply. If the call hang time is up, you need to initiate a call to reply. The call hang time can be set by dealer.

When the current channel is analogue channel and after a call is received, press PTT button within the call hang time and speak to the microphone to reply.

## 7 Features and Operation

### 7.1 TOT (time-out-timer)

TOT prevents the user from occupying the channel for too long. If the continuous transmission exceeds the duration set by dealer, the radio will stop transmitting and sound alarm. For stopping alarm, release PTT button. For transmission again, please press PTT button after a certain time interval (interval set by dealer).

If the dealer set pre-alarm feature, pre-alarm will sound before TOT time is up.

### 7.2 Channel Scan

Channel scan searches channels with signals. When the channel scanned has signals, the radio will stay on this channel for communication. Scan method is carrier control scan.

By pressing the Scan shortcut key, the radio can scan the scan list related to the current channel. When the radio is in scan state, press the Scan shortcut key again to stop the scan.



### 7.3 Initiating a Call during Scan

When the radio is scanning, press PTT button and the radio will transmit and talk on the predefined channel. This channel is set by dealer.

### 7.4 Priority Scan

When there is priority scan set in the scan list, the priority scan will be automatically enabled when the radio starts the scan feature. The priority scan mode is cycle scan, and it scans priority channel every time when it scans a conventional channel. For example, if there are channel 1, 2, 3, 4 in the scan list and channel 2 is priority channel, the scan cycle will be 1->2->3->2->4->2->1.

### 7.5 Kill and Unkill

If the dealer enables and sets Kill and Unkill, the radio is able to receive and decode the Kill/Unkill signals from other radios. After being killed, the radio cannot transmit or receive any signals but activation signal. After being activated, the radio will be back to normal state. Kill/Unkill feature is valid

on digital mode.

## 7.6 Emergency

In state of emergency, press the Emergency shortcut key to send emergency alarm.

Emergency alarm consists of two parts: alarm type and alarm mode. Alarm mode is used to specify the contents sent to other members in emergency. You can ask your dealer to set these parameters based on your requirements.

For exiting emergency, press again the Emergency shortcut key.

### ◆ Alarm Mode

Emergency Alarm: enable to send alarm and exit alarm state automatically afterwards.

Emergency Alarm + Emergency Call: after the radio sends emergency alarm, press PTT button to send emergency call.

Emergency Alarm + Auto Background Tone: after the radio sends emergency alarm, the background tone will be sent automatically in the way of emergency call.

### ◆ Alarm Type

None: no alarm feature (default).

Siren Only: after the radio enters the alarm state, the siren can only sound locally and the control center will not receive any alarm signals.

Conventional: after the radio enters alarm state, there will be light and sound alert and it can also receive response from other members.

Secret: after the radio enters alarm state, there will be no light or sound alert, and it cannot receive response from other members.

Secret with Voice: after the radio enters alarm state, there will be no light or sound alert but it can receive response from other members.

**Note:**

Emergency Alarm: the radio transmits non-speech signal to trigger the alarm sent from other radios.

Emergency Call: it is a call mode which is faster in occupying channel than common calls, which ensures smooth call in emergency.

## 7.7 Enabling Color Code on Digital Mode

Only when both the color code and ID matches, the speaker can be turned on to receive.

Range: 0~15 (16 groups of color codes)

## 8 Troubleshooting

| No. | Problem                 | Cause and Solution                                                                                                                                      |
|-----|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | Failed to power on      | A. The battery is used up –charge the battery or change to a new battery;<br>B. Volume switch is faulty – repair at the specified service station;      |
| 2   | Small voice during call | A. speaks too far from the microphone – the ideal distance: 3-10cm;<br>B. wrong volume setting – turn the volume knob clockwise to increase the volume; |

|   |                               |                                                                                                                                                                                                      |
|---|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3 | Failed to transmit or receive | <p>A. wrong channel parameters – reset the parameters and try again;</p> <p>B. the group identity for default contact is wrong – select a right group;</p> <p>C. Beyond the communication scope.</p> |
|---|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|



## 科立讯通信股份有限公司

地址:深圳市南山区科技园松坪山齐民道1号贝特尔多厦5-6楼

全国服务专线: 400-700-9995

