HP56X Intrinsically Safe Digital Portable Radio

User Manual

Hytera Communications Corporation Limited

Preface

Welcome to the world of Hytera and thank you for purchasing this product. This manual includes a description of the functions and step-by-step procedures for use.

To avoid bodily injury or property loss caused by incorrect operation, please carefully read the *Safety Information Booklet* before use.

This manual is applicable to the following product:

HP56X Intrinsically Safe Digital Portable Radio (X may represent 2, 5, 6, 8, or 9)

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FCC Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates and can radiate radio frequency energy. If not installed and used in accordance with the instructions, it may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. Verification of harmful interference by this equipment to radio or television reception can be determined by turning it off and then 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 different circuit to that of the receiver's outlet.
- Consult the dealer or an experienced radio/TV technician for help.

Operation is subject to the following two conditions:

- This device may not cause harmful interference.

- This device must accept any interference received, including interference that may cause undesired operation.

Note: 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.

Compliance with RF Exposure Standards

The radio complies with the following RF energy exposure standards and guidelines:

- United States Federal Communications Commission, Code of Federal Regulations; 47 CFR § 1.1307, 1.1310 and 2.1093

- American National Standards Institute (ANSI)/Institute of Electrical and Electronic Engineers (IEEE) C95. 1:2005; Canada RSS102 Issue 5 March 2015

- Institute of Electrical and Electronic Engineers (IEEE) C95.1:2005 Edition

RF Exposure Compliance and Control Guidelines and Operating Instructions

To control your exposure and ensure compliance with the occupational/controlled environmental 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), press the Push-to-Talk (PTT) key. To receive calls, release the PTT key. Transmitting 50% of the time, or less, is important because the radio generates measurable RF energy only when transmitting (in terms of measuring for standards compliance).

- Keep the radio unit at least 2.5 cm away from the face. Keeping the radio at the proper distance is important as RF exposure decreases with distance from the antenna. The antenna should be kept away from the face and eyes.

- When worn on the body, always place the radio in an approved holder, holster, case, or body harness or by use of the correct clip for this product. Use of non-approved accessories may result in exposure levels which exceed the FCC's occupational/controlled environmental RF exposure limits.

- Use of non-approved antennas, batteries, and accessories causes the radio to exceed the FCC RF exposure guidelines.

- Contact your local dealer for the product's optional accessories.

ISEDC Statement

The device has been tested and complies with SAR limits, users can obtain Canadian information on RF exposure and compliance.

Après examen de ce matériel aux conformité aux limites DAS et/ou aux limites d'intensité de champ RF, les utilisateurs peuvent sur l'exposition aux radiofréquences et la conformité and compliance d'acquérir les informations correspondantes.

This device complies with Innovation, Science and Economic Development Canada Compliance license-exempt RSS standard(s). Operation is subject to the following two conditions:

- This device may not cause harmful interference.

- This device must accept any interference received, including interference that may cause undesired operation.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes: (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

RF Radiation Information

This product must be restricted to operations in an occupational/controlled RF exposure environment. Users must be fully aware of the hazards of the exposure and able to exercise control over their RF exposure to qualify for the higher exposure limits.

RF Radiation Profile

Radio Frequency (RF) is a frequency of electromagnetic radiation in the range at which radio signals are transmitted. RF technology is widely used in communication, medicine, food processing and other fields. It may generate radiation during use.

RF Radiation Safety

In order to ensure user health, experts from relevant industries including science, engineering, medicine and health work with international organizations to develop standards for safe exposure to RF radiation. These standards consist of:

- United States Federal Communications Commission, Code of Federal Regulations; 47CFR part 2 sub-part J;

- American National Standards Institute (ANSI)/Institute of Electrical and Electronic Engineers (IEEE) C95. 1-1992;

- Institute of Electrical and Electronic Engineers (IEEE) C95.1-1999;

- International Commission on Non-Ionizing Radiation Protection (ICNIRP) 1998.

FCC Regulations

Federal Communication Commission (FCC) requires that all radio communication products should meet the requirements set forth in the above standards before they can be marketed in the U.S, and the manufacturer shall post a RF label on the product to inform users of operational instructions, so as to enhance their occupational health against exposure to RF energy.

Operational Instructions and Training Guidelines

To ensure optimal performance and compliance with the occupational/controlled environment RF energy exposure limits in the above standards and guidelines, users should transmit not more than 50% of the time and always adhere to the following procedures:

- RF energy will be generated only when the radio is transmitting.

- The radio must be 2.5 centimeters away from human body when transmitting.

Hazardous Locations Certification Information

Compliance Standards

- UL 913, 5th Ed. February 21, 1997

- CAN/CSA C22.2 No. 157-92 (R2016) +Upd1 +Upd2

- ANSI/TIA-4950-A, Rev. May 13, 2014

- UL 121201, 9th Ed., Rev. September 15, 2017

- CAN/CSA C22.2 No.213, 3rd Ed. April 2021

Equipment marking

- Class I, Division 1, Groups C-D, T4

- Class II, Class III, Division 1, Groups E-G, T135°C

- Class I, Division 2, Groups A-D, T4

Ta: –20°C to +60°C

Certificate Number

SGSNA/24/SUW/00066X

No Misoperations

Stop operating this product and leave the explosive atmosphere immediately when the safety or integrity of the product is endangered, and deliver it to your local dealer for examination.

These items may endanger the product's safety or integrity:

● The radio is stored improperly;

● The radio is faulty;

● The radio works with overload;

● The radio's operational error or threshold value is out of allowed range;

● The radio is damaged during transportation;

● The radio's housing is obviously damaged or cracked;

● The radio logo or model is hard to be recognized.

Safety Instructions

⚠ **Caution:** To protect you against any property loss, bodily injury or even death, be sure to observe the following safety instructions:

● Use only the Ex-battery BL2301-Ex specified by the Company. The use of other batteries may result in Ex-protection (intrinsic safety) failure.

● Charge the battery in a non-hazardous area only with the designated charger.

● Do not remove the battery from the radio in a hazardous area.

● Do not carry any standby battery into a hazardous area.

● Use the accessories specified by the Company only. Do not replace the accessories in a hazardous area.

● Do not use a damaged antenna. If a damaged antenna comes into contact with your skin, a minor burn may result.

● Do not expose the radio to direct sunlight for a long time, nor place it close to a heating source.

● Hold the radio upright and keep its microphone 2.5 to 5 centimeters away from your mouth during use.

● If you wear a radio on your body, ensure its antenna is at least 2.5 centimeters away from your body during transmission.

● Do not attempt to repair and service the radio, batteries and its accessories. Please contact your dealer for repair and servicing.

● Do not dissemble or redo the radio. Unauthorized modification of the radio may result in termination of Ex-protection (intrinsic safety) of the radio.

- Improper usage of the product other than it is intended to be used for will impair safety of the product, yourself and surrounding environment.

Renseignements sur l'homologation des endroits dangereux

Normes de conformité

- UL 913, 5th Ed. February 21, 1997

- CAN/CSA C22.2 No. 157-92 (R2016) +Upd1 +Upd2

- ANSI/TIA-4950-A, Rev. May 13, 2014

- UL 121201, 9th Ed., Rev. September 15, 2017

- CAN/CSA C22.2 No.213, 3rd Ed. April 2021

Marquage de l'équipement

- Class I, Division 1, Groups C-D, T4

- Class II, Class III, Division 1, Groups E-G, T135°C

- Class I, Division 2, Groups A-D, T4

Ta: –20°C to +60°C

Numéro de certificat

SGSNA/24/SUW/00066X

Mauvaises utilisations à éviter

Arrêtez d'utiliser ce produit et quittez l'atmosphère explosive immédiatement si la sécurité ou l'intégrité du produit sont compromises, puis retournez-le à votre revendeur local pour vérification.

Voici la liste des éléments susceptibles de compromettre la sécurité ou l'intégrité du produit:

- La radio n'est pas stockée correctement.

- La radio est défaillante.

- La radio fonctionne en surcharge.

- La valeur de seuil ou d'erreur de fonctionnement de la radio se trouve en dehors de la plage autorisée.

- La radio est endommagée au cours du transport.

- Le boîtier de la radio est visiblement endommagé ou fendillé.

- Le logo ou le modèle de la radio sont difficilement reconnaissables.

Instructions de sécurité

⚠️ Avertissement: Pour vous protéger contre la perte de biens, les blessures corporelles ou même les risques

mortels, assurez-vous de suivre les instructions de sécurité suivantes:

- N'utilisez que la batterie Ex BL2301-Ex spécifiée par l'Entreprise. L'utilisation d'autres batteries peut entraîner une défaillance de la protection Ex (sûreté intrinsèque).

- Chargez uniquement la batterie dans une zone ne présentant aucun risque, à l'aide du chargeur prévu à cet effet.

- Ne retirez pas la batterie de la radio dans une zone à risques.

- Ne transportez pas de batterie de rechange dans une zone à risques.

- Utilisez uniquement les accessoires specifies par l'Entreprise. Ne remplacez pas les accessoires dans une zone à risques.

- N'utilisez pas une antenne endommagée. Si une antenne endommagée entre en contact avec votre peau, vous risquez des brûlures superficielles.

- N'exposez pas la radio à la lumière directe du soleil pendant une période prolongée. Ne la placez pas à proximité d'une source de chaleur.

- Tenez la radio en position vertical et gardez le micro à une distance de 2,5 à 5 cm de votre bouche pendant son utilisation.

- Si vous transportez une radio, assurez-vous que son antenne se trouve à une distance minimale de 2,5 cm de votre corps au cours de la transmission.

- N'essayez pas de réparer et d'entretenir la radio, les batteries et les accessoires. Veuillez contacter votre revendeur pour la reparation et l'entretien.

- Ne démontez pas la radio, ne la modifies pas. Toute modification non autorisée de la radio peut compromettre la protection Ex (sûreté intrinsèque) de la radio.

- Une utilization incorrecte du produit, autre que dans le cadre de l'utilization prévue, peut compromettre la sécurité du produit, votre sécurité et celle de votre environnement.

- Ne transportez pas la radio dans des zones 0 et 20. Veuillez ne pas utiliser la radio en dehors des plages de temperature de fonctionnement spécifiées pour ce produit.

Contents

Documentation Information

This section describes the conventions of this document.

Documentation Conventions

Instruction Conventions

Icon	Description
💡 TIP	Indicates information that can help you make better use of your product.
✎ NOTE	Indicates references that can further describe the related topics.
⚠ CAUTION	Indicates situations that could cause data loss or equipment damage.
⚠ WARNING	Indicates situations that could cause minor personal injury.
⚡ DANGER	Indicates situations that could cause major personal injury or even death.

Notation Conventions

Item	Description	Example
Boldface	Denotes menus, tabs, parameter names, window names, dialog names, and hardware buttons.	To save the configuration, click **Apply**.
		The **Log Level Settings** dialog appears.
		Press the **PTT** key.
" "	Denotes messages, directories, file names, folder names, and parameter values.	The screen displays "Invalid Battery!".
		Open "PSS.exe".
		Go to "D:/opt/local".
		In the **Port** text box, enter "22".
>	Directs you to access a multi-level menu.	Go to **File** > **New**.
Italic	Denotes document titles.	For details about using the UNM5800, refer to *UNM5800 Operation Guide*.
Courier New	Denotes commands and their execution results.	To set the IP address, run the following command: vos-cmd - m name IP

1. Packing List

Unpack carefully and check that you have received the following items. If any item is missing or damaged, contact your dealer.
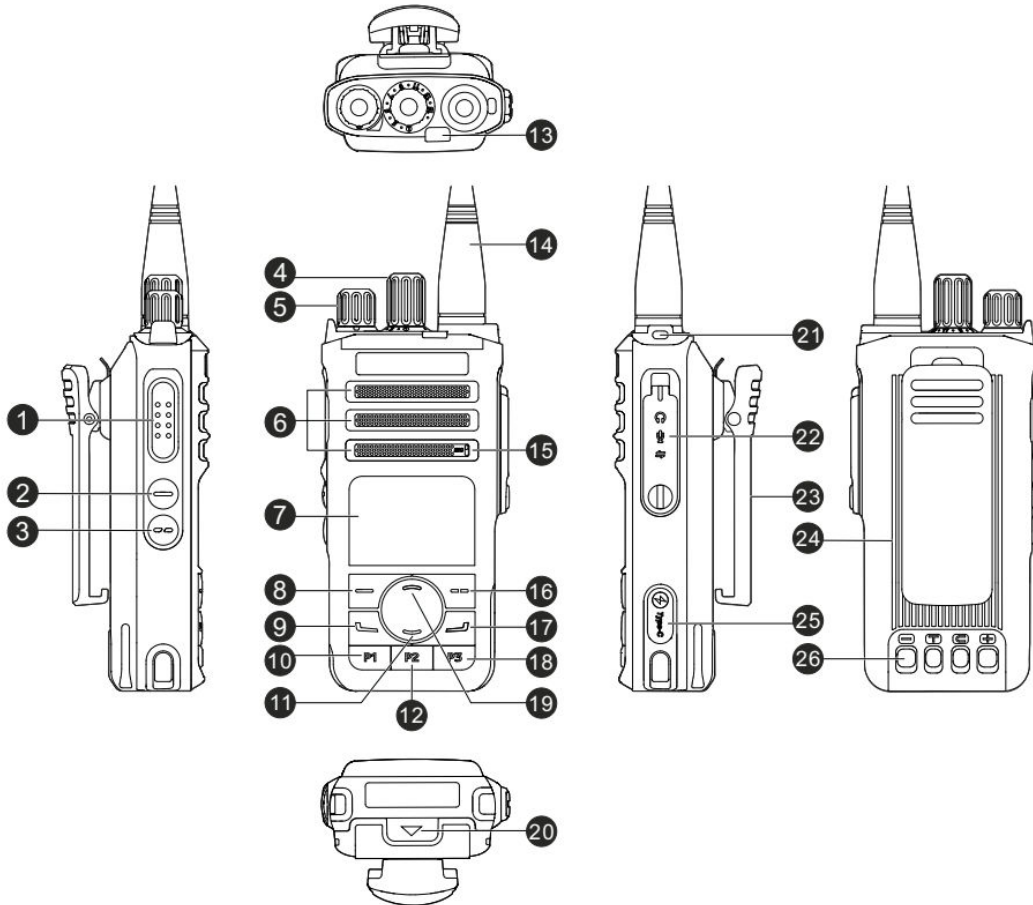
Item	Quantity (PCS)	Item	Quantity (PCS)
Radio	1	Antenna	1
Battery	1	Belt Clip	1
Charger	1	Strap	1
Power Adapter	1	Documentation Kit	1

NOTE

- Figures in this manual are only for reference.

- Check and ensure that the frequency band marked on the antenna label matches that on the radio label. If not, contact your dealer.

2. Product Overview

2.1 Product Layout

No.	Part Name	No.	Part Name	No.	Part Name
1	Push-to-Talk (PTT) Key	10	P1 Key*	19	Up Key*
2	Side Key 1 (SK1)*	11	Down Key*	20	Battery Latch
3	Side Key 2 (SK2)*	12	P2 Key*	21	Strap Hole
4	Channel Selector Knob	13	LED Indicator	22	Accessory Connector
5	On-Off/Volume Knob	14	Antenna	23	Belt Clip
6	Speaker	15	Microphone	24	Battery
7	LCD Display	16	Back Key	25	USB Type-C Port
8	OK/Menu Key	17	P5 Key*	26	Charging Contacts
9	P4 Key*	18	P3 Key*	/	/

✎**NOTE**

The asterisk symbol (*) indicates the programmable key. To assign features to programmable keys, contact

your dealer.

2.2 Model Description

HP 56X XX

① ② ③
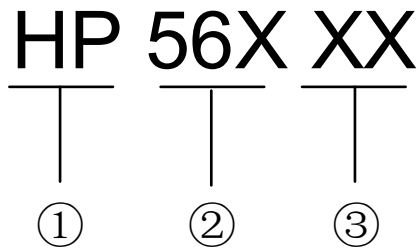
No.	Description
①	HP indicates Hytera portable radio.
②	56X indicates the products series.
③	XX indicates the frequency range such as UHF 1, or VHF.

3. Before Use

3.1 Charge the Battery

⚠️ **CAUTION**

- Do not charge the radio in hazardous area.

- Read the Safety Information Booklet before charging.

- The remaining lithium-ion battery power is limited to 30% pursuant to the new lithium battery shipment regulation approved by the International Air Transport Association (IATA).

- It is recommended that the radio remains turned off during charging.

- Use the charger to charge the battery alone or the battery attached to the radio.

  You can learn about the charging status through the LED indicator on the charger.

LED Indicator	Charging Status
Glows red	The battery is being charged.
Glows green	The battery is fully charged.
Flashes red slowly	No battery is placed on the charger.
Flashes red rapidly	The battery fails to be charged.

- Connect the radio with battery attached to the power adapter, power bank, or PC through the USB Type-C cable.

  You can learn about the charging status through the LED indicator on the radio.

LED Indicator	Charging Status
Glows red	The battery is being charged.
Flashes red rapidly	The battery fails to be charged.
Glows green	The battery is fully charged.

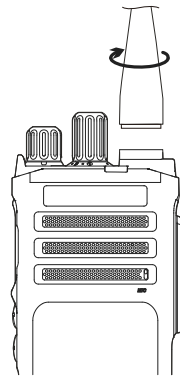📝 **NOTE**

If the battery has not been used for a long time, charge the battery with the charger until it is fully charged.
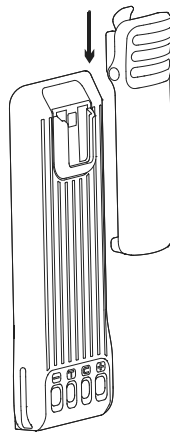
3.2 Install the Antenna

⚠ **CAUTION**

- Do not install or remove the antenna in hazardous area.

- Do not hold the radio by the antenna and swing it. This may affect the antenna performance and shorten the life span of the antenna.

3.3 Attach the Belt Clip

1. Align the holder on the belt clip with the groove on the battery.

2. Press the belt clip downwards into place.

📝 **NOTE**

To remove the belt clip, press and hold the spring plate and push the belt clip upwards.

3.4 Attach the Battery

⚠ CAUTION

● Do not attach or remove the battery in hazardous area.

● Use the approved battery to avoid the risk of explosion.

● Dispose of the used battery according to "Precautions for Disposal" in the *Safety Information Booklet*.

1. Aligh the battery with the battery slot.

2. Press and push the battery upwards until you hear a click.
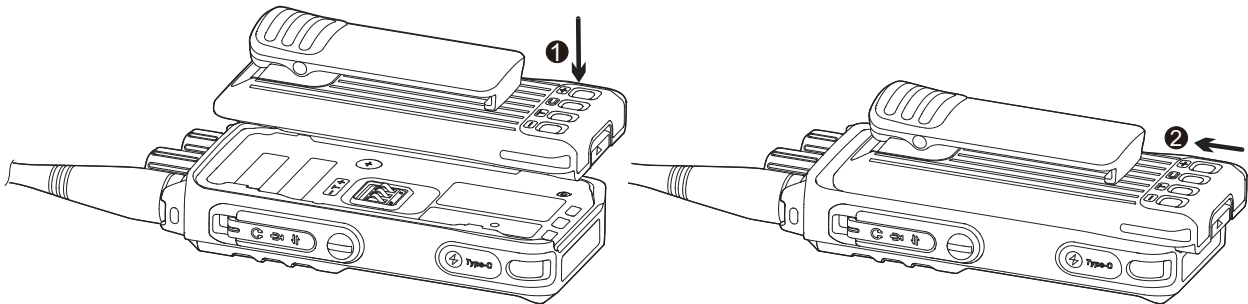

📝 NOTE

● Before removing the battery, turn off the radio.

● To remove the battery, toggle up the battery latch and push the battery downwards.

# 3.5 Attach the Audio Accessory

⚠ CAUTION

● Do not attach or remove the audio accessory in hazardous area.

● For optimal waterproof and dustproof performance, do as follows:

➢ When you attach the accessory, do not scrape or damage the silicone rubber surrounding the screw hole on the accessory connector.

➢ After you remove the accessory, close the accessory connector cover and fasten the screw.
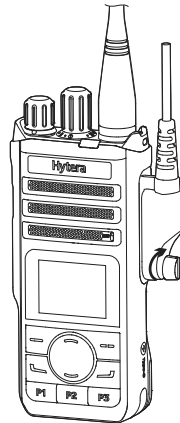
1. Rotate the screw for the accessory connector counterclockwise to remove the screw and cover.
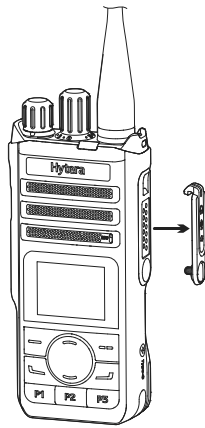
2.   Insert the audio accessory plug into the accessory connector.
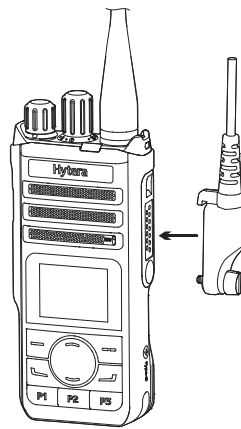
3.   Rotate the screw clockwise until hand tight.

4. Basic Operations

4.1 Turn On or Off the Radio
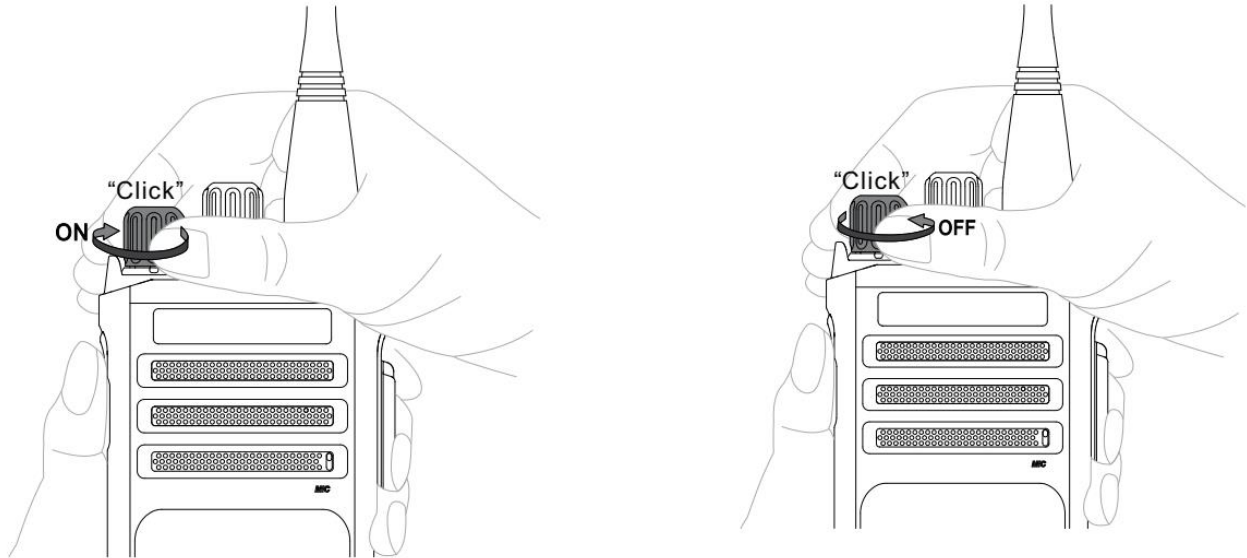
4.2 Adjust the Volume

4.3 Select a Zone

Through the Programmable Key

Press the preprogrammed **Zone Up** or **Zone Down** key.

Through the Menu

1. On the home screen, press the **Back** key.

2. Press the **Up** or **Down** key to select a zone, and then press the **OK/Menu** key.

3. Select **Set Default**, and then press the **OK/Menu** key.

4.4 Select a Channel

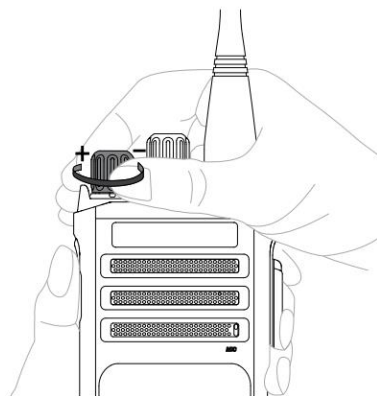You can rotate the knob or press keys to switch to a channel within the same zone by default. If Cross-Zone Switchover is turned on, you can switch to a channel in other zones.

Through the Knob or Programmable Key

- Rotate the **Channel Selector** knob.

- Press the preprogrammed **Channel Up** or **Channel Down** key.

- Press the preprogrammed **Preset Channel** key.

Through the Menu

1. On the home screen, press the **Back** key.

2. Press the **Up** or **Down** key to select a zone, and then press the **OK/Menu** key.

3. Select a channel, and then press the **OK/Menu** key.

NOTE

With Voice Broadcast turned on, the radio audibly notifies the current channel when you switch channels or turn on the radio.

4.5 Check the Radio Information

1. On the home screen, go to **Menu** > **Settings** > **Device Information**.

2. Select **Device Status**, or **Radio Information**.

   You can view the radio ID, radio alias, serial number (SN), model, frequency range, and software version.

5. Status Indications

5.1 LCD Icons

Icon	Radio Status
▥	More bars indicate more remaining battery power.
▭	The battery is low.
ℾ×	The radio detects no signal.
ℾ⑊	More bars indicate stronger signal.
Ⓛ	The radio operates in low power mode.
Ⓗ	The radio operates in high power mode.
ⅈₒ	An accessory is connected.
ⓢ	Location is turned on, and valid location data has been received.
᠔	Location is turned on, but no valid location data has been received.
Ⓑ	BT is turned on.
·Ⓑ·	A BT device is connected.
⚠	The radio is in emergency mode.
⚘	The radio stays on a site.
⚘	The radio is roaming.
▤	Scrambler or Encrypt is turned on.
↻	The radio is scanning.
⟳	The radio stays on an active channel.
⟳	The radio stays on Priority Channel 1.
⟳	The radio stays on Priority Channel 2.
⩘	The radio is switched to the mixed channel.
☑	The radio operates in the Meeting profile.
☑	The radio operates in the Outdoor profile.
◁	Monitor is on.

Icon	Radio Status
🔊	The speaker is on.
🔇	The radio operates in silent mode.

5.2 LED Indicator

LED Indicator		Radio Status
Flashes green		The radio is being turned on.
Glows green		The radio is receiving.
Glows red		The radio is transmitting.
Flashes orange slowly		The radio is scanning or roaming.
Glows orange		● Digital mode: The radio is in the call hang time. In this case, no voice is being transmitted or received during a call. Within such a period, you can press and hold the **PTT** key to speak. ● Analog mode: The radio is in the auto reset time.
Flashes blue	Every 3s	BT is turned on, but the radio is not connected to any BT device.
	Every 1.5s	A BT device is connected.
	Every 0.1s	BT is being turned off.

6. Call Services

To ensure optimal voice quality on the receiving radio, keep the microphone 2.5 cm to 5 cm away from your mouth during speaking.

6.1 Group Call

A group call is a call from an individual user to other group members.

6.1.1 Initiate a Group Call

Through the Preset Contact

1. Select a digital channel with a preset group contact according to 4.4 Select a Channel.

2. Press and hold the **PTT** key.

Through the Menu

1. Enter the **Contact** interface.

   ➢ Press the preprogrammed **Contact List** key.

   ➢ On the home screen, go to **Menu** > **Contact**.

2. Select a group contact.

3. Press and hold the **PTT** key.

Through One Touch Call Key

1. Press the preprogrammed **One Touch Call** key.

2. Press and hold the **PTT** key.

6.1.2 Answer a Group Call

You can answer a group call without any operation.

6.1.3 End a Group Call

A group call ends when the call hang time expires.

6.2 Private Call

A private call is a call from an individual user to another individual user.

6.2.1 Initiate a Private Call

Through the Preset Contact

1. Select a digital channel with a preset private contact according to 4.4 Select a Channel.

2. Press and hold the **PTT** key.

Through the Menu

1. Enter the **Contact** interface.

   ➢ Press the preprogrammed **Contact List** key.

   ➢ On the home screen, go to **Menu** > **Contact**.

2. Select a private contact.

3. Press and hold the **PTT** key.

Through Call Logs

1. On the home screen, go to **Menu** > **Call Logs**.

2. Select a private call record.

3. Press and hold the **PTT** key.

Through the One Touch Call Key

1. Press the preprogrammed **One Touch Call** key.

2. Press and hold the **PTT** key.

6.2.2 Answer a Private Call

You can answer a private call without any operation.

6.2.3 End a Private Call

A private call ends when the call hang time expires.

6.3 All Call

An all call is a call from an individual user to every user on the current digital channel.

📝NOTE

To preprogram All Call, contact your dealer.

6.3.1 Initiate an All Call

Through the Preset Contact

1. Select a digital channel with a preset all call contact according to 4.4 Select a Channel.

2. Press and hold the **PTT** key.

Through the Menu

1. Enter the **Contact** interface.

   ➢ Press the preprogrammed **Contact List** key.

   ➢ On the home screen, go to **Menu** > **Contact**.

2. Select an all call contact.

3. Press and hold the **PTT** key.

Through the One Touch Call Key

1. Press the preprogrammed **One Touch Call** key.

2. Press and hold the **PTT** key.

6.3.2 Receive an All Call

You can answer an all call without any operation.

6.3.3 End an All Call

An all call ends when the calling party releases the **PTT** key.

6.4 Call on Analog Channel

Call Without Signaling

On an analog channel without signaling, you can initiate a call to all the other users on the channel.

1. Select an analog channel according to 4.4 Select a Channel.

2. Press and hold the **PTT** key.

Call with Signaling

On an analog channel with signaling, you can initiate a call to a specific contact on the channel.

● Through the menu

   a. On the home screen, go to **Menu** > **Contact**, or press the preprogrammed **Contact List** key.

   b. Select a contact.

   c. Press and hold the **PTT** key.

●   Through the **One Touch Call** key

      Press the preprogrammed **One Touch Call** key.

7. Message Services

Message allows you to send and receive text messages.

7.1 View a Message

● New message

  When you receive the message, press the **OK/Menu** key.

● Messages in the inbox

  a.   On the home screen, go to **Menu** > **Message**.

  b.   Select a message, and then press the **OK/Menu** key.

7.2 Delete a Message

1.   On the home screen, go to **Menu** > **Message**.

2.   Select a conversation, and then select a message.

3.   Press the **OK/Menu** key, and then do either of the following:

  ➢   To delete the selected message, select **Delete**.

  ➢   To delete the conversation, select **Delete All**.

8. Contacts

To view contact information, do the following:

1.   Enter the **Contact** interface.

   a.   On the home screen, go to **Menu** > **Contact**.

   b.   Press the preprogrammed **Contact List** key.

2.   Select a contact.

3.   Press the **OK/Menu** key.

9. Settings

You can set radio parameters including **Basic Settings**, **Call Settings**, and **Security Settings**.

9.1 Basic Settings

9.1.1 Set the Display

On the home screen, go to **Menu** > **Settings** > **Basic Settings** > **Display**, and then set any of the following:

- Backlight

  The backlight illuminates the display and keypad.

  a. In the **Display** interface, select **Backlight**.

  b. Press **Up** or **Down** key to select **Off**, **Light**, or **Timed**.

  c. Press the **OK/Menu** key.

- Night mode

  The display supports both day mode and night mode. The screen brightness and user interface vary with the display mode.

  a. In the **Display** interface, select **Night Mode.**

  b. Press the **OK/Menu** key to turn on or off the night mode.

- Brightness

  Small level number represents high screen brightness.

  a. In the **Display** interface, select **Brightness**.

  b. Press **Up** or **Down** key to select a brightness level.

  c. Press the **OK/Menu** key.

9.1.2 Set the Keypad Lock

You can lock the keypad to prevent misoperation.

Turn on the Keypad Lock

- Automatic

  When radio is idle for a preset time, the keypad will be automatically locked.

- Manual

  Press the preprogrammed **Keypad Lock** key.

NOTE

- To preprogram Keypad Lock, contact your dealer.

- It is recommended that you ask the dealer to assign the keypad lock feature to a programmable key so you can lock and unlock the keypad with the key.

Select Locked Keys

1. On the home screen, go to **Menu** > **Settings** > **Basic Settings** > **Keypad Lock > Optional Key**.

2. Press **Up** or **Down** key to select a key.

3. Press the **OK/Menu** key.

9.1.3 Set the Date and Time

With Time Display turned on by default, you can view the local time on the radio. If the radio cannot receive time data, you can view "--:--" on the radio.

On the home screen, go to **Menu** > **Settings** > **Basic Settings** > **Date & Time**.

- To set the time format, select **Time Format**, and then select **24 Hour** or **12 Hour**.

- To set the time zone, select **Time Zone**, and then select a time zone.

9.1.4 Set MIC & SPK

MIC & SPK allows you to select the microphone and speaker to transmit and receive voice. With the audio accessory connected, you can switch the audio paths.

MIC

Option	Description	Operation

Follow PTT	- When you press the **PTT** key on the radio to transmit voice, the radio uses the internal microphone.
	- When you transmit voice through the audio accessory, the radio uses the external microphone.
		- Through the menu
		  a. On the home screen, go to **Menu** > **Settings** > **Basic Settings** > **MIC & SPK**.
		  b. Select **MIC Selection**.
		  c. Select the audio option.

Only Internal	The radio uses only the internal microphone.	

Option	Description	Operation
Only External	The radio uses only the microphone of the audio accessory, such as earpieces.	● Press the preprogrammed **Mic Set Switch** key to switch the audio path.
External First	When the radio is connected to an audio accessory, the radio uses the external microphone. Otherwise, the radio uses the internal microphone.	

SPK

Option	Description	Operation
External First	When the radio is connected to an audio accessory, the radio uses the external speaker. Otherwise, the radio uses the internal speaker.	● Through the menu a. On the home screen, go to **Menu** > **Settings** > **Basic Settings** > **MIC & SPK**.
Only Internal	The radio uses only the internal speaker.	b. Select **SPK Selection**.
Only External	The radio uses only the speaker of the audio accessory, such as the remote speaker microphone.	c. Select the audio option. ● Press the preprogrammed **SPK Set Switch** key.

9.1.5 Set the USB Path

You can select a USB path for communication between the radio and external devices.

Option	Description	Operation
Type-C First	When both the USB Type-C port and accessory connector are connected to external devices, the radio uses the Type-C port as the USB path.	● Through the menu a. On the home screen, go to **Menu** > **Settings** > **Basic Settings** > **USB Path**.
Pin Port First	When both the USB Type-C port and accessory connector are connected to external devices, the radio uses the accessory connector as the USB path.	b. Select the USB path option. ● Press the preprogrammed **USB Path Switch** key.

9.1.6 Set Language

1. On the home screen, go to **Menu** > **Settings** > **Basic Settings** > **Language**.

2. Press the **Up** or **Down** key to select the display language.

3. Press the **OK/Menu** key.

9.2 Call Settings

9.2.1 Power Level

You can set the TX power level to high or low.

1. On the home screen, go to **Menu** > **Settings** > **Call Settings** > **Power Level**.

2. Select **High Power** or **Low Power**.

3. Press the **OK/Menu** key.

9.2.2 Squelch Level

The squelch level controls the signal reception threshold on analog channels. Higher squelch level requires stronger signal.

● On the home screen, go to **Menu** > **Settings** > **Call Settings** > **Squelch**, select **Open**, **Normal**, or **Tight**, and then press the **OK/Menu** key.

● Press the preprogrammed **Adjust Squelch Level** key to adjust the level.

9.2.3 Compandor

Compandor allows the radio to compress the voice signal when transmitting and decompress the voice signal when receiving to improve the voice quality.

1. On the home screen, go to **Menu** > **Settings** > **Call Settings** > **Compandor**.

2. Press the **OK/Menu** key.

9.3 Security Settings

9.3.1 Encryption

Encryption provides end-to-end encryption to protect your voice and data against eavesdropping.

9.3.2 Turn on Encrypt

● On the home screen, go to **Menu** > **Settings** > **Security Settings** > **Encrypt**, and then press the **OK/Menu** key

● Press the preprogrammed **Encrypt** key.

NOTE

● If you turn on this feature, the radio will encrypt the voice and data on the current channel. Whenever you switch to the current channel, the radio automatically turns on the Encrypt feature.

● To preprogram Encryption, contact your dealer.

9.3.3 Select Encryption Keys

1. On the home screen, go to **Menu** > **Settings** > **Security Settings** > **Encrypt** > **Key List**.

2. Select an encryption key.

3. Press the **OK/Menu** key.

9.3.4 Lone Worker

Lone Worker allows the radio to automatically send an emergency alarm to your companion or the control center in either of the following scenarios:

● You do not operate the radio within the preset time.

● The radio does not transmit voice within the preset time.

You can press the keys, rotate the knob, or transmit voice to exit the emergency mode.

To turn on Lone Worker, do either of the following:

● On the home screen, go to **Menu** > **Settings** > **Security Settings** > **Lone Worker**, and then press the **OK/Menu** key.

● Press the preprogrammed **Lone Worker** key.

9.3.5 Scrambler

Scrambler allows the radio to invert the frequency spectrum of transmitted audio signals. Only the receiving radio with the same Scrambler settings can restore the audio signals. This prevents eavesdropping and ensures communication privacy.

To turn on Scrambler, do either of the following:

● On the home screen, go to **Menu** > **Settings** > **Security Settings** > **Scrambler**, and then press the **OK/Menu** key.

● Press the preprogrammed **Scrambler** key.

10. Profiles

Profiles allows you to set the audio and alert tone of the radio for clear voice in various scenarios. The radio supports the following profiles:

● General: applies to the low-noise environment, such as a quiet street.

● Meeting: applies to the indoor environment that is relatively quiet.

● Outdoor: applies to the high-noise outdoor environment, such as a highway.

10.1 Switch Profiles

To switch profiles, do any of the following:

● On the home screen, go to **Menu** > **Profiles**, select a profile, and then press the **OK/Menu** key.

● Press the preprogrammed **Profiles Switch** key.

● Press the preprogrammed **One Touch Menu** key to go to the **Profiles** interface, and then switch the profile.

10.2 Customize Each Profile

After you select a profile, you can change the default audio or LED settings of the profile.

10.2.1 Set Mic AGC

Mic AGC allows the calling radio to control the voice output gain within a proper range during transmission, so as to provide improved voice with proper volume for the called radio. This feature ensures stable voice even in noisy environment.

With Mic AGC preprogrammed, to turn on Mic AGC, do the following:

1. On the home screen, go to **Menu** > **Profiles** > **Setting** > **Audio Set**.

2. Select **Digital Mic AGC** or **Analog Mic AGC.**

3. Press the **OK/Menu** key.

10.2.2 Set AI-based Noise Cancellation

AI-based Noise Cancellation allows the radio to automatically eliminate ambient noise when receiving or transmitting voice. This feature enhances the voice clarity, but also slightly decreases the volume.

With AI-based Noise Cancellation preprogrammed, to turn on AI-based Noise Cancellation, do the following:

1. On the home screen, go to **Menu** > **Profiles** > **Setting** > **Audio Set** > **Noise Cancellation**.

2. Press the **OK/Menu** key.

10.2.3 Set Audio Mode

Audio Mode adds gain to audio signals at high, medium, and low frequency, thus optimizing the audio quality.

1. On the home screen, go to **Menu** > **Profiles** > **Setting** > **Audio Set** > **Audio Mode**.

2. Select an audio mode.

3. Press the **OK/Menu** key.

10.2.4 Set Alert Tone

If You Want to…	Then…
Turn on or off all radio tones	1. On the home screen, go to **Menu** > **Profiles** > **Setting** > **Tone** > **Radio Tone**. 2. Press the **OK/Menu** key.
Turn on or off single tone	1. On the home screen, go to **Menu** > **Profiles** > **Setting** > **Tone** > **Single Tone**. 2. Select a feature, and then select **On/Off**. 3. Press the **OK/Menu** key.
Adjust the volume of all radio tones	1. On the home screen, go to **Menu** > **Profiles** > **Setting** > **Tone** > **Radio Tone Volume**. 2. Select a volume level. 3. Press the **OK/Menu** key.
Adjust the volume of a single tone	1. On the home screen, go to **Menu** > **Profiles** > **Setting** > **Tone** > **Single Tone.** 2. Select a feature. 3. Select **Tone Volume**. 4. Select a volume level. 5. Press the **OK/Menu** key.

10.2.5 Set the LED Indicator

1. On the home screen, go to **Menu** > **Profiles** > **Setting** > **LED**.

2. Press the **OK/Menu** key to turn on or off the feature.

10.2.6 Reset the Radio Profile

1. On the home screen, go to **Menu** > **Profiles** > **Setting** > **Restore initial value**.

2. Press the **OK/Menu** key.

11. Radio Features

✎**NOTE**

To preprogram or turn on features in this chapter, contact your dealer.

11.1 Scan

Scan allows you to listen to activities on other channels, keeping track of your team members

11.1.1 Turn on Scan

● On the home screen, go to **Menu** > **Scan** > **Scan On/Off**, and then press the **OK/Menu** key.

● Press the preprogrammed **Scan** key.

The radio scans according to the scan list preset for the current channel. During the scanning, the LCD displays 🔄, and the LED indicator flashes orange slowly.

When detecting activities on a channel, the radio stays on the channel and the LED indicator glows green. If the radio stays on Priority Channel 1 or Priority Channel 2, the LCD displays 🔍 or 🔍. If the radio stays on a non-priority channel, the LCD displays 🔍.

✎**NOTE**

If you do not want to hear activities on the channel, press the preprogrammed **Nuisance Temporary Delete** key to remove the channel from the scan list temporarily.

11.1.2 Set Scan List

The scan list is a list of up to 32 analog and digital channels that the radio scans.

On the home screen, go to **Menu** > **Scan**, select a scan list, and then do any of the following:

● To view or manage all channels on the current list, select **View Record**, and then press the **OK/Menu** key.

● To set the list as the default scan list, select **Set Default**, and then press the **OK/Menu** key.

● To add a new channel to the list, select **Add CH**, and then press the **OK/Menu** key.

✎**NOTE**

● If you do not need to scan, select the current channel and then select Delete CH to delete the current channel.

● If you want to preferentially hear the activities on a channel, you can select a channel, and then select Set PrioCH-1 or Set PrioCH-2.

11.2 Positioning

Positioning allows you to collect the position information of the radio through satellites.

✎ NOTE

Positioning applies only to radios with GPS, BDS, or GLONASS.

11.2.1 Turn on Positioning

1. On the home screen, go to **Menu** > **Position** > **GPS On/Off**

2. Press the **OK/Menu** key.

11.2.2 View Position

1. On the home screen, go to the **Menu** > **Position** > **Position**.

2. Press the **OK/Menu** key.

   You can view the position information of your radio (including longitude, latitude, speed, altitude, time, date, and the number of satellites).

11.2.3 Turn on GPS Report

GPS Report allows the radio to report its location information to the control center.

Manual

Press the preprogrammed **GPS Report** key.

Automatic

You can consult your dealer to configure the GPS trigger conditions. After configuration, the radio can automatically report the GPS data upon power-on/off, at the preset time, or at specified distance interval.

11.3 BT

BT is a wireless technology that supports short-distance communications and data exchange between devices. You can connect the radio to a BT device through the built-in BT module.

⚠️ **CAUTION**

● To derive optimal communication quality, it is recommended that you use the BT devices approved by the Company.

● If BT earpieces of other companies are used, you must use them with the wireless ring PTT of the Company. Otherwise, the earpieces cannot transmit voice.

To turn on BT, do either of the following:

● On the home screen, go to **Menu** > **BT**, select **BT**, and then press the **OK/Menu** key.

● Press the preprogrammed **BT** key.

📝 **NOTE**

BT applies only to radios with the BT module.

11.3.1 Connect to a BT Device

1. Turn on the BT device and enter the pairing status.

   For details, refer to the related user manual of the BT device.

2. Turn on BT on the radio.

3. On the home screen, go to **Menu** > **BT** > **Auto Search**.

4. Select the BT device from the detected device list.

5. Press the **OK/Menu** key.

   After the radio is connected to the BT device, the LED indicator of the radio flashes blue every 1.5 seconds.

11.3.2 Switch BT Audio

With the BT device connected, press the preprogrammed **BT Audio Switch** key to switch the audio output device between BT earpiece and the radio.

11.3.3 Set BT

📝 **NOTE**

Before setting BT, turn on BT.

On the home screen, go to **Menu** > **BT** > **My Device**, and then set any of the following:

● To view the BT name, select **BT Devices Name**, and then press the **OK/Menu** key.

● To turn on visibility, select **Always Detected**, and then press the **OK/Menu** key.

● To view the BT information, select **Device Information**, and then press the **OK/Menu** key.

11.4 One Touch Call/Menu

One Touch Call/Menu allows you to initiate a preset service or switch to the function menu by pressing the preprogrammed **One Touch Call**/**Menu** key.

The following table shows the services that can be implemented by this feature and the corresponding operations.

Description	Operation
On an analog channel, you can initiate a call to a two-tone contact.	Press the preprogrammed **One Touch Call**/**Menu** key to initiate the service.
On a digital channel, you can do one of the following: ● Initiate a(n) group, private, or all call. ● Send a quick text message or position message to a private or group contact. ● Initiate an alert call, radio check, remote monitor, radio enable, or radio disable service. ● Switch to a menu or realize a function.	✎**NOTE** To initiate a call on a digital channel, press the **One Touch Cal/Menu** key, and then press and hold the **PTT** key.

11.5 Roam

Roam allows the radio to select base stations according to signal strength. This ensures seamless communication across sites or networks.

● To turn on Roam, do either of the following:

  ➢ Press the preprogrammed **Roaming** key.

  ➢ On the home screen, go to **Menu** > **Roaming** > **On/Off**, and then press the **OK/Menu** key.

● To set the roam list, do the following:

  a. On the home screen, go to **Menu** > **Roaming** > **Roaming List**.

  b. Select a roaming list.

  c. Press the **OK/Menu** key.

  d. Do any of the following:

    ● To view or manage all channels on the current list, select **View Record**, and then press the **OK/Menu** key.

    ● To set the list as the default scan list for the current channel, select **Set Default**, and then press the **OK/Menu** key.

⚫To add a new channel to the list, select **Add CH**, and then press the **OK/Menu** key.

11.6 Priority Interrupt

Priority Interrupt allows you to interrupt the ongoing activities (such as a call, a call hang status or remote monitor) on the current channel to release it. Therefore, you can initiate a new call or data service on that channel.

Manual Priority Interrupt

Press the preprogrammed **Priority Interrupt** key to interrupt the ongoing activities.

Auto Priority Interrupt

Auto Priority Interrupt	Triggered When You…
Emergency Priority Interrupt	Initiate an emergency call.
Call Back Priority Interrupt	Press and hold the **PTT** key to call back.
Message Priority Interrupt	Send a message.
Radio Disable Priority Interrupt	Send the Radio Disable command.
All Call Priority Interrupt	Initiate an all call.

11.7 Emergency Services

Emergency Service allows you to seek help from your companion or the control center in case of an emergency. You can initiate an emergency call with the highest priority even when your radio is transmitting or receiving.

In emergency mode, the radio transmits at high power level by default. According to the emergency type preset by your dealer, the radio gives different indications as follows:

Emergency Type	Description
Siren Only	The radio emits siren and displays ⚠ and 🚨, but does not transmit any emergency signal to the control center.
Regular	The radio gives visible or audible indications.
Silent	The radio gives no visible and audible indication.
Silent w/ Voice	The radio gives audible indication only upon receiving a call. Otherwise, the radio gives no audible or visible indication.

Emergency Type	Description
Alarm w/ Siren	The radio transmits the emergency signal to the control center, and then emits siren and displays ⚠ and 🚨.

In addition, you can request your dealer to set one of the following emergency modes:

Emergency Mode	Description	Note
Call Only	It allows you to initiate an emergency call.	If the emergency type is Siren Only or Alarm w/Siren, you do not need to set the emergency mode.
Alarm w/Call	It allows you to send an emergency code and initiate an emergency call.	
Alarm	It allows you to send an emergency code.	

11.7.1 Initiate an Emergency Call

Press the preprogrammed **Emergency On** key to initiate an emergency call to the preset contact.

If the Alarm w/Call To Follow feature is preprogrammed by your dealer, you can speak into the microphone without pressing or holding the **PTT** key. If the preset voice cycles expire, you can press and hold the **PTT** key to initiate an emergency call again.

11.7.2 Answer an Emergency Call

You can answer an emergency call without any operation.

11.7.3 End an Emergency Call

● Calling party

  ➢ Press the preprogrammed **Emergency Off** key.

  ➢ Turn off the radio.

● Called party

  ➢ Switch the channel.

  ➢ Turn off the radio.

11.8 Radio Disable and Radio Enable

● Radio Disable

You can send a Radio Disable command to remotely disable a radio. Once disabled, this radio becomes inoperable but can still be monitored remotely.

● Radio Enable

You can enable the disabled radio again to resume normal operation by either of the following methods:

➢ Send a Radio Enable command to the radio.

➢ Program the radio again.

12. Troubleshooting

Phenomena	Analysis	Solution
The radio cannot be turned on.	The battery may be installed improperly.	Remove and reattach the battery.
	The battery power may have run out.	Recharge or replace the battery.
	The battery may suffer from poor contact caused by dirtied or damaged battery contacts.	Clean the battery contacts.
The voice is unclear.	The signal may be weak.	Make sure call participants are within the communication range.
There are unknown voices or noises on the channel.	You may be interrupted by radios using the same frequency.	Change the frequency, or adjust the squelch level.
	The radio may be set with no signaling.	Set signaling for all member radios to avoid interference at the same frequency.
The LCD display does not display any information.	The LCD display may fail to function temporarily.	Restart the radio.
The radio cannot be located.	The radio may be at an unfavorable position, so no position signal is received.	Move to an open and flat area, and try again.
The radio cannot be paired with a BT device.	The battery power of the BT device may be low.	Charge the BT device.
	The BT device may be too far away from the radio.	Move the BT device towards the radio.
During receiving, the voice is weak, discontinuous, or totally inactive.	The battery voltage may be low.	Recharge or replace the battery.
	The volume may be low.	Increase the volume, or contact your dealer to turn off the Mic AGC feature.
	The antenna may be loosened or installed improperly.	Turn the radio off, and then reattach the antenna.

	The speaker may be blocked or damaged.	Clean the surface of the speaker.
The radio fails to communicate with group members.	The frequency or signaling type may be inconsistent with that of other members.	Set your TX/RX frequency and signaling to the same as that of other members.
	The channel type (digital/analog) may be set inconsistently.	Make sure all members are on the same digital/analog channel.
	You may be too far away from the group members.	Move towards other members.
	The signal may be weak.	Make sure call participants are within the communication range.
There is too much noise and hiss.	The signal may be weak.	Make sure call participants are within the communication range.
	The radio may be in an unfavorable position. For example, the signal may be blocked by tall buildings or frustrated in the underground areas.	Move to an open and flat area, and then restart the radio.
	The radio may suffer from external disturbance (such as electromagnetic interference).	Stay away from the equipment that may cause interference.

If the above solutions cannot solve your problems, or you may have some other queries, please contact us or your local dealer for more technical support.

13. Product Care

13.1 Radio

> ⚠️ **CAUTION**
>
> If the product comes in contact with liquid, do not turn it on. Contact your local dealer or service center in time.

To ensure optimal performance and maximize product lifespan, follow these instructions:

- Do not disassemble the product.

- Do not drop, crush, or smash the product.

- Do not pierce or scrape the product, especially the interfaces and ventilation holes.

- Do not expose the product to extreme temperatures for a prolonged period.

- Keep the product away from corrosive substances, such as salty water or corrosive gas.

- Close the accessory connector cover when no accessory is in use.

- Do not connect the product to other incompatible devices.

- Do not hold the product by its antenna.

To avoid liquid penetration into the product, follow these instructions:

- Do not expose the product to the environment with high temperature and high humidity.

- Keep the product away from salty water, ionized water, alcoholic beverage, lotion, or other impure water.

- Before connecting the accessory or charger to the product, ensure both the product and the interface are dry.

If the product comes in contact with liquid, follow these instructions:

- Do not turn on the product.

- Do not connect any accessory or charger to the product.

- Do not use external heat sources (such as microwave and hair dryer) to dry the product.

- Do not insert the cotton buds or tissue into the interface.

- Use the clean and soft cloth to dry the water on the product surface, and then put the product to the well-ventilated place until it is fully dry.

13.2 Battery

To ensure optimal performance and maximize battery life and lifespan, follow these instructions:

- Only use the charger approved by the Company to charge the battery.

- Keep the product turned off during charging.

- Do not use the product during charging.

- Charge the battery at the temperature from 0°C to 45°C.

- When the low battery alert appears, replace or charge the battery in time.

- When the battery is fully charged, disconnect the charger in time.

- Do not drop the battery.

- Do not expose the battery to water.

- To avoid short circuit, do not use conductive materials (such as iron wire) to touch the battery electrodes.

- Do not dispose of the battery with household waste.

13.3 Cleaning

⚠ CAUTION

● Before cleaning, turn off the product, remove the battery, and disconnect the cable, antenna, and accessory.

● Do not use chemical preparations such as stain removers, alcohol, sprays, or oil preparations.

● Do not directly spray the neutral cleanser on the product.

● Do not use the product before it is fully dry.

● After cleaning the accessory connector, put the cover back in place.

It is recommended that you clean the product regularly. During cleaning, check whether the components are damaged. If damages exist, contact your local dealer or the Company for service.

1. Use the non-metal brush to remove the dust or dirt from the product surface.

2. Use the lint-free cloth with proper neutral cleanser to clean the surface, screen, keys, knob, and interfaces.

3. Use another lint-free cloth with proper pure water to clean up the cleanser or residue.

📝 NOTE

To clean the battery slot, use the non-mental brush to remove the dust or dirt, and then use the dry and soft lint-free cloth to clean up the battery contacts.

13.4 Sterilizing

⚠ **CAUTION**

- Before sterilizing, turn off the product, remove the battery, and disconnect the cable, antenna, and accessory.

- Do not directly spray the alcohol on the product.

- Keep the product away from the power supply and fire source.

- Do not use the product before it is fully dry.

- After sterilizing the accessory connector, put the cover back in place.

It is recommended that you sterilize the product regularly.

Use the lint-free cloth with proper rubbing alcohol (density $\geq$ 70%) to clean up the product surface, screen, knob, keys, and interfaces.

13.5 Storing

⚠ **CAUTION**

- Before storing, turn off the product, remove the battery, and disconnect the cable, antenna, and accessory.

- Long-term storage may affect battery capacity and performance.

When you store the product, follow these instructions:

- Keep the product in the well-ventilated place with the temperature from –40°C to +85°C and humidity from 45% to 75%.

- Keep the product away from the acidic or corrosive substances.

- Keep the product away from the fire or other heat sources.

- Do not store the product in direct sunlight.

- During storing, charge the battery every three months, and care the battery every six months.

14. Optional Accessories

⚠ CAUTION

Use the accessories approved by the Company only. Otherwise, we will not be liable for any loss or damage

arising out of the use of unauthorized accessories.

Contact your local dealer for the optional accessories used with the product.

15. Specifications

Item	Description
Frequency Range	136–174 MHz 400–470 MHz
Channel Capacity	512
Channel Spacing	12.5 kHz/20 kHz/25 kHz
Operating Voltage	7.4 V DC
Explosion-proof Rating	- Class I, Division 1, Groups C-D, T4; - Class II, Class III, Division 1, Groups E-G, T135°C; - Class I, Division 2, Groups A - D, T4; Ta: –20°C to 60°C
Sensitivity	- Analog: 0.18 µV (12 dB SINAD) 0.16 µV (Typical) (12 dB SINAD) - Digital: 0.18 µV/BER5%
RF Output Power	- UHF: 4 W/1 W - VHF: 5 W/1 W
Rated Audio Output Power	0.5 W
Rated Audio Distortion	≤ 3%
Operating Temperature	–20°C to +60°C
Storage Temperature	–40°C to +85°C
Ex Battery	BL2301-Ex (2400 mAh, typical)
Battery Life (5-5-90 duty cycle, high TX power at digital mode)	- With Location turned on: 21 h - With Location turned off: 23 h

NOTE

All specifications are subject to changes without notice.

16. Abbreviations

Abbreviation	Full Name
GPS	Global Positioning System
LCD	Liquid-Crystal Display
LED	Light-Emitting Diode
PTT	Push-To-Talk
SN	Serial Number
SK	Side Key