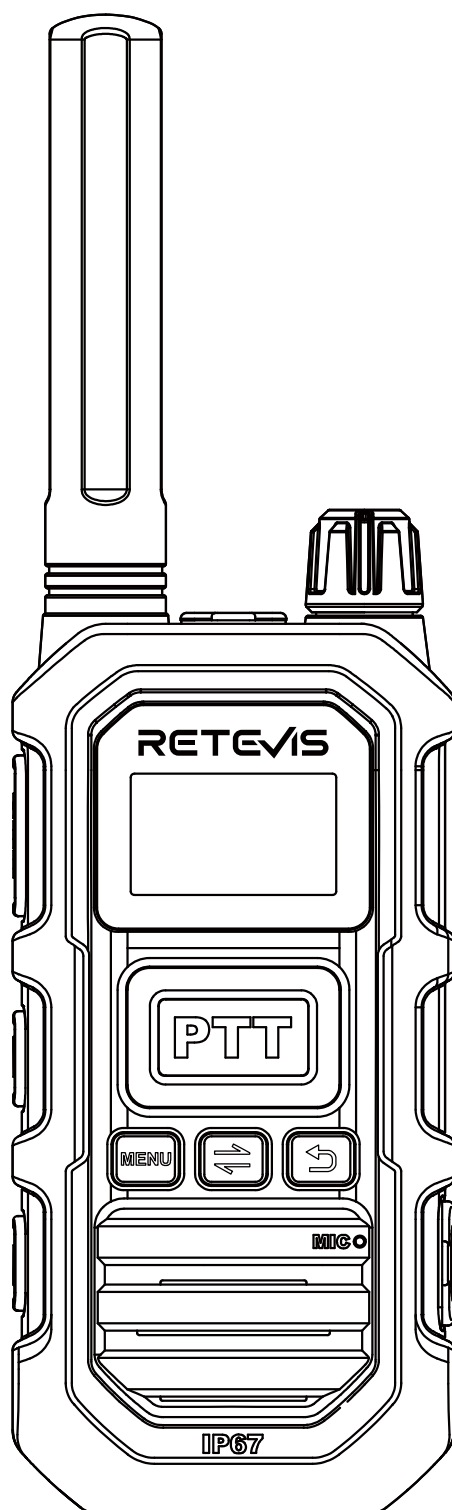


RETEVIS



RB48D USER'S MANUAL

Built with rugged durability, stable performance, and straightforward operation, this device provides reliable team communication for years to come. Please read this manual carefully to master all operating points, ensuring optimal performance and easy handling of various usage scenarios.

Introduction

The RB48D is a handheld digital transceiver designed for business communications in the UHF professional radio frequency band. This transceiver offers comprehensive operational features for versatile and reliable business communications.

The RB48D supports up to 512 channels. Key channel frequencies are stored in the CPU flash memory and can be easily customized via CPS.

The following sections detail the advanced features of the RB48D transceiver. After reading this manual, consult your radio equipment administrator for detailed configuration information for local use.

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For downloading further resources:

Brochures, Software/Firmware, Manual etc, Please contact
your direct reseller first OR go to website retevis.com and
check “support” in the each product link to download it.

Factory Default Frequencies

	No.	Frequency UHF (MHz)	Power	Contact
Digital Channel Zone 1: First 8 channels Zone 2: Last 8 channels	1	461.11250	High	Call 1
	2	461.13750	High	Call 1
	3	461.16250	High	Call 1
	4	468.56250	High	Call 1
	5	468.61250	High	Call 1
	6	468.66250	High	Call 1
	7	456.33750	High	Call 1
	8	456.43750	High	Call 1
	9	459.60625	High	Call 1
	10	448.19375	High	Call 1
	11	469.36875	High	Call 1
	12	449.31250	High	Call 1
	13	459.12500	High	Call 1
	14	444.55000	High	Call 1
	15	457.17500	High	Call 1
	16	442.87500	High	Call 1

Note: Call 1 is a group call with ID 1

*Note: To prevent radio interference caused by unauthorized frequency transmission, users are not permitted to modify channels pre-configured by the manufacturer, equipment supplier, commissioning technician, or maintenance personnel.

Operating frequency bands may vary by model. Commercial transceivers must comply with local regulations (e.g., EU member state requirements). If your region restricts the use of such devices or requires a license, operating frequencies will be set by the dealer or system administrator and cannot be modified by users. For more details, contact your dealer or system administrator.

Specifications

Frequency Band	400-470MHz
Number of Channels	Prohibited bands: FRS/PMR446 Max 512 channels supported, up to 16 zones can be created (when switching zones, the last used channel is retained — e.g., Zone 1 Channel 3, switching to Zone 2 then back to Zone 1 remains on Channel 3). Max 32 channels per zone. Factory default: 2 zones, first 8 channels in Zone 1, last 8 channels in Zone 2. Factory default: all-channel mode, digital format.
Antenna Impedance	50Ω
Operating Temperature	-30°C to 60°C
Charging Temperature	0-40°C
Charging Time	4.2±0.5h
Operating Time - 5590	Digital: 11.5h Analog: 16h
Standby Time	Max 29h
Operating Voltage	DC7.4V
IP Rating	IP67 (ensure silicone plugs on audio jack and charging port are tightly sealed)
Dimensions	H×W×L: 137 × 33 × 60.5 mm (excluding antenna and knob); 205.55 × 33 × 60.5 mm (including antenna)

Operating frequency bands may vary by region. Commercial transceivers must comply with local radio management regulations. If local restrictions apply or licensing is required before use, operating frequencies will be pre-set by the dealer or system administrator and cannot be modified by users. For details, consult your dealer or system administrator.

Note: To prevent radio interference from unauthorized frequency transmission, channels pre-configured by the manufacturer, equipment supplier, technical commissioning personnel, and maintenance staff cannot be modified by users.

Transmitter Specifications

RF Output Power	Low 1watts or HI 5watts
Frequency error	±2.5ppm
Channel Spacing	12.5kHz
Modulation Limiting	2.5kHz
Free Time Slot Power	≤-57dB
Audio Distortion	< 5%
Modulation BER(Bit Emor Rate)	≤5%

Receiver Specifications

DMR Sensitivity	≤-115dBm (1%BER) ≤-122dBm (5%BER)
FM Sensitivity	≤-121dBm@12dB sinad
Adjacent Channel Selectivity	W:≥70dB N:≥60dB
Inter-modulation	≥65dB
Block	≥84dB
S/N	45dB
Audio Output Power	Max 2W@16ohms
Audio Distortion	≤5%

Main Functions and Features

- DMR Digital Transceiver
- English Voice Prompts
- Analog Monitor
- Up to 16 zones, max 32 channels per zone, 512 channels total
- AES256/ AES128/ARC4/NORMAL
- High/Low Power Switching
- VOX
- TOT Time-Out Alarm
- TOT Re-Key Delay
- Power-Saving Mode
- Battery Level Indicator
- Talk Around Mode
- Lone Worker
- Scan
- Emergency Alarm
- All Call / Group Call / Private Call
- Smart Volume
- One-Touch Call
- Noise Reduction
- CTCSS/DCS
- Man Down Alarm

Unboxing and Accessory Inspection

Thank you for choosing this transceiver. Before use, please follow these inspection steps:

- Check the outer packaging for damage;
- Carefully unpack and verify that all accessories are included. If any accessories are missing or damaged during shipping, contact your dealer promptly.

Battery Charging Instructions

Please use our company's charging adapter and follow these steps to charge the battery:

Plug the charger into a power outlet.

Insert the standalone battery or the transceiver with battery installed. The indicator light turns red, indicating charging is in progress.

When the red light turns off and the green light stays on, the battery is fully charged.

Disconnect the charger from power and remove the battery.

Battery Guidelines

Batteries are not fully charged at the factory. Please complete a full charge before first use. Initial charging on a new unit, or recharging after storage exceeding 2 months, may not reach full capacity. Battery capacity will restore to

optimal levels after 2–3 full charge–discharge cycles.



Do not continue charging after the battery is fully charged, as this will shorten battery service life.

Precautions

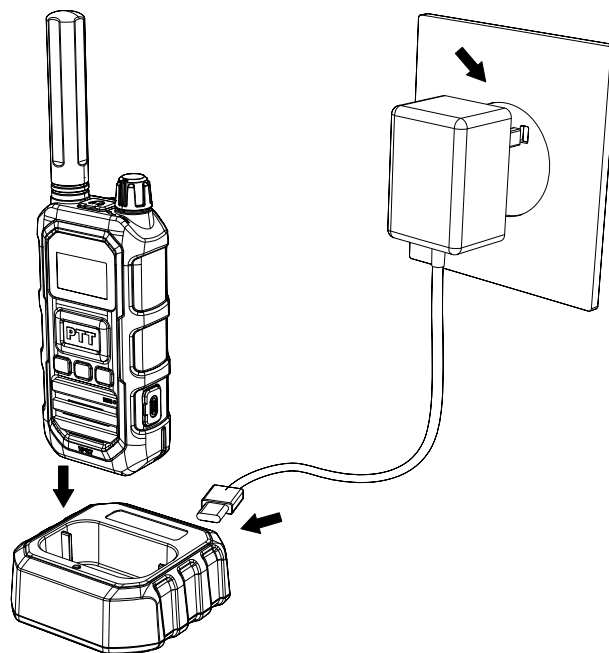
1. Charge in ambient temperatures between 0°C and 40°C. Batteries cannot fully charge outside this range. Prepare spare batteries for low-temperature operation; do not discard batteries that temporarily fail in low temperatures — they will resume normal function after returning to room temperature.
2. Dirt on battery metal contacts will interfere with charging. Wipe contacts clean before charging.
3. Turn off the transceiver before charging; otherwise, the charging process may be disrupted.
4. Do not charge a wet battery or transceiver. Allow to dry completely before use.
5. If battery capacity does not return to normal after a full charge, the battery has reached the end of its service life. Replace with a new battery.

Eliminating the Risk, keep away from the flammable materials, heat sources and ignition sources while a battery is charged. Charging should only take place in a well ventilated area and when someone is about to be aware and react to a potential issue. To reduce risk of fire, a battery should not be charged for more than 8 hours and disconnect charger from line voltage (AC outlet) by removing main plug even if the batter is not completely charged. Don't leave a device unattended while charging. Disconnect the charger when the device is fully charged: do not overcharge the device.

Don't fully drain: Aim to recharge when the battery hits about 20% for battery, keeping it above critical levels.

Don't store batteries empty; charge them to 60–80% for ideal long-term storage to extend storage periods.

If your device or battery is not used for longer than seven days, please perform regular maintenance checks and recharge the battery periodically to maintain optimal battery levels. Following these guidelines will not only protect battery life but also ensure that devices can return to active duty without issue.



Battery Specifications

Charge only with original manufacturer batteries. Use of non-original batteries carries risk of explosion and injury.

Safety Precautions

1. Never dispose of batteries in fire.
2. Do not disassemble the battery casing.

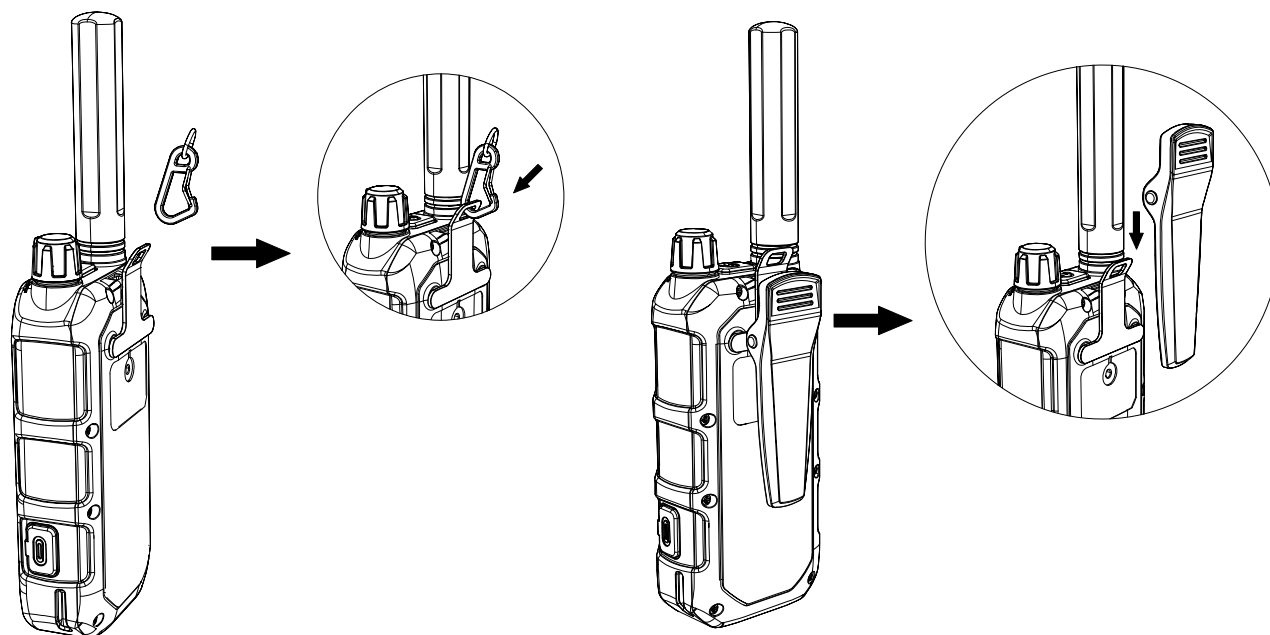
Battery Storage Instructions

1. Batteries self-discharge naturally. If storing long-term, fully charge before storage to prevent damage from excessive self-discharge.
2. Recharge batteries periodically during storage to offset self-discharge capacity loss. We recommend recharging stored batteries every 6 months.
3. Storage environment requires proper temperature and humidity control. (• Since batteries are sensitive to high temperatures when storing them, keep

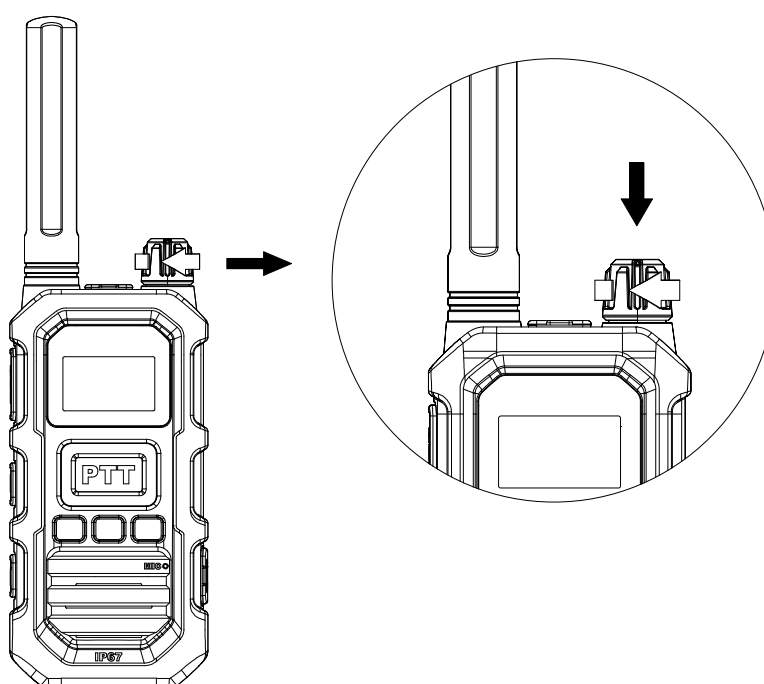
them in a cool and dry place. The recommended temperature should be between +10 °C and +25 °C and never exceed +30 °C. Batteries should therefore not be stored next to radiators or boilers nor in direct sunlight. Extremes of humidity (below 35% and above 95% relative humidity for sustained periods) should be avoided since they are detrimental to both batteries and packing. Although the storage life of batteries at room temperature is good, storage is improved at lower temperatures provided special precautions are taken. Also, accelerated warming is harmful.

- Batteries should be removed from the appliance when not being used for long periods of time (6 months). The batteries should be enclosed in special protective packaging (such as sealed plastic bags or variants) which should be retained to protect them from condensation during the time they are warming to ambient temperature. Storing them in a cool, dry place can slow down self-discharge. This battery has been tested and shows no swelling after continuous storage at 85 °C for 8 hours.

Getting Started



1. To install the belt clip: Align the belt clip screw holes with the device holes.
2. Press the belt clip down until the metal plate is flush with the device, install screws, and tighten.
--- To remove the belt clip, loosen the screws and remove normally.
3. After installing the belt clip, connect the lanyard clip to the device structure tab.



Preparation Steps:

1. Unpack and install the included antenna in the designated position. Do not use the transceiver without an antenna installed.
2. If you have a speaker/microphone, we recommend familiarizing yourself with basic RB48D operation before connecting. Requires a 2.5mm audio jack.

Quick Start Guide:

1. Rotate the top knob clockwise to power on the transceiver.
 2. Use the channel selector button on the front to switch channels. Long-press the MENU button to toggle between digital/analog modes. After selecting the desired channel, use the PTT button on the front/side for normal calls (Digital mode: ensure frequency, color code, and time slot match the receiving party; Analog mode: ensure frequency and CTCSS/DCS match).
 3. Channel voice prompts are enabled by default. Disable via the menu if not needed. For more default features, refer to page XX. Additional detailed features can be configured via CPS using a specific programming cable. Contact your transceiver distributor for details.
 4. To power off, rotate the volume/power knob counterclockwise until you hear a click.
- Note: If the transceiver does not power on, check the battery charge level and installation. If the issue persists after troubleshooting, contact your dealer.
5. Volume Adjustment
With the transceiver powered on, rotate the volume/power knob to adjust volume: Clockwise: increase volume; Counterclockwise: decrease volume.

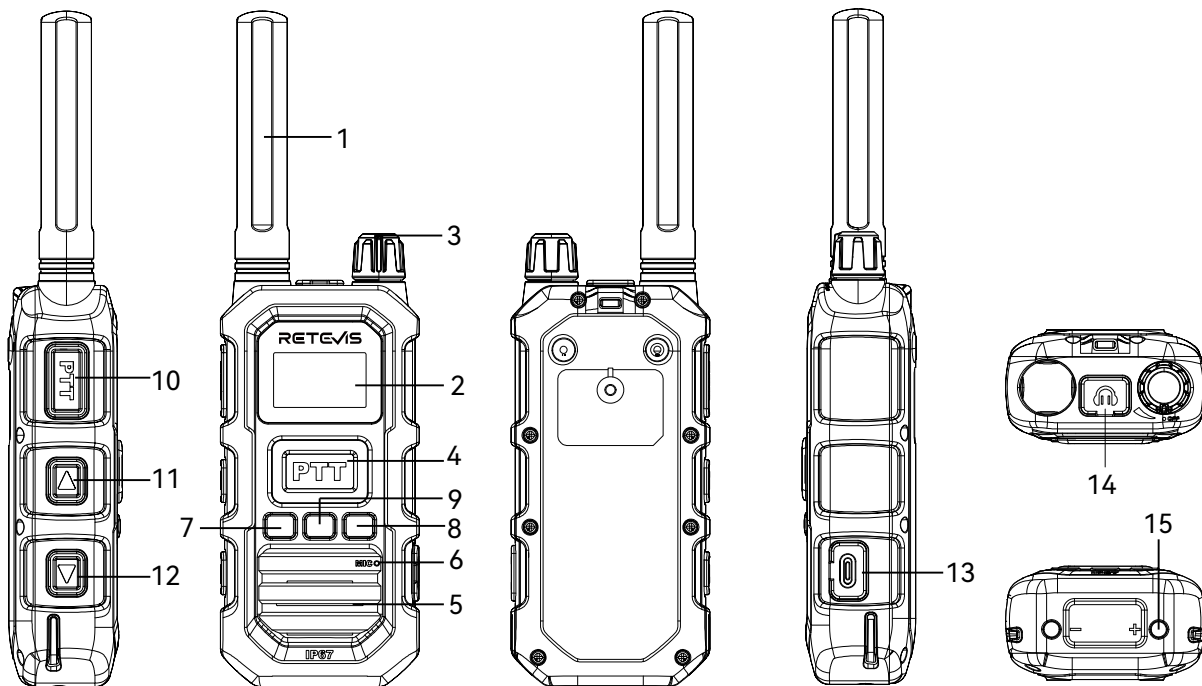
Transmit and Receive

Transmit

Press and hold the PTT button to speak. Hold the microphone approximately 3–4 cm from your mouth and speak in a normal tone.

Receive

Release the PTT button to listen to the other party. Adjust volume to an appropriate level for optimal listening.



Basic Operation:

MENU: Short press to enter menu interface; Confirmation button; Long press in standby to toggle transceiver mode — analog/digital conversion

Return: Short press to return to previous menu level; Long press to activate keypad lock

Selector: Short press to scroll down; Long press to toggle scrolling direction

PF1: Programmable function key; can be defined for short or long press; acts as up-scroll key in menu interface

PF2: Programmable function key; can be defined for short or long press; acts as down-scroll key in menu interface

Key Descriptions

No.	Name	Purpose
1	Antenna	Transmits and receives signals (detachable)
2	Screen	Indicates operating status
3	Power Switch	Power on/off/volume adjustment
4	PTT Button	Push-to-Talk Button
5	Speaker	Audio output
6	Mic	Audio Input
7	MENU Button	Menu Setting Button; Confirmation key — long press to toggle digital/analog mode
8	Return Button	Short press to return to previous menu; long press to lock keypad. When locked, long press return key again to unlock.
9	Selector Button	Short press to scroll down; long press to toggle scrolling direction
10	Side PTT Button	Push-to-Talk Button
11	Left Side Key1	Standby: customizable short/long press shortcut functions; Menu: acts as up-scroll key
12	Left Side Key2	Standby: customizable short/long press shortcut functions; Menu: acts as down-scroll key
13	Right Side USB key	Supports charging and programming
14	Top Headphone jack	2.5mm Audio Jack
15	Bottom Charging port	Desktop charging contacts. Pay attention to device orientation during use to avoid reverse insertion.

Left Side Key 1 and Left Side Key 2 can be assigned different functions in different interfaces. Short press and long press trigger respective functions, which must be customized via programming software.

Left side keys 1/2 can be customized via menu or programming software. Operate side keys in standby interface to execute corresponding functions.

Short Press Functions:

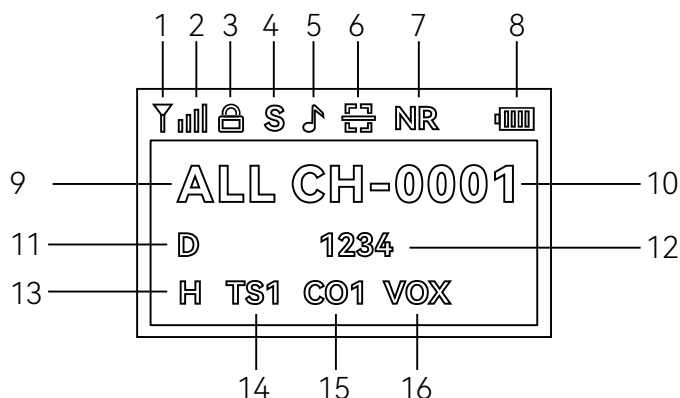
1. None
2. Transmit Power
3. Scan
4. VOX
5. Compander
6. Scrambler
7. Encryption Toggle
8. Zone Up
9. Zone Down
10. Squelch Off (Talk Around)
11. Lone Worker
12. Noise Reduction On/Off
13. Alarm

Long Press Functions:

1. None
2. Transmit Power
3. Scan
4. VOX
5. Compander
6. Scrambler
7. Encryption
8. Zone Up
9. Zone Down
10. Repeater/Talk Around
11. Monitor
12. One-Touch Call-1 (definable as private/group/all call)
13. One-Touch Call-2 (definable as private/group/all call)
14. One-Touch Call-3 (definable as private/group/all call)

15. One-Touch Call-4 (definable as private/group/all call)
16. One-Touch Call-5 (definable as private/group/all call)
17. Lone Worker (alarm logic same as SOS)
18. Noise Reduction On/Off
19. Alarm

Standby display, as shown



Display Description

NO.	CHAR	Description
1	Signal Icon	Signal Icon
2	Signal Level	TX: Power level; RX: Received signal strength
3	Lock	Keypad Lock
4	S	Power-Saving Indicator
5	Sound	Sound icon — displayed if either BEEP or VOICE is enabled
6	SCAN	Scan Indicator
7	NR	Noise Reduction Indicator
8	Battery	Battery level or charging status
9	Zone	Displays ALL for all-channel zone; otherwise displays Z + zone number, e.g., Z1
10	Channel Number	Channel number in the channel list
11	Channel Type A/D	D: Digital channel; A: Analog channel
12	Radio ID	Radio ID
13	Power	H/L
14	Time Slot / Wide-Narrow Band	Digital channels: displays time slot TS; Analog channels: displays W/N
15	Color Code / CTCSS/DCS	Digital channels: CC; Analog channels: CTC/DCS sub-tone type
16	VOX	VOX Icon

Attention:

Factory default: 2 zones, 16 channels per zone. Can be configured via programming software up to 16 zones, with up to 32 channels per zone.

Detailed Feature Description

LCD Backlight Indicator:

Red backlight: Transmit state

Blue backlight: Receive state

Purple backlight: Standby state

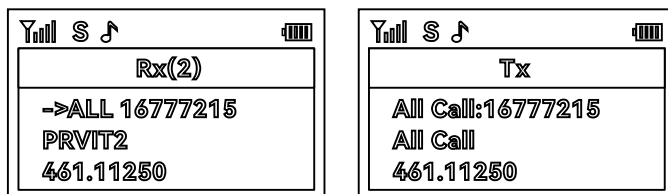
Receive and Transmit Call

Zone Selection

A zone is a group of channels. This device supports up to 16 zones, with no more than 32 channels per zone.

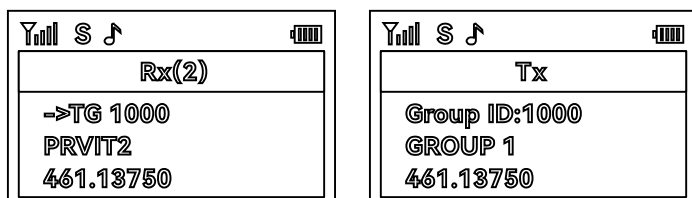
1. Zones can be switched from the main menu.

Answering and Replying to Calls



After configuring channels, user IDs, or group IDs, you can receive and reply to calls. The screen glows red during transmission and blue during voice reception.

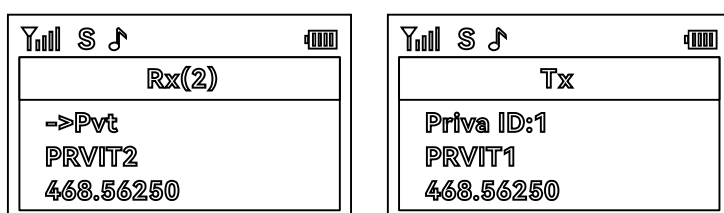
Receiving and Replying to Group Calls



The transceiver must be pre-assigned to the corresponding group to receive calls from that group.

1. Screen glows blue;
2. Hold the transceiver vertically, with the microphone approximately 1–2 inches (2.5–5.0 cm) from your mouth;
3. Press and hold the PTT button to reply to the call; the screen turns red;
4. Release the PTT button to resume listening.

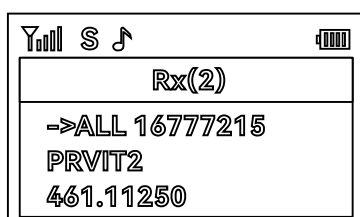
Receiving and Replying to Private Calls



A private call is a one-to-one call mode. Steps when receiving a private call:

1. Screen glows blue;
2. Hold the transceiver vertically, with the microphone approximately 1–2 inches (2.5–5.0 cm) from your mouth;
3. Press and hold the PTT button to reply to the call; the screen turns red;
4. Release the PTT button to resume listening.

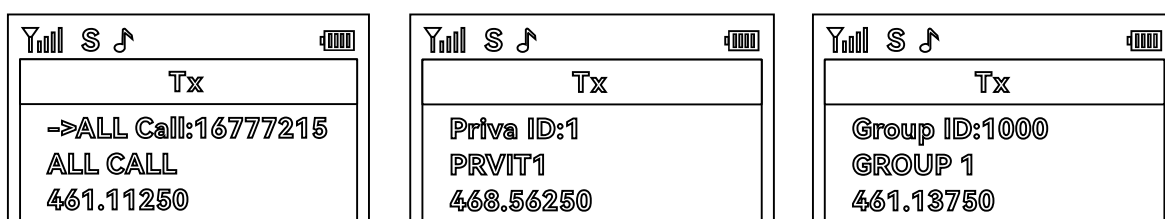
Receiving All Calls



An all call is when a single transceiver calls all devices on the same channel, used for important announcements to alert all personnel. The screen glows blue when receiving an all call.

Note: During an all call, switching channels will terminate reception. All programmable keys are disabled until the all call ends.

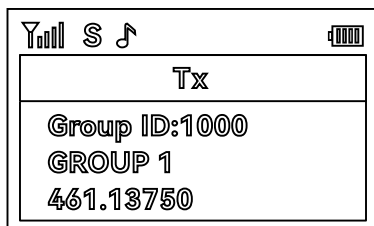
Initiating Calls



You can initiate calls by selecting channels, user IDs, or talkgroup IDs in the following ways.

- Short press the selector button in standby to switch channels.
- Long press the selector button in standby to toggle channel direction, increment/decrement.

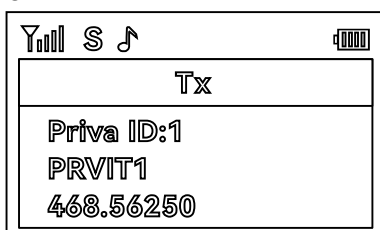
Initiating a Group Call



Before initiating a group call, the transceiver must be pre-assigned to the corresponding group.

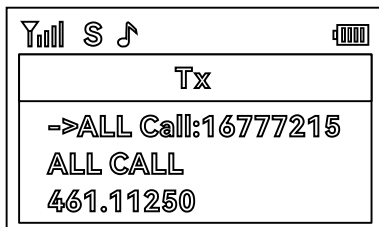
1. Switch to the target channel and select the talkgroup via the enabled group ID;
2. Hold the transceiver vertically, with the microphone approximately 1–2 inches (2.5–5.0 cm) from your mouth;
3. Press and hold the PTT button to initiate the call; the screen glows red;
4. Release the PTT button to enter listening mode. When the other party responds, the screen turns blue.

Initiating a Private Call



1. Switch to the target channel and select the contact via the enabled user ID;
2. Hold the transceiver vertically, with the microphone approximately 1–2 inches (2.5–5.0 cm) from your mouth;
3. Press and hold the PTT button to initiate the call; the screen glows red;
4. Release the PTT button to wait for answer. When the other party responds, the screen turns blue.

Initiating an All Call



This function broadcasts to all users on the same channel. The transceiver must have this function pre-enabled via programming software to send voice messages to all devices on the channel.

1. Rotate the channel knob to switch channels and select the corresponding channel via the enabled all-call group ID;
2. Hold the transceiver vertically, with the microphone approximately 1–2 inches (2.5–5.0 cm) from your mouth;
3. Press and hold the PTT button to initiate an all call; the screen glows red.

Monitor Function (Analog)

A listening method for receiving weak signals. Press the dedicated key to forcibly activate the receive signal path, allowing the user to detect faint sounds from the speaker by ear.

- PF1 or PF2 long press can be configured as Monitor via CPS.

Talk Around

Assign the 'Talk Around' function to PF1 or PF2 (Short or Long Press) via CPS. Press the assigned key to toggle the Talk Around function on/off; the radio will announce "Talk Around On/Off".

In digital repeater mode, when disabled, communication goes through the repeater. When enabled (Talk Around), it switches to direct mode, and the transmit frequency changes to the receive frequency (both radios need to enable Talk Around simultaneously).

One-Touch Call

Configure PF1 or PF2 long press as One-Touch Call via CPS. Currently supports storing 5 one-touch call contacts. Long press PF1 or PF2 to transmit to the configured contact; transmission starts when the red light illuminates. This function is available only in digital mode.

Example settings below

No.	Mode	Call	Type
1	Digital	Contact 1 (Private Call ID)	Voice / Text
2	Digital	Contact 2 (Group Call ID)	Voice / Text
3	Digital	Contact 3 (Private Call ID)	Voice / Text
4	Digital	Contact 4 (Private Call ID)	Voice / Text
5	Digital	Contact 5 (Private Call ID)	Voice / Text

Scan Function

Scan lists must be pre-configured via programming software, with channels and groups to scan added to the list. PF1 and PF2 side key short/long press can be customized as scan start/stop in the programming software. Press the corresponding key to activate — the device announces "Scan Start" and scanning begins. When a valid signal is detected, the screen stays blue and normal communication is possible. Press the key again — the device announces "Scan Stop" and scanning ends.

Lone Worker

Configure PF1 or PF2 short/long press as Lone Worker via programming software. Pressing the corresponding key toggles the function on/off. Lone worker response timer is the duration without key presses before alarm is triggered, configurable from 1–255 minutes. Set lone worker reminder time in programming software — this is the final reminder before the alarm triggers. Infinite loop reminders, each stops after the set time, optional 1–60 second advance warning. If an alarm system is selected for the channel, an alarm sounds after the reminder. Lone worker requires an alarm system pre-configured on the transmit channel.

Radio Kill/Wake-Up (Digital)

- ① When the receiver has the kill function enabled and receives a kill command, the radio becomes inoperable — all keys are disabled, and no transmit/receive is possible.
- ② When the receiver has the wake-up function enabled and receives a wake-up command while in killed state, the radio is reactivated and resumes normal operation.
- ③ The kill state can also be cleared via the CPS programming function.

Analog Scrambler

Analog scrambler toggle: Off = no scrambling; On = channel scrambling enabled;
Scrambler can be enabled/disabled via side key configuration or per-channel settings in CPS.

Digital Encryption

Digital encryption keys set encryption type in digital channels: Basic, ARC4, AES128, AES256.

Basic encryption key is a 4-digit number composed of digits 0–9.

AES256 advanced encryption uses 64 digits, AES128 uses 32 digits, ARC4 uses 14 digits. Keys are composed of letters A, B, C, D, E, F and digits 0–9.

Transmit Permit:

Always Allow: The radio transmits immediately when PTT is pressed, regardless of channel activity.

Channel Free: Transmission is allowed when the channel is idle (no carrier signal on the same frequency). Transmission is not allowed when there is a signal on the channel.

Color Code Free (Digital Channel): Transmission is not allowed when there is a carrier signal on the same frequency and same color code.

CTCSS/DCS Mismatch (Analog Channel): Transmission is not allowed when there is a carrier signal on the same frequency and same CTCSS/DCS.

Receive Only: This function prohibits any transmission on the channel, but reception operates normally.

Emergency Alarm Function

Programming software sets alarm system modes and types:

a.Alarm Only: Local alarm sounds, no remote alarm, red light flashes. Alarm duration can be set to unlimited.

b.Normal: Emergency alarm — both local and remote alarm sound (local alarm can be disabled), no hot mic, no receive; Emergency call — no local or remote alarm, hot mic enabled, receive enabled; Alarm call — both local and remote alarm sound, hot mic enabled, receive enabled. Hot mic and receive durations are configurable.

c.Silent Alarm: Emergency alarm — no local alarm, remote alarm sounds, no hot mic, no receive; Emergency call — no local or remote alarm, hot mic only, no receive; Alarm call — no local alarm, remote alarm sounds, hot mic only, no receive.

d.Silent with Voice: Emergency call — no local or remote alarm, no hot mic, no receive; Emergency call — no local or remote alarm, hot mic enabled, receive enabled; Alarm call — no local alarm, remote alarm sounds, hot mic and

receive enabled.

After configuring emergency alarm on a side key, short press the side key to initiate an alarm. Number of alarm cycles is set via programming software. After initiating emergency alarm, press PTT or the alarm key to cancel.

Menu:

Squelch Level

① Squelch level can be set in the menu, configurable from 0–9, factory default level 3.

② Menu → Radio Setting → Squelch.

Press key to enter menu, use PF1/PF2 for up/down or down-only scrolling, select Radio Setting, select Squelch, and adjust to desired level.

Voice Prompts

① Menu → Radio Setting → Voice: Toggle voice prompts on/off.

Side Key Definition

① Long/short press functions for side keys 1/2 can be set in the menu.

② Menu → Radio Setting → Key Define: Key1 Short, long press return key to switch to next key function definition — Key1 Long. Total 4 key function definitions: Key1 Short, Key1 Long, Key2 Short, Key2 Long. Long press return key to cycle through key definitions.

③ In the key definition interface, short press side key 1/2 or the selector button to cycle through function codes for the current key.

④ Short press function codes: None, Transmit Power, Scan, VOX, Compander, Scrambler, Encryption Toggle, Zone Up, Zone Down, Squelch Off, Lone Worker, Noise Reduction On/Off, Alarm.

⑤ Long press function codes: None, Transmit Power, Scan, VOX, Compander, Scrambler, Encryption, Zone Up, Zone Down, Repeater/Squelch Off, Monitor, One-Touch Call-1, One-Touch Call-2, One-Touch Call-3, One-Touch Call-4, One-Touch Call-5, Lone Worker (alarm logic same as SOS), Noise Reduction On/Off, Alarm.

Key Lock

① Menu → Radio Setting → Key Lock: Set manual or automatic lock.

② In manual lock mode, long press the return key in standby to lock the device.

③ In automatic lock mode, the device locks automatically after 15 seconds of no key operation.

④ When locked, a lock icon appears. Long press again to unlock. Only PTT is functional when locked.

Noise Reduction Setting

① Menu → Radio Setting → Noise Reduction: Turn noise reduction on or off.

Transmit Beep

① Menu → Radio Setting → Tx Beep: Turn transmit beep on or off.

Man Down

① Menu → Radio Setting → Man Down: Turn man down alarm on or off.

② When man down is enabled and the device detects an abnormal angle, it triggers a man-down state. If an alarm system is configured, the alarm function is triggered.

Noise Tail Elimination

① Menu → Radio Setting → Noise Tail: Turn noise tail elimination on or off.

Vibration Alert

① Menu → Radio Setting → Vibration: Turn vibration alert on or off.

② When vibration alert is enabled and there is no key operation for an extended period (30s), the device vibrates when receiving voice. Timer resets after any key operation.

Smart Volume

① Menu → Radio Setting → Smart Volume: Turn smart volume on or off.

② When smart volume is enabled, the radio detects background noise via the MIC and automatically adjusts speaker volume during reception. Background noise is detected only in standby mode, not during transmission or reception. Factory default: off.

Note: Long-term use of this function at maximum volume may damage the speaker.

Power Switching

① Menu → Channel Setting → Power: Set high/low power. Factory default: high power.

VOX

① Menu → Channel Setting → VoxEn: Turn VOX function on or off. Factory default: off.

VOX Level

- ① Menu → Channel Setting → VoxLevel: Set VOX level 0–9.
- ② 0 = VOX off; 1–9, higher numbers mean VOX is harder to trigger.

DMR Mode

- ① Visible only on digital channels.
- ② Menu → Channel Setting → DMR Mode: Set DMR mode to: Direct / Repeater / Dual Time Slot.

DMR Time Slot

- ① Visible only on digital channels.
- ② Menu → Channel Setting → DMR Slot: Set DMR time slot to: Slot 1 / Slot 2.

DMR Color Code

- ① Visible only on digital channels.
- ② Menu → Channel Setting → Color Code: Set color code 0–15.

Zone Switching

- ① Menu → Zone: Set current zone. "ALL" indicates all-channel zone.

Contacts

- ① Visible only on digital channels.
- ② Menu → Contacts → ContactsList: View and set contact ID, type, and alias. Initiate direct calls to contacts via the PTT button.
- ③ In private call type, the Radio Service menu is available. Select signaling to send: Radio WakeUp / Radio Kill / Radio Check.
- ④ After sending the corresponding signaling: When a response signaling is detected from the other party, the radio beeps once. If the other party is offline or not on the corresponding channel, the radio plays a failure tone.

Radio Information View

- ① Menu → About Radio: View model, ID, software version, frequency range, hardware version, date.

Factory Reset Function

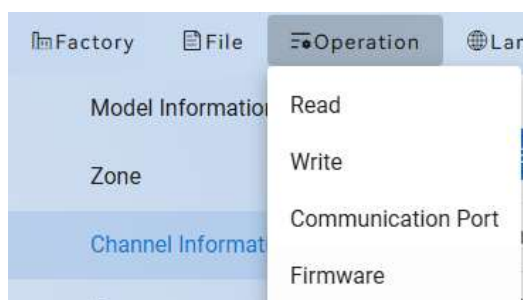
With the radio off, hold MENU + Return key and power on. The screen displays "Data Initia....." indicating reset in progress. This resets to default channels and settings, and the radio restarts automatically after completion.

Firmware Upgrade Guide:

Firmware Upgrade Function

Hold PTT + Side Key 1 while powering on. The blue backlight illuminates. Connect the programming cable and open Operation → Firmware in CPS.

Select the appropriate port, model RB48D, baud rate default 115200. Select the upgrade firmware, click Download. The radio restarts automatically after upgrade completes.



FirmwareUpgrade

COM5

▼

🔄

RB48D

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Please turn off the device, then press and hold both the PTT and PF1 buttons at the same time And turn on the radio to enter the mode for flashing firmware.

.bin file path

Select File

Download Application to the Flash

▼

Download

Troubleshooting

The table below helps resolve issues that are not equipment malfunctions. If you cannot identify the cause or resolve the problem using this table, contact your seller or Retevis service center. Examples:

Problem Example	Possible Cause	Solution
Transceiver does not turn ON.	The battery is exhausted.	Charge the battery pack, or replace the batteries.
	Loose the connection of a battery pack (case).	Clean the battery terminals.
No sound comes from the speaker.	The volume level is too low.	Rotate Volume Knob to adjust the level.
	The squelch level is too high.	Adjust the squelch level.
	An external speaker is connected to the [SP] jack.	Check the external speaker connection.
Keypad is unresponsive	Keyboard locked or not.	Check if keypad has been locked. Check if other keys are currently pressed.
Battery life lower than expected		Be sure the charger indicates the battery is fully charged. The battery pack capacity will naturally diminish over a number of charge cycles. This is the case with all lithium batteries.

FCC electronic labeling Information

When your radio is unlocked, short press Menu button to enter menu interface and then short press Left Side Key1 and then Men button to check FCC's Product Identification as follow:

"About radio

Model:RB48D

FCC ID:2ASNS48D "

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



CAUTION!

Before using this device, please read this guide which contains important operating instructions for safe usage, control information and operational instructions for compliance with RF Energy Exposure limits in applicable national and international standards.

User' instructions should accompany the device when transferred to other users.

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.

Radio License

Governments keep the radios in classification. Two-way radios are only operated on authorized radio frequencies that are regulated by the local radio management departments (such as FCC, ISSED, OFCOM, ANFR, BFTK, Bundesnetzagentur, and so on.).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.

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;

Note: This equipment has been tested and found to comply with the limits for a Class B digital device. 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 compliance information

• (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 on putting into service

This product may be used in following 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).

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For the intended country of use, please refer to the package.

This radio equipment contains frequency bands that are subject to licensing procedures before it is allowed to be operated. Please make sure you have a valid radio license or radio operator permit before use.

Disposal

The crossed-out wheeled-bin symbol on your product, literature, or packaging reminds you that all electrical and electronic products, batteries, and accumulators 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 and rules in your area. Out

RF Safety

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. 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/>

Keeping the radio at a proper distance is important as RF exposure decreases with increasing distance from the proper antenna. A proper antenna is the antenna supplied with this radio by the manufacturer or specifically authorized by the local authority for use with this radio. This radio can only be operated by use of an antenna of a type and maximum (or lesser) gain approved for the transmitter under regulations and rules. This transmitter must operate with the antenna(s) documented and in Push-to-Talk and body-worn configurations as documented. Using Authorized accessories is important because the use of Non-Retevis accessories may result in exposure levels, which exceed the IEEE/ICNIRP RF exposure limits.

Transmit no more than the rated duty factor of 75% of the time. 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. Some measures to reduce your RF exposure include:

Reduce the amount of time spent using your wireless device.

Use a speakerphone, earpiece, headset, or hands-free accessory to reduce proximity to the head (and thus head exposure). While wired earpieces may conduct some energy to the head and wireless earpieces also emit a small amount of RF energy, both wired and wireless earpieces remove the greatest source of RF energy (handheld device) from proximity to the head and thus can greatly reduce total exposure to the head.

Increase the distance between wireless devices and your body.

This radio is designed for and classified as "Occupational/Controlled Use Only". Occupational/Controlled environments are defined as locations where there is exposure that may be incurred by people who are aware of the potential of exposure. It meaning a radio must be used only by individuals aware of the hazards, and the ways to minimize such hazards; NOT intended for use in a General population/uncontrolled environment.

	Hand-held Mode To control your exposure and ensure compliance with the controlled environment exposure limits, always adhere to the following procedure: -To receive calls, release the PTT button. To transmit (talk), press the Push-to-Talk (PTT) button in front of the face. -Hold the radio in a vertical position with the microphone (and other parts of the radio including the antenna) at least one inch (2.5 centimeters) away from the nose or lips.
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Electromagnetic Interference/Compatibility

Nearly every electronic device is susceptible to electromagnetic interference (EMI) if inadequately shielded, designed, or otherwise configured for electromagnetic compatibility. 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, such as hospitals or health care facilities

Persons with pacemakers, Implantable cardioverter defibrillators (ICDs) or other active implantable medical devices should:

- Consult with their physicians regarding the potential risk of interference from radio frequency transmitters, such as portable radios (poorly shielded medical devices may be more susceptible to interference).
- Turn the radio OFF immediately if there is any reason to suspect that interference is taking place.
- Do not carry the radio in a chest pocket or near the implantation site, and carry or use the radio on the opposite side of their body from the implantable device to minimize the potential for interference.

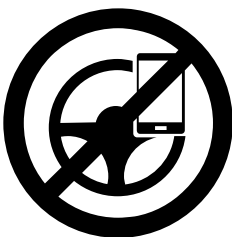
Hearing Aids: Some digital wireless radios may interfere with some hearing aids. In the event of such interference, you may want to consult your hearing aid manufacturer to discuss alternatives.

Other Medical Devices: If you use any other personal medical device, consult the manufacturer of your device to determine if it is adequately shielded from RF energy. Your physician may be able to assist you in obtaining this information.

Turn off your radio power in the following conditions:

 WARNING	• Turn off your radio before removing or installing accessory. • Turn off your radio prior to entering any area with a potentially hazardous or explosive atmosphere. Only radio types that are especially qualified should be used in such areas as “Intrinsically Safe”. Note: The areas with potentially explosive atmosphere referred to above include blasting caps, blasting area, inflammable gas, dust particles, metallic powders, grain powders, fueling areas such as below decks on boats, fuel or chemical transfer or storage facilities, areas where the air contains chemicals or particles (such as grain, dust or metal powders) and any other area where you would normally be advised to turn off your vehicle engine. Areas with potentially explosive atmospheres are often – but not always posted. • Do not use any 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. • 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.
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Use of Communication Devices While Driving

	• Always check the laws and regulations on the use of radios in the areas where you drive. Use of Communication Devices ,for example, mobile radio, may not be allowed. • Give full attention to driving and to the road. • Use hands-free operation, if available. • Pull off the road and park before making or answering a call, if driving conditions or regulations so require. • 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. • Turn off your radio when taking on fuel or parked at gasoline service stations.
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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.
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 WARNING	The plug of adapter is considered as disconnect device. The socket-outlet shall be installed near the equipment and shall be easily accessible.
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Batteries Safety

	• WARNING: KEEP NEW OR OLD USED BATTERIES OUT OF REACH OF CHILDREN.
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- Turn off your radio before removing or installing a battery. Store spare batteries securely. Dispose of used batteries immediately and safely.
- The battery supply terminals are not to be short-circuit.
- Do not replace the battery in any area labeled "Hazardous Atmosphere". Any sparks created in a potentially explosive atmosphere can cause explosion or fire.
- When the conductive material such as jewelry, keys or chains touches 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;
- Dirty battery contacts need to be wiped with clean dry cloth, both on the battery and in the appliance.
- Exhausted batteries are to be removed from the equipment.
- Do not dismantle, open or shred batteries. Batteries should be dismantled only by trained people.
- Batteries shall be charged at 0°C~40°C environment temperature specified. If the environment temperature is lower than 0°C, the charge shall be prohibited.
- Rechargeable batteries are only to be charged by adults. The plug of the adapter is considered a disconnect device. The socket-outlet shall be installed near the equipment and shall be easily accessible.

	WARNING: CHOKING HAZARD-Small Parts. Not suitable for children under 3 years old.
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Authorized Accessories List

- For a list of Retevis-approved accessories for your radio model, visit the website: <http://www.Retevis.com>
- Contact Retevis for assistance regarding repairs and service.

French Environmental Recycling Label

User Manual

Guarantee

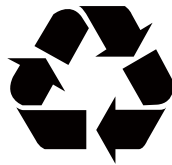
Model Number: _____
Serial Number: _____
Purchasing Date: _____
Dealer: _____ Telephone: _____
User's Name: _____ Telephone: _____
Country: _____ Address: _____
Post Code: _____ Email: _____

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.



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E-mail: info@retevis.com
Facebook: [@retevis.fans](https://www.facebook.com/retevis.fans)



Made in China

说明书要求

尺寸：145*210MM

印刷：单色印刷

装订：骑马订

纸张材质：

80g双胶纸

本页无需印刷