



Portable DMR Digital Radio USER MANUAL

CE RoHS



THANK YOU!

Thank you very much for choosing our radios as your communication. This radio is a multifunctional DMR Digital Portable Two Way Radio. It combines the rugged mechanical framework, whether you are a professional who needs to keep in touch with the event team (such as pastoral, autonomous driving, hunting, showrooms, trade shows or hotels) or simply you want to communicate with friends and for casual users who keep in touch with their families, this radio will definitely bring convenience to your work, life and leisure.

To avoid personal injury or property damage

due to improper operation, to ensure that you enjoy the convenience of this product to the fullest, please read all information carefully before using our radio.

Changes or modifications not expressly approved by the party responsible for compliance will void the user's authority to operate the equipment.

FOR YOUR SAFETY

Read these simple guidelines. Not following them may be dangerous or illegal. Read the complete user manual for further information.

SWITCH ON SAFELY



Do not switch the radio on when two way radio use is prohibited or when it may cause interference or danger.



ROAD SAFETY COMES FIRST

Obey all local laws. Always keep your hands free to operate the vehicle while driving. Your first consideration while driving should be road safety.



INTERFERENCE

All wireless devices may be susceptible to interference, which could affect performance.



SWITCH OFF IN HOSPITALS

Follow any restrictions. Switch the device off near medical equipment.



SWITCH OFF IN AIRCRAFT

Follow any restrictions. Wireless devices can cause interference in aircraft.



SWITCH OFF WHEN REFUELING

Do not use the device at a refueling point. Do not use near fuel or chemicals.



SWITCH OFF NEAR BLASTING

Follow any restrictions. Do not use the device where blasting is in progress.



USE SENSIBLY

Use only in the normal position as explained in the product documentation. Do not touch the antenna unnecessarily.



QUALIFIED SERVICE

Only qualified personnel may install or repair this product.



ENHANCEMENTS AND BATTERIES

Use only approved chargers and batteries.

Do not connect incompatible products.



WATER-RESISTANCE

Your device is not fully water-resistant.
Keep it dry.



BACK-UP COPIES

Remember to make back-up copies or keep
a written record of all important
information.



CONNECTING TO OTHER DEVICES

When connecting to any other device, read
its user manual for detailed safety
instructions. Do not connect incompatible
products.

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UNPACKING AND CHECKING EQUIPMENT

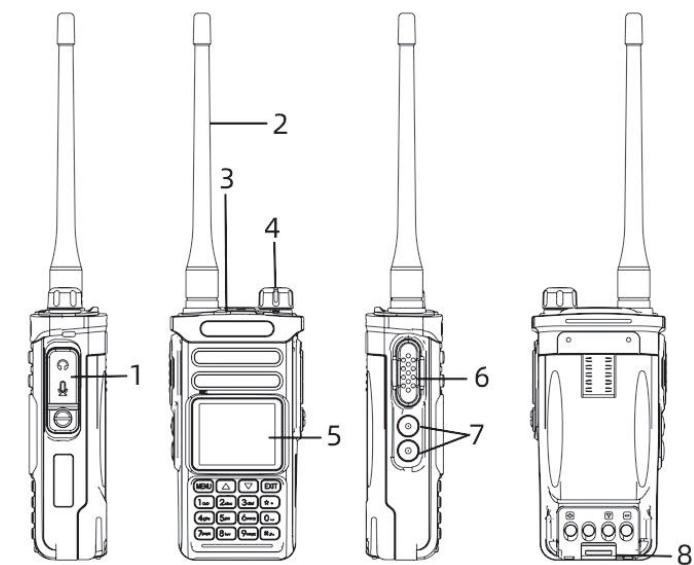
Carefully unpack the transceiver. We recommend that you identify the items listed in the following table before discarding the packing material. If any items are missing or have been damaged during shipment, file a claim with the carrier immediately.

Packing List

DESCRIPTION	QUANTITY
Radio Body	1
Li-ion Battery Pack	1
Charger	1
Antenna	1
Belt Clip	1
Hand Strap	1
User Manual	1

GETTING ACQUAINTED

Button Description



1	Earphone/ Programming Jack	2	Antenna
3	SOS Button(TK)	4	Power/ Volume Switch
5	Screen	6	PTT Button
7	Programming Key(SK1/SK2)	8	Battery Release Clip






Programmable Key Settings



Dealers can program 【TK】 , 【SK1】 , 【SK2】 long keys or short keys to one of the following functions through programming software according to customer needs.

LED Indicator

LED Indication	Radio Status
LED glows red	Transmitting with high output power.
LED flashes red	Low power, please charging.
LED glows green	Receiving
LED flashes orange	Scanning
LED glows orange	After voice communication ends, you can hold the PTT button to talk while the LED glows orange. Transmitting with low output power.

LCD Status Icon

Icon Name	Icon	Radio status
Battery Power		The more grids, the more current battery power
Scan		Scanning
		Scanning stuck on non-priority channel
		Scanning stuck on priority channel 1
Emergency Call		The walkie talkie is in emergency alarm state(except secret alarm)

Receive		When the walkie talkie is in the receiving state, the signal is displayed
Message Icon		Received text messages/ have unread short messages
Channel Type	A	Analog channel
	D	Digital channel
	M(Blue Background)	Mixed channel
	M(Red Background)	Current main work area
Radio	FM	Radio is on
VFO Channel	VFO	The current channel is the VFO channel

PREPARATION

Assembling the Antenna

- 1.Screw the antenna into the connector on the top of the transceiver by holding the antenna at its base.
- 2.Turn the antenna clockwise until secure.

Caution: Do not swing the radio when holding it by the antenna, so as to avoid lowering the performance and shortening the life span of the antenna.

Assembling the Battery Pack

To install the battery pack, insert the extensions on each side of the battery into the slots on the aluminum sides of the radio. After fully inserting, press the battery release clip until you hear a "click" sound.

To remove the battery, open the battery release clip, then separate the extensions on both sides of the battery from the battery slot, and finally remove the battery.

Assembling the Belt Clip

- 1.Screw the belt clip at the back of battery to assemble.
- 2.Screw counter clockwise the screws at the back of battery to remove.

Assembling the Accessories

- 1.Open the cap of accessory jack.
- 2.Insert the accessories (such as: earphone/ programming cable) plug into the earphone jacks.

Charging the Battery Pack

The battery pack is not full charged at the factory, please charge it before use. Initially charging the battery pack after purchase or extended storage (greater than 2 months) will not bring the battery pack to its normal operating capacity. After repeating the charge/ discharge cycle two or three times, the operating capacity will increase to normal.

Please charge the battery pack as follows:

- 1.Make sure the battery pack contacts are in contact with the charging terminals.
- 2.Slide the battery pack or transceiver with a battery pack into the desktop charger.
- 3.The charging LED lights red and charging begins.

4. After charging about 4 hours, when the light turns to green, it means the battery pack is fully charged.

5. Then you can take off the battery pack or transceiver with the battery pack and use it.

Caution:

- Make sure the radio is powered off before charging and do not use the radio during charging.
- Read the Safety Information Booklet in advance to get necessary safety information.

BASIC OPERATION

Switch power on and off

To turn on, please turn the [Power/ Volume Switch] knob clockwise until you hear a "click" sound; to turn off the

power, please turn the knob counterclockwise until you hear a "click" sound.

Adjust the volume

After power on, turn the [Power/ Volume Switch] knob clockwise to increase the volume, and counterclockwise to decrease the volume.

Select A/B section work area

Press the **【EXIT】** key in the initial interface to switch the A/B section work area. A letter "M" with a red background will appear on the upper right of the selected work area, and the unselected work area will not be displayed. Only the selected workspace can respond to operations such as PTT button, programmable keys, keyboard, and channel knobs.

Select channel mode

You can switch back and forth among the three channel modes of VFO /MR/ CH by pressing the **【*】** key on the initial interface. In VFO mode, you can set the frequency of the current VFO channel through the numeric keypad . In MR mode, display the current channel frequency information. In CH mode, the current channel alias information is displayed, and the channel alias can be defined by the user.

Note:Only when the MR/VFO mode



is selected on the programming software can you switch back and forth between the three channel modes of VFO/MR/CH by pressing the **【*】** key on the initial interface.

Select zone

A zone is a channel group, that is, you can put channels with the same attributes into a zone, which is convenient for you to manage the existing channels effectively. This machine has a total of 1000 channels, supports 100 zones, and each zone contains a maximum of 200 channels. You can select a zone in two ways:

1. The following to select zone :

【MENU】 key→Settings→Radio Set→Zone, press **【▲/▼】** key to select the desired zone, and then press the **【MENU】** key to switch to the selected zone.

2. Select by programming keys

If the dealer has set a shortcut key for you to select an zone, press this shortcut key to switch to the desired zone.

Select channel

Press **【▲/▼】** key to select the desired channel.

Battery saver

When the walkie talkie does not receive a signal or does no operation, and the duration is longer than the power-saving delay time, the receiving circuit enters a power-saving state, and the power-saving function starts; when a signal is received or an operation is performed, the battery power-saving function is automatically turned off.

Low voltage beep

When the battery is in a low power state, the walkie talkie will remind the user that it needs to be charged at regular intervals (specifically set by the dealer). When the voltage is lower than the forbidden value, the walkie talkie cannot transmit. Press **【MENU】** key to enter the

menu, depending on whether the channel you are using is a digital channel or an analog channel, the available menus will be different. In addition, through the dealer's programming settings, you can control whether some menus appear.

Scan function

To enter this menu, press the **【MENU】** key to enter the main menu and select “Scan”. “Scan” The scanning function allows you to listen to the communication activity on other channels, so as to understand the current activities of relevant group members.

Set up

To enter this menu, press **【MENU】** key to enter the main menu and select "Settings". The following functions can be set:

1) Call volume: There are three levels of call volume, low, middle and high, and the user can choose the appropriate level according to the usage environment and habits. The specific operations are as follows:

【MENU】key→Settings→Radio Set→Sound→Volumes

2) Voice prompt: You can set the key tone, whether the power-on or power-off prompt sound is turned on and power tone

3) Brightness: Set the brightness of the backlight of the walkie talkie, there are 1-5 levels to choose.

4) Backlight: Set the backlight of the walkie talkie, there are 6 options to choose from: Infinite/ 5s/ 15s/ 30s/ 60s.

5) Zone: This machine supports 100 zones, you can select the zone you need through operation (the specific zone number and name can be configured by the dealer through the frequency writing software).

6) Power level: You can select the transmit power level of the walkie talkie as low , middle or high in this menu.

7) Language: Set the language displayed on the walkie talkie, and provide two language choices:Russian and English.

8) Key Lock: You can set the keyboard lock mode and whether to enable the keyboard lock function.

9) VOX: You can set the voice-controlled gain level, voice-activated delay time, and whether to enable the voice-activated transmission function.

10) MIC Gain: There are three levels of microphone gain: Low, Middle and High, and users can choose the appropriate level according to the use environment and habits.

11) Frequency step: set the frequency step value of the

VFO channel, there are 7 options to choose from:
5.00K/6.25K/10.00K/12.50K/25.00K/50.00K/100.00K.

12) TOT (Time limiter for transmission): the timeout time and early warning time of the overtime prohibition function can be set.

13) Power Save: You can set whether to enable the power saving function.

14) Working mode: the walkie talkie can be set to work in single A-segment or single B-segment mode.

15) Edit channel: You can select the channel to be edited in the channel list, and edit its basic parameters. You can create a new channel and edit it, and the new channel will be automatically added to the current working area (enter or import the specified channel area.

Note: when the number of channels in the current channel area exceeds 100, it will not be added.

16) Walkie talkie buttons: It is possible to edit and operate the functions of the three keys **【TK】** , **【SK1】** and **【SK2】** of the machine.

It should be noted that the above 15) and 16) operations may require you to enter a configuration password, which can be set through the frequency writing software, and the password can be set to empty.

Walkie talkie information

To enter this menu, press the **【MENU】** key to enter the main menu and select “Setting”→Radio Info

Device information can help you view the relevant information of the device, such as the radio alias, type of radio, radio ID and firmware version.

Contact person

To enter this menu, on the digital channel initial interface,

press 【MENU】 key to enter the main menu and select "Contacts". The following functions can be set:

Contact list: Up to 500 groups of contacts can be stored, and the following operations can be performed from the contact list.

a) Check the detailed information of the contact, such as the contact alias and number; if the contact is an individual call, you can edit its number alias.

b) Send message: Edit and send message to contacts in the contact list.

c) Edit: For individual call contacts in the contact list, the number and alias can be edited.

d) Delete: The newly created individual call contact can be deleted, but the delete function cannot be used after reading and writing frequency.

New: This menu can create a new contact (personal call

contacts only) to the contact list. The input contact number can be up to 8 digits.

View DMR ID: Support the network-wide address book function of up to 160,000 DMR IDs. You can view the list of DMR IDs and the detailed information of each DMR ID. You can also use the ID search function to quickly locate the ID contact information you want to view. You can press the PTT button to initiate a call directly to the selected contact in the list or initiate a call prompt operation in its menu. When the machine receives a DMR call, if the incoming DMR ID matches the DMR ID in this address book, the detailed information of this ID (call sign, name, address, etc.) will be displayed on the incoming call display interface.

Short message

To enter this menu, on the digital channel initial interface,

press the **【MENU】** key to enter the main menu and select "Message". The following functions can be edited:

1) New: You can enter this menu, edit a new short message (up to 128 characters) and send it or save it to the draft box, and you can choose to send it to individuals or groups.

2) Quick Text: the user can choose whether to access the pre-defined shortcut text information stored in the host (up to 16), and can choose to insert these template information when the user creates a new information.

3) Inbox: This machine can store up to 16 received short messages. If a new short message is received when the inbox is full, the earliest read short message will be overwritten automatically; if they are all unread, the first received one will be overwritten. You can perform the following operations on any short message: resend, forward, save as a new contact, delete; to delete all short

messages in the inbox, press **【MENU】** key → select “Message” → Inbox → Delete All.

4) Outbox: This machine can store up to 16 sent short messages. If the outbox is full, if there is a new message to be sent, the earliest message will be overwritten automatically. You can perform the following operations on any short message: resend, forward, save as a new contact, delete; to delete all short messages in the outbox, press **【MENU】** key → select “Message” → Outbox → Delete All.

5) Draft: This machine can store up to 16 draft messages. When the draft is full, if there is a new draft message, the oldest draft message will be overwritten automatically. You can perform the following operations on any draft message: send, save, delete; to delete all draft messages in the draft box, press **【MENU】** key → select “Message” → Draft → Delete All.

Call logs

Pressing **【MENU】** key enter the main menu and select “Call Logs” on the digital channel initial interface. Call Logs is for personal calls only. The following functions can be edited:

- 1) Outgoing calls: The machine can store up to 16 dialed calls. When a new call record is received when the call record is full, the oldest record will be overwritten automatically. You can call, add to contact list, delete, etc. for any record.
- 2) Incoming calls: Same as dialed calls, please refer to dialed calls.
- 3) Missed calls: Same as dialed calls, please refer to dialed calls.

SQL level (Squelch level)

In the analog channel, press the menu key to enter the main menu, select Settings-Squelch Level, and then you can choose the squelch level of the walkie talkie; there are 1~3 levels for selection.

(The following functions need to be set by the dealer’s programming software.)

Receiving

On analog channels, the radio can be programmed for CTCSS/DCS functionality or signaling. If you select a channel with these features set, you will only receive calls from radios that have the same settings for CTCSS/DCS and Signaling as your system. If the channel you choose is not configured with the above functions, you will receive calls from other radios using the same frequency.

On digital channels, a matching color code or calling station ID must be received in order to hear the call from the transmitter.

Call

The machine supports two calls: analog call and digital call. Due to the different implementation methods of these two calls, the analog channel can only communicate with the analog channel; the digital channel can only communicate with the digital channel.

On an analog channel, hold down the PTT button and speak into the MIC to make a call.

On a digital channel, press the PTT button to initiate a call to the preset calling contact on the current channel.

Release the PTT button to enter the receiving state. The calling contact set for each channel is set by the dealer. In order to ensure the best reception volume of the receiver,

please keep the microphone about 2.5 to 5 cm away from the mouth when transmitting.

Individual call

If the call type in the contact is individual call, the individual call function is realized, and the individual call is a call from one individual walkie talkie to another individual walkie talkie. You can initiate a private call in the following ways.

Initiate a call to the preset contact: in the initial interface, press and hold PTT button to initiate a private call to the preset personal call contact of the current digital channel. Initiate calls from Contact List or Call Log.

- a. Press **【MENU】** key→ select Contacts→ Contact List;
- b. Use **【▲/▼】** key to select the individual call contact you want to call;
- c. Press and hold PTT button to initiate a private call.

Initiate a call by manual dialing: Enter the individual call number you want to call on the keyboard, and press and hold the PTT button to initiate a call.

Group call

If the call type in the contact is group call, the group call function is realized. Add the group call contacts to the group list members, when receiving calls from this user group, you can make a call. You can initiate a group call in the following ways.

Initiate a call to a preset contact: On the initial interface, press and hold PTT button to initiate a group call to the preset group call contact on the current digital channel.

Initiate a call through pressing the 【MENU】 key→ select Contacts→ Contact List; use 【▲/▼】 key to select the group call contact you want to call, and press and hold PTT button to initiate a group call.

Initiate a call by manual dialing: Enter the group call number you want to call on the keyboard, and press and hold PTT button to initiate a call.

All call

If the call type in the contact is all call, the all call function will be realized. When all call is set, the contact will send signals to all users of the channel. When setting up all calls, you need to check Allow all calls in the settings of the programming software first.

You can initiate a general call in the following ways:

Initiate a call to a preset contact: on the initial interface, press and hold PTT button to initiate a general call to the preset group call contact on the current digital channel.

Initiate a call through pressing the 【MENU】 key→ select Contacts→ Contact List; use 【▲/▼】 key to select the all call contact you want to call, and press and

hold PTT button to initiate a all call.

Initiate a call by manual dialing: In the initial interface, enter the general call sign on the keyboard, and press and hold PTT button to initiate a all call.

Call on hold

The unique function of the digital channel, after the end of the individual call or group call, within the call hold time, press and hold PTT button, you can call back and continue the call. If PTT button is pressed outside the hold time, the call will be made to the contact bound to the current digital channel. The specific holding time is set by the dealer.

Power level adjustment

The power level indicates the transmit power of the walkie talkie when it is working, and the power level of

the walkie talkie can be set according to actual needs.

When the communication distance is required to be long and the call quality is high, the high-power working state of the walkie talkie can be selected; when the communication distance is required to be short and the call quality is average, the low-power working state can be selected, which can reduce battery consumption and prolong the use time. After pressing the key programmed for power level adjustment, the power will switch between high and low power, and you can also select high and low power through the menu **【▲/▼】** key.

Wide/Narrow band

There are two analog channels, 12.5KHZ and 25KHZ.

There are 12.5KHZ-type digital channels

Busy channel lockout (BCLO)

If you enable this function, when the channel is being used by other walkie talkie, pressing the PTT button will fail to transmit, and a warning tone will sound. Only when no signal is received, press the PTT button again to transmit. This function can be set independently for each channel.

Transmit Allowed: The radio is ready to transmit at any time.

Channel Idle: When the selected channel is busy, no transmission is allowed.

Tone Match (Analog): The walkie talkie is allowed to transmit when the channel is idle and the tone matches, otherwise it is not allowed to transmit.

Tone mismatch (Analog): The walkie talkie is allowed to transmit when the channel is idle and the tone does not match, otherwise it is not allowed to transmit.

Receive only

Indicates that the current channel can only be used for reception, and any transmission on this channel is prohibited.

Individual call confirmation

Set whether to send an individual call confirmation request when the walkie talkie sends an individual call. After the receiving party decodes and confirms the individual call request, it will automatically send a reply to the transmitter host, and then the voice call can be established.

CTCSS tail revert

The walkie talkie has set this function by default on the channel with sub-tone signaling, and you will not hear the "click" sound caused by the end of the call and the

disappearance of the carrier, so that you will be free from noise impact. Channel tails are not eliminated on channels that do not add subtone frequencies.

Note: Only analog channels have this function.

Voice control

The voice-activated transmission function can directly speak to the MIC without pressing the PTT button, and the walkie talkie can transmit.

Squelch level adjustment

The purpose of the squelch function is to silence the background noise output of the speaker when there is no signal (the squelch circuit is closed). If the squelch output setting is correct, the sound will be heard when the signal is actually received (the squelch circuit is open), and you can select the squelch band level from 1 to 3 levels, the default value: 2 levels.

Squelch open

When you press the button programmed as "Squelch On", the radio will make a "rustling" background noise, and press the button again to turn off the squelch.

Momentary squelch open

The function is the same as squelch opening, the difference is that it needs to be pressed all the time to work, and the squelch will be closed when you release it.

Scanning

The scanning function allows you to listen to communication activity on other channels, so you can understand the current activity status of relevant team members. Scanning is initiated by pressing the key programmed for the scanning function. "This machine

supports two scanning methods: channel scanning and VFO scanning. VFO scanning is only used in VFO channels."

The **channel scanning** process is as follows:

1. When scanning, the walkie talkie LED flashes orange.
2. When an activity is detected on a certain channel, the walkie talkie will stay on the current channel.
3. It can be launched during the scanning process, and the launch mode is configured by the dealer.
4. To stop scanning, press the scan key to exit.

The **VFO scanning** process is as follows:

1. When scanning, the walkie talkie LED flashes orange, and the VFO channel frequency changes according to the set frequency step.
2. When there is activity on a certain frequency point, the walkie talkie will stay at the current frequency point.

When the activity disappears, it will continue to scan.

3. During the scanning process, you can press the 【▲/▼】 key to select the scanning direction. Up means the frequency increases, and down means the frequency decreases.

4. To stop scanning, press the scan key or PTT button to quit scanning.

It should be noted that the VOX function does not work when scanning.

Work alone

If there is no effective physical operation (button) on the walkie talkie within a certain period of time, an alarm pre-prompt tone will sound during this period of time. After the time reaches the set value, it will be confirmed as an emergency and enter the emergency alarm mode.

Push to talk

The push-to-talk function allows you to conveniently operate according to the function set by the predetermined key, which can be used by setting the side key function of the walkie talkie.

Encryption

The unique function of the digital channel ensures that the call will not be heard by a third party, and the calling parties need to have the same key to talk, so that your communication can be kept confidential.

Remote kill

When the walkie talkie receives the correct remote kill code, the walkie talkie will prohibit transmission/reception. The walkie talkie will not be able to receive voice signals, but can only receive the activation code to

release the remote lock.

Activation

When the remote-killed walkie talkie receives the correct activation code, the walkie talkie will release the remote kill function.

Remote monitoring

The remote monitoring function allows the user to remotely activate the microphone of the target party's walkie talkie, so that the target party's walkie talkie secretly transmits background voice to the user's walkie talkie, so as to achieve the effect of being monitored for voice information. This function is mainly used in emergency situations and is only valid for digital channels

Radio check decode

The calling user can use the walkie talkie check function to confirm whether the device is on and working without disturbing the user of a certain wireless walkie talkie device. This function is only for individual calls. It is turned on by default and cannot be changed.

Keypad lock

Press the **【MENU】** key first and then press the **【*】** key, the keypad will be locked; repeat the above operation, the keypad will be unlocked.

Note: The keypad lock operation can only work when the keypad lock function is activated in the radio settings or through the radio software.

Two modes are supported:

Keypad Only: In this mode, only the keyboard is locked. Channel knob and programmable keys and the PTT

button responds normally.

All keys: All keys (including the channel knob) except the PTT button are locked.

Digital monitoring

This function can be turned on by operating the digital menu "Settings"→"Digital Monitoring". When the digital monitoring function is turned on, the machine will monitor the digital call under the current channel according to the digital monitoring rules, and display the information of the DMR call (including DMRID and color code) in the "Channel Information" menu. Digital monitoring rules can be configured as the same ID or any ID, the same color code or any color code. When configured as any ID and any color code, it can monitor all digital calls on the current channel.

Channel barge

This feature can remotely interrupt a walkie talkie call that is sending interruptible voice.

Voice barge-in: The machine can interrupt the voice call of the other party at any time during the process of receiving a voice call that is allowed to be interrupted. The machine presses the PTT button to issue a barge-in command. The machine's own call. This function is only valid for digital channels, and can only be used if the item "Allow Interrupt" is selected.

Simultaneous solution of digital and analog

When the channel type is set to mixed channel, digital calls or analog calls can be decoded and received at the same time. In mixed receiving mode, the analog parameters of the channel must be configured as receiving mode with subtone.

English input method

- 1) Press **【#↑】** to switch to uppercase or lowercase English input method.
- 2) Press the number keys of the machine to input the required English letters in sequence, and the corresponding letters will be displayed on the color screen.
- 3) Repeat the above steps to complete the input.

Digital input method

Operation method:

- 1) Press **【#↑】** to switch to digital input method.
- 2) Press the number keys on the machine to input the corresponding numbers in sequence.
- 3) By pressing number key **【*】** to enter a space

CODE PLUG PROGRAMMING GUIDE

PROGRAMMING NOTES

When programming the radio, start by reading the factory software data, and then rewrite this data with your frequency etc., to a new saved code plug, otherwise errors may occur.

You can use the programming cable with a PC to program the frequency, channel type, power etc. You programming must comply with your FCC (or other country) license certification.

European Users should note that operation of this unit in Transmit mode requires the operator to have a valid Amateur Radio License from their respective Countries Amateur Radio Licensing Authority for the Frequencies and Transmitter Power levels that this Radio transmits on.

Failure to comply may be unlawful and liable for prosecution.

PROGRAMMING GUIDE

When programming this radio for the first time, it is recommended you first READ the radio with the software and then save this file for future reference as it contains the default programming and settings.

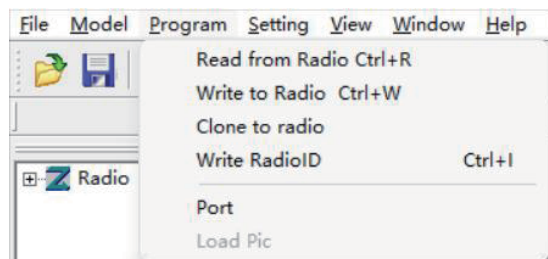
In addition, after you READ this radio with software, first make you programming and frequency changes, and then write the edited file to your radio. You will need the programming cable to connect your radio to your computer for programming.

1.Programming the radio

Before programming your radio, read the current information from the radio to your PC to create an initial

CPS template and at the same time backup the factory data for future use.

When reading or writing data from or to the radio, the software offers various possibilities:



(Picture 1: Read data)

1.1 Read data

To read in all frequency settings as well as further settings from your radio, use this option.

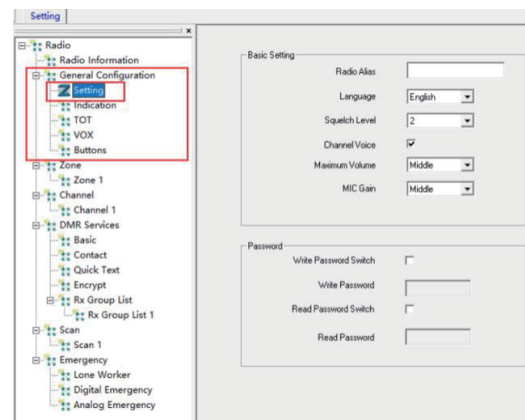
1.2 Write data

Whenever you have made your changes and additions to the settings of your radio use this option to write your

settings to the radio.

2.General setting

The radio supports quite a few general settings. To get there, use the left directory bar→ "Settings"

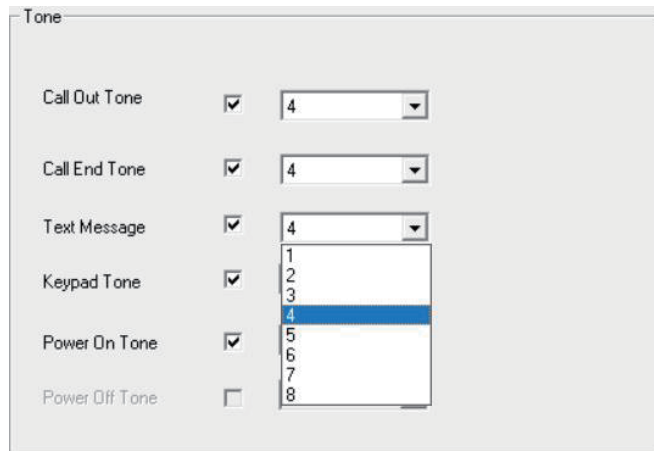


(Picture 2: Setting)

2.1 Alert Tone

These five beeps can be turned on or off, and there are 1-8 levels to choose from.

(Level 1 is the highest, Level 8 is the lowest)

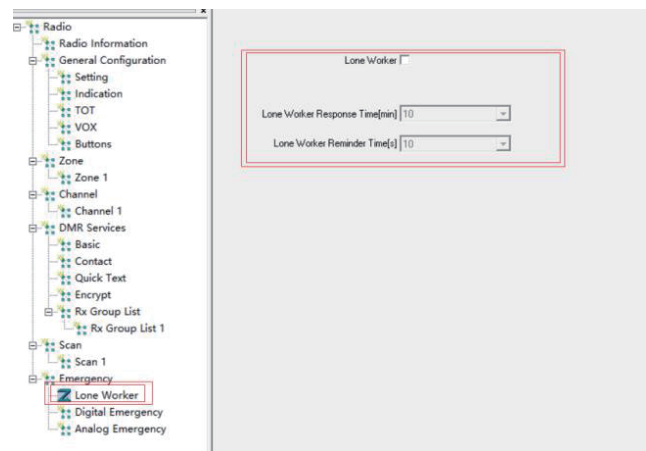


(Picture 3: Alert Tone)

2.2 Lone Worker

Lone Worker: This functionality is for establishing a convenient rescue. 2 operators have both started their separate work. If one of them does not perform any action during the set time (including pressing the PTT button, turn the knob) or pressing the button light), the

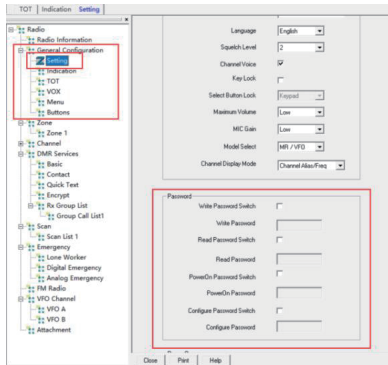
other one will receive an alarm tone within a certain time.



(Picture 4: Lone Worker)

3.Basic settings

There are a few settings that do require special attention.



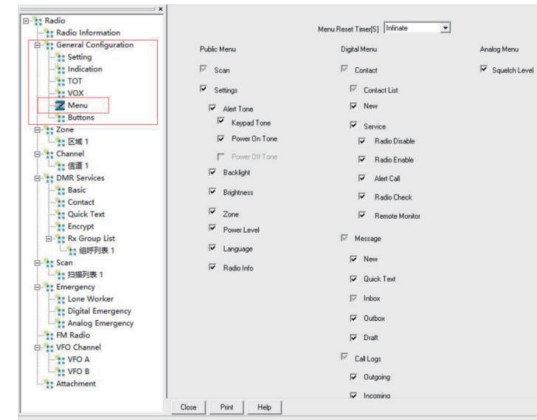
(Picture 5: Program Password)

If you set PC programming password, you must remember this password. If you forget it, there will be no way to retrieve it.

4.Menu item

Often not all available menus are what the user actually needs. Therefore, for ease of operation, you can disable certain menus according to your personal requirements. Navigate to the corresponding configuration page using

the left content bar -> "General Configuration"->Menu.



(Picture 6: Menu Item)

5.Button definitions

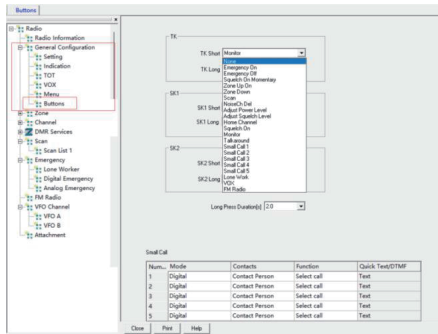
There are various buttons definitions possible:

- Radio Buttons
- One Touch Access
- Number Key Quick Contact Access

5.1 Radio Buttons

The radio buttons may even have two different functions

assigned. One of the functions is been activated on a ‘Short Press’ of the corresponding keys whereas the other one requires a ‘Long Press’. The ‘Long Press Duration(s)’ defines the time period required to keep the key pressed in order to activate this ‘Long Press’ function.



(Picture 7: Radio Buttons)

Each of the keys has a function activated on ‘Short Press’ and another one activated on ‘Long Press’, resulting in a total of 15 different functions being directly accessible.

Those are your options:

- None (default)
- VOX
- Emergency On/Off
- Zone Up On
- Zone Down
- Adjust power Level
- Adjust Squelch Level
- Lone Work
- High/Low Power
- NoiseCh Del
- Monitor
- Small Call 1~5
- Squelch on momentary
- Talk around
- FM Radio
- Home Channel
- Scan

Note:

Squelch open Function:

No matter what signal reception conditions are set by this unit, in this mode, the speaker can be forced to be turned on, so as to listen to any sound on the channel. If there is no audio signal on the channel, listen for background noise; if there is an audio signal, listen for audio.

Operation method: Press the monitor key to enter this mode; Press the monitor key again to exit this mode

Transient squelch open Function:

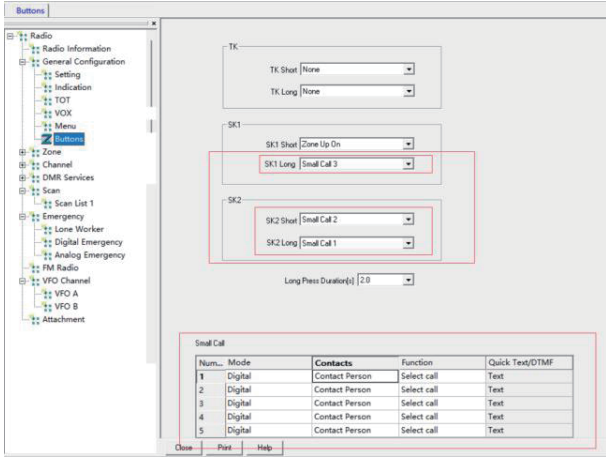
Refer to squelch open.

If there is no audio signal on the channel, listen for background noise; if there is an audio signal, listen for audio.

Operation method: keep pressing the programming key to enter this mode; release the key to exit this mode

5.2 Small Call

There is a total of five ‘Small call’ options. Each of them with its own ‘Mode’, ‘Contact’, ‘Function’ and ‘Quick Text/DTMF’



(Picture 8: Small Call)

Mode: select either ‘Digital’ or ‘Analog’

Contacts: If you select analog mode, this option is ignored. If you select digital mode,

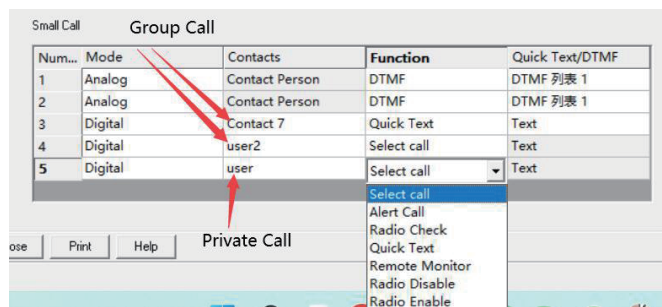
it will define the 'Digital Contact' to be used.

Function: From different Contacts. There are different function can be choose.

Private Call Contact: Select call(default)/ Alert call/
Radio Check/Quick Text/Remote Monitor/Radio
Disable/Radio Enable

Group Call Contact: Select call (default)/Quick Text

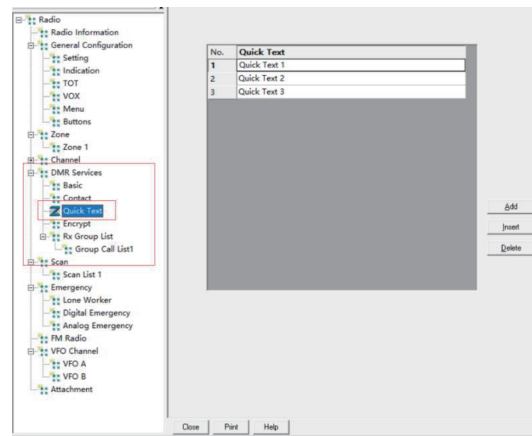
Quick Text/DTMF: Select the Quick Text that has been
set or select DTMF



(Picture 9: Function Different from Private call and Group call)

6.Text message

You can edit the quick text messages that you use frequently. After you save them to your radio, they all will be available in your 'Quick Text '-folder. You can easily send them to the people you need to send without additional editing. Navigate to the corresponding configuration page using the left content bar -> "DMR Services"->Quick Text.



(Picture 10: Quick Text Message)

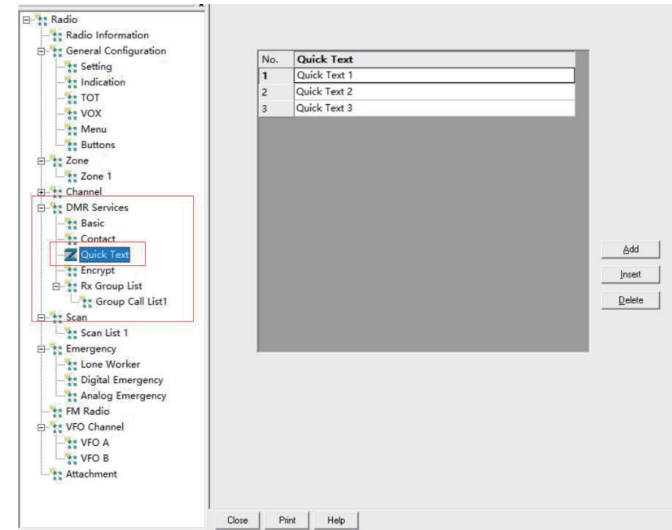
7.Privacy setting

Digital encryption is also supported by your radio. You can set the corresponding digital encryption password. The person you are talking to can only hear your voice by setting the same encryption password as you, avoiding other people hearing your call.

Select 'DMR Services' -> 'Encrypt' to get to the appropriate configuration page.

Note:

Encryption might not be allowed in your network.

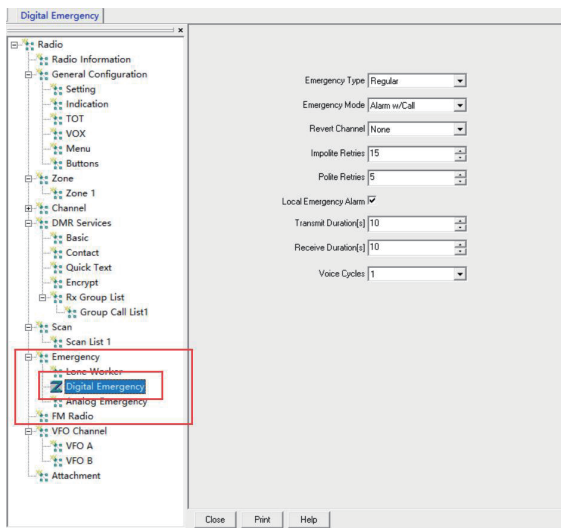


(Picture 11: Privacy Setting)

8. Emergency System

The availability of a digital emergency system depends on the digital network used.

Select 'Emergency' -> 'Digital Emergency' and selected the system to edit.



(Picture 12: Digital Emergency System)

Name

This entry displays the name of the system. The user can enter up to 8 characters. Valid characters include letters, numbers, spaces, and special characters.

Emergency Type

An alarm is a non-voice signal that triggers an alert

indication on another radio. This feature specifies the behavior of the initiating radio's alarm when the emergency button is pressed.

Emergency Mode

Defines the radio's behavior when the radio's emergency button is pressed.

Impolite Retries

An impolite transmission is a transmission that occurs even when there is activity on the current channel. The radio tries a number of impolite transmissions to get an acknowledgement and then goes on to try a number of polite transmissions. This feature sets the number of attempts to transmit an emergency alarm impolitely.

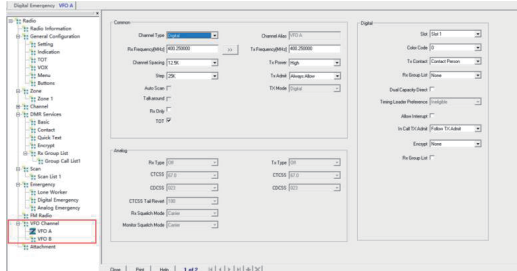
Polite Retries

A polite transmission is a transmission that occurs only when there is no activity on the current channel. The radio tries a number of impolite transmissions to get an

acknowledgement before trying a number of polite transmissions. This feature sets the number of attempts to transmit an emergency alarm politely.

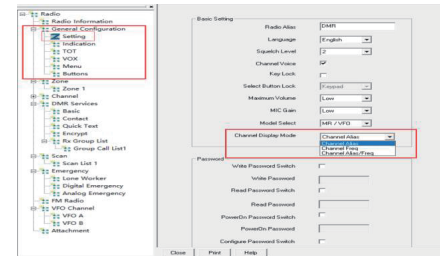
9.VFO mode

The VFO mode is similar to the normal channel mode in terms of the various parameters. Select 'VFO Channel' -> 'VFO A/B' to get to the appropriate configuration page.



(Picture 13: VFO Mode)

The displayed mode can be set in the general settings.



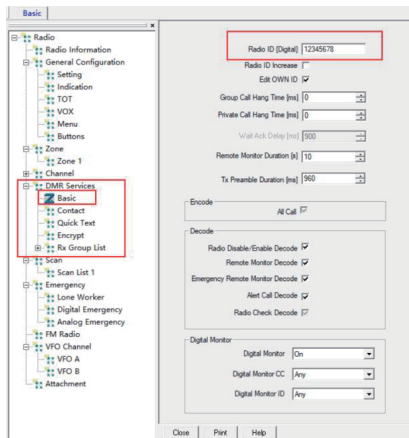
(Picture 14: Display Mode)

10.Prepare for DMR operation

10.1 Request a valid DMR RADIO ID

To operate on the DMR network, you must register for a DMR identification number. This can be done at <https://www.radioid.net/or> <https://register.ham-digital.org/>, depending on where you live. Normally new DMR IDs are issued within 24 hours. Your DMR ID can now be entered into the CPS.

- Click on 'Radio' -> 'Radio information'



(Picture 15: Store Your call sign and Your DMR Radio ID)

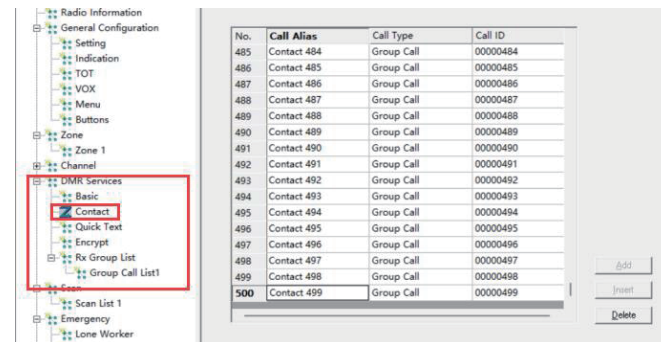
Note:

Never ever operate the radio using an ID that is not issued to yourself. Within amateur radio networks this may result in losing your license.

10.2 Digital Contacts (besides those of the DMR database)

Store up to 500 contacts.

Select 'DMR Services' -> 'Contact' in order to work on those digital contacts.



(Picture 16: Contact)

Note: entry within the list of digital contacts (up to 10k entries)

Contact Name: Name to be displayed for this digital contact

Call Type: You may select between:

- Group Call
- Private Call
- All Call

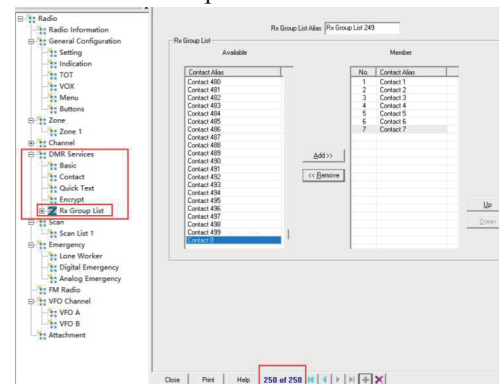
Call ID: ID for a digital call member or talk group. This ID is used to identify and communicate with a target radio (DMR ID) or group of radios (TG) depending on the call type.

10.3 RX Group List

You will require a so called ‘RX Group List’ for your Channel settings. Creating such a group allows you to put your configured ‘Contacts’ into logical groups so they can be contacted.

- Up to 250 individual RX Groups can be created and named to identify each group.
- Each group can contain as few or as many contacts as convenient.
- Groups should be named according to their group members (Digital Contacts).
- Only contacts set as group calls can be added to a group To work on such groups use ‘DMR Services’

-> ‘RX Group List’.

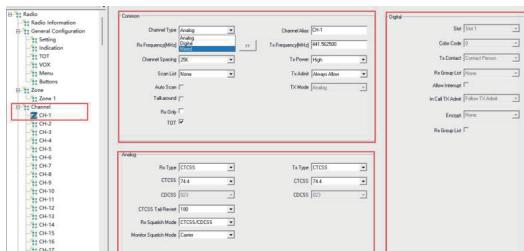


(Picture 17: RX Group List)

11.Channel settings

The radio offers up to 1000 channels for UHF and VHF.

To start double click on the first line CH-1 to open the Channel Information window for that channel:



(Picture 18: Channel information)

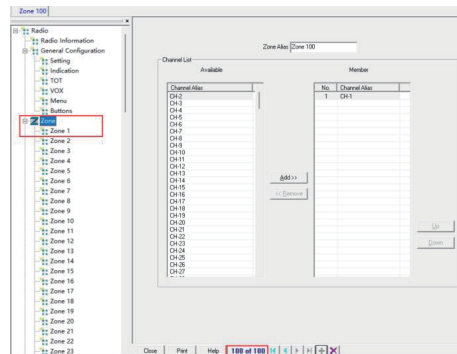
Once completely filled in, click '+' to save this Channel.

12.Zones to bundle channels

Creating a 'Zone' allows you to put your previously configured 'channels' into logical groups so they can be accessed.

- Up to 100 individual zones can be created and named to identify each channel
- group.
- Each zone can contain as few or as many channels as convenient.

- Zones can be named to identify repeaters, functions, etc.
- The channels in each zone can be sorted or rearranged in any order.



(Picture 19: Zone information)

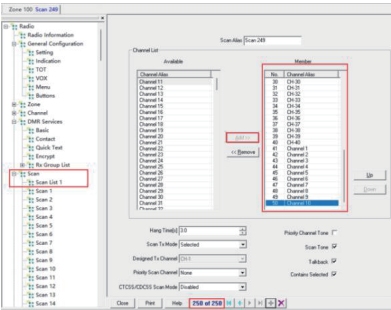
13.Scan list

A 'Scan List' is a group of channels to be monitored when the 'Scan'-function is been activated using one of the programmable function keys. The radio has the

capability of storing multiple scan lists per channel.

- 1. Select Scan List from the left column
- 2. Double click on the first open line
- 3. Enter a name for the new Scan List
- 4. Highlight the channel name you want to appear in the list and press ‘Add>>’.

Up to 50 channels can be loaded into an individual list.
You also have the ability to sort or rearrange the channels in this list. The scan list will later be assigned to a channel of your choice during the setup of a channel (see section on channels)



(Picture 20: Scan List)

14. Write data to radio

After you have completed all the above steps, you can write the data to the radio.

Appendix.I: CTCSS Analog sub-audio meter (Hz)

1-67.0	11-94.8	21 -131.8	31-171.3	41-203.5
2-69.3	12-97.4	22-136.5	32-173.8	42-206.5
3-71.9	13-100.0	23-141.3	33-177.3	43-210.7
4-74.4	14-103.5	24-146.2	34-179.9	44-218.1
5-77.0	15-107.2	25-151.4	35-183.5	45-225.7
6-79.7	16-110.9	26-156.7	36-186.2	46-229.1
7-82.5	17-114.8	27-159.8	37-189.9	47-233.6
8-85.4	18-118.8	28-162.2	38-192.8	48-241.8
9-88.5	19-123.0	29-165.5	39-196.6	49-250.3
10-91.5	20-127.3	30-167.9	40-199.5	50-254.1

Appendix.II: DCS Digital Tone Code Table

023	071	143	225	266	356	452	532	664
025	072	145	226	271	364	454	546	703
026	073	152	243	274	365	455	565	712
031	074	155	244	306	371	462	606	723
032	114	156	245	311	411	464	612	731
036	115	162	246	315	412	465	624	732
043	116	165	251	325	413	466	627	734
047	122	172	252	331	423	503	631	743
051	125	174	255	332	431	506	632	754
053	131	205	261	343	432	516	645	
054	132	212	263	346	445	523	654	
065	134	223	265	351	446	526	662	

TROUBLESHOOTING GUIDE

Fault description	Failure Cause Analysis	Troubleshooting
Boot failure	The battery may not be installed properly.	Take out the battery and reinstall.
	The battery may be exhausted.	Charge or replace the battery.
	Poor contact due to dirty or damaged contacts on the battery.	Clean the battery contacts. If the problem still cannot be solved, please contact the dealer or the designated maintenance point for overhaul.
Little, intermittent, or no sound when receiving a signal.	Battery voltage is too low.	Charge or replace the battery.
	Low volume	Turn up the volume.
	The antenna is loose or not installed properly.	Reinstall and tighten the antenna after power off.
	Speakers are clogged or damaged.	Perform a simple exterior cleaning. If the problem still cannot be solved, please contact the dealer or designated maintenance station for inspection
	Perform a simple exterior cleaning. If the problem still	Different frequencies or signaling settings are used than other
		Set the same frequency and signaling as other members of the group.

cannot be solved, please contact the dealer or designated maintenance station for inspection.	members of the group.	
	Improper digital and analog channel settings	Set the same digital channel or analog channel.
	Far away from members of the group.	Get as close to members as possible.
There are other talking sounds or noises on the channel.	Interference from co-channel users.	Change to a new frequency point, or adjust the squelch level.
	Signaling not set.	Set signaling for all walkie talkies in the group to prevent co-channel interference.
The noise is relatively loud.	Communication distance with members is too long.	lose to members
	The location is not good, such as blocked by tall buildings, or located in the basement, etc.	After moving to an open and flat place, turn on the computer and try again
	Affected by the external environment or electromagnetic interference.	Avoid devices that may cause interference.

In order to ensure the good performance of this product and prolong its service life, please be familiar with the

following content so as to better carry out daily cleaning and maintenance of this product.

Clean

- ◆ Please regularly use a clean and dry lint-free cloth or brush to wipe off the dust attached to the surface of the product and the charging pole piece;
- ◆ The keys, control knobs and casing of this product are easily dirty. It can be cleaned with neutral detergent and non-woven cloth. Do not use chemicals such as detergent, alcohol, spray or petroleum preparations to avoid damage to its surface and shell. After cleaning, please make sure that the product is completely dry, otherwise do not use it.

Notice:

Please turn off the radio and remove the battery before cleaning.

Maintenance

- ◆ Do not use hard objects to puncture or scratch this product;
- ◆ Do not store this product in an environment containing substances that corrode electronic circuits;
- ◆ When carrying or using this product, please do not use the portable antenna or earphone cable;
- ◆ When the accessory is not in use, please cover the accessory interface cover.

You can enter user aliases, numbers and text messages through the keypad of the walkie talkie. This walkie talkie supports English input method and number input method.