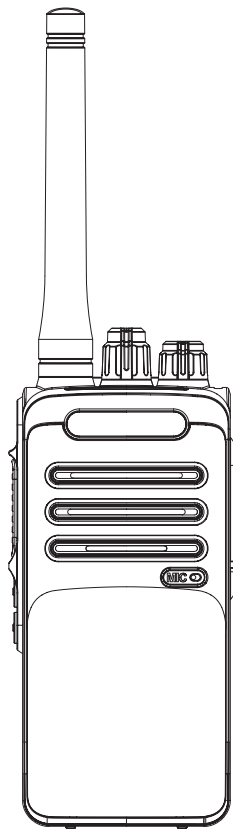


Digital Radio



User's Manual

Rev.3



To Users

Thank you for purchasing our product! This Manual is designed to make you quickly grasp use of this device. In order to avoid physical injury or property loss due to improper operation, please read this Manual carefully before using this device.



Notice

The device meets the requirements of FCC PART 90, PART 97 and PART 15. Local laws and regulations shall be complied with when setting up or using the equipment, and corresponding qualifications and relevant procedures shall be obtained if necessary. Consulting the relevant authorities is suggested.

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.

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.

ISED RSS warning

This product meets the applicable Industry Canada technical specifications. / Le présent matériel est conforme aux spécifications techniques applicables d'Industrie Canada.



RF Radiation Information

1. This product is limited to occupational applications that can meet RF energy radiation requirements. The user must be fully aware of the RF radiation hazards and can take corresponding measures to meet the RF radiation limitation requirements.
2. Radio frequency (RF) refers to the electromagnetic frequency that can be radiated into space. It is a widely used technology in the fields of communication, medical treatment, and food processing. It will generate certain RF radiation during use.



Safety Information

In order to use the radio safely and efficiently, please read the following safety information:

- The radio can only be maintained by professional technicians. Do not disassemble the radio without permission.
- Only the batteries and chargers specified by our company can be used.
- To avoid problems caused by electromagnetic interference and electromagnetic compatibility, please turn off the radio in places where the "Please turn off the radio" sign is displayed, such as hospitals and other health care places. When taking the flight, please turn off the radio if the crew requests to do so.

- In vehicles with airbags, do not place the radio in the area where airbag deployment may be involved.
- Please turn off the radio before entering flammable or explosive environment.
- Do not replace or charge the battery in a flammable or explosive environment.
- Please turn off the radio before approaching the blasting area and the detonator area.
- Do not use the radio with damaged antenna. A damaged antenna may cause minor burns when it comes into contact with the skin.
- Do not expose the radio to direct sunlight for a long time or place it near the heating Radio.
- If you wear a portable radio, make sure the antenna is at least 2.5 cm away from your body when the radio is transmitting.

WARNING:

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

CAUTION:

Use the approved charger to charge the battery. The remaining lithium-ion battery is limited to 30% pursuant to the new lithium battery shipment regulation approved by International Air Transport Association (IATA). Before use, charge the battery. It is recommended that the radio remain powered off during charging.

Use of battery not recommend or replaced with incorrect type of battery may result in a risk of fire and explosion or personal injury.

Maximum ambient temperature around the power supply equipment including charger must not exceed 40°C (104°F) and device operating temperature not exceed 55°C (131°F).

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:

- Do not remove the RF Exposure Label from the device.
- User awareness instructions should accompany 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, release the PTT button. Transmitting 50 % of the time, or less, is important because this radio generates measurable RF energy exposure only when transmitting (in terms of measuring for standards compliance).
- Hold the radio in a vertical position in front of face with the microphone (and the other parts of the radio, including the antenna) at least one inch (2.5 cm) away from the nose. Keeping the radio at the proper distance is important because RF exposures decrease with distance from the antenna. Antenna should be kept away from eyes.
- When worn on the body, always place the radio in approved clip, holder, holster, case, or body harness for this product. Use of non-approved accessories may result in exposure levels, which exceed the occupational/controlled environment RF exposure limits.
- Use only manufacturer's approved supplied or replacement antennas, batteries, and accessories. Use of non-manufacturer-name approved antennas, batteries, and accessories may exceed the FCC and IC RF exposure guidelines.

- For a list approved accessories please consult your local dealer for information.

European Union (EU) Waste of Electrical and Electronic Equipment (WEEE) directive:

The European Union's WEEE directive requires that products sold into EU countries must have the crossed out trash bin label on the product (or the package in some cases). As defined by the WEEE directive, this cross-out trash bin label means that customers and end-users in EU countries.



EXPOSURE RF compliance et Lignes de contrôle et Instructions opérationnelles

contrôle et Instructions opérationnelles

Pour contrôler votre exposition et garantir le respect des limites d'exposition dans un environnement professionnel / contrôlé, suivez toujours les procédures suivantes.

Des lignes directrices:

- Ne retirez pas l'étiquette d'exposition RF de l'appareil.
- Les instructions de sensibilisation des utilisateurs doivent accompagner l'appareil lors de leur transfert à d'autres utilisateurs.
- N'utilisez pas cet appareil si les exigences opérationnelles décrites ici ne sont pas remplies.

Mode d'emploi:

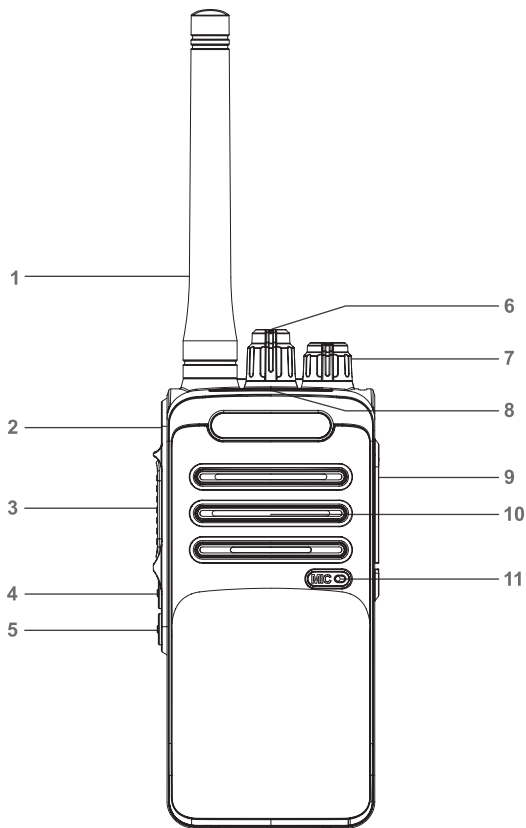
- Ne transmet pas plus que le facteur de marche nominal de 50% du temps. Pour transmettre (parler), appuyez sur le bouton Push-To-Talk (PTT). Pour recevoir des appels, relâchez le bouton PTT. La transmission 50% du temps, ou moins, est importante car cette radio génère une exposition mesurable à l'énergie RF uniquement

lors de la transmission (en termes de mesure pour la conformité aux normes).

- Tenez la radio en position verticale devant le visage avec le microphone (et les autres parties de la radio, y compris l'antenne) à au moins 2,5 cm du nez. Garder la radio à la bonne distance est important car les expositions RF diminuent avec la distance de l'antenne. L'antenne doit être tenue à l'écart des yeux.
- Lorsqu'elle est portée sur le corps, placez toujours la radio dans un clip, un support, un étui, un étui ou un harnais de sécurité approuvés pour ce produit. L'utilisation d'accessoires non approuvés peut entraîner des niveaux d'exposition qui dépassent les limites d'exposition aux RF de l'environnement professionnel / contrôlé.



User Interface





About the Device

1	Antenna	7	Power switch/Volume knob
2	Alarm key	8	LED indicator
3	PTT key	9	Interface
4	P1 key	10	Speaker
5	P2 key	11	Microphone
6	Channel selection knob		



Radio LED Indicators

Radio Status	LED Indication
Standby	Blinking Green
Low Battery	Blinking Red
Transmit (TX)	Solid Red
Receive (RX)	Solid Green
Programming Mode (Read from Radio)	Fast Blinking Red
Programming Mode (Write to Radio)	Fast Blinking Green
Scanning	Slow Blinking Orange
Call hang time mode	Solid Orange



Power On/Off and Volume Control



Power on/off:

Turn the power switch knob to turn on/off the radio normally.

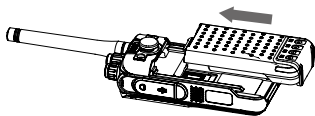
Note: The battery needs to be charged, otherwise the radio cannot be turned on under low power state.

Volume control:

In standby state, turn the knob clockwise/ counterclockwise to adjust the volume that fits your ears.

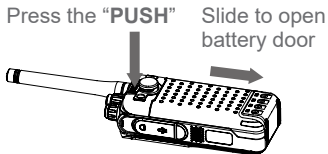


Battery Installation or Remove



Installation:

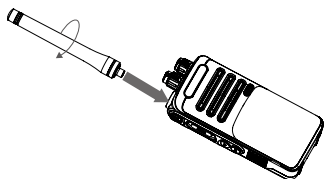
Align the battery as shown in the picture, press and slide in the battery until the latch snaps into place.



Remove:

Step 1: Please turn off the radio first.

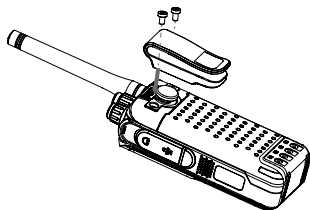
Step 2: Lift up the bottom battery latch take out the battery pack.



Antenna Installation

Align the antenna with the connector on the top of the radio, and screw it in clockwise until it is tightened.

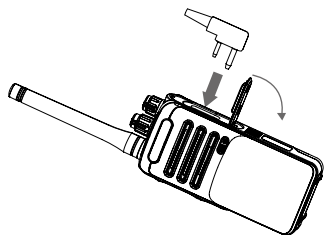
Note: Do not hold the radio by its antenna; otherwise, the performance and service life of radio may be affected.



Belt Clip Installation

Step 1: Remove the belt clip screws from the device.

Step 2: Align the radio screw holes on the belt clip, and then tighten the screws.



Accessory Installation

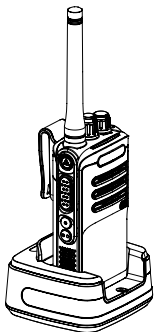
Step 1: Open the accessory connector cover.

Step 2: Align the plug of the accessory (matching headset or programming cable) with the accessory connector.

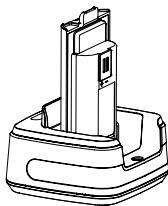
Step 3: Insert the accessory properly into the accessory connector.



Charging Function



Device charging



Battery pack charging

Charge Indicator

LED Indicator	Charge Status
LED no light	No load
LED glows red	Charging
LED glows green	Fully Charged

Charging precautions:

- Please use the original charger tray of the model for charging.
- When charging, it is recommended that the radio remain powered off during charging.
- To obtain the best battery performance, please charge for at least 5 hours for the first time.
- Do not charge the battery pack overnight, otherwise it will affect the battery pack life. When the battery is fully charged, please stop charging in time.
- The charger can only be used to charge the battery pack of the product. Do not use it to charge other battery packs, otherwise the charger and battery pack may be damaged.

- The battery pack should be stored in a cool and dry place after being fully charged. Do not expose the battery pack near the fire or to the sun, otherwise there are safety risks.
- During charging, it is not recommended to transmit the radio.
- The battery pack may slightly heat up during charging, which is a normal phenomenon.



Channel and Zone Selection



Rotate the [Channel Selection] knob clockwise or counterclockwise to switch to the desired channel.

Zone:

A zone is a group of channels. User can include the channels with same property into a zone, which facilitates user to effectively manage existing channels. This product supports a maximum of 16 zones and 32 channels in each zone. Before selecting zone, make sure that the zone contains the required channel.

To select a zone, press the preprogrammed [Zone Up]/[Zone Down] shortcut key (P1/P2).



Transmitting/Receiving

After starting up successfully, the user can conduct various call operations.

Precautions for radio use:

- When the radio is transmitting, keep the radio in a vertical position, and keep the microphone 2.5-5 cm away from the mouth. When transmitting, the radio should be at least 2.5 cm away from the head or body.
- Do not turn on/off the radio repeatedly during use, and adjust the volume to a level suitable for your hearing.


Precautions for radio operation:

1. Before using the radio for communication, please set the transmitter and receiver to the same frequency point.
2. After the analog channel is configured with the same sub-code frequency, the radios can communicate normally; radios with mismatched sub-code cannot communicate.
3. After encrypting the digital channel, the receiver and transmitter need to set the same password in order to perform normal communication.
4. If the digital channel sets the color code, only when the transmitting color code and receiving color code are the same can the radios communicate.
5. Transmit/receive at high/low power (switch by P1/P2 key).
6. After inserting the headset, press the [PTT] key to transmit and receive speech through the headset.
7. Transmit with VOX headset after enabling VOX (turn on/off VOX through side key and insert the VOX headset).



Program Button

User can configure program button functions via programming software. Corresponding features as below:

- None
- Monitor
- Scan On/Off
- Direct Mode On/Off
- High/Low Power
- Emergency Call
- One Touch Call
- Zone Selection
- VOX On/Off
- GoGrouping 



Device Name Configuration and Modification

1. Enter the basic setting interface of programming software to configure or modify the device name.
2. Device name can support: Letters, numbers, Chinese, special characters, etc.



Radio ID

1. The device ID is related to the private call contact, and the ID range is 1 to 16776415.
2. When using a private call contact to call, select device ID of the other party.



Password Configuration

1. To prevent information leakage, you can set the reading and writing password through programming software.
2. Each time you read or write, you must enter the correct 8-digit password before operating.
3. To cancel the password, clear the password and confirm.
4. To change the password, key in the old password first, and then enter the new password to rewrite.
5. When you forget the password, you can perform factory reset or reprogram it.



Sub-Code Configuration

1. The sub-code frequency supports CTCSS, DCS positive code, DCS reverse code, standard sub-code and non-standard sub-code.
2. Only when the transmitting sub-code and receiving sub-code are the same can they communicate to each other.
3. A radio with sub-code can transmit to radio without, but cannot receive signal without sub-code.



Setting/modifying frequency

1. The frequency can be set to any value within the range of national regulations.
2. In the direct talk mode, only when the transmitting frequency and receiving frequency are consistent can the radios talk to each other.
3. In DMR relay mode, the transmitting frequency and receiving frequency are different, but the relay is required.



Scan List Configuration

1. The scan list can contain analog channels and digital channels.
2. After configuring the scan list, the scan switch should be turned on.
3. Turn on/off the scan list through preprogrammed [P1/P2] key.
4. During scanning, the channels scanned include the channels in the scan list and the current main channel.
5. When any channel in the scan list is transmitting a signal, it will stay on that channel upon signal detection.



High/Low Power

1. Set the high/low power through preprogrammed [P1/P2]key.
2. The programming software can set the high/low power for each channel according to the use condition.
3. If set to high power, the transmission distance is long, but with higher power consumption, which may shorten the battery life.
4. If set to low power, the transmission distance is short, but the low power consumption.



DTMF Configuration

1. The DTMF interface of the programming software can configure the DTMF function related parameters, such as side tone, duration, interval time, online telegram code, offline telegram code, transmission start sound, transmission end sound, transmission start and end sound.
2. After the transmitter turns on the side tone, when the [PTT] key is pressed to transmit, the transmitter itself will also give DTMF sound.



Emergency Call

1. Configure functions of the alarm system through programming software,

such as alarm channel, re-transmission times, and alarm type.

2. Emergency call supports the digital channel and analog channel.
3. Set the side button as the “Emergency Call” button in the “programmable button”.
4. When Analog or Digital channel triggers emergency call, an emergency call code will be sent. Emergency call will be automatically transmitted after remaining re-transmit call becomes 0, and automatic emergency calls will repeat transmit twice.
5. The transmitter will sound the alert tone after the emergency call is sent. Receiver side also will receive an alert tone after receiving the emergency call.



Digital Encryption


1. Add encryption through programming software, which only supports basic encryption, maximum 8 characters.
2. Supported characters include: numbers, uppercase letters, lowercase letters.
3. The same encryption template must be configured for transmitter and receiver for normal intercom, otherwise the speech content cannot be heard clearly.
4. The main purpose is to prevent the content of the speech from being monitored by other people at the same frequency.



Color Code

The color code can identify a system. Users who need to communicate with each other must set the same color code. The radios does not respond to channel activities that do not match the preset color code.

1. Set the color code though programming software.
2. The color code range of this product can be set: 0~15.

- 
1. Contacts are only valid for digital channels.
 2. There are three kinds of contacts: private call, group call and all call; and each digital channel needs to be set through programming software.
 3. When making private call, only when the frequency is the same, the other party's ID exists and is in standby state communication can be made.
 4. When making group call, pay attention to whether the contact is in the receiving group, and all radios in the same receiving group can receive the speech.
 5. When making all call, all channels with the same frequency can receive the speech, and the all call ID is fixed.



Call Alert (Private call only)

Call alert can be used to get a hold of someone quickly for requesting the recipient to call back. Call alert are repeated until response to. To respond, the recipient can talk back.

1. Configure "One touch call" through programming software and send "Call Alert".
2. After "Call Alert" is sent successfully, it will prompt a beep sound, otherwise error tone will sound.
3. When "Call Alert" is received, alert tone will continue to sound.



Remote Monitor (Private call only)

Remote monitor is used to send a command to the other party, and the other party's device sends a voice to the command sender in a secret state to achieve the purpose of monitoring the other party.

1. The transmission duration of monitoring voice can be configured through programming software.
2. The monitored party's device sends voices secretly without any alert

on the interface.

3. Configure “One touch call” through programming software and send “Remote Monitor”.



Radio Check (Private call only)

Radio check is used to check whether it can communicate normally with the other party.

1. Configure “One touch call” through programming software to send “Radio Check”.
2. After “Radio Check” is sent successfully, it will prompt a beep sound, otherwise error tone will sound.
3. After “Radio Check” is received, there will be no interface alert, and the device will automatically reply.




Digital pass-through mode dual slot

This radio is designed with digital pass-through mode dual slot to establish two sets of calls or data services at the same time on different time slots between two sets of radios at the same frequency, color and contact. The related parameters can be configured with programming software:




1. Pass-through frequency and color code for call
2. Contacts for call
3. Time slot for call (for example: time slot 1 and time slot 2)





GoGrouping

“GoGrouping”  allows a group of radios to use programmable button quickly switch the radios to same channel. Any radio in the group can be designated as the “group leader”, and its frequency settings can be transmitted to other radios in the group and copied.

Note: Changing the channel will cover the leader's frequency setting include contact, color code or tone code settings.

1. Configure the programmable key as a "GoGrouping"  through the programmable software.
2. A group of radios in mutual communication, one or more sets to operate the temporary teaming function: press the programmable button preset as "GoGrouping"  to enter the frequency allocation mode, and the indicator flashes green.
3. One of the radio can temporarily act as the group leader: In the frequency allocation mode, press the programmable key preset as "GoGrouping"  again to send signal and the indicator flashes red.
4. Other radios that enter the "GoGrouping" mode receive signaling
When the indicator lights of the transmitter and receiver stop flashing and emit a prompt tone, the frequency allocation is completed and a temporary talk group is formed. Members can talk to each other without switching the frequency.

Note:

- The radio that enters the "GoGrouping"  mode will automatically exit the frequency allocation mode if there is no operation for 2 minutes.
- After the frequency allocation is successful, any member will exit the "GoGrouping"  mode after switching channel.



Remote Kill (Private call only)

In the case that the radio is lost or in other situations, to prevent the other party from using the radio, you can send the "Kill" command to make the radio unusable.

1. The "Kill" can be sent in "Push-to-talk" mode as set with the programming software.
2. After the "Kill" command is sent successfully, an OK prompt will be issued; otherwise, an error prompt will be given.
3. The operation with buttons except power on/off can only be restored

by writing frequency or receiving the "activation" command.



Activate (Private call only)

1. The activation command is to remove kill status.
2. After sending activation command, it can change the other party from remote kill state to active state. After restarting, it can be used normally.



Voice Control Function

1. Preset the [Program] key to [VOX On/Off] key through programming software.
2. Press the [VOX On/Off] key to turn on/off the voice control function. VOX levels can be preset through programming software: Level 1, Level 2, and Level 3, where Level 3 is the most sensitive. When the radio VOX function is on, the preset VOX level is used.



TOT Function

In order to prevent some users from occupying the same channel for a long time, users can set to enable the TOT function. When the user's continuous transmission time on the current channel reaches the TOT duration, the radio will stop transmitting and the speaker will give a time-limit prompt tone. You can set the time out timer via programming software. By default is 60 seconds. When OFF is selected, user can transmit continuously.



Squelch Step (SQ)

1. SQ is only valid for analog channels.
2. SQ can be configured through programming software only.



Power saving function

To extend battery life, the user can enable power saving mode. In the power saving mode, the user can press [PTT] key to transmit or the radio can receive normally when a signal is detected. The power saving function can be enabled/disabled by programming software.



GPS Function (for specific models only)

1. After turning on GPS, you can get the latitude, longitude, current time, date, number of satellites, speed, etc. of the current time zone in the open field.
2. During outdoor sports, GPS information will be updated automatically during buffer time.
3. GPS information will stop updating when the signal is unstable, and will be reconnected and updated again when the signal is better.
4. GPS function should have corresponding antenna and hardware support.



Factory setting

1. You can press and hold the "Programmable 1" and "Programmable 2" buttons for 2 seconds when the green power indicator until the green indicator flashes quickly, and release the buttons when the red indicator is on and off to restore the factory setting.
2. After the factory setting is restored, all settings will be restored to the default values.
3. After the factory setting is restored, the previously set data of the the radio will be lost, so restore the factory setting with caution.



Optional Accessories

Default accessories of the device are included in the product packaging box. For more information about accessories, please consult your local dealer.



Disclaimer

This manual strives for the accuracy and completeness of its content during the preparation. Repeated review has been carried out, and the company will not assume any responsibility for errors or omissions that may occur during the output and printing process. In addition, due to the continuous development of technology, the company reserves the right to change the product design and specification without prior notice.

GUARANTEE CARD

Model Number: _____

Serial Number: _____

Purchasing Date: _____

Dealer: _____ Telephone: _____

User's Name: _____ Telephone: _____

Address: _____ Post Code: _____

REMARKS:

- 1.This guarantee card to be kept by the user ,no replenishment if lost.
- 2.This guarantee card to be filled & chopped by the dealer,or it is invalid.
- 3.Don't alter the guarantee card,please confirm the serial number on the guarantee card is same as that on the machine.
- 4.Warranty void if seal broken.
- 5.1 year guarantee for product, 6 months for charger,battery and antenna .
- 6.The user can get repairing service from the following ways:
 - a.Go to the shop where you buy the machine
 - b.Our local repairing agent

Chop by Dealer

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