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RETEVIS

USER'S MANUAL

Two Way Radio

RT27V

Shenzhen Retevis Technology Co.,Ltd
Web: www.retevis.com
E-mail: hongkong@retevis.com

MADE IN CHINA

FM Transceiver

Dear user:

Welcome to use our handheld transceiver. We believe you will be pleased to use it in our daily life and work.

This transceiver adopts advanced technology, we hope you will be satisfied with its quality and functions. This transceiver will bring you convenient,fast,reliable two-way communication.

Notice:

• Please read this manual carefully before using this transceiver.

• Please do not communicate or charge this transceiver in flammable,explosive and area which transceiver communication is prohibited(such as oil station,gas station, chemical factory).

• Please do not operate this transceiver without license in government laws banned areas.

• Please make sure this transceiver avoids the sunshine, and avoids to put it near any heating device.

• Please make sure this transceiver avoids any dusty,humid and water splashed place,and also avoids to put it on unsteady desktop.

• If transceiver smells or smokes, please remove the battery pack from transceiver at once, and then contact our company or local dealer.

• The repair job of this transceiver is in the charge of professionals & technicals, self-disassembly is prohibited.

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UNPACKING AND CHECKING EQUIPMENT

We recommend that you open the packing box before use and check the equipment for any damage and check the accessories and the supplied accessories. If any item missed or damaged during shipment, please contact the shipper or local dealer.

1. Supplied Accessories

Item	Quantity
Hand Strap	1
Belt Clip	1
Battery	1
USB Charger	1
User's Manual	1

PREPARATION

Notice:

Do not charge the battery for a long time!

If battery is not fully charged within schedule time, stop charging. Otherwise the battery may be overheat and explode, it may cause fire.

Do not throw the battery into micro-wave oven and high-pressure container!

The battery may be overheat and smoke and burst into fire.

Prevent the break as well as liquid spilling battery from fire!

If the battery is spilling(or exuding smelly smell), put it away from inflammable area. The electrolyte spilling from the battery is easy to catch fire, and it will cause battery smokes or burst into fire suddenly.

Do not use unusual battery!

If battery smells smelly, different colors, out of shape or abnormal phenomena happen during using, stop it from charger or operating device and do not use it .

Please use standard charger

The charger supplied is specialized designed for this transceiver only. If will charge the battery more scientific reasonable, and safety.

1. Use Li-ion Battery

Charge the battery before use.

To prevent battery pack from discharging , please remove the battery pack from transceiver when it is not in use, and then keep it in a dust proof place.

For battery long time storage

1. Remove the battery from device

2. If possible,discharge battery.

3. Store it in a cool(below 25℃) and dry place.

2.Battery Characteristic

The capacity of battery will reduce step by step after being charged and discharged again and again.

Battery will be aged even without any usage.

It will cost longer time to charge the battery in cool and dry place.

Battery working life will be reduced if being charged in hotter place. Battery ages more quickly when stored in hot place.

Please do not leave battery in car and put away any heating device.

If battery working life becomes shorter, please replace it even if it is not long time being charged and discharged, the electrolyte will age.

3.Charge Li-ion Battery

When charger is power on, pull battery in and full connected, the light will turn red, start charging. When battery has been fully charged, the green light on.

4. Install/Remove Battery Pack

Note:

Do not short circuit battery pack terminals or throw battery into fire.

Do not try to remove the battery pack shell.

Do not install battery pack under dangerous conditions, otherwise spark will cause explosion.

Insert the top part of the battery pack into the top 2 slots of the transceiver (Pic1), then press the battery pack down until a "click" sound is heard (Pic2).

To remove the battery pack, make sure the transceiver has been turned off, and then press the battery released latch in the bottom of transceiver, pull the bottom part of battery away from the transceiver body, and remove the battery.(Pic3)

5.Install/Remove Belt Clip

If necessary, install the supplied screws into the belt clip at the back of battery pack for easy carry.(Pic3)

To remove the belt clip, directly remove the two screws only.

6.Install Hand Strap

Install the hand strap at the middle circle of the transceiver.(Pic4)

GETTING STARTED

① Power/Volume Knob

Rotate the knob clockwise to turn on the transceiver, keep rotating to adjust the volume. To turn it off, rotate the knob to the end anticlockwise.

② LED Indicator

When transmitting, LED indicator turns green, and when receiving, LED indicator turns red. LED indicator will flash red when battery in low voltage.

③ Channel Selection Knob

Rotate this knob to select different channels.

④ PTT(Push-To-Talk) Switch

To transmit, press PTT button and face towards microphone to talk.

⑤ Scan Key

Press it to open and again to close this function.

⑥ MONI Key

Press it to monitor the selected channel.

⑦ MIC-SP Jack

It is to connect the optional microphone-speaker.

BASIC OPERATION

1.Turn On/Turn Off

Rotate the Power/Volume knob clockwise to turn on the transceiver.

Rotate the Power/Volume knob anticlockwise to turn on the transceiver.

2.Adjust Volume

Rotate the Power/Volume knob to adjust the volume.

Clockwise rotation will raise the volume and anticlockwise rotation will reduce the volume.

More accurate adjustment is needed while communication.

Note: You can press MONI key to monitor the background noise while adjusting volume.

3.Channel Select

Rotate Channel Selection Knob to select needed channel. Clockwise rotation will rise the channel number and anticlockwise rotation will reduce the channel number.

Voice Prompt: The radio will be voice prompt record channel number automic when you rotate channel knob. The voice prompt can be set by English and Chinese, you can select the language by software.

4.Adjust Squelch Level

Squelch function is used to let speaker quiet when no any signal. When squelch is on , you can hear background noise from speaker. When squelch is off, no any noise can be heard.

The selected squelch level will decide where to turn on or off squelch function. If the selected squelch level is too high, then weaker signal can not be heard; But if the selected squelch level is too low , then signal will appear with the background noise. (PC programmable)

5. Transmit(Call)

1. Adjust the proper squelch settings of monitor function, press [MONI] key to monitor loudspeaker. Make sure no any transceiver is transmitting on the selected channel.

2. Press [PTT] key, and speak to microphone.

(1) Keep microphone away from your mouth about 3~4 cm, and speak in your usual tone, so that the receiver can get best tone quality.

(2) Press [PTT] key, LED indicator displays red.

3. Release [PTT] key and wait to receive.

6.Receive

When the selected channel is being called, LED indicator displays green, you can receive the call.

If the transmitting signal is weaker, and also higher squelch level is set, then maybe you can not receive the call.

Maybe your local dealer has set CTCSS/DCS signalling on your transceiver. When this programmable channels has been selected, only transceiver with same signalling can be received. Other transmitting can not be received.

This function can help you not to receive unnecessary call.

It seems the transceiver maybe have its own channel after CTCSS/DCS has been input, but if other transceivers have been set same CTCSS/DCS codes, your transmitting can be also heard.

VOX FUNCTION

Press and hold the [MONI] key to boot, and VOX setting function will be open, then press [MONI] key again to select VOX levels, you can use short press the [MONI] key to select the VOX levels from 0-9 , finally press [PTT] key to confirm. Press and hold the [Scan] key to boot, you can enter into the VOX delay setting. Then you can short press [Scan] key to select 1-6 VOX delay levels, finally press [PTT] key to confirm.

SCAN FUNCTION

Press Scan key to start auto scan. When receiving signal, it will stop at current channel, and it will auto scan again after signal disappears in fix. Press [PTT] key, if scan is working, then transmitting will according to the frequency from the scan start channel. If scan stops, transmitting will according to current channel (PC programmable).

CTCSS and DCS

Maybe your local dealer has set CTCSS/DCS signalling on your transceiver. When this programmable channels has been selected, only transceiver with same signalling can be received. Other transmitting can not be received.

This function can help you not to receive unnecessary call.

It seems the transceiver maybe have its own channel after CTCSS/DCS has been input, but if other transceivers have been set same CTCSS/DCS codes, your transmitting can be also heard.

AUXILIARY FUNCTIONS

1. Busy Channel Lockout

Start this function to prevent interfering other transceiver using same channel frequency.

The default setting of this function is off. If the selected channel is occupied on by software or local dealer, when other transceiver is using this channel, it press [PTT] key, the radio will send "Dee" prompt, and transceiver will sound "Dee-Dee", "Dee-Dee". To stop being sound, release PTT key.

[When this channel is free, press PTT key again to transmit.

2. Battery Voltage

When transceiver power is on, battery voltage will be auto detected. When voltage is low, LED indicator displays red. The transceiver can be used for a while, but excessive transmitting will run out of battery quickly. When battery voltage is very low, an alarm will be heard, transmitting is prohibited. Please charge the battery pack or replace the battery pack.

3. Monitor

You can press [MONI] key to monitor weaker signal which is difficult to be received under normal operation, and also adjust the selected channel volume if signal disappears.

4. CTCSS Select

Open this function, input the necessary frequency, click "DCS" which is under "CTCSS/DCS decode" and "CTCSS/DCS encode", and select the necessary CTCSS, then write it into transceiver by software.

5. DCS Select

Open the software, input the necessary frequency,click "DCS" which is under "CTCSS/DCS decode" and "CTCSS/DCS encode", and select the necessary CTCSS, then write it into transceiver by software.

6. Time-out Timer(TOT)

TOT function is used to prevent a channel have been used for a long time.

If the transmitting time exceeds the programmable time, transceiver will stop transmitting, and send alarm sound. Release [PTT] key, transceiver will back to receiving mode automatically .

CTCSS FREQUENCY(50 groups)

01	67.0	09	94.8	17	141.3	25	179.9	33	225.7
02	69.3	10	97.4	18	146.2	26	183.5	34	229.1
03	71.9	11	100.0	19	151.4	27	189.9	35	233.6
04	74.4	12	103.5	20	156.7	28	192.8	36	241.8
05	77.0	13	107.2	21	162.2	29	196.6	37	250.3
06	79.7	14	110.9	22	167.9	30	199.5	38	254.1
07	82.5	15	114.8	23	173.8	31	203.5		
08	85.4	16	118.8	24	179.9	32	206.5		
09	88.5	17	123.0	25	186.2	33	210.7		
10	91.5	18	127.3	26	192.8	34	218.1		
11	94.8	19	131.8	27	203.5	35	225.7		

DCS FREQUENCY (105 groups)

01	023	09	043	17	065	25	092	33	122	41	162
02	025	10	047	18	071	26	093	34	125	42	164
03	026	11	051	19	072	27	094	35	131	43	165
04	031	12	054	20	073	28	095	36	132	44	166
05	032	13	056	21	074	29	097	37	134	45	172
06	036	14	059	22	077	30	098	38	143	46	174
07	043	15	060	23	081	31	099	39	145	47	205
08	047	16	062	24	082	32	101	40	152	48	212
09	051	17	065	25	084	33	102	41	155	49	223
10	054	18	071	26	086	34	103	42	156	50	225
11	056	19	072	27	087	35	104	43	162	51	226
12	059	20	073	28	088	36	107	44	164	52	243
13	060	21	074	29	089	37	108	45	165	53	244
14	062	22	077	30	091	38	109	46	166	54	245
15	065	23	081	31	092	39	114	47	172	55	246
16	071	24	082	32	093	40	115	48	174	56	251
17	072	25	084	33	094	41	116	49	205	57	252
18	073	26	086	34	095	42	122	50	212	58	255
19	074	27	087	35	097	43	125	51	223		
20	077	28	088	36	098	44	131	52	225		
21	081	29	089	37	099	45	132	53	226		
22	082	30	091	38	101	46	134	54	243		
23	084	31	092	39	102	47	143	55	244		
24	086	32	093	40	103	48	145	56	245		

Technical specifications

- Operating Frequency: MURS
- Channel: 5
- Modulation type: F3E
- Bandwidth: 11.25K(Ch-20.00K)Hz
- Power source: Li-ion Battery 3.7V DC/1100mAh

Channel and Frequency correspondence list

CH.No	CH.Freq.	CH.No	CH.Freq.	CH.No	CH.Freq.
1	151.820	3	151.940	5	154.600
2	151.880	4	154.570		

Note: Above channels are license free channels

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 safe RF energy exposure is and how to control your exposure to ensure compliance with established RF exposure limits http://www.wha.ala.us/.

Local Government Regulations

When two-way radios are used as a consequence of employment, the Local Government Regulations require 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. This two-way radio is shipped with a Product Label, a User Manual, and this user manual, 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, a license may be required in your country or area. 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 these 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 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 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 described in this manual is in compliance with the essential requirements and other relevant provisions of RED Directive 2014/53/E 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 radio may 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), Slovenia (SI), Poland (PL), Portugal (PT), Romania (RO), 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 wheelie-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.

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 Pack-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.

This radio is designed for and classified as "General population/uncontrolled Use"

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 General population/uncontrolled 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, holster, holster, case, or body worn accessory. For body worn operation, other 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 recommended 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:

• Turn off your radio before removing (installing) a battery or accessory, and then charging battery.
• Turn off your radio when you are in a potentially explosive environment such as fuel stations, paint shops, 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 electromagnetic compatibility,
• 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.
• Limit your time of use.
• Turn down the volume before entering noisy environments.
• Turn the volume before adding headset or earpiece.
• Limit the amount of time you use headsets or earpieces at high levels.
• When using the radio without a headset or earpiece, hold the radio the radio's speaker directly against your ear.
• Use carefully with the earphone maybe possible excessive sound pressure from earphones and headphones can cause hearing loss.

Note: Exposure to loud noises from any source over a period of time can temporarily reduce 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 applicable)

• When the conductive material such as jewelry, keys or chains touch exposed terminals of the battery, may complete an electrical circuit (short circuit the battery) and heave to be cautious in handling any battery, particularly when placing any battery in a pocket or other container with metal objects

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 electric shock.

• 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 airbag or in the airbag deployment area. The radio may be propelled with great force and cause serious injury to occupants of the vehicle when the air bag inflates.

Battery Safety

• 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.
• Battery charger 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 approved for this product. Other metal 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 CARD

Model Number:.....
Serial Number:.....
Purchasing Date:.....
Dealer:..... Telephone:.....
User's Name:..... Telephone:.....
Address:..... Post Code:.....

Please cut along with the line

REMARKS:

1.This guarantee card to be kept by the user,no replenishment if lost.

2.This guarantee card to be filled & chopped by the dealer,or it is invalid.

3.Don't alter the guarantee card,please confirm the serial number on the guarantee card is same as that on the machine.

4.Consumable,accessories(earphone,earphone antenna and charger) are not under guarantee.

5.The user can get repairing service from the following ways:
a.Go to the shop where you buy the machine
b.Our local repairing agent