RETEVIS

CE RoHS Compliant

MADE IN CHINA

US

RT18
Two Way Radio
User's Manual

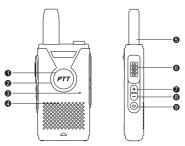# Function Introduction

◆ FrequencyFRS
◆ Up to 16 Channels
◆ Chinese/English Language
◆ 50 Groups CTCSS,105 Groups of standard DCS
◆ Time-out timer(TOT)
◆ Battery saving function
◆ Alarm function
◆ USB rapid charge
◆ Programmable by PC

Basic information

Parts List

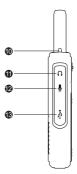Radio x2，Battery x2，Belt Clip x2，USB Cabel x1，
Hand-Strap x2，User's Manual x1

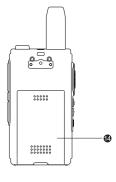**Basic Parameter**
Size :130X52X14mm
Weight:80g
Channels: 16
Operating Voltage:3.3-4.2V DC
Working Temperature:-20℃~+50℃

❶ PTT	❽ Channel -
❷ Light	❾ Power on/off Switch
❸ Mic	❿ Volume Switch
❹ Speaker	⓫ Earphone Interface
❺ Antenna	⓬ Microphone Interface
❻ Side key PTT	⓭ USB Interface
❼ Channel +	⓮ Battery

Function Operation

Radio Information

1-Indicator
Green light flashes when radio is receiving. Red light flashes when radio is transmitting.

2-Channel Switch
Choosing desired channel to communication from 1-16. When the UP button is pressed, increase the channel No.. When the DOWN button is pressed, the channel drops and recycled.

3-Power Switch
Press the power button about 2 seconds to turn on the radio. Press the power button about 2 seconds to turn off.

4-PTT
The radio has two PTT switches on the side and the front. Press PPT and face to microphone to communicate with the others. Red light flashes. Release PTT to receive and the green light flashes.

5-Monitor
Long press channel UP key can turn on monitor function. Press it again to turn off the monitor function.

6-Squelch level
The purpose of the squelch is to mute the speaker when no signals are present Lower squelch level, high background noise hear. longer communication range, weaker the anti-inference.
Default squelch level is 5 and can be programmed level 0-9 by PC.
Level 0 is to open the squelch. The higher the selected squelch level. the stronger the signals must be when receiving.

7-TOT
This function can prevent users occupied the present channel for long time and limit TX time, meanwhile prevent radio from damage by long time transmitting If radio continue TX over the limit time (set by the programming software), radio will quit TX and sounds a warning sound. To stop warning sound, release the PTT, radio will back to the receiving state.When TX over time, through the bell to carry out early warning in advance(set by program software).

8-Scan
When the radio enters channel 16, it enters into the scanning function automatically.

9-CTCSS
Check the Hopping option of program, CTCSS can be programmed Non-standard TONE, increasing voice privacy.

10-Language
Please choose the desired language by PC program software.

11-Power Saving Function
Please select to active or disable the power save function by PC program software.

12-Battery Voltage Alert
When the battery voltage is lower than a certain level, the voice will sound "please charge", and prohibit transmitting.

13-Busy Channel Lockout
If radio programmed with BCLO, pressing PTT to prohibit TX after receiving the signal.

14-High /Low Power Switch
Radio default setting is high power. You can switch high /low power by PC programming software.

15-Wide/Narrow Band Selection(25.0KHz/12.5KHz)
Radio default setting is wide band. You can select wide /narrow band by PC programming software.

16-VOX
Enable or disable VOX by PC programming software. When your radio turn on the VOX function, talking to the microphone, then voice will be sent out; Stop talking, then radio will be in receiving state.when you use the earphone, need to adjust the VOX level in an appropriate level. If the microphone is too sensitive, the noise will activate transmitting; If the microphone is not sensitive enough, your voice will not activate transmitting. In order to communicate successfully,please adjust the appropriate level.

17-Scrambler

Enable or disable the scrambler by PC programming software . Scrambler function is one of encryption way. It through the spectrum to complete the purpose of changing the transmission spectrum and receiving the signal to restore, so as to achieve encryption effect.

18-CTCSS/DCS

You can set the CTCSS/DCS by PC programming software. When the channels are set the CTCSS/DCS, squelch can be turn on when received a signal with the same CTCSS/DCS. If the same channel uses a different CTCSS/DCS, the squelch can not be turned on and the light will be green.

19-Charging Indicator

The charger is charged by Android data line. When charging, the indicator light is red.

20-Channel Locking Function

Long press the channel DOWN key to hear the "beep" twice, then the channel is locked in the currently set channel. Long press the channel" DOWN" key to unlock the channel after hearing the sound of "di," and the channel switch can operate normally.

Troubleshooting

Symptom	Try This
No power	● Battery power may have run out, please update battery or recharge it. ● Battery may not be properly installed, please take it off and re-install.
Battery lasts a short time after charge	● The battery life is over, please replace new battery.
Can not talk to other members of your group.	● Verify transmitting is within effective operating range. ● Verify channel, frequency and

Hearing other conversation on a channel (not group members')	● Please change code settings, including all two way radio settings

TECHNICAL SPECIFICATION

General Specifications	
Frequency	FRS
Channels Capacity	16
Channels Spacing	12.5KHz
Operation voltage	3.7V DC
Operation temperature	-20℃--+50℃
Antenna impedance	50Ω
Transmitter Specifications	
RF Power	≤2W
Maximum deviation(W/N)	≤5KHz/≤2.5KHz
Frequency stability	±5ppm
Adjacent channel power	≤-65dB/≤-60dB
SNR(W/N)	≥-45dB/≥-40dB
Audio Distortion	≤5%
Transmission current	≤1.45A
Receiver	
Sensitivity	-122dBm(12Db SINAD)
Audio power	0.33-0.37W@3.7V
Audio distortion	≤5%
Inter modulation	55dB
Adjacent channel selectivity(W/N)	50dB@12.5KHz 55dB@20/25KHz
Modulation Acceptance	3.5KHz@12.5KHz 7KHz@25KHz
Receiver current	≤70mA

Note: The above specifications/technical instructions are for reference only because of the continuous improvement of the technology. Please refer to the physical object.

WARNINGS

RF ENERGY EXPOSURE AND PRODUCT SAFETY GUIDE FOR PORTABLE TWO-WAY RADIOS

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.

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 about 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/

Local Government Regulations

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

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. NOTE: 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.

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 or manual section.
• 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.

RF Exposure Information
• 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 user 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.

• 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".

RF Exposure Compliance and Control Guidelines and Operating Instructions

To control your exposure and ensure compliance with the occupational/controlled environment exposure limits, always adhere to the following procedures.

Guidelines:
•User awareness instructions should accompany the device when transferred to other users.
•Do not use this device if the operational requirements described herein are not met.

Operating Instructions:
• 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 50% of the time, or less, is important because the radio generates measurable RF energy exposure only when transmitting in terms of measuring for standards compliance.

• 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.

• 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.

Hand-held Mode
• 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
• When placing or receiving a phone call, hold your radio product as you would a wireless telephone. Speak directly into the microphone.

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:

WARNING

• 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 (inflammable 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:

WARNING

• 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

WARNING

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
Long transmission
• When the transceiver is used for long transmissions, the radiator and chassis will become hot.

13

14

Safety Operation

Forbid

WARNING

- 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

WARNING

- 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

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Cut along this line

Warranty Card

Product model: _____ Date of purchase: _____

Serial Number: _____

Seller: _____ contact number: _____

Username: _____ contact number: _____

Address: _____ Zip code: _____

Warranty description:

1. The warranty card is saved by the customer as the warranty certificate, and the loss is not compensated.
2. This card must be stamped and dated for sale to take effect.
3. This card must not be altered. Please confirm that the warranty card serial number matches the purchase machine number, otherwise it will be invalid.
4. The warranty period is one year. Chargers, batteries, headphones, antennas and feeders are consumables, not covered by warranty.
5. Users can choose the following ways to get repair service:
   a. At the original purchase office.
   b. Our company is in the local special maintenance point.