

RETEVIS

RT22P

USER'S MANUAL

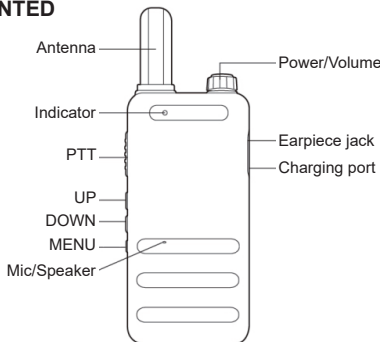
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Charging Instructions

- The Lion battery is not charged in the factory. Please charge the battery before initial use. Please charge the battery between 5-40 °C.
- After purchase or long-term (above 2 months) storage, if the battery cannot reach saturation on the first charge, please repetitional charging and discharge the battery 2 or 3 times. The battery would get the maximum capacity.
- Please turn off the power when you charge the radio with the battery. Do not operate the radio in charging, or it will affect the normal charging and liable to become dangerous.
- Please remove the radio/battery from the charging base (Or remove the USB charger) when the battery is fully charged. Overcharging will shorten the life of the battery.
- Please replace or order a new battery when the battery does not last as long as expected at adequately charging.

GETTING ACQUAINTED



Basic Operation

1. Power on/off

Turn on the radio when you rotate the Power knob clockwise until you hear a 'click.' Turn off the radio when you are counterclockwise to a 'click' sound.

2. Adjusting the Volume

Rotate the [Volume] knob to adjust the volume in the power-on state.

3. Selecting a Channel

Short press the [UP] and [DOWN] buttons to switch the channel in the power-on state.

4. Transmitting & Receiving

4.1 Press the [PTT] button to transmit, and the indicator flashes red. And keep your microphone 3-8cm away from your mouth and in your normal speaking voice for the best sound quality at the receiving station.

4.2 When the radio is received, the indicator is green, and the sound comes out of the loudspeaker.

Function introduction

1. Squelch

The squelch function can eliminate the background noise in receiving.

Set up the squelch level from 0-9 in the programming software.

Note: Level 0 squelch is the lowest level to eliminate the noise, and level 9 is the highest level on it.

2. Monitor

In the power-on state, long-press the [UP] button can enter the monitor mode while rotating the power on/Volume knob to adjust the volume. Release the [UP] button to return.

3. Scan

The scan function can search the calls on the other channels.

3.1 Set up the scan function on the 'Side Key' in the programming software.

3.2 Add the channel to the scan list in the programming software.

3.3 Long press the [DOWN] button for 2 seconds and hear 'ON' to scanning. The radio will scan from the current channel to the incremental channel automatically. Talk when scanning a matching carrier and sub-tone signal. It will continue to scan if no one press the [PTT] button or if there is no signal within 4 seconds.

3.4 Long press the [DOWN] button for 2 seconds to return to the scan mode when you hear 'OFF.'

(Note: The scan function does not work when less than 2 channels in the scan list)

- 'Carrier scan': It will stop scanning and stay at the same frequency when the radio detects a signal until it disappears. There will be a 4-second delay between the signal disappeared and the next scan.
- 'Timer scan': It will stop scanning for 5 seconds when the radio detects a signal. It will be continued scan after 5 seconds even if the call is still there.

4. Emergency alarm

4.1 The programming software can be defined as the emergency alarm function on the 'Side Key' (The Factory default function)

4.2 Long press the [DOWN] button for 2 seconds to activate the local and remote emergency alarm.

4.3 Short press the [PTT] button to end.

5. VOX

The VOX function means it can talk and transmit without pressing the [PTT] button.

5.1 Tick the VOX can turn on the function, and there is no tick to turn off the VOX function on the premise that the VOX level has been turned on in the software. (The factory default is VOX OFF)

5.2 The shortcut button can turn it on/off.

5.2.1 Switch to channel 7 and turn off the radio. Press the [UP] button to turn on the radio, the 'VOX ON' prompt.

5.2.2 In VOX on state, switch to channel 7 and turn off the radio, press and hold the [UP] button to turn it on, the 'VOX OFF' prompt.

6. VOX level

The VOX level means the level of speaking sensitivity.

- Set up the VOX level from off and 1-9 level. It cannot activate the VOX when the VOX level is off, and the most sensitivity on Level 9, and the factory default is Level 3.

7. Channel Lock

7.1 Long press the menu button for 2 seconds and hear a prompt, then the channel is locked.

7.2 In the channel lock state, long-press the menu button for 2 seconds and hear 2 prompts to unlock the channel, and you can switch the channel.

8. Busy Channel Lock

This function can protect the channel calls from the transmit.

8.1 Turn on/off the function via software.

- When the function is active, press the [PTT] button, the radio cannot transmit with a prompt if you select a busy channel.

- When the BCL function is off, no such cases have been reported.

9. Power Save

The radio will stop working to save the battery power when no signal is received. It will extend the usage time after a full charge.

Trick 'Power save' to turn it on (The factory default), and no trick to turn it off via software.

10. Low Battery Alert

When the voltage falls to the lowest level, it will prompt. Stop transmitting at low Power and be required to replace or charge the battery immediately.

11. (TOT) Time-out-timer

The purpose of the Time-out-timer is to prevent a continual and long-time transmission. The transceiver will stop transmission and give out alarms if the call continues at a limited time. Release the [PTT] button and press it again for new communication.

Set up the period via software. (The 30s, 60s to 180s, and 30s are added for each level)

12. QT/DQT

It can choose 50 QT codes and 210 DQT codes in the software.

Technical Parameters

GENERAL	Frequency Range	FRS
	Rated Voltage	3.7V DC
	Memory Channel	16
	Antenna Impedance	50Ω
	Operation Temperature Range	-20℃~+55℃
TRANSMITTER	RF power	≤2W
	Modulation type	16kΦF3E
	Modulation distortion	<5%
	Adjacent channel power	≥65dB
	Max FR.Deviation	±5KHz
	Current	≤1200mA
RECEIVER	Modulation Noise	<-40dB
	Receiving sensitivity	0.2μV
	Adjacent channel selectivity	≥65dB
	Current	Standby ≤60mA
	Reference Frequency	26.000MHz
	Inter-modulation	≥60dB
	Spurious	≥55dB
	Audio distortion	<5%
	Audio power	<500mW

Frequency Table

FRS			
Channel	Frequency (MHz)	Max Power Output	CTCSS/DCS
1	462.5625	2W	67.0
2	462.5875	2W	118.8
3	462.6125	2W	127.3
4	462.6375	2W	131.8
5	462.6625	2W	136.5
6	462.6250	2W	127.3
7	462.7250	2W	136.5
8	462.6875	2W	141.3
9	462.7125	2W	146.2
10	462.5500	2W	123.0
11	462.5750	2W	D743I
12	462.6000	2W	D332I
13	462.6500	2W	D243I
14	462.6750	2W	D606N
15	462.7000	2W	D731I
16	462.7250	2W	D462I



ATTENTION!

Before using this radio, read this guide which contains important operating instructions for safe usage and rf energy awareness and control for compliance with applicable standards and regulations.

- **User instructions should accompany the device when transferred to other users.**
- **Do not use this device if the operational requirements described herein are not met.**

This two-way radio uses electromagnetic energy in the radio frequency (RF) spectrum to provide communications between two or more users over a distance. RF energy, which when used improperly, can cause biological damage.

All Retevis two-way radios are designed, manufactured, and tested to ensure they meet government-established RF exposure levels. In addition, manufacturers also recommend specific operating instructions to users of two-way radios. These instructions are important because they inform users of RF energy exposure and provide simple procedures on how to control it.

Please refer to the following websites for more information on what RF energy exposure is and how to control your exposure to assure compliance with established RF exposure limits: <http://www.who.int/en/> When two-way radios are used as a consequence of employment, the Local Government Regulations requires users to be fully aware of and able to control their exposure to meet occupational requirements. Exposure awareness can be facilitated by the use of a product label directing users to specific user awareness information. Your Retevis two-way radio has a RF Exposure Product Label. Also, your Retevis user manual, or separate safety booklet includes information and operating instructions required to control your RF exposure and to satisfy compliance requirements.

Radio License(only applicable to licensed radio)

Governments keep the radios in classification, business two-way radios operate on radio frequencies that are regulated by the local radio management departments (FCC, ISED, OFCOM, ANFR, BFTK, Bundesnetzagentur...). To transmit on these frequencies, you are required to have a license issued by them. The detailed classification and the use of your two radios, please contact the local government radio management departments.

Use of this radio outside the country where it was intended to be distributed is subject to government regulations and may be prohibited.

Unauthorized modification and adjustment

Changes or modifications not expressly approved by the party responsible for compliance may void the user's authority granted by the local government radio management departments to operate this radio and should not be made. To comply with the corresponding requirements, transmitter adjustments should be made only by or under the supervision of a person certified as technically qualified to perform transmitter maintenance and repairs in the private land mobile and fixed services as certified by an organization representative of the user of those services.

Replacement of any transmitter component (crystal, semiconductor, etc.) not authorized by the local government radio management departments equipment authorization for this radio could violate the rules.

FCC Requirements:

This device complies with part 15 of the FCC Rules. Operation is subject to the condition that this device does not cause harmful interference. (Licensed radios are applicable);

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (Other devices are applicable)

- (1) This device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.

(Only Applicable to GMRS radio station):

A valid individual license is required to operate a GMRS station. To obtain an individual license, an applicant must be eligible and follow the applicable rules and procedures established by FCC. The applicant must pay the required application and regulatory fees. Each individual license in the GMRS will normally have a term of ten years from the date of grant or renewal, and may be renewed pursuant to the procedures of FCC. To obtain a

GMRS operator license, you need FCC Form 605 & 159, we suggest visiting the FCC website at <https://www.fcc.gov/wireless/support/fcc-form-605>, which includes necessary instructions. More questions about the license application, please contact the FCC at 1-888-225-5322 or go to the FCC's website: <http://www.fcc.gov>. According to FCC rules, any individual who holds an individual license may allow his or her immediate family members to operate his or her GMRS station or stations. Immediate family members are the licensee's spouse, children, grandchildren, stepchildren, parents, grandparents, stepparents, brothers, sisters, aunts, uncles, nieces, nephews, and in-laws.

•(Only applicable to industrial environment) This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

•(Only applicable to home) 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.

CE Requirements:

•(Simple EU declaration of conformity) Shenzhen Retevis Technology Co., Ltd. declares that the radio equipment type is in compliance with the essential requirements and other relevant provisions of RED Directive 2014/53/EU and the RoHS Directive 2011/65/EU and the WEEE Directive 2012/19/EU; the full text of the EU declaration of conformity is available at the following internet address: www.retevis.com.

•Restriction Information

This product can be used in EU countries and regions, including: Belgium (BE), Bulgaria (BG), Czech Republic (CZ), Denmark (DK), Germany (DE), Estonia (EE), Ireland (IE), Greece (EL), Spain (ES), France (FR), Croatia (HR), Italy (IT), Cyprus (CY), Latvia (LV), Lithuania (LT), Luxembourg (LU), Hungary (HU), Malta (MT), Netherlands (NL), Austria (AT), Poland (PL), Portugal (PT), Romania (RO), Slovenia (SI), Slovakia (SK), Finland (FI), Sweden (SE) and United Kingdom (UK).

For the warning information of the frequency restriction, please refer to the package.

•Disposal

The crossed-out wheeled-bin symbol on your product, literature, or packaging reminds you that in the European Union, all electrical and electronic products, batteries, and accumulators (rechargeable batteries) must be taken to designated collection locations at the end of their working life. Do not dispose of these products as unsorted municipal waste. Dispose of them according to the laws in your area.



IC Requirements:

Licence-exempt radio apparatus

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

- (1) This device may not cause interference.
- (2) This device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

- (1) l'appareil ne doit pas produire de brouillage;
- (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

- Occupational/Controlled Radio, this radio is designed for and classified as “Occupational/Controlled Use Only”, meaning it must be used only during the course of employment by individuals aware of the hazards, and the ways to minimize such hazards; NOT intended for use in a General population/uncontrolled environment.
- General population/uncontrolled Radio, this radio is designed for and classified as “General population/uncontrolled Use”.

To control your exposure and ensure compliance with the occupational/controlled environment exposure limits, always adhere to the following procedures. When operating in front of the face, worn on the body, always place the radio in a Retevis approved clip, holder, holster, case, or body harness for this product. Using approved body-worn accessories is important because the use of Non-Retevis approved accessories may result in exposure levels, which exceed the IEEE/ICNIRP RF exposure limits.

Transmit no more than the rated duty factor of 50% of the time. To Transmit (Talk), push the Push to Talk (PTT) button. To receive calls (listen), release the PTT button. Transmitting necessary information or less, is important because the radio generates measurable RF energy exposure only when transmitting in terms of measuring for standards compliance.

- DO NOT operate the radio without a proper antenna attached, as this may damage the radio and may also cause you to exceed RF exposure limits. A proper antenna is the antenna supplied with this radio by the manufacturer or an antenna specifically authorized by the manufacturer for use with this radio, and the antenna gain shall not exceed the specified gain by the manufacturer declared.
- DO NOT transmit for more than 50% of total radio use time, more than 50% of the time can cause RF exposure compliance requirements to be exceeded.
- During transmissions, your radio generates RF energy that can possibly cause interference with other devices or systems. To avoid such interference, turn off the radio in areas where signs are posted to do so.
- DO NOT operate the transmitter in areas that are sensitive to electromagnetic radiation such as hospitals, aircraft, and blasting sites.
- Portable Device, this transmitter may operate with the antenna(s) documented in this filing in Push-to-Talk and body-worn configurations. RF exposure compliance is limited to the specific belt-clip and accessory configurations as documented in this filing and the separation distance between head and the device or its antenna shall be at least 2.5 cm.
- Mobile Device, during operation, the separation distance between user and the antenna subjects to actual regulations, this separation distance will ensure that there is sufficient distance from a properly installed externally-mounted antenna to satisfy the RF exposure requirements. Transmit only when people outside the vehicle are at least the recommended minimum lateral distance away from a properly installed according to installation instructions, externally mounted antenna.

Hand-held Mode(if applicable)

- Hold the radio in a vertical position with the microphone (and other parts of the radio including the antenna) at least 2.5 cm (one inch) away from the nose or lips. The antenna should be kept away from the eyes. Keeping the radio at a proper distance is important as RF exposure decreases with increasing distance from the antenna.



Phone Mode(if applicable)

- When placing or receiving a phone call, hold your radio product as you would a wireless telephone. Speak directly into the microphone. Do not use the equipment when you are driving

Electromagnetic Interference/Compatibility

NOTE: Nearly every electronic device is susceptible to electromagnetic interference (EMI) if inadequately shielded, designed, or otherwise configured for electromagnetic compatibility.

Avoid Choking Hazard



Small Parts. Not for children under 3 years.

Turn off your radio power in the following conditions:



- Turn off your radio before removing (installing) a battery or accessory or when charging battery.
- Turn off your radio when you are in a potentially hazardous environments: Near electrical blasting caps, in a blasting area, in explosive atmospheres (flammable gas, dust particles, metallic powders, grain powders, etc.).
- Turn off your radio while taking on fuel or while parked at gasoline service stations. To avoid electromagnetic interference and/or compatibility conflicts

- Turn off your radio in any facility where posted notices instruct you to do so, hospitals or health care facilities (Pacemakers, Hearing Aids and Other Medical Devices) may be using equipment that is sensitive to external RF energy.
- Turn off your radio when on board an aircraft. Any use of a radio must be in accordance with applicable regulations per airline crew instructions.

Protect your hearing:



- Use the lowest volume necessary to do your job.
- Turn up the volume only if you are in noisy surroundings.
- Turn down the volume before adding headset or earpiece.
- Limit the amount of time you use headsets or earpieces at high volume.
- When using the radio without a headset or earpiece, do not place the radio's speaker directly against your ear
- Use careful with the earphone maybe possible excessive sound pressure from earphones and headphones can cause hearing loss

Note: Exposure to loud noises from any source for extended periods of time may temporarily or permanently affect your hearing. The louder the radio's volume, the less time is required before your hearing could be affected. Hearing damage from loud noise is sometimes undetectable at first and can have a cumulative effect.



Avoid Burns



Antennas

- Do not use any portable radio that has a damaged antenna. If a damaged antenna comes into contact with the skin when the radio is in use, a minor burn can result.

Batteries (If appropriate)

- When the conductive material such as jewelry, keys or chains touch exposed terminals of the batteries, may complete an electrical circuit (short circuit the battery) and become hot to cause bodily injury such as burns. Exercise care in handling any battery, particularly when placing it inside a pocket, purse or other container with metal objects
- **BATTERY WARNING: KEEP OUT OF REACH OF CHILDREN**
- Store spare batteries securely
- If the battery compartment (if applicable) does not close securely, stop using the product and keep it away from children
- If you think batteries might have been swallowed or placed inside any part of the body, seek immediate medical attention
- Dispose of used batteries immediately and safely
- Long transmission
- When the transceiver is used for long transmissions, the radiator and chassis will become hot.

Safety Operation



Forbid

- Do not use charger outdoors or in moist environments, use only in dry locations/conditions.
- Do not disassemble the charger, that may result in risk of electrical shock or fire.
- Do not operate the charger if it has been broken or damaged in any way.
- Do not place a portable radio in the area over an air bag or in the air bag deployment area. The radio may be propelled with great force and cause serious injury to occupants of the vehicle when the air bag inflates.

To reduce risk

- Pull by the plug rather than the cord when disconnecting the charger.
- Unplug the charger from the AC outlet before attempting any maintenance or cleaning.
- Contact Retevis for assistance regarding repairs and service.
- The adapter shall be installed near the equipment and shall be easily accessible

Approved Accessories



- This radio meets the RF exposure guidelines when used with the Retevis accessories supplied or designated for the product. Use of other accessories may not ensure compliance with the RF exposure guidelines and may violate regulations.
- For a list of Retevis-approved accessories for your radio model, visit the following website: <http://www.Retevis.com>

Guarantee

Model Number: _____
Serial Number: _____
Purchasing Date: _____
Dealer: _____ Telephone: _____
User's Name: _____ Telephone: _____
Country: _____ Address: _____
Post Code: _____ Email: _____

Remarks:

- 1.This guarantee card should be kept by the user, no replacement if lost.
- 2.Most new products carry a two-year manufacturer's warranty from the date of purchase. Further details, pls read <http://www.retevis.com/after-sale/>
- 3.The user can get warranty and after-sales service as below:
 - Contact the seller where you buy.
 - Products Repaired by Our Local Repair Center
- 4.For warranty service, you will need to provide a receipt proof of purchase from the actual seller for verification

Exclusions from Warranty Coverage:

- 1.To any product damaged by accident.
- 2.In the event of misuse or abuse of the product or as a result of unauthorized alterations or repairs.
- 3.If the serial number has been altered, defaced, or removed.



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MADE IN CHINA