



Kirisun Communications Co.,Ltd.  
<http://en.kirisun.com>



Professional wireless communication system solution supplier

## INSTRUCTION MANUAL

# FP460

Digital Two-way Radio



DIGITAL

<http://en.kirisun.com>



## Important Information

### ◆ 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 parties.

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

#### ◆ Operating Instructions to control RF Exposure

To decrease your exposure and ensure compliance with the occupational/controlled environment exposure limits, please always adhere to the following procedures.

1. Transmit no more than the rated duty factor of 50% of the time. To transmit, press the PTT button, and to receive the call, release the PTT button.
2. Keep your radio in a vertical position in front of the face with the microphone 5cm away from your mouth while transmit.
3. When worn on your body, keep the antenna 2.5cm away from you body while transmit.
4. Do not transmit when the radio is not equipped with an antenna. Transmitting without an antenna may damage the product and result RF discomfort.

#### ◆ 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.



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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

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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.

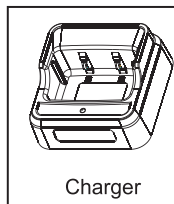
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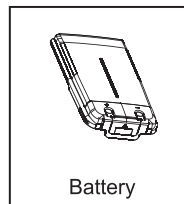
## 1 Unpacking and checking

Unpack the radio carefully. We recommend that you check the radio and the supplied accessories listed in the following table before discarding the packing material. If any damage or loss has occurred during shipment, please contact the deliveryman or the dealer without delay.

ITEM	QUANTITY
Two-way radio	1
Antenna	1
Battery	1
Belt Clip	1
Charger	1
Power Adapter	1
Hand Strap	1
Instruction Manual	1



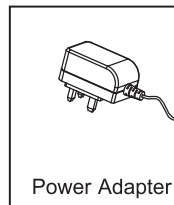
Charger



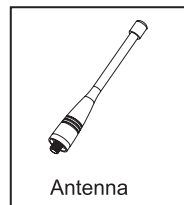
Battery



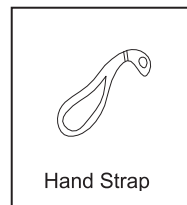
Belt Clip and Screws



Power Adapter



Antenna

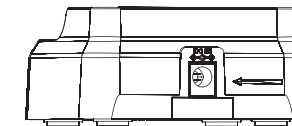


Hand Strap

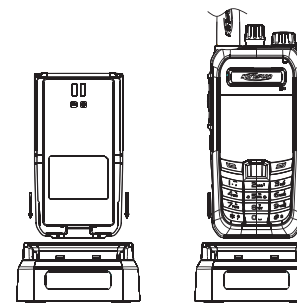
## 2 Preparing Your Radio for Use

### 2.1 Charging the Battery

Plug the power adapter into an applicable AC outlet and connect the power adapter to the battery charger. The green LED lights up.



Insert the battery or the radio into the charger slot. Make sure the battery is well connected with the charger. Then the red LED lights up, it indicates that the charging starts. When the LED light green, it indicates the battery has been full charged.



#### Charging Notice

※ The radio's battery is not fully charged before shipment. Before the initial use, please charge the battery. Charging/discharging twice or triple can let the battery capacity in the best status. When the battery is in low power, it needs to be charged or change another battery.

※ Do not recharge the battery if it has been fully charged or the radio is not in the low battery alarm state; otherwise, it shortens the battery's life time and performance.

※ To make sure the battery can be full charged, please turn off the radio while charging.

※ Please do not put the radio in the charger when it does not need to, charging in cycle shortens the battery's life time and performance.

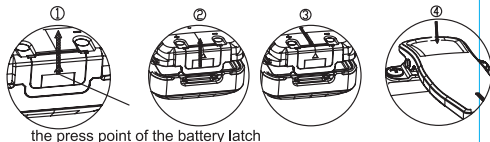
※ Please do not let the terminal of battery in short circuit or throw the battery into fire.

※ You'd better place the battery in 25°C ambient environment. The battery is easy to lose efficiency if long stayed under -10°C environment.

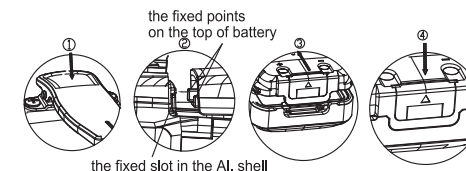
※ If the temperature is higher than 35°C or lower than -10°C, the electro-discharge will be reduced by the Li battery's physics characters.

## 2.2 Attaching the Battery

If the belt clip is attached, press down the belt clip first; match the two grooves on the battery to that of on the radio back. Then press down the bottom of the battery until it locks.



Removing: Press down the battery latch and push backwards until it separates from the radio.



Note:

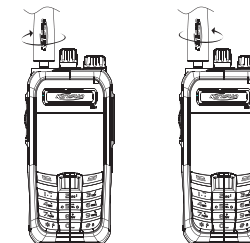
Do not short-circuit the battery or discard in the fire.

Do not disassemble the cover of the battery by your own.

## 2.3 Attaching the Antenna

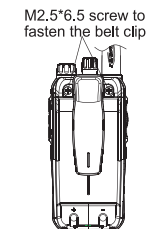
Hold the base of the antenna and turn the antenna clockwise into the connector on the top of the radio until secure.

Removing: Hold the base of the antenna and turn the antenna anti-clockwise and remove it.



## 2.4 Attaching the Belt Clip

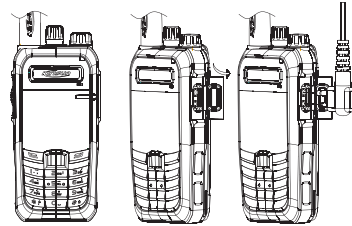
Match the holes on the belt clip to that of on the radio; fasten it with two M2.5\*6.5 screws.



To remove the belt clip, loosen the two screws.

### 2.5 Attaching the External Earphone

Open the cover for external equipment, and then insert the earphone plug into the jacks on the radio.



### 2.6 Powering on/off the Radio

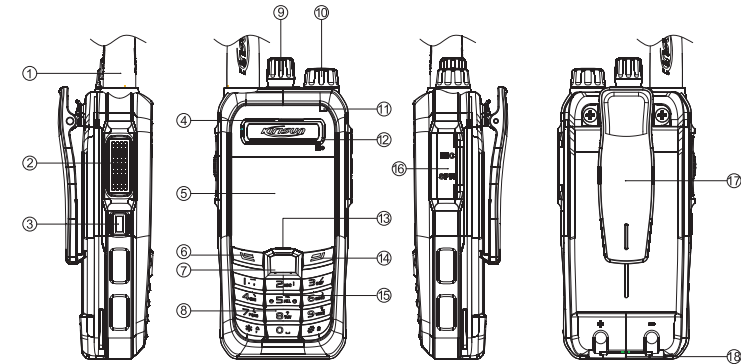
With the radio turned off, turn the On/Off/Volume Knob clockwise until you hear a click to turn on the radio; when the radio turns on, turn the On/Off/Volume Knob counterclockwise until you hear a click to turn off the radio.

### 2.7 Adjusting the Volume

Rotate the Volume Knob to adjust the volume.

## 3 Identifying Radio Controls

### 3.1 Radio Controls



① Antenna

② PTT Button

Press the button to make a call.



**③PF Button (programmable)**

This button can be programmed with different functions by dealer, the functions of which refer to Section of Programmable button.

**④Speaker**

To output voice.

**⑤LCD Display**

The display indicates the radio's status. Details refer to Section of LCD display.

**⑥Menu Key**

In the standby status, press this key to enter menu mode; in the menu operation status, press this key to confirm the current menu item.

**⑦OK Key****⑧Numeric Keypad**

There are 12 keys, which can be used to input call numbers, write messages or create new contact.

**⑨Channel Knob**

Rotate it to select channel

**⑩On/Off/Volume Knob**

Turn it clockwise to turn on the radio. Turn it counterclockwise until you hear a click to turn off the radio.

With the radio turned on, turn it to increase/decrease the volume.

**⑪LED Indicator**

LED indicator lights in red when transmit signal; LED indicator lights in green when receive signal.

LED indicator flashes red when the battery voltage is low.

**⑫Microphone**

To input voice.

**⑬Up key****⑭Cancel Key**

In the menu operation, press this key to cancel the operation and return to the previous menu.

Connector for external equipment

Remove the cover to plug in the external speaker, microphone or other external equipments.

**⑮Down Key**

⑩ Connector for External Equipment

⑪ Belt Clip

⑫ Battery Latch

### 3.2 Programmable Buttons

In order to facilitate your usage, you can program the following buttons as function shortcut keys by your dealer:

Name	Operation	Functions
PF button	Long/short press	See below
Menu Key	Long press	See below
Cancel Key	Long press	See below

Note:

Short press: press the key and release it soon;

Long press: press and hold the key for at least 2s.

Functions programmable:

None: No feature will be assigned.

Power Level Adjust: Toggles transmit power level between high and low.

Monitor: If the current analog channel is configured with CTCSS/CDCSS, the CTCSS/CDCSS will be canceled and the radio switches to carrier squelch mode when press the key, which means if the carrier received matches with the frequency of the current channel, the radio sounds. Press the key again to return to the default setting.

Emergency Alarm On: Allows the user to set up an emergency call to seek help under the emergency condition.

Emergency Alarm Off: Allows the user to terminate an outgoing emergency call.










Squelch on/off: Turns on/off the squelch function. The weak signal can be received on the analog channel.







Squelch Level Adjust: Allows the user to set the Squelch Level. The higher squelch level is selected, the harder to receive weak signals, but the more rarely disturbed by the noise.

Scan: Turns on/off scanning function to search the communication activity on other channels.

Whisper: Turns on/off whisper function. If this function is enabled, the receiver can hear the voice from the transmitter clearly even the voice is very low.

## 3.3 LCD Display

Name	Icon	Descriptions
Signal Strength Indication		No signal
		Signal detected
Messages		There is unread message in the inbox.
		The inbox is full.
Scan		The radio is scanning.
Power	<b>L</b>	The transmit power of the current channel is low.
	<b>H</b>	The transmit power of the current channel is high.
Keypad Lock		Indicates that the keypad is locked.
Squelch Off		Displays when pressing the Squelch on/off shortcut key.
Emergency Alarm		The radio is in emergency alarm status (except secret alarm), or receives emergency alarm.
Battery Display		Indicates the residual capacity of the battery.

Private Call		Indicates the current number is private call number.
Group Call		Indicates the current number is group call number.
All Call		Indicates the current number is all call number.
Call Out		Indicates that the radio is transmitting signal.
Call In		Indicates that the radio is receiving signal.
Hold on the call		Indicates that the call is holding on, without the need to redial.

## 3.4 LED Indicators

Red LED lights on: the radio is transmitting.

Green LED lights on: the radio is receiving.

Red LED flashes: low battery, the battery needs to be charged.

## 4 Basic Functions

### 4.1 Selecting a channel



Each channel in your radio can be programmed to analog channel or digital channel. Under the Home Screen, turn the Channel Knob to select a channel.

### 4.2 Receiving and answering the call

#### (1) Receiving and answering to group call

In order to receive the group call, you must set your radio as the group member (add your radio into the group call list).

When the radio receive the group call,



- The green LED indicator lights on
- The group call icon , group alias or ID and incoming call icon  display on the LCD screen.
- Keep your mouth 3~6 inches away from the microphone;
- Press the PTT key to answer the call and the RED LED indicator lights on;
- Wait for the Talk Permit Tone to finish (if enabled\*) and speak to the MIC;
- Release the PTT key to receive the call;

- After the preset time (call hang time) is over, the call is over.

#### (2) Receiving and answering private call

Private call is a call from an individual radio to another individual radio.



When the radio receives the private call:

- GREEN LED indicator lights on;
- The private call icon , the caller's alias or ID and the incoming call icon  display on the LCD screen;
- Keep your mouth 3~6 inches away from the microphone;
- Press the PTT key to answer the call and the RED LED indicator lights on;
- Wait for the Talk Permit Tone to finish (if enabled\*) and speak to the MIC;
- Release the PTT key to receive the call;
- After the preset time (call hang time) is over, the call is over.

#### (3) Receiving an all call

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 the radio receives the all call:

- a. GREEN LED indicator lights on;
- b. The all call icon , the caller's alias or ID and the incoming call icon  display on the LCD screen;
- c. When the all call is finished, the radio returns to the previous screen.

#### (4)Receiving and answering a in analog mode

On an analog channel, press the PTT Button and speak to the MIC.

On an analog channel, when the radio receives a call, press the PTT Button to answer the call directly.

#### 4.3 Making a call

On a digital channel, choose one of the following procedures to make a call:

- a. Enter **Contacts** menu, select one contact and then press and hold the PTT Button, speak to the MIC.
- b. Enter **Call Log** menu, and then enter **Call Out** or **Call In** item, select one contact, press the PTT Button and speak to the MIC.
- c. Under the Home Screen, press the PTT Button and speak to the MIC. The call out number is the default contact number of this channel, which can be programmed by the dealer, or set through

menu.

- d. Under the Home Screen, input the number manually, then press the PTT Button and speak to the MIC.

On an analog channel, press the PTT Button and speak to the MIC.

## 5 Advanced Functions

Your radio also equips with the following advanced functions.

### 5.1 Radio Check

This function is used to check whether the radio is active in the system or not, while the checked radio user cannot detect it. Except the LED flashes, there is no audible or visual notification on the radio. The checked radio silently sends back a response to the check radio.

#### (1) Sending a radio check

In the standby screen, press [Menu] key to come to step c), or

Press “ Menu” key to enter the menu;

Press “Up/Down” key to select “Contacts”, and press OK to select;  
Press “Up/Down” key to select the target private call contact, Or  
Press “Down” key to select “Add”, and press “Options” to select. Then input the target ID with the keyboard and press “Options” to select.  
Press “down” key select “Status Inquire”, and press “OK” to select.  
Wait for the response.  
If the target radio is active in the system, LCD displays “Ms is Valid”, or otherwise “Ms is Invalid”.  
Press “Back” to return to options feature list

## 5.2 Radio Kill/Revive

This function allows one radio sending the signaling to kill another radio. The radio to be killed cannot display anything, make or receive calls. The radio can only revive through CPS sends a revive order. After revived, the radio can work normally again. This function is used to manage the unauthorized usage of the radio, prevent misappropriating the radio which is lost.

### (1) Receiving a radio kill

When receive radio kill order and “Radio kill/decoding enabled”, the radio will automatically reply ACK (Successful), or otherwise reply ACK (Failed).

“Status of kill” display on the screen. The killed radio will not receive any information except the

revive order and neglect all the keyboard input except ON/OFF key operation.

### (2) Receiving a radio revive

When “Radio kill/decoding enabled” and the killed radio receives the revive order, the radio automatically replies ACK (Successful), or otherwise replay ACK (Failed).

The radio returns to the standby screen. Channel alias display on the LCD.

### (3) Sending a radio kill or revive

In the standby screen, press [Menu] key to enter into menu

Press “ Menu” key to enter the menu;

Press “Up/Down” key to select “Contacts”, and press OK to select;

Press “Up/Down” key to select the target private call contact, Or

Press “Down” key to select “Add”, and press “Options” to select. Then input the target ID with the keyboard and press “Options” to select.

Press “down” key select “kill” or “Revive”, and press “OK” to select.

Wait for the response.

If the target radio is killed in the system, LCD displays “Kill ok” or “Revive Failed, or otherwise “Kill Failed” or “Revive Failed”.

Press “Back” to return to options feature list

### Note:

During when the “Radio kill/revive” order is sent out and the radio is waiting for the response, press “cancel”, the radio will terminate the order and exit “Radio kill/revive” mode.

Or

If the time to wait for the response is over, the radio will automatically exit this mode and displays “Radio kill/revive Failed”.

### 5.3 Emergency Alarm

If you are in danger and this function is enabled, you can press Emergency Alarm On shortcut key to send an emergency alarm.

The means of sending emergency alarm are decided by the following parameters: Alarm Type, which defines the audio and visual reaction when the radio sends an alarm; Alarm Mode, which defines the content sent to the other members when the radio sends an alarm. The above parameters can be programmed by dealer.

To turn off the Emergency Alarm, press the programmed Emergency Alarm Off shortcut key.

#### Alarm Type:

- ◆None: No alarm function (Default setting); you cannot send an emergency alarm.
- ◆Siren Only: The radio only emits siren locally.

◆Regular: The radio provides audio and visual indication that it is in Emergency mode and can receive the signal from others;

◆Secret: No audio and visual indication. And the radio cannot receive the signal from others;

◆Secret with voice to follow: No audio and visual indication. But the radio can receive the signal from others.

#### Alarm Mode:

◆Emergency Alarm: The radio sends out an emergency alarm, and then exits the emergency alarm status automatically.

◆Emergency Alarm w/ Call: An emergency alarm is sent, after which an emergency call can be transmitted by pressing the PTT Button.

◆Emergency Alarm w/ Voice to Follow: The radio sends out an emergency alarm, and then sends out background tone periodically and automatically through emergency call.

Note:

Emergency Alarm: The radio sends out a signal to alert other member.

Emergency Call: A priority call on channel, so as to make sure the successful communication under emergency condition.

#### 5.4 Keypad Lock

If the keypad is locked, the keys have no reaction when pressing key except the PTT key, Emergency Alarm shortcut key, coding knob or the Keypad Lock key is pressed. Thus, it can avoid changing the current channel and working status unconsciously.

Long press the Keypad Lock shortcut key to lock the keypad, and long press this key or “\*” key to unlock it.

You can turn on this function following these steps: “Setting” menu→”Keypad Lock” item→ select “ON”.

#### 5.5 TOT

This function forbids you from occupying the channel for a long time. If the continuous transmitting time exceeds the setting time by dealer, the radio sends out a warning tone and stops transmitting. Release the PTT key to stop the warning tone. After a period of time, which is set by dealer, you can transmit again. And if the radio is programmed with pre-alert function by the dealer, the radio will send out an alert before the time out timer expires.

#### 5.6 Channel Scan

Press the Scan shortcut key to start scanning. During scanning, the radio checks every channel in

the scan list and stops on the channel which a signal is detected.

During scan, the radio checks and stops on a busy channel. Then the radio continues scanning until the channel is not busy for a while (this time is set by dealer, which is named as Scan Hold Time).

Steps to start scanning: press the Scan shortcut key → select “Start” item. The radio scans the channels in the current scanning list one by one. During scan, press the Cancel key or scan shortcut key to stop.

#### Scan revert channel

During scan, press the PTT key to make the radio transmit on a default channel. The channel can be programmed by your dealer.

#### 5.7 Messages:

Enter “Messages” menu, you can edit, send, receive, reply, forward and delete the message.

#### 5.8 Shortcut Messages:

Enter “Messages→Shortcut Message” menu, you can edit, send, receive, reply, forward and delete the shortcut message. The content of shortcut messages is set by local dealers. Users can use these functions under the menu prompt.

#### 5.9 Setting operating parameters



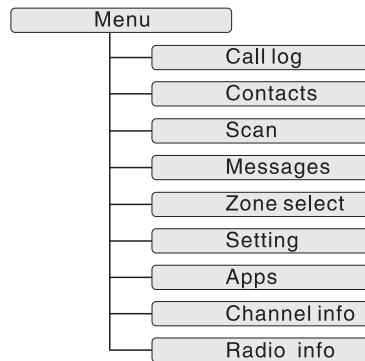
You can set the radio's operating parameters. Details refer to "Menu in Digital Mode"→

## 6 Identifying Menu Structures

Press the Menu Key to enter it. The menu items would be a slight difference in digital mode and in analog mode. And the items displayed can be reprogramming by your dealer.

Menu in digital mode

If you choose a digital channel, the main menu structure is as follows:



### 6.1 Call Log

Your radio is able to record the call in and call out log. If the call log is full, the earliest log will be covered and disappeared when the new call record is saved.

Procedures:

Use the menu

1. Press the Menu Key to access the main menu.
2. Press the Up/Down Key to **Call Log** and press the OK Key to confirm.

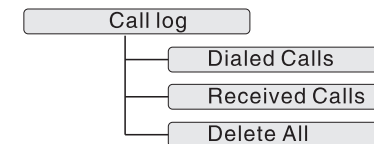
Use the programmed Call Log key

1. Press the shortcut Call Log Key to enter.

#### 6.1.1 Dialed Calls/ Received Calls

You can make a call, check the detailed information of the contact, add number, send a Status Inquire call, set the contact as the default contact, and delete the call log under these two items. If the Radio Enable or Radio Disable function is enabled by your dealer, you can also send Radio Enable or Radio Disable command to the contact.

Detailed information:



You can view the detailed information of the selected call log.

Add number:

You can add the number of the selected call log into **Contact list**. Only Individual Call log has this function.

Status Inquire:

You can send this command to the selected number (only private call contact) to make sure whether the radio has been powered on or is active on the current channel secretly. Only Individual Call log has this function.

Radio Disable:

You can send this command to the contact (only private call contact) to make the target radio disabled.

Radio Enable:

You can send this command to the killed radio (only private call contact) to make the target radio enabled.

Set as default contact:

The default contact is the contact number which is dialed to make a call by pressing the PTT Button directly, without the need to enter **Dialed Call**, **Received Call** or **Contacts** menu list. Each channel can be set one default contact. The number can be programmed by your dealer or set on your radio.

Set as default contact means to set the selected number as the default contact of the current channel. Only Group Call log has this function.

Delete:

Delete the selected call logs.

#### 6.1.2 Delete All

If you want to delete all the call logs, select **Delete All** item and confirm it.

## 6.2 Contacts

**Contacts** provides “address-book” capabilities on your radio. There are **Add** submenu and all **Contacts** list in this menu.

Procedures:

Use the menu

1. Press the Menu Key to access the main menu.
2. Press the Up/Down Key to **Contacts** and press the OK Key to confirm.

#### 6.2.1 Contacts List

You can view the entire Contacts list through **Contact** menu or the Contact List shortcut key. These contacts can be edited by programming software or by inputting manually. Only the private call

contact can be inputted manually.

Enter **Contacts** list, choose one contact, you can perform the following operations: press the PTT Button to send a call; check the detailed information; send a Status Inquire Call(only individual call contacts); set this contact as default contact; edit(only individual call contacts) or delete(only individual call contacts) contact.

If Radio Enable, Radio Disable function is enabled by your dealer; you can also send Radio Enable or Radio Disable command to the contact.

About the descriptions of Status Inquire, Set as default contact, Radio Enable and Radio Disable, details refer to Call Log Section. And other functions are as below:

Detailed information:

You can check the contact's name, number, and call type.

Edit:

You can edit the contact's name and number.

Delete:

Delete the selected contact.

New contact:

You can create an individual call contact into the contacts list. The contact number is made up of 7

digits.

### 6.3 Scan

Scan function helps you to receive calls from other channels, so as to supervise the activities of the personnel.

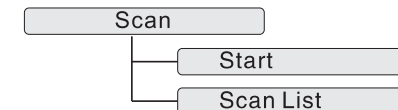
During scanning, the radio checks every channel in the scan list and stops on the channel which a signal is detected. The scanning mode is carrier-control, which has been preset by your dealer.

Carrier-control scan

During scan, the radio checks and stops on a busy channel. Then the radio continues scanning until the channel is idle for a while (this time is set by your dealer, which is named as Scan Hold Time).

Scan revert channel

While scanning, press the PTT button to make the radio transmit on a default channel. This channel can be programmed by your dealer.



Procedures:

Use the menu

1. Press the Menu Key to access the main menu.
2. Press the Up/Down Key to **Scan** and press the OK Key to confirm.

Use the Scan shortcut key

1. Press the Scan shortcut key to enter.

### 6.3.1 Starting scan

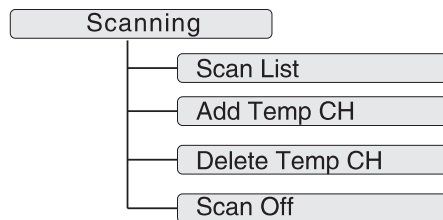
Select **Start** item and confirm to start scanning, and press the Cancel Key or Scan shortcut key to stop scanning.

In scanning status, press the Menu Key, the following menu will be displayed:

Add/Delete Temp Channel

During scanning, if the radio stops on an unwanted channel, such as nuisance channels, the unwanted channel can be temporarily deleted by selecting Delete Temp Channel function, and then the scan continues. And also, you can temporarily add a channel by selecting Add Temp Channel function. After existing scanning mode, the temporarily added or deleted channel is invalid. The scan list resumes its original channel.

### 6.3.2 Scan list



Each channel can correspond to one scan list by dealer's programming. Only the channel which is set in the **Scan List** item can enable scanning. Each scan list includes 16 channels at most, with both digital and analog channel. Selecting **Scan List** item and confirming it, check, added or delete the channels included in it.

Attention: If the channel included in the Scan List is changed, the other channels which related to the Scan List will be influenced.

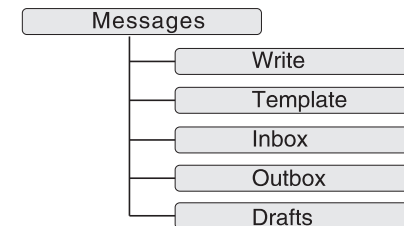
### 6.4 Messages

Your radio is able to receive data, for example a text message, from another radio. You can reply, forward or delete the message under this menu.

Procedures:

Use the menu

1. Press the Menu Key to access the main menu.
2. Press the Up/Down Key to **Messages** and press the OK Key to confirm.





### 6.4.1 Writing a message

You can write a new message to send. The target contact can be chosen from the Contact List. The message can also be saved into Drafts, and the template message can be inserted while writing a new message.

#### 6.4.2 Template

There are some template messages programmed by your dealer, you can send these message directly if you like.

#### 6.4.3 Inbox

The inbox stores the received messages. If there's a new message,  will be displayed on the home screen; if the inbox is full,  will be displayed. If the inbox is full, the earliest received messages will be covered and disappeared after receiving a new message. You can check the detailed information, reply, forward and delete the message here.

#### 6.4.4 Outbox

The outbox stores the sent messages. If the outbox is full, the earliest sent messages will be covered and disappeared after sending a new message. You can check the detailed information, resend, forward and delete the message here.

#### 6.4.5 Drafts

The draft box stores the draft messages. If the draft box is full, the earliest draft messages will be covered and disappeared after saving a new draft message. You can send, edit and delete the

message here.

#### 6.5 Zone select

A zone is a group of channels. You radio supports up to 16 channels and 16 zones, with a maximum of 16 channels per zone.

Procedures:

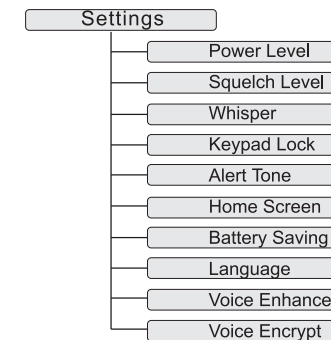
Use the menu

1. Press the Menu Key to access the main menu.
2. Press the Up/Down Key to **Zone Selected** and press the OK Key to confirm.

#### 6.6 Settings

You can set your radio parameters as required, including Power, Squelch Level, Whisper, Keypad Lock, Alert Tone, Home Screen, Battery Saving, Language and voice enhancement, encryption. Settings will be different due to different dealers.

##### 6.6.1 Power



The channel's power can be set as High or Low. High power is useful in long distance communication, but the battery's working time will be lessened. **H** refers to high power, **L** refers to low power. Each channel's power level can be set separately.

#### 6.6.2 Squelch level

The radio's squelch level can be set from 0 to 9. If the squelch level is higher, the radio is affected less by noise, but harder to receive weak signal. If the squelch level is lower, the radio is easier to receive weak signal, but easier affected by noise.

#### 6.6.3 Whisper:


Whisper function can make the receiver hear clearly even if you speak in a low voice to MIC. You can set whisper function on/off here.

#### 6.6.4 Keypad Lock

If the function is enabled, the keypad will be locked automatically. And only the PTT Button, Emergency Alarm Key and Keypad Lock shortcut key are available when the keypad is locked. You can set keypad lock function on/off here.

Procedures:

Long press the Keypad Lock Shortcut Key or \* Key;

 displays on the screen, and the keypad is locked.

Repeat the above procedure to unlock the keypad.

#### 6.6.5 Alert Tone:

You can set alert tone function on/off the alert tone here.

#### 6.6.6 Home Screen

You can set what to display on your Home Screen, including channel number, channel frequency, channel name, zone number and zone alias.

#### 6.6.7 Battery Saver

You can set battery saver function on/off here. This function can prolong the battery's working time when enabled.

#### 6.6.8 Language:

You can choose Chinese or English as the working language.

#### 6.6.9 Voice Enhancement

You can turn on/off Voice Enhancement function or set the enhancement level.

#### 6.6.10 Voice Encryption

You can turn on/off Voice Encryption of current channel.

### 6.7 APPs

Calculator is available under this menu.

### 6.8 Channel Information

You can check the current channel mode and transmit/receive frequency.

### 6.9 Radio Information

You can check the following information: radio ID, model type, firmware version, data version and frequency range.

### 6.10 Menu in analog mode

In analog channel, there are Scan, Channel Info, Settings, APPs and Radio Info in the main menu, the contents of which are the same as on digital channel. (Refer to: Menu in digital mode)

You can check the frequency and CTCSS of the current channel under Channel Info menu item.

## 7 Troubleshooting

No.	Problem	Causes and Solutions
1	The radio cannot be switched on or no display after being switched on.	A. The power switch is in failure. Please change it. B. The battery is out of power, please recharge it or change it.
2	The voice is low.	A. Please speak close to the microphone. The ideal distance is 3-10cm. B. Please turn the Volume Knob to increase the volume to the best.
3	Cannot transmit	A. The frequencies of both users are not the same. Please select the same frequency channel again. B. The CTCSS/DCS signals of both users are not the same. Please reset it. C. The radio is out of effective communication range.

## 8 Specification

General	
Frequency Range	400-470MHz/136-174MHz
Channel Capacity	256
Channel Spacing	6.25KHz/12.5KHz
Operating Temperature	-25°C ~ +55°C
Operating Voltage	7.5V DC ±20%
Battery	1500mAH Li-ion
Frequency Stability	±2.5 ppm
Dimension (with battery and antenna)	116mm x54mmx30mm
Weight (with battery and antenna)	243g
Transmitter	
RF Power Output	4W/ 1W
Frequency Modulation	16KφF3E/11KφF3E (Analog) 4FSK(Digital)
Antenna Impedance	50Ω
Modulation Limiting	±2.5kHz

Radiated Spurious Emission	-36dBm < 1GHz -30dBm > 1GHz
FM Noise	45dB @ 25KHz 40dB @ 12.5KHz
Modulation Distortion	< 3%
Receiver	
Reference Sensitivity	0.25μV @12.5KHz
Adjacent Channel Selectivity	60dB @ 12.5KHz
Intermodulation	60 dB
Spurious Response Rejection	60 dB
Rated Audio Output	1W
S/N	45/40
Rated Audio Distortion	≤3%



