To customers

Thank you very much for using our two-way radios. This product has a newly developed function menu and humanism operation design, making it easy to use. It will meet your requirement by the compact size and reasonable price.
Welcome to use our two-way radio

- CTCSS/DCS
- Programmable CTCSS/DCS
- Wide band/narrow band selectable
- End-tone detection
- DTMF encode/decode
- PTT ID
- Password
- Firmware update
- Dual time slot for point to point
- Dual time slot for repeater
- 5 watt output power
- Call detection
- Call prompt
- Remote monitor/Emergency alarm
- Contact view and edit
- Message view and edit
- Call info view and edit
- SN - Equipment Identity Code for device verification
- PC programmable function
- 1750Hz tone
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Overview

Professional FM Transceiver
Getting familiar

**Power/ Volume knob**
To power on/off and adjust the volume. Rotate it clockwise, a “click” sound is heard and a “Du” tone prompts the radio power on, continue to rotate it to adjust the volume. Rotate it counter-clockwise until a “click” sound is heard, it powers off.

**Side key 1**

**Side key 2**

**Side key 3**
Emergency alarm key
Antenna
with threaded head, for transmitting and receiving

**LED indicator light**
The indicator light turns red when transmit, turns green when receive. It blinks red when the battery capacity is low, and blinks green.

**PTT switch**

**Programming connector**
Microphone connector

**Belt clip**
You can clip the radio in the belt and is easy to take.

**Mic/speaker jack/ programming port**
Used to connect headset or external programming cable. Programmable via PC programming software.

**Li-ion battery**
For charging the radio.

Safety and Overview

Product safety and RF Exposure for handheld two way radio.

Before using this two way radio, please read the manual which contain important operating instructions for safe usage, RF Energy Awareness control information and operational instructions for compliance with R Energy Exposure limits in applicable national and international standard. Also read the operational instructions for safe use.

Overview

Turn on radio

Turn the volume control knob clockwise until you hear a "click" sound with a brief start-up tone, and you will see picture or the custom characters. The LED blinks green and the screen lights up.

Note: If the radio tone / prompt is disabled, there is no power on tone. To turn off the radio, turn the knob counterclockwise until you hear a "click" sound. Custom characters can be set in software.

Adjust the volume

Turn the volume control knob clockwise to increase the volume of radio. To decrease the volume, turn the knob counterclockwise.
### Main functions

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<tr>
<th>First menu</th>
<th>Second menu</th>
<th>Function description</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact</td>
<td></td>
<td>Contact list, software edit or new contact add or call record contact add, up to 256 contacts</td>
<td>digital channel only</td>
</tr>
<tr>
<td>Contact</td>
<td></td>
<td>Manually create a new contact, enter the number, alias, tone, if the current input number are samewith one of contact list, just overwrite the old contact information</td>
<td>digital channel only</td>
</tr>
<tr>
<td>Manual Dial</td>
<td></td>
<td>Enter the other party ID number (up to 8-bit, full call ID fixed to 16777215) and then press the Enter key. You can realize call alert, radio check, remote monitor, radio active, radio kill, the above functions can be open in software</td>
<td>digital channel only</td>
</tr>
<tr>
<td>Message</td>
<td></td>
<td>Inbox: message received latest, the maximum storage amount is 16, if you continue to receive, loop to cover the storage</td>
<td>digital channel only, this function can be set in software</td>
</tr>
<tr>
<td>Message</td>
<td></td>
<td>Delete all: delete all messages received</td>
<td>digital channel only, this function can be set in software</td>
</tr>
<tr>
<td>Message</td>
<td></td>
<td>Text edit, the maximum input of 144 characters or 72 Chinese characters. You can input &quot;#&quot; key to switch inputmode: abc (lowercase letters) / ABC (capital letters) / 123 (number) / py (Pinyin), after enter the message, press the Enter key to proceed with the operation</td>
<td>digital channel only, this function can be set in software</td>
</tr>
<tr>
<td>Message</td>
<td></td>
<td>Outbox: Store the latest sent messages, the maximum storage amount is 16</td>
<td>digital channel only, this function can be set in software</td>
</tr>
</tbody>
</table>

### Draft

- **Draft**: Draft list, the maximum can store 16 messages

### Quick Text

- **Quick Text**: You can write in advance in software, the maximum can store 32 messages. Each message can enter a maximum of 144 characters or 72 Chinese characters

### Answered

- **Answered**: Dialed call list: the maximum number of calls can be stored in 32 latest record. The record can be viewed, you can also store to Contact by operation Delete all: delete all records for the list

### Missed

- **Missed**: Missed Call List: the maximum number of calls can be stored in 32 latest record. The record can be viewed, you can also store to Contact by operation Delete all: delete all records for the list

### Call logs

- **Outgoing**: Dialed call list: the maximum number of calls can be stored in 32 latest record. The record can be viewed, you can also store to Contact by operation Delete all: delete all records for the list

### Set

- **CTCSS/DCS**: C CDC/DCS: set both Encoding and Decoding; R CDC/DCS: only set Decoding; T CDC/DCS: only set Encoding; Press "*" key to switch CTCSS/DCS; press "#" key to switch positive (N)/reverse (I) in DCS. You can also input manually non-standard CTCSS/DCS by keypad, Press the confirm key to confirm, press the return key to return

- **Squelch**: Strict/Normal: Strict signal is 6dBm bigger than Normal
<table>
<thead>
<tr>
<th>Feature</th>
<th>Settings and Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tx Power</strong></td>
<td>High/Low, High: 5W, Low: 1.5W</td>
</tr>
<tr>
<td><strong>Talkaround</strong></td>
<td>Talkaround on/off: this function is valid only after tick “Allow Talkaround” in software</td>
</tr>
<tr>
<td><strong>Band</strong></td>
<td>Narrow/wide band available in analog mode. Wide band: 25KHZ, Narrow band: 12.5KHZ</td>
</tr>
<tr>
<td><strong>Busy Lock</strong></td>
<td>Off/carry(QT/CC), Off: busy lock is off; Carry: Match Carrier Press PTT Prohibited; QT/CC: Match QT/CC Press PTT Prohibited</td>
</tr>
<tr>
<td><strong>TOT</strong></td>
<td>OFF / 15S / 30S / 45S optional, there is warning when close to 10 seconds before limit time. Transmitting is prohibited when limit time is up</td>
</tr>
<tr>
<td><strong>VOX</strong></td>
<td>Off/on, Level 1 to 10 can be set in software. General Setting-VOX Sensitivity. Level 1 is the highest level of sensitivity, and level 10 is the lowest level of sensitivity</td>
</tr>
<tr>
<td><strong>Double Wait</strong></td>
<td>Off/Double wait/Single wait optional. Off: turn off dual standby/radio into single band mode. Double Wait: main channel and sub-channel rotation scan, effective reception will lock the call. Press the PTT key to communicate with other party. Battery saving is invalid now. Single Wait: Up and down channels through the keyboard switch, the machine only receives and transmits on the main channel</td>
</tr>
<tr>
<td><strong>Encrypt</strong></td>
<td>Off/on. Open the encryption function, both sides of radio can communicate when match same encryption key</td>
</tr>
</tbody>
</table>

**Digital Channel Only**

- Power save: Off/On, Saving ratio is 1:4
- Beep: All Tone/Call Permit/Key Beep optional
- Backlight: Always/5/10/15 sec optional
- Keypad lock: Manual/5/10/15 sec optional. Select Manual, long press “***” key for 3 seconds lock; Press the “menu” button immediately press “***” key to unlock
- Indicator: Off/On, When indicator off (transmit indicator, receiving indicator, power-on indicator, etc.) does not work
- Password Lock: Enter power on password, power on password (off/on)/new password (change password, the maximum input 6 digit)
- Mode: CH NO(Channel Number)/CH Name(Channel Name can be set in software)/CH Freq(show RX frequency)
- Screen: Picture (can be loaded 128 * 64 BMP picture) / preset characters (two lines, can be set in software)
- Language: English / Chinese optional, Chinese and English display switching, including menu, call prompts, Call Logs and all other interfaces
- Radio Info: 8-bit ID number, maximum 16776415

**Analog Channel Only**

- Power save: Off/On, Saving ratio is 1:4
- Beep: All Tone/Call Permit/Key Beep optional
- Backlight: Always/5/10/15 sec optional
- Keypad lock: Manual/5/10/15 sec optional. Select Manual, long press “***” key for 3 seconds lock; Press the “menu” button immediately press “***” key to unlock
- Indicator: Off/On, When indicator off (transmit indicator, receiving indicator, power-on indicator, etc.) does not work
- Password Lock: Enter power on password, power on password (off/on)/new password (change password, the maximum input 6 digit)
- Mode: CH NO(Channel Number)/CH Name(Channel Name can be set in software)/CH Freq(show RX frequency)
- Screen: Picture (can be loaded 128 * 64 BMP picture) / preset characters (two lines, can be set in software)
- Language: English / Chinese optional, Chinese and English display switching, including menu, call prompts, Call Logs and all other interfaces
- Radio Info: 8-bit ID number, maximum 16776415

*Digital channel only.*
### Radio Cfg

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dev. Info</td>
<td>Model information, serial number, CPS version, hardware version, firmware version, DSP version, programming time</td>
</tr>
<tr>
<td>Rx Freq</td>
<td>enter frequency manually in key pad</td>
</tr>
<tr>
<td>Tx Freq</td>
<td>enter frequency manually in keypad</td>
</tr>
<tr>
<td>Ch Name</td>
<td>enter channel name manually in keypad, support English/Chinese</td>
</tr>
<tr>
<td>Color Code</td>
<td>Color code 0-15 optional, digital channel only, cannot be set in analog channel</td>
</tr>
<tr>
<td>Slot</td>
<td>slot 1/2 optional, digital channel only, cannot be set in analog channel</td>
</tr>
</tbody>
</table>

### Zone

<table>
<thead>
<tr>
<th>Zone</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zone</td>
<td>Zone list, can support up to 250 zones</td>
</tr>
</tbody>
</table>

### Scan

<table>
<thead>
<tr>
<th>On/Off</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>On/Off</td>
<td>On/Off, only the current channel is equipped with a scan list to turn on scan function. Side key can be set &quot;scan on/off&quot; in the software</td>
</tr>
<tr>
<td>Scan list</td>
<td>show current scan list, can just view, this function can be set in software</td>
</tr>
</tbody>
</table>

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**Double Wait Switch**

Press [ ] button to switch the main channel, [ ] points main channel. Double wait can be set manually. (Flow: Menu - Set - Radio Set - Double Wait (Off/Double Wait/Single Wait)). When double wait is off, radios works under single band mode. When single wait is selected, radio operates on the main channel, and sub-channel does not receive the signal. When double wait is selected, main channel and sub-channel receiving scan one by one. When scanning effective reception of the signal, radio locked and work. If channel locked is not main channel, [ ] points to the temporary working channel, then press PTT, temporary Channel transmit. Timing time is up, [ ] icon disappears. No temporary icon, press PTT, [ ] point to the main channel transmission.

Note: In double wait mode, the power saving function is invalid. At this time, even if the power saving function is turned on, radio is in no power saving state and radio standby time is shortened. Since double wait mode is in the main and sub-channel scanning state, DTMF, Scan, lone worker, ARTS auxiliary function does not work.
Launch And Receive Calls

Menu Key/Confirm Key ➕ Up key ➕ Left Key/ Main Channel Switch Key
Back Key ➕ Down Key ➕ Right Key

Key usage

Launch And Receive Calls

Zone Selection
Zones is a channel group. Each radio can set 250 zones and each zone with max 16 channels.

The menu function:
1. Press [开来] key to enter the menu.
2. Move [лево или право] key to choose, after that with [конфим] key to confirm.
3. Screen shows the chosen zone and named by it.
5. Screen shows the chosen zone and then return to the selected Zone screen.

Selection Of Channels, User ID Or Group ID
Select the needed zone (if there are more than one zone), using [лево или право] key to select the channel, user name or ID, group name or ID.

Receive And Reply Group Call
The radio must be under a group, then can receive the group call.
When received the group call:
Receive and Reply the Single Call

Single call means one on one call. Only with two types: One is testing presence of radio before call, and another one is to call immediately.

When Receive the Single Call:
1. LED indicator is green color.
2. Display area: the first line shows "Single Call", the middle shows "Single Call", the bottom shows call ID and call icon (digital mode only).
3. Hold the radio in a vertical position and keep it at a distance of 1 to 2 inches (2.5 to 5.0 cm) from the mouth. If the "channel free indication tone" function is enabled, the receiver will hear a short beep when PTT button is released by radio transmitting, indicating that the channel is in use, can not reply all call.
4. Press PTT key to reply the call, and the LED indicator is red.
5. Release PTT key to receive.

Launch a radio call

You can choose a channel, user ID or group call with following methods
- Channel switch
- Pre-programmed key
- Contacts
- Manual dialing (only for single call)
Group call
The radios should be in same group if want to make a group call
1. Press 🈵️ or 🈶️ key to switch channel, and use the active call group alias or ID to select
the channel.
2. Hold radio in a vertical position and keep it at a distance of 1 to 2 inches (2.5 to 5.0 cm)
from the mouth.
3. Press PTT button to initiate the call, LED indicator is red, screen displays the group alias
or ID, and icon 🎤.
4. Release PTT key to receive, and when the target radio reply, the LED indicator lights green.
5. If the "channel free indication tone" function is enabled, the receiver will hear a short beep
when the target radio releases PTT key, indicating that the channel is idle and waiting for
a reply. Press PTT key to reply, or if there is no voice activity within a predetermined time
period, the call end.
6. You will hear a short tone, the screen shows the call end.
You can also use the side keys to set up a One Touch Access or contacts to initiate a single
call or a quick contact access via a keyboard entry to find the desired target radio.

Single Call
1. Press 🈵️ or 🈶️ key to switch channel, and use the active call group alias or ID to select
the channel.
2. Hold radio in a vertical position and keep it at a distance of 1 to 2 inches (2.5 to 5.0 cm)
from the mouth.
3. In the display area: the first line shows a Single Call, the middle display user alias, the
bottom display ID and call icon 🎤 (digital mode only).
4. Release PTT key to receive, and when the target radio reply, the LED indicator lights green.
5. If the "channel free indication tone" function is enabled, the receiver will hear a short beep
when the target radio releases PTT key, indicating that the channel is idle and waiting for
a reply. Press PTT key to reply, or if there is no voice activity within a predetermined time
period, the call end.
6. You will hear a short tone, the screen shows the call end.
You can also use the side keys to set up a One Touch Access or contacts to initiate a single
call or a quick contact access via a keyboard entry to find the desired target radio.

All Call
This function allows you to send signals to all users on the channel. The radio must be
programmed to allow you to use this function.
1. Press 🈵️ or 🈶️ key to switch channel, and use the active all call group alias or ID to
select the channel.
2. Hold the radio in a vertical position and keep it at a distance of 1 to 2 inches (2.5 to 5.0 cm)
from the mouth.
3. Press PTT button to initiate the call and the LED light is red. The screen displays all call,
all call alias or all call ID, and call icon 🎤 .
The user on the channel can not reply to all call.
Use a one-touch call to initiate a group call or a single call
The One-Touch Call function allows you to easily make a group or single call to a predefined
alias or ID. This function can be assigned to short programming or long programming keys.
You can assign only one alias or ID to a one-touch call key, and the radio can have multiple
programmed one-touch keys.
1. Initiate a group call or a single call to a predefined alias or ID by pressing a preprogrammed
one-touch call key.
2. Hold radio in a vertical position and keep it at a distance of 1 to 2 inches (2.5 to 5.0 cm)
from the mouth.
3. Press PTT button to initiate the call and the LED light is red. The screen displays the group
/user alias or ID, as well as icon.
4. Release PTT key to receive, and when the target radio reply, the LED indicator lights green.
5. If the "channel free indication tone" function is enabled, the receiver will hear a short beep
when the target radio releases PTT key, indicating that the channel is idle and waiting for
a reply. Press PTT key to reply, or if there is no voice activity within a predetermined time
period, the call end.

Emergency alarm function
Emergency alerts are used to indicate an emergency situation. You can initiate an emergency
call at any time or on any screen, even if there is activity on the current channel.
Note: The emergency function is set in digital emergency alarm system of the signaling
system in the software and should be in the group call channel.
Your radios supports three emergency alerts:
• Emergency alert
• Emergency alerts and calls
• Emergency alert and voice

Receive an emergency alert
1. Receive an emergency alert time code, the number of alerts received, and the received
alert, which alternates with the sender's alias or ID.
2. A beep sounds and the LED flashes red.
3. If activated, your radio will automatically acknowledge an emergency alert. When an
emergency alert is received by radio, the screen displays a prompt that an emergency
alert has been received until an acknowledgment is sent and exit emergency mode.
You will not be able to receive any other prompts or display any other calls until you
exit the screen that received the emergency alert.
Note: Short press the [back] key, then press the preprogrammed alarm off key to clear
the prompt for receiving an emergency alert and exit the emergency mode.
Reply to an emergency alert
When receiving an emergency alert:
1. Press any key to stop all audible alerts that receive an emergency alert.
2. Hold the radio in a vertical position and keep it at a distance of 1 to 2 inches (2.5 to 5.0 cm) from the mouth. If the "channel free indication tone" function is enabled, the receiving radio will hear a short beep when radio release PTT button, indicating that the channel is now available.
3. Press PTT key to initiate a call with an emergency call. LED indicator light is red. The radio is in emergency call mode.
4. Release [PTT] key to receive, and when the emergency call initiates the radio reply, the LED will light green. You will see group call, group ID, and launch radio ID on the screen.
5. After the call ends, short press [back] key, then press the preprogrammed alarm off key to clear all prompts that received an emergency call and exit the emergency mode.
6. The radio returns to the main screen.

Send an emergency alert
This feature allows you to send an emergency alert, which is a non-voice signal that will trigger a prompt on another radio. Only the emergency alarm channel contact is group call number can send an emergency alert.
1. Press the preprogrammed alarm on key.
2. The screen displays issue an alarm that alternates with the radio ID. The LED indicator light is red and then the emergency call interface is displayed.
3. When an emergency alert is received, an emergency call beep is issued and the LED flashes green. The screen displays alarm has been received.
4. Hold radio in a vertical position and keep it at a distance of 1 to 2 inches (2.5 to 5.0 cm) from the mouth.
5. Press [PTT] button to initiate a call, the LED indicator is red, and the call group icon appears on the screen.
6. Release the [PTT] button to receive.
7. If the "channel free indication tone" function is enabled, the receiving radio will hear a short beep when the target intercom releases the [PTT] key, indicating that the channel is idle and awaits a reply. Press PTT key to reply, Or press the preprogrammed alarm off key to exit the emergency mode.
8. The radio returns to the main screen. If your radio is set to "all tones off", it will not display an emergency alert that has been received. After all retry times have been exhausted, a beep is issued and then exit the emergency alarm mode.
4. The radio exits the emergency alert mode and returns to the main screen. If your radio is set to “all tones off”, it will not display any voice or visual prompt in emergency call mode.

Send an emergency alert with call
This feature allows you to send an emergency alert to another radio. After confirming, the two radios communicate via a preprogrammed emergency channel.
1. Press the preprogrammed alarm on key.
2. The screen displays issue an alarm that alternates with the radio ID. The LED indicator light is red and then the emergency call interface is displayed.
3. When an emergency alert call is received, an emergency alarm beep is issued and the LED flashes green. The screen display alarm has been received.
4. Hold radio in a vertical position and keep it at a distance of 1 to 2 inches (2.5 to 5.0 cm) from the mouth.
5. Press [PTT] button to initiate a call, the LED indicator is red, and the call group icon appears on the screen.
6. Release the [PTT] button to receive.
7. If the "channel free indication tone" function is enabled, the receiving radio will hear a short beep when the target intercom releases the [PTT] key, indicating that the channel is idle and waiting for a reply. Press PTT key to reply, Or press the preprogrammed alarm off key to exit the emergency mode.
8. The radio returns to the main screen. If your radio is set to “all tones off”, it will not display
any voice or visual prompts in the emergency call mode and will not receive any response (call) from the target radio until you press [PTT] to initiate the call. If your radio is set to "call permit", it will not display any voice or visual prompts in emergency call mode or when you receive a call from the target radio. A prompt is displayed only when you press [PTT] key to initiate or respond to a call.

Send an emergency alert with voice followed
This feature allows you to send an emergency alert to another radio. Your radio microphone is automatically activated, allowing you to communicate with other radio without pressing the [PTT] key. This activated microphone state is called "emergency microphone". If you press [PTT] during the preprogrammed emergency microphone transmitting, the radio ignores [PTT] and remains in the emergency mode.

Note: If you press [PTT] key during an emergency microphone transmitting and continue pressing the key after the end of the emergency microphone, the radio continues to transmit until you release [PTT] key.

1. Press the preprogrammed alarm on key.
2. The screen displays issue an alarm, the LED indicator is red and the emergency alarm call interface is displayed.
3. After screen display the emergency alarm is successful, speak to the microphone clearly. After the emergency microphone has been activated, the radio automatically transmits the signal without pressing [PTT] key until the emergency microphone time ends.
4. At the time of launch, the LED indicator light is red and the alarm call interface is displayed.
5. After the end of the emergency microphone time, the radio automatically stops sending the signal. To launch again, press the [PTT] key.

If your radio is set to "all tones", it will not display any voice or visual prompts in the emergency call mode and will not receive any response from the target radio until the preprogrammed emergency microphone time is over and you press [PTT] key. If your intercom is set to "call permit", it will not display any voice or visual prompts when you use an emergency microphone to initiate a call in emergency call mode or when the target radio responds after a preprogrammed emergency microphone time. These prompts appear only when you press [PTT] key.

There are two situations where this can occur:

• When the radio channel is changed in the emergency mode, the emergency mode is exited.
  If an emergency alert is activated on the new channel, the radio restarts the emergency call.
• In the emergency call start / launch mode, press the preprogrammed alarm on key. This will cause the radio to exit the current state and then restart the emergency call.

Exit the emergency mode
When one of the following occurs, radio exits the emergency mode:

• The maximum number of attempts to send alerts has been reached
• Press the preprogrammed alarm off key
• Press [PTT] key. Can not exit alarm mode

Note: If turn off radio, the radio exits emergency mode. When you turn on radio again, the radio will not restart emergency mode.
Menu function operation

Character input

You can use the 3x4 alphanumeric keyboard to access radio functions. When using the keyboard to enter user aliases or text messages, radios contains three modes: 1. English alphabet mode, 2. Chinese input method mode, 3. Numbers input mode. When using the keyboard to enter an ID, Can only use digital mode.

English alphabet mode:

Users have to press a key several times for getting some characters. The following table shows the number of times a key needs to be pressed to get the desired character.

| Key | 1   2   3   4   5   6   7   8   9   10  11  12  13 |
|-----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1   | 1    | .    | !    | :    | ?    | ()   | -    | /    | []    | #    | <>    | [ ]  |
| 2   | a    | b    | c    | A    | B    | C    |       |      |       |      |       |      |
| 3   | d    | e    | f    | 3    | D    | E    | F    |       |      |      |       |      |
| 4   | g    | h    | i    | 4    | G    | H    | I    |       |      |      |       |      |
| 5   | j    | k    | l    | 5    | J    | K    | L    |       |      |      |       |      |
| 6   | m    | n    | o    | 6    | M    | N    | O    |       |      |      |       |      |
| 7   | p    | q    | r    | s    | 7    | P    | Q    | R    | S    |       |      |      |
| 8   | t    | u    | v    | 8    | T    | U    | V    |       |      |      |       |      |
| 9   | w    | x    | y    | z    | 9    | W    | X    | Y    | Z    |       |      |      |
| 0   | 0    | Space|       |      |      |      |      |      |      |      |       |      |
| *   |      |      |       |      |      |      |      |      |      |      |       |      |
| #   |      |      |       |      |      |      |      |      |      |      |       |      |

Press # to switch input mode
Chinese Typing

Number 1 is a button of punctuation s selection input, Number 2-9 are correspond Pinyin input, when user input something, the screen shows the pinyin input interface, the first line of interface shows the contents inputted by user., second line of interface shows the Chinese characters what users input. When the content of the pinyin input interface show in the first row, users can move [or] to select Pinyin, users can press [ ] button to delete the Pinyin what they inputted previously one by one, when all the Pinyin characters were deleted, Pinyin input interface disappeared.

Press [ ] button to select the pinyin, press [ or ] key to select the up and down line, the user can press [ or ] key to select the Chinese character, through [ ] key to return to the phonetic selection. Press [ ] key to select the corresponding Chinese characters and displayed them in the editing area, at this time the Chinese character input is completed, Pinyin input interface disappears. Press * to display *, press 0 to display the space, and press # to switch the input mode.

Numbers input mode:

Press the numeric keys to display the corresponding digits in the numbers input mode, press * to display *, and press # to switch the input mode.

Note: When users Enter a user alias, ID, or text messages, if editing area without any content, then the [ ] button is used for returning to the higher level menu, or else if there is any content on the editor area, pressing [ ] will delete one character before the cursor at one time, until the editing area has no content, then press the [ ] button to return to the higher level menu.

Menu Application

1. Press [ ] to enter Menu, then move up or down [ or ] to access the menu function
2. Press [ ], select a function or go into a sub menu
3. Press [ ] to return the higher level menu

Note: After a period of time not activity radio will automatically exit and return to the main menu screen (hang time is set by the programming software).

Radio Check

If there are any activation, this feature allows you to determine whether there is other two way radio active inside the system, and does not disturb the walkie-talkie users, none-voice or visual notice appears on the target two way radio

This feature applies only to single call user aliases or IDs.

Send Radio Check

This feature applies only to single call user aliases or IDs. Using menu:

1. Press [ ] to enter Menu
2. Move [ or ] button to select Contacts, then press [ ] to select
3. Move [ or ] to The required user alias or ID, then press [ ] to select
4. Or press [ or ] key to manual dialing, and then press [ ] key to select. If there are before calling ID, show ID and along with the flashing cursor, using the keyboard editing ID, press [ ]
5. Move [ or ] to radio detection, and then press [ ] to select
5. When Screen displays radio detection: < user alias or ID >, it is indicating the ongoing of radio detection. The LED indicator light is red.
6. Waiting for confirmation
7. If the target radio is active in the system, then it makes a prompt sound, screen will show that target two way radio has responded shortly.
   Or if the target radio in the system is not active, then it makes a prompt sound, screen will show that target two way radio has no answer shortly.
8. Two way radio returns to user alias or ID screen. If you press [ackle] when waiting for confirmation, made a prompt sound, two way radio will end all retry and exit the two way radio detection mode.

Monitor

Using monitoring function to open the target two way radio's microphone (only the user alias or ID). You can use the function to monitor any sound around target two way radio.
Your must allow your two way radio to use this function by programming it.

Start Monitor

Using the Menu:
1. Press [ackle] to enter the Menu
2. Move [ or ] to Contacts, then press [ackle] to select
3. Move [ or ] to The required single call user alias or ID, then press [ackle] to select

Or move [ or ] key to manual dialing, and then press [ackle] key to select
If there are any calling ID remains before, radio shows the ID and along with the flashing cursor, using the keyboard to edit the ID, press [ackle] key to choose.
Or move [ or ] key to manual dialing, and then press [ackle] key to select. Inputting the user alias or ID, and then press [ok] key to select.
4. Move [ or ] to select Remote Monitor then press [ackle] to select
5. When two way radio makes a prompt sound, LED light turns green.
6. Waiting for confirmation.
7. Screen displays Monitor succeeded,
   Or screen displays Monitor failed
If success: two way radio began to receive voice signals from the radios which are being monitored voice and screen displays two way radio are monitoring, until the end of the duration of the preprogrammed, two way radio made a prompt sound, and the LED light puts out, screen display that monitoring ends.
If failed: two way radio Repeats until reach the preprogrammed attempts.

Contacts setting

Contacts is “address book” for handheld two way radio. Each entry corresponds to an alias or ID used to start the call. In addition, each item, according to the different content setting, relate to three types of call: group calling, single call, all call. Your radio support digital address book. The Contacts' entries display in the following information
• Contacts
• New Contact
• Manual Dial

Note: you can add, delete, edit Contacts person in the digital address book (contacts)

Group Call With Contacts
1. Press [ ] to enter Menu
2. Move [ or ] to contacts, then press [ ] to choose, entries arrange in alphabetical order.
3. Move [ or ] to required calling group’s alias or ID.
4. Holding the radio and let it in a vertical position and keep mouth 1 to 2 inches (2.5 to 5.0 cm) with radio.
5. Press [PTT] to start calling, the LED turns red. The screen displays the calling group’s alias or ID, as well as icon of group call.
6. Releasing (PTT) button to receive, when any user response within the group, the LED light turns green. You will see on the screen group call icon of user’s ID.
7. If the “Channel Idle Beep” function is enabled, the receiver will hear a short beep when the target radio releases the [PTT] key, indicating that the channel is idle and waiting for a reply. Press the call key (PTT) to reply. If there is no voice activity during the pre-programmed group call hang time, the call end.

Single Call With Contacts
1. Press [ ] to enter Menu
2. Move [ or ] to Contact, then press [ ] to choose single call contact, entries arrange in alphabetical order.
3. Move [ or ] to required single call alias or ID.
   Or move [ or ] key to manual dialing, and then press [ ] key to choose. If there is a user alias or ID called before, radio shows ID and along with the flashing cursor, using the keyboard editing this ID.
   Or move [ or ] key to manual dialing, and then press [ ] key to choose, using the keyboard to enter a new ID.
4. Hold radio in a vertical position and keep it at a distance of 1 to 2 inches (2.5 to 5.0 cm) from the mouth.
5. Press [PTT] button to initiate the call and the LED indicator is lit red. The first line shows “single call” user alias or ID, the second line shows single call alias, the third line shows single call number and call icon .
6. Release [PTT] key to receive. When the target radio responds, the LED is lit green and the screen displays the ID of the transmitting radio.
7. If the “channel free indication tone” function is enabled, the receiver will hear a short beep when the target radio releases [PTT] key, indicating that the channel is idle and waiting for a reply. Press call key (PTT) to reply. If there is no voice activity during preprogrammed single call hang time, the call ends.
8. You will hear a short tone, the screen shows the call is terminated.
Note:
If you release (PTT) button when you are setting up the call, and when it will exit and return to the previous screen without any reminder. Radio can be preprogrammed executive two way radio are testing before establishing single call. If the target radio did not reply, you will hear a short beep, and screen shows the other radios did not reply. Two way radio return to menu before starting the radios around test.

Deleting Calling Log’s Record
1. Press [        ] button to enter the menu mode.
2. Press [       or       ] key to call record, and then press [        ] button to select.
3. Press the [      or      ] key to the desired list, and then press [        ] button to select.
5. Press [       or       ] key to view the list and press [PTT] key to start a single call with the currently selected alias or ID.

Move Whenever you miss call, two way radio will display a not answered call, select view or view later.

Call Log
Your radio can record all the recent dialed, received, and not answered call. Use the calling record function view and manage the recent calls.

Checking New Call’s Number
Menu items can show the not answer call, received calls and dialed call.
1. Press [ ] key to enter the menu mode.
2. Move the [ or ] key to the Call Log, and then press [ ] key to choose.
3. Move [ or ] to the required list, and then press [ ] key too choose.
4. The screen on the top of the list shows the recent entries.
5. Press [ or ] key to view the list and press [PTT] key to start a single call with the currently selected alias or ID.

Missed Call
Whenever you miss call, two way radio will display a not answered call, select view or view later.

Note:
If you press (PTT), when you’re viewing missing call number, radios will exit the missing call screen and establishing a single call again.
1. The screen shows the missing call, and the missing call’s number and view.
2. Press [ ] view missing call’s ID, missing call’s record list displayed on the screen.
   Press [ ] to store or delete this entry; Or move[ or ] key to view later, and then press [ ] key choice, return to the main screen.

Storing Missed call’s Alias Or ID
1. Press [ ] key to enter Menu.
2. Move the [ or ] key to Call Log, and then press [ ] key to choose.
3. Move the [ or ] key to missed call, and then press [ ] key to choose.
4. Move [ or ] key to missed call’s alias or ID, and then press [ ] key to choose
5. Move the [ or ] key to store, and then press [ ] key to choose
6. Radio Shows flashing cursor, if needed, enter the ID alias, and then press [ ] eye.
7. The screen contacts have been saved.
   You can also enter ID without alias.

Deleting Calling Log’s Record
1. Press [ ] button to enter the menu mode.
2. Press [ or ] key to call record, and then press [ ] button to select.
3. Press the [ or ] key to the desired list, and then press [ ] button to select.
4. Press [A or B] key to the desired alias or ID, and then press [ ] button to select.
5. Press [A or B] to delete the entry. And then press [ ] button to select whether delete the entry.
6. Select "Yes" to press [ ] button to delete the entry, the screen appears with the entry deleted; or select "No" and press [ ] button to return to the previous screen.

When you select a call list but there are no entries, the screen will show that the list is empty, and if the keyboard tone is on, a low tone will sound.

Call prompt operation
Call prompt allows you to prompt a specific radio user to call you back at a possible time. This feature is only available for single call user aliases or IDs and can be used through the menu via contacts or manual dialing.

Receive and confirm call prompts
When you receive a call prompt, the screen displays a call prompt that alternately displays the alias or ID of the transmitting radio.
1. You will hear the tone repeat sound.
2. Press and release the [PTT] key to confirm the prompt, or press [ ] key or [ ] to select "Ignore?" to exit the call prompt.

Starting Call Alert From Contact List
1. Press [ ] key to enter the Menu.
2. Move the[A or B] key to Contacts, and then press [ ] key to choose.

3. Move [A or B] key to missed call's alias or ID, and then press [ ] key to choose.
4. Move [A or B] key to manual dialing, and then press [ ] key to choose, a flashing cursor appears; then enter the user ID you want to call, and then press [ ] key.
5. Move[A or B] key to Call Alert, the screen display Call Alert:< user s alias or ID >, and then press [ ] key and instructions have been sent Call Alert.

Message function
Your radio can receive data, such as text messages from another radio, with a maximum length of 144 characters.

Edit and send text messages
Use menu function:
1. Press [ ] button to enter menu.
2. Press [A or B] key to enter message, and then press the [ ] button to select.
3. Press [A or B] to write the message, and then press the [ ] button to select.
4. A flashing cursor appears, using keyboard to input messages. Press [ ] key to move left, press [ ] key to move right, when editing area have contents, press [ ] key to delete any useless characters, otherwise return to the previous menu when there is no content.
5. After writing the message, press [ ] button to select Send or Save or Clear.
6. During editing, you can switch the input method by pressing [#] key.
7. During editing, you can switch the input method by pressing [#] key. 
8. After selecting Send, press [ or ] key to desired alias or ID, and then press [ ] button to select. 
   Or press [ or ] key to manual dial, then press [ ] button to select, enter user ID and press [ ] button. 
8. The screen displays the message: <user / group alias or ID> to confirm that the message is being sent. 
9. If the message is sent successfully, a beep will sound and the screen shows message is sent successfully. 
   Or if the message is not sent, a loud tone beeps, and the screen displays a message sending failure. If the message is not sent, radio returns to the retransmission selection screen. 

Send a Quick Text 
Radio supports up to 32 pre-made SMS messages programmed by the agent: 
When you have predefined a text message, you can edit each message before sending it. 
1. Press [ ] button to enter menu. 
2. Press [ or ] key to enter message, and then press the [ ] button to select. 
3. Press [ or ] to Quick Text, and then press the [ ] button to select. 
4. Press [ or ] to required Quick Text, and then press the [ ] button to select. 
5. A flashing cursor appears, using keyboard to input messages. Press [ ] key to move left, press [ ] key to move right, when editing area have contents, press [ ] key to delete any useless characters, otherwise return to the previous menu when there is no content. 
6. After writing the message, press [ ] button to select Send or Save or Clear. 

7. After selecting Send, press [ or ] key to desired alias or ID, and then press [ ] button to select. 
8. After selecting Send, press [ or ] key to desired alias or ID, and then press [ ] button to select. 
   Or press [ or ] key to manual dial, then press [ ] button to select, enter user ID and press [ ] button. 
9. The screen displays the message: <user / group alias or ID> to confirm that the message is being sent. 
10. If the message is sent successfully, a beep will sound and the screen shows message is sent successfully. 
   Or if the message is not sent, a loud tone beeps, and the screen displays a message sending failure. If the message is not sent, radio returns to the retransmission selection screen. 

Use a one-touch call key to send quick text 
1. Send a pre-made SMS to a predefined alias or ID by preprogramming one-touch call key. 
2. The screen displays message: <user / group name or ID>, confirm that the message is being sent. 
3. If the message is sent successfully, a beep will sound and the screen shows message is sent. 
   Or if you can not send text messages, screen displays failed to send message. If message failed to send, radio returns to the retransmission selection screen. 

Manage failed text messages 
In the retransmission selection screen, you can choose from the following options:
Resend text messages
1. Press [       ] to resend the same message to the same user / group name or ID.
2. If the message is sent successfully, a beep will sound, and the screen displays the message has been sent or if you cannot send the message, the screen displays failed to send message.

Forward text messages
Select Forward a text message to another user / group name or ID.
1. Press [       ] key to forward, and then press [         ] button to select.
2. Press [       ] key to the desired alias or ID, and then press [         ] button to select.
   Or press [       ] key to manual dial, then press [   ] button to select, enter user ID and press [ ] button.
3. The screen displays message: <user / group name or ID> to confirm that the message is being sent.
4. If the message is sent successfully, a beep will sound, and screen displays the message has been sent or if you can not send the message, a beep will sound, the screen displays failed to send message.

Editing messages
Select Edit to edit a text message before sending a text message.
Note: You can not edit the subject line if you have a subject line (a text message received from an e-mail program).

Resend text messages
1. Press [       ] to resend the same message to the same user / group name or ID.

Forward text messages
Select Forward a text message to another user / group name or ID.
1. Press [       ] key to forward, and then press [         ] button to select.
2. Press [       ] key to the desired alias or ID, and then press [         ] button to select.
   Or press [       ] key to manual dial, then press [   ] button to select, enter user ID and press [ ] button.
3. The screen displays message: <user / group name or ID> to confirm that the message is being sent.
4. If the message is sent successfully, a beep will sound, and screen displays the message has been sent or if you can not send the message, a beep will sound, the screen displays failed to send message.

Manage text messages sent
Once message is sent to another radio, it will be saved to "Outbox". Messages sent after sending are always added to the top of the Outbox list. Outbox folder can store up to 16 recently sent messages. When the folder is full, the next sent message will automatically replace earlier messages in this folder.
Note: Pressing [ ] button at any time can return to the previous screen.

View sent text messages
Use menu:
1. Press [ ] button to enter menu mode.
2. Press [ ] key to enter message, and then press [ ] button to select.
3. Press [ ] key to Outbox, and then press [ ] button to select.
4. Press [ ] key to the desired message, and then press [ ] button to select.
   The icon in the upper right corner of the screen indicates the status of the message.

Send a sent message
When viewing a text message, you can choose from the following options:
• Resend
• Forward
• Edit
• Delete
1. While viewing message, press [ ] button again.
2. Press [ ] key to resend, and then press [ ] button to select.
3. The screen display sent to: <user / group alias or ID>, confirming that the same message is being sent to same target radio.
4. If the message is sent successfully, a beep will sound and screen shows message is sent. Or if message is not sent, a loud tone beeps, and the screen displays failed to send message. If message is not sent, radio returns to the resend screen. Press [ ] to resend message to the same user / group name or ID.

Receive text messages
When your radio receives a text message, the tone sounds, screen displays short message icon.
View message
1. Press [ ] button to enter menu mode, press [ ] key to message, press [ ] button to select Inbox, and press [ ] key to select Inbox list.
2. The selected message in the Inbox opens.
3. Press [ ] button to return to Inbox.
   Or press [ ] to reply, forward or delete message.
Press [ ] or [ ] to reply or forward or delete selection screen:
   • Select Reply to reply messages and select Forward to forward messages.
   • Select Delete to delete received messages.

Manage received messages
Use Inbox to manage messages. Inbox can store up to 16 text messages.
Radio support the following message options:
   • Reply
   • Forward
   • Delete
   • Delete all
Store the messages in your inbox in the order you received recently.
Note: Pressing [ ] button at any time can return to the previous screen.

Check messages in your inbox
1. Press [ ] button to enter menu mode.
2. Press [ ] or [ ] key to enter message, and then press [ ] button to select.

Reply messages in your Inbox
Use menu function:
1. Press [ ] button to enter menu mode.
2. Press [ ] or [ ] key to message, and then press [ ] button to select.
3. Press [ ] or [ ] key to Inbox, and then press [ ] button to select.
4. Press [ ] or [ ] key to desired message, and then press [ ] button to select.
5. Press [ ] button again to enter the submenu.
6. Press [ ] or [ ] key to reply, and then press [ ] button to select.
7. Press [ ] or [ ] key to write message, then press [ ] button to select, the flashing cursor appears, and use your keyboard to edit your message.
Or press [ ] or [ ] to enter quick text, and then press [ ] button to select. Select desired message and press [ ] button, flashing cursor appears. If necessary, use your keyboard to edit your message.
8. After writing message, press [ ] button.
9. The screen displays message: <user / group name or ID> to confirm that the message is being sent.
10. If message is sent successfully, a beep will sound and screen shows message is sent. Or if you cannot send text messages, the screen displays failed to send message. If the message is not sent, radio returns to resend selection screen.

Delete messages in the Inbox
Use menu function:
1. Press [ ] button to enter menu mode.
2. Press [ ] key to message, and then press [ ] button to select.
3. Press [ ] key to Inbox, and then press [ ] button to select.
4. Press [ ] key to desired message, and then press [ ] button to select.
5. Press [ ] button again to enter the submenu.
6. Press [ ] key to delete, and then press [ ] button to select.
7. When radio shows delete message, press [ ] key to "YES", and then press [ ] button to select.
8. Screen shows message is delete.
9. The screen returns to Inbox.

Delete all messages in your inbox
Use menu function:
1. Press [ ] key to enter the menu mode.
2. Press [ ] or [ ] to message, and then press [ ] button to select.
3. Press [ ] or [ ] key to Inbox, and then press [ ] button to select.
4. Press [ ] or [ ] key to delete all, and then press [ ] button to select.

5. When radio shows delete all, press [ ] or [ ] key to YES, and then press [ ] button to select.
6. The screen display Inbox has been cleared. When you select "Inbox" but there is no text message, the screen will show that list is empty.

Encryption
If this function is enabled, it is helpful to prevent other users on the channel from eavesdropping by unauthorized use of software encryption. The transmitted signaling and user identification sections are not encrypted. Your radio must enable encryption on the channel to send encrypted transmissions, even if it is not necessary to receive this.

Basic Encryption
Digital channels, radio can only be assigned one of the above encryption type. To decrypt an encrypted call or a data transmission, preprogrammed radio and launch radio must have same "encryption key" (suitable for basic encryption).
If your radio receives an encrypted call with a different encryption key or a different key value and key ID, you will hear a messy sound (basic encryption).
Press the preprogrammed encryption key to turn encryption on or off.

DTMF
Analog channels, Dual Tone Multi-Frequency function allows operate radio in a radio system with interference.
To initiate a DTMF call
1. Press and hold [PTT] button.
2. Enter the desired number.

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

Note: The implementation of radio kill or activation is limited to radio that have open (software preset) this function.

Radio Disable (Digital mode)

Use menu mode
1. Press [ ] key to enter the menu mode.
2. Move [ or ] key to Contacts, and then press [ ] key to select; entries are in alphabetical order.
3. Move [ or ] key to the required alias or ID, and press [ ] key to select.
Or move [ or ] key to Manual Dial, then press twice [ ] key to enter a user alias or ID, and press [ ] key to select.
4. Move [ or ] key to radio disable, and then press [ ] 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 [ ] key, because you will not get a confirmation message.

Radio Enable (Digital mode)

Use menu function:
1. Press [ ] key to enter the menu mode.
2. Move [ or ] key to Contacts, and then press [ ] key to select; entries are in alphabetical order.
3. Move [ or ] key to the required alias or ID, and press [ ] key to select.
Or move [ or ] key to Manual Dial, then press twice [ ] key to enter a user alias or ID, and press [ ] key to select.
4. Move [ or ] key to radio enable, and then press [ ] key to select.
5. The display shows the radio enable: <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 enable successfully.
Or if it fails, emit a beep and the screen displays radio fail to enable.

During radio enable operation, do not press the [ ] key, because you will not get a confirmation message.
Scan list
Note: Scanning function should be used when double wait is closed!
Create a scan list and assign it to a single channel/group, and your radio can support up to 16 scan lists, up to 16 members per list.
Each scan list supports mixing of analog and digital channels. You can add/remove channels or set priorities for channel by editing scan list.

Create a scan list and assign it to a single channel/group, and your radio can support up to 16 scan lists, up to 16 members per list. Each scan list supports mixing of analog and digital channels. You can add/remove channels or set priorities for channel by editing scan list.

Scan instructions and methods
When you start scanning, your radio through cycling of pre-programmed scan list to see whether there is voice activity in the current channel. The LED flashes orange and scan icon appears on the screen.
During a dual mode scan, if you are on a digital channel and your radio locks an analog channel, it will automatically switch from digital mode to analog mode throughout the duration of the call. vice versa.

View members in scan list
1. Press [ 或 ] to select a channel with a preprogrammed scan list;
2. Press [ ] button to enter menu mode;
3. Press [ 或 ] key to scan, and then press [ ] button to select;
4. Press [ 或 ] key to view/edit list, and then press [ ] button to select;
5. Use [ 或 ] key to view members in the list.
If priority is set, scan icon distinction display, priority 1 或 priority 2 或, no priority 或 when scan is on.

Scan reply
Scanning when radio detects an active channel/group, radio remains in the channel/group, which is called “scan hang time” of preprogrammed time limit.
Process:
1. Hold radio in a vertical position and keep it at a distance of 1 to 2 inches (2.5 to 5.0 cm) from the mouth. If “channel free indication tone” function is enabled, the receiver will hear a short beep when [PTT] button is released by the launch radio, indicating that the channel

Two scanning methods:
- Manual scan: Start scanning according to preprogrammed scan on/off key or menu function, radio will detect all channels/groups in preset scan list when scanning is initiated.
- Auto Scan: When you select a channel/group that has activated Auto Scan, radio starts scanning from the channel that activated auto scan.

Start and stop scanning
Press preprogrammed scan on/off key or enter scan menu function
1. Press [ 或 ] to select a channel with a preprogrammed scan list;
2. Press [ ] button to enter menu mode;
3. Press [ 或 ] key to scan, and then press [ ] button to select;
4. If scan is disabled, screen displays on or if scan is activated, screen displays off;
5. Press [ ] button to select.
6. When scan is activated, LED flashes red and scan icon is displayed; or when scan is disabled, LED is off and scan icon is not displayed.
Set
Set include the following:
Radio Set
• CTCSS/DCS (Analog channel)
• Squelch
• TX Power (Programmable in software)
• Talkaround (Programmable in software)
• Band (Analog channel)
• Busy Lock
• TOT
• VOX
• Double Wait (Programmable in software)
• Encrypt (Digital channel) (Programmable in software)
• Power Save
• Beep (Programmable in software)
• Backlight (Programmable in software)
• Keypad Lock (Programmable in software)
• Indocator (Programmable in software)

Radio Info
• Radio ID
• Dev. Info

Radio Cfg
• RX Freq
• Tx Freq
• Ch Name
• Color Code
• Slot

Radio Set
CTCSS/DCS
In analog channels, in order to prevent interference, only match carrier and CTCSS/DCS can open the speaker. Provide 50 groups standard CTCSS, while supporting non-standard CTCSS (range 60Hz ~ 280Hz); provide 104 groups standard DCS, while supporting non-standard (Range 000 ~ 777Hz) a total of 1024 groups. CTCSS/DCS can be set in receiving CTCSS / DCS or transmitting CTCSS/DCS of analog channel in software, or CTCSS/DCS menu in radio.

2. Press [PTT] key during hang time, and LED indicator will be on red.
4. If you do not respond within hang time, radio continues to scan down.
Contents set will be saved permanently, contents after turn off radio is not lost.

Set Squelch level
You can adjust radio squelch level, filter useless calls with low signal, or channels with background noise higher than normal values. Settings: Normal is default, strict filtering (useless) calls or background noise. However, calls from remote locations may also be filtered out. Press preprogrammed strict / normal squelch key to switch between normal and strict squelch level.

Use menu function:
1. Press [        ] button to enter menu mode.
2. Press [       or       ] key to set, then press [        ] button to select radio set.
3. Press [       or       ] key to squelch, and then press [        ] button to select.
4. Press [       or       ] key to select Strict or Normal, and then press [        ] button to select.
5. Press continuously [        ] to return to main screen.

Set Power Level
You can set radio power level for each channel high or low.

Press preprogrammed high / low power select key to switch transmit power level between high and low.

Use menu function:
1. Press [        ] button to enter menu mode.
2. Press [       ] button to select "Set", and then press [       ] button to select Radio Set.
3. Press [       or       ] key to "CTCSS/DCS", then press [       ] button to select "C CDC/DCS" and press [ ] button to select. Press [  or  ] key to switch CTSS and DCS: Press [ ] key to switch positive and negative DCS in DCS, N is positive, I is negative. Press [ ] button to select, but also through keyboard number keys to enter Non-standard CTCSS/DCS, press [   ] button to confirm. Press [        ] button to cancel and return previous menu.
4. Press continuously [        ] to return to the main screen.
2. Press [A or V] key to set, then press [ ] button to select radio set.
3. Press [A or V] key to Power Level, and then press [ ] button to select.
4. Follow screen instructions to change current settings.
5. Press [ ] button to select new power level.
6. Press continuously [ ] button to return to the main screen, screen displays power level icon.

Talkaround
You can continue to communicate when repeater does not work or when radio is outside range of repeater but is within range of other radios. This is so-called "talkaround".

Press preprogrammed repeater / talkaround key to switch between two modes.
Use menu function:
1. Press [ ] button to enter menu mode.
2. Press [A or V] key to set, then press [ ] button to select.
3. Press [A or V] key to Talkaround, and then press [ ] button to select.
4. Press continuously [ ] button to return to main interface. Screen displays " " to show talkaround is on.
Even after shutdown, radio still maintain talkaround setting.

Wide and narrow band
In analog mode, channel bandwidth set to narrow band (12.5kHz) and wide band (25kHz) for transmit and receive frequencies.
Use menu function in analog channels

1. Press [ ] button to enter menu mode.
2. Press [A or V] key to set, then press [ ] button to select.
3. Press [A or V] key to Band, and then press [ ] button to select.
4. Press [A or V] key to Narrow or Wide band, and then press [ ] button to select.
5. Press continuously [ ] button to return to main interface.
Even after shutdown, radio still maintain Wide/Narrow band setting.

Busy Lock
Settings: "Off" / "Carry" / "QT / CC"
Select "Carry" when carry is matched and reach to open squelch threshold, press PTT to prohibit and send busy tone;
Select "QT / CC", when carry is matched and reach to open squelch threshold and does not match QT / CC, press PTT to prohibit and send busy tone.
1. Press [ ] button to enter menu mode.
2. Press [A or V] key to set, then press [ ] button to select.
3. Press [A or V] key to Busy Lock, and then press [ ] button to select.
4. Press [A or V] key to Off or Carry or QT / CC, and then press [ ] button to select.
5. Press continuously [ ] button to return to main interface.
Even after shutdown, radio still maintain Busy Lock setting.

TOT
1. Press [ ] button to enter menu mode.
2. Press [A or V] key to set, then press [ ] button to select.
3. Press [A or V] key to TOT, and then press [ ] button to select.
4. The screen shows OFF, 15S, 30S ... 495S and other options (with the increasing amplitude
of 15s). Press [ 或 ] key to corresponding option, and then press [ ] button to select. If "OFF" is selected, TOT is closed. If you select other options, screen displays .. S has been selected.

VOX
This feature allows you to initiate hands-free voice calls on a preprogrammed channel. When microphone on the accessory with VOX function detects the voice, radio automatically launches signal during the preprogrammed time period.

During operation of radio, pressing [PTT] key disables VOX function. To re enable VOX function, do one of following actions:
• turn off and return on radio, or
• change channels via channel knobs, or
• Perform the following procedure:

Note: Enabling or disabling this feature is limited to the radio that activates these features.

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

Use menu
1. Press [ ] button to enter menu mode.
2. Press [ 或 ] key to set, then press [ ] button to select.
3. Press [ 或 ] key to VOX, and then press [ ] button to select.
4. The screen shows on and off. If you select Off, press [ ] button to disable VOX function. If you select On, enable VOX function. Press continuously [ ] to return to main interface.

Microphone icon in icon bar indicates that Vox is turned on.

Double Wait
Double wait can be set through radio menu, you can also set in "menu option" in software.

Use menu
1. Press [ ] button to enter menu mode.
2. Press [ 或 ] key to set, then press [ ] button to select.
3. Press [ 或 ] key to Double Wait, and then press [ ] button to select.
4. Screen shows Off/Double Wait/Single Wait. When choose off, radios works under single band mode. When single wait is selected, radio operates on the main channel, and sub-channel does not receive the signal. When double wait is selected, main channel and sub-channel receiving scan one by one.

When scanning effective reception of the signal, radio locked and work. If channel locked is not main channel, points to the temporary working channel, then press PTT, temporary channel transmit. Timing time is up, icon disappears. No temporary icon, press PTT, point to the main channel transmission. Press continuously [ ] to return to main interface and display the corresponding status.

Encrypt
In digital mode, communication voice secret switch. When encryption is on, only two-party radios matching encryption key can communicate.

Use menu
1. Press [ ] button to enter menu mode.
2. Press [ 或 ] key to set, then press [ ] button to select.
3. Press [ 或 ] key to Encrypt, and then press [ ] button to select on/off.
4. Press [ ] to confirm and press continuously [ ] to return to main interface.
Power Save
Power saving, the default ratio is 1:4. Radio will open power saving function after 10 seconds be in standby mode.
1. Press \[button to enter menu mode.
2. Press \[ or  \] key to set, then press \[button to select.
3. Press \[ or  \] key to Power Save, and then press \[button to select on/off.
4. Press \[to confirm and press continuously \[to return to main interface.

Beep
including following
- All Tone
- Call Permit
- Key Beep

All tone
If desired, you can enable or disable all radio tones and prompts (except for incoming emergency tones).
Press preprogrammed beeps on / off key to turn on or off all tones of radio.
Use Menu
1. Press \[button to enter menu mode.
2. Press \[ or  \] key to set, then press \[button to select.
3. Press \[ or  \] key to Beep, and then press \[button to select.
3. Press \[ or  \] key to All Tone, and then press \[button to select.
5. Press \[button to select On to enable all tones and hints, and screen shows that all tones are on.

Turn on/off Key Beep
Use Menu
1. Press \[button to enter menu mode.
2. Press \[ or  \] key to set, then press \[button to select.
3. Press \[ or  \] key to Beep, and then press \[button to select.
3. Press \[ or  \] key to Key Beep, and then press \[button to select.
5. Press \[button to select On to enable key beep. Or press \[button to select Off, key beep are turned off. Press continuously \[to return to main interface.

Backlight
You can turn on or off screen backlight as needed. This setting also affects menu key and keyboard backlight.
Press preprogrammed backlight key to switch backlight setting.
Use Menu
1. Press \[button to enter menu mode.
2. Press \[ or  \] key to set, then press \[button to select radio set.
3. Press \[ or  \] key to Backlight, and then press \[button to select.
4. The screen displays Always On, 5 sec, 10 sec, 15 sec option. Press \[button to select
Always On, screen backlight will always be lit and will not turn off. Or if you choose 5 sec, 10 sec, 15 sec, screen will be off in the corresponding time after users no operation. Press continuously \[to return to main interface.
Keypad Lock
You can lock radio keyboard to prevent accidental key input. Ways includes manual keyboard lock and automatic keyboard lock. Automatic keyboard lock includes 5 sec, 10 sec, 15 sec three time options.

Use Menu
1. Press [ ] button to enter menu mode.
2. Press [ or ] key to set, then press [ ] button to select.
3. Press [ ] key to Keypad Lock, and then press [ ] button to select.
4. Press [ or ] key to Manual, then press [ ] button to select. Screen display Select Manual, you need to long press [*] key to lock the keypad.
5. Press [ or ] to select 5 sec, 10 sec, 15 sec, screen displays to select the corresponding time. The within the corresponding time, if users have not any keyboard operation, the screen display lock, return to main screen.
6. To unlock keypad, press [ ] button, and then press [*] key. Press continuously [ ] to return to main interface.

Indicator
If needed, you can turn on/off LED indicator.
1. Press [ ] button to enter menu mode.
2. Press [ or ] key to set, then press [ ] button to select.
3. Press [ or ] key to indicator, and then press [ ] button to select.
4. Screen displays on, press [ ] button to enable LDE indicator, screen shows indicator on.
Or Screen displays off, press [ ] button to turn off LED indicator, screen shows indicator off. Press continuously [ ] to return to main interface.

Passwd Lock
1. Press [ ] button to enter menu mode.
2. Press [ or ] key to set, then press [ ] button to select radio set.
3. Press [ or ] key to Passwd Lock, and then press [ ] button to select.
4. Use keypad to enter correct 6-digit password (also can be preset in software), then press [ ] button.
5. If password is incorrect, screen displays Password Error. If password is correct, selection option is displayed.
6. If the first line shows "On", press [ ] button to turn on password lock, next time you need to enter correct password to turn on radio. If the first line shows "off", press [ ] button to turn off password lock, next time you turn on the radio directly.
7. Press [ or ] key to change Pwd, and then press [ ] button to select.
8. Enter new password below 6 digits and press [ ] button to select.
9. Screen shows set Succeed. Press continuously [ ] to return to main interface.

Mode
Mode settings are divided into:
• CH. No.: Displays channel number
• CH Name: Displays channel name
• CH Frequency: Displays channel frequency
1. Press [ ] button to enter menu mode.
Screen
If necessary, you can enable and disable screen display.
1. Press [ ] button to enter menu mode.
2. Press [ ] or [ ] key to Mode, and then press [ ] button to select.
3. Press [ ] or [ ] key to select CH. No or CH Name or CH Frequency, and then press [ ] button to select the corresponding display mode. Display show corresponding mode is selected.
4. The main interface will display CH. No or CH Name or CH Frequency (reception frequency, PTT display transmission frequency) according to the selected mode. Press continuously [ ] to return to main interface.

Language
Radios supports the following languages:
- English
- Chinese

Radio Info
- Radio ID
- Dev. Info
Note: Pressing [ ] button at any time can return to previous screen.

Radio Info
1. Press [ ] button to enter menu mode.
2. Press [ ] or [ ] key to set, then press [ ] button to select radio set.
3. Press [ ] or [ ] key to Language, and then press [ ] button to select.
4. Press [ ] or [ ] key to corresponding Language, and then press [ ] button to select.
5. The screen switches and displays the corresponding language. Press continuously [ ] to return to main interface.

Dev. Info
including following contents:
- Model information: radio model No.
- Serial number: radio identity code
- CPS version: software version
- Hardware version: Hardware version number
• Firmware version: CPU software version
• DSP version: Digital chip baseband version number
• Programming time: the last writing time
1. Press [ ] button to enter menu mode.
2. Press [ ] or [ ] key to Radio Cfg, then press [ ] button to select.
3. Press [ ] or [ ] key to Dev. Info, and then press [ ] button to select.
4. Press [ ] or [ ] key to view model information, serial number, CPS version, hardware version, firmware version, DSP version, and programming time. Press continuously [ ] to return to main interface.

Radio Cfg
Radio configuration is mainly to edit the channel content
Editable channel content includes:
• Rx Freq
• Tx Freq
• Ch Name
• Color code
• Slot
• Dual time slot for point to point

Rx Freq
1. Press [ ] button to enter menu mode.
2. Press [ ] or [ ] key to Radio Cfg, then press [ ] button to select.

Tx freq
1. Press [ ] button to enter menu mode.
2. Press [ ] or [ ] key to Radio Cfg, then press [ ] button to select.
3. Press [ ] or [ ] key to Tx Freq, and then press [ ] button to select.
4. The screen displays the current channel transmit frequency, and then press [ ] button to select.
5. Press [ ] button to delete, press [ ] key to move one digit left, press [ ] to move one digit right, press [*] to delete all, delete all and press [ ] to return to the previous menu. Press number keys to enter the corresponding number.
6. After the change is complete, press [ ] button, the screen displays "Tx Freq success". Note: When editing frequency, the frequency will be changed according to the frequency range preset on software. If exceed the frequency range preset on software, show "illegal modification value is invalid" and return.

3. Press [ ] or [ ] key to Rx Freq, and then press [ ] button to select.
4. The screen displays the current channel reception frequency, and then press [ ] button to select.
5. Press [ ] button to delete, press [ ] key to move one digit left, press [ ] to move one digit right, press [*] to delete all, delete all and press [ ] to return to the previous menu.
6. After the change is complete, press [ ] button, the screen displays "Rx Freq success". Note: When editing frequency, the frequency will be changed according to the frequency range preset on software. If exceed the frequency range preset on software, show "illegal modification value is invalid" and return.
Ch Name
1. Press [ ] button to enter menu mode.
2. Press [ ] or [ ] key to Radio Cfg, then press [ ] button to select.
3. Press [ ] or [ ] key to Ch Name, and then press [ ] button to select, screen displays the current channel name.
4. Press [ ] button to delete, press [ ] key to move one digit left, press [ ] to move one digit right, press [*] to delete all, delete all and press [ ] to return to the previous menu. Press number keys to enter the corresponding number.
5. After the change is complete, press [ ] button, the screen displays "Ch Name success".

Color Code
Color code can only be set in digital channels.
1. Press [ ] button to enter menu mode.
2. Press [ ] or [ ] key to Radio Cfg, then press [ ] button to select.
3. Press [ ] or [ ] key to Color Code, and then press [ ] button to select.
4. Press [ ] or [ ] key to select color code value to be set, and then press [ ] button to select. Screen display color code X (selected color code value) has been selected.

Special function
Online update
1. Turn off radio, insert programming cable;
2. Hold down side key 1 and side key 2 at the same time to turn on radio, the indicator light green, indicating that radio has entered the upgrade mode;
3. Start upgrade software "Update.exe"; select the corresponding serial port;
4. Click "Browse" to select the file to be upgraded (provided by the manufacturer), for example: XX_V2.2.1.sgl;

2. Only after 5S current channel has received a signal or actively transmit, radio re-enter the double wait switch
3. If the radio sending synchronization code and the call radio are not the same frequency band, it takes 8-10S.

Slot
1. Press [ ] button to enter menu mode.
2. Press [ ] or [ ] key to Radio Cfg, then press [ ] button to select.
3. Press [ ] or [ ] key to Slot, and then press [ ] button to select.
4. Press [ ] or [ ] key to select slot value to be set, and then press [ ] button to select. Screen display slot X (selected slot value) has been selected.

Note: Double wait and the main channel to open dual capacity direct mode, the main channel locked after the first 4.5 minutes will send synchronization code, and in the channel stay about 3S-5S to determine whether the other party received the synchronization code.
1. After no receiving any signal, after 3S-5S the launch of the synchronization code, radio re-enter double wait switch
5. Click "Download" until the download is successful, remember that when updating, prohibit power off, or radio single machine scrapped;
6. Unplug programming cable, turn off radio or reboot radio

Factory Reset Defaults
Turn off radio and press and hold side key 1 and number key [1] at the same time to turn on radio. Radio displays "Memory Reset?" Press [ key to enter the initialization, radio displays "Memory Reset ..." After 10 seconds, initialization is successful and normal boot; press other keys to exit initialization interface and normal boot. When initialization, prohibit power off, or otherwise it will cause initialization to fail.

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**Specification**

**General**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency range</td>
<td>136–174/400–470MHz</td>
</tr>
<tr>
<td>Channel</td>
<td>1024</td>
</tr>
<tr>
<td>Frequency stability</td>
<td>±1 ppm</td>
</tr>
<tr>
<td>Operating temperature</td>
<td>−30°C ~ +60°C</td>
</tr>
<tr>
<td>Voltage</td>
<td>7.4V DC</td>
</tr>
</tbody>
</table>

**Receiver**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analog sensibility</td>
<td>0.2 μV @ 12dB SINAD</td>
</tr>
<tr>
<td>Digital sensibility</td>
<td>0.25uV(BER:5%)</td>
</tr>
<tr>
<td>Adjacent channel selectivity</td>
<td>≤−<a href="mailto:60dB@12.5KHz">60dB@12.5KHz</a></td>
</tr>
<tr>
<td>Co-channel rejection</td>
<td>≥65dB</td>
</tr>
<tr>
<td>Spurious response</td>
<td>≥70dB</td>
</tr>
<tr>
<td>Audio response</td>
<td>+1 ~ −3dB</td>
</tr>
<tr>
<td>Rated audio distortion</td>
<td>&lt;5%</td>
</tr>
<tr>
<td>Audio power</td>
<td>1W</td>
</tr>
<tr>
<td>Modulation noise</td>
<td>≥45dB@25KHz / ≥40dB @12.5KHz</td>
</tr>
<tr>
<td>Parameter</td>
<td>Specification</td>
</tr>
<tr>
<td>---------------------------------</td>
<td>------------------------</td>
</tr>
<tr>
<td><strong>Power</strong></td>
<td>High: 5W Low: 1W</td>
</tr>
<tr>
<td><strong>Transmit current</strong></td>
<td>Analog ≤ 1.6A Digital ≤ 0.9A</td>
</tr>
<tr>
<td><strong>Standby current</strong></td>
<td>0.15A</td>
</tr>
<tr>
<td><strong>FM modulation mode</strong></td>
<td>11K0F3E @ 12.5KHz 14K0F3E @ 20KHz 16K0F3E @ 25KHz</td>
</tr>
<tr>
<td><strong>4FSK digital mode</strong></td>
<td>12.5KHz Data only: 7K60FXD 12.5KHz Data and voice: 7K60FXW</td>
</tr>
<tr>
<td><strong>Modulation distortion</strong></td>
<td>&lt;5%</td>
</tr>
<tr>
<td><strong>Hum and noise</strong></td>
<td>≥ 45dB@25KHz / ≥ <a href="mailto:40dB@12.5KHz">40dB@12.5KHz</a></td>
</tr>
<tr>
<td><strong>Adjacent channel power</strong></td>
<td>≤ <a href="mailto:-60dB@12.5KHz">-60dB@12.5KHz</a></td>
</tr>
<tr>
<td><strong>Audio response</strong></td>
<td>+1 ~ -3dB</td>
</tr>
<tr>
<td><strong>Antenna port spurious</strong></td>
<td>9KHz–1GHz: ≤ -36dBm</td>
</tr>
<tr>
<td></td>
<td>1GHz–12.75GHz: ≤ -30dBm</td>
</tr>
<tr>
<td><strong>Digital protocol</strong></td>
<td>ETSI–TS102 361–1,–2,–3</td>
</tr>
</tbody>
</table>