







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 [  ] to enter menu mode;
3. Press [  or  ] to scan, and then press [  ] to select;
4. If the scan is disabled, the screen displays on or if the scan is activated, the screen displays off.
5. Press [  ] 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
- Language
- LED Indicator
- VOX
- Passwd Lock
- 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 [  ] key to enter the menu mode.
2. Press [  or  ] key to utilities, and then press [  ] key to select.
3. Press [  or  ] key to radio settings, and then press the [  ] key to select.
4. Press [  or  ] key to talk around, and then press [  ] 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 [  ] key to select.
7. Screen showing turn on talk around  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 [  ] key to enter the menu mode.
2. Press [  or  ] key to utilities, and then press [  ] key to select.
3. Press [  or  ] key to radio settings, and then press the [  ] key to select.
4. Press [  or  ] key to tones/alerts, and then press [  ] key to select.
5. Press [  or  ] key to all tone, and then press [  ] key to select.
6. Press [  ] 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. Press [  or  ] key to utilities, and then press [  ] key to select.
3. Press [  or  ] key to radio settings, and then press the [  ] key to select.
4. Press [  or  ] key to tones/alerts, and then press [  ] key to select.

5. Press [  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.

Using the menu function:

1. Press the [  ] key to enter the menu mode.
2. Press [  or  ] key to utilities, and then press [  ] key to select.
3. Press [  or  ] key to radio settings, and then press the [  ] key to select.
4. Press [  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 automatical backlight key to switch backlight settings

Using the menu function:


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

3. Press [  or  ] key to radio settings, and then press [  ] key to select.

4. Press [  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. Press [  or  ] key to utilities, and then press [  ] key to tight.

3. Press [  or  ] key to radio settings, and then press the [  ] key to tight.


4. Press [  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. Press [  or  ] key to utilities, and then press [  ] key to select.

3. Press [▲ or ▼] key to radio settings, and then press [☰] key to select.
4. Press [▲ or ▼] key to keypad lock, then press [☰] key to select.
5. Press [▲ 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. Press [▲ 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.

## Language

Radio supports the following languages:

- English
- Chinese

1. Press [☰] key to enter the menu mode.
2. Press [▲ or ▼] key to utilities, and then press [☰] key to select.
3. Press [▲ or ▼] key to radio settings, and then press [☰] key to select.
4. Press [▲ or ▼] key to the language selection, then press [☰] key.
5. Press [▲ or ▼] key to the corresponding language option, then press [☰] key.
6. Screen displays to select corresponding language, and then jump back to the main interface.

## LED Indicator

If desired, you can activate and deactivate the LED.

1. Press [☰] key to enter the menu mode.
2. Press [▲ or ▼] key to utilities, and then press [☰] key to select.
3. Press [▲ or ▼] key to radio settings, and then press [☰] key to select.
4. Press [▲ 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. Press [  or  ] key to utilities, and then press [  ] key to select.
3. Press [  or  ] key to radio settings, and then press the [  ] key to select.
4. Press [  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. Press [  or  ] key to utilities, and then press [  ] key to select.
3. Press [  or  ] key to radio settings, and then press [  ] key to select.
4. Press [  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 [  ] 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 [  ] key to display the power-on password cancellation, next time you can directly turn on radio.
8. Press [  or  ] key to change power-on password, and then press [  ] key to select.
9. Enter 8 digits new password, and then press [  ] key to select.
10. Once again, enter 8 digits new password, and then press [  ] key to select.
11. Screen displays that password was successfully changed.


















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

## Clock


















Clock settings are divided into:

- Time
- Date

### Time














1. Press [  ] key to enter the menu mode.
2. Press [  or  ] key to utilities, and then press [  ] key to select.
3. Press [  or  ] key to radio settings, and then press [  ] key to select.
4. Press [  or  ] key to clock, and then press [  ] key.
5. Press [  or  ] key to time, and then press [  ] key to display the current time.
6. Press [  ] key to enter time setting interface.
7. Press [  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 [  ] key to save, the screen displays the time has been saved.

## Date

1. Press [  ] key to enter the menu mode.
2. Press [  or  ] key to utilities, and then press [  ] key to select.
3. Press [  or  ] key to radio settings, and then press [  ] key to select.
4. Press [  or  ] key to clock, and then press [  ] key.
5. Press [  or  ] key to date, and then press [  ] key to display the current date.
6. Press [  ] key to enter the time setting interface.
7. Press [  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 [  ] key to save, the screen displays the date has been saved.

### Mode

Mode settings are divided into:

- CH Mode
  - MR Mode
1. Press [  ] key to enter the menu mode.
  2. Press [  or  ] key to utilities, and then press [  ] key to select.
  3. Press [  or  ] key to radio settings, and then press [  ] key to select.
  4. Press [  or  ] key to mode and then press [  ] key.
  5. Press [  or  ] key to select CH mode or MR mode, then press [  ] 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.











## Radio Info

Radio contains the following information:

- My Number
- Versions








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


## My Number

1. Press [  ] key to enter the menu mode.
2. Press [  or  ] key to utilities, and then press [  ] key to select.
3. Press [  or  ] key to radio information, and press [  ] key to select.
4. Press [  or  ] key to my number, then press [  ] key.
5. The display shows radio ID and name.

## Versions

Display radio firmware version.

1. Press [  ] key to enter the menu mode.
2. Press [  or  ] key to utilities, and then press [  ] key to select.
3. Press [  or  ] key to radio information, and press [  ] key to select.

4. Press [  or  ] key to radio versions, and then press [  ] 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 [  ] key to enter the menu mode.
2. Press [  or  ] key to utilities, and then press [  ] key to select.
3. Press [  or  ] key to program radio, and then press [  ] key to select.
4. Use the keypad to enter the correct Program radio password (programmed by software), and then press [  ] key to select.
5. Press [  or  ] key to receiving frequency, and then press [  ] key to select.
6. The screen displays receiving frequency of the current channel, and then press [  ] key



to select.

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















8. After finish the change, press [☑] 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 [☑] key to enter the menu mode.
2. Press [▲ or ▼] key to utilities, and then press [☑] key to select.
3. Press [▲ or ▼] key to program radio, and then press [☑] key to select.
4. Use the keypad to enter the correct Program radio password (programmed by software), and then press [☑] key to select.
5. Press [▲ or ▼] key to the channel name and press [☑] key to select.
6. The screen displays the current channel name, press the [#1] 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 [☑] key, the screen displays channel name has been saved.

## TOT








1. Press [  ] key to enter the menu mode.
2. Press [  or  ] key to utilities, and then press [  ] key to select.
3. Press [  or  ] key to program radio, and then press [  ] key to select.
4. Use the keypad to enter the correct Program radio password (programmed by software), and then press [  ] key to select.
5. Press [  or  ] key to TOT, and then press [  ] key to select.
6. The screen displays infinite, 15S, 30S ... 555S and other options (increasing 15S each time), press [  or  ] key to the corresponding option, then press [  ] 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 [  ] key to enter the menu mode.
2. Press [  or  ] key to utilities, and then press [  ] key to select.
3. Press [  or  ] key to program radio, and then press [  ] key to select.

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















## Decode

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

decoding value, and then press [  ] 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 [  ] key to enter the menu mode.
2. Press [  or  ] key to utilities, and then press [  ] key to select.
3. Press [  or  ] key to program radio, and then press [  ] key to select.
4. Use the keypad to enter the correct Program radio password (programmed by software), and then press [  ] key to select.
5. Press [  or  ] key to color code, then press [  ] key to select.
6. Press [  or  ] key to select color code values, and then press [  ] 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 [  ] key to enter the menu mode.
2. Press [  or  ] key to utilities, and then press [  ] key to select.
3. Press [  or  ] key to program radio, and then press [  ] key to select.
4. Use the keypad to enter the correct Program radio password (programmed by software), and then press [  ] key to select.

5. Press [  or  ] key to repeater slot, and then press [  ] key to select.

6. Press [  or  ] key to select repeater slot values, and then press [  ] key to select.  
Screen shows X(the selected repeater slot value) is selected.

## Specifications

### General Specifications

Frequency range	UHF: 400-480MHz
Channel	1000 Channels
Channel Spacing	12.5KHz
Operating Voltage	7.4V
Battery Type	Li-ion
Operating Temperature	-30℃ +60℃
Store Temperature	-40℃ +85℃
Antenna Impedence	50 Ω
Audio Output Power	≤ 1000mW@16 Ω
Battery capacity	2000mAh standard Li-ion battery
Dimension (H*W*D)	131*61*36mm (Not Including Antenna)
Weight	258g

### Transmitter

Output power	High: ≤ 5W (HI)    Low: ≤ 1W (Low)
Frequency Stability	+/-1.0PPM
Adjacent Channel Power	≤ -60dB
Free Time Slot Power	TDMA: ≤ 57dBm
Hum and Noise	-40dB@12.5KHz
Spurious Radiation	Antenna: 9KHz-1GHz    ≤ -36dBm 1GHz-12.75GHz    ≤ -30dBm
FM Modulation Mode	12.5KHz: 11K0F3E
4FSK Digital Mode	12.5KHz(data only):7K60FXD 12.5KHz(data +voice): 7K60FXE
Modulation Maximum Deviation	2.5KHz@12.5KHz
Nonactive Slot Power	-57dBm
Digital Protocol	ETSI TS 102 361-1 -2 -3
Vocoder Type	AMBE+2TM
Audio Response	+1dB~-3dB
Modulation BER(Bit Error Rate)	≤ 5%

## Receiver

Analog sensibility	0.35uV/-116dBm(20dB SINDA) 0.22uv/-120dBm(Type)
Digital sensibility	0.3uV/-117.4dBm (BER 5%) 0.22uv/-110dBm (BER 1%)
Co-channel Rejection	≥ -12dB
Adjacent Channel Selectivity	TIA603C:65dB ETSI:60dB
Spurious Response	TIA603C:75dB ETSI:70dB
Rated audio power	1W
Audio response	=1dB~-3dB
Rated audio distortion	3%(Type)
Spurious Radiation	Antenna: 9KHz-1GHz ≤ -57dBm 1GHz-12.75GHz ≤ -47dBm

**Note:** Specifications will be revised without notice due to technical improvement. Thank you.

## Guarantee

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

Serial Number: \_\_\_\_\_

Purchasing Date: \_\_\_\_\_

Dealer: \_\_\_\_\_ Telephone: \_\_\_\_\_

User's Name: \_\_\_\_\_ Telephone: \_\_\_\_\_

Address: \_\_\_\_\_ Post Code: \_\_\_\_\_

### Remarks:

- 1 This guarantee card to be kept by the user, no replenishment if lost.
- 2 This guarantee card to be filled & chopped by the dealer, or it is invalid.
- 3 Don't alter the guarantee card, please confirm the serial number on the guarantee card is same as that on the machine.
- 4 One-year guarantee, charger, battery, ear-phone, antenna and cable are not under guarantee.
- 5 The user can get repairing service from the followingways:
  - Go to the shop where you buy the machine.
  - Our local repairing agents.
  - Send back to our company.

Please cut along with this line

