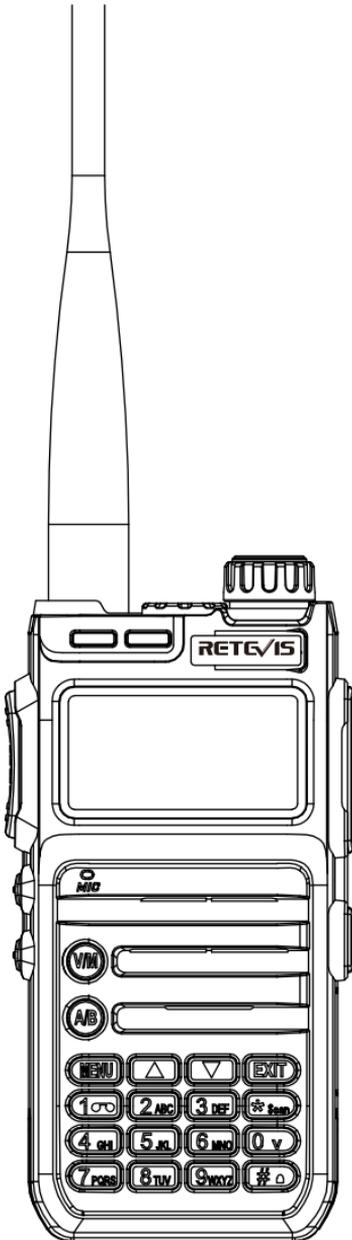


RETAVIS



RA85 User's manual

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FEATURE

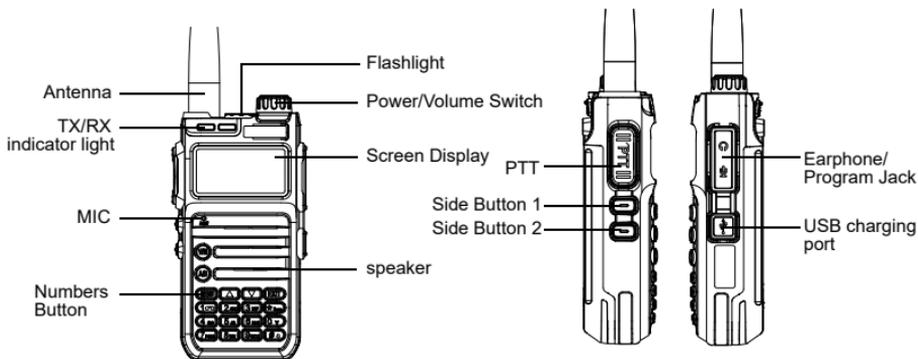
- Frequency Range: GMRS
- Dual Band, Dual Display, Dual Standby
- High Power, middle power, low power switching to meet the different talking distance, save power
- Up to 60 memory channels for programming frequency and other various data
- Multiple display modes such as channel number, frequency, channel frequency, channel name, etc.
- CTCSS/DCS, DTMF signaling reject unnecessary calls from other stations
- The tail tone is eliminated to avoid the noise from the speaker after the call is over
- VOX sound activated, no need to press the PTT button to talk
- Emergency alarm, ANI identification and other functions through DTMF
- DTMF, CTCSS (60.0 -259.9 HZ), DCS signaling codec function
- 8-step frequency selection (2.5K, 5.0K, 6.25K, 10.0K, 12.5K, 20.0K, 25.0K, 50.0K)
- Automatic power saving function to extend battery life
- SOS emergency alert function
- Digital FM radio (receiving 65-108MHz)
- Menu item keyboard number direct selection function, transmit and receive frequency can be manually input
- Flashlight lighting function
- Frequency measurement function, copy the frequency of other devices at any time
- USB charging function, you can use the USB charging cable to charge

Unpacking and Checking Equipment

The box contains the following items. If any items are missing or damaged, please contact the dealer where you purchased the product.

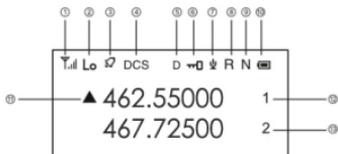
Product	Quantity	Product	Quantity
Radio	1	Charging Base	1
Battery	1	Belt clip	1
Manual	1		
Hand Strap	1		

Radio Introduction



Status Indicator

Status Icon



NO.	Icon	Product Status
1		Channel strength indicator, the more the number, the stronger the signal
2		The current transmitting power is high power (the longest communication distance, the highest power consumption)
		The current transmitting power is medium power (more power saving, relatively moderate communication distance)
		The current transmitting power is low power (the most power saving, relatively close distance)
3		This symbol appears when the side tone switch is set to button side tone/button+identity code/identity code
4		This symbol indicates that the current status is DCS
		This symbol indicates that the current status is CT
5		This symbol indicates that dual frequency waiting is on and it is in a dual-waiting status.
6		This symbol appears when the buttonboard is locked, press 【#】 button to unlock and it disappears
7		This symbol indicates that the VOX function is activated, and the emission will start when the sound pressure level of the microphone reaches the set value
8		Receiving and transmitting frequency inversion in frequency mode/channel mode
9		It appears when the channel is working in a narrowband mode
10		Display the current remaining power of battery
11		A/B band pointer, indicating the current working frequency or working channel
12	Aranbic No.	Band A current channel number in channel mode
13	Aranbic No.	Band B current channel number in channel mode

LED Indicator

The LED indicators of this radio can let you easily grasp the current operating status.

Indicator status	Radio Status
Red light long bright	Transmitting
Green light long bright	Receiving

Preparation

Battery Installation

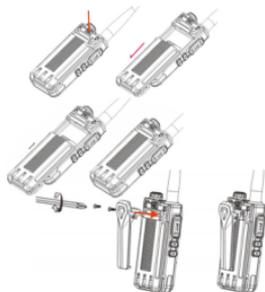
- Align the battery with the battery mount on the back of the radio
 - Press the battery forcefully into the walkie-talkie, and slide the battery up until the lock plate is locked to the correct position
- If you need to remove the battery, turn off the radio. Press the battery lock to the unlocked position and hold it down, then slide the battery down and away from the battery mount.

Belt Clip Installation

Align the two screw holes of the belt clip with the screw holes above the battery, install and tighten the screws.

If you need to remove the belt clip, loosen and remove the screws from the belt clip

Install an external headset/microphone (optional purchase separately)



1. Open the earphone cover.
 2. Insert the headphone plug into the headphone jack.
- When you don't need to use the earphones, pull out the earphone plug from the earphone hole and put on the earphone cover.

When the universal interface is not used, please put on the dust cover.

Do not shake the radio with the top of the antenna, otherwise it will reduce the working performance and service life of the antenna.



Radio Charging

Note:

- Please use the charging equipment designated by our company to charge. When charging the whole device, please turn off the radio first.
- According to the 2016 new requirements of the International Civil Aviation (IATA) "Technical Regulations for the Safe Air Transport of Dangerous Goods", the state of charge of lithium-ion batteries (cells) for air transport shall not exceed 30% of its rated capacity. Therefore, the first time the battery is used with the host, there will be a low battery warning with the voice prompt "Please charge" phenomenon, please charge the battery before use.

When using the radio for the first time, a low battery alarm may appear. Please charge the battery before using, follow the steps :

1. Insert the power adapter interface into the jack on the back of the charging base.
2. Insert the plug of the power adapter into the power socket.
3. Put the battery into the charging cradle.
4. Observe the LED indicator of the charging base to understand the current charging status, as shown in the table below.

Charing Base LED Indicator	Current Charging Status
Red light flashing	Lower battery voltage
Red light is on	Charging
Green light on	Finished charging



Check Battery Power

This function allows you to know the current battery voltage and remaining power.

Long press **[0]** key to display the current voltage.

The current battery level is displayed on the upper right of the screen, and the battery level icons are as follows:

Battery Icon	Batter Power
	High
	Middle
	Low
	insufficient

Basic operation

Knobs, Switches, Buttons	Instructions
Power/volume Switch	<p>Turn on/off: Turn the [Power/Volume Switch] knob clockwise to turn on the radio and adjust the volume to the maximum.</p> <ul style="list-style-type: none"> • Turn the [Power/Volume Switch] knob counterclockwise to adjust the volume to the minimum until the radio is turned off. • If the voice broadcast function is turned on, the startup voice will be broadcast.
Select Channel	<p>The channel is the aisle through which the signal is transmitted. After power on, press the [V/M] key to switch to the channel mode, press [J] to select the channel, and the channel number will be displayed on the right side of the screen.</p> <ul style="list-style-type: none"> • If the channel broadcast function is turned on, the intercom will broadcast the current channel mode.

PTT Button Call	<ul style="list-style-type: none"> • Channel mode to initiate a call: After selecting a channel, press and hold the [PTT] key to initiate a call to the current channel. Speak into the microphone in a normal tone. When a call is initiated, the red LED light is always on. • Manually input frequency to initiate a call: Press the [V/M] key to switch to frequency mode, enter a frequency within the allowable range, and hold down the [PTT] key to initiate a call to the current channel. Speak into the microphone in a normal tone. When a call is initiated, the red LED light is always on. • Receiving a call: After releasing the [PTT] key, you can answer it without any operation. When receiving a call, the green LED light is always on. <p>To ensure the best receiving volume, please keep the distance between the microphone and your mouth at 2.5 cm ~ 5 cm when transmitting.</p>
SK1 (Side Key 1)	<p>The side buttons have two modes: short press and long press, and the following functions can be selected: off, flashlight, alarm, radio, NOAA weather forecast, monitoring, and frequency sweeping.</p> <p>Off: No function</p> <p>Flashlight function: Short press the [SK1] key to turn on the flashlight function and the flashlight light is always on; short press the [SK1] key again to turn off the flashlight function. If you choose to operate the flashlight function in the menu mode, short press the [SK1] key the first time the flashlight lights up, short press the second time the flashlight light continues to flash, short press three times the flashlight light to turn off.</p> <p>Alarm: SOS emergency alarm function: Short press the [SK1] key to turn on the alarm function. At this time, the green indicator light and the red indicator light flash at the same time. Short press the [SK1] key again to release the alarm.</p> <p>Radio: Short press the [SK1] key to turn on the radio function, and short press the [SK1] key again to turn off the radio.</p> <p>The radio frequency can be entered through the keyboard or tap the "#" key to automatically search for radio stations. In radio mode, press the [EXIT] key to switch between 65-75/76-108MHz frequency band.</p> <p>NOAA weather forecast: Short press the [SK1] key to turn on the NOAA function, and short press the [SK1] key again to turn off the NOAA function.</p> <p>Press the up and down keys to select the channel: 10 channels for selection: see Appendix 1 for details</p> <p>Monitoring function: Short press the [SK1] key to turn on the monitoring function, and release the [SK1] key to cancel the monitoring.</p> <p>Sweep: Short press [SK1] to turn on the sweep function, and directly measure the frequency of other devices.</p>
SK2 (Side key 2)	Same side key SK1, with short press and long press function to choose
V/M Key	<p>Frequency mode or channel mode switching.</p> <ul style="list-style-type: none"> • Frequency mode: Manually enter the frequency. • Channel mode: Press [▲ / ▼] to select a channel.
A/B Key	<p>A/B upper and lower frequency band switch selection.</p> <p>Press the PTT button to transmit in the frequency band pointed to by the pointer.</p>
Keyboard Lock and Unlock	<p>Manual lock: Long press # key to lock the intercom.</p> <p>Automatic lock: After the automatic keyboard lock is turned on, when there is no operation on the buttons and knobs, the automatic lock will be delayed for 10 seconds.</p> <p>Unlock: Long press # key to unlock the keyboard.</p>

Function Description

Menu Settings

You can enter "Menu Settings" through the menu key to set some common functions. The specific instructions and operation methods are as follows:

Menu No.	Primary menu display characters	Secondary menu display characters	Secondary menu setting description
0	Squelch	0,...,9	Squelch level, the lower the level, the easier it is to interfere, the higher the level the worse the sensitivity, the default value is 3.

1	Step	2.5KHz	In frequency mode, press ▲ / ▼ key to change the step value of frequency, the value range is 2.5~50KHz
		5.0KHz	
		6.25KHz	
		10.00KHz	
		12.50KHz	
		20.0KHz	
		25.0KHz	
		50.0KHz	
2	Tx Power	High	High power transmission
		Middle	Medium power transmission
		Low	Low power transmission
3	Power save	OFF	Turn off power saving mode
		ON	Turn on power saving mode
4	Vox Level	OFF	Turn off VOX
		1,2,... 10	The level intensity of voice activation, the value range is 1~10
5	Backlight	Bright	Backlight is always on
		OFF	Backlight off
		5Sec,10Sec,... 60Sec	Automatic backlight delay time, the range is 5~60 seconds
6	Menu Exit Time	5Sec,10Sec,... 60Sec	Automatic backlight delay time, the value range is 5~60 seconds
7	Dual Standby	OFF	Dual Standby off
		ON	Dual Standby on
8	Beep Prompt	OFF	Beep Prompt off
		ON	Beep Prompt on
9	VOICE	OFF	Prompt voice off
		ON	Prompt voice on
10	Tx over time	OFF	Press and hold the PTT button to keep transmitting
		15,30,...600	Value range 15~600, step value 15
11	Rx DCS	OFF	DCS off
		D023N,...,D754I	DCS Standard sequence
12	Rx CTCSS	OFF	CTCSS off
		67.0HZ,...,254.1HZ	CTCSS Standard sequence, At the same time, you can directly type standard or non-standard CTCSS by keyboard
13	Tx DCS	OFF	DCS off
		D023N,...,D754I	DCS Standard sequence
14	Tx CTCSS	OFF	CTCSS off
		67.0HZ,...,254.1HZ	CTCSS Standard sequence, At the same time, you can directly type standard or non-standard CTCSS by keyboard
15	DTMFST	OFF	
		DT-ST	
		ANI-ST	
		DT+ANI	
16	TONE	1000hz,1450hz, 1750hz,2100hz	Repeater activation audio
17	S-CODE	1,2, ...,15	When needed, send out this group of information codes (information codes can only be written by frequency writing software)

18	Scan Mode	TO	Time scan
		CO SE	Carrier scan Search mode scan
19	PTT-ID	OFF	Press PTT to not send ID code
		BOT	Press PTT to send ID code (ID code is set by frequency writing software)
		EOT	Release PTT to send ID code
		BOTH	ID code is sent when you press and release the PTT button
20	MDF-A	Frequency	In the channel mode of the A segment, the channel displays the frequency
		Name	In the channel mode of section A, the channel displays the channel name (the specific name is set in the frequency writing software)
21	MDF-B	Frequency	In the channel mode of section B, the channel displays the frequency
		Name	In the channel mode of section B, the channel displays the channel name (the specific name is set in the frequency writing software)
22	Busy Lockout	OFF	Allowed to transmit when channel is occupied and
		ON	Forbide to transmit when channel is occupied
23	Key Auto Lock	OFF	Automatic keyboard lock off
		ON	Automatic keyboard lock on
24	Key1 sp	OFF	No function
		LAMP	Turn on the flashlight function
		SOS	Turn on the alarm function
		FM	Turn on the radio function
		NOAA	Turn on NOAA weather forecast function
		MONI	Turn on the monitoring function
		SEARCH	Turn on the searching function
25	Key1 LP	Same function as side key 1 short press	
26	Key2 sp	Same function as side key 1 short press	
27	Key2 LP	Same function as side key 1 short press	
28	Alarm Mode	On site	
		Send sound	
		Send code	
29	TAIL	OFF	After the PTT is released, the radio does not send a shutdown code, usually when it is relayed through the relay, let it make noise to confirm whether the signal of the radio is relayed
		ON	After releasing the PTT button, the radio sends a shutdown code to suppress the instantaneous noise of the listener
30	PROGER	OF	Turn off the call end alert tone
		ON	Turn on the call end alert tone
31	Language	Chinese	
		English	

32	Reset	VFO	Menu initialization only
		ALL	Menu and channel initialization
33	SPECIAL DCS	OFF	Turn off special DCS
		ON	Turn on special DCS, Only the same DCS code can talk to each other

Main Function Description

The functions supported by the walkie-talkie are shown in the table below.

Name	Function Description
Squelch level adjustment	Squelch level adjustment is to adjust the signal strength required when receiving signal. The squelch level (0 open to 9 is the highest) is selected by the local environment, and 3 is generally selected.
DCS/CTCSS	Used to avoid listening to unrelated calls of the same frequency. Only when the transmitted DCS/CTCSS matches the received DCS/CTCSS, the radio can listen to the voice through the speaker.
TOT	The timeout timer can limit the single transmission time (the default is 60 seconds) to prevent the communication parties from occupying channel resources for a long time, and to prevent the terminal from being damaged due to overheating. After the duration of pressing the [PTT] key expires, the terminal will automatically terminate the transmission and emit a warning tone. If you need to talk again, please transmit after the preset time.
Power saving	When the walkie-talkie has no receiving or transmitting, no button or knob operation reaches the power saving time, it will automatically enter the power saving mode.
Low battery warning	When the battery power is low, it can be charged in time through the sound reminder. When the battery is too low, transmission will be prohibited.
Emergency alert	An emergency alert is when you encounter an emergency, you can ask your companion or the control center for help.
SCAN	After the scan is turned on, the terminal will scan according to the scan list. When it finds activity on a certain channel, it will stay on the channel to listen, so as to understand the current activity status of the relevant group members.
Busy channel lock	Channel busy lock can prevent interference from other terminals on the same channel during transmission. When other terminals occupy the current channel, press and hold the [PTT] key, and the terminal will emit a "beep" tone, indicating that it cannot be transmitted. If the current channel is free, press and hold the [PTT] key to start transmission.
Power level	The power level refers to the transmit power level of the walkie-talkie, which can be set to high power or low power. High power can increase the signal strength of the current transmitted voice of the terminal, and it can also communicate with the remote terminal. Low power can save power.
MONI	Monitoring is a listening method used to receive more signals or weak signals, which helps to distinguish and listen to the faint sounds in the speakers.
Channel broadcast	It is used to indicate the sequence of the current channel.
VOX	After turning on the voice control, when the voice detected by the microphone meets the transmission conditions, the terminal will automatically transmit the voice, and you can speak directly without pressing the [PTT] key. The voice control gain is used to control the sensitivity of the microphone's voice control emission, which is configured by the dealer.

VOX

press the [PTT] key to call, then this function can be enabled. Operation method:

- 1) In the standby mode, press the [MENU] key, the voice prompt "menu setting", enter the function menu setting;
- 2) Press [▲] or [▼] key to select 4 menu number forward or backward; or directly enter the number 4 to enter 4 menu number;
- 3) Press the [MENU] key, the voice prompt "Voice-activated emission", press the [▲] or [▼] key, select 1~10 (the larger the value, the higher the sensitivity; such as selecting 3)
- 4) Press the [MENU] key, the voice prompt "OK", save and return to the previous menu.
- 5) Repeat the above operation, select OFF to turn off the voice-activated transmission function.

 After turning on the voice-activated transmission function, speak into the microphone, and the voice can be sent out; stop speaking, and the transmission will also stop. You can select the VOX sensitivity level according to the quietness of the environment. If the environment noise is too large, long emission will occur after the VOX function is activated.

 If the dual-standby is enabled on this machine, the VOX function is turned off by default, and the VOX function cannot be activated.

Keyboard Lock function

The keyboard lock function disables the number keys to prevent you from activating a function by mistake. This radio can be set to automatic keyboard lock function, the operation is as follows:

- 1) In the standby mode, press the [MENU] key, the voice prompt "menu setting", enter the function menu setting;
- 2) Press the [▲] or [▼] key to select the 23 menu number forward or backward; or directly enter the numbers 2 and 3 to enter the 23 menu number;
- 3) Press [MENU] key, press [▲] or [▼] key to select ON;
- 4) Press the [MENU] key, the voice prompt "OK", save and return to the previous menu. The automatic keyboard lock function is activated.
- 5) Repeat the above operation, select OFF to turn off the automatic keyboard lock function, and select manual keyboard lock. The operation is as follows:

① In the standby state, long press the «#» key for more than 2s, the keyboard lock function is activated (voice prompt "keyboard lock");

② Long press the «#» key repeatedly for more than 2s, the keyboard lock function is closed (voice prompt "keyboard unlock").

 After the automatic keyboard lock function is turned on, when it is not locked, the numeric keyboard is automatically locked without any keyboard operation for 10 seconds.

Dual Standby

When in dual standby mode, the two-way radio can receive the frequency set by the A or B channel. The operation is as follows:

- 1) In the standby mode, press the [MENU] key, the voice prompt "menu setting", enter the function menu setting;
- 2) Press the [▲] or [▼] key to select the 7 menu number forward or backward; or directly enter the number 7 to enter the 7 menu number;
- 3) Press the [MENU] key, the voice prompt "Dual Standby", press [▲] or [▼] key, select ON
- 4) Press the [MENU] key, the voice prompt "OK", save and return to the previous menu. The dual-frequency waiting function is turned on.

 Repeat the above operation and select OFF to turn off the dual-frequency standby function. In the menu mode, the dual-frequency standby is temporarily turned off, and recover after exiting.

 Since the dual-standby mode is in the main and sub-channel scanning state, in the dual-standby mode, even if the power saving function of the unit is turned on, its power saving function is still invalid, and the standby time of the walkie-talkie will be shortened.

CTCSS/ DCS

CTCSS/ DCS is mainly used to avoid listening to unrelated calls on the same frequency. If CTCSS/DCS is set, within the effective communication range, only calls with the same CTCSS/DCS set in the channel can be received; but if CTCSS/DCS signaling is not set, you can listen to the effective communication range All calls on the same channel.

Side Tone Switch

Key side tone: The radio emits key side tone when sending key side tone

ID code side tone: When sending the ID code, the radio will emit the ID code side tone

Button side tone + ID code side tone: When sending button side tone and ID code side tone, the radio emits the corresponding sound

Note: Button side tone: including number key side tone and TONE tone

USB charging

The walkie-talkie can be directly plugged into the USB charging cable and charging with a power bank.

Frequency Measurement Function

Press **MENU** + **[*]** key to enter the frequency measurement mode, press **[▲]** or **[▼]** key to select U segment or V segment. When the signal is received, if the current frequency has CTCSS/DCS, it will be displayed on the screen at the same time, press **MENU** the key, you can save the current frequency. Or you can select the shortcut operation method by pressing the side button.

Optional Accessories

Please use the accessories specified by our company.

 If you use unlicensed accessories without authorization, all consequences caused by this will be the responsibility of the user.

Please consult your local dealer for optional accessories of the walkie-talkie.

Main Technical Specifications

Frequency Range	GMRS
Memory channels	60
Frequency step	12.5kHz
Input voltage	7.4 VDC
Battery(standard configuration)	1800mAh(Li-Ion)
Battery life (5-5-90,high power transmission)	About 14 Hours
Power: Consumption in standby	≤65mA
Consumption in reception	≤450 mA
Consumption in transmission	≤1.8 A @high power , 850 mA @ low power
Frequency stability	±2.5ppm
Operating temperature	-20 °C to +60 °C
Antenna impedance	50Ω
Dimensions (With battery, but without antenna)	121×61×33mm
Weight (Including antenna and battery)	223g
Transmit output power	5W/0.5W
Modulation	11K0F3E@12.5KHz
Spurious emission	-36dBm < 1GHz, -30dBm > 1GHz
FM signal-to-noise ratio	40dB @12.5KHz
Audio distortion	≤5%
Modulation limit	±2.5 KHz@12.5 KHz
Adjacent channel power	60dB @ 12.5KHz
Audio response (300-3000Hz)	+1~3dB
Receiving sensitivity	0.25μV (12dB SINAD)
Adjacent channel selectivity	≥55dB@12.5KHz
Intermodulation immunity	≥55dB@12.5KHz
Conducted spurious emissions	≤-57dB @12.5KHz
FM signal-to-noise ratio	≥40dB @12.5KHz
Audio output power	1W @16ohms
Audio distortion	≤5%
Audio response(300-3000Hz)	+1 ~-3dB



All specifications are subject to change without notice or responsibility.

CH	TX	RX	GMRS		CTC/DCS
			Power	W/N	
1	462.5625	462.5625	5W	12.5KHz	67
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	467.5625	467.5625	0.5W	12.5KHz	D243N
9	467.5875	467.5875	0.5W	12.5KHz	D032N
10	467.6125	467.6125	0.5W	12.5KHz	D047N
11	467.6375	467.6375	0.5W	12.5KHz	D051N
12	467.6625	467.6625	0.5W	12.5KHz	D053N
13	467.6875	467.6875	0.5W	12.5KHz	D065N
14	467.7125	467.7125	0.5W	12.5KHz	D116N
15	462.55	462.55	5W	12.5KHz	123
16	462.575	462.575	5W	12.5KHz	D743I
17	462.6	462.6	5W	12.5KHz	D332I
18	462.625	462.625	5W	12.5KHz	127.3
19	462.65	462.65	5W	12.5KHz	D243I
20	462.675	462.675	5W	12.5KHz	D606N
21	462.7	462.7	5W	12.5KHz	D731I
22	462.725	462.725	5W	12.5KHz	136.5
23	467.55	462.55	5W	12.5KHz	136.5
24	467.575	462.575	5W	12.5KHz	136.5
25	467.6	462.6	5W	12.5KHz	136.5
26	467.625	462.625	5W	12.5KHz	136.5
27	467.65	462.65	5W	12.5KHz	136.5
28	467.675	462.675	5W	12.5KHz	136.5
29	467.7	462.7	5W	12.5KHz	136.5
30	467.725	462.725	5W	12.5KHz	136.5
31	462.5625	462.5625	5W	12.5KHz	67
32	462.5875	462.5875	5W	12.5KHz	118.8
33	462.6125	462.6125	5W	12.5KHz	127.3
34	462.6375	462.6375	5W	12.5KHz	131.8
35	462.6625	462.6625	5W	12.5KHz	136.5
36	462.6875	462.6875	5W	12.5KHz	141.3
37	462.7125	462.7125	5W	12.5KHz	146.2
38	467.5625	467.5625	0.5W	12.5KHz	D243N
39	467.5875	467.5875	0.5W	12.5KHz	D032N
40	467.6125	467.6125	0.5W	12.5KHz	D047N
41	467.6375	467.6375	0.5W	12.5KHz	D051N
42	467.6625	467.6625	0.5W	12.5KHz	D053N
43	467.6875	467.6875	0.5W	12.5KHz	D065N
44	467.7125	467.7125	0.5W	12.5KHz	D116N
45	462.55	462.55	5W	12.5KHz	123

46	462.575	462.575	5W	12.5KHz	D743I
47	462.6	462.6	5W	12.5KHz	D332I
48	462.625	462.625	5W	12.5KHz	127.3
49	462.65	462.65	5W	12.5KHz	D243I
50	462.675	462.675	5W	12.5KHz	D606N
51	462.7	462.7	5W	12.5KHz	D731I
52	462.725	462.725	5W	12.5KHz	136.5
53	467.55	462.55	5W	12.5KHz	136.5
54	467.575	462.575	5W	12.5KHz	136.5
55	467.6	462.6	5W	12.5KHz	136.5
56	467.625	462.625	5W	12.5KHz	136.5
57	467.65	462.65	5W	12.5KHz	136.5
58	467.675	462.675	5W	12.5KHz	136.5
59	467.7	462.7	5W	12.5KHz	136.5
60	467.725	462.725	5W	12.5KHz	136.5

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.

•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 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.

Safety Operation



WARNING

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



WARNING

•Contact Retevis for assistance regarding repairs and service.

•The adapter shall be installed near the equipment and shall be easily accessible

•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.





CE FC RoHS



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