



PD40X Portable Radio

USER MANUAL



Preface

This manual describes the information related to the product repair. It is intended for use by qualified technicians only. To repair the product properly, please read this manual carefully before repairing.

This manual is applicable to the following product:

PD40X Digital Portable Radio (X may represent 2, 5, 6, or 8)

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FCC Statement

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

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

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

RF Exposure Compliance and Control Guidelines and Operating Instructions

To control your exposure and ensure compliance with the occupational/controlled environment exposure limits always adhere to the following procedures.

Guidelines:

- Do not remove the RF Exposure Label from the device.
- User awareness instructions should accompany device when transferred to other users.
- Do not use this device if the operational requirements described herein are not met.

Operating Instructions:

- Transmit no more than the rated duty factor of 50% of the time. To transmit (talk), push the Push-To-Talk (PTT) 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 a Hytera-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 optional accessories of the product.

L'exposition aux champs rf de conformité et de contrôle d'orientations et instructions

Pour contrôler l'exposition et s'assurer de la conformité avec les limites d'exposition professionnelle / environnement contrôlé, toujours respecter les procédures suivantes.

Lignes directrices:

Ne pas enlever l'étiquette de l'appareil d'exposition aux radiofréquences.

Sensibilisation des utilisateurs instructions devraient accompagner dispositif lorsque transférés à d'autres utilisateurs.

Ne pas utiliser cet appareil si les exigences opérationnelles décrites ci - après ne sont pas remplies.

Les instructions de fonctionnement:

Transmettre non plus que le facteur d'utilisation nominal de 50% du temps à transmettre (parler), pousse le pousse à parler (ptt). Pour recevoir des appels, les ptt.50% du temps de transmission, ou moins, est important parce que la radio génère de l'énergie rf seulement lors de la transmission des (en termes de mesure de la conformité aux normes).

Le groupe de la radio continue d'au moins 2,5 cm de la surface. garde la radio à la bonne distance est important, car l'exposition aux champs rf diminue avec la distance de l'antenne. l'antenne doit se tenir loin du visage et des yeux.

Quand portés sur le corps, toujours place de la radio dans un étui, hytera approuvé titulaire, ou un harnais ou par l'utilisation de la vidéo pour ce produit. utilisation des accessoires non approuvés peuvent entraîner des fac qui dépassent les niveaux d'exposition professionnelle et environnementale contrôlée des limites d'exposition aux rf.

Les opérations doivent satisfaire aux deux conditions suivantes:

Ce dispositif peut ne pas causer d'interférences nuisibles.

Ce dispositif doit accepter toute interférence reçue,

Y compris les interférences qui peuvent provoquer des accidents. Operation

Non approuvé des antennes, les piles et les accessoires causes la radio à dépasser les lignes directrices sur l'exposition aux radiofréquences de fac.

Communiquez avec votre distributeur local pour les accessoires facultatifs du produit.

ISED 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 conformités 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.

SAR tests are conducted using standard operating positions accepted by the FCC/ISED with the device transmitting at its highest certified power level in all tested frequency bands, although the SAR is determined at the highest certified power level, the actual SAR level of the device while operating can be well below the maximum value.

Before a new model device is available for sale to the public, it must be tested and certified to the FCC/ISED that it does not exceed the exposure limit established by the FCC/ISED, Tests for each device are performed in positions and locations (worn on the body) as required by the FCC/ISED.

For face-up, 25mm was used for test, this equipment should be installed and operated with minimum distance 25mm.

For body worn operation, this model phone has been tested and meets the FCC/ISED RF exposure guidelines when used with an accessory designated for this product or when used with an accessory that Contains no metal.

Non-compliance with the above restrictions may result in violation of RF exposure guidelines.

Les essais SAR sont effectués à l'aide de positions d'exploitation normalisées acceptées par la FCC/ISED avec l'appareil transmettant à son niveau de puissance certifié le plus élevé dans toutes les bandes de fréquences testées, bien que le SAR soit déterminé au niveau de puissance certifié le plus élevé, le niveau réel de R-S de l'appareil pendant son fonctionnement peut être bien inférieur à la valeur maximale.

Avant qu'un nouveau dispositif de modèle ne soit disponible à la vente au public, il doit être testé et certifié à la FCC/ISED qu'il ne dépasse pas la limite d'exposition établie par la FCC/ISED, les tests pour chaque appareil sont effectués dans des positions et des emplacements (portés sur le corps) comme l'exige la FCC/ISED. Pour le face-vers le haut, 25mm a été utilisé pour l'essai, cet équipement doit être installé et actionné avec une distance minimale de 25mm.

Pour le fonctionnement du corps usé, ce téléphone modèle a été testé et répond aux directives d'exposition RF FCC/ISED lorsqu'il est utilisé avec un accessoire désigné pour ce produit ou lorsqu'il est utilisé avec un accessoire qui ne contient pas de métal.



Le non-respect des restrictions ci-dessus peut entraîner une violation des lignes directrices sur l'exposition aux RF.

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Documentation Information

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 "PDT_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 .
<i>Italic</i>	Denotes document titles.	For details about using the DWS, refer to <i>Dispatch Workstation User Guide</i> .
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.

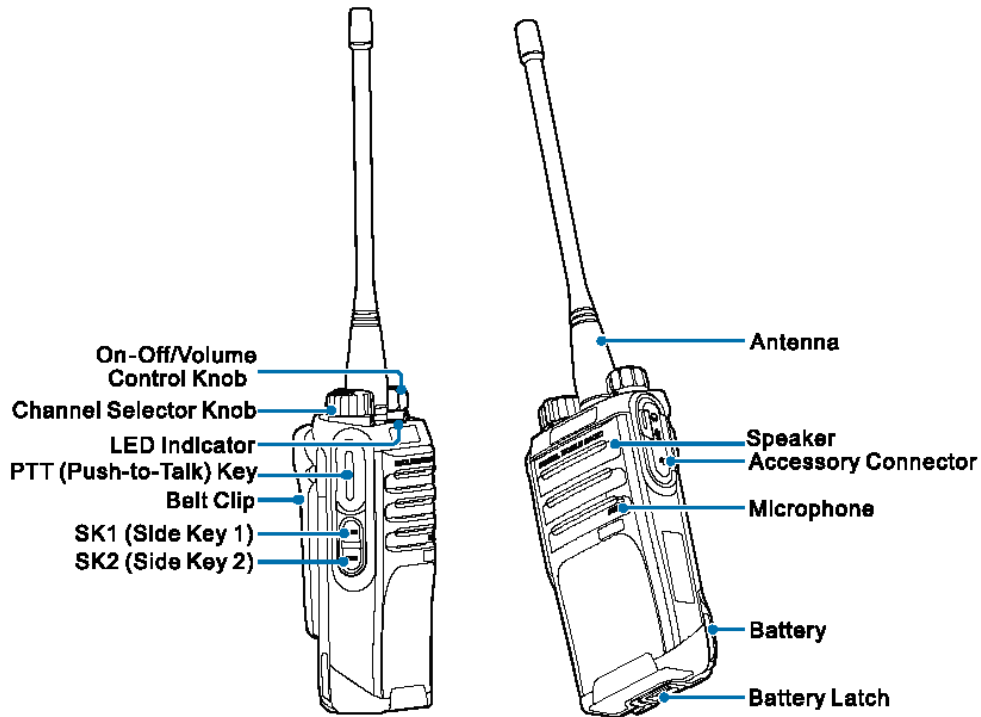
Item	Qty	Item	Qty
Radio	1	Antenna	2
Battery	1	Belt Clip	1
Charger	1	Strap	1
Power Adapter	1	Documentation Kit	1

 NOTE

- Figures in this manual are for reference only.
 - 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



2.2 Programmable Keys

You can request your dealer to program **SK1** and **SK2** as shortcuts to radio features. Consult your dealer for assignable radio features.

2.3 LED Indications

LED Indicator	Radio Status
Flashes green	The radio is being turned on.
Glowes green	The radio is receiving.
Glowes red	The radio is transmitting.
Flashes orange slowly	The radio is scanning.
Glowes 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 and speak.

3. Before Use

3.1 Charging the Battery

 CAUTION

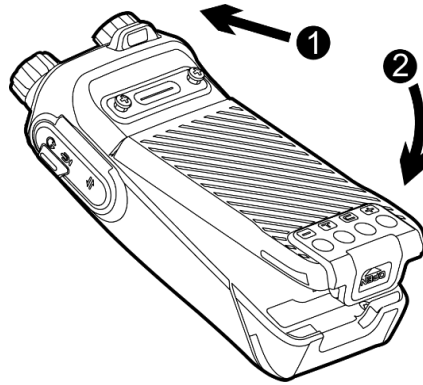
- Use the approved charger by the Company to charge the battery.
 - Read the *Safety Information Booklet* before charging.
 - The remaining lithium-ion battery power is limited to 30% pursuant to the new lithium battery shipment regulation approved by International Air Transport Association (IATA).
-

Before initial use, charge the battery. You can charge either the standalone battery or the radio with battery attached. It is recommended that the radio remain powered off during charging.

The LED indicator on the charger shows the charging status. For details, see the following table:

LED Indicator	Charging Status	LED Indicator	Charging Status
Glows red	The battery is being charged.	Glows orange	The battery is charged to 90% or more.
Glows green	The battery is fully charged.	Flashes red rapidly	The battery fails to be charged.
Flashes red slowly	No battery is placed on the charger.	/	/

3.2 Attaching the Battery



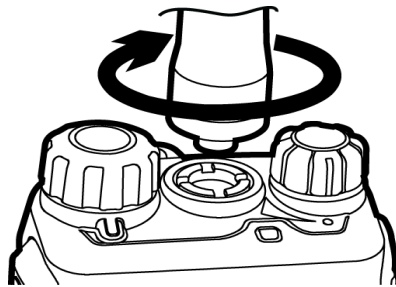
NOTE

To remove the battery, make sure that the radio is turned off, and then slide the battery latch upwards to unlock the battery.

3.3 Attaching the Antenna

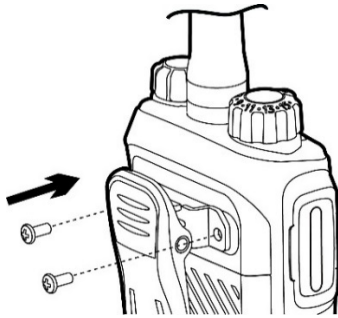
CAUTION

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.



3.4 Attaching the Belt Clip

1. Use a Phillips screwdriver to turn the screws counter-clockwise on the back of the radio and remove them.
2. Align the screw holes in the belt clip and on the back of radio.
3. Put the screw back in place, and then use the screwdriver to tighten them.

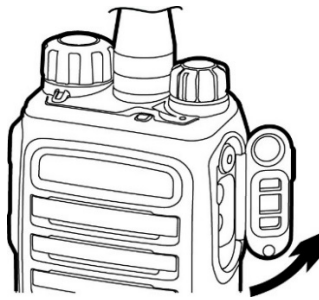


3.5 Attaching the Audio Accessory

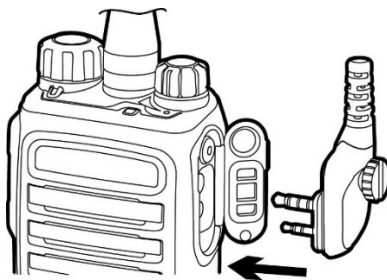
⚠ CAUTION

For optional waterproof and dustproof performance, do close the accessory connector cover and fasten the screw when no accessory is attached.

1. Open the accessory connector cover.



2. Plug the accessory into the accessory connector.

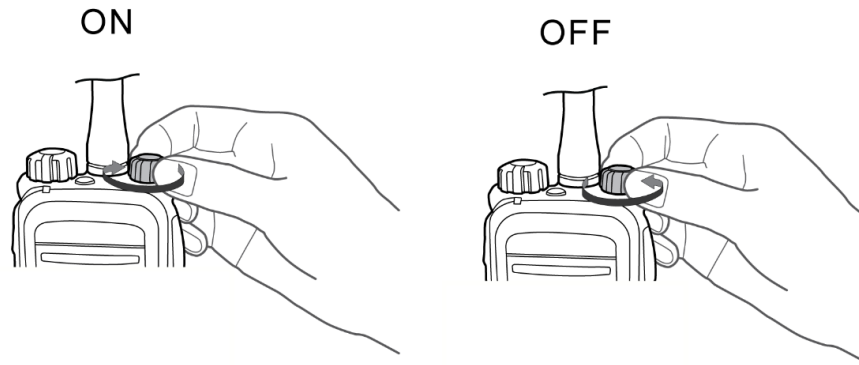


3. Rotate the screw on the adapter clockwise to fasten the adapter.

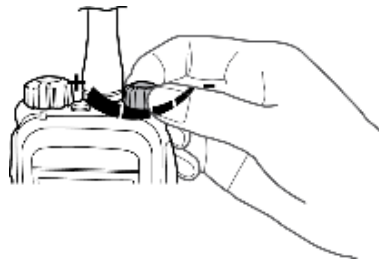


4. Basic Operations

4.1 Turning the Radio On or Off



4.2 Adjusting the Volume



4.3 Checking the Battery Power

To check the battery power, press and hold the preprogrammed **Battery Power Indicator** key. The following table lists the battery power indications.

LED indicator	Alert Tone	Battery Power
Glows green	Three beeps	High
Glows orange.	Two beeps	Medium
Glows red	One beep	Low
Glows red	Low battery tone	Under the low battery threshold. Recharge or replace the battery.

4.4 Selecting a Zone

A zone is a group of channels within the same operational area. The radio supports up to 3 zones, each of which contains up to 16 channels.

To select a zone, press the preprogrammed **Zone Up** or **Zone Down** key.

4.5 Selecting a Channel

To select a channel, rotate the **Channel Selector** knob.

If the Channel Notify feature is enabled, the radio automatically announces the current channel upon power-on and channel change.

5. Call Services

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

5.1 Call on Digital Channel

You can initiate or receive the following types of calls on a digital channel:

- Private call: a call from an individual user to another individual user.
- Group call: a call from an individual user in a group to all the other members in the group.
- All call: a call from an individual user to all the other users on the current channel.

5.1.1 Initiating Calls

You can initiate a call in either of the following ways:

- On the home screen, press and hold the **PTT** key to initiate a private/group/all call to the preset contact on the channel.
- If the One Touch Call feature is configured by your dealer, press the preprogrammed **One Touch Call** key, and then press the **PTT** key to initiate a call to a private or group contact.

5.1.2 Receiving and Responding to Calls

You can listen to an incoming call without any operation.

To respond to a private/group call, press and hold the **PTT** key within the preset call hang time.

5.1.3 Ending Calls

- A private or group call automatically ends when the call hang time expires.
- An all call ends when the calling party releases the **PTT** key.

5.2 Call on Analog Channel (Without Signaling)

You can initiate a call to all other users on the current analog channel. The operations

are the same as those on a digital channel.

6. Supplementary Features

Feature	Description	Operation
Power Level	The feature allows you to set the TX power level of the radio to High or Low. High level strengthens the TX signal. Low level saves the battery power.	To adjust the power level, press the preprogrammed Power Level Adjust key.
Scan	The feature allows you to listen to activities on other channels, keeping track of your group members. With this feature enabled, the radio searches the scan list preset for the channel and remains on the active channel.	To enable the feature, press the preprogrammed Scan key, or switch to a channel on which the Auto Scan feature is enabled through the programming software.
Emergency	The feature allows you to ask for help from your companion or the control center in case of emergency. With the highest priority, you can make emergency operation even when your radio is transmitting or receiving.	To initiate an emergency call to a preset contact, press the preprogrammed Emergency On key. To end the emergency call, press the preprogrammed Emergency Off key. With the Alarm w/Call to Follow feature enabled, you can talk in an emergency call by speaking into the microphone without pressing the PTT key.

Feature	Description	Operation
VOX	<p>The feature allows you to transmit voice without pressing and holding the PTT key. The radio automatically transmits voice when the volume reaches the preset level.</p> <p>The sensitivity of the microphone transmission is determined by the VOX gain, which is configured by your dealer.</p>	<p>You can use the feature with the earpiece with VOX. To enable the VOX feature, do as follows:</p> <ol style="list-style-type: none"> 1. Toggle the PTT/VOX switch on the earpiece to VOX, and then insert the earpiece into radio. 2. Press the preprogrammed VOX key on radio, or switch to a channel on which the Auto VOX feature is enabled through the programming software. <p>To disable the VOX feature, toggle the PTT/VOX switch on the earpiece to PTT.</p>
Talk Around	<p>The feature allows you to continue communication in DMO mode, when the repeater malfunctions or your radio is out of the repeater's coverage.</p>	<p>To switch between DMO and repeater mode, press the programmed Talk Around key.</p>
Busy Channel Lockout	<p>The feature prevents you from talking on a channel that is already in use. If you press and hold the PTT key while the channel is occupied, your radio will keep beeping, alerting you to transmission prohibition.</p>	<p>The feature is enabled by default.</p>

Feature	Description	Operation
Time-out Timer (TOT)	This feature allows the radio to automatically stop transmission when the preset period (60s by default) expires. In this case, the radio keeps beeping until you release the PTT key. You must wait for a certain period to initiate a call again.	The feature is enabled by default.
Keypad Lock	The feature allows you to lock the keypad or knobs to avoid unintended operations, when they are not in use.	To enable or disable the feature, press the programmed Keypad Lock key.
Battery Save	This feature allows the radio to automatically enters Battery Save mode when on carrier is detected and no transmission is made within a certain period.	The feature is enabled by default.
One Touch Call	The feature allows you to quickly access a service, including initiating a call and sending a quick text to a preset contact.	To send a quick text to a preset contact, press the preprogrammed One Touch Call key. To initiate a call to a preset contact, press the preprogrammed One Touch Call key, and then press the PTT key.
Roam	The feature allows you to enjoy seamless communication across sites or networks, when the radio automatically registers with the available BS according to the signal strength.	To enable or disable the feature, press the preprogrammed Roam key.

Feature	Description	Operation
Encrypt	The feature provides end-to-end encryption for voice and data. In this way, the feature prevents eavesdropping and ensures communication privacy.	To enable the feature, press the preprogrammed Encrypt key.
Covert Mode	The feature allows the radio totally mute in some special situations. With this feature enabled, the radio disables all visible and audible indications. If an audio accessory is connected to the radio, the voice is output through the accessory.	To enable the feature, press the preprogrammed Cover Mode key.
Adjust Squelch Level	The feature allows you to adjust the squelch threshold required for the radio to unmute. Generally, the higher squelch level requires stronger signal for the radio to be unmuted. The squelch level includes Low, Normal, and Tight.	To adjust the level, press the preprogrammed Adjust Squelch Level key.
Monitor	The feature allows the radio to receive more signals or weak signals, so as to recognize the weak voice in the speaker.	To enable or disable the feature, press the preprogrammed Monitor key,
Scrambler	The feature allows the radio to invert the frequency spectrum of transmitted audio signals. Only the receiving radio with the same scrambler setting can restore the audio signals. In the way, the feature prevents eavesdropping and ensures communication privacy.	To enable the feature, press the preprogrammed Scrambler key, or switch to a channel on which the Scrambler feature has been configured.

Feature	Description	Operation
CTCSS/CDCSS	The feature allows the radio to play the voice only when the received CTCSS/CDCSS matches the transmitted CTCSS/CDCSS.	The feature is enabled by your dealer.

7. Troubleshooting

Phenomena	Analysis	Solution
You cannot turn on the radio.	The battery may be improperly installed.	Remove and reattach the battery.
	The battery power 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.
During reception, the voice is weak, intermittent, or totally inactive.	The battery power may be low.	Recharge or replace the battery.
	The volume level may be low.	Increase the volume by using the On-Off/Volume Control knob.
	The antenna may get loose or improperly installed.	Turn off the radio, and then re-install the antenna.
	The speaker may be blocked or damaged.	Clean the surface of the speaker.
You cannot communicate with other group 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 type (digital or analog) may be set incorrectly.	Verify you are on the correct digital or analog channel.
	You may be too far away from other group members.	Move towards other members.
	You may be interrupted by radios using the same frequency.	Change the frequency, or adjust the squelch level.

Phenomena	Analysis	Solution
Unknown voice or noise is heard on the channel.	The radio may be set with no signaling.	Request your dealer to set signaling for all radios operating at the same frequency, and make sure that all group members share the same signaling.
During reception, you hear too much noise and hiss.	You may be too far away from other members.	Move towards other members.
	The radio may be at 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 equipment that may cause interference.
The radio keeps transmitting.	You might have toggled the PTT/VOX switch on the earpiece with VOX from PTT to VOX .	Plug the earpiece out and in, or switch channel.
The voice is unclear.	The signal is poor.	Make sure the radio is within the communication range.

If the above solutions cannot fix your problems, or you may have some other queries, contact your dealer or the Company for more technical support.

8. Care and Cleaning

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

8.1 Product Care

- Do not pierce or scrape the product.
- Keep the product away from substances that can corrode the circuitry.
- Do not hold the product by the antenna or earpiece cable.
- Close the accessory cover when no accessory is in use.

8.2 Product Cleaning

 CAUTION

Turn off the product and remove the battery before cleaning.

- Clean up the dust and fine particles on the radio 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. Do not use chemical preparations such as stain removers, alcohol, sprays or oil preparations, so as to avoid surface case damage.
- Make sure the products are completely dry before use.

9. Optional Accessories

 CAUTION

Use the accessories specified by the Company only. Otherwise, we will not be liable for any losses or damages arising out of use of any unauthorized accessories.

10. Abbreviations

Abbreviation	Full Name
LED	Light-Emitting Diode
PTT	Push-To-Talk
SK	Side Key



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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
<http://www.hytera.com>