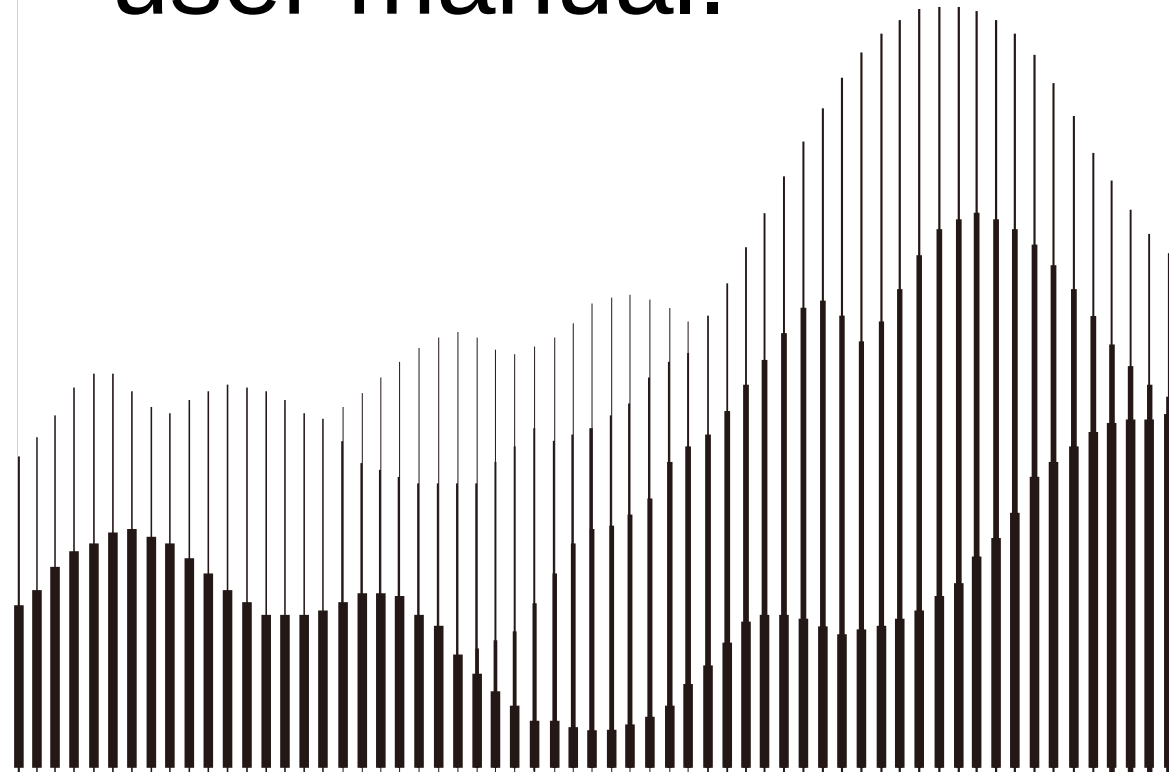




Amateur Handheld Radio

user manual.



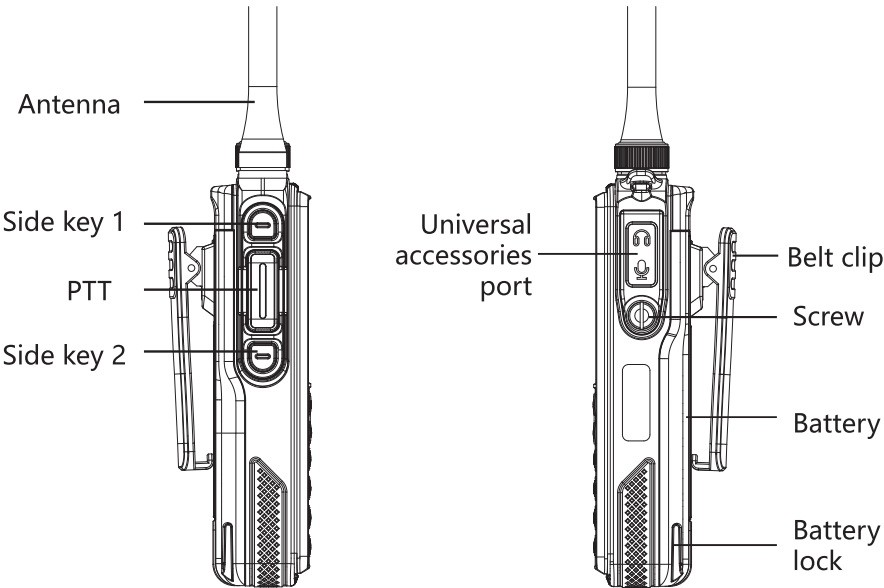
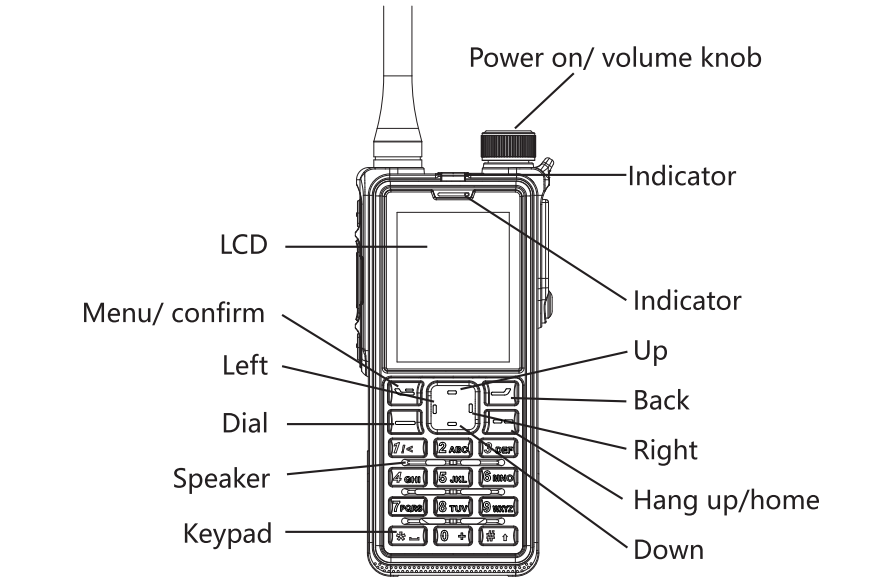
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Get familia

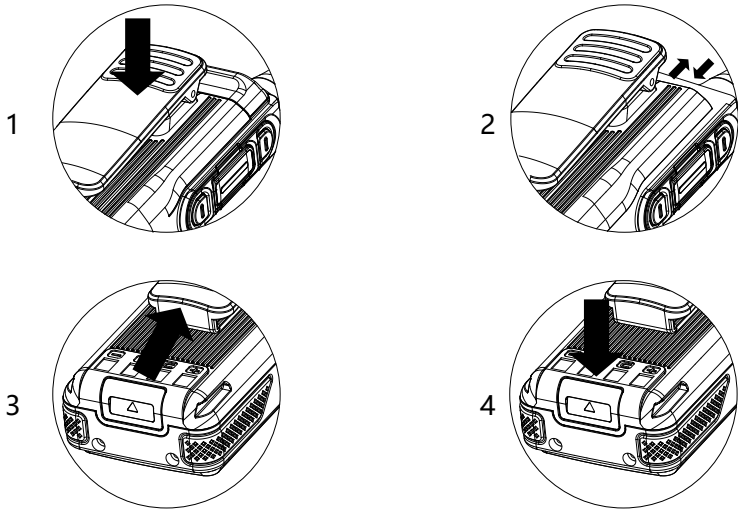


Packing list

NO.	Items
1	Radio body
2	battery
3	antenna
4	adaptor
5	manual
6	Safety information and warranty
7	Explosion-proof safety information card (for explosion-proof only)
8	Lanyard
9	charger

Battery installation

1. Gently press the top of the back clip to release it.
2. Align the battery with the battery mount on the back of the radio and insert it.
3. Push the battery into place.
4. Gently press the bottom of the battery until the battery push button locks it into place.

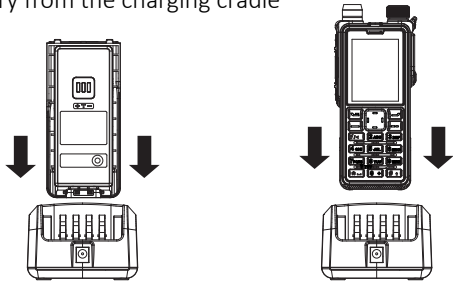


Battery/Radio Charging

1. Plug the charging power adapter into a suitable AC outlet.
2. Plug the power adapter cable into the adapter jack on the back of the charging cradle. The green indicator light will illuminate.
3. Insert the battery or radio to be charged into the charging cradle. Confirm that the battery is securely connected to the cradle terminals. Charging will begin when the red indicator light illuminates.
4. After approximately 5 hours of charging, the red light will turn off and the green indicator will illuminate, indicating that the battery is fully charged. 4. Leave the battery on the green light for 1-2 hours before removing it to maximize battery performance. 5. Remove the charging power adapter from the AC outlet.

Note:

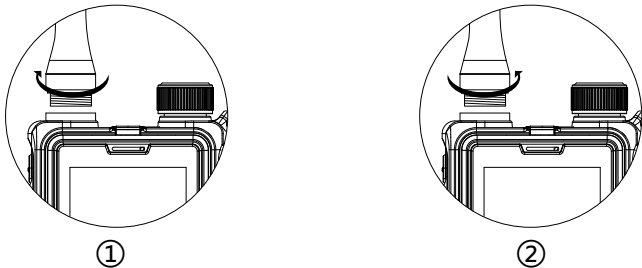
1. The radio battery is not charged at the factory. Please charge the battery before first use.
2. Please use the lithium battery and charger provided by our company.
3. When charging a new battery for the first time or a battery that has been stored for an extended period (over 2 months), charge it several times to achieve its full capacity.
4. Do not charge the battery when it is fully charged or when the battery level is above the radio's low voltage warning level to avoid affecting battery life and performance. After charging is complete, remove the battery from the charging cradle.



Installing/Removing the Antenna

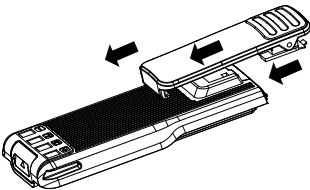
As shown in Figure ① on the right, align the antenna with the antenna connector on the top of the radio and rotate it clockwise until it is secure.

To remove the antenna, rotate it counterclockwise until it comes out, as shown in Figure ②



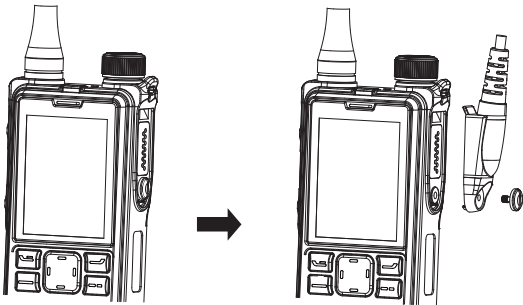
Installing/Removing the Clip

Align the two screws on the clip with the two screw holes on the back of the console and tighten with a screwdriver. To remove, loosen the two screws securing the clip and remove it.



Install the accessories:

Plug the external audio accessories into the universal accessory port and secure with screws.



LED indicator

LED indicator	Radio statue
red	transmit
green	radio is receiving a signal (voice, short message, data) or detects activity on the channel.
orange	radio receives a call and automatically resets within the time (analog) or the call hangs up time (digital)
Orange flashed	radio is in alarm or receives a missed call, call alert, or is in the radio scan process.
Red flashed	The battery is low or an emergency alert is being received, the radio has failed the power-on self-test, or the radio is reading or writing frequencies.

LCD display

	Battery Level Indicator The less space the indicator has, the more battery power remaining. When the battery is empty, the icon turns red.
	RSSI More bars indicate a stronger signal, while fewer bars indicate a weaker signal. This icon is displayed only during reception.
	HI/ LOW power
	Earphone mode
	mute
	There message unread
	statue
	Keypad lock
	Emergency alarm mode
	Encryption
	Missed call
	VOX
	PTT
	Scan
	monitor
	talkaround
	romaing
	GPS
	Analog channel
	Mix channel
	Digital channel
	recording
ID:	
	Single call
	Group call

Basic operation

- 1.Powering on and off1. Powering on and off
- If radio is off, press and hold the [Power/Volume Knob] for three seconds to power it on. The LCD screen will display the power-on screen, the backlight will automatically turn on, and the intercom will emit a beep.
If the device is on, press and hold the [Power/Volume Knob] for three seconds to power it off.
- 2.Select a channel
- In the standby mode, rotate the [Power/Volume] knob to select a channel.
Each channel on the radio can be configured as either an analog channel or a digital channel. Rotating the [Power/Volume] knob switches between analog and digital channels.
- 3.Adjust the volume
- With the radio powered on, briefly press the Power/Volume knob to adjust the volume. The volume mode will appear. Turn the knob clockwise to increase the volume, and counterclockwise to decrease it.
- 4.launch a Call
- 1) launch a Call to a Default Contact
- If your radio has a default contact preset for the current channel, you can press and hold the [PTT] key to directly call the default contact.
Your dealer can preset a default contact for each digital channel.
- 2) Selecting a Contact to Initiate a Call: Enter the "Contacts" menu, select the contact you want to call from the "Contact List," and press and hold the [PTT] key to initiate the call.
- 3) Manually Dial a Call: Enter the "Contacts" menu, select "Manual Dial," enter the ID you want to call, and press and hold the [PTT] key to initiate the call.

5. Receiving a Call

When a call is received, the radio automatically switches to receiving mode:

- 1) The green LED lights up.
- 2) The LCD displays the call type icon (single call, group call, or all call), the alias or ID, and the incoming call icon.
- 3) The received audio is played.
- 4) While waiting for the other user to stop calling, you can immediately press and hold the PTT key during the call hang time to call back the current contact.

Note:

To receive calls from a user group, the radio must be configured as a member of that group (this is done by the dealer using the programming software).

6. Emergency Alarm

In an emergency, you can use the Emergency Alarm feature to send an emergency alarm message with confirmation and an emergency voice message to a designated group of radio users. You can initiate an emergency alarm at any time, even if the current channel is receiving a signal.

7. Call Log

The Call Log feature allows you to view and manage the radio's recent outgoing, incoming, and missed call records. The Call Log only stores single calls; group calls are not recorded.

FUNCTION AND OPERATION

Contacts

In the Contacts menu, you can view your contact list, add contacts, and manual dialing.

1. Group Call Type

When the selected Contacts member type is Group Call, you can view the Group Call ID or send a text message to a contact in a Group Call.

2. single Call Type

When the selected Contacts member type is single Call, you can view details, send a call alert, send a text message, edit the name or number, delete, radio check, remote kill or activate and remote monitor the contact in a single Call.

●**Call prompt:** Sends a call prompt to a specified single Call contact, requesting that the contact respond when communication is possible. When the contact receives the all alert, the interface displays a call alert and a ring tone sounds.

●**radio check:** radio check allows the user to determine whether the radio is active in the system without displaying any information to the radio user. If a response is received, a success tone sounds and the radio interface displays: "check Successful." If no response is received within a certain period of time, a failure tone sounds and the interface displays: "check Failed."

●**Remote Monitoring:** Send a remote monitoring request. If a remote monitoring confirmation is received, a success notification tone will sound and the receiving interface will display "Remote Monitoring Failed." If no confirmation is received within a certain period of time, a failure notification tone will sound and the interface will display "Remote Monitoring Failed." Only when the device's signaling system "Remote Monitoring Decoding" is checked will the monitored voice activity be allowed.

●**radio Activation:** This function can activate a radio that has been remotely disabled, restoring normal operation to the target intercom.

●**radio Kill:** Send an radio kill code. If a response is received, a success notification tone will sound and the radio screen will display "Kill Successful." If no response is received within a certain period of time, a failure notification tone will sound and the screen will display "Kill Failed." If the receiving intercom's signaling system "Device Kill Decoding" is checked, it can receive remote kill code from this device. After being remotely disabled, all operating screen re disabled and only the received telemetry command will be processed.

- **Edit:** Modify the name or number of a single Call contact. Press * to delete. When editing a name, press # to switch input methods. The ID input range is 1 to 16776415, and the name input is limited to 16 characters.

- **Delete:** You can delete a single Call contact. If the contact has been added to the channel's default address or configured for a Single Call function, it cannot be deleted.

3. All Call Type

When the All Call contact type is selected, you can view the All Call ID: 16777215.

4. Manual Dial

Manual dialing is used to easily call a single Call contact not in the Contacts list. Enter the ID and press PTT to initiate a single Call. Alternatively, press the Confirm key to initiate a call notification, send a text message, perform radio detection, remote monitoring, radio activation, or radio deactivation..

5.Contacts add

This radio only allows adding single call contacts. When editing a name, press * to delete it and # to switch input methods. Enter up to sixteen characters. After entering the name, press the down arrow key, then enter the number (1 to 16776415), and press OK to save. After successfully saving, the screen will prompt: "Number already exists." You can then find the newly added contact in the contact list.

Contact MENU

The Contact menu allows you to view your contact list, add contacts, and manually dial. The contact list can store up to 100 contacts, allowing you to view, edit, and delete contact names and numbers. When making a call, select the contact list or manually dial, enter the contact number, and then press the dial button to initiate the call. During a call, you can dial a number by pressing a number or symbol on the numeric keypad.

Scanning

1.Scan On/Off

Scanning can only be enabled if a scan group has been added to the current channel's scan list, and the scan group contains at least two channels. During scanning, the system cycles through the channels in the scan list to check for activity, such as voice. While scanning is active, the "B" icon on the screen flashes. If a channel is detected with activity, it stays on the channel, indicating that the call is being received, and the "B" icon remains stationary. If you receive an unwanted call, use the "Channel Delete" function to temporarily remove the current channel from the scan list. To disable scanning, enter the scan menu, select Scan Off, switch channels, or press the side button to exit the current scan.

2.View/Edit List

This menu allows users to edit the scan list. In the View Members menu, you can view the members in the scan group list and remove channels from the scan group. The Add Member option allows users to add new members to the scan list. Each list can contain up to 16 channels. Creating new scan groups or deleting existing scan groups is not allowed on the radio.

Zones

The radio supports up to 32 zones. Each zone can contain up to 16 channels, and 32 zones can support up to 512 channels. You can select the desired zone from the zone list. Note: Zone switching is only possible when two or more zones are written.

Text Messages

1. Write a Text Message

You can create a new text message and send it to the target user. When editing a text message, press the # key to switch the input method, press the * key to delete, and use the up and down arrow keys to change the input cursor position. In Pinyin or Alphabet mode, the 1 key is a punctuation key, and the 0 key is a space key. Text messages can be entered up to 140 characters. You can enter a number to send a private call ID or select a private or group call number from the address book to send. A successful send will be notified by a ring tone and the screen will display: "Sent Successfully"; a failed send will also be notified by a ring tone and the screen will display: "Sent Failed."

2. Inbox

The inbox can store up to 30 received text messages. The inbox menu is displayed after (*/*). The first number indicates the number of unread messages received, and the second number indicates the total number of messages in the inbox. When you enter the inbox, unread messages are displayed as:  and read messages are displayed as:  You can reply, forward, and delete messages in the inbox.

3. Preset SMS

Use the text editor to add preset messages. You can store up to 10 preset messages, each containing up to 140 characters. Preset messages can be edited and sent directly or sent directly.

Note: You can assign preset messages to single-touch functions and then quickly send them using the side key.

4. Sent Message

Accessing Sent Messages allows you to review the contents of sent messages and check whether they were successfully sent. Sent Messages can store up to 30 messages. If a message is successfully sent, the message will display:  and you can forward or delete it. If a message fails to be sent, the message will display:  and you can resend, forward, or delete it.

5. delete all SMS

Clear SMS is used for delete all messages in your inbox or sent messages at once, eliminating the need to delete each message individually. Clear All deletes all messages in your inbox and sent messages, but does not delete preset messages.

Call log

1. Missed Numbers

This radio records recent missed calls. It stores up to 10 missed calls. When the missed number list is full, the oldest entry will be automatically cleared when a new entry is added. If the missed number is from an unknown contact, you can save the missed call to the address book or delete the missed call.

2. Received Numbers

This radio records recent received calls. It stores up to 10 received calls. When the received number list is full, the oldest entry will be automatically cleared when a new entry is added. If the received number is from an unknown contact, you can save the received number to the address book or delete the received call.

3. Dialed Numbers

This radio records recent outgoing calls. It stores up to 10 outgoing calls. When the dialed number list is full, the oldest entry will be automatically cleared when a new entry is added. If the dialed number is from an unknown contact, you can save the dialed number to the address book or delete the dialed call.

Settings

1. radio Settings

This feature provides users with some basic radio settings.

- **talk around:** When the radio is operating in relay mode but the relay service is unavailable, the radio can enable talk around communication. When the talk around function is enabled, the screen displays: , and the radio enters talk around mode. The intercom transmits using the receive frequency, allowing two radios to communicate directly. The talk around function automatically disables when switching channels, starting scanning, or restarting the radio.

Note: To enable this function, the transmit and receive frequencies must be different, and the channel must have the talk around function enabled via the frequency programming software. If the side button is set to relay/talk around, the talk around function can also be enabled.

- **Tones/Alerts:** Allows users to turn audio alerts on or off through the menu. This includes all tones, call ringtones, message ringtones, and keypad settings. All tones control all alerts, including voice announcements. If all alerts are disabled, alarms will still play normally.

- **LED Indicator:** Allows the user to turn the radio's LED indicator on or off through the menu. When the LED indicator is off, the backlight and keyboard light are also disabled, and the LED indicators for transmit, receive, and scan operations are all off. Users should be careful when turning off the LED backlight, otherwise they may not be able to see the on-screen menu operations unless the LED indicator is turned on in sunlight or through the programming software.

- **LED Backlight:** Allows users to change backlight settings and control the screen backlight via the menu. Available value: On, Auto. Selecting Auto will turn off the backlight if no key is pressed for 5 seconds; selecting On will keep the backlight on permanently.
- **Keypad Backlight:** Allows users to change backlight settings and control the screen backlight via the menu. Available value: On, Auto. Selecting Auto will turn off the backlight if no key is pressed for 5 seconds; selecting On will keep the backlight on permanently.
- **Language Selection:** Supports Chinese and English.
- **Power-On Screen:** Allows users to enable or disable the power-on screen, open the power-on screen, and display icons via the menu.
- **Keypad Lock:** Allows users to lock the keypad via the menu. The keypad lock screen displays: ? ? ? When the keypad is locked, no keys except the PTT and side keys can be operated. Press the # key to unlock.
- **Channel Lock:** Allows the user to lock a channel through the menu. Once locked, switching to another channel will have no effect. The interface will display a locked channel notification and a voice announcement will be given. If the channel is unlocked and there are more than two channels, you can switch to the next channel and a voice announcement will be given.
- **Date and Time:** Time and date display allows you to view the real-time time or modify the time zone, date, and time as needed.
- **VOX:** VOX means no need to press the PTT button when transmitting. When enabled, you can initiate transmission directly with voice, and transmission will automatically end when the voice stops. The menu allows users to enable voice control and set the voice control delay. You can select voice control levels from 1 to 8, or turn it off. The voice control delay can be set from 0.5 to 10 seconds in 0.5-second increments. Plug in headphones to enable voice control. The screen displays: ? ? ?

Note: Headphones must be plugged in for voice control to function.

- **Solo Work:** This feature is designed for solo workers who encounter unexpected situations while working and are unable to operate the radio or transmit voice messages within a preset time. The radio will automatically sound an alarm to request assistance. Enable Solo Work using the programming software, set the Solo Work response time and reminder time, and choose between keystrokes or voice transmission as the response action.
- **Man down:** Activate the Man down function when the user is in a relatively isolated environment. This function sends an alert signal to the outside world if the user falls and is unable to continue working. The Man down trigger can be selected as Tilt or Motion Detection. If the trigger is Tilt, a beep sounds when the radio tilts to the set angle (30°, 45°, or 60°). If the radio is not righted within the preset time, an emergency alarm will automatically be issued. If the trigger is Motion Detection, a beep sounds when the radio remains stationary for a preset time. If the radio is not moved within the preset time, an emergency alarm will automatically be issued. If the user accidentally tilts the device, a warning tone will sound before the emergency alarm sounds. This tone duration allows for corrective action to prevent false alarms. Reverse playback parameters are configured using the programming software. Configuration steps: Signaling System Folder > Man down > Enable Man down > Entry Delay > Exit Delay > Man down Pre-Alert Time > Trigger Tilt > Man down Trigger Method
- **Silence Mode:** Enable Silence mode when you're in a meeting or other environment where loud noises are undesirable. While the radio won't sound an alarm, you can still transmit, minimizing the risk of disturbing others.

2. Radio Information

This function provides users with partial radio information, including battery level, radio ID, device name, version information, and date and time.

- **Battery Level:** This function allows users to view the remaining battery charge, allowing them to monitor battery usage and charge the battery promptly. A green battery indicator indicates a full charge, yellow indicates a moderate charge, and red indicates a low charge. A "Charge" tone indicates a low battery charge and requires immediate charging.
- **Number:** This function allows users to view the radio ID number, used for digital private calls.
- **Device Name:** This function allows users to view the radio model name.
- **Version Information:** This function allows users to view the latest radio upgrade time.
- **Date and Time:** This function allows users to view the date and time. to be saved.

3. Channel Configuration

The channel configuration menu allows users to modify the current channel parameters. In digital mode, users can modify the transmit power, transmit and receive frequencies, color code, time slot, transmit time limit, transmit contacts, receive group list, encryption, and channel name. In analog mode, you can modify the transmit power, transmit and receive frequency, transmit time limit, transmit code, receive code, and channel name.

Note: After confirming parameter changes, you must exit to the main interface for the changes to be saved.

Digital Emergency Alarm

Emergency mode indicates an emergency situation, You can initiate an emergency alarm and enter emergency mode at any time from any screen. This intercom supports three alarm types and three.

emergency alarm modes:

Normal: When the intercom initiates an emergency alarm, the screen displays Emergency Mode and a continuous alarm tone plays.

Silent: When the intercom initiates an emergency alarm, no screen display appears, no alarm tone plays, and any incoming calls that qualify will not be played.

Silent with Voice: When the intercom initiates an emergency alarm, no screen display appears, no alarm tone plays, but any incoming calls that qualify will be played.

Alarm Mode:

Emergency Alarm: The radio issues an emergency alarm and exits Emergency mode when it receives an acknowledgment or the number of attempts has expired.

Emergency Alarm and Call: Pressing the Emergency button initiates an emergency alarm, and then you can initiate an emergency call by pressing the PTT button.

Emergency Alarm and Voice: Pressing the Emergency button initiates an emergency alarm, and then you can automatically initiate a voice call.

1. Sending an Emergency Alert

If the emergency system has been added to the current channel and the reply channel is set to that channel, you can send an alert message on the current channel. Press the designated Emergency Mode On button. The LED indicator will light red, and the :  icon will appear on the normal screen.

2. Exiting an Emergency Alert

In Normal + Emergency Alert mode, the alert mode will automatically exit when the alarm is confirmed or the number of attempts has expired, or you can press the designated Emergency Mode Off button to exit. In Non-Normal Alert mode, press the PTT button or the designated Emergency Mode Off button to exit.

3. Receiving an Emergency Alert

When an alert is received, the radio enters Emergency Mode. If the Emergency Alert indicator is selected, the :  icon, the ID or name of the alert originator, and a continuous warning tone will appear. Otherwise, no warning will be displayed. To exit the Emergency Alert, press the Emergency Alert Off button.

● **Power-on Password:** If the device has a power-on password, you can change it here. You must enter the old password correctly before you can set a new one. The new password must be the same twice. Note: This password change option is only available if a power-on password has been set using the frequency programming software.

● **Roaming:** You can lock or unlock a site, or perform manual site roaming.

● **USB Disk Mode:** If the device supports recording, you can enable USB disk mode to copy recorded files to a computer for playback. Restarting the device exits USB disk mode.

Location

Supports positioning, including GPS and Beidou modes. This function allows you to query the location of the radio, including time, date, longitude, latitude, speed, altitude, and number of satellites. When positioning is enabled, the radio automatically sends its location to the center if the number of call connections or PTT reaches the set value. You can also manually send the satellite positioning data to the target radio. The target radio will receive the data and store it as a text message, which can be viewed in the inbox.

● **Querying Other Radio's Positioning Data:** You can query the target radio's location data by sending a text message using the programming software. The steps are as follows:

① On radio A, enable positioning and set the "Query Command" in the satellite positioning settings of the programming software to ABC.

② On radio B, enter the text message creation function, enter the text "ABC," and send it to radio A. ③ After receiving the text message from walkie-talkie B, radio A sends its location information to radio B.

④ If walkie-talkie A has no location data, walkie-talkie B will receive a text message stating "Invalid Location Data." To set this up using the programming software: Go to Satellite Positioning Settings > Mode > Connection Times > PTT Times > Control Center ID > Query Command.

Note: Satellite positioning is optional. The device can support both GPS and Beidou combined positioning modes, or either mode alone.

ROAMING

Digital channels support roaming. Device roaming is designed to connect multiple repeaters to achieve extended coverage for the radio system. When roaming is enabled for a channel, the screen displays the icon :  , and the LED indicator flashes red when roaming search is in progress. If roaming is locked or disabled, the roaming icon is not displayed. If the current channel is configured as a roaming channel, the roaming menu allows you to lock/unlock a site or manually roam.

Note: Each channel can only be configured for either scanning or roaming; both functions cannot be enabled simultaneously. Roaming is optional.

Encryption

Encryption ensures the security of voice calls. Using the programming software, you can select between three different types of encryption: static, dynamic, or advanced dynamic. Encryption is enabled on all devices, and calls can only be made using the same voice encryption type and encryption key.

Note: Voice encryption is only available in digital mode.

TDMA Direct Mode

If TDMA Direct mode is selected, radios in the same group must use the same time slot for communication. In TDMA Direct mode, two simultaneous calls in different time slots, Time Slot 1 and Time Slot 2, can be made on the same frequency. This ensures that the two calls do not interfere with each other.

Configuration steps via the programming software: Channel > zone > Specific channel > TDMA Direct mode > Channel Time Slot Calibrator > Time slot > Virtual trunking transmit time slot

Note: TDMA Direct mode is only available in digital mode.

Networking

Select the networking function on a digital channel to log in to the system and perform corresponding operations. Scanning and standard digital emergency alarm functions will not be supported on this channel.

Configuration steps via the programming software: Channel folder > Region > Specific digital channel > Networking

Local Call

Select the networking function on a digital channel to enable this function. If you select Local Call, calls initiated by the radio will be forwarded only to this trunk. Callbacks within the time limit for incoming calls will be based on the type of incoming call (networked or non-networked). This setting is configured using the programming software: Channel → ZONE → Specific Digital Channel → Network → Local Call.

Note: System Function is optional.

Priority Call Function

This device supports call disconnection and barge-in. Calls with higher priority can interrupt lower-priority calls and preempt the call. Voice priority has three levels: Level 0 is the lowest, Level 3 is the highest, and Alarm priority is the highest. To force an interruption, press the [Priority Interrupt] shortcut key to interrupt the current call on the channel, allowing for a new voice or data service.

Configure this via the frequency programming software: Channel > zone > Specific digital channel > Priority Interrupt > Enable > Voice Priority.

Note: Priority Interrupt is only available in digital mode.

TOT

TOT prevents the current channel from being occupied by a single user for too long. For busy channels, a shorter transmit time limit can be set. If continuous transmission exceeds the set value, the radio will emit a beep and automatically terminate transmission. The time limit can be set via the programming software from 15 to 495 seconds, with a default of 300 seconds and increments of 15 seconds.

TX admit (Digital Channel)

The TX admit

when the PTT key is pressed when there is activity on the current channel. TX admit conditions can be set via the programming software to: Always, Color Code free, or Channel free. In the Always setting, transmission is initiated regardless of channel status when the PTT key is pressed. In the Color Code free setting, if the current channel's color code is occupied, pressing the PTT key will indicate that the channel is busy and transmission is prohibited. In the Channel free setting, if there is activity on the current channel, pressing the PTT key will indicate that the channel is busy and transmission is prohibited. Setting up via the programming software: Channel → zone → Specific digital channel → Transmit parameters → Permis-

Power Saving Mode

Enabling this feature automatically puts the radio into power saving mode when free. Power saving mode extends battery life, but also delays response time. Users can set the sleep-to-wake-up time ratio when the radio enters power saving mode. Options include 1:1, 1:2, 1:3, or 1:4. A smaller ratio results in a more noticeable power saving. The default setting for power saving mode is 1:2. Setting up via the programming software: General Settings → Power Saving Mode

Low Battery Alert

When the battery is low, the radio's LED indicator flashes red and a "Charge" tone sounds. Please charge or replace the battery immediately to avoid interruptions. Otherwise, the radio will automatically shut down if the battery is too low.

Setting up via the programming software: General Settings → Low Battery Alert Interval

Recording Function/Optiona

If the recording function is enabled on the radio, recording will automatically begin when transmitting or receiving. When the recording function is enabled, the screen displays:

You can choose between compressed and uncompressed recordings. Compression takes up less storage space, while uncompressed provides better sound quality. Enter the recording date in the Recording File menu to view or play recordings. Recording files are created in half-hour intervals. A file suffix of 000 indicates uncompressed files, while 001 indicates compressed files. After the radio is switched to USB flash drive mode, recorded files can also be transferred to a PC for playback.

To set this up using the programming software: Go to General Settings → Recording → Enable Recording → Recording Compression Ratio (times).

Note: Recording will automatically turn off when the radio's battery is low; recording is optional.

GPS Operation

After turning on the radio, briefly press the P1 button, then find Accessories. Short-press P1 again, select Positioning. Short-press P1 again, select On/Off. Short-press P1 to access the settings, Power Saving, and High Performance settings. Selecting High Performance will provide the fastest GPS updates and the most accurate location. Turning on the GPS function will display: You can view longitude, latitude, time and date, speed, altitude, and number of satellites.

Noise cancellation Operation

After turning on the device, briefly press the P1 button, find Accessories menu . Short press the P1 button again, select Noise cancellation, then briefly press the P1 button again, select On, select On, and then press PI to confirm. After exiting the screen, calls will now be clearer and less noisy.

To configure via the frequency writing software: Go to General Settings r → Noise cancellation → Enable Noise cancellation

Specification

General	
Frequency range	TX:144-148MHz, 420-450MHz(Amateur band) Scanning/RX:136-174MHz,400-480MHz
Channel space	FM: 12.5kHz,25 kHz 4FSK:12.5kHz
Working voltage	DC 7.4V (±20%)
Battery capacity	2150mAh
Recorder time	Selectable
Frequency stability	±1.5ppm
Antenna iimpedance	50Ω
dimension	64(L)*36(W)*146(H)mm (Antenna not included)
weight	258g(Battery included)

TRANSMITTER	
Power	37dBm+1.5dB
FM noise	-40dB
Spurious emission	-36 dBm≤1GHz/-30 dBm≥1GHz
Adchannel power	≤-60dB
Frequency Response	+1/-3 dB
Audio distortion	3%
Digital vocoder	AMBE3000

Receiver	
Digital sensitivity	5% BER: 0.25 uV
Mutual adjustment	60dB
Adchannel selectivity	60 dB
Spurious suppression	60 dB
FM Noise	-40dB
Frequency Response	+1/-3 dB
Rated audio distortion	3%(typical)
Conducted Emissions	-57dBm
GPS positioning accuracy	Horizontal position accuracy $\leq$ -10m (under good signal conditions)
TTFF (Time to First Fix) Cold Start	<1 minute (under good signal conditions)
TTFF (Time to First Fix) hot start	<10 second (under good signal conditions)
Max audio power	1.3W
Rated audio power	0.5 W

Environmental specification	
Working temperature	-20°C-+60°C
Storage temperature	-30°C-+85°C
Shock and vibration	MIL-STD-810C/D/E/F Standard
IPRATE	IP67

Common troubleshooting and solution

NO.	Fault	Reason and solution
1	Can not turn on the radio	A. Please recharge or replace the battery pack. The power terminal and battery are not making contact. B. Reinstall and try again. The battery contacts are dirty or damaged, causing contact. C. Defective. Clean the battery contacts.
2	Can not received the signa	A. The radio frequencies are incorrect. Reselect a channel with the same frequency. B. The CTCSS/CDCSS signaling codes on the radio are different. Reset them using a computer. C. Out of range.
3	Can not talk to each other	A. The antenna is not making good contact. Retighten the antenna head. B. The transmit and receive frequency is incorrect. Reselect the same frequency. C. The communication
4	GPS failed to location	A. Check whether the antenna is dual-mode. If not, replace it. B. Check whether the GPS settings are correct. If not, reset them. C. The machine is in a shielded environment. Relocate it to an open area and reposition it.
5	Can not programmed	A. The programming cable is not connected correctly. Check the connection. B. The programming cable is incorrect. Replace it with a genuine one. C. The headphone jack board has poor contact. Check the board for any problems. If not, replace it.

Caution

(Replacing the battery with an incorrect model may result in explosion. Be sure to dispose of the used battery according to the instructions.)

- Do not disassemble the battery pack.
- Do not dispose of the battery pack in a fire.
- Do not short-circuit the positive and negative terminals of the battery pack.
- Charge only with the included charger.
- Do not use if the battery pack is severely swollen.
- Do not expose to high temperatures.
- Do not disassemble, impact, crush, or dispose of in fire.
- Do not use the battery after it has been submerged in water.

Any Changes or modifications not expressly approved by the party responsible for compliance could the users authority to operate the equipment.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.

- Increase the separation between the equipment and receiver.

- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

- Consult the dealer or an experienced radio/TV technician for help.

SAR tests are conducted using standard operating positions accepted by FCC with the device transmitting at its highest certified power level in all tested frequency bands, although the SAR is determined at the highest certified power level, the actual SAR level of the device while operating can be well below the maximum value. Before a new model is available for sale to the Occupational/Controlled it must be tested and certified to the FCC that it does not exceed the exposure limit established by the FCC. Tests for each product are performed in positions and locations as required by the FCC.

For body worn operation, this device has been tested and meets the FCC RF exposure guidelines when used with and accessory designated for this product or when used with and accessory that contains no metal. To maintain compliance with FCC RF exposure guidelines hold the transmitter and antenna at least 1 inch (2.5 centimeters) from your face and speak in a normal voice, with the antenna pointed up and away from the face.

The equipment complies with FCC radiation exposure limits set forth for an Occupational/Controlled environment. In order to comply with the FCC RF exposure requirement, the antenna installation must comply with following:

Users must be fully aware of the hazards of the exposure and able to exercise control over their RF exposure to qualify for the higher exposure limits.

Your wireless hand-held portable transceiver contains a low power transmitter. This product sends out radio frequency (RF) signals when the Push-to-Talk(PTT) button is pressed.

The device is authorized to operate at a duty factor not to exceed 50%.