



DIGITAL PORTABLE RADIO
DIGITAL TRUNKING PORTABLE RADIO



Preface

Thanks for your favor in our product. This manual is helpful for you to quickly know how to use the product. For detailed features and operations, please refer to the Feature Description and Operation Manual along with the product.

To avoid body injury or property loss caused by misoperation, please read the Safety Information Booklet carefully before use.

This manual is applicable to the following product:
X1p Digital Portable Radio

Icon Conventions



Indicates functions that are available on digital channel only.



Indicates functions that are available on analog channel only.

Functions marked with no icon are available on both analog and digital channels.

Disclaimer

Hytera Communications Corporation Limited (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.

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 2014/53/EU. Please note that the above information is applicable to EU countries only.

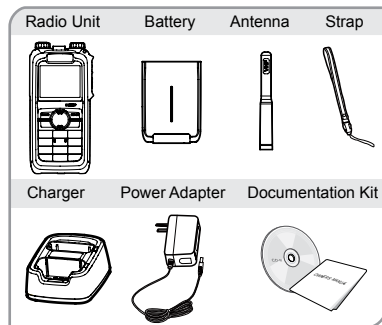
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Items in the Package

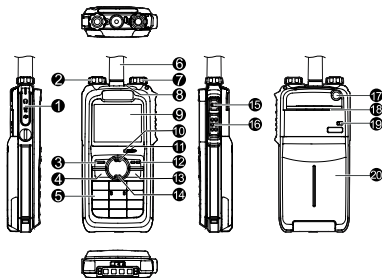
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Note: The frequency band is marked on the label of antenna; if not, please refer to the label on the radio for frequency band information.

Product Overview

Product Controls



No.	Part Name	No.	Part Name
1	Accessory Connector	11	Up Key
2	Power On/Off/Volume Control Knob	12	Back Key
3	OK/Menu Key	13	P2 Key
4	P1 Key	14	Down Key
5	Numeric Keypad	15	SK1 (Side Key 1)
6	Antenna	16	PTT (Push-to-Talk) Key
7	Channel Selector Knob	17	TK (Top Key)
8	LED Indicator	18	Speaker
9	LCD Display	19	Rear Microphone
10	Front Microphone	20	Battery

Programmable Keys











For enhanced convenience, you may request your dealer to program the **TK** (⏏), **SK**, **P1** (⏏) and **P2** (⏏) as shortcuts to certain functions. Please refer to the Feature Description and Operation Manual along with the product for more details.









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

LCD Icon

LCD Icon	Name	Radio Status
	DTMF Keypad Icon	The DTMF keypad is active.
	GPS Icon	The GPS feature is active, and valid GPS data is received.
		The GPS feature is active, but no valid GPS data is received.
	Battery Power Icon	More bars indicate more battery power.
	TX Power Icon	Low TX power for the current channel.
		High TX power for the current channel.
	Accessory Icon	An accessory is connected.
	Work Order Icon	One or more new work orders are received.

LCD Icon	Name	Radio Status
DM	Operation Mode Icon	Direct Mode: Under this mode, radios communicate with each other directly.
RM		Repeater Mode: Under this mode, radios communicate with each other via a repeater.
	Monitor Icon	The Monitor feature is active.
	Emergency Icon	The Emergency mode (other than secret emergency) is active or an emergency message is received.
	Roam Icon	The radio is roaming.
	Scrambler/Encrypt Icon	The Scrambler/Encrypt feature is active.
	Hunt Icon	The radio is scanning.
		The radio stays on a non-priority channel.
P₁		The radio stays on priority channel 1.
P₂		The radio stays on priority channel 2.
		The VOX feature is active.
	Missed Call Icon	Missed call(s).
	Message Icon	New message/unread message.
		Inbox is full.

LCD Icon	Name	Radio Status
	RSSI Icon	No signal.
		More bars indicate stronger signal strength.
	Speaker Icon	The speaker is unmuted.
	Call/Contact Icon	<ul style="list-style-type: none"> Indicates a private call in progress. Indicates a private contact in the contact list.
		<ul style="list-style-type: none"> Indicates a group call in progress. Indicates a group contact in the contact list.
		<ul style="list-style-type: none"> Indicates an all call in progress. Indicates an all call contact in the contact list.

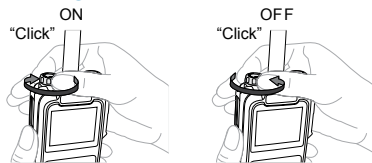
LED Indicator

LED Indication	Radio Status
The LED indicator flashes green.	Powering on
The LED indicator glows green.	Receiving
The LED indicator glows red.	Transmitting

LED Indication	Radio Status
The LED indicator flashes orange slowly.	Scanning or Roaming
The LED indicator flashes orange rapidly.	Emergency
The LED indicator glows orange.	Call hung period. No voice is being transmitted or received on the traffic channel during a call. Within such period, you can hold down the PTT key to talk to the other party.
The LED indicator glows blue and then flashes once every three seconds.	LED indicator glowing blue indicates the BT feature is being started; LED indicator flashing blue once every three seconds indicates the BT feature is enabled, but no wireless device is connected.
The LED indicator flashes once every two seconds.	A wireless device is connected.

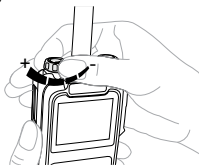
Basic Operation

Turning the Radio 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

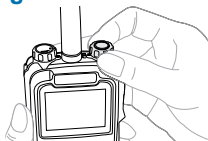
A zone is a group of channels with the same property, which can facilitate convenient management over the channels. The radio supports 64 zones, each of which consists of up to 16 channels. Your dealer can program the zone for your specific needs. You can select a zone through any of the following ways:

- 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.

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

Selecting a Channel



Note: 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. In the editing mode, you may do as follows.

- Press **#↑** to switch the text input methods between alphabetic mode and numeric mode
- In the alphabetic mode, press **1<** to input the special characters. But in the numeric mode, pressing **1<** will input the numeric digit 1
- In the alphabetic mode, press ***<** to input the space. But in the numeric mode, pressing ***<** will input the special characters





Locking and Unlocking the Keypad

When the keypad is not in use, you can lock the

keypad to prevent accidental keypad operation. The following methods are available for you to lock or unlock the keypad:

- Key Combination: Press "**OK+** ***<**" to lock or unlock the keypad.
- Shortcut key: Press the programmed **Keypad Lock** key to lock or unlock the keypad.
- Menu: Go to "Menu -> Settings -> Radio Set -> Keypad Lock" and then select "Enable" or "Disable".
 - » Enable: The keypad will be locked automatically if no operation is made within the preset time period. After the "Enable" option is selected, you can press the **Up/Down** key to set the Keypad Auto Lock Delay Time.
 - » Disable: The keypad will not be locked automatically.



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

Managing the Contact

Contact management allows you to view, edit, delete or add contacts.

Contact List

The contact list is used to save private call contact, group call contact, and all call contact information such as call alias, call type and call ID. You can

access the Contact List via the menu or the programmed **Contact List** key.

In the "Contact List" menu, you can view, 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 the *Feature Description and Operation Manual* along with the product for details.

Favorite Contact

Favorite Contact is used to save the frequently used contacts. You can access the Favorite Contact via the menu or the programmed **Favorite Contact List** key.

In the favorite contact list, you can view, edit or delete the favorite contacts. You can send to a favorite contact the following commands: Alert Call, Radio Check, Remote Monitor, Radio Enable or Radio Disable. Please refer to the *Feature Description and Operation Manual* along with the product for details.

New Contact

New Contact is used to add 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 you initiate a private call, the radio will display the icon . You can make a private call through any of the following ways:

Preset Contact

You may request your dealer to preset a regular private call contact for each digital channel. In the home screen, hold down the **PTT** key to initiate a private call to the private contact preset for the current channel.

Contact List

1. Go to "Menu -> Contact -> Contact List".
2. Use the **Up/Down** key to select an appropriate contact.

3. Hold down the **PTT** key to initiate a private call.

Call Logs


1. Go to "Menu -> Call Logs -> Outgoing/Incoming/ Missed".
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 "Menu -> Contact -> Manual Dial".
2. Input the private call number using 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 ID/ Group 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 through the "Manual Dial" menu only.


Receiving and Responding to a Private Call

When you receive a private call, the radio will display the icon , then you can listen without any

operation. You can hold down the **PTT** key to call back within the preset time. If you do not respond to it, the radio will display appropriate indications.

Group Call

Initiating a Group Call

When you initiate a group call, the radio will display the icon . You can make a group call through any of 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 "Menu -> 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

When you receive a group call, the radio will display the icon  on the LCD. You can hold down the **PTT** key to call back within the preset time.

Call on Analog Channel (Without Signaling)

To transmit on an analog channel, hold down the **PTT**

and speak into the microphone. To receive, release the **PTT** key.

Please refer to the Feature Description and Operation Manual along with the product 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 Emergency Call to ask for help from your companion or the control center.

Emergency Call needs to be configured and enabled by your dealer. Please refer to the Feature Description and Operation Manual along with the product for details.

Message Services

Message Services allow you to edit and send a new message, to directly send a quick text message and to forward the messages saved in the Inbox, OutBox and Drafts.

Text Message



1. Go to "Menu -> Message -> New Msg" to enter the relevant screen.
2. Type the text and press the **OK** key. You can save the text message to Drafts, or send it to a private call contact or a group call contact directly.
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 is the frequently used message preset by your dealer. You can send the quick text directly or edit this text before sending it.

InBox



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

-  : Read text message.
-  : Unread text 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 OutBox saves the sent messages and marks each message with a corresponding icon to indicate its status.

-  : The text message is sent successfully.
-  : The text 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 Drafts saves the edited messages. 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.

Available Features

Available features of this radio are listed below. Please refer to the *Feature Description and Operation Manual* for detailed feature descriptions.

Feature Type	Detailed Feature
Basic Setting	<ul style="list-style-type: none"> • Password • Language • Indication: Backlight, Brightness, Vibration, LED, Tone • Audio: Mic AGC, Treble Boost, Audio Feedback Suppression • Scanning: Scan On, Scan Off, Scan List • Managing the Contacts: Contact List, Favorite Contact, New Contact • Other Features: Device Information, Power Level, VOX, One Touch Call/Menu, Renting, Programming, User Assignment ID, Covert Mode
Digital Features	<ul style="list-style-type: none"> • Voice Services: Group Call, Private Call, All Call, Phone Call • Message Services: New Msg, Quick Text, InBox, OutBox, Drafts • Control Services: Alert Call, Radio Check, Remote Monitor, Radio Enable, Radio Disable, Priority Interrupt, Receiving Vibration, Time-out Timer (TOT) • Personal Security Services: Emergency Alarm, Man Down, Lone Worker • Encrypt • Network: Talk Around, Roam • Other Features: Pseudo Trunking, Morse Code
Analog Features	<ul style="list-style-type: none"> • Voice Services: Call without Signaling, Call with Signaling, Phone Call • Control Services: Compandor, Time-out Timer (TOT), Receiving Vibration, Monitor, Squelch Level Adjustment, CTCSS/CDCSS • Personal Security Services: Emergency Alarm, Man Down, Lone Worker • Scrambler • Talk Around • Morse Code
Accessory-related Features	<ul style="list-style-type: none"> • BT • Positioning Service: GPS On/Off, Position View, GPS Msg, Time Zone, Query Location
API Features	<ul style="list-style-type: none"> • GPS Report • Radio Registration Service • Telemetry • Work Order

Troubleshooting

Phenomena	Analysis	Solution
The radio cannot be powered on.	The battery may be improperly installed.	Remove the battery and then reattach it.
	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 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 get loose or may be improperly installed.	Turn off the radio and reattach the antenna.
	The speaker may be blocked or damaged.	Clean the surface of the speaker.
You cannot 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 type (digital and analog) may be set inconsistently.	Make sure all members are on the same digital or 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 without 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.
The GPS cannot locate your position.	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.
Wireless devices cannot be paired.	The battery power of wireless devices may be low.	Recharge the wireless devices.
	Wireless device may be too far away from the radio.	Move the wireless device towards 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 substances that can corrode the circuit.
- 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 product, and please consult your local dealer for more other accessories.



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

Type	Model	Name
Power Supply	BL1103	Li-ion battery (1100 mAh)
	BL1809	Li-ion battery (1800 mAh)
	CH04L01	Portable Charger
	CHV09	Vehicle Adapter for Charger
	MCA05-X	Battery Optimizing System
	MCA10	MCU Multi-unit Rapid-rate Charger
	POA53	Li-ion Battery Adapter
	POA58	Multi-unit Charger Battery Adapter
Audio Accessories	EAN19	3-wire Surveillance Earpiece with Transparent Acoustic Tube (Beige)
	EAN21	3-wire Surveillance Earpiece with Transparent Acoustic Tube (Beige)
	EAN22	Detachable Earpiece with Transparent Acoustic Tube

Type	Model	Name
	EAN24	2-wire Surveillance Earpiece with Transparent Acoustic Tube (Black)
	EHN20	Swivel Earset
	EHN21	C-Earset
	EHW02	Wireless Earpiece
	ESN14	Earbud
	EWN07	Digital Wireless Covert Earpiece With in-Line Controller (Neckloop Sensor)
	EWN08	Digital Wireless Covert Earpiece (Flatpack Sensor)
	POA47	Wireless Ring PTT
Cable	PC45	Programming Cable (USB port)
Carrying Accessories	NCN009	Covert Shoulder Harness
	PCN005	Belt Clip
	NCN009-C	Covert Radio Zip Up Vest (White)



Note: Existing devices should be upgraded to Hytera's iM or iS firmware before being used as part of a system. For details about upgrade, contact your Hytera dealer.



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X1p Digital Trunking Portable Radio

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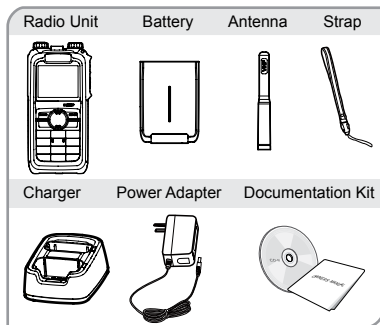
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Items in the Package

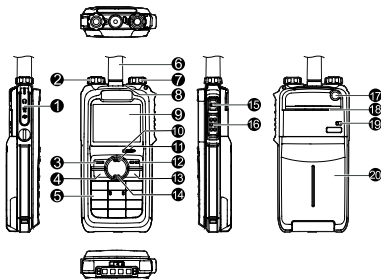
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Product Controls



No.	Part Name	Part Name
1	Accessory Connector	11 Up Key
2	Power On/Off/Volume Control Knob	12 Back Key
3	OK/Menu Key	13 P2 Key
4	P1 Key	14 Down Key
5	Numeric Keypad	15 SK1 (Side Key 1)
6	Antenna	16 PTT (Push-to-Talk) Key
7	Channel Selector Knob	17 TK (Top Key)
8	LED Indicator	18 Speaker
9	LCD Display	19 Rear Microphone
10	Front Microphone	20 Battery

Programmable Keys













For enhanced convenience, you may request your dealer to program the **TK** (⚠) and **SK1** as shortcuts to certain functions. Please refer to the *Feature Description and Operation Manual* along with the product for more details.



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

LCD Icon

LCD Icon	Name	Radio Status
	GPS Icon	The GPS feature is active, and valid GPS data is received.
		The GPS feature is active, but no valid GPS data is received.
	TX Power Icon	Low TX power for the current channel.
		High TX power for the current channel.
	Accessory Icon	An accessory is connected.
	Battery Power Icon	More bars indicate more battery power.
	Operation Mode Icon	Trunking Mode: In this mode, the radio communicates with other radios via the trunking system.
	Roam Icon	The radio is roaming.

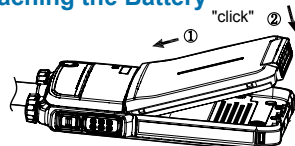
	Hunt Icon	The radio is hunting. This icon will not appear during the Background Hunt, HomeStation Hunt or Multi-site Handover.
	VOX Icon	The VOX feature is active.
	Message Icon	New message/unread message.
	Inbox full.	
	RSSI Icon	No signal.
	RSSI Icon	More bars indicate stronger signal strength.
	Knob Operation Mode Icon	The knob is used for selecting the group currently.
	Volume Icon	The knob is used for adjusting the volume currently.
	Speaker Icon	The speaker is unmuted.
	Call/Contact Icon	<ul style="list-style-type: none"> Indicates a private call in progress. Indicates a private contact in the contact list.
		<ul style="list-style-type: none"> Indicates a group call in progress. Indicates a group contact in the contact list.
		<ul style="list-style-type: none"> Indicates an all call in progress. Indicates an all call contact in the contact list.

LED Indicator

LED Indication	Radio Status
The LED indicator flashes green.	Powering on
The LED indicator flashes green slowly.	Standby
The LED indicator glows green.	Receiving
The LED indicator glows red.	Transmitting.
The LED indicator flashes red.	Establishing a call (the LED indicator on the calling radio flashes).
The LED indicator flashes orange rapidly.	Establishing a Full Off Air Call Set-Up (FOACSU) (the LED indicator on the called radio flashes).
The LED indicator flashes orange slowly.	Hunting
The LED indicator glows orange.	Call hung period. No voice is being transmitted or received on the traffic channel during a call. Within such period, you can hold down the PTT key to talk to the other party.
The LED indicator glows blue and then flashes once every three seconds.	The LED indicator glowing blue indicates the BT feature is being started; The LED indicator flashing blue once every three seconds indicates the BT feature is enabled, but no Bluetooth device is connected.
The LED indicator flashes once every two seconds.	A wireless device is connected.

Before Use

Attaching the Battery



To remove the battery, turn off the radio first. Slide the battery latch in direction as arrow ① shows to unlock the battery, and then remove the battery as arrow ② shows.



Attaching the Antenna



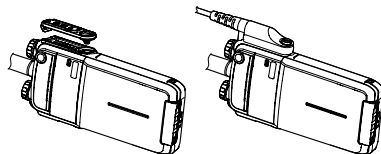
Caution: Do not hold the radio by its antenna, otherwise the performance and lifespan of the antenna will be reduced.

Attaching the Accessories



Caution: Please attach the accessory properly; otherwise, waterproof performance of the radio may get affected.

1. Loosen the screw on the accessory connector cover to uncover the connector.
2. Align the accessory plug with the connector.
3. Tighten the screw on the accessory plug.

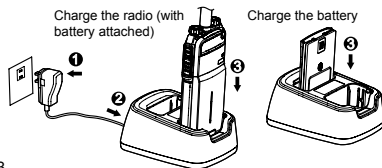


Charging the Battery



Caution:

- Use the charger specified by the Company to charge the battery.
- Make sure the radio is powered off before charging. Read the Safety Information Booklet in advance to get necessary safety information.
- Charge a new battery for at least 3.5 hours before initial use for best performance.



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

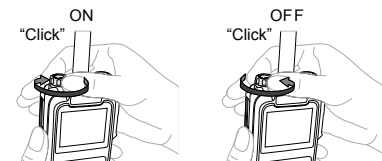
Checking the Battery Power

You can 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 and alert tone are listed below:

LED Indication/Tone	Icon
The LED Indicator glows green.	
The LED Indicator glows orange.	
The LED Indicator glows red.	
The LED Indicator glows red and an alert tone sounds.	 The battery runs low. Please recharge or replace the battery for proper radio operation

Basic Operations

Turning the Radio On/Off



Initial Registration

Before the radio can make the communication normally, it needs to register in the system. Once you turn on the radio, it will start hunting the control channels for available base station and attempt to make the registration automatically.

Hunting the Control Channel

The radio starts hunting the control channel for available base station automatically upon power-on. There are two hunt plans: Fixed Control Channel and Flexible Control Channel. You may request your dealer to set the appropriate plan for your radio. Please refer to the Feature Description and Operation Manual along with the product for details.



Note: During hunting, the radio displays "Registering, Please Wait!" with the icon and the LED indicator flashes orange slowly.

Registering

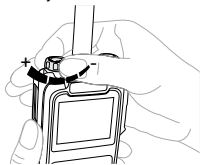
When the radio searches for a control channel, the radio determines whether the base station allows it to register. Upon successful registration, the radio will display "Registered Successfully!" on the LCD. Then it is ready for communication. If you want the radio to register with another base station, press the programmed **Manual Current Hunt** key to hunt again.



Note: For smooth registration, it is highly recommended to put the frequently used frequencies of base stations in the control channel list via the dealer.

Adjusting the Volume

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



Inputting via Keypad

You can input alias, call numbers and messages via the keypad of the radio. In the editing mode, you may do as follows.

- Press **#↑** to switch the text input methods

between alphabetic mode and numeric mode

- In the alphabetic mode, press **1<** to input the special characters. But in the numeric mode, pressing **1<** will input the numeric digit 1
- In the alphabetic mode, press ***←** to input the space. But in the numeric mode, pressing **1<** will input the special characters

Locking and Unlocking the Keypad

When the keypad is not in use, you can lock the keypad to prevent accidental keypad operation. The following methods are available for you to lock or unlock the keypad:

- Key Combination: Press "**OK+*←**" to lock or unlock the keypad.
- Shortcut key: Press the programmed **Keypad Lock** key to lock or unlock the keypad.
- Menu: Go to "Menu -> Settings -> Radio Set -> Keypad Lock" and then select "Enable" or "Disable".
 - » Enable: The keypad will be locked automatically if no operation is made within the preset time period. After the "Enable" option is selected, you can press the **Up/Down** key to set the Keypad Auto Lock Delay Time.
 - » Disable: The keypad will not be locked automatically.

Selecting a Subgroup

You can include the group contacts into a subgroup for efficient management.

You can enter the menu "Subgroup" by pressing the **Menu** or **Subgroup** key, then use the **Up/Down** key to select an appropriate subgroup. Afterwards, select the option "Set as Default" and press the **OK** key to switch to that subgroup.

Selecting a Group Contact

After the radio is registered successfully after power-on, you can select a group contact through any of the following methods:

- Knob: Rotate the **Group Call Selector Knob** to select an appropriate group contact. An audio alert will be given in case of no group contact preset for this knob.
- Menu: You can enter the menu "Subgroup" by pressing the **Menu** or **Subgroup** key, then use the **Up/Down** key to select an appropriate subgroup. Afterwards, select "Member" and use the **Up/Down** key to select an appropriate group contact.
- Shortcut key: You can press the programmed **Group Call List** key to access the group call list, and select an appropriate group contact by pressing the **Up/Down** key.

Managing the Contact

Contact management allows you to view, edit, delete or add contacts.

Contact List

The contact list is used to save private call contact, group call contact, and all call contact information such as call alias, call type and call ID. You can

access the Contact List via the menu or the programmed **Contact List** key. In the "Contact List" menu, you can view, edit or delete the private contact.

Favorite Contact

Favorite Contact is used to save the frequently used contacts. You can access the Favorite Contact via the menu or the programmed **Favorite Contact List** key. In the favorite contact list, you can view, edit or delete the favorite contacts.

New Contact

New Contact is used to add a new contact to the private contact list. The number and alias of a new contact must be unique. For the contact number range, please refer to Feature Description and Operation Manual for more details.



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 and registered, you can make and receive calls. To ensure an optimal volume of the receiving radio, keep the microphone about 2.5 to 5 centimeters away from your mouth when transmitting.



Note: If the radio does not register successfully or you select an empty group by rotating the Group Call Selector Knob, the radio cannot initiate any call.




Private Call

Private call is a call made to a private contact. There are two ways to answer the private call: Full Off Air Call Set-Up (FOACSU) and Off Air Call Set-Up (OACSU). The specific way is decided by the settings made for the called radio via the network management application.


- FOACSU: The called party needs to answer the call manually.
- OACSU: The called party answers the call without any operation.

Initiating a Private Call


When you initiate a private call, the radio will display the icon . After a private call is established, either the calling party or called party can hold down the **PTT** key to talk while the radio displays "PTT Enable" on the LCD.

You can make a private call through any of the following ways:



Contact List

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



Call Logs

1. Go to "Menu -> Call Logs -> Outgoing/Incoming/ Missed".
2. Use the **Up/Down** key to select an appropriate contact.
3. Press  or hold down the **PTT** key to initiate a private call.

ReDial Call Logs

1. In the home screen, press  to enter the ReDial Call Logs.
2. Use the **Up/Down** key to select an appropriate contact.
3. Press  or hold down the **PTT** key to initiate a private call.


BackDial Call Logs

1. In the home screen, press  to enter the BackDial Call Logs.
2. Use the **Up/Down** key to select an appropriate contact.
3. Press  or hold down the **PTT** key to initiate a private call.


Manual Dial

1. In the home screen, input a private call number using the numeric keypad.

For the dial rules, please refer to "Dial Scheme" in the Feature Description and Operation Manual along with the product.





2. Press  or hold down the PTT key to initiate a private call.

Missed Call Screen


Hold down the **PTT** key in the "Missed Call" screen to directly call back the last missed private contact. Also you can press  or hold down the **PTT** key to call back when viewing that private contact.

Receiving a Private Call

FOACSU



When you receive a private call, the radio will display the icon  on the LCD. You can press  or hold down the PTT key within the preset time period to answer the call. After the call is established successfully, the radio will emit a tone and display the icon  on the LCD as well. If you don't answer this call, the radio will display the icon  to remind you.

OACSU

The call is established automatically. The radio will display the icon  on the LCD after call setup.

Voice Communication

After a private call is established, either the calling party or called party can hold down the **PTT** key to talk while the radio displays "PTT Enable" on the

LCD. The radio will display the icon  when transmitting and the icon  when receiving.

End of Communication

The call will be terminated when any of the following situations occurs:


- Neither party holds down the **PTT** key to speak before the preset time period expires.
- The call duration exceeds the time preset by the dealer.
- Either of the parties ends the ongoing call.
- The base station signal is lost.
- Either of the parties selects an empty group via the **Group Call Selector Knob** during the call.
- A pre-emptive call or an emergency call occupies the channel.

Group Call

The Group Call includes group call and broadcast group call. In a group call, both the calling party and the called party can talk. However, in a broadcast group call, only the calling party can talk while the called party can listen to it only. The radio cannot make a broadcast group call unless the dealer authorizes it.

As a broadcast group call is made in the same manner as a group call, we will only detail their differences in the following introductions.

Initiating a Group Call


When you initiate a group call, the radio will display the icon . You can make a group call through

any of the following ways. The operation is similar to initiating a private call.


Preset Contact

In the home screen, you can hold down the **PTT** key to initiate a group call to the contact currently selected by the **Group Call Selector Knob**.



Group Contact

1. In the home screen, enter the menu "Subgroup" by pressing the **Menu** or **Subgroup** key.
2. Go to "Subgroup -> Members".
3. Use the **Up/Down** key to select an appropriate contact.
4. Press  or hold down the **PTT** key to initiate a group call.





Note: To make a broadcast group call, select "Broadcast Group Call" as the "Call Type", and press the OK key,  key or hold down the PTT key.

ReDial Call Logs

1. In the home screen, press  to enter the ReDial Call Logs.
2. Use the **Up/Down** key to select an appropriate contact.
3. Press  or hold down the **PTT** key to initiate a group call.



BackDial Call Logs

1. In the home screen, press  to enter the ReDial Call Logs.
2. Use the **Up/Down** key to select an appropriate contact.
3. Press  or hold down the **PTT** key to initiate a group call.


Manual Dial

1. In the home screen, input a group call number using the keypad.




For the dial rules, please refer to “Dial Scheme” in the Feature Description and Operation Manual along with the product.

2. Press ,  or hold down the **PTT** key to initiate a group call.

Receiving a Group Call

You can answer a group call without any operation after this call is established successfully. And the radio will emit a tone and display the icon  on the LCD as well.

Voice Communication

- Group call: After a group call is established, either the calling or called party can hold down the **PTT** key to talk while the radio displays “PTT Enable” on the LCD. The radio will display the icon  when transmitting and the icon  when receiving.
- Broadcast group call: After the call is established, only the calling party can talk by holding down the **PTT** key. During transmission, the calling radio will display the icon  on the LCD. The called party can only receive the voice.

Late Entry

With the Late Entry feature, a group member that has missed the start of a group call can join this active group call later without any operation.

The Late Entry feature is applicable to the following situations:

- The radio moves within the coverage area after the group call is established.
- The radio is turned on after the group call is established.
- The radio is busy with other call services when the group call is established. After such other call services end, the radio will join this group call.
- The signal of the base station recovers after the group call is established.
- The radio is added to the group after the group call is established.

End of Communication

The call will be terminated when any of the following situations occurs:

- No group member holds down the **PTT** key to talk before the preset time period expires (except in the broadcast group call).
- The call duration exceeds the time preset by the dealer.
- The calling party ends the in-progress call (if the called party ends the call, he/she will exit this group call but can rejoin via Late Entry feature).
- The base station signal is lost.
- A pre-emptive call or an emergency call occupies the channel.

Emergency Call

In case of emergency, you can use Emergency Call to ask for help from your companion or the control center.

Emergency Call needs to be configured and enabled by your dealer. Please refer to the Feature Description and Operation Manual along with the product for details.

Message Services

Message Services allow you to edit and send a new message, to directly send a quick text message and to forward the messages saved in the InBox, OutBox and Drafts.

Text Message

1. Go to “Menu -> Message -> New Msg” to enter the relevant screen.
2. Type the text and press the **OK** key. You can save the text message to Drafts, or send it to a private call contact or a group call contact directly.
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!”.

You can send the quick text or status messages, and forward the message saved in the Inbox, Outbox or Drafts.

Quick Text





Quick Text is the frequently used message preset by your dealer. You can send the quick text directly or edit this text before sending it.


Status Message

Status message is a quick message that contains the message text and the message code, both of which are preset by your dealer. When a status message is sent, only the message code will be transmitted, to ensure privacy of the communications. You can view and send the preset status messages, but cannot edit or delete them.

InBox





The InBox saves the received messages and marks each message with a corresponding icon to indicate its status.

-  : Read text message.
-  : Unread text message.
-  : Read status message.
-  : Unread status 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 OutBox saves the sent messages and marks each message with a corresponding icon to indicate its status.

-  : The text message is sent successfully.
-  : The text message is not sent successfully. In this case, you can resend it.
-  : The status message is sent successfully.
-  : The status 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 Drafts saves the edited messages. 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.

Available Features

Available features of this radio are listed below. Please refer to the *Feature Description and Operation Manual* for detailed feature descriptions.

Feature Type	Detailed Feature
Basic Setting	<ul style="list-style-type: none">• Password• Language• Indication: Backlight, Brightness, LED, Tone, Vibration• Audio: Mic AGC, Treble Boost, Audio Feedback Suppression• Operation Mode Switch• Managing the Contacts: Favorite Contact, Private Contact, New Contact• Other Features: Device Information, Power Level, VOX, Covert Mode, One Touch Call/Menu, Renting
Mobility management	<ul style="list-style-type: none">• Hunt• Roam
Voice Services	<ul style="list-style-type: none">• Group Call• Private Call• PSTN/PABX Call• Broadcast Group Call• All Call• Priority• Call Queue• Time-out Timer (TOT)
Data Services	<ul style="list-style-type: none">• Message Services: New Msg, InBox, OutBox, Drafts, Status Message, Quick Text• GPS: Position View, Time Zone, Message with Position, Query Neighbors
Control Services	<ul style="list-style-type: none">• Over the Air Programming (OTAP)• Ambience Listening• Interrupt• Override
Personal Security Services	<ul style="list-style-type: none">• Emergency Alarm• Man Down• Lone Worker
Communication Security Services	<ul style="list-style-type: none">• Authentication• Encrypt• Kill• Stun• Revive
Accessory-related Features	<ul style="list-style-type: none">• BT

Troubleshooting

Phenomena	Analysis	Solution
The radio cannot be powered on.	The battery may be improperly installed.	Remove the battery and then reattach it.
	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.
The radio cannot make a registration.	The radio may not detect signals from the base station.	Make sure the radio is within the coverage of the base station.
	The radio may be unauthorized.	Contact the base station manager to check whether the radio is authorized in the network management system.
The radio registers repeatedly.	The signal may be discontinuous.	Make sure the radio is within the coverage of the base station.
The radio cannot establish a call.	The signal may be poor.	Make sure the radio is within the coverage of the base station.
No voice is heard after a call is established.	The radio ID may be repeated.	Contact the base station manager to check whether the radio ID is repeated in the network management system.
The called party disconnects repeatedly during communication.	The signal may be discontinuous.	Make sure the radio is within the coverage of the base station.
During receiving, the voice is weak, discontinuous or totally inactive.	The battery power may be low.	Recharge or replace the battery.
	The volume level may be low.	Increase the volume by rotating the Power On-Off/Volume Control Knob clockwise, or request your dealer to disable the Digital MIC AGC feature.
	The antenna may get loose or may be improperly installed.	Turn off the radio and reattach the antenna.
	The speaker may be blocked or damaged.	Clean the surface of the speaker.
You cannot communicate with other members.	The signal may be poor.	Make sure you and the group members are within the communication range.
The voice is unclear.	The signal may be poor.	Make sure you and the talk party(ies) are within the communication range.
The noise is too loud.	The signal may be poor.	Make sure you and the talk party(ies) are within the communication range.
	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.
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.
Wireless devices cannot be paired.	The battery power of wireless devices may be low.	Recharge the wireless devices.
	Wireless device may be too far away from the radio.	Move the wireless device towards the radio.

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 substances that can corrode the circuit.
- 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 product, and please consult your local dealer for more other accessories.



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

Type	Model	Name
Power Supply Audio Accessories	BL1103	Li-ion battery (1100 mAh)
	BL1809	Li-ion battery (1800 mAh)
	CH04L01	Portable Charger
	CHV09	Vehicle Adapter for Charger
	MCA05-X	Battery Optimizing System
	MCA10	MCU Multi-unit Rapid-rate Charger
	POA53	Li-ion Battery Adapter
	POA58	Multi-unit Charger Battery Adapter
Cable Carrying Accessories	EAN19	3-wire Surveillance Earpiece with Transparent Acoustic Tube (Beige)
	EAN21	3-wire Surveillance Earpiece with Transparent Acoustic Tube (Beige)
	EAN22	Detachable Earpiece with Transparent Acoustic Tube
	EAN24	2-wire Surveillance Earpiece with Transparent Acoustic Tube (Black)
	EHN20	Swivel Earset
	EHN21	C-Earset
	EHW02	Wireless Earpiece
	ESN14	Earbud
	EWN07	Digital Wireless Covert Earpiece With in-Line Controller (Neckloop Sensor)
	EWN08	Digital Wireless Covert Earpiece (Flatpack Sensor)
Power Supply	POA47	Wireless Ring PTT
	PC45	Programming Cable (USB port)
	NCN009	Covert Shoulder Harness
	PCN005	Belt Clip
	NCN009-C	Covert Radio Zip Up Vest (White)



Note: Existing devices should be upgraded to Hytera's iM or iS firmware before being used as part of a system. For details about upgrade, contact your Hytera dealer.