

any other key, will return to this message. When you press [PTT] for a single call or group call, or as a response to the group calling, radio will exit the retransmission selection screen.

If received text messages or remote sensing information, emergency call, or call the police, or call reminder, radio will exit the retransmission selection screen.

If you press [PTT] in response to a single call (in addition to the radio in the show did not answer the call screen), or at the end of all call, the screen will return to resend selection screen. Press [MENU] key, enter the forwarding, edit, or delete selection screen.

- choose forward, will choose the SMS sent to speak to other groups/user alias or ID.
- choose to edit, to edit the selected text messages before sending
- choose delete, delete the selected text.

Note: if you screen out SMS messages when send text messages, so radios will be in the "sent items" folder for SMS status updates, not the tip or by voice prompt. If the messages in the sent items folder state before update, walkie-talkie pattern changed or blackout, walkie-talkie will not be able to complete the ongoing message processing, and automatically start tag to the icon of failure. This radio can handle 5 text messages at the same time. At this stage, the radio can't send a new message, and automatically start tag icon to send failure.

## Deleting all Sent Messages In the "Sent Items"

Using the Menu Function

1. Press the [MENU] button to enter the Menu.
2. Move the [▲ or ▼] key to Messages, and then press [MENU] key choice.
3. Move [▲ or ▼] to Sent Items, and then press [MENU] key choice.
4. Move the [▲ or ▼] key to delete all, and then press [MENU] key choice.

5. When it appears to delete messages, press [MENU] button, select "yes" project has clear screen display has been sent.

Or delete the text, move [▲ or ▼] to no, and click [MENU] key to return to the previous screen. When you select the "sent items" but not one of them text messages, the screen will display the list is empty, if the keyboard is open at this time, will be a low tone hint sound.

## Receive SMS

When your radio are receiving SMS, the left of the screen shows the sender alias or ID ICONS and text messages.

When receive text messages, you can choose the following options:

- reading?
- Reading Later
- delete

Note: when the radio shows tip on the screen, please press (PTT), two way will exit and to establish a single call or text message screen group call.

## Check the SMS

1. Move the [▲ or ▼] key to Read, And then press [MENU] key to choose
2. the selected text messages on the inbox opened, if the message is from the email program, it will appear a subject line.
3. Click [MENU] key to return to your inbox.

Or press [MENU] to reply, forward or delete messages.

Move [  or  ] key to enter later view or delete selection screen:

Later, select view screen before returning to receive messages.

Choose delete, delete receive text messages.

### Manage Received SMS

Use your inbox to manage messages. inbox can store up to 50 text messages at Most.












Two way radio supports the following text options:


- Reply
- Forward
- delete
- Delete all

store the message in the inbox in the order of received time .

Note: at any time according to the [  ] key can return to the previous screen.























### Check The Inbox SMS

1. Press the [  ] button to enter the Menu.
2. Move the [  or  ] key to Messages, and then press [  ] key to choose
3. Move [  or  ] to the inbox, and then press [  ] key to choose.
4. Move the [  or  ] key to check the message. If the messages are from the email program, it will appear a subject line.
5. Press the [  ] key to choose the current text, then press [  ] key again to reply, delete, or forward this message.

Unread messages:  , Already read message: 

### Reply The Inbox SMS

Use the menu function:

1. Press [  ] button to enter the Menu.
  2. Move the [  or  ] key to message, and then press [  ] key to choose
  3. Move [  or  ] to the inbox, and then press [  ] key to choose
  4. Move the [  or  ] key to the SMS, and then press [  ] key to choose. If the messages are from the email program, it will appear a subject line.
  5. Press again [  ] button to enter submenu.
  6. Move [  or  ] to reply, and then press [  ] key to choose.
  7. Move [  or  ] to write messages, and then press [  ] key choice, a flashing cursor, using a keyboard editing text messages.
- Or move [  or  ] key to prefabricated text messages, and then press [  ] key to choose.
- Choose the required message after press [  ] a flashing cursor, if needed, with the keyboard editing your message.
- 8 After Writing the text, press [  ] .
  9. The screen displays message : < user/ call group name or ID >, to confirm. text messages were being sent
  10. If the messages sent successfully, issued a prompt sound, and screen display text message has been sent.
- Or if you cannot send text messages, screen display text message sent failure. If message sent failure, radio return to the retransmission selection screen.

## Deleting the Inbox messages

Use the menu function:

1. Press the [MENU] button to enter the Menu.
2. Move the [▲ or ▼] key to message, and then press [MENU] key to choose
3. Move [▲ or ▼] to the inbox, and then press [MENU] key to choose
4. Move the [▲ or ▼] key to the SMS, and then press [MENU] key choice. If the messages are from the email program, it will appear a subject line.
5. Press again [MENU] button to enter submenu.
6. Move the [▲ or ▼] key to delete, and then press [MENU] key to choose.
7. Delete messages, move [▲ or ▼] key to "yes", then press [MENU] key to choose.
8. Screen appears short message has been deleted.
9. The screen back to inbox.

## Deleting all messages in the Inbox

Use the menu function:

1. Press the [MENU] button to enter the Menu.
2. Move the [▲ or ▼] to the Message, and then press [MENU] key to choose.
3. Move [▲ or ▼] to the inbox, and then press [MENU] key to choose.
4. Move the [▲ or ▼] key to delete all, and then press [MENU] key to choose.
5. When it appears Deleting the messages, move [▲ or ▼] select yes, and then press [MENU] key to choose
6. Then The screen inbox was empty already.

When you select the "inbox" but not one of them text messages, the screen will display the list is empty, if the keyboard is open at this time, will be a low tone hint sound.

## Encryption

If you enable this feature, which is beneficial to prevent other users on the channel by using the method of software encryption for unauthorized eavesdropping. The launch of signaling and user identification part unencrypted. Your radio must be enabled on the channel encryption function, can send encrypted, even if the receiving transmission is not must request to do so.

## Basic encryption

Two way radio can only be assigned more than one type of encryption. If users Call for encryption or decryption of data transmission, must make to be preprogrammed walkie-talkies and launch radio has the same "encryption keys" (suitable for basic encryption).

If your radio to receive different encryption keys or key values and key encryption call ID, you will hear the sound of the transport chaos encryption (basic).

Press the preliminary programming encryption keys on or off.

## DTMF

Dual Tone Multi-Frequency (DTMF) function allows to operate radio when there is interference in the radio system.

To initiate a DTMF call

1. Press and hold [PTT] key.

2. Enter number you need.

You can disable DTMF tone by turning off all radio tone and prompts.

### Secrecy

You can activate or kill any radio in the system. For example, you might want to disable a stolen radio, to prevent thieves use it, and enable it when you get it back.

Note: radio kill or activation is limited to activate the radios with these functions.

### Radio Disable

Use menu mode

1. Press [ **MENU** ] key to enter the menu mode.
  2. Move [ **▲** or **▼** ] key to Contacts, and then press [ **MENU** ] key to select, entries are in alphabetical order.
  3. Move [ **▲** or **▼** ] key to the required alias or ID, and press [ **MENU** ] key to select.  
Or move [ **▲** or **▼** ] key to Manual Dial, then press twice [ **MENU** ] key to enter a user alias or ID, and press [ **MENU** ] key to select.
  4. Move [ **▲** or **▼** ] key to radio disable, and then press [ **MENU** ] key to select.
  5. The display shows the radio disable: <user alias or ID> and the LED indicator light is red.
  6. Wait for confirmation.
  7. If successful, emit a beep and the screen displays radio disable successfully.  
Or if it fails, emit a beep and the screen displays radio fail to disable.
- During radio disable operation, do not press the [ **BACK** ] key, because you will not get a confirmation message.

### Scanning List

Create a scan list and assign to a single channel / talkgroup, your radio can support up to 250 scan lists, each up to 16 members. Each scan list support mixed analog and digital channels.

You can edit the scan list to add / delete channels or set the priority channel.


### Check members of list

1. Use the channel knob to select a channel with pre-programmed scan list;
2. Press the [ **MENU** ] key to enter the menu mode;
3. Move [ **▲** or **▼** ] key to scan, and then press the [ **MENU** ] key to select;
4. Move [ **▲** or **▼** ] key to Viewlist the list, and then press the [ **MENU** ] button to select;
5. Use [ **▲** or **▼** ] key to see members of list.

If you set the priority, the priority icon is displayed in the left of member alias, indicating that the member is the Priority **1** or Priority **2** channel; if the priority is set to **N**, no priority icon.

In a scan list, you can not have more than one Priority **1** or Priority **2** channel.

### Scanning Instruction

When scanning, your radio can view if there is a voice activity in current channel through circulating pre-programmed scan list. LED lights flashing for a red light, and the scan icon  appears on the screen.


When scanning in dual mode, if you're in a digital channel and your radio locking an analog channel, radio will switch automatically from digital mode to analog mode throughout the duration of the call. And vice versa.

There are two scanning methods

- Manual Scan: According to a pre-programmed scan on / off key or menu function to start the scan, when you start scanning, radio will detect all channels / contact groups on pre-programmed scan list.
- Auto Scan: When you select an already activated auto scan channels / contact groups, radio scans from the activated auto scan channel.

### Start/Stop Scan

Press Pre-programmed Scan On / Off Key Or Enter The Scan Menu Function

1. Using the channel knob to select a channel of pre-programmed scan list;
2. Press [ **MENU** ] to enter menu mode;
3. Move [ **▲** or **▼** ] to scan, and then press [ **MENU** ] to select;
4. If the scan is disabled, the screen displays on or if the scan is activated, the screen displays off.
5. Press [ **MENU** ] to select
6. When the scan is activated, LED indicator flashes red and displays scan icon ; or when scanning is disabled, LED light goes out and does not display the scan icon.

### Scanning Reply

Radio detect active channel/contact group when scanning, at this time radio will stay in the channel/ contact group, which is called "Scan hang time" pre-programmed time.

Procedure:

1. Hold the radio in a vertical position and keep one to two inches (2.5 to 5.0 cm) distance from the mouth. If you enable the "channel idle tone" function, when transmitting radio release [PTT] key, you will hear a short beep, indicating that the channel is idle, waiting for your respond.
2. Within the hang time by pressing [PTT] button, LED indicator light is red.
3. Release [PTT] key to respond.
4. If you do not respond within the hang time, radio will continue down the scan

### Utilities

Utilities includes the following contents:

- Radio settings
- Radio Info
- Program Radio

### Radio settings

Radio Setting includes:

- Talkaround
- Tones/Alerts
- Power
- Backlight

- Squelch
- Intro Screen
- Keypad Lock
- LED Indicator
- VOX
- Passwd Lock
- Record
- Clock
- Mode

### Talkaround

When the transponder does not work, or when the radio located outside the range of the transponder but located within the range of other radios call, you can continue to communicate. This is called "talk around."

Press Pre-programmed repeater / talk around button, you can switch between repeater / talk around mode.

Use the menu function

1. Press [ **MENU** ] key to enter the menu mode.
2. Move [ **▲** or **▼** ] key to utilities, and then press [ **MENU** ] key to select.
3. Move [ **▲** or **▼** ] key to radio settings, and then press the [ **MENU** ] key to select.
4. Move [ **▲** or **▼** ] key to talk around, and then press [ **MENU** ] key to select.
5. If radio is currently in repeater mode, you can see the open, or if radio is currently in talk

around you can see the close.

6. Press [ **MENU** ] key to select.
7. Screen showing turn on talk around "I→I" or turn off talk around.
8. The screen automatically returns to the previous menu.  
Even after the shutdown, still remains talk around.

### Tones/Alerts

including the following contents:

- All Tones
- Talk Permit
- Keypad Tones

### All Tones


If desired, you can enable or disable all radio tone and prompts (except emergency incoming tone).

Press pre-programmed all Beep ON / OFF to turn on or off all radio tones.

Use the menu function:















1. Press [ **MENU** ] key to enter the menu mode.
2. Move [ **▲** or **▼** ] key to utilities, and then press [ **MENU** ] key to select.
3. Move [ **▲** or **▼** ] key to radio settings, and then press the [ **MENU** ] key to select.
4. Move [ **▲** or **▼** ] key to tones/alerts, and then press [ **MENU** ] key to select.
5. Move [ **▲** or **▼** ] key to all tone, and then press [ **MENU** ] key to select.
6. Press [ **MENU** ] key to select on, then enable all tone and prompts, screen displays all tone


is open.

Or press [  ] key to select Off, then turn off all tones and prompts, screen displays all tone is off.

### Keypad Tones

If desired, you can activate and deactivate call admission tone.

1. Press [  ] key to enter the menu mode.
2. Move [  or  ] key to utilities, and then press [  ] key to select.
3. Move [  or  ] key to radio settings, and then press the [  ] key to select.
4. Move [  or  ] key to tones/alerts, and then press [  ] key to select.
5. Move [  or  ] key to keyboard tone, then press [  ] key to select.
6. Press [  ] key to select Open, then enable the keyboard tone, the screen shows keyboard tone is turned on.

Press [  ] key to select off, then turn off the keyboard sound, the screen shows keyboard tone is turned off.












### Power


You can set each channel power level to high or low. Setting: High-power radio implement communications with relatively far distance radios. Low-power radio implement communications with relatively close distance radios.

Press pre-programmed high / low power selection key, you can switch high / low transmit power.

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Using the menu function:

1. Press the [  ] key to enter the menu mode.
2. Move [  or  ] key to utilities, and then press [  ] key to select.
3. Move [  or  ] key to radio settings, and then press the [  ] key to select.
4. Move [  or  ] key to power, and then press [  ] key to select.
5. Follow the on-screen instructions to change the current settings.
6. Press [  ] key to select the new power level.
7. Return to the previous menu screen.












Press [  ] to return to the main screen, the screen displays the power level icon.

### Backlight

You can turn on or off the screen backlight according to the need. This setting also affects the menu button and the keyboard backlight.

Press a pre-programmed automatic backlight key to switch backlight settings

Using the menu function:

1. Press [  ] key to enter the menu mode.
2. Move [  or  ] key to utilities, and then press [  ] key to select.
3. Move [  or  ] key to radio settings, and then press the [  ] key to select.
4. Move [  or  ] key to backlight, and then press [  ] key to select.
5. The screen displays always open, 5S, 10S, 15S options, press [  ] key to select always open, the screen will remain lit and won't turn off, or if you choose 5S, 10S, 15S, the sc-

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reen backlight will be off in the corresponding time under users without any operations.

## Squelch

You can adjust radio squelch level, thus filtering low signal intensity useless call or channel higher than normal value. Setting: Normal is the default, strict filtering (useless) call or background noise. However, a call from a remote location may also be filtered out.











Press pre-programmed strict / normal squelch button to switch between normal and strict squelch level.


Using the menu function:


1. Press [  ] key to enter the menu mode.
2. Move [  or  ] key to utilities, and then press [  ] key to select.
3. Move [  or  ] key to radio settings, and then press [  ] key to select.
4. Move [  or  ] key to squelch, and then press [  ] key to select.
5. Select strict or normal, and then press [  ] key to select.
6. The screen returns to the previous menu.

## Intro Screen

If desired, you can enable and disable the Intro Screen display.



















1. Press [  ] key to enter the menu mode.
2. Move [  or  ] key to utilities, and then press [  ] key to tight.
3. Move [  or  ] key to radio settings, and then press the [  ] key to tight.
4. Move [  or  ] key to Intro Screen, then press [  ] key to select.

5. The screen is on, press [  ] key to enable the Intro Screen display, the screen displays the boot screen display on.

Or the screen is off, press [  ] key to close the Intro Screen display, the screen displays the boot screen display off.

## Keypad Lock












You can lock the keypad to prevent accidental key input. Ways include manual and automatic keypad lock, which includes 5S, 10S, 15S three options.


1. Press [  ] key to enter the menu mode.
2. Move [  or  ] key to utilities, and then press [  ] key to select.
3. Move [  or  ] key to radio settings, and then press [  ] key to select.
4. Move [  or  ] key to keypad lock, then press [  ] key to select.
5. Move [  or  ] key to manual, and then press [  ] key to select, screen show to select Manual, you need to long press [  ] key to lock keypad on the main interface.
6. Move [  or  ] key 5S, 10S, 15S, the screen shows to select the corresponding time, then keypad will be locked and return to the main screen if user have not any keypad operation after corresponding period of time.
7. To unlock the keypad, press [  ] key, then press [  ] key.
8. Screen shows unlock keyboard, and then return to the main screen.

## LED Indicator



If desired, you can activate and deactivate the LED.

1. Press [  ] key to enter the menu mode.
2. Move [  or  ] key to utilities, and then press [  ] key to select.
3. Move [  or  ] key to radio settings, and then press [  ] key to select.
4. Move [  or  ] key to LED indicator, and press [  ] key to select.
5. The screen displays open, press [  ] button to enable LDE light, screen shows to turn on the LED light.

Or The screen displays off, press [  ] button to turn off the LED light, screen shows to turn off the LED light.

If you disable the LED light, buttons and keyboard backlight automatically turns off.

## VOX

This function allows you to initiate voice-activated hands-free calls on pre-programmed channels. Whenever a microphone with VOX function detect voice, radio will automatically transmit signals within pre-programmed period of time.












During radio operation press [PTT] key will disable VOX function, to re-enable the VOX function, do one of the following:

- Turn off and return on radio
- Through the channel knob to change the channel, or
- Perform the following procedure:












Note: Enabling or disabling this function is limited to activate radios of these function.

Press pre-programmed VOX on / off key, to turn on or off this function.

Using the menu function:

1. Press [  ] key to enter the menu mode.
2. Move [  or  ] key to utilities, and then press [  ] key to select.
3. Move [  or  ] key to radio settings, and then press the [  ] key to select.
4. Move [  or  ] key to VOX, and then press [  ] key to select.
5. Screen shows VOX off and VOX level 1-10S, if you choose to turn off, press [  ] key to disable the VOX function, emitting a beep and the screen displays VOX off. If you choose 1-10S, VOX function is enabled, and the voice transmit sensitivity is on the corresponding level. If you activate the call allowing sound, you can initiate a call using a trigger word. Waiting sound end (if activated), and then speak clearly into the microphone.

## Passwd Lock

1. Press [  ] key to enter the menu mode.
2. Move [  or  ] key to utilities, and then press [  ] key to select.
3. Move [  or  ] key to radio settings, and then press [  ] key to select.
4. Move [  or  ] key to passwd lock password, and then press [  ] key.
5. Use the keypad to enter the correct 8 digits password (You can pre-set by software), and then press the [  ] key.
6. If the password is incorrect, the screen displays an error code. If the password is correct,

the screen displays options.

7. If the first line shows open, press [ **MENU** ] key to display the power-on password application. Next time you need to enter the correct password to turn on radio. If the first line shows off, press [ **MENU** ] key to display the power-on password cancellation, next time you can directly turn on radio.
8. Move [ **▲** or **▼** ] key to change power-on password, and then press [ **MENU** ] key to select.
9. Enter 8 digits new password, and then press [ **MENU** ] key to select.
10. Once again, enter 8 digits new password, and then press [ **MENU** ] key to select.
11. Screen displays that password was successfully changed.

Note: The power-on password must be set to eight digits.

## **Record (Be able to record for more than 8 hours when it's 3000 channels & 10000 contacts)**

### **Record On/Off**

Note: Record function is only available on digital mode

1. You can set one of the Buttons Definitions to turn on/off the record
2. Menu operations
  - (1) Press [ **MENU** ] to enter menu mode
  - (2) Move [ **▲** or **▼** ] to Utilities, then press [ **MENU** ] to select

(3) Move [ **▲** or **▼** ] to select Radio Settings,

(4) Move [ **▲** or **▼** ] to Record

(5) Move [ **▲** or **▼** ] to Turn On/ Turn Off

(6) Press [ **MENU** ] to select

When the record function is turned on, each digital call will be recorded and stored in the Call Log submenu

### **Record Check/Playback**

1 Press [ **MENU** ] to enter menu mode

2 Move [ **▲** or **▼** ] to Call Log, press [ **MENU** ] to select

3 Move [ **▲** or **▼** ] to Record, press [ **MENU** ] to select

4 Move [ **▲** or **▼** ] to record Directory (records will be stored each day), press [ **MENU** ]

5 Move [ **▲** or **▼** ] to select the record you need

6 Press [ **MENU** ] to choose from: Play, Destination ID, Source ID, Date, Time ,Tx/Rx, RecordTime

7 Press [ **MENU** ] to select

### **Clock**

Clock settings are divided into:

- Time
- Date

## Time

1. Press [ **MENU** ] key to enter the menu mode.
2. Move [ **▲** or **▼** ] key to utilities, and then press [ **MENU** ] key to select.
3. Move [ **▲** or **▼** ] key to radio settings, and then press [ **MENU** ] key to select.
4. Move [ **▲** or **▼** ] key to clock, and then press [ **MENU** ] key.
5. Move [ **▲** or **▼** ] key to time, and then press [ **MENU** ] key to display the current time.
6. Press [ **MENU** ] key to enter time setting interface.
7. Move [ **▲** or **▼** ] key to move left and right to select the desired number, the selected number will reverse video display, then enter the corresponding numbers to change the time via the numeric keypad.
8. Press [ **MENU** ] key to save, the screen displays the time has been saved.

## Date

1. Press [ **MENU** ] key to enter the menu mode.
2. Move [ **▲** or **▼** ] key to utilities, and then press [ **MENU** ] key to select.
3. Move [ **▲** or **▼** ] key to radio settings, and then press [ **MENU** ] key to select.
4. Move [ **▲** or **▼** ] key to clock, and then press [ **MENU** ] key.
5. Move [ **▲** or **▼** ] key to date, and then press [ **MENU** ] key to display the current date.
6. Press [ **MENU** ] key to enter the time setting interface.

7. Move [ **▲** or **▼** ] key to move left and right to select the desired numbers, the selected numbers will reverse video display, then enter the corresponding number to change the date via the numeric keypad.
8. Press [ **MENU** ] key to save, the screen displays the date has been saved.

## Mode

Mode settings are divided into:

- CH Mode
- MR Mode

1. Press [ **MENU** ] key to enter the menu mode.
2. Move [ **▲** or **▼** ] key to utilities, and then press [ **MENU** ] key to select.
3. Move [ **▲** or **▼** ] key to radio settings, and then press [ **MENU** ] key to select.
4. Move [ **▲** or **▼** ] key to mode and then press [ **MENU** ] key.
5. Move [ **▲** or **▼** ] key to select CH mode or MR mode, then press [ **MENU** ] key to select the corresponding mode, the screen displays this mode is selected.
6. The main screen will show channel name or frequency (receiving frequency) according to the selected mode.

## Private call match

1. press ENT/ MENU to enter the menu.
2. choose the UTILITIES.
3. press ENT/ MENU to enter radio setting,choose Private call Match to confirm.

Note: when Private call match is on, you can communicate the radio directly without the ID match.

### Group call match

1. press ENT/ MENU to enter the menu.
2. choose the UTILITIES.
3. press ENT/ MENU to enter radio setting, choose Private call Match to confirm.

Note: when Group call match is on, you can communicate the radio directly without the ID match.

### Interrupt:

1. Open the Interrupt in the software.
2. If the radio has to be allowed to interrupt, when received the radio which is also set to be: TX interrupt in call criteria. When radio will be in receiving automatically.

### Radio Info

Radio contains the following information:

- My Number
- Versions

Note: At any time you can return to the previous screen by pressing the [ **BACK** ] key.

### My Number

1. Press [ **MENU** ] key to enter the menu mode.
2. Move [ **▲** or **▼** ] key to utilities, and then press [ **MENU** ] key to select.

3. Move [ **▲** or **▼** ] key to radio information, and press [ **MENU** ] key to select.
4. Move [ **▲** or **▼** ] key to my number, then press [ **MENU** ] key.
5. The display shows radio ID and name.

### Versions

Display radio firmware version.

1. Move [ **MENU** ] key to enter the menu mode.
2. Move [ **▲** or **▼** ] key to utilities, and then press [ **MENU** ] key to select.
3. Move [ **▲** or **▼** ] key to radio information, and press [ **MENU** ] key to select.
4. Move [ **▲** or **▼** ] key to radio versions, and then press [ **MENU** ] key.
5. The screen will display the current firmware version, Codeplug version.

### Program Radio

Radio configuration mainly includes editing the channel contents

Channel contents can be edited include:

- RX Frequency
- TX Frequency
- Channel Name
- Time out Timer
- CTC/DCS
- Color Code
- Repeater Slot

## Rx Frequency

1. Press [ **MENU** ] key to enter the menu mode.
2. Move [ **▲** or **▼** ] key to utilities, and then press [ **MENU** ] key to select.
3. Move [ **▲** or **▼** ] key to program radio, and then press [ **MENU** ] key to select.
4. Use the keypad to enter the correct Program radio password (programmed by software), and then press [ **MENU** ] key to select.
5. Move [ **▲** or **▼** ] key to receiving frequency, and then press [ **MENU** ] key to select.
6. The screen displays receiving frequency of the current channel, and then press [ **MENU** ] key to select.
7. Press the number keys to enter the corresponding number, press [ **▲** ] key to delete the last number, press [ **BACK** ] to return to the previous menu.
8. After finish the change, press [ **MENU** ] key, the screen displays receiving frequency has been saved.

Note: Editing frequency will be limited within the frequency range setted by programming software, if less than the write frequency range setted by software, the final change result will be the minimum frequency of frequency range setted on software, otherwise it is maximum.

## Tx Frequency

1. Press [ **MENU** ] key to enter the menu mode.
2. Move [ **▲** or **▼** ] key to utilities, and then press [ **MENU** ] key to select.

3. Move [ **▲** or **▼** ] key to program radio, and then press [ **MENU** ] key to select.
4. Use the keypad to enter the correct Program radio password (programmed by software), and then press [ **MENU** ] key to select.
5. Move [ **▲** or **▼** ] key to transmitting frequency, and then press [ **MENU** ] key to select.
6. The screen displays transmitting frequency of the current channel, and then press [ **MENU** ] key to select.
7. Press the number keys to enter the corresponding number, press [ **MENU** ] key to delete the last number, press [ **BACK** ] to return to the previous menu.
8. After finish the change, press [ **MENU** ] key, the screen displays transmitting frequency has been saved.

Note: Editing frequency will be limited within the frequency range setted by programming software, if less than the write frequency range setted by software, the final change result will be the minimum frequency of frequency range setted on software, otherwise it is maximum.

## Channel Name

1. Press [ **MENU** ] key to enter the menu mode.
2. Move [ **▲** or **▼** ] key to utilities, and then press [ **MENU** ] key to select.
3. Move [ **▲** or **▼** ] key to program radio, and then press [ **MENU** ] key to select.
4. Use the keypad to enter the correct Program radio password (programmed by software), and then press [ **MENU** ] key to select.

5. Move [▲ or ▼] key to the channel name and press [MENU] key to select.
6. The screen displays the current channel name, press the [#\*] key to switch the input method to enter the relevant letters, numbers or characters, the same as the input method and text editing.
7. After the change is complete, press [MENU] key, the screen displays channel name has been saved.

## TOT

1. Press [MENU] key to enter the menu mode.
2. Move [▲ or ▼] key to utilities, and then press [MENU] key to select.
3. Move [▲ or ▼] key to program radio, and then press [MENU] key to select.
4. Use the keypad to enter the correct Program radio password (programmed by software), and then press [MENU] key to select.
5. Move [▲ or ▼] key to TOT, and then press [MENU] key to select.
6. The screen displays infinite, 15S, 30S ... 555S and other options (increasing 15S each time), move [▲ or ▼] key to the corresponding option, then press [MENU] key to select; if you choose infinite, the screen displays transmit time close, if you select others, the screen display corresponding time selected.

## CTC/DCS

CTCSS/DCS can only be set on analog mode, including:

- CTCSS/DCS encoding

- CTCSS/DCS decoding

## Encode

1. Press [MENU] key to enter the menu mode.
2. Move [▲ or ▼] key to utilities, and then press [MENU] key to select.
3. Move [▲ or ▼] key to program radio, and then press [MENU] key to select.
4. Use the keypad to enter the correct Program radio password (programmed by software), and then press [MENU] key to select.
5. Move [▲ or ▼] key to CTCSS/DCS, and then press [MENU] key to select.
6. Move [▲ or ▼] key to CTCSS/DCS encoding, and then press [MENU] key to select.
7. Screen display off and a set of CTCSS/DCS encoding value, move [▲ or ▼] key to off, and then press [MENU] key to select, and there will be no CTCSS/DCS encoding value, screen displays CTCSS/DCS encoding value off; move [▲ or ▼] key to CTCSS/DCS encoding value, and then press [MENU] key to select, then set the corresponding value, screen displays the corresponding CTCSS/DCS encoding value.

## Decode

1. Press [MENU] key to enter the menu mode.
2. Move [▲ or ▼] key to utilities, and then press [MENU] key to select.
3. Move [▲ or ▼] key to program radio, and then press [MENU] key to select.
4. Use the keypad to enter the correct Program radio password (programmed by software),

and then press [MENU] key to select.

5. Move [▲ or ▼] key to CTCSS/DCS, and then press [MENU] key to select.
6. Move [▲ or ▼] key to CTCSS/DCS decoding, and then press [MENU] key to select.
7. Screen display off and a set of CTCSS/DCS decoding value, move [▲ or ▼] key to off, and then press [MENU] key to select, and there will be no CTCSS/DCS decoding value, screen displays CTCSS/DCS decoding value off; move [▲ or ▼] key to CTCSS/DCS decoding value, and then press [MENU] key to select, then set the corresponding value, screen displays the corresponding CTCSS/DCS decoding value.

### Color Code

Color code only can be set on digital channels.

1. Press [MENU] key to enter the menu mode.
2. Move [▲ or ▼] key to utilities, and then press [MENU] key to select.
3. Move [▲ or ▼] key to program radio, and then press [MENU] key to select.
4. Use the keypad to enter the correct Program radio password (programmed by software), and then press [MENU] key to select.
5. Move [▲ or ▼] key to color code, then press [MENU] key to select.
6. Move [▲ or ▼] key to select color code values, and then press [MENU] key to select. Screen shows X(the selected color code value) is selected.

### Repeater Slot

Repeater slot only can be set on digital channels.

1. Press [MENU] key to enter the menu mode.







2. Move [▲ or ▼] key to utilities, and then press [MENU] key to select.
3. Move [▲ or ▼] key to program radio, and then press [MENU] key to select.
4. Use the keypad to enter the correct Program radio password (programmed by software), and then press [MENU] key to select.
5. Move [▲ or ▼] key to repeater slot, and then press [MENU] key to select.
6. Move [▲ or ▼] key to select repeater slot values, and then press [MENU] key to select. Screen shows X(the selected repeater slot value) is selected.

### VOX level
















1. Press [MENU] to enter menu mode
2. Move [▲ or ▼] to Utilities, then press the [MENU] key
3. Move [▲ or ▼] to radio Programming Radio, then press [MENU]
4. Input the correct password of radio (set by software) , press [MENU]
5. Move [▲ or ▼] to VOX, then press [MENU]
6. Move [▲ or ▼] to set the VOX level you need, there are level 1-10 to be selected.

### Tx Contact

1. Press [MENU] to enter menu mode
2. Move [▲ or ▼] to Utilities, then press the [MENU] key
3. Move [▲ or ▼] to radio Programming Radio, then press [MENU]

4. Input the correct password of radio (set by software) , press [  ]
5. Move [  or  ] to Tx Contact, then press [  ]
6. Move [  or  ] to select the Contacts you need, radio will show the info "TxContact Selected"

### Group List

1. Press [  ] to enter menu mode
2. Move [  or  ] to Utilities, then press the [  ] key
3. Move [  or  ] to radio Programming Radio, then press [  ]
4. Input the correct password of radio (set by software) , press [  ]
5. Move [  or  ] to GroupList , then press [  ]
6. Move [  or  ] to GroupList , you will be able to add and delete group members from the selected group list. Or you can move [  or  ] to select to add group list.

## Specifications

General	
Frequency Range(MHz)	VHF: 136-174 Mhz      UHF: 400-480 Mhz
Channel	1000
PLL Channel Spacing	12.5KHz
Voltage Rating	DC 13.8V
Operating Temperature	-30°C~+60°C
Storage Temperature	-30°C~+85°C
Dimension	18.8cm*L*14.3cm(W)*5.0cm(H)
Compatible With American Military Standard	(MIL-STD-810C/D/E)
Transmitter	
RF Power Output	VHF H:50W L:5W      UHF H:35W L:5W
FM Hum and Noise	-40dB @12.5kHz
Modulation limited	+/-2.5kHz @ 12.5kHz
Conducted/radiated emission	-30 dBm < 1GHz      -30 dBm >1Ghz < 4GHz
Adjacent channel power	-60 dB @12.5kHz
Audio Response	+1dB~-3dB
Audio distortion	3%
FM modulation	12.5kHz: 11KOF3E
4FSK digital modulation	12.5kHz only data:7K60F1D      12.5kHz data and audio:7K60F1E
Digital Protocol	ETSI TS 102361-1, -2, -3
Digital vocoder type	AMBE++



Digital agreement	DMR
<b>Receiver</b>	
Frequency stability (-20°C +60°C, +25°C)	+/-1.0ppm
Digital Sensibility	0.3uV/-117.4dBm(BER 5%) 0.7uV/-110dBm(BER 1%)
Analogue Sensibility	0.35uV/-116dBm(20dB SINAD) 0.22uV/-120dBm(20dB SINAD)
Rated audio	5W
Adjacent Channel Selectivity	TIA603C:60 dB @ 12.5kHz ETSI: 60 dB @ 12.5kHz
Intermodulation	TIA603C:65 dB ETSI: 65 dB
CO-channel Rejection	12 dB @ 12.5kHz
Spurious Rejection	TIA603C:70 dB ETSI: 70 dB
Audio distortion @ rated audio	≤3%
FM Hum and Noise	-40dB @12.5kHz
Audio response	+1dB~-3dB
Spurious emission	-57dBm@<1GHz -47dBm@>1GHz
Bolck	84dB

## Warranty card

**Note:**

1. This warranty card is only applicable to two-way radio of the above-listed model and serial number.
2. The warranty card is an important document for the end-user to enjoy warranty service, please keep it well.
3. The warranty card shall be filled and chopped by the dealer, or it is invalid.

Customer's name: \_\_\_\_\_ Gender: \_\_\_\_\_

Add and postal code: \_\_\_\_\_

Customer's Tel: \_\_\_\_\_

Model: \_\_\_\_\_

Serial number: \_\_\_\_\_

Purchasing date: \_\_\_\_\_

Invoice No.: \_\_\_\_\_

Dealer: \_\_\_\_\_ Stamp: \_\_\_\_\_

Add and postal code of the dealer: \_\_\_\_\_

Contact Tel: \_\_\_\_\_

Handling people: \_\_\_\_\_

Thank you for buying two-way radios, we will do our best to provide you with a stable, clear and efficient wireless communication services. In order for you to enjoy a better quality warranty service, please focus on the following information:

The products warranty period begins from the purchasing date, if product failure under normal use within warranty period occurs, according to the contents of this warranty, (the radio is guaranteed for 12 months, accessories 6 months), please carry the warranty card originals and purchase invoice to designated authorized warranty repair station for warranty service.

The following situations occur during warranty period will be implemented in paid service:

- (1) Failure to produce the warranty card
- (2) The card has altered traces or inconsistent with the product
- (3) Defect or damage caused by abnormal or non-normal use
- (4) Defect or damage caused by misuse, accident, water or negligence
- (5) Defect or damage caused by improper testing, operation, maintenance, installation, disassembly or adjustment
- (6) Defect or damage caused by unauthorized repair or disassembly
- (7) Defect or damage caused by force majeure
- (8) Wear and tear under normal use

When you are in need of repair, please send the radio, warranty card and purchase invoice together by post or take directly to designated authorized service stations, shipping costs should be borne by the user.

#### Maintenance record

Carry-in date			
Completion date			
Fault description			
Maintenance staff numbers			
Maintenance personnel No.			
Signature			

This warranty card to be kept by the user, no replenishment if lost

#### Antenna Information:

Manufacturer	Antenna Type	Model No.	Gain (dBi)
nagoya Antenna	Monopole Antenna	NL-770R	3.2dBi@136-174MHz 5.5dBi@ 400-470MHz

*Note: The antenna gain is less than 3.2dBi(136-174MHz)/5.5dBi(400-470MHz) if other antennas are used.*