

Preface

Thank you for purchasing Hytera POWER446 portable radio. As a high-tier license free radio (446MHz), it is equipped with reliable mechanics, superb waterproof performance, long standby time and simple operation, enabling you to enjoy communication services with ease!

To derive optimum performance from your product, please read this manual and the supplied Safety Information Booklet carefully before use.

Instructional Icons

The following icons are available through this manual:



Caution: indicates situations that could cause damage to your product.



Note: indicates tips that can help you make better use of your product.

Term Explanation

Please pay your attention to the following key terms:

Key Operation

Short press: to press a key and release it quickly.

Long press: to press and hold down a key for above 1.5 seconds.

Hold down: to press a key and remain holding it down.

User Mode

Refers to the mode entered after you turn on the radio directly.

CTCSS/CDCSS

The signaling can help you prevent unwanted conversations at the same frequency.

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<http://www.hytera.cn>.

RF Radiation Information

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.

As a conscientious company centering on users, Hytera strictly complies with the foregoing requirements from design, production and test.

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 no more than 50% of the time and always adhere to the following procedures:

- Your radio radiates measurable RF energy only while it is transmitting (during talking), not when it is receiving (listening) or in standby mode.
- Keep the radio at least 2.5 centimeters away from your body during transmission.

EU Regulatory Conformance

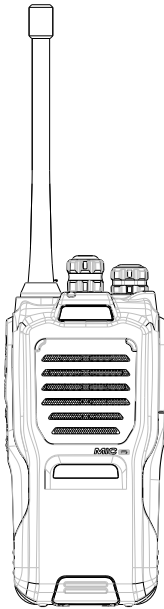
As certified by the qualified laboratory, the product is in compliance with the essential requirements and other relevant provisions of the Directive 1999/5/EC. Note:
Please note that the above information is applicable to EU countries only.

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Checking Items in the Package

Please unpack carefully and check that all items listed below are received. If any item is missing or damaged, please contact your dealer.



Radio



Li-Ion battery



Charger



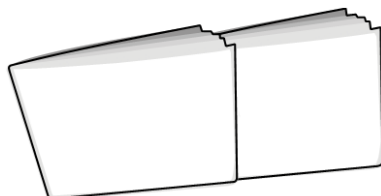
Power Adapter



Belt Clip



Strap



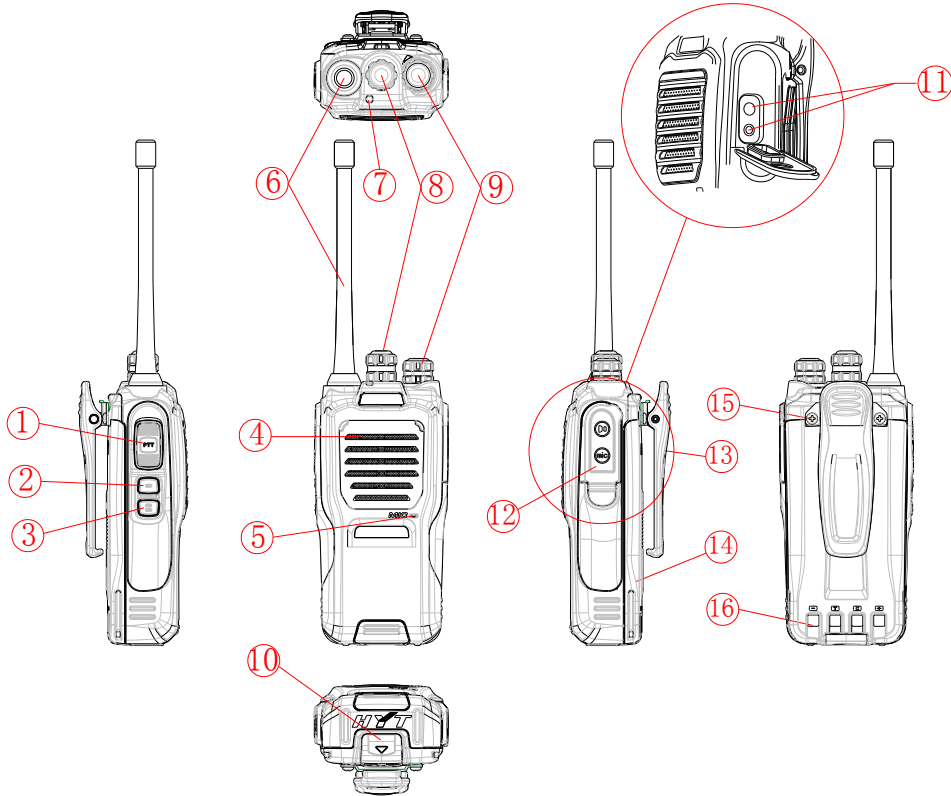
Manuals



Note: The above-mentioned pictures are for reference only.

Product Overview

Product Controls



| No. | Part Name | No. | Part Name | No. | Part Name |
|-----|----------------|-----|-----------------------|-----|----------------------------------|
| ① | PTT Key | ② | SK1 (programmable) | ③ | SK2 (programmable) |
| ④ | Speaker | ⑤ | Microphone | ⑥ | Antenna |
| ⑦ | LED Indicator | ⑧ | Channel Selector knob | ⑨ | Radio On-Off/Volume Control Knob |
| ⑩ | Battery Latch | ⑪ | Accessory Jack | ⑫ | Accessory Jack Cover |
| ⑬ | Belt Clip | ⑭ | Battery | ⑮ | Screw (Belt Clip) |
| ⑯ | Charging Piece | | | | |

Programmable Keys

For enhanced convenience, you may request your dealer to program the keys **SK1** and **SK2** as shortcuts to the functions listed below:

| No. | Shortcut Key | Function |
|-----|----------------------------|--|
| 1 | Monitor | To adjust the condition for incoming signal match |
| 2 | Monitor Momentary | |
| 3 | Squelch Off | To always unmute speaker no matter whether carrier is present or not |
| 4 | Squelch Off Momentary | |
| 5 | Scan | To receive signals on other channels |
| 6 | VOX | To make the radio transmit automatically when you speak. |
| 7 | Battery Strength Indicator | To indicate the battery strength |
| 8 | Channel Lockout | The current channel will remain unchanged in case of rotating the Channel Selector knob accidentally. |



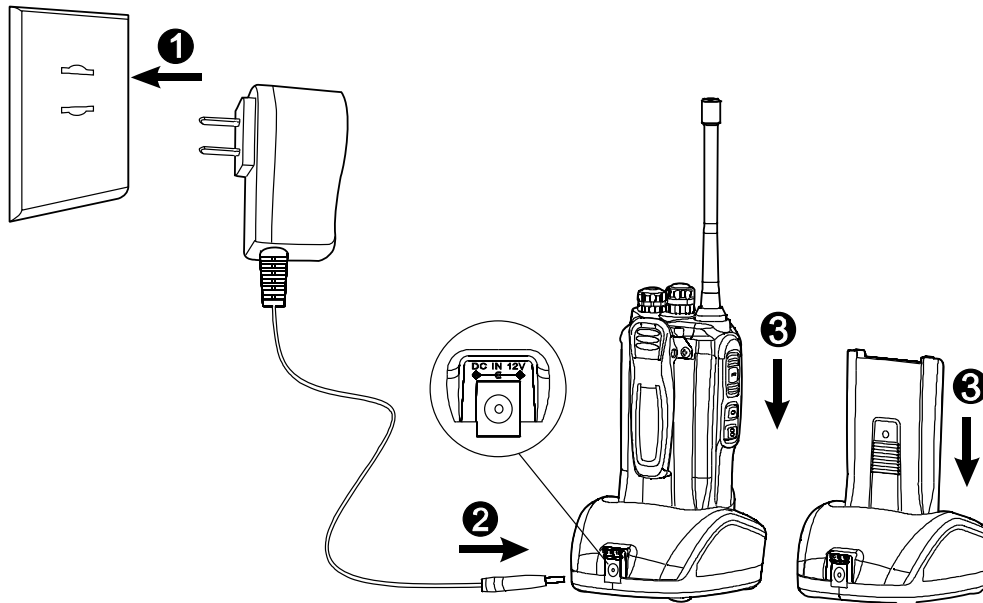
Note: Long and short press of a key can be assigned with different functions by your dealer.

Before Use

Charging the Battery

Use only the charger and battery specified by Hytera. Charger LED can indicate the charging process.

Charging Diagram



Procedures

1. Connect the power adapter to AC socket. See arrow ①.
2. Plug the power adapter into the rear jack of the charger. See arrow ②.
3. Place the radio with the battery attached, or the battery alone, into the charger. See arrow ③.
4. The LED glows red in the process of charging, and glows green after the charging is completed.




Note: To achieve optimal battery performance, please charge the battery for 5 hours before initial use.

LED Indicator

| Charge Status | LED Indicator |
|---------------|---------------|
|---------------|---------------|

| | |
|-------------------|---|
| Standby (no load) | The LED flashes red slowly (on for 0.2S/off for 3S). |
| Charging | The LED glows red. |
| Fully charged | The LED glows green. |
| Error | The LED flashes red rapidly (on for 0.2S/off for 0.2S). |

 **Caution:** Be sure to read the Safety Information Booklet, to get necessary safety information.

Assembling the Accessories

Assembling the Battery

1. Slide the battery into the radio's slot.

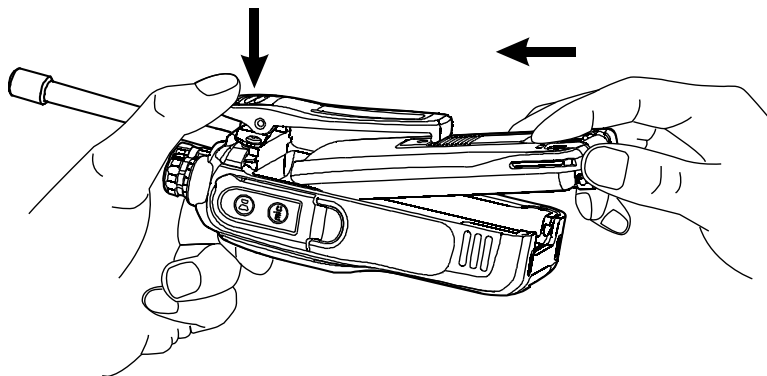


Figure 1

2. Slightly press the bottom of the battery until a click is heard.

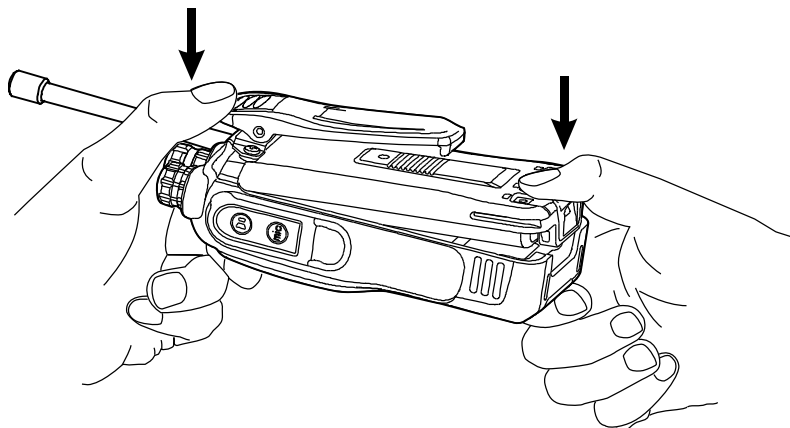


Figure 2

Disassembling the battery

1. Turn off the radio first and slide the battery latch upward.

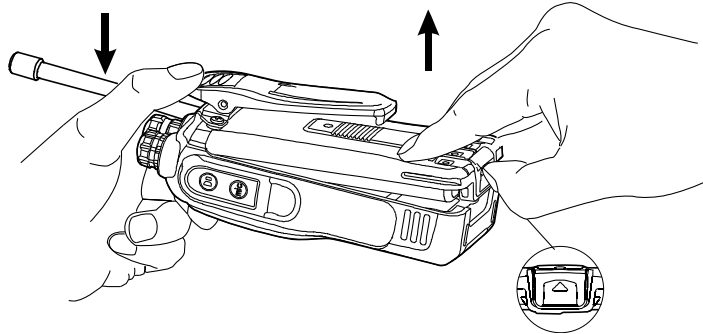


Figure 3

2. Release the latch to remove the battery.

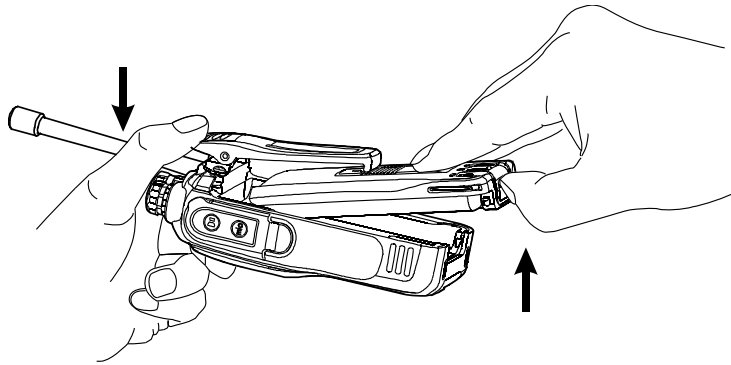


Figure 4

Assembling the Belt Clip

1. Remove the screws.
2. Align the screw holes on the belt clip with those on the radio's body, and then tighten the screws.

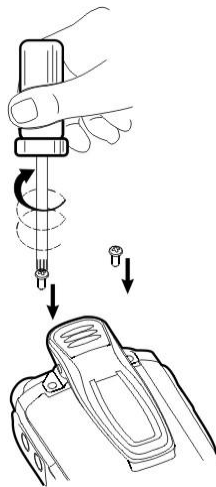


Figure 5

3. To remove the belt clip, loosen the screws.

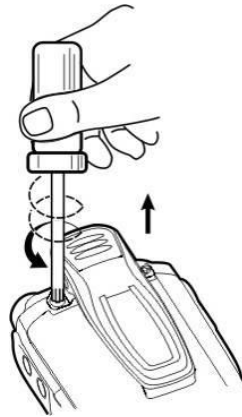


Figure 6

Assembling the Audio Accessory/Programming Cable

1. Uncover the accessory jack.

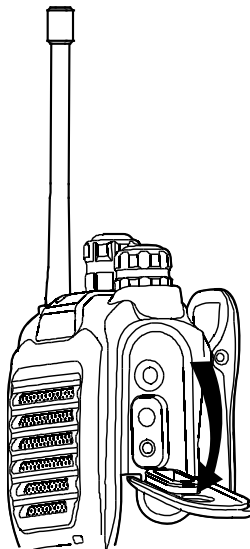


Figure 7

2. Plug an accessory into the accessory jack (if it is an audio accessory, remember to tighten the screw).

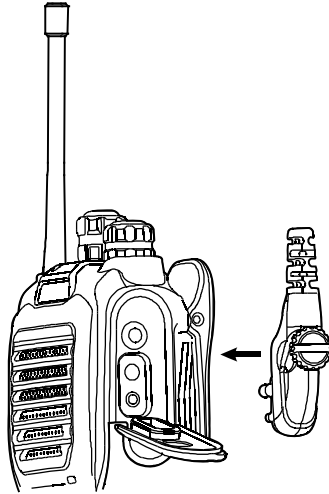


Figure 8

3. To remove the accessories, loosen the screw at first and pull out the plug (if it is an audio accessory, remember to loosen the screw first).



Caution: When you are using an external accessory, waterproof performance of the radio may get affected.

Status Indication

The top LED indicator will help you easily identify the current status of your radio.

| LED Status | Radio Status |
|--------------------|--------------|
| Red LED glows. | Transmitting |
| Red LED flashes. | Low battery |
| Green LED glows. | Receiving |
| Green LED flashes. | Scanning |

Basic Operations

Turning the Radio On/Off

Rotate the **Radio On-Off/Volume Control** knob clockwise/counter-clockwise until a click is heard to turn the radio on/off.

Adjusting the Volume

You may control the volume level using the **Radio On-Off/Volume Control** knob. After the radio is powered on, rotate the knob clockwise to increase the volume, or counter-clockwise to decrease the volume.

Selecting a Channel

The radio supports up to 16 channels. Rotate the **Channel Selector** knob to select a desired channel.



Note: When the radio is currently on a blank channel, it will sound beep tones continuously.

Transmitting/Receiving

To transmit audio signals, press and hold down the **PTT**, and speak into the microphone. During transmission, the LED glows red.

To receive, just release the **PTT**. When any audio signal is received, the LED glows green.



Note:

- 1) To ensure optimal volume of the receiving radio, hold the palm microphone approximately 2.5 to 5 centimeters away from your mouth.
- 2) Communication range may get affected in rainy days or forests.

Functions and Operations

CTCSS/CDCSS

CDCSS/CTCSS can be used to prevent unwanted conversations at the same frequency. If CTCSS/CDCSS is set on a certain channel, you can only receive voice calls from radios with matching CTCSS/CDCSS. Otherwise you will receive voice calls from all users operating at the same frequency.

You may request your dealer to program corresponding parameters on certain channels. For detailed operation method, please consult your dealer.



Note: This radio supports 38 groups of standard CTCSS, 83 groups of standard CDCSS, non-standard CTCSS/CDCSS, and 180 degree /120 degree CTCSS tail reverse.

Time-out Timer (TOT)

The purpose of TOT is to prevent any user from occupying a channel for an extended period. If the preset time expires, the radio will automatically terminate transmission and keep beeping. To stop beeping, please release the **PTT** key. You must wait for a certain time period (preset by your dealer) to initiate another transmission.

If the Pre-alert function is activated by your dealer, your radio will alert you to the TOT expiration in advance.

Monitor

This feature allows you to lower the conditions for incoming signal match.

Operation:

- Press the programmed **Monitor** key to activate this function; press it again to deactivate the function. Or
- Press and hold down the programmed **Monitor Momentary** key to activate this

function; release the key to exit.

Squelch Off

This feature allows you to unmute the speaker, no matter whether a carrier is present or not.

Operation:

- Press the programmed **Squelch Off** key to activate this function; press it again to deactivate it. Or
- Press and hold down the programmed **Squelch Off Momentary** key to activate this function; release the key to deactivate it.



Note: When this function is enabled on current channel, you will hear audio signals (if any); otherwise, background noise will be heard.

Scan

The feature allows you to listen to communication activities on other channels so that you can keep a close track of your team members. The scan list can be set by your dealer.

Operation:

1. To activate this function, you may
 - press the programmed **Scan** key; or
 - switch to a channel enabled with the auto scan feature (programmed by your dealer).



Note: The radio will not start scan if there are less than two channels in the scan list.

2. After the feature is enabled, your radio will scan according to the scan list set for the channel on which scanning starts. The scanning process is as follows:
 - The LED flashes green during scanning.

- When communication activities are detected on a channel, the radio will stay on the channel to receive current activities. Meanwhile, the LED glows green.
 - If the Talk Back feature is enabled by your dealer, press and hold down the **PTT** to reply when the radio stays on a certain channel.
 - You can scan the frequently used channel if the priority scan feature is enabled. When scan stays on a non-priority channel, the radio will keep detecting activities on the priority channel. Once any activity is detected, it will jump to the priority channel. For more information, please consult your dealer.
3. To exit the scanning process, you may
- press the **Scan** key again, or
 - switch to a channel where the auto scan feature is disabled.

**Note:**

- The Scan Start Alert tone and the Scan End Alert tone can be enabled / disabled by the dealer.
- During scanning, the following function keys (if programmed) are available: **PTT**, **Squelch Off** , **Squelch Off Momentary** , **Monitor** and **Monitor Momentary** .

VOX

This feature allows you to transmit your voice with no need to press the **PTT**. However, you must employ a dedicated earpiece to realize this function.

Operation:

1. Set the **PTT/VOX Switch** on the earpiece to VOX;
2. Plug the earpiece into the accessory jack;
3. Press the programmed **VOX** key to activate this function.
4. Speak into the microphone (on the earpiece) to transmit your voice, and transmission will stop automatically when you stop talking;
5. Power the radio off or press the **VOX** key again to deactivate this function.

**Note:**

- If the **PTT/VOX Switch** on the earpiece is set to PTT, you can only transmit by pressing the external **PTT**, no matter whether VOX is activated.
- When the earpiece is plugged into the accessory jack, do not switch the **PTT/VOX Switch** from PTT to VOX directly if it is set to PTT; otherwise, continuous transmission may occur. If continuous transmission occurs unexpectedly, you can restore the radio to normal operation by toggling the switch from VOX to PTT, or turning the radio off and back on.
- You can select an appropriate VOX sensitivity according to the environment. If VOX is activated under heavy noise, continuously transmission may occur.

Battery Strength Indicator

This feature allows you to know the current battery strength.

Operation:

Press the programmed **Battery Strength Indicator** key, and the LED glows to indicate remaining battery strength by different colors .Release the key to exit. The following table lists different colors representing different battery strength levels

| LED Indicator | Battery Strength |
|-------------------|------------------|
| Green LED glows. | 70%-100% |
| Orange LED glows. | 50%-70% |
| Red LED glows. | 30%-50% |



Note: 1) When the battery strength is less than 30%, the LED will flash red and the low-pitched tone will sound periodically in standby mode. In this case, please replace or charge the battery.

2) when the battery strength is less than 10%, transmission will be prohibited; if you press **PTT** in such situations, the radio will sound an alert to warn you.

Channel Lock

This feature can avoid unexpected channel change due to rotation of **Channel Selector** knob accidentally.

Operation:

Press the programmed **Channel Lock** key to enable the feature (the alert tone sounds once). To disable the feature, press this key again (the alert tone sounds once). When this function is activated, the radio will stay on the current operating channel even if you rotate the **Channel Selector** knob.

Battery Save

In Standby mode, when no signal is received / transmitted or no operation (key press) is performed for 10 seconds (programmable), the radio will automatically enter **Battery Save** mode to reduce power consumption. The radio may exit the **Battery Save** mode and get activated as soon as any key is pressed or any signal is received.

Low Battery Alert

This feature allows you to know the low battery status. When battery power runs low, the LED will flash red, and the low-pitched tone will sound periodically. In this case, please replace or charge the battery.

Busy Channel Lockout

If enabled via the programming software, this feature can prevent your radio interfering with other transmitting radios on the same channel. When the channel is already in use, the radio will keep beeping and return to RX mode upon pressing the **PTT** key. To stop beeping, please release the **PTT** key.

Troubleshooting

| Phenomena | Analysis | Solution |
|---|--|---|
| The radio can not be powered on. | The battery may be improperly installed. | Remove the battery and attach it again. |
| | The battery may 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. If the problem can not be solved, contact your dealer or our authorized service center for inspection and repair. |
| During receiving signals, the voice is weak, discontinuous or totally inactive. | The battery strength may be too low. | Recharge or replace the battery. |
| | The volume may be set to a low level. | Increase the volume by rotating the Volume Control knob clockwise. |
| | The antenna may get loose or may be improperly installed. | Power off the radio, re-install the antenna and power on the radio again. |
| | The speaker may be blocked or damaged. | Clean surface of the speaker. If the problem can not be solved, contact your dealer or our authorized service center for inspection and repair. |
| You can not communicate with other members. | The frequency or signaling 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 Lock is enabled unexpectedly and you operate on an undesired channel. | Exit the Channel Lock mode and switch to the desired channel. |
| | You may be too far away from the group members. | Move towards other members. And make sure that you are within the communication range. |
| Irrelevant communication activities or noises are heard 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 noise is too loud. | You may be too far away from other members. | Move towards other members, power off your radio and then restart it. |
| | You may be at an unfavorable position. For example, your communication may be blocked by high buildings or | Move to an open and flat area, and restart the radio. |

| | | |
|--|--|---|
| | frustrated in the underground areas. | |
| | You may suffer from external disturbance (such as electromagnetic interference). | Stay away from equipment that may cause interference. |

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

Care and Cleaning

To guarantee optimal performance as well as a long service life of the product, please follow the tips below.

Product Care

- Do not pierce or scrape the product with any edged instruments or hard objects.
- Keep the product far away from substances that can corrode the circuit.
- Do not hold the product by its antenna or earpiece cable directly.
- Attach the accessory jack cover when the product is not in use.

Product Cleaning







- Clean up the dust and fine particles on the product surface and charging piece with a clean and dry lint-free cloth or a brush regularly.
- Use neutral cleanser and a non-woven fabric to clean the keys, control knobs and front case after long-time use. Do not use chemical preparations such as stain removers, alcohol, sprays or oil preparations, so as to avoid probable damage. Make sure the product is completely dry before use.









Caution: Power off the product and remove the battery before cleaning.

Optional Accessories

The following items are the main optional accessories for the product, and please consult your local dealer for more other accessories.

| | | | |
|---|---|--|---|
|  |  |  |  |
| Li-Ion Battery (1200mAh) BL1204 | Ni-MH Battery (1300mAh) BH1303 | MCU Rapid-rate Charger (for Li-Ion/Ni-MH battery) MCA02 | Six-unit Switching Power PS7002 |
|  |  |  |  |
| Vehicle Adapter CHV09 | Chest Pack (black) LCBN13 | Nylon Carrying Case NCN001 | Programming Cable (COM Port) PC19 |
|  |  |  |  |
| Programming Cable (USB Port) PC26 | Earbud with on-MIC PTT & VOX ESM12 | D-earset with in-Line MIC & VOX EHM15 | D-earset with Boom MIC & VOX EHM16 |
|  |  |  |  |
| 2-Wire Surveillance Earpiece with | 3-Wire Surveillance Earpiece with | Behind-the-Head Noise-Cancelling | Lightweight Throat-Vibrating |

| | | | |
|---|---|--|---|
| Transparent Acoustic Tube and VOX (black) EAM13 | Transparent Acoustic Tube (black/beige) EAM16/ EAM15 | Earpiece ECM114 | Earpiece ELM01 |
|  |  |  |  |
| Bone-Induction Earpiece EBM01 | Noise-Cancelling Remote Speaker Microphone (IP56) SM13M1 | Remote Speaker Microphone SM08M3 | Receive-only Earpiece (for use with remote speaker microphone) ESS07 |
|  | | | |
| Receive-only Earpiece with Transparent Acoustic Tube (for use with remote speaker microphone) ESS08 | | | |

 **Caution:** Use the accessories specified by Hytera only. If not, Hytera shall not be liable for any losses or damages arising out of use of unauthorized accessories.