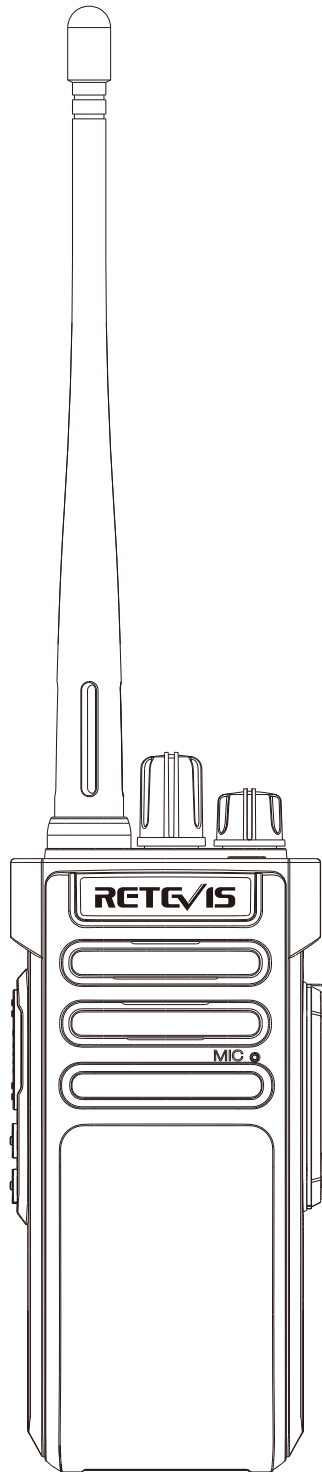


RETAVIS



RT29D

Two Way Radio

SPECIFICATION

Frequency Range	UHF:400-480Mhz
Channel Number	8 Zones*16 Channels
Channel Spacing	12.5Khz
Antenna Impedance	50Ω
Operating Temperature	-10°C~45°C
Operating Voltage	DC7.4V
IP Protection Level	IP67
Dimension(Excluding antenna)	128x58.5x39mm

TRANSMITTER

Modulation	≤-45dB
Free Time Slot Power	≤-57dB
Audio Distortion	≤5%
Modulation BER(Bit Error Rate)	≤3%

RECEIVER

Inter-modulation	≥60dB
Block	≥84dB
S/N	45dB
Audio Output Power	750mW
Audio Distortion	≤5%

Main Functions and Features

- High / Middle/Low Power Adjustable
- English /Chinese Voice Prompts
- Monitor
- 8 Zones*16 Channels
- Power Save/Low Power Alarm
- Squelch Level 1-10
- Electricity Inquiry
- Sound Tail Elimination
- Programmable Side Keys
- TOT
- Encryption
- Channel Scan
- Talk Around/Repeater Function
- Wide / Narrow Bandwidth Selection

Unpacking and Checking Equipment

Welcome to use our transceiver, before use, we suggest you:

- Check the packing box whether it has been damaged.
- Please unpack the box carefully, and check if it includes all items that supplied below.If any item is found missing or damaged during shipment,please notify your dealer.

Supplied Accessories

Quantity	Commodity
Transceiver	1
Antenna	1
Battery	1
Battery Charger	1
Belt Clip	1
Hand Strap	1
User Manual	1

Charging The Battery

Please use our company's official charger, and follow the steps below to charge the battery.

1. Connect the charger to the power supply socket.
2. Install the battery or the transceiver with battery, then the light turns red, indicating that the battery is being charged.
3. If the red light is off while the green light is on, this indicates that the battery is fully charged.
4. Unplug the charger from the power supply socket, and remove the battery.

Battery Information

The battery is not fully charged in the factory, please charge it before use.

Charge the battery for the first time after purchase or extended storage (more than 2 months) may not bring the battery to its normal operating capacity. After repeating fully charge/discharge for two or three times, the operating capacity will reach the best performance.



Please do not continue charging when the battery is full-charged situation, otherwise will shorten the life of battery.

Notice

1. The ambient temperature should be between 5 °C and 40 °C while charging. If beyond this temperature, battery can not be fully charged. So please prepare spare battery as backup during cold weather. Do not throw away those batteries which can not be used at this time, they may be used in normal temperature.
2. When the battery contacts are dirty or stains, this will affect the normal use of the battery charging. Please wipe clean and then start charge.
3. Before charging, turn off the radio, or it will affect the normal charging.
4. When the battery or radio is wet, do not charge the battery. Please dry it before use.
5. After the battery has been properly charged, if the battery capacity still can not return to normal capacity, that means battery life is end, please replace it.

Battery Type

Please charge the battery with our company official battery. Use other battery types may cause explosion and injure people.

Safety Precautions

1. Do not throw batteries into fire.
2. Do not attempt to disassemble the battery pack housing.

Battery storage

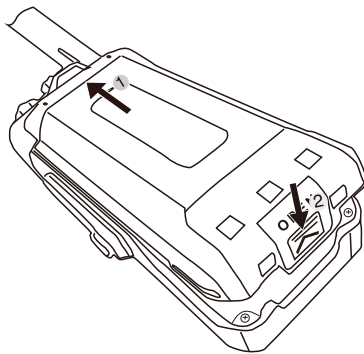
1. Battery has the phenomenon of self-discharge, therefore, if the battery is not in use for a long time, please be fully charged first before storage, this is to void battery damage due to excessive self-discharge.
2. After a period of storage, battery needs to be charged, in order to avoid excessive self-discharge to reduce the battery capacity. Battery storage is recommended after 6 months battery charge.
3. Please pay attention to the temperature and humidity of the battery storage environment. Keep the battery in a cool, dry conditions room to decrease battery self-discharge.

Install and Remove Accessories

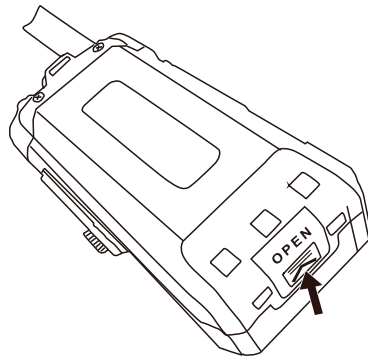
Install/Remove Battery Pack

Note:

- Do not short circuit battery pack terminals or throw battery pack into fire.
- Do not try to remove the battery pack shell.
- Do not install battery pack under dangerous conditions, otherwise spark will cause explosion.



Insert the top part of the battery pack into the top 2 slots of the transceiver and then press the bottom's buckle.



To remove the battery pack, make sure the transceiver has been turned off, and then open the bottom's buckle. Remove the battery when the battery pops up.

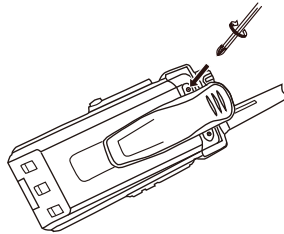
Install / Remove Belt Clip

If necessary, install the supplied screws into the belt clip at the back of battery pack for easy carry. To remove the belt clip, directly remove the two screws only.



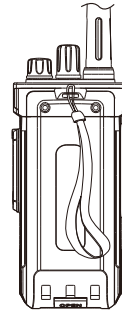
Install Antenna

Hold the base of antenna, rotate it tightly into the connector of the top of transceiver clockwise.

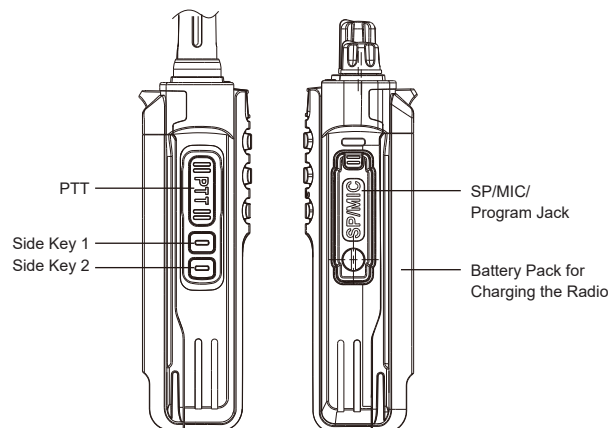
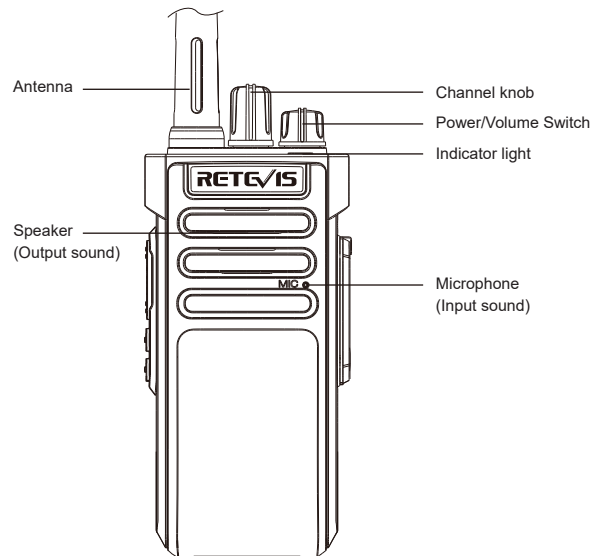


Install Hand Strap

Install the hand strap at the middle circle of the transceiver.



Getting Started



Remark: Different functions of Side Key 1, Side Key 2, which are used by the long press or a short press, can be defined by programming software.

The following functions can be defined:

Side Key:

1. None
2. Monitor(Analog)
3. Permanent Monitor(Analog)
4. Zone Selection
5. High / Middle / Low power selection
6. Repeater / Talk Around
7. Electricity Inquiry
8. Scan On / off

Basic Operations

POWER ON and POWER OFF:

Rotate the knob clockwise until a "click" is heard, transceiver will have a short beep sound, indicating power on detecting success.

Attention:

If your transceiver is not power on, please check the battery, and confirm if the battery has been charged and installed correctly. If it still can not be turned on, please contact with the agent. To turn off the transceiver, please rotate the power knob / Volume knob anticlockwise until a "click" is heard, then transceiver is power off.

Adjust Volume

When the transceiver is power on, rotate the power switch / Volume knob to adjust the volume.

Clockwise rotation to increase the volume;

Anticlockwise rotation to decrease the volume.

You can press the side key which is programmed MONITOR function to monitor the current volume

Attention: MONITOR key can be set to P1 or P2 Key according to the programming software.

Channel Selection:

Rotation the channel knob to select the desired channel. This transceiver has 128 channels.

Attention:

There are 8 zones in this transceiver, each zone has 16 channels, Zone can be selected by pre-programmed key.

Transmit

When going to transmit, press PTT key, keep microphone away from your mouth about 3-4cm, and speak in your usual tone.

Receive

Release the PTT key to receive. Adjust the suitable volume to get the best receiving result.

Function Specification

LED indicator

LED indicator shows transceiver's working status.

Red light indicates the transceiver is transmitting.

Green light indicates the transceiver is on process of power on or is receiving non-encrypted signal or data.

Receive and Transmit Call

Zone Selection

The zone is a group of channels. The transceiver supports at most 8 zones, and each zone is not more than 16 channels.

1. Press the pre-programmed Zone key.
2. You will hear a "confirmed" tone, and each time you press the intercom, it will cycle through a zone from low to high.
3. Rotate the channel knob to choose the desired transmitting channel.

Receive and Reply Call

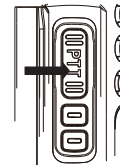
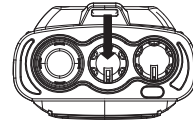
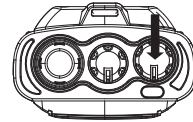
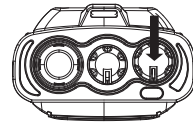
You can received or reply call after finished channel / user ID or group ID's setting. When transmitting transceiver, LED indicator turns red.

When receiving message, the LED indicator turns green.

Receive and Reply Group Call

To receive a call from a user's group, the transceiver must be configured as belonging to that group.

1. LED indicator turns green.
2. Hold the transceiver vertically and keep about 1~2 inches (2.5~5.0cm) away from mouth.
3. Press PTT key to respond the call, LED indicator turns red.
4. Release PTT key to receive.



Receive and reply Individual Call

Private Call is one to one calling.

When Receiving a Private Call:

- 1.LED indicator turns green.
- 2.Hold the transceiver vertically and keep about 1~2inches(2.5-5.0cm) away from mouth.
3. Press PTT key to respond to the call, LED indicator turns red.
4. Release PTT key to receive.

Receive All Call

All Call is a call from an individual transceiver calls all transceivers at the same channel. It is used to announce something important that users must pay special attention to.

When received all call, LED indicator turns green.

Notice: when receiving all call, if you turn to another channel, the transceiver stop to receive all call. During the all call, you can not use any re-programmed key until the call finished.

Launch a Transceiver Call

You can choose a channel, user ID or talking group ID with following methods.

- Channel Knob

Launch a Group Call

To launch a group call, the transceiver must be configured as belonging to that group.

- 1.Rotate channel knob, using activated group ID to select the talking group.
- 2.Hold the transceiver vertically and keep about 1~2inches(2.5-5.0cm) 15 away from mouth.
- 3.Press PTT key to launch the call, the LED indicator turns red.
4. Release PTT key to receive, when the target transceiver is responding, LED indicator turns green.

Launch a Private Call

1. Rotate channel knob, using activated user's ID to select channel.
- 2.Hold the transceiver vertically and keep about 1~2inches(2.5- 5.0cm) away from mouth.
3. Press PTT key to launch the call, the LED indicator turns red.
4. Release PTT key to receive, when the target transceiver is responding, LED indicator turns green.

Launch All Call

This functions allows you to transmit to all users in same channel. The transceiver must be programmed with this function, so that you can send information to every user who are under the channel.

- 1.Rotate channel knob, using activated all call talking group ID to select channel.
- 2.Hold the transceiver vertically and keep about 1~2inches(2.5- 5.0cm) away from mouth.
- 3.Press PTT key to launch the call, the LED indicator turns red.

Scan Function (Carrier Scan)

1. Use programming software to set PF1/PF2 as scan function.
 2. Long press the scan button, the transceiver will give a "di" sound to active scan function, it will stop when a valid signal has been scanned. After the signal disappears in 5 seconds , scan starts again.
- Long press the scan button again, the transceiver will give a "di di" sound to turn off the scan function.

Power reporting function

Through the programming software, define PF1/PF2 as the electricity reporting function; Long press the electricity reporting definition key, and the transceiver will give "Di" sound and report the current percentage power.

Encryption Function

Encryption Setting (This function is effective for digital mode only)

According to the programming software setting, there are 10 groups at most to preset group encryption or encryption key (10 Byte) With pre-programmed key to start up / shut down encryption function.

Setting

Setting Squelch level

You can adjust the transceiver squelch level, filter low signal

strength(unwanted calls) or the the channel that background noise is higher than the channel common values.

Set: 1-10 levels,the higher the level, the deeper the squelch,squelch deep filtration (unwanted) calls or background noise. However, a call from a remote location may be also filtered out.

Setting Power Level

You can set each channel power in High /Middle/Low level.

Setting: Set high power to communicate with transceivers in far area. Set middle/low power to communicate with transceivers in near area. Press pre-programmed "High /Middle/Low power" selection key.

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



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.

1.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.

2.1 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.

3.1 FCC Requirements

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

3.2 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.

4.1 CE Requirements:

*(Simple EU declaration of conformity)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

4.2 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).

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

This radio equipment is subject to restrictions on putting into service or to requirements for authorisation of use. Please make sure you have a valid radio license or radio operator permit before use.

5.1 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.



6.1 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/CNIRP RF exposure limits.

Transmit no more than the rated duty factor of 50% 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.

6.2 Only for licensed transmitters

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.

6.3 For handheld devices

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.



7.1 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.

7.2 TX

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.

8.1 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.
- Turn off your radio when taking on fuel or parked at gasoline service stations.
- 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.
- 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 on board an aircraft. Any use of a radio must be in accordance with applicable regulations per airline crew instructions.

9.1 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.

10.1 Protect your hearing



- Use the lowest volume necessary to do your job.
- Turn up the volume only if you are in noisy surroundings.
- Turn down the volume before adding headset or earpiece.
- Limit the amount of time you use headsets or earpieces at high volume.
- When using the radio without a headset or earpiece, do not place the radio's speaker directly against your ear.
- Use careful with the earphone maybe possible excessive sound pressure from earphones and headphones can cause hearing loss.

Note: Exposure to loud noises from any source for extended periods of time may temporarily or permanently affect your hearing. The louder the radio's volume, the less time is required before your hearing could be affected. Hearing damage from loud noise is sometimes undetectable at first and can have a cumulative effect.



WARNING

The plug of adapter is considered as disconnect device. The socket-outlet shall be installed near the equipment and shall be easily accessible.