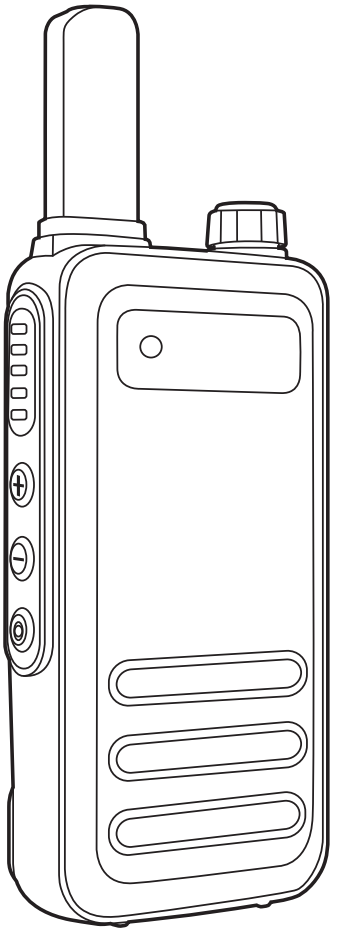
RETEVIS



RB47
User Manual

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User Safety Information

To use the two way radio securely and high-effectively, please read the following safety information:

*The repair of the two way radio is responsible for technical, don't disassemble and install it by yourself.

*Use the specified battery and charger of the two way radio.

*Please turn off the two way radio before entering the flammable and explosive environments

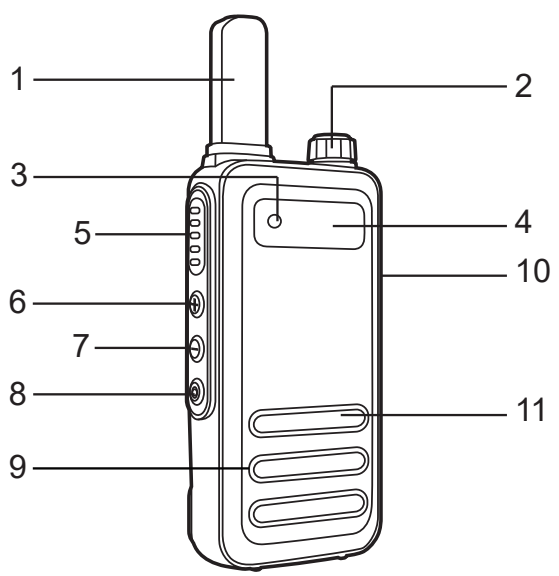
*To avoid the problem caused by electromagnetic interference, turn off the two way radio in the place with "Please Turn Off the two way radio".

*Don't use the damaged antenna, it may cause a slight skin burn when touching the skin.

Warranty! If you carry the two way radio around you, ensure that the antenna is at least 2.5cm away from your body when transmitting.

●FRS Strong Reception
● IP67 Waterproof
● Scan Function
● Easy Pairing
● VOX Function
● Powerful Flashlight (Optional)
● English Broadcasting
● Selectable H/L Power
● Busy Channel Lockout
●Low Battery Alert
● Special code mode
● Super-long Standby
● 50 CTCSS/208 DCS (Set Non-standard CTCSS/DCS）

Radio Function



1.Antenna
2.Volume/Power Knob
3.Indicator
4.Standby Indicator
5.PTT
6.UP Key
7.DOWN Key
8.Function Key
9.Speaker
10.Earpiece Jack
11.Microphone

Charging Attentions (1)

●The Li-ion battery doesn't recharge at the factory, please recharge it in the environmental temperature between 5-40℃ before using.

● After purchase or long-term storage (more than 2 months), the battery can't reach its full capacity when charging it for the first time. After repeated charging/discharging two or three times, the normal charging effect and battery energy can be achieved.

● Before charging, please turn off the two way radio with the battery. Don't use the battery during charging, otherwise, it will affect the normal charging of the battery or cause accidental danger.

● After the battery is fully charged, please take it out of the charging base. Don't overcharge for a long time to shorten the battery life. The battery energy (power) is not fully used, please do not recharge it. Otherwise, it will cause damage to the memory effect.

●When the usage time of the battery does not increase even if it is charged fully correctly, it means that the life of the battery has expired, please replace or purchase a new battery.

Charging Attentions (2)

● First insert the small output plug of the "Fire Bull" into the socket behind the "charger", and then insert the plug of the Fire Bull into the 110~220V mains power supply, and the green indicator of the charger will be on.

● Insert the battery or the walkie-talkie with the battery on the charging stand, and confirm that the battery or the walkie-talkie is in normal contact with the charging terminal. When charging, the red light is on, and the charging starts. The green light turns on when fully charged.

Basic Operations

Power/Volume Knob

● Clockwise rotate the knob and a click is heard, the two way radio is turned on. Anticlockwise rotate the knob and a click is heard, the two way radio is turned off.

● Press the Custom key to enter monitor mode and hear the noise, while rotating the volume knob to adjust the volume.

Channel Selection

In power-on state, shortly press the UP key or DOWN key to circularly choose the channel.

The receive indicator lights up and the speaker makes a sound when receiving the proper signal.

PTT Transmitting Key

Keep the microphone away 3-8cm from your mouth when pressing the PTT key. Speaking towards the microphone in a normal tone, the receiver can get the best voice quality.

Standby Indicator

After two way radio enters battery save mode, standby indicator on the Logo flashes once every 20s.

Function Introductions

Monitor Function
In power-on state, UP (long) is custom defined as monitor function, long press the UP key for 2s to enter/exit the monitor mode.

Flashlight (Optional)
The function needs to be equipped with the matching flashlight. After turning on the two way radio, shortly press the function key and hear a beep, the flashlight is in level 1. Shortly press the function key and hear a beep again, the flashlight enters level 2 (Powerful Flashlight Mode). Shortly press the function key and hear a beep for the third, exit the flashlight function.

Scan Function
Scan function is convenient for users to search the other users' calls on other channels. When the UP (long) is defined as the scan function through the programming software, long press the UP key for 2s and two way radio prompts ON, the 1-22 channels will automatically increase enter the scan mode. The two way radio will start scanning from the current channel. When scanning the matching carrier and CTCSS/DCS signal, you can communicate. If you don't press the PTT key or not receive the signal in 4s, the two way radio will continue to scan. In scan mode, long press the UP key for 2s and the two way radio prompts OFF, exit the scan mode.
(Note: when scan is added less 2 in the programming software, the two way radio can't scan).

Carrier Scan: when the two way radio detects a signal, scan stops and keeps in the same frequency until the signal stops. There is a 4s delay between the signal disappears and the scan restores.

Time Scan: when the two way radio detects a signal, scan stops and keeps for 5s, the two way radio continues to scan even if the signal exits.

Emergency Alarm Function
Long press the DOWN key for 2s, the indicator lights up and emergency alarm sound rings, and the emergency alarm signal is sent. In the receiving range, the same frequency two way radio can receive alarm signal, press the PTT key to end emergency alarm send.

Channel Lock Function
Long press the function key for 2s and a beep is heard, the channel is locked. Long press the function key for 2s and two beeps are heard, the channel is unlocked.

High/Low Power Choice
High/Low power setting can be achieved through the programming software. When the power is low, the two way radio indicator lights up two colors while transmitting.

Voice Broadcast Function
The two way radio has an English voice broadcasting function. The function can be set through programming software.

VOX Function

The VOX refers to the function that speaks towards the two way radio but not pressing the PTT key. The function can be set through the programming software，or press the UP + DOWN key to turn on or off the VOX function(English voice prompts VOX ON/OFF).

On the premise that the VOX is turned on, tick means the VOX is ON, untick means the VOX is OFF.

Easy Pairing

1.Pairing all channels

Adjust the two radios of the same model to channel 2 and turn them off. Press the UP key and turn on radio at the same time, two radios enter the pairing mode (don't interrupt or power-off). Shortly press the PTT key of the copied two way radio to transmit data. After the red indicator of the transmitting two way radio flashes, the 22 channels are copied completely (if it is accidentally interrupted, the completed 2 channel setting re-enter the pairing mode to continue finishing copying; if it is interrupted before not finishing the 2 channel setting, please connect the programming cable to set). After turning off the two radios, two way radio exits the copying status and normally uses after rebooting.

2. Pairing one channel

Adjust the channel to 1 and turn off the two way radio. Press the UP key and turn on the two way radio, the green of the two way radio indicator flashes, the two way radio enters the Easy Pairing one channels mode. When any two way radio transmits（please keep pushing PTT for a moment), the two way radio receives the signal and communicates normally, a channel finishes pairing, and the two way radio will save to the current channel.Turn off the radio to exit the copy status and normally uses after rebooting.

Battery Save

Battery save function can reduce power consumption by reducing the receiving work when the two way radio has no received signal in receiving status. It can extend the use time of the two way radio after charging once. The function can turn on by ticking the battery save in the programming software.

Low Battery Alert

When the battery power is low, the two way radio will have a voice prompt if the voice broadcast is set. When two way radio has a low battery alert, change or recharge the battery in time.

TOT

TOT aims at preventing the two way radio from transmitting for a long time. The time of TOT can be set through the programming software (30s, 60s, ..., 300s; every level step is 30s). Transmit continuously to the set TOT time, the two way radio will stop transmitting and makes a warning sound. Release the PTT key and then press it again to restore transmitting.

CTCSS/DCS

The two way radio has 50CTCSS and 208DCS to be selected. In addition, the

non-standard CTCSS range 30.0-260Hz and the non-standard DCS range D000-D777 can be set (through the programming software).
DCS/DQT has two types: common code and special code. Special code is only effective to set CTCSS to the channel (setting the CTCSS or don not set CTCSS/DCS to the channel is ineffective).
Common code refers to the DQT on the channel is the common code, it can communicate with the two way radio set the same DQT.

Special code mode

Special code refers to the DQT on the channel is the specially processed code. Only when the two way radio from the same factory is set to the DQT, and the special signaling is set at the same time, two way radios can communicate normally. The special code with the same setting on the two way radio of other companies cannot communicate.

CTCSS/DCS cancellation/restoration

In the power-off state, press the UP key and turn on the two way radio to cancel/restore the CTCSS/DCS setting.

Companding

You can choose Yes or No to turn on or off companding function through the programming software (To ensure the sound quality, suggest turning off scramble while turning on companding).

CTCSS (50 Numbers)				
67	69.3	71.9	74.4	77
79.7	82.5	85.4	88.5	91.5
94.8	97.4	100	103.5	107.2
110.9	114.8	118.8	123	127.3
131.8	136.5	141.3	146.2	151.4
156.7	159.8	162.2	165.5	167.9
171.3	173.8	177.3	179.9	183.5
186.2	189.9	192.8	196.6	199.5
203.5	206.5	210.7	218.1	225.7
229.1	233.6	241.8	250.3	254.1
DCS (208 Numbers)				
D023N	D025N	D026N	D031N	D032N
D036N	D043N	D047N	D051N	D053N
D054N	D065N	D071N	D072N	D073N
D074N	D114N	D115N	D116N	D122N

DCS (208 Numbers)				
D125N	D131N	D132N	D134N	D143N
D145N	D152N	D155N	D156N	D162N
D165N	D172N	D174N	D205N	D212N
D223N	D225N	D226N	D243N	D244N
D245N	D246N	D251N	D252N	D255N
D261N	D263N	D265N	D266N	D271N
D274N	D306N	D311N	D315N	D325N
D331N	D332N	D343N	D346N	D351N
D356N	D364N	D365N	D371N	D411N
D412N	D413N	D423N	D431N	D432N
D445N	D446N	D452N	D454N	D455N
D462N	D464N	D465N	D466N	D503N
D506N	D516N	D523N	D526N	D532N
D546N	D565N	D606N	D612N	D624N
D627N	D631N	D632N	D654N	D662N
D664N	D703N	D712N	D723N	D731N
D732N	D734N	D743N	D754N	D023I
D025I	D026I	D031I	D032I	D036I
D043I	D047I	D051I	D053I	D054I
D065I	D071I	D072I	D073I	D074I
D114I	D115I	D116I	D122I	D125I
D131I	D132I	D134I	D143I	D145I
D152I	D155I	D156I	D162I	D165I
D172I	D174I	D205I	D212I	D223I
D225I	D226I	D243I	D244I	D245I
D246I	D251I	D252I	D255I	D261I
D263I	D265I	D266I	D271I	D274I
D306I	D311I	D315I	D325I	D331I
D332I	D343I	D346I	D351I	D356I
D364I	D365I	D371I	D411I	D412I

D413I	D423I	D431I	D432I	D445I
D446I	D452I	D454I	D455I	D462I
D464I	D465I	D466I	D503I	D506I
D516I	D523I	D526I	D532I	D546I
D565I	D606I	D612I	D624I	D627I
D631I	D632I	D654I	D662I	D664I
D703I	D712I	D723I	D731I	D732I
D734I	D743I	D754I		

Technical Parameters

General	
Frequency Range	FRS
Rated Voltage	DC 3.7V
Memory Channel	22
Antenna	Built-in Antenna
Antenna Impedance	50Ω
Working Methods	Frequency simplex mode
Grounding Methods	Negative Electrode
Dimension	146x58x23.6mm (belt clip not included)
Receiver	
Sensitivity	<0.16μV(12dB SINAD)
Audio Power	800mw
Audio Distortion	<6%
Receiving Current	≤300mA
Standby Current	≤25mA
Transmitter	
RF Power	2W/0.5W
Modulation Mode	FM (F3E)
Maximum Frequency Deviation	≤2.5KHz
Pre-emphasis	6dB per frequency multiplier
Transmitting Current	≤1.2A

Note: if specifications change because of the improved technology, please forgive not informing any more.

Serial number	Frequency	Sub audio	Power
1	462.5625	67.0	2W
2	462.5875	118.8	2W
3	462.6125	127.3	2W
4	462.6375	131.8	2W
5	462.6625	136.5	2W
6	462.6875	141.3	2W
7	462.7125	146.2	2W
8	467.5625	D243N	0.5W
9	467.5875	D032N	0.5W
10	467.6125	D047N	0.5W
11	467.6375	D051N	0.5W
12	467.6625	D053N	0.5W
13	467.6875	D065N	0.5W
14	467.7125	D116N	0.5W
15	462.5500	123.0	2W
16	462.5750	D743I	2W
17	462.6000	D332I	2W
18	462.6250	127.3	2W
19	462.6500	D243I	2W
20	462.6750	D606N	2W
21	462.7000	D731I	2W
22	462.7250	136.5	2W

RF ENERGY EXPOSURE AND PRODUCT SAFETY GUIDE FOR 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.

•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/

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 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.

RF Exposure Compliance and Control Guidelines and Operating Instructions

•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.
•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.
•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.

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

••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.

Cut along this line

CE FC RoHS

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MADE IN CHINA