Preface

Thanks for your favor in our product. This manual is helpful for you to quickly know how to use the product. Please refer to the corresponding Feature Book for detailed features and operations.

This manual is applicable to the following product:
PD78X/78XG Digital Portable Radio (X may represent 2, 5, 6 or 8)

Instructional Icons

🖿 Indicates functions that are available on digital channel only.

⊙ Indicates functions that are available on analog channel only.

Functions marked with neither the above icons are available on both analog and digital channels.

Disclaimer

Hytera Communications Co., Ltd. ("the Company") endeavors to achieve the accuracy and completeness of this manual, but no warranty of accuracy or reliability is given. All the specifications and designs are subject to change without notice due to continuous technology development. No part of this manual may be copied, modified, translated, or distributed in any manner without the express written permission of us.

We do not guarantee, for any particular purpose, the accuracy, validity, timeliness, legitimacy or completeness of the Third Party products and contents involved in this manual.

If you have any suggestions or would like to learn more details, please visit our website at: http://www.hytera. com.

RF Radiation Information

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

RF Radiation Profile

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

RF Radiation Safety

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

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

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

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

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

FCC Regulations

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

Operational Instructions and Training Guidelines

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

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

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

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.

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

Contents

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.

❶ Radio Unit	❷ Battery	❸ Belt Clip
❹ Antenna	❺ Charger	❻ Power Adapter
❼ Strap	❽ Documentation Kit	

Note: The frequency band is marked on the label of antenna; if not, please refer to the label on the radio for frequency band information.

Product Overview

Product Control
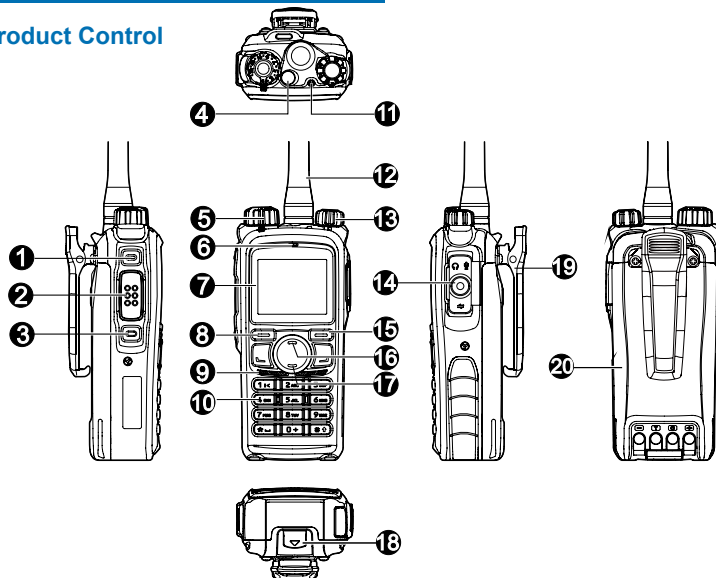
No.	Part Name	No.	Part Name	No.	Part Name
1	SK1 (Side Key 1)	8	OK/Menu Key	15	Back Key
2	PTT (Push-to-Talk) Key	9	Speaker	16	Up Key
3	SK2 (Side Key 2)	10	Numeric Keypad	17	Down Key
4	TK (Top Key)	11	LED Indicator	18	Battery Latch
5	Channel Selector Knob	12	Antenna	19	Belt Clip
6	Microphone	13	Power On-Off/Volume Control Knob	20	Battery
7	LCD Display	14	Accessory Connector		

2

Programmable Keys

For enhanced convenience, you may request your dealer to program the TK ( ), SK1, SK2, P1 ( ) and P2 ( ) as shortcuts to certain functions. Please refer to the corresponding Feature Book for more details.

⚠️ **Caution:** The TK is programmed with emergency feature by default (short press: Emergency On; long press: Emergency Off). It is programmable by your dealer.

Before Use

Charging the Battery

⚠️ **Caution:**
- Make sure the radio is powered off before charging. Read the Safety Information Booklet in advance to get necessary safety information.
- To achieve optimal battery performance, please charge the battery for at least 5 hours before initial use.

Please use the charger specified by the Company to charge the battery. Charging Diagram is listed below.

Charge the Radio
(with battery attached)

Charge the Battery
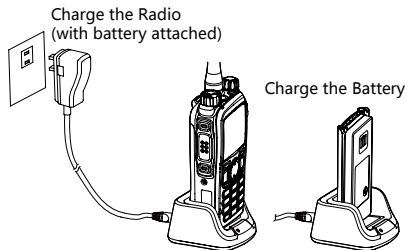
Charging Status Indication (on charger):

| LED Indication	Charging Status
The LED Indicator flashes red slowly.	Standby (no load)
The LED Indicator glows red.	Charging
The LED Indicator glows orange.	90% charged
The LED Indicator glows green.	Fully charged
The LED Indicator flashes red rapidly.	Charging failed

Attaching the Battery

"Click"
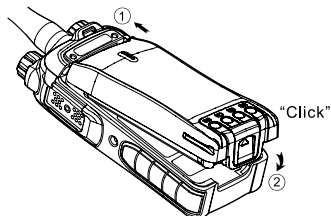
📝 **Note:** To remove the battery, turn off the radio first. Then slide the battery latch upwards to unlock the battery and remove it.

Checking the Battery Power

You may check the current battery power by holding down the programmed **Battery Power Indicator** key preset by your dealer. And release the key to exit. Battery power indications are listed below:

| LED Indication	Icon	Battery Power
The LED Indicator glows green.		High
The LED Indicator glows orange.		Medium
The LED Indicator glows red.		Low
The LED Indicator glows red and low battery alert beeps.		Under the low battery threshold. Please recharge or replace the battery for proper radio operation

Attaching the Antenna

Turn the antenna clockwise to fasten it.
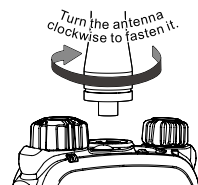
⚠️ **Caution:** Do not hold the radio by its antenna, otherwise the performance and lifespan of the antenna will be reduced.

Attaching the Belt Clip

1. Loosen the screws from the back of the radio.
2. Align the screw holes of the belt clip with those on the radio's back, and then tighten the screws.
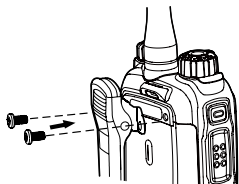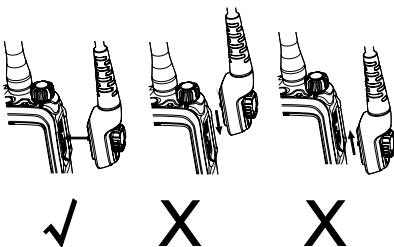

Attaching the Accessories

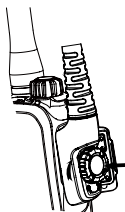1. Open the accessory connector cover as shown below.

2. Align the accessory (such as an audio accessory, or a programming cable) plug with the accessory connector.

⚠ **Caution:** Do not scrape the silicone rubber surrounding the accessory connector screw hole, in order to ensure the waterproof performance of the radio.

√   X   X

3. Tighten the screw on the accessory plug.

Status Indication

LCD Icon

Icon Name	Icon	Radio Status
DTMF Keypad Icon		The DTMF keypad is enabled.
GPS Icon		The GPS feature is enabled, and valid GPS data is received.
		The GPS feature is enabled, but no valid GPS data is received.
Battery Power Icon		More bars indicate more battery power.
TX Power Icon	L	Low power for the current channel.
	H	High power for the current channel.
Accessory Icon		An accessory is connected.
Work Order Icon		Unread work order.
Operation Mode Icon	DM	Direct Mode Operation: Under this mode, radios can communicate with each other directly.
	RM	Repeater Mode Operation: Under this mode, radios communicate with each other via a repeater.

Monitor Icon	◁⅃	The Monitor feature is enabled.
Emergency Icon	⚠	The radio is in emergency state (except for silent emergency type) or an emergency call is received.
Roam Icon	⊕	The radio is roaming.
Scrambler/ Encrypt Icon	🗐	The Scrambler/ Encrypt feature is enabled.
Scan Icon	↻	The radio is scanning.
	↻	The radio stays on a non-priority channel.
	P_1	The radio stays on Priority Channel 1.
	P_2	The radio stays on Priority Channel 2.
VOX Icon	Ⓥ	The VOX feature is enabled.
Missed Call Icon	📞	Missed call(s).
Message Icon	✉	Unread message(s).
	✉	Inbox is full.
RSSI Icon	▽ₓ	No signal.
	▽ ▽ᵢ ▽ᵢᵢ ▽ᵢᵢᵢ ▽ᵢᵢᵢᵢ	More bars indicate better signal strength.
Speaker Icon	◁»	The speaker is unmuted.
LQO Icon	Ⓠ	The LQO feature is enabled.

Call/Contact Icon	👤	● Indicates Private Call during a call. ● Indicates Private Contact in the contact list.
	👥	● Indicates Group Call during a call. ● Indicates Group Contact in the contact list.
	👥	● Indicates All Call during a call. ● Indicates All Call Contact in the contact list.

LED Indicator

LED Indication	Radio Status
The LED indicator flashes green.	Powering on
The LED indicator glows green.	Receiving
The LED indicator glows red.	Transmitting
The LED indicator flashes orange slowly.	Scanning or roaming
The LED indicator flashes orange rapidly.	Emergency
The LED indicator glows orange.	Call hung. During a call, you can hold down the **PTT** key to talk to the other party before the call hang time expires.

Menu Navigation

The following menu structure shows all the customizable menu items, which can be programmed by your dealer as per your actual requirements.

In the home screen, press the **Menu** key to enter the main menu, use the **Up/Down** key to navigate the menu items, and then press the **OK** key to confirm your selection. This manual only provides a menu path when instructing menu operations, for example, to access the contact list, go to "Contact -> Contact List".

The radio supports menu reset function. When you do not operate the menu for a preset time period configured by the dealer, the radio will automatically return to the home screen. You may request the dealer to change the auto reset time or disable the feature.
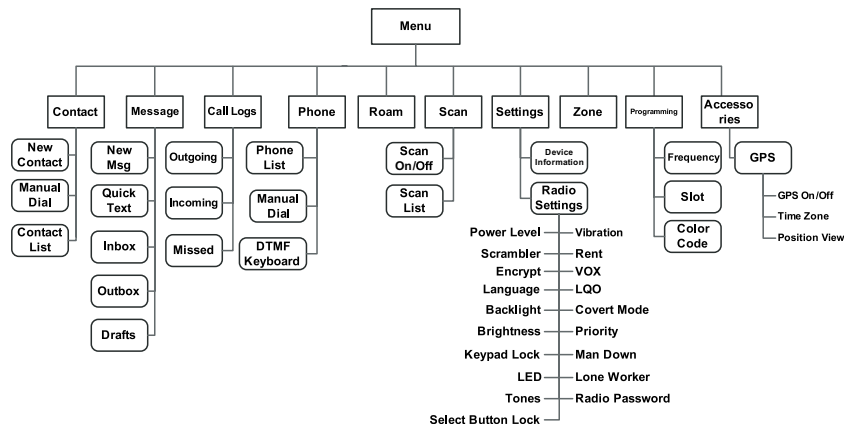
Basic Operation

Powering On/Off
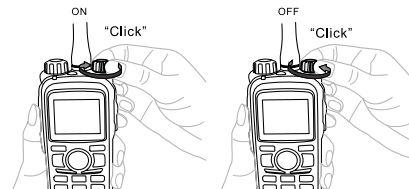
Adjusting the Volume

You can adjust the volume of output voice, alert tone and channel notification tone by rotating the **Volume Control Knob**. For other tones, the volume will be configured by the dealer.

Selecting a Zone

A zone is a group of channels exhibiting the same property, which is programmed by your dealer and can facilitate convenient management over the channel. The radio supports 64 zones, each of which consists of up to 16 channels. You can select a zone through any of the following ways:

● Via the menu: Go to "Menu -> Zone", press the **Up/**

Down key to select an appropriate zone, and then press the **OK** key to switch to the selected zone.

- Via Programmable Keys: You can toggle to the appropriate zone by pressing the programmed **Zone Up** or **Zone Down** key preset by your dealer.

Selecting a Channel

If the Channel Notify feature is enabled by your dealer, the radio will announce the channel number upon channel switching.

Inputting via Keypad

You can input alias, call numbers and messages via the keypad of the radio. Besides, you may need to do the following during inputting.

- To switch input method: `# ↑`
- To input special characters: `1 !<`
- To input space: `* ⌴`

Locking and Unlocking the Keypad

When the keypad is not in use, you can lock the keypad to avoid mishandling. You can lock or unlock the keypad through any of the following methods:

- Key Combination: Press the **OK** key and then press `* ⌴`
- Programmable Key: Press the programmed **Keypad Lock** key preset by your dealer.

- Menu Navigation: Go to "Settings -> Radio Settings -> Keypad Lock" to enable or disable the feature.

  » Enable: The keypad will be locked automatically if there is no radio operation within the preset time. After this feature is enabled, you can press the **Up/Down** key to set the Keypad Auto Lock Delay Time.

  » Disable: The keypad will not be locked automatically. However, you can lock or unlock the keypad via the key combination or **Keypad Lock** key mentioned above.

> **Note:** All keys on the front panel except for **P1** (⌐) and **P2** (⌐) will be locked by default. Moreover, you can go to "Settings -> Radio Settings -> Select Button Lock" to configure the following lockable keys or knobs: **TK, Channel Selector Knob, P1**(⌐)、**P2**(⌐)), **SK1, SK2** and **Volume Control Knob**.

Managing the Contact

You can manage the contacts via the "Contact" menu.

Contact List

The Contact List is used to save Private Call/Group Call/All Call contacts information such as Call Alias, Call Type and Call ID. You can access the "Contact List" menu via the "Contact" menu or by pressing the programmed **Contact List** key.

In the "Contact List" menu, you can check the contact information, edit or delete the private contact. You can send to a private call contact the following commands: Alert Call, Radio Check, Remote Monitor, Radio Enable or Radio Disable. Please refer to Feature Book for details.

New Contact

You can add and save a new contact to the contact list. The number and alias of a new contact must be unique.

> **Note:** Except for adding a new contact, you can also save the new numbers from Call Logs, ReDial List and BackDial List into the contact list.

Call Services

After the radio is powered on, you can make and receive calls. To ensure optimal volume of the receiving radio, keep the microphone about 2.5 to 5 centimeters away from your mouth when transmitting.
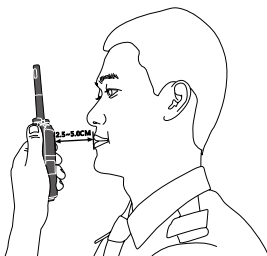
Private Call

Initiating a Private Call

When initiating a private call, the radio will display the icon . You can make a private call through the following ways:

Preset Contact

In the home screen, hold down the PTT key to initiate a Private Call to the Private Call contact preset for the current channel.

You may request your dealer to preset a regular Private Call contact, Group Call contact or an All Call contact for each digital channel.

Contact List or Call Log
1. Go to "Contact -> Contact List" or "Call Log".
2. Use the **Up/Down** key to select an appropriate contact.
3. Hold down the **PTT** key to initiate a private call.

Manual Dial
1. Go to "Contact -> Manual Dial".
2. Input the private call number via the numeric keypad.
3. Hold down the **PTT** key to initiate a private call.

> **Note:**
> - If both the Private Call Manual Dial and Group Call Manual Dial are available, you can press `#` to switch between the two dialing methods, and the radio will display the call type (private call ID/ group call ID).
> - If the Default Numeric Key Selection feature is enabled by your dealer, you can enter a private call number in the home screen, and then hold down the **PTT** key to initiate a private call. However, if the DTMF keypad is enabled, the number entered in the home screen is a phone number. You can dial the private call number via the menu "Manual Dial" only.

Receiving and Responding to a Private Call

After receiving a private call, the radio will display the

8

icon and you can listen to it without any operation. You can hold down the **PTT** key to call back within the preset time. If you do not respond it, the radio will display appropriate indications.

Group Call

Initiating a Group Call

When initiating a group call, the radio will display the icon You can make a group call through the following ways. The operation is similar to initiating a private call.

Preset Contact
In the home screen, hold down the **PTT** key to initiate a group call to the group call contact preset for the current channel.

Contact List
1. Go to "Contact -> Contact List".
2. Use the **Up/Down** key to select an appropriate contact.
3. Hold down the **PTT** key to initiate a group call.

Manual Dial
The operation is the same as initiating a private call.

Receiving and Responding to a Group Call

After receiving a group call, the radio will display the icon . You can hold down the **PTT** key to call back within the preset time.

Call on Analog Channel (No Signaling)

In an analog channel, you can hold down the **PTT** key and talk to the microphone to transmit, and release the **PTT** key to receive.

Please refer to the corresponding Feature Book for operation description on how to make and receive calls

on the analog channel with signaling.

Emergency Call

In case of emergency, you can use this feature to ask for help from your companion or the control center. The Emergency Call has the highest priority which can terminate the ongoing calls with lower priorities on the current channel. You can make an emergency call even when your radio is transmitting or receiving.

This feature needs to be configured and enabled by your dealer. Please refer to the corresponding Feature Book for details.

Message Services

This feature allows you to edit and send a new message, to directly send a quick text message and to forward the messages in the Inbox, Outbox and Drafts.

Message
1. Go to "Menu -> Message -> New Message" to enter the relevant screen.
2. Type the text and then press the **OK** key. Save it to Drafts, or send it to a private call contact or a group call contact.
3. Select the contact or input the contact number manually.
4. Press the **OK** key to send the message. When the message is sent successfully, the radio will display the prompt "Send Success!".

Quick Text
Quick Text are frequently used messages preset by your dealer. You can choose to edit and send any entry.

Inbox
The radio saves the received messages into the Inbox and marks every message with a corresponding icon to indicate its status.

: Read message

: Unread message

When the Inbox is full, the radio will display the icon ✕, and the earliest message will be overwritten by the latest one automatically.

Outbox

The radio saves the sent messages into the Outbox and marks every message with a corresponding icon to indicate its status.

The message is sent successfully

The message is not sent successfully. In this case, you can resend it.

When the Outbox is full, the earliest message will be overwritten by the latest one automatically.

Drafts

The radio saves the edited messages into the Drafts. When the Drafts is full, the earliest message will be overwritten by the latest one automatically. After the message in the Drafts is sent successfully, it will be removed from the Drafts and be saved into the Outbox. If not sent successfully, the message will be saved into the Drafts and the Outbox.

Troubleshooting

Phenomena	Analysis	Solution
The radio fails to **power on.**	The battery may be improperly installed.	Remove the battery and then reattach it.
	The battery power may be used up.	Recharge or replace the battery.
	The battery may be poorly connected due to dirtied or damaged battery contacts.	Clean the battery contacts. If the problem cannot be solved, contact your dealer or authorized service center for inspection and repair.
During receiving, the voice is weak, discontinuous or totally inactive.	The battery voltage may be low.	Recharge or replace the battery.
	The volume level may be low.	Increase the volume by rotating the **Volume Control Knob**.
	The antenna may be loosened or improperly installed.	Reattach the antenna after turning off the radio.
	The speaker may be blocked or damaged.	Clean the surface of the speaker. If the problem cannot be solved, contact your dealer or authorized service center for inspection and repair.
You cannot communicate with other members.	The frequency or signaling may not match 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.
Irrelevant communication or noise is 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.
	You may locate in an unfavorable position. For example, your communication may be blocked by high buildings or frustrated in the underground areas.	Move to an open and flat area, and restart the radio to try again.
	You may suffer from external disturbance (such as electromagnetic interference).	Stay away from equipment that may cause interference.

Phenomena	Analysis	Solution
GPS positioning fails.	GPS signals may not be received due to unfavorable position.	Move to an open and flat area to try again.
You cannot use the keys.	The keypad may fail to function temporarily.	Restart the radio.
The LCD does not display any information.	The LCD may fail to function temporarily.	Restart the radio.

If the above solutions cannot 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.
- Keep the product far away from corrosive environments.
- Do not hold the product by its antenna or earpiece cable directly.
- Attach the accessory connector cover when the accessory is not in use.

Product Cleaning

⚠ **Caution:** Turn off the product and remove the battery before 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 surface case damage.
- Make sure the product is completely dry before use.

Optional Accessories

The following items are the main optional accessories for the radio. For more information of other accessories, please consult your local dealer.

⚠ **Caution:** Use the accessories specified by the Company only. If not, the Company shall not be liable for any loss or damage arising out of use of unauthorized accessories.

- Power Supply: CHV09 Vehicle Adapter for Charger, MCA05 Battery Optimizing System, MCA06 MCU Multi-unit Rapid-rate Charger
- Audio: EAN16 Earpiece with on-MIC PTT & Transparent Acoustic Tube, EAN17 3-wire Surveillance Earpiece with Transparent Acoustic Tube (Beige), EAN18 3-wire Surveillance Earpiece with Transparent Acoustic Tube (Black), EHN12 D-Earset with on-MIC PTT, ESN10 Earbud with on-MIC PTT, ESS07 Receive-Only Earbud (for use with remote speaker microphone), ESS08 Receive-Only Earpiece with Transparent Acoustic Tube (for use with remote speaker microphone), SM18N2 Waterproof Remote Speaker Microphone (IP57)
- Cable: PC38 Programming Cable (USB Port)
- Carrying Accessories: LCBN13 Universal Chest Pack (Nylon)(Black); LCY003 Carrying Case (Thick Battery)(Leather)(Swivel)