Hytera

User Manual

HP68X DIGITAL PORTABLE RADIO



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:

HP68X Digital Portable Radio (X may represent 2, 5, 6, or 8)

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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 your 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.

EU Regulatory Conformance

As certified by the qualified laboratory, the product is in compliance with the essential requirements and other relevant provisions of 2014/53/EU.

Please note that the above information is applicable to EU countries only.

Contents

Documentation Conventions **4**
1. Packing List **5**
2. Product Overview **6**
2.1 Product Layout 6
2.2 Programmable Keys 8
3. Before Use **9**
3.1 Charging the Battery 9
3.2 Attaching the Belt Clip 9
3.3 Attaching the Battery 10
3.4 Attaching the Antenna 10
3.5 Attaching the Audio Accessory 11
4. Basic Operations **13**
4.1 Turning the Radio On or Off 13
4.2 Adjusting the Volume 13
4.3 Locking or Unlocking the Keypad 13
4.4 Using the Keypad 13
4.5 Selecting a Zone 14
4.6 Selecting a Channel 14
5. Status Indications **15**
5.1 LCD Icons 15
5.2 LED Indications 16
6. Call Services **17**
6.1 Group Call 17
6.1.1 Initiating a Group Call 17
6.1.2 Receiving a Group Call 17
6.1.3 Ending a Group Call 18
6.2 Private Call 18
6.2.1 Initiating a Private Call 18
6.2.2 Receiving a Private Call 18
6.2.3 Ending a Private Call 19
6.3 All Call 19
6.3.1 Initiating an All Call 19
6.3.2 Receiving an All Call 19
6.3.3 Ending an All Call 19
6.4 Phone Call 19
6.4.1 Initiating a Phone Call 19
6.4.2 Receiving a Phone Call 20
6.4.3 Ending a Phone Call 20

6.5 Call on Analog Channel 20
6.5.1 Call Without Signaling 20
6.5.2 Call with Signaling 20
7. Message Services 21
7.1 Sending a Message 21
7.2 Replying to a Message 22
7.3 Editing a Message 22
8. Supplementary Features 23
8.1 Settings 23
8.1.1 Basic Settings 23
8.1.2 Call Settings 25
8.1.3 Security Settings 25
8.1.4 Checking the Radio Information 27
8.2 Contacts 27
8.2.1 Creating a Contact 27
8.2.2 Editing a Favorite Contact Switching the Profile 28
8.3 Profiles 28
8.3.1 Switching the Profile 28
8.3.2 Setting the Alert Tone 28
8.3.3 Enabling the Mic AGC 29
8.3.4 Enabling the Noise Cancellation 29
8.3.5 Selecting the Audio Mode 29
8.4 Scan 29
8.4.1 Enabling the Scan Feature 29
8.4.2 Setting the Scan List 30
8.5 Positioning 30
8.5.1 Enabling the Positioning Feature 30
8.5.2 Selecting the Positioning System 30
8.5.3 Viewing the Position 31
8.5.4 Sending a Position Message 31
8.5.5 Call Location 31
8.5.6 GPS Report 31
8.5.7 Quick GPS 32
8.6 BT 32
8.6.1 Connecting a BT Device 32
8.6.2 BT Audio Switch 33
8.6.3 Setting the BT 33
8.7 One Touch Call/Menu 33
8.8 Quick Dial 34
8.9 Roam 34

8.10 Priority Interrupt 34
8.10.1 Manual Priority Interrupt 34
8.10.2 Auto Priority Interrupt 34
8.11 Emergency 35
8.11.1 Initiating an Emergency Call 35
8.11.2 Receiving an Emergency Call 36
8.11.3 Ending an Emergency Call 36
8.12 Kill and Revive 36
8.13 Emergency Erase Data 36
9. Troubleshooting 37
10. Radio Care 39
10.1 Radio 39
10.2 Battery 39
10.3 Cleaning 40
10.4 Sterilizing 40
10.5 Storing 41
11. Optional Accessories 42
12. Abbreviations 43

Documentation Conventions

Icon Conventions

Icon	Description
NOTE	Indicates references that can further describe the related topics.
CAUTION	Indicates situations that could cause data loss or equipment damage.

Notation Conventions

Item	Description	Example
Boldface	Denotes menus, tabs, parameter names, window names, dialogue names, and hardware buttons.	To save the configuration, click **Apply**.
		The **Log Level Settings** dialogue box 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 DWS, refer to *Dispatch Workstation User 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

Please unpack carefully and check that you have received the following items. If any item is missing or damaged, contact your dealer.

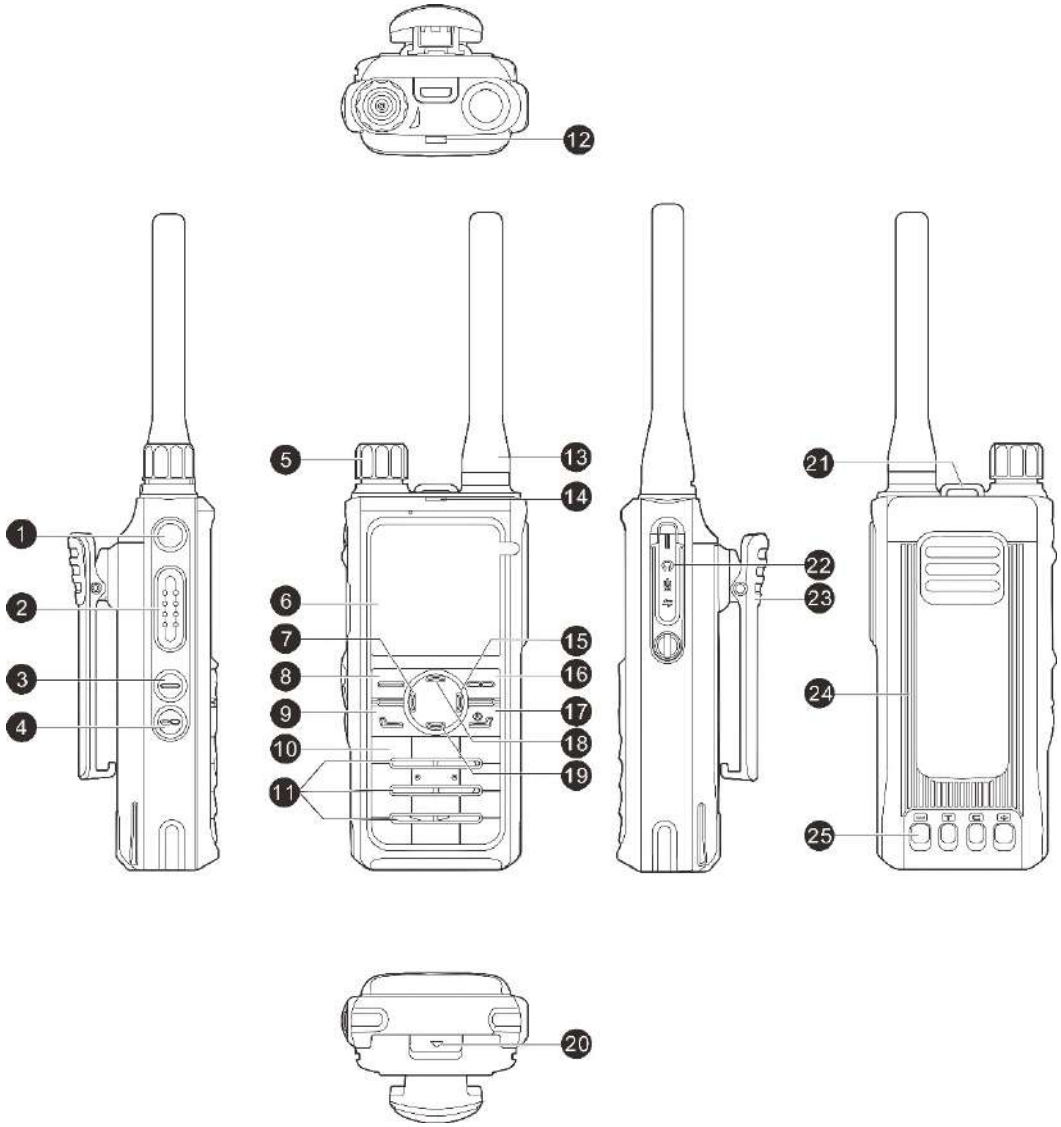
Item	Quantity (PCS)	Item	Quantity (PCS)
Radio	1	Antenna	1
Battery	1	Belt Clip	1
Charger	1	Strap	1
Power Adapter	1	Documentation Kit	1

NOTE

- Figures in this manual are only for reference.
- Check whether 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
1	Side Key (SK1)	14	Microphone
2	Push-to-Talk (PTT) Key	15	Right Key
3	Side Key 2 (SK2)	16	Back Key
4	Side Key 3 (SK3)	17	On-Off/P2 Key
5	Smart Knob	18	Up Key
6	LCD Display	19	Down Key

No.	Part Name	No.	Part Name
7	Left Key	20	Battery Latch
8	OK/Menu Key	21	Strap Hole
9	P1 Key	22	Accessory Connector
10	Keypad	23	Belt Clip
11	Speaker	24	Battery
12	LED Indicator	25	Charging Contacts
13	Antenna	/	/

2.2 Programmable Keys

For enhanced convenience, you can request your dealer to program the following keys as shortcuts to radio features: **SK1**, **SK2**, **SK3**, **P1** key, **P2** Key, **Up** key, and **Down** key. For details, consult your dealer.

3. Before Use

3.1 Charging the Battery

⚠ CAUTION

- Use the approved charger to charge the battery.
- 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).

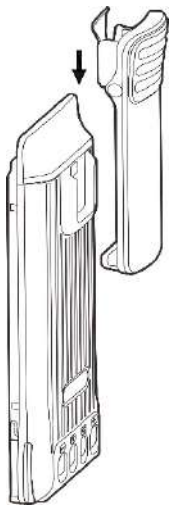
Before initial use, charge the battery alone or the battery attached to the radio. It is recommended that the radio remain powered off during charging.

The LED indicator on the charger shows the charging status, as described in the following table.

LED Indicator	Charging Status
Glows red	The battery is being charged.
Glows orange	The battery is charged to 90% or above.
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.

3.2 Attaching the Belt Clip

Align the holder on the belt clip with the groove on the battery, and then press the belt clip downwards into place.



NOTE

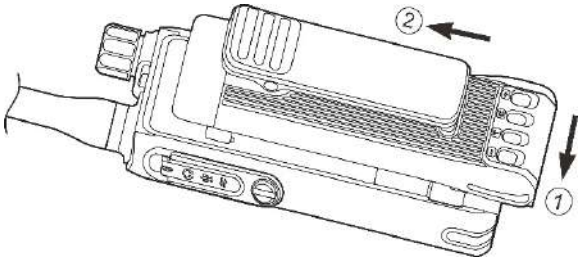
You can press and hold the belt clip spring plate and push the belt clip upwards to remove it.

3.3 Attaching the Battery

CAUTION

- 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*.

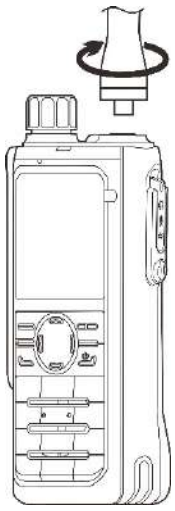
1. Align the tabs on the battery with the grooves in the battery slot.
2. Press and push the battery into the battery slot until a click is heard.



3.4 Attaching the Antenna

CAUTION

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.



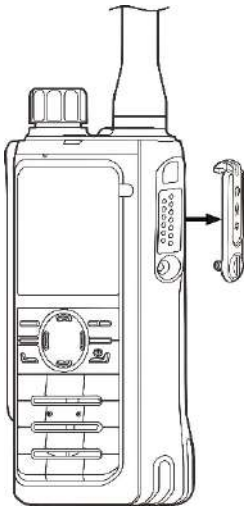
3.5 Attaching the Audio Accessory

⚠ CAUTION

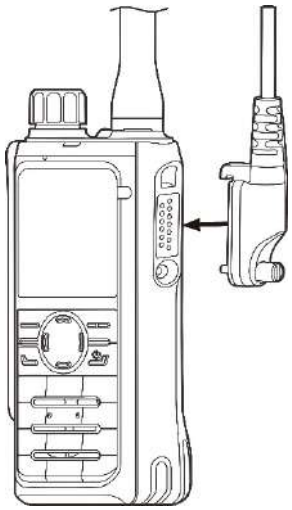
For optimal waterproof and dustproof performance, do as follows:

- Attach the accessory with care to avoid scraping the silicone rubber surrounding the accessory connector screw hole.
- Close the accessory connector cover and fasten the screw after removing the accessory.

1. Loosen the screw on the accessory connector cover, and then remove the cover.



2. Insert the audio accessory plug into the accessory connector.



3. Tighten the screw on the audio accessory plug.



4. Basic Operations

4.1 Turning the Radio On or Off

To turn the radio on or off, press and hold .

4.2 Adjusting the Volume

Rotate the **Smart** knob clockwise to increase the volume, or counter-clockwise to decrease the volume.

4.3 Locking or Unlocking the Keypad

When the keypad is not in use, it is recommended that you lock it to avoid unintended operations.

- Auto Lock

  a. Go to **Menu** > **Settings** > **Basic Settings** > **Keypad Lock**.

  b. Enable **AutoLock**, and then go to **Timed** to set the auto lock time.

  If you do not operate the radio or if the radio receives no call or message within the auto lock time, the keypad is locked automatically.

- Manual Lock or Unlock

  ➢ Press the preprogrammed **Keypad Lock** key.

  ➢ On the home screen, press the **OK/Menu** key, and then press .

- Keypad Lock Backup

  With this feature preprogrammed by your dealer, the radio automatically saves the last settings of keypad lock upon power-off.

NOTE

You can go to **Menu** > **Settings** > **Basic Settings** > **Keypad Lock** > **Optional Key** to set whether the following keys and knobs still work when the keypad is locked: **SK1**, **SK2**, **SK3**, **PTT** key, **P1/Answer** key, **P2/Home** key, **CH/Group** knob, **ACC P1** key, **ACC P2** key, **ACC P3/TK** key, and **ACC** knob.

4.4 Using the Keypad

You can use the keypad to enter contact aliases and IDs, or edit messages.

- To switch the input method between alphabetic mode and numeric mode, press .
- To enter special characters, press  in alphabetic mode.
- To enter a space, press  in alphabetic mode.

4.5 Selecting a Zone

A zone is a group of channels within the same operational area.

To select a zone, do either of the following:

- Go to **Menu** > **Zone**, select the zone, and then select **Set Default**.
- Press the preprogrammed **Zone Up** or **Zone Down** key.

4.6 Selecting a Channel

The radio receives and transmits voice and data on the selected channel. Before selecting a channel, make sure that the current zone contains the channel.

To select the channel, do one of the following:

- Press the **Smart** knob, and then rotate the knob within 5s.

  NOTE

  If you do not rotate the **Smart** knob within 5s, or if you press it again within 5s, you can rotate it to only adjust the volume.

- Go to **Menu** > **Zone**, select the zone, and then select the channel.
- Press the **Back** key, select the zone, and then select the channel.
- Press the preprogrammed **Channel Up** or **Channel Down** key.
- Press the preprogrammed **Preset Channel** key.

5. Status Indications

5.1 LCD Icons

Icon	Radio Status
	More bars indicate more remaining battery power
	The battery power runs out. Recharge or replace the battery.
	The radio detects no signal.
	The number of bars indicates the signal strength.
	The radio operates in low power mode.
	The radio operates in high power mode.
	The keypad is locked.
	An accessory is connected.
	The GPS feature is enabled, and valid positioning data has been received.
	The GPS feature is enabled, but no valid positioning data has been received.
	The BT feature is enabled.
	A BT device is connected.
	The radio is operating in emergency mode.
	The radio stays on a site.
	The radio is roaming.
	The Scrambler or Encrypt feature is enabled.
	The Over the Air Encrypt feature is enabled.
	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 has switched to the mixed channel.
	The Monitor feature is enabled.
	The speaker is unmuted.
	The radio operates in silent mode.
	The radio operates in profile 1.

Icon	Radio Status
	The radio operates in profile 2.
	The radio operates in profile 3.
	There is/are new/unread message(s).
	The inbox is full.
	There is/are missed call(s).
	The Call Divert feature is enabled.

5.2 LED Indications

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.
Flashes orange rapidly	The radio is operating in emergency mode.
Glows orange	Call hang time: No voice is being transmitted or received during a call. Within such a period, you can press and hold the **PTT** key to speak.
Flashes blue every 3s	The BT feature is enabled, but no BT device is connected.
Flashes blue every 1.5s	A BT device is connected.
Flashes blue every 0.1s	The BT feature is being disabled.

6. Call Services

When you are speaking during a call, keep the microphone about 2.5 cm to 5 cm away from your mouth. This ensures optimal voice quality on the receiving radio.

6.1 Group Call

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

6.1.1 Initiating a Group Call

Through Preset Contact

Press and then rotate the **Smart** knob to select the group contact preset for the digital channel, and then press and hold the **PTT** key.

Through Contact List

1. Go to **Menu** > **Contact/Favorite**, or press the preprogrammed **Contact List** or **Favorite Contact List** key.
2. Select the group contact.
3. Press and hold the **PTT** key.

Through Manual Dialing

- With the group call dial permission preprogrammed by your dealer, on the home screen, enter the group ID, select **Group ID**, and then press and hold the **PTT** key.
- With the Keypad Mode feature preprogrammed by your dealer, go to **Menu** > **Settings** > **Basic Settings** > **Keypad Mode**, and then select **On**. On the home screen, enter the group ID, select **Group ID**, and then press and hold the **PTT** key.

NOTE

The group ID must comply with the dialing rules. For details, consult your dealer.

Through One Touch Call/Menu

With the One Touch Call/Menu feature preprogrammed by your dealer, press the preprogrammed **One Touch Call/Menu** key, and then press and hold the **PTT** key.

6.1.2 Receiving a Group Call

You can answer a group call without any operation.

6.1.3 Ending 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 Initiating a Private Call

Through Preset Contact

Press and then rotate the **Smart** knob to select the private contact preset for the digital channel, and then press and hold the **PTT** key.

Through Contact List

1. Go to **Menu** > **Contact/Favorite**, or press the preprogrammed **Contact List** or **Favorite Contact List** key.
2. Select the private contact.
3. Press and hold the **PTT** key.

Through Manual Dialing

With the private call dial permission preprogrammed by your dealer, on the home screen, enter the private ID, select **Private ID**, and then press and hold the **PTT** key.

With the Keypad Mode feature preprogrammed by your dealer, go to **Menu** > **Settings** > **Basic Settings** > **Keypad Mode**, and then select **On**. On the home screen, enter the private ID, select **Private ID**, and then press and hold the **PTT** key.

NOTE

The private ID must comply with the dialing rules. For details, consult your dealer.

Through Call Logs

Go to **Menu** > **Call Logs**, select the private call record, and then press and hold the **PTT** key.

Through One Touch Call/Menu

With the One Touch Call/Menu feature preprogrammed by your dealer, press the preprogrammed **One Touch Call/Menu** key, and then press and hold the **PTT** key.

6.2.2 Receiving a Private Call

You can answer a private call without any operation.

6.2.3 Ending 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 all the other users on the current digital channel.

6.3.1 Initiating an All Call

Through Preset Contact

Press and then rotate the **Smart** knob to select the all call contact preset for the digital channel, and then press and hold the **PTT** key.

Through Contact List

1. Go to **Menu** > **Contact/Favorite**, or press the preprogrammed **Contact List** or **Favorite Contact List** key.
2. Select the all call contact.
3. Press and hold the **PTT** key.

Through One Touch Call/Menu

With the One Touch Call/Menu feature preprogrammed, press the preprogrammed **One Touch Call/Menu** key, and then press and hold the **PTT** key.

6.3.2 Receiving an All Call

You can answer an all call without any operation.

6.3.3 Ending an All Call

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

6.4 Phone Call

A phone call is a call between a radio and a phone. After a repeater accesses the PSTN/PABX system through a PSTN/PABX gateway, the radio can communicate with the phone through the repeater.

6.4.1 Initiating a Phone Call

Through Contact List

1. Go to **Menu** > **Contact/Favorite**, or press the preprogrammed **Contact List** or **Favorite Contact List** key.
2. Select the phone contact.
3. Press and hold the **PTT** key.

Through Manual Dialing

With the phone call dial permission preprogrammed by your dealer, on the home screen, enter the phone number, select **DTMF Dial**, and then press and hold the **PTT** key.

NOTE

The phone number must comply with the dialing rules. For details, consult your dealer.

6.4.2 Receiving a Phone Call

When receiving a phone call, press  (with the One-Key Connect feature preprogrammed) or enter the connect code to access the phone system. Then you can answer the phone call.

6.4.3 Ending a Phone Call

A phone call ends in either of the following cases:

- The calling party hangs up.
- The called party presses  (with the One-Key Disconnect feature preprogrammed) or enters the disconnect code.

6.5 Call on Analog Channel

You can initiate or receive a call on an analog channel with or without signaling.

6.5.1 Call Without Signaling

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

On the home screen, press and then rotate the **Smart** knob to select the analog channel, and then press and hold the **PTT** key.

6.5.2 Call with Signaling

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

1. Go to **Menu** > **Contact**, or press the preprogrammed **Contact List** key.
2. Select the contact.
3. Press and hold the **PTT** key, or press the preprogrammed **One Touch Call/Menu** key.

7. Message Services

The radio can send and receive short messages, which are classified into the following types:

- Text message: a message containing text or numbers.
- Quick text message: a frequently used text message that can be created, edited, or deleted through the menu.

7.1 Sending a Message

Through Message

1. Go to **Menu** > **Message** > **Msg New** > **New Msg**.
2. Select the contact in either of the following ways:
   - In the recipient text box, enter the contact ID, and then press # to switch the ID type.
   - Press the **OK/Menu** key to enter the contact list, and then select the contact.
3. Do either of the following:
   - To send a text message, enter the message content in the message text box.
   - To send a quick text message, select **Insert** to add the message.
4. Select **Send**.

Through Contact

1. Go to **Menu** > **Contact** > **Contact/Favorite**.
2. Select the contact.
3. Press the **OK/Menu** key, and then select **New Msg**.
4. Enter the message content, or select **Insert** to add the quick text.
5. Select **Send**.

Through Call Logs

1. Go to **Menu** > **Call Logs**.
2. Select the contact.
3. Select **Send Msg**.
4. Enter the message content, or select **Insert** to add the quick text.
5. Select **Send**.

7.2 Replying to a Message

To reply to a message, do as follows:

1. Go to **Menu** > **Message** > **Msg**.
2. Select a conversation.
3. Select **Reply**.
4. Enter the message content, or select **Insert** to add the quick text.
5. Select **Send**.

7.3 Editing a Message

To edit a message, do as follows:

1. Go to **Menu** > **Message** > **Msg**.
2. Select a dialog box.
3. Press the **Up** key, and then press the **OK/Menu** key.
4. Do either of the following:
   - Select **Forward** to forward the message.
   - Select **Resend** to resend the message.
   - Select **Delete** to delete the message.
   - Select **Delete All** to delete all messages with the contact.

8. Supplementary Features

8.1 Settings

Go to **Menu** > **Settings**, and then set radio parameters including **Basic Settings**, **Call Settings**, and **Security Settings**.

8.1.1 Basic Settings

Language

Go to **Basic Settings** > **Language**, and then select the display language.

Display

Go to **Basic Settings** > **Display**, and then set any of the following:

- Backlight

  The backlight is designed to illuminate the display and keypad.

  Go to **Backlight**, and then select **Off**, **Light**, or **Timed**.

- Night Mode

  The display modes include day mode and night mode. The screen brightness and user interface vary with the display mode.

  Go to **Night Mode** to switch between the two modes.

- Brightness

  Go to **Brightness**, and then select the screen brightness level.

  Lower level represents brighter screen.

Keypad Lock

For details, see 4.3 Locking or Unlocking the Keypad.

Date and Time

The radio displays the local time by default. If no time data is received, the radio displays "--:--".

Go to **Basic Settings** > **Date & Time**, and then do any of the following:

- With **Time Display** preprogrammed by your dealer, select **Time Display** to enable or disable the display of time on the home screen, or in the call logs and message interface.
- With **Time View** preprogrammed by your dealer, select **Time View** to view the current **Time**, **Date**, and **Week**.
- Select **Time Set**, and then modify the **Hour**/**Minute**/**Second**/**Year**/**Month**/**Day** to be displayed.

- Select **Time Format**, and then set the format to **24 Hour** or **12 Hour**.
- Select **Time Zone**, and then set the time zone.

Keypad Mode

With the Keypad Mode feature preprogrammed by your dealer, go to **Basic Settings** > **Keypad Mode**, and then do any of the following:

- Select **On** to enable the manual dialing on the home screen.
- Select **Off** to disable the manual dialing on the home screen.
- Select **One Touch Call/Menu** to allow the services of the One Touch Call/Menu feature to be triggered by the numeric keypad.

MIC and SPK

The MIC & SPK feature allows you to select the microphone and speaker used by the radio for transmitting and receiving voice. With the audio accessory connected, you can switch the audio options. For details, see the following table.

Option	Description	Operation
Follow PTT	When you transmit voice through the **PTT** key of the radio, the radio uses the internal microphone. When you transmit voice through the audio accessory, the radio uses the external microphone.	To switch the audio option, do either of the following: ● Go to **Basic Settings** > **MIC & SPK** > **MIC Selection**/**SPK Selection**, and then select the audio option. ● Press the preprogrammed **Mic Set Switch** or **SPK Set Switch** key.
Only Internal	The radio uses only the internal microphone and speaker.	
Only External	The radio uses only the microphone and speaker of the audio accessory, such as earpieces and remote speaker microphone.	
External First	When audio accessories are connected, the radio uses the external microphone and speaker. Otherwise, the radio uses the internal microphone and speaker.	

8.1.2 Call Settings

Power Level

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

Go to **Call Settings** > **Power Level**, and then select **High Power** or **Low Power**.

Talker Alias

With the Talker Alias feature preprogrammed by your dealer, you can do either of the following:

Sending the Caller Alias

Go to **Call Settings** > **TalkingAlias**, and then enable or disable **Send Alias**.

With **Send Alias** enabled, you can send the radio alias when initiating a call. The called party can view the alias on the display and identify the calling party.

Adding a Contact Automatically

Go to **Call Settings** > **TalkingAlias**, and then enable or disable **Auto Add Contact**.

When the radio receives a call from unknown calling party with **Send Alias** enabled, the radio will automatically save this number to the Contact list.

Talk Around

The Talk Around feature allows you to continue communication in direct mode when the repeater malfunctions or the radio is out of the coverage of the repeater.

With this feature preprogrammed by your dealer, go to **Call Settings** > **Talk Around**, and then enable or disable the feature.

Squelch Level

On an analog channel, the squelch level refers to the squelch threshold required for the speaker of the radio to be turned on. The higher squelch level requires a stronger signal.

- Go to **Call Settings** > **Squelch**, and then select **Open**, **Normal**, or **Tight**.
- Press the preprogrammed **Adjust Squelch Level** key to adjust the level.

Compandor

On an analog channel, the Compandor feature allows the radio to compress the audio when transmitting and decompress the audio when receiving to improve the audio quality.

Go to **Call Settings** > **Compandor**, and then enable or disable the feature.

8.1.3 Security Settings

Power-on Password

This feature allows you to set the power-on password of the radio. If you enter the wrong password for the preset consecutive times, the radio cannot be used normally. Contact your dealer to reset the password.

1. Go to **Security Settings** > **Power on Password** > **On/Off**.
2. Enter the password twice.
3. Select **Confirm**.

Encrypt

The Encrypt feature provides end-to-end encryption for voice and data to protect your voice and data against eavesdropping.

Enabling the Encrypt Feature

If the radio is preprogrammed with this feature, you can enable it in either of the following ways:

- Go to **Security Settings** > **Encrypt** > **On/Off**, and then enable the feature.
- Press the preprogrammed **Encrypt** key.

Setting the Encrypt Feature

You can add and select the encrypt key.

1. Add an encrypt key.

   Go to **Security Settings** > **Encrypt** > **New Key**, specify the key-related parameters, and then press the **OK/Menu** key.

   The following table describes the key-related parameters.

Parameter	Description
Key ID	The ID for each key must be unique. The value ranges from 1 to 255.
Key Alias	The key alias is composed of letters, digits, and special characters.
Key Length	The key length can be 10 characters, 32 characters, or 64 characters.
Key Value	The key value is composed of digits and letters and within the key length.

2. Select the encrypt key.

   Go to **Security Settings** > **Encrypt** > **Key List**, and then select the encrypt key.

Man Down

The Man Down feature allows the radio to automatically enter the emergency mode in either of the following scenarios:

- The radio is inclined by an angle greater than the preset angle.

- The radio keeps motionless (including moving at a constant speed) longer than the preset time.

You can place the radio upright or move it to exit the emergency mode.

To enable this feature, do either of the following:

- Go to **Security Settings** > **Man Down**.
- Press the preprogrammed **Man Down** key.

Lone Worker

The Lone Worker feature 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 enable this feature, do either of the following:

- Go to **Security Settings** > **Lone Worker**.
- Press the preprogrammed **Lone Worker** key.

8.1.4 Checking the Radio Information

Go to **Menu** > **Settings > Device Information**, and then do any of the following:

- Select **Device Status**, and then check the information of the battery.
- Select **Radio Information**, and then check the radio ID, serial number, model name, frequency range, and so on.
- With the QR Code feature preprogrammed by your dealer, select **QR Code**, and then scan the QR code to quickly obtain the radio information.

8.2 Contacts

8.2.1 Creating a Contact

Through Contact Menu

1. Go to **Menu** > **Contact > Contact** > **New Contact**.
2. Enter the alias and private ID/phone number.
3. Press the **OK/Menu** key.

NOTE

The alias and ID/number of each contact must be unique.

Through Call Logs

You can save a private ID to the contact list from the call logs. Do as follows:

1. Go to **Menu** > **Call Logs**.
2. Select the call log.
3. Select **New Contact** or **Add To Contact**.
4. Press the **OK/Menu** key.

8.2.2 Editing a Favorite Contact Switching the Profile

Go to **Menu** > **Contact** > **Favorite**, or press the preprogrammed **Favorite Contact List** key to enter the favorite contact list, and then do any of the following:

- Select the favorite contact to view details or delete it.
- Select **Edit** to add or delete favorite contacts.

8.3 Profiles

The Profiles feature allows you to set the audio, alert tone, and vibration of the radio to suit your preference and work environments. The profiles include the following:

- General: It applies to the low-noise environment, such as a quiet street.
- Meeting: It applies to the indoor environment that is relatively quiet.
- Outdoor: It applies to the high-noise environment, such as a highway.
- Covert: It applies to the special environment where the radio operates without any visible and audible alerts and notifications. The radio uses only the audio accessory to output voice.
- Custom: It applies to other specific situations.

8.3.1 Switching the Profile

- Go to **Menu** > **Profiles**, and then select the profile.
- Press the preprogrammed **Profiles Switch** key.

8.3.2 Setting the Alert Tone

- To enable or disable the alert tone, go to **Menu** > **Profiles** > **Settings** > **Tone** > **Radio Tone**.

- To adjust the alert tone volume, go to **Menu** > **Profiles** > **Settings** > **Tone** > **Radio Tone Volume/Single Tone**, and then select the volume level. Higher level represents higher volume.

8.3.3 Enabling the Mic AGC

The Mic AGC feature 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 a noisy environment.

With this feature preprogrammed by your dealer, go to **Menu** > **Profiles** > **Settings** > **Audio Set**> **Digital Mic AGC**/**Analog Mic AGC**.

8.3.4 Enabling the Noise Cancellation

The Noise Cancellation feature allows the radio to automatically eliminate ambient noise when receiving or transmitting voice. This feature enhances the voice clarity, while also decreases the volume.

With this feature preprogrammed by your dealer, you can do one of the following to enable it.

- Go to **Menu** > **Profiles** > **Settings** > **Audio Set** > **Noise Cancellation**.
- Press the preprogrammed **Noise Cancellation** key**.**

8.3.5 Selecting the Audio Mode

The Audio Mode feature allows the radio to balance frequency components of the audio signal upon receiving voice. This optimizes the quality of the received voice to meet user demands in different scenarios.

Go to **Menu** > **Profiles** > **Settings** > **Audio Set** > **Audio Mode**, and then select the mode. If **User Defined** is selected, you need to manually set **Low Freq. Gain**, **Mid Freq. Gain**, and **High Freq. Gain**.

8.4 Scan

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

8.4.1 Enabling the Scan Feature

- Go to **Menu** > **Scan** > **Scan On/Off**.
- Press the preprogrammed **Scan** key.

  With this feature enabled, the radio scans according to the scan list preset for the current channel. The LCD displays , and the LED indicator flashes orange slowly. When detecting activities on a channel, the radio stays on the channel. The LED indicator glows green. If the radio stays on a non-priority channel, the LCD displays . If the radio stays on Priority Channel 1 or Priority Channel 2, the LCD displays or .

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.

8.4.2 Setting the Scan List

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

Go to **Menu** > **Scan**, select the scan list, and then do any of the following:

- Select **Add CH** to add a new channel to the list.
- Select **Set Default** to set the list as the default scan list for the current channel.
- Select **View Record** to view or manage all channels on the current list.

  If you do not need to scan, you can delete all channels other than the current channel. If you want to preferentially hear the activities on a channel, you can select the channel, and then select **Set PrioCH-1** or **Set PrioCH-2**.

8.5 Positioning

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

NOTE

This feature applies only to radios with GPS, COMPASS, or GLONASS.

8.5.1 Enabling the Positioning Feature

Go to **Menu** > **Position** > **GPS On/Off**.

8.5.2 Selecting the Positioning System

The radio supports the following positioning systems:

- GPS
- COMPASS/GLONASS
- COMPASS/GLONASS+GPS

To select the positioning system, go to **Menu** > **Position** > **Position Sys**.

NOTE

This feature applies only to radios with COMPASS or GLONASS.

8.5.3 Viewing the Position

- Local Position

  Go to the **Menu** > **Position** > **Position**, and then view the position information of your radio (including longitude, latitude, time, date, and the number of satellites).

- Contact Position

  Go to **Menu** > **Position** > **Query Location**, and then view the location information of a nearby private contact (including alias, direction, and distance).

8.5.4 Sending a Position Message

You can send a position message to a contact. Do as follows:

1. Go to **Menu** > **Position** > **Position** > **GPS Msg**.
2. Press the **OK/Menu** key to enter the contact list, and then select the contact.
3. Press the **OK/Menu** key to send the message to the contact.

8.5.5 Call Location

During a call, if the transmitting radio is preprogrammed with the Call Location feature, the receiving radio displays the location information of the transmitting radio when receiving valid positioning data.

Voice w/Location

The Voice w/Location feature allows the radio to report its location information when initiating a private call, a group call, or an emergency call.

Go to **Menu** > **Position** > **Call Location** > **Voice w/Location**, and then enable the feature.

Display Call Location

If the transmitting radio is enabled with the Voice w/Location feature and the receiving radio is enabled with the Display Call Location feature, the receiving radio displays the location information of the transmitting radio during a call.

1. Go to **Menu** > **Position** > **Call Location** > **Display Call Location**, and then enable the feature.
2. Go to **Menu** > **Position** > **Call Location** > **Display Type**, and then select **16 Azimuth & Dist.**, **Accur Azimuth & Dist.**, or **Talker Location**.

8.5.6 GPS Report

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

To report the location information, do either of the following:

- Press the preprogrammed **GPS Report** key.
- Request your dealer to configure the GPS Report trigger as power-on/off, preset time, or distance interval.

  The radio automatically reports the location information according to the trigger.

8.5.7 Quick GPS

Based on GPS standard time, the Quick GPS feature divides the GPS upload time into several equal-length time slices. These time slices are allocated to radios of different configurations for periodic upload and single upload. Each radio uses the same GPS upload time slice to upload GPS data, improving upload efficiency and reliability.

If your dealer preprograms the feature to a digital channel, the channel only reports the quick GPS data. The services of voice, short message, RRS, and conventional GPS report are not supported.

8.6 BT

CAUTION

- To derive optimal communication quality, it is recommended that the BT devices approved by the Company are used.
- If BT earpieces of other companies are used, you must use them with the wireless ring PTT of the Company. Otherwise, transmission is unavailable through the earpieces.

The BT feature allows the radio to connect to a BT device for short-distance communication and data exchange.

To enable the BT feature, go to **Menu** > **BT**, or press the preprogrammed **BT** key. After this feature is enabled, the LED indicator flashes blue every three seconds.

NOTE

The BT feature applies only to radios with the BT module.

8.6.1 Connecting a BT Device

1. Turn on the BT device and enter the pairing status. Refer to the accessory manual for details.
2. Search and connect to the BT device.
   - Go to **Menu** > **BT** > **Manual Search** > **Match PTT**/**Match Earphone**, enter the MAC address, and then press the **OK**/**Menu** key.
   - Go to **Menu** > **BT** > **Auto Search**, and then select the BT device from the detected device list.

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

8.6.2 BT Audio Switch

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

8.6.3 Setting the BT

Changing BT Name

Go to **Menu** > **BT** > **My Device** > **BT Devices Name**, and then enter the new name.

Setting Visibility

Go to **Menu** > **BT** > **My Device** > **Always Detected**, and then enable the feature.

Other BT devices can detect the radio.

Viewing BT Information

Go to **Menu** > **BT** > **My Device** > **Device Information** to view the BT version and MAC address of the radio.

8.7 One Touch Call/Menu

The One Touch Call/Menu feature allows you to quickly initiate a preset service 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 2-tone contact.	● Use the numeric keypad to initiate the service. 1. Go to **Menu** > **Settings** > **Basic Settings** > **Keypad Mode**, and then select **One Touch Call/Menu**. 2. On the home screen, press the numeric key to initiate the service. ● Press the preprogrammed **One Touch Call/Menu** key to initiate the service. **NOTE** While initiating a call on a digital channel, you need to press and hold the **PTT** key after pressing the **One Touch Call/Menu** key.
On a digital channel, you can do any of the following: ● Initiate a group call, a private call, or an all call. ● Send a quick text message or position message to a private or group contact. ● Initiate an alert call, radio check, remote monitor, revive, or kill service. ● Switch to a function menu or realize a function.	

8.8 Quick Dial

The Quick Dial feature allows you to enable or disable a feature or switch to a function menu by manual dialing.

This feature is available only when the keypad input is enabled.

On the home screen, press a numeric key (0–9) and then the **OK/Menu** key to adjust the power level, set the backlight, check the radio information, or enable/disable the alert tone.

NOTE

- When you enter "0" on the home screen, the quick dial text box appears by default.
- On a digital channel, you can press # to switch between the contact text box and the quick dial text box. On an analog channel, the radio displays only the quick dial text box.

8.9 Roam

The Roam feature allows you to enjoy seamless communication across sites or networks.

With the Roam feature preprogrammed by your dealer, you can do either of the following:

- Enabling the Roam Feature

Go to **Menu** > **Roam** > **On/Off**, or press the preprogrammed **Roam** key.

- Setting the Roam List

A roam list contains a group of channels under monitoring. Each list contains up to 32 channels.

Go to **Menu** > **Roam** > **Roam List**, select a roam list, and then add or delete channels in the list.

8.10 Priority Interrupt

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

This feature is preprogrammed by your dealer.

8.10.1 Manual Priority Interrupt

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

8.10.2 Auto Priority Interrupt

Auto Priority Interrupt includes Call Back Priority Interrupt, Emergency Priority Interrupt, All Call Priority Interrupt, Message Priority Interrupt, and Kill Priority Interrupt.

With this feature preprogrammed by your dealer, you can interrupt an ongoing call in one of the following ways:

- Press and hold the **PTT** key.
- Initiate an emergency call.
- Initiate an all call.
- Send a message.
- Send the Kill command.

8.11 Emergency

The Emergency feature allows you to seek help from your companion or the control center in case of 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. The available emergency types are as follows:

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

8.11.1 Initiating 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 and holding the **PTT** key. If the preset voice cycles expire, you can press and hold the **PTT** key to initiate the emergency call again.

8.11.2 Receiving an Emergency Call

You can answer an emergency call without any operation.

8.11.3 Ending an Emergency Call

The calling party can end an emergency call in either of the following ways:

- Press the preprogrammed **Emergency Off** key.
- Turn off the radio.

The called party can exit an emergency call by switching the channel or turning off the radio.

8.12 Kill and Revive

You can send the Kill command to a private contact to kill its radio. The killed radio is incapable of any function except the remote monitor. The killed radio must be reprogrammed by your dealer or revived by the Revive command for reuse.

You can send the Revive command to a private contact to restore its radio to normal use.

8.13 Emergency Erase Data

The Emergency Erase Data feature allows the radio to erase encrypted data in case of emergency, so as to prevent unauthorized access. When erasing the data, the radio stops voice and data services and returns to the home screen.

If this feature is preprogrammed by your dealer, the encrypted data can be erased in the following cases:

- Press **SK1** and then the **PTT** key (within 1.5s) for two times, and then press **SK1** again.
- When the radio is killed, the data on the radio will be erased automatically.

9. 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.
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.
	The antenna may be loosened or installed improperly.	Turn the radio off, and then remove and reattach the antenna.
	The speaker may be blocked or damaged.	Clean the surface of the speaker.
Communications with group members are unavailable.	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.
There are unknown voices or sounds 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.
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 restart the radio.
	The radio may suffer from external disturbance (such as electromagnetic interference).	Stay away from the equipment that may cause interference.
The LCD does not display any information.	The LCD may fail to function temporarily.	Restart the radio.

Phenomena	Analysis	Solution
The keys do not work.	The keys may fail to function temporarily.	Restart the radio.
The voice is unclear.	The signal may be weak.	Make sure call participants are within the communication range.
The GPS cannot locate your position.	The radio may be at an unfavorable position, so no GPS signal is received.	Move to an open and flat area, and try again.
The BT device cannot be paired.	The battery power of the BT device may be low.	Recharge the BT device.
	The BT device may be too far away from the radio.	Move the BT device towards the radio.

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.

10. Radio Care

10.1 Radio

⚠ CAUTION

If the radio is seriously wet inside, do not turn on it. Contact your dealer or maintenance center for maintenance in time.

To guarantee optimum performance as well as a long service life of the radio, follow the tips below:

- Do not disassemble the radio.
- Do not throw, crack, or hammer the radio.
- Do not pierce or scrape the radio, espeically the interfaces.
- Do not expose the radio to the extreme temperature.
- Keep the radio away from substances that can corrode it.
- Close the accessory connector cover when no accessory is in use.
- Do not connect the radio to the incompatible device.
- Do not hold the radio by its antenna.

To avoid liquid penetration into the radio, follow the tips below:

- Do not expose the radio to the environment with high temperature and high humidity.
- Keep the radio away from salty water, ionized water, alcoholic beverage, lotion, or other impure water.
- Before connecting the accessory or charger to the radio, ensure the radio and the interface are dry.

If the radio has been wet, follow the tips below:

- Do not turn on the radio.
- Do not connect the accesory or charger to the radio.
- Do not dry the radio by microwave, hair dry, or other external heat sources.
- Do not insert the cotton buds or tissue into the interface.
- Use the clean and soft cloth to dry the water on the radio surface, and then put the radio to the well-ventilated place until it is dry.

10.2 Battery

To guarantee optimum performance as well as a long service life of the battery, follow the tips below:

- Use the approved charger to charge the battery.

- Keep the radio turnned off during charging.
- Do not use the radio during charging.
- Charge the battery under the temperature from 0℃ to 45℃.
- When the low battery alert occurs, replace or charge the battery in time.
- When the battery is fully charged, disconnect the charger in time.
- Do not drop the battery by force.
- Do not make the battery wet.
- To avoid short circuit, do not use the conductive substance such as iron wire to touch the anode and cathode of the battery.

10.3 Cleaning

⚠ CAUTION

- Turn off the radio and remove the battery before cleaning.
- Ensure no external devices are connected to the radio.
- Do not use chemical preparations such as stain removers, alcohol, sprays, or oil preparations.
- Do not directly spray the neutral cleanser on the radio.
- Do not use the radio before it is fully dry.
- After cleaning the accessory connector , put the cover back in place.

It is recommended to clean the radio regularly. During cleaning, you can check whether the components are damaged. If damages exist, contact your local dealer or the Company.

1. Use the non-metal brush to clean up the dust or dirt on the radio surface.
2. Use the lint-free cloth with proper neutral cleanser to clean the surface, screen, keys, knobs, and interfaces.
3. Use another lint-free cloth with proper pure water to clean up the cleanser or residue.
4. When cleaning the battery slot, use the non-metal brush to clean up the dust and dirt in the slot, and then use the dry and soft lint-free cloth to clean the contacts.

10.4 Sterilizing

⚠ CAUTION

- Turn off the radio and remove the battery before sterilizing.

- Ensure no external devices are connected to the radio.
- Do not directly spray the alcohol on the radio.
- Keep the radio away from the power supply and fire.
- Do not use the radio before it is fully dry.
- After sterilizing the accessory connector, put the cover back in place.

It is recommended to sterilize the radio regularly. You can sterilize the radio by the following tips:

Use the lint-free cloth with proper rubbing alcohol (density ≥ 70%) to clean the radio surface, screen, keys, knobs, and interfaces.

10.5 Storing

CAUTION

- Turn off the radio and remove the battery before storage.
- Ensure no external devices are connected to the radio.

When storing the radio, follow the tips below:

- Keep the radio in the well-ventilated place with the temperature from –5℃ to 25℃ and with the humidity from 45% to 75%.
- Keep the radio away from the acidic and corrosive substances.
- Keep the radio away from the fire or other heat sources.
- Do not store the radio in direct sunlight.
- During storing, charge the battery once every three months, and care the battery once every six months.

11. 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 radio.

12. Abbreviations

Abbreviation	Full Name
AGC	Automatic Gain Control
DTMF	Dual-tone Multi-frequency
GPS	Global Positioning System
LCD	Liquid-Crystal Display
LED	Light-Emitting Diode
PABX	Private Automatic Branch Exchange
PSTN	Public Switched Telephone Network
PTT	Push-To-Talk
RRS	Radio Registration Services
SK	Side Key

Hytera

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Address: Hytera Tower, Hi-Tech Industrial Park North, 9108# Beihuan Road, Nanshan District, Shenzhen, People's Republic of China Postcode: 518057
https:// www.hytera.com