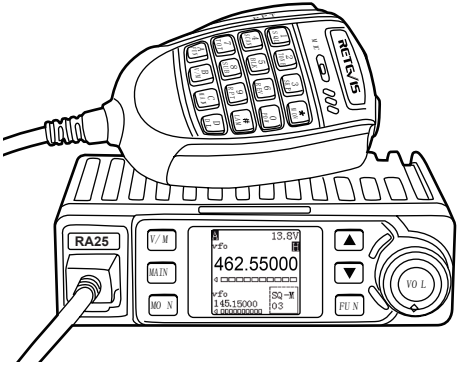
RETEVIS

RA25

Instruction Manual



Instruction Manual

(EN)

CE FC RoHS

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MADE IN CHINA

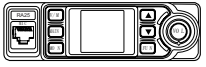
1.FUNCTIONS & FEATURES

Retevis RA25 Mobile Radio has nice housing, stoutness & stability, advanced and reliable functions, perfect & valuable. This amateur mobile radio especially designs for drivers and it pursues philosophy of innovation and practicality. More functions as follows:

- Adopt superior quality material, better technology and high quality radiator to ensure stable and durable operation.
- 1.44 Inch TFT display.
- Amateur mode and professional mode for different operation requirement.
- 30 programmable memory channels, identified by editing name.
- CTCSS, DCS, DTMF, 2Tone, 5Tone setting for each single channel.
- 11 groups fixed scrambler code plus self define scrambler code.
- LCD brightness control.
- Main unit and microphone key lock function.
- Compander function.
- Tone Pulse frequency.

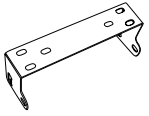
2.ACCESSORIES

2.1 Standard Accessories



Transceiver

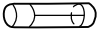
Microphone



Mobile Bracket

Adjusting screws

non-slip mat



Fuse(10A 250V)

Screws

Pads

manual

2.2 Optional Accessories

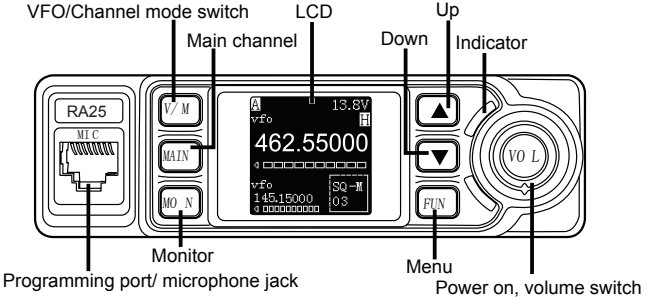
External Speaker

PC cable

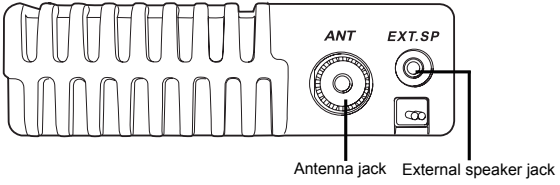
Car Antenna

3. GETTING ACQUAINTED

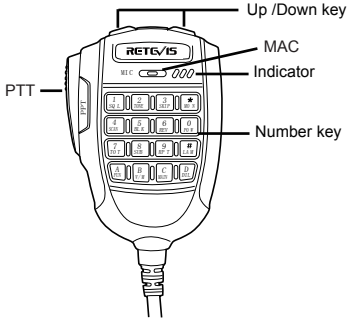
3.1 Front panel



3.2 Rear panel



3.3 Microphone



4.BASIC OPERATIONS

4.1 Switching the Power On/Off

1. Turn the Volume knob clockwise to turn on the radio, the radio LCD will display programmed text and emit a beep sound .
2. Power Off: Turn volume knob anti-clockwise until hear "click" to turn off the radio.

4.2 Adjusting the Volume

Turn volume knob clockwise to increase colume and anti-clockwise to reduce it.

4.3 Switch between Main Channel and Sub Channel

In standby states, press the microphpne [C MAIN] key or front panel [MAIN] key to switch between main channel and sub channel. The top left corner of LCD will display current main channel .

4.4 Adjust Channel

1. Press microphone [B V/M] key or front panel [V/M] key to switch the radio to channel mode,press microphone 【UP】/【DN】 key or front panel [▲] / [▼] key to choose channel .
2. In channel mode, input three numbers by number key to fast choose a channel.

4.5 Adjusting Frequency

1. By number key: In VFO mode, you can input wanted frequency by the microphone number key. For example if want 145.125Mhz, just press key 1, 4, 5, 1, 2, 5, if want 145Mhz, just press 1, 4, 5. The input is invalid if the frequency is over range.
2. By step size: In VFO mode, press microphone 【UP】/【DN】 or front panel [▲] / [▼] key can change frequency by step size.

Step size can be programmed by software from 2.5K to 50K.

4.6 Store channel

In standby states, press the microphpne [A FUN] key , the top left corner will display Func ,then press 【UP】 KEY , the LCD bottom left corner will display Save to XXX,
now press 【UP】/【DN】 key to choose a channel number, hold [* MON] key to store the new frequency and return to standby.

⚠ XXX stands for the channel number, if LCD displays “Null” under “Save TO XXX”, means current channel is empty.

4.7 Channel Delete

1.In channel mode, press microphone [A FUN] key, then press 【DN】 key, the LCD displays “Delete XXX” and frequency, presss 【UP】/【DN】 key to choose the channel to delete,Hold 【#LAM】 key delelte to current channel.

⚠ » “XXX” stands for the channel number, the LCD displays “Null” after chennel deleted

4.8 Receiving

Choose a receiving channel or frequency for receiving call, if the RX signal is week, hold front panel [MON] key or microphone [* MON] key to monitor weak signal.

⚠ »When the RX icon and field strength flashes, but can not hear the calling, it means current channel receive a matching carrier but unmatching signaling. Refer toCTCSS/ DCS CODE or Optional Signaling setup in Page 6).

4.9 Squelch Off

In standby, press microphone [* MON] key or front panel [* MON] key to turn off squelch, the radio will monitor weak signal.

4.10 Transmitting

Hold [PTT] and speak into microphone. the radio start transmit, the screen shows red TX and field strength. Hold the microphone approximately 2.5-5.0cm from your lips and speak to microphone in your normal speaking voice to get best timbre.

4.11 Emergency Alarm

In standby, hold [MAIN] key, release it until the LCD displays ALARM, the alarm function turns on. Program emergency alarm rule shall be programmed by PC software.

4.12 Keypad Lockout

In standby, hold [FUN] key or [A FUN] key , the radio emit Du sound, the LCD displays LOCK.Now release the key , the keypad is locked. To turn of key lock, hold key or key untilthe radio emit Du Du, the LOCK icon disappear. now release the key.

4.13 Transmit Tone Pulse Frequency

Hold PTT and [DN] key will transmit selected Pre-programmed tone pulse frequency.

4.14 VFO Scan and Channel Scan

1. VFO scan: In VFO mode, press microphone key or key to start VFO scan . if the radio has programm PL1, PH1, ,PL2, PH2, PH2 frequency(in the buttom of channel list), VFO scan will between PL1-PL2 and PL2-PH2.
2. Channel Scan: In channel mode press microphone [A FUN] key and then press [4 SCAN] key to start channel scan. Channel scan setting shall be programmed by PC software.

4.15 VOX On/Off Control

In standby, hold【V/M】key until LCD dispplays VOX icon, repeater this step or repower on radio to turn off VOX function.

⚠ Note: Before turn on VOX, please set VOX level in 26th menu.

5. SHORTCUT OPERATION

Press microphone [A FUN] key and then press number key TO fast enter following functions, then press 【UP】/【DN】 key to choose value. Presss 【PTT】 key or [D DIAL] key to Store.

Function list

NO	Function name	Combination Key
1	Squelch level setting	[A FUN] + [1 SQL]
2	Optional signaling setting	[A FUN] + [2 TONE]
3	Scan Skip	[A FUN] + [3 SKIP]
4	Scan	[A FUN] + [4 SCAN]
5	Busy channel lockout	[A FUN] + [5 BLK]
6	Frequency reverse	[A FUN] + [6 REV]
7	Time out timer	[A FUN] + [7 TOT]

8	Sub channel on/off switch	A FUN + B SUB
9	Offset direction	A FUN + 9 RP
10	Function Menu	A FUN + * MON
11	Power setting	A FUN + 0 POW
12	LCD brightless	A FUN + # LAM
13	DTMF Code check	A FUN + D DIAL

⚠ » In DTMF check mode
When check DTMF code, press PTT will send current DTMF code.To revise DTMF code, press A FUN key and then press 0 POW key to enter edit mode. input DTMF code by number keys , then press PTT to transmit the code and store

5.FUNCTION SETTING

5.1 By Front Panel Key

1. Press FUN key to enter main menu.
2. Press V/M key or MAIN key to choose function.
3. Press ▲ / ▼ key to choose value.
4. Press FUN key or MON key to store and exit.

When setting DCS code, MON key is for switch between positive and inverse code.

5.2 By Microphone Key

1. Press A FUN key and then press * MON key to enter menu.
2. Press B V/M key or C MAIN key to choose function.
3. Press 【UP】 / 【DN】 key to choose value.
4. Press D DIAL key to store and exit

⚠ » When setting DCS code, 1 SQL key is for switch between Positive and inverse code. 3 SKIP key is for choose special DCS.

Function list

NO	Function name	Setting value
1	TX CTC/DCS	67Hz~254.1Hz、000N~777I
2	RX CTC/DCS	67Hz~254.1Hz、000N~777I
3	TX/RX CTC/DCS	67Hz~254.1Hz、000N~777I
4	Optional signaling	OFF、DTMF、2Tone、5Tone
5	Squelch mode	SQ、CT/DCS、Tone、C&T、C/T
6	Step size	2.5K~50K
7	Band width	WIDE(25K)、NARROW(12.5K)
8	Reverse	ON、OFF
9	Talk around	ON、OFF
10	Offset frequency	0~70MHz
11	Busy channel Lock	OFF、REPEATER、BUSY
12	Channel name	0~z
13	TX OFF	ON、OFF
14	Scramber	1~11、edit、OFF
15	Compander	ON、OFF
16	NC(Noise reduction)	ON、OFF
17	5Tone	1~100,Press PTT to transmit
18	2Tone	1~32, Press PTT to transmit
19	Sub channel display	FREQ、VOLT、OFF
20	Key beep	ON、OFF
21	Time out timer	1~30Min、OFF

21	Time out timer	1~30Min、OFF
22	DMTF transmit time	50ms~500ms
23	Squelch level	OFF、1~9
24	Scan pause time	5ST、10ST、15ST、2SP
25	LCD brightness	1~5
26	VOX level	OFF, 1-9
27	VOX delay	0.5-5 Second
28	Tone burst frequency	1750Hz、2100Hz、1000Hz、1450Hz
29	Channel display	FREQ、CH、NAME
30	Reset	FACTORY? INITIALIZE?

5.3 Reset Factory Default

If your radio seems to be malfunctioning because of wrong operation or setup, this function will resume all setup and channels to factory default.

1.Press front panel MAIN key to enter main MENU list.
2.Press V/M or MAIN key to chooe 27th function, the LCD display reset options.
3.Press ▲ / ▼ key to chooe"FACTORY？"。
4.Hold FUN key, until the radio re-power on.

⚠ After reset, all channel and fucntion setting will resume default value.
If choose "INITIALIZE？", only function setting value will resume to default setting.

6.SPECIFICAITONS

GENERAL		
Frequency Range	GMRS: TX: 462.5500-467.7250MHz RX:462.5500-462.7250MHz FM:86.7-108MHz	
Number of Channels	30 channels	
Channel Spacing	25K (Wide Band) 12.5K (Narrow band)	
Phase-locked Step	2.5KHz,5KHz,6.25KHz,10KHz,12.5KHz,15KHz,20 KHz,25KHz,30KHz,50KHz	
Operating Voltage	DC 13.8V±15% (Standard version) DC 12V~28V (Optional version)	
Squelch	Carrier/CTCSS/DCS/5Tone/2Tone/DTMF	
Frequency Stability	±2.5ppm	
Operating Temperature	-20℃~+60℃	
Dimensions(mm)	124x101x36m	
Weight	0.45kg (mian unit)	
RECEIVER		
	Wide band	Narrow band⩽0.25μV
Sensitivity (12dB Sinad)	⩽0.25μV	⩽0.35μV
Adjacent Channel Selectivity	⩾70dB	⩾60dB
Audio Response	+1~-3dB(0.3~3KHz)	+1~-3dB(0.3~2.55KHz)
Hum & Noise	⩾45dB	⩾40dB
Audio distortion	<3%	
Audio power output	>2W@10%	
TRANSMITTER		
	Wide band	Narrow band
Power Output	<=20W	
Modulation	16KΦF3E	11KΦF3E

Adjacent Channel Power	≥70dB	≥60dB
Hum & Noise	≥40dB	≥36dB
Spurious Emission	≥60dB	≥60dB
Audio Response	+1~-3dB(0.3~3KHz)	+1~-3dB(0.3~2.55KHz)
Audio Distortion	≤5%	

6. Factory default settings

CH.	TX	RX	GMRS		Subaudio
			POWER	W/N	
1	462.5625	462.5625	5W	12.5KHz	67.0
2	462.5875	462.5875	5W	12.5KHz	118.8
3	462.6125	462.6125	5W	12.5KHz	127.3
4	462.6375	462.6375	5W	12.5KHz	131.8
5	462.6625	462.6625	5W	12.5KHz	136.5
6	462.6875	462.6875	5W	12.5KHz	141.3
7	462.7125	462.7125	5W	12.5KHz	146.2
8	/	/	/	/	/
9	/	/	/	/	/
10	/	/	/	/	/
11	/	/	/	/	/
12	/	/	/	/	/
13	/	/	/	/	/
14	/	/	/	/	/
15	462.5500	462.5500	20W	12.5KHz	123
16	462.5750	462.5750	20W	12.5KHz	D743I
17	462.6000	462.6000	20W	12.5KHz	D332I
18	462.6250	462.6250	20W	12.5KHz	127.3
19	462.6500	462.6500	20W	12.5KHz	D243I
20	462.6750	462.6750	20W	12.5KHz	D606N
21	462.7000	462.7000	20W	12.5KHz	D731I
22	462.7250	462.7250	20W	12.5KHz	136.5
23	467.5500	462.5500	20W	12.5KHz	136.5
24	467.5750	462.5750	20W	12.5KHz	136.5
25	467.6000	462.6000	20W	12.5KHz	136.5
26	467.6250	462.6250	20W	12.5KHz	136.5
27	467.6500	462.6500	20W	12.5KHz	136.5
28	467.6750	462.6750	20W	12.5KHz	136.5
29	467.7000	462.7000	20W	12.5KHz	136.5
30	467.7250	462.7250	20W	12.5KHz	136.5

Warnings

RF ENERGY EXPOSURE AND PRODUCT SAFETY GUIDE FOR PORTABLE WALKIE TALKIE

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 o 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 document ed 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 su cient distance from a properly installed externally-mounted antenna to satisfy the RF exposure requirements.
•Occupational/Controlled Radio, this radio is designed for and classified Occupational/Controlled Use Only",meaming 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/uncon trolled 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:

- 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:

- 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

Long transmission

- When the transceiver is used for long ransmissions, 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.

Toreduce 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:

Guarantee

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.