

TWO-WAY RADIO
Scanning Receiver

USER'S MANUAL



TWO-WAY RADIO

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

Changes or modifications not expressly approved by the party responsible for compliance could void the user's 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.

WARNING: MODIFICATION OF THIS DEVICE TO RECEIVE CELLULAR RADIOTELEPHONE SERVICE SIGNALS IS PROHIBITED UNDER FCC RULES AND FEDERAL LAW.

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.

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Welcome to use our two-way radio

Scanning Receiver

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Main functions

TOT

Scan

CTCSS/DCS

Chinese and English voice prompt

Battery Saving function

Low battery alert

Hi/ Low power selectable

Wide/ Narrow band selectable

VOX

Programming protect

Busy lock function

Squelch level selectable

Side-key assignment

Scrambler



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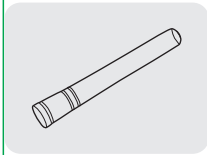
Unpacking and checking equipment
Charging the battery
Using the battery

Scanning Receiver

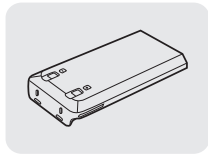
Unpacking and checking equipment

Welcome to use our two-way radio. Carefully unpack the radio. We recommend you check the items listed in the following table before discarding the package. If any item is missing, please contact local dealer immediately.

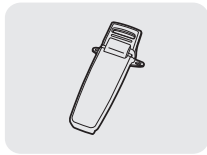
Supplied Accessories



Antenna



Li-ion Battery

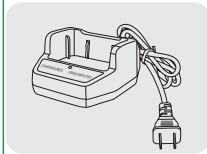


Belt Clip



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Optional Accessories



Charger



Charger Adapter

Charging the Battery

please use the designated battery charger to charge battery, and follow the steps:

- Insert DC jack of power adapter into DC jack behind the charging kit.
- Insert power adapter into AC power supply socket, now the charging red and green indicator lights, successfully connect the power supply.
- Insert the battery to radio equipped with battery into the charging kit. Red indicator keeps lighting means radio is under charging. Red indicator flashes means battery not be used for long time and over-discharged. And will Turn to normal charge when red indicator keeps lighting.
- Confirm the battery is fully charged, when red indicator goes out.
- Please take off the adaptor and battery.



Using the battery

The battery is not completely charged at the factory, please charge it before using. After purchase or extended storage (more than two months), the first time to charge battery cannot make battery reach its normal operating capacity. After repeating charge /discharge it two or three times, the operating capacity will increase to its normal capacity.

Notice: After fully charge the battery, please do not charge it again and should take it off from the charger. If not, it will short or damage the battery life for over charge.

Note:

- The temperature for charging should be from 5°C to 40°C. Battery can not be over fully charged out of this temperature range. Please prepare a spare battery for the cooler weather and do not discard the defect battery. Because it may be used under the normal temperature.
- Please clean the battery terminal when it covers with some dust or dirty.
- To make sure the battery can be normal use and charge.
- Please turn off the radio power before charging.
- Do not charge the battery before radio or the battery being wet.
- Please change another new battery if battery can not be recover normal capacity after fully charged.

Battery Type

Please use the assigned battery to charge. It maybe explode and harm to human body if use other batteries.

Safety Tips

- Do not discard the battery into fire.
- Do not unfold the battery case by yourself.

Battery Storage

- 1) Please fully charged battery first to store before long time no use it. To avoid the battery self over discharge and being damage.
- 2) To avoid short the battery capacity, please fully charged the battery after long time no use. Recommend charge the battery again after six months.
- 3) Please take care the temperature and humidity for storing battery. Make sure the battery store under the normal temperature, cool and dry to reduce battery discharge.

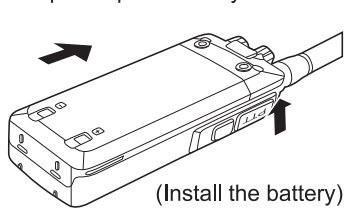
Installing and uninstalling of the accessories Getting Acquainted

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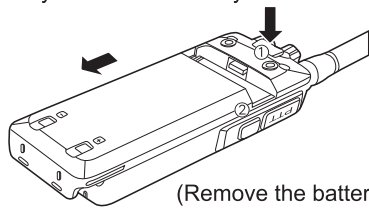
Installing and uninstalling of the accessories

Installing / Removing the Battery

To install the battery into the battery positioning hole of radio bottom, then press the battery, make the button completely to lock battery. To remove the battery, please turn off the radio, and then push up the battery button of radio top, finally take off the battery.



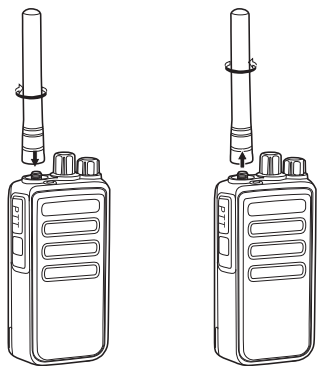
(Install the battery)



(Remove the battery)

Installing/Removing the Antenna

Screw the antenna into the connector on the top of the radio by holding the antenna at its base and turning it clockwise until secure. To turn the antenna counter-clockwise until you can remove it.



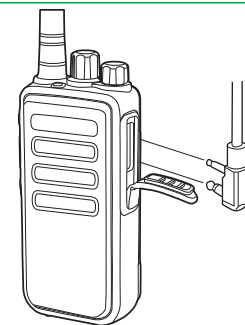
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Installing Earphone /Programming Jack

Uncover earphone lid, directly insert earphones into earphone holes (earphones need to be additionally purchased)

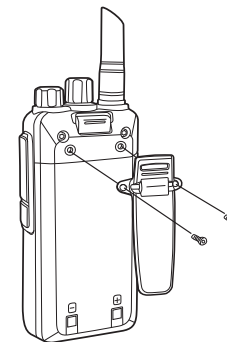
You can use computer programming software to operate (consult with local dealers about computer programming software)

Note: If your radio developed with VOX function, you should re-turn on radio power once to active VOX function.



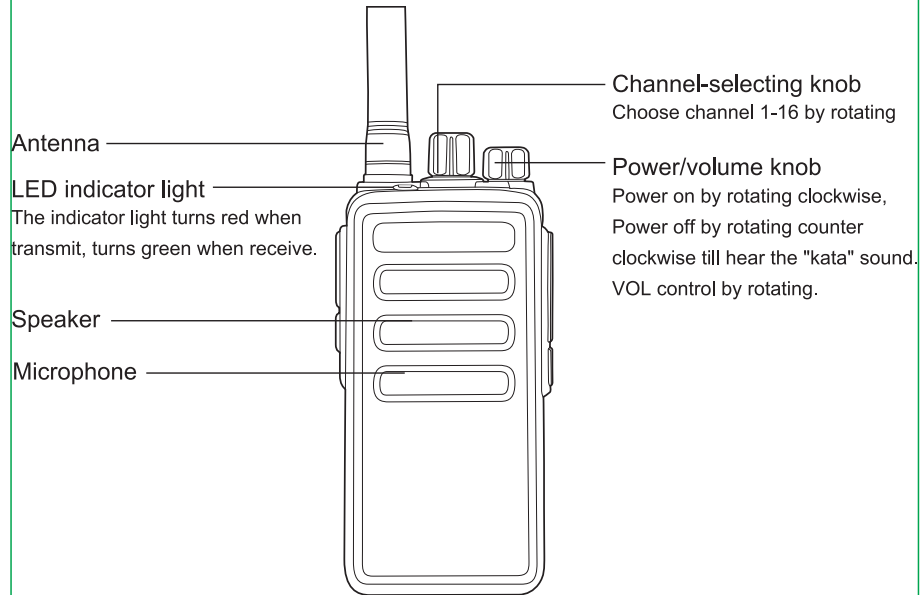
Installing the belt clip

If necessary, attach the belt clip to the back of battery with the screws supplied carry conveniently.

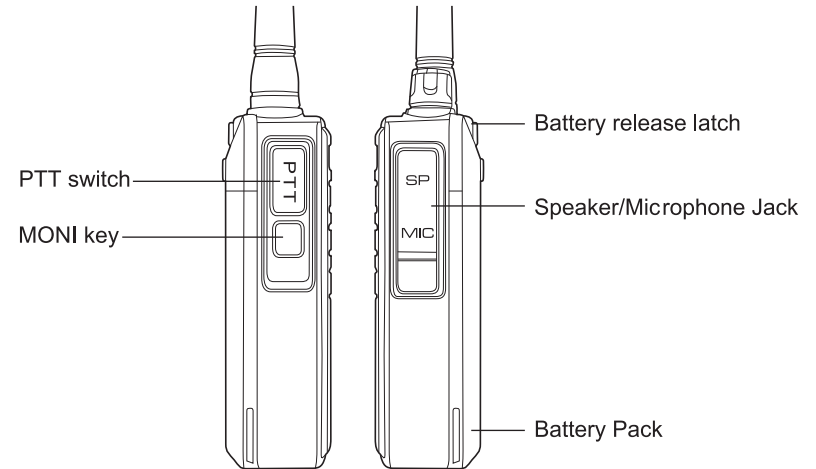


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Getting Acquainted



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User's Manual

Basic operations
Specification
Trouble shooting guide
Warranty card

Basic operations

Led indicator

It lights red when transmitting, and lights green when receiving.

Channel-selecting knob

Rotate it to select channel 1-16, clockwise rotation to increase, counter-clockwise rotation to decrease. An alert tone will sound when an empty channel is selected.

Power/Volume knob

Rotate it by clockwise to power on the radio. To turn off the radio, rotate it by counter-clockwise until a click sound is heard, VOL control by rotating.

PTT switch

Press PTT switch and then talk to the microphone, the indicator light turns red, if the channel does not have transmitting frequency, a "Du Du" tone sounds, and indicator light turns red. Release PTT switch to receive. It lights green when there is signal.

Multifunctional side-key assignment

Users can define the functions of this key via X-1 programming software.

Short press: A. Monitor B. Scan C. Scrambler

M key is moni key

Monitoring: monitor your selected channel if anyone in the call, if no signal is loud "Rustle" sound.

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Squelch level

The squelch level will determine the signal strength to open the speaker of the radio. If the squelch level is lower, the background noise of opening the radio's speaker will be higher, and the corresponding communication range will be further, but the anti-interference capacity will be weaker. The default setting of squelch level is 5, you can adjust it through the menu "Squelch level" of the "Optional features" in the software, level 0 to 9 can be selected. 0 is the lowest level.

Time out timer (TOT)

The purpose of TOT is to prevent any radio from talking in one channel for too long, and to prevent the radio from being damaged due to continuous transmission. If the transmitting time exceeds the TOT pre-set time, the radio will stop transmission and an alert tone sounds. Release PTT switch to stop the alert tone, the radio resume to receiving mode.

Scan On/Off

When the radio is set as scan via software, rotate the channel-selecting knob to channel 16, it will start scanning. It will scan all scannable channels from channel 1 to 16. you can define as channel added or deleted in software.

When there is signal in the scanning channel, it stops in the channel for talk.

Note: **a.** The radio will stay in the channel which has signal, and 15 seconds after the signal disappears, it will continue scanning.

b. It can not scan when there is less than 2 scannable channels.

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Non-standard CTCSS code programmable

You can program non-standard CTCSS code by program software.

- a.** Set non-standard CTCSS code on channels, you can choose 67.0-254.1Hz for CTCSS frequency.
- b.** The non-standard CTCSS code should set on the same channel.

English/Chinese voice prompt

Voice prompt Off, radio will not issue a prompt. Select Chinese, then open the Chinese "prompt" function, select English, then open the English "prompt" function.

VOX

Speak to the microphone in normal voice to transmit directly, no need to press PTT switch. Turn VOX on/off through programming software.

1) When VOX is on in your working channel.

- Speak to the microphone directly, it will transmit automatically.
- The radio stops transmitting when there is no voice, and waits for receiving.

2) When a headset with a microphone is used.

- When VOX is on, you should VOX gain for the radio to identify voice volume.
- If microphone is too sensitive, the noise around radio will start transmitting.
- If microphone is not sensitive, the radio can not collect your voice. Please adjust VOX level well to guarantee smooth communications.

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Note: When turn on VOX and VOX gain is in high and sensitive level, if connect mic/speaker with radio,the signal of mic/speaker will probably cause radio transmit.

Battery save function

The batter capacity will be saved when this function is turned on via program software.

It means radio does not save battery when there is not a tick

It means radio save battery when there is a tick.

Low battery prompt

Note: Low voltage: when the voltage falls below a certain level, if select prompt off, every 15s issued a "DeDe" voice prompt; if select prompt on,"Please replace the battery." If you choose Chinese or English speech, press and hold the PTT button or VOX are all invalid and issued a "please change battery" voice prompt, and loud "Di" sound until PTT release or end VOX.

Busy channel lockout(BCLO)

If you set busy channel lockout, press PTT after receiving a signal, prohibiting transmit, and issue "Di" sound until PTT release.

High/low power selective

The default setting is high power, you can select "High/low power" through the menu "power" in the software.

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Wide/narrow bandwidth selective (25.0KHz/12.5KHz)

The default setting is wide band, you can select "Wide/narrow" in the "Channel" in the software.

PC program protection

You can set in the software

QT/DQT

You can select the QT/DQT via program software. When a channel has QT/DQT, the speaker will be turned on when it receives the same QT/DQT. If there is transmitted signal with different QT/DQT in the same channel, the speaker will not open and indicator light turns green.

Scrambler

When the radio is allowed the scrambler function, and press the key, TX voice will be sent out with scrambler, other radio only received the signal when its scrambler also turns on.

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Specification

General	
RF Power	5W / 0.5W
Operating Voltage	7.4VDC
Operating Temperature	-10℃ ~+50℃
Antenna	High gain antenna
Antenna Impedance	50Ω
Mode of operation	Simplex or semi-duplex
FrequencyRange	TX:420-450MHz RX:400-480MHz
Transmitter	
Modulation Type	16KF Φ 3E
Spurious Radiation	≤7.5μV
Modulated noise	<-40dB
Modulation distortion	<5%
Frequency stability	5ppm
Max Fr. Deviation	≤ ± 5KHz
Audio response(300-3000Hz)	+6.5~ -14dB
Adjacent CH. Power	≥65dB
Intermediation sensitivity	8-12mv

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Receiver	
Sensitivity	≤0.2μV
Occupied bandwidth	≤16KHz
Selectivity	≥65dB
Intermediation	≥55dB
Audio Output	> 1W
Audio Distortion	≤5%
Frequency Stability	5ppm
current	55mA(when standby);150mA(when working)
Audio response(300-3000Hz)	+7~ -12.5dB

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

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Trouble shooting guide

<i>Troubles</i>	<i>Solution</i>
No Electrical Source	<ul style="list-style-type: none"> • The battery has been exhausted. Replace or recharge the battery. • The battery is installed incorrectly. Remove it and install again.
The operating time becomes short, even the battery is fully charged.	<ul style="list-style-type: none"> • Replace the battery.
Not able to communicate with the transceivers of the same group.	<ul style="list-style-type: none"> • Confirm the QT/DQT is the same. • The distance is outside of range.
The voice of another group can be heard.	<ul style="list-style-type: none"> • Change all QT/DQT of the group.
Other radios can not receive the TX signals or receive signals in a low volume.	<ul style="list-style-type: none"> • Switch the volume knob to the highest level • The microphone may be damaged, send it to the local dealer for check.
Noise is always heard.	<ul style="list-style-type: none"> • The distance is outside of range. Turn on the radio in nearer range and try again.

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Warranty card

Note:

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

Customer's name: _____ Gender: _____

Add and postal code: _____

Customer's Tel: _____

Model: _____

Serial number: _____

Purchasing date: _____

Invoice No.: _____

Dealer: _____ Stamp: _____

Add and postal code of the dealer: _____

Contact Tel: _____

Handling people: _____

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

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

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

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

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

Maintenance record

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

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

