



USER MANUAL

PD71X Ex DIGITAL PORTABLE RADIO





Welcome to the world of Hytera and thank you for purchasing this product. This manual includes a description of the functions and step-by-step procedures for use. It also includes a troubleshooting guide. To avoid bodily injury or property loss caused by incorrect operation, please carefully read the *Safety Information Booklet* before use.

This manual is applicable to the following product:

PD71X Ex Digital Portable Radio (X may represent 2, 5, 6, or 8)

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

FCC Statement

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

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

Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

Note: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Compliance with RF Exposure Standards

The radio complies with the following RF energy exposure standards and guidelines:

- United States Federal Communications Commission, Code of Federal Regulations; 47 CFR § 1.1307, 1.1310 and 2.1093
- American National Standards Institute (ANSI)/Institute of Electrical and Electronic Engineers (IEEE) C95.1:2005; Canada RSS102 Issue 5 March 2015
- Institute of Electrical and Electronic Engineers (IEEE) C95.1:2005 Edition

RF Exposure Compliance and Control Guidelines and Operating Instructions

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

Guidelines:

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

Operating Instructions:

- Transmit no more than the rated duty factor of 50% of the time. To transmit (talk), press the **Push-to-Talk (PTT)** key. To receive calls, release the **PTT** key. Transmitting 50% of the time, or less, is important because the radio generates measurable RF energy only when transmitting (in terms of measuring for standards compliance).
- Keep the radio unit at least 2.5 cm away from the face. Keeping the radio at the proper distance is important as RF exposure decreases with distance from the antenna. The antenna should be kept away from the face and eyes.
- When worn on the body, always place the radio in an approved holder, holster, case, or body harness or by use of the correct clip for this product. Use of non-approved accessories may result in exposure levels which exceed the FCC's occupational/controlled environmental RF exposure limits.
- Use of non-approved antennas, batteries, and accessories causes the radio to exceed the FCC RF exposure guidelines.
- Contact your local dealer for the product's optional accessories.

IC 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 et compliance d'acquiescer les informations correspondantes

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes: (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement

EU Regulatory Conformance

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



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

Contents

Documentation Conventions	2	Checking LED Indications	7	Care and Cleaning	15
Intrinsically Safe Radio Information	2	Call Services	8	Product Care	15
Equipment Marking	2	Group Call	8	Product Cleaning	15
No Misoperations	2	Private Call	8	Optional Accessories	15
Safety Instructions	2	All Call	9	Abbreviations	15
Specifications	3	Broadcast Call (Trunking Only)	9		
Compliance Standards	3	Include Call (Trunking Only)	9		
Packing List	4	Call on Analog Channel (Conventional Only)	10		
Product Overview	5	Supplementary Features	10		
Product Layout	5	Audio Optimization	10		
Programmable Keys	5	MIC & SPK	10		
Before Use	6	One Touch Call-Menu	11		
Charging the Battery	6	Scan	11		
Attaching the Battery	6	Hunt	11		
Attaching the Antenna	6	Roam	12		
Attaching the Belt Clip	6	Talk Around	12		
Attaching the Audio Accessory	6	Time-out Timer	12		
Basic Operations	7	VOX	12		
Turning the Radio On or Off	7	Analog Service	12		
Adjusting the Volume	7	Personal Safety Services	12		
Checking the Battery Power	7	Communication Security Services	13		
Switching the Operation Mode	7	Troubleshooting	14		
Selecting a Zone and Channel	7				

Documentation Conventions

Icon Conventions

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

Notation Conventions

Item	Description	Example
Boldface	Denotes menus, tabs, parameter names, window names, dialogue names, and hardware buttons.	To save the configuration, click Apply .
		The Log Level Settings dialogue 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 .

Item	Description	Example
<i>Italic</i>	Denotes document titles.	For details about using the DWS, refer to <i>Dispatch Workstation User Guide</i> .
<code>Courier New</code>	Denotes commands and their execution results.	To set the IP address, run the following command: <code>vos-cmd - m name IP</code>

Intrinsically Safe Radio Information

Equipment Marking

FM/CAN

Class I, Zone 1 AEx/Ex ib IIC T4 Gb
Class II, III Div 1, Group E, F, G T120°C

ATEX

II 2G Ex ib IIC T4
II 2D Ex ib IIIC T120°C IP5X
I M2 Ex ib

IECEX

Ex ib IIC T4
Ex ib IIIC T120°C IP5X
Ex ib I

Certificate Number

FM13ATEX0023X
FMG 13.0010X

CSA

- CLI, Div 2, Gr-A-D T4 –20°C < Ta < +50°C

- CLII, III, Div 2, Gr E, F, G T120°C –20°C < Ta < +50°C
- CLI, Zn 1, Ex ib IIC T4 Gb –20°C < Ta < +50°C
- Zn 21 Ex ib IIIC T120°C Db –20°C < Ta < +50°C
- IP5X

Certificate Number

CSA 17.70108168

No Misoperations

Stop operating this product and leave the explosive atmosphere immediately when the safety or integrity of the product is endangered, and deliver it to your local dealer for examination.

These items may endanger the product's safety or integrity:

- The radio is stored improperly.
- The radio is faulty.
- The radio works with overload.
- The radio's operational error or threshold value is out of allowed range.
- The radio is damaged during transportation.
- The radio's housing is obviously damaged or cracked.
- The radio logo or model is hard to be recognized.

Safety Instructions

Caution

To protect you against any property loss, bodily injury or even death, be sure to observe the following safety instructions.

- Use only the Ex-battery BL1807-Ex specified by the Company. The use of other batteries may result in Ex-protection (intrinsic safety) failure.
- Charge the battery in a non-hazardous area only with the designated charger.
- Do not remove the battery from the radio in a hazardous area.
- Do not carry any standby battery into a hazardous area.
- Use the accessories specified by the Company only. Do not replace the accessories in a hazardous area.
- Do not use a damaged antenna. If a damaged antenna comes into contact with your skin, a minor burn may result.
- Do not expose the radio to direct sunlight for a long time, nor place it close to a heating source.
- Hold the radio upright and keep its microphone 2.5 to 5 centimeters away from your mouth during use.
- If you wear a radio on your body, ensure its antenna is at least 2.5 centimeters away from your body during transmission.
- Do not carry the radio into Zone 0 and 20. Please do not use the radio out of the operating temperature range specification of this product.
- Do not attempt to repair or service the radio, batteries and its accessories. Please contact your dealer for repair and servicing.
- Do not disassemble or redo the radio. Unauthorized modification of the radio may result in termination of Ex-protection (intrinsic safety) of the radio.
- Using the product for purposes other than as intended will impair safety of the product, yourself and surrounding environment.

Specifications

Item	Specifications
Frequency Range	136–174 MHz; 400–470 MHz
Channel Spacing	12.5 kHz; 20 kHz; 25 kHz
Operating Voltage	7.4 V DC
Weight (with standard antenna & battery)	About 495 g
Sensitivity	0.3 μ V
RF Power Output	1 W
Rated Audio Power Output	0.5 W
Audio Distortion	3%
Operating Temperature	–20°C to +50°C
Storage Temperature	–40°C to +85°C
Charging Temperature	0°C to +40°C
Battery	Ex-battery BL1807-Ex (1800 mAh)
Battery Life	About 14 to 17 hours (5-5-90 duty cycle)
Charging Time	About 4 hours
Maximum Charging Voltage	12 V DC

Compliance Standards

Standard	Issue Date
FM	
FM Class 3600	2011

Standard	Issue Date
FM Class 3611	2004
FM Class 3810	2005
ANSI/IEC-60529 (Ed. 4.0)	2004
ANSI/ISA-60079-0 (12.00.01)	2009
ANSI/ISA-60079-11 (12.02.01)	2012
ANSI/ISA-60079-31 (12.10.03)	2009
ANSI/ISA-61010-1 (82.02.01)	2004
CAN	
CAN/CSA-C22.2 No.0-M91	2006
CAN/CSA-C22.2 No.142-M1987	2009
CAN/CSA-C22.2 No.213-M1987	2008
CAN/CSA-C22.2 No.60079-0 (Ed. 5.0)	2011
CAN/CSA-C22.2 No.60079-11 (Ed. 5.0)	2011
CAN/CSA-C22.2 No.60079-31 (Ed.1.0)	2012
CAN/CSA-C22.2 No.60529 (Ed. 5.0)	2005
CAN/CSA-C22.2 No.61010-1 (Ed. 2.0)	2009
ATEX	
EN 60079-0 (Ed. 5.0)	2009
EN 60079-11 (Ed. 6.0)	2012
EN 60079-31 (Ed. 1.0)	2009
EN 60529+A1 (Ed. 2.0)	1992
IECEx	
IEC-60079-0 (Ed. 6.0)	2011
IEC-60079-11 (Ed. 6.0)	2011

Standard	Issue Date
IEC-60079-31 (Ed. 1.0)	2008

Packing List

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

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

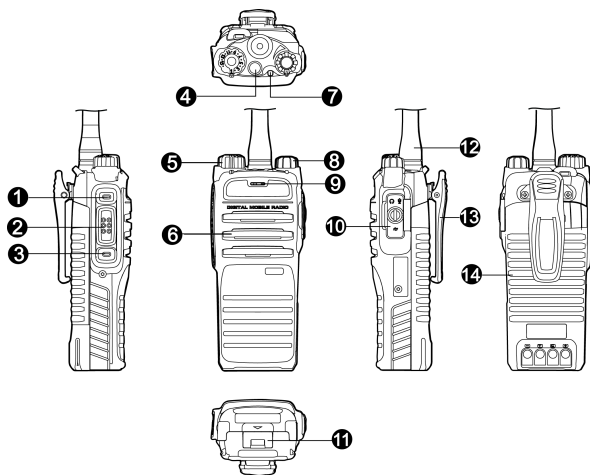


Note

Check whether the frequency band marked on the antenna label matches that on the radio label. If not, please contact your dealer.

Product Overview

Product Layout



No.	Part Name	No.	Part Name
1	Side Key 1 (SK1)	8	On-Off/Volume Control Knob
2	Push-to-Talk (PTT) Key	9	Microphone
3	Side Key 2 (SK2)	10	Accessory Connector
4	Top Key (TK)	11	Battery Latch

No.	Part Name	No.	Part Name
5	Channel/Group Selector Knob	12	Antenna
6	Speaker	13	Belt Clip
7	LED Indicator	14	Battery

Programmable Keys

You can request your dealer to program the following programmable keys as shortcuts to assignable radio features: **SK1**, **SK2**, and **TK**.

Before Use

Charging the Battery

⚠ Caution

- Read the *Safety Information Booklet* before charging.
- Use the approved charger to charge the battery.

Before initial use, fully charge the battery to ensure optimum performance.

To charge the battery, do as follows:

1. Insert the output connector of the power adapter into the port on the back of the charger.
2. Plug the power adapter into a power outlet.
3. Place the battery into the charger.

To determine the charging status, check the light-emitting diode (LED) indicator on the charger according to the following table:

LED Indicator	Description
Glows red	The battery is charging.
Glows orange	The battery is charged to 90% or above.
Glows green	The battery is fully charged.
Flashes red slowly	The battery fails to make proper contact with the charger. In this case, take the battery out of the charger, and then place it into the charger for proper contact.

LED Indicator	Description
Flashes red rapidly	The battery fails to be charged. In this case, please contact your dealer to check whether the battery or power adapter is damaged.

📘 Note

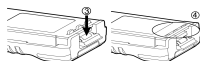
You can also charge the radio with battery attached. It is recommended that your radio be turned off during charging.

Attaching the Battery

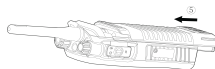
1. Align the battery slots with the guide rails on the radio, and then push the battery until the metal lock reaches the bottom of the radio.



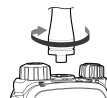
2. Open the battery latch and exert force on it to retract the metal lock into the battery housing completely.



3. Push the battery until it is fully fitted into the slot, and then release the battery latch.



Attaching the Antenna

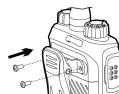


⚠ Caution

Do not hold the radio by the antenna, because it might reduce the radio performance and life span of the antenna.

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 on the belt clip with those on the back of the radio.
3. Put the screws back in places as shown below, and use the screwdriver to turn them clockwise until hand tight.



Attaching the Audio Accessory

⚠ Caution

For optimal 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.

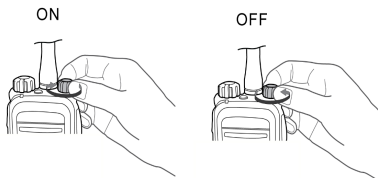


3. Rotate the screw on the accessory plug clockwise until hand tight.

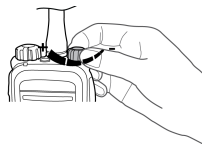


Basic Operations

Turning the Radio On or Off



Adjusting the Volume



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
Flashes red	Low battery tone	Under the low battery threshold. Please recharge or replace the battery.

Switching the Operation Mode

The radio can operate in conventional or trunking mode. In conventional mode, you can receive and transmit voice and data after selecting the required channel. In trunking mode, you can receive and transmit voice and data after the radio registers successfully.

To manually switch the operation mode, press the preprogrammed **Operation Mode Switch** key.

To allow the radio to automatically switch to conventional mode when the signal drops below the preset level in trunking mode, press the preprogrammed **Mode Automatic Switch** key.

Selecting a Zone and Channel

In conventional mode, the radio receives and transmits data and voice on the selected channel. A zone is a group of channels within the same operational area.

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

To select a channel after selecting the required zone, do one of the following:

- Rotate the **Channel Selector** knob.
- Press the preprogrammed **Channel Up** or **Channel Down** key.

Checking LED Indications

To determine the radio status, check the LED indicator on the radio according to the following table:

LED Indicator	Radio Status
Flashes green	Being turned on.
Flashes green slowly	Standby in trunking mode.
Glows green	Receiving.
Glows red	Transmitting.
Flashes red	Establishing a call in trunking mode. This indication is applicable only to the calling radio.

LED Indicator	Radio Status
Flashes orange slowly	Scanning, hunting, or roaming.
Flashes orange rapidly	<ul style="list-style-type: none"> Conventional mode: Working in emergency mode. Trunking mode: Establishing a Full Off Air Call Set-Up (FOACSU) call. This indication is applicable only to the called radio.
Glows orange	Call hang time: No voice is being transmitted or received on the channel during a call. Within such a period, you can press and hold the PTT key and speak.

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.



Group Call

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

Initiating a Group Call

Conventional Mode

To initiate a call to the group contact preset for the current channel, press and hold the **PTT** key.

To initiate a call to another group contact, rotate the **Channel Selector** knob to select the channel associated with the group contact, and then press and hold the **PTT** key.

Trunking Mode

To initiate a call to a group contact, do one of the following:

- Rotate the **Group Selector** knob to select the required group contact, and then press and hold the **PTT** key.
- Press the preprogrammed **Group Up** or **Group Down** key to select the required group contact, and then press and hold the **PTT** key.
- Press the preprogrammed **One Touch Call/Menu** key, and then press and hold the **PTT** key to initiate a call to the associated group contact.

Receiving a Group Call

You can listen to a received group call without any operation.

Ending a Group Call

In conventional mode and trunking mode, a group call automatically ends when the call hang time expires.

In trunking mode, a group call also ends in any of the following cases:

- The calling party ends the call by pressing the preprogrammed **Clear Down** key.
- The call duration preset by your dealer expires.
- A preemptive or emergency call interrupts the call.
- The base station signal is lost.

Private Call

A private call is a call from an individual user to another individual user.

Initiating a Private Call

Conventional Mode

To initiate a call to the private contact preset for the current channel, press and hold the **PTT** key.

To initiate a call to another private contact, rotate the **Channel Selector** knob to select the channel associated with the private contact, and then press and hold the **PTT** key.

Trunking Mode

To initiate a call to a private contact, do one of the following:

- Rotate the **Group Selector** knob to select the target private contact, and then press and hold the **PTT** key.
- Press the preprogrammed **Private Up** or **Private Down** key to select the target private contact, and then press and hold the **PTT** key.
- Press the preprogrammed **One Touch Call/Menu** key to initiate a call to the associated private contact.

Receiving a Private Call

Conventional Mode

You can listen to a received private call without any operation.

Trunking Mode

When receiving an Off Air Call Set-Up (OACSU) private call, you can listen to it without any operation.

When receiving a FOACSU private call, the radio rings and vibrates. You can press the **PTT** key to establish the call.

Ending a Private Call

In conventional mode and trunking mode, a private call automatically ends when the call hang time expires.

In trunking mode, a private call also ends in any of the following cases:

- The calling or called party ends the call by pressing the preprogrammed **Clear Down** key.
- The call duration preset by your dealer expires.
- A preemptive or emergency call interrupts the call.
- The base station signal is lost.

All Call

Conventional Mode

An all call is a call from an individual user to all other users on the current channel.

Trunking Mode

An all call is a call from an individual user to all other users in a specific BS, area, or system.

According to whether the called party can respond, an all call is classified into the following two types:

- **Broadcast All Call:** The called party cannot respond to the call.
- **General All Call:** The called party can respond to the call.

Initiating an All Call

Your radio can initiate an all call only after being authorized by your dealer.

Conventional Mode

To initiate an all call, rotate the **Channel Selector** knob to select the channel associated with the all call contact, and then press and hold the **PTT** key.

Trunking Mode

To initiate an all call, press the preprogrammed **One Touch Call/Menu** key.

Receiving an All Call

You can listen to a received all call without any operation.

Ending an All Call

In conventional mode and trunking mode, an all call ends when the Time-out Timer (TOT) expires.

In trunking mode, an all call also ends in any of the following cases:

- The calling party ends the call.
- The call duration exceeds the period preset by your dealer.
- The base station signal is lost.

Broadcast Call (Trunking Only)

A broadcast call is a special group call to which the called party cannot respond. Your radio can initiate a broadcast call only after being authorized by your dealer.

Initiating a Broadcast Call

To initiate a broadcast call, press the preprogrammed **One Touch Call/Menu** key.

Receiving a Broadcast Call

You can listen to a received broadcast call without any operation.

Ending a Broadcast Call

A broadcast call ends in any of the following cases:

- The calling party ends the call.
- The call duration exceeds the period preset by your dealer.
- A preemptive or emergency call interrupts the call.
- The base station signal is lost.

Include Call (Trunking Only)

An include call is a special group call initiated to another group in call hang time of an ongoing group call, so that the group joins the ongoing call. Your radio can initiate an include call only after being authorized by your dealer.

For operations of the include call, see "Group Call" on the previous page.

Call on Analog Channel (Conventional Only)

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

To initiate a call on an analog channel, do as follows:

1. Rotate the **Channel Selector** knob to select the required channel.
2. Press and hold the **PTT** key, and speak into the microphone.

Supplementary Features

The features supported by the radio vary with the operation mode. For details, see the following table.

Feature	Conventional		Trunking
	Digital	Analog	
Mic Automatic Gain Control (AGC)	√	√	√
Treble Boost	√	√	√
3-Band Equalizer	√	√	√
Audio Feedback Suppression	√	×	√
MIC & SPK	√	√	√
One Touch Call/Menu	√	√	√
Scan	√	√	×
Hunt	×	×	√

Feature	Conventional		Trunking
	Digital	Analog	
Roam	√	×	√
Talk Around	√	√	×
Time-out Timer	√	√	√
VOX	√	√	√
Call Divert	×	×	√
Call Priority	×	×	√
Dynamic Group Number Assignment (DGNA)	×	×	√
GPS	√	√	√
Analog Services	×	√	×
Personal Security Services	√	√	√
Encrypt	√	×	√
Scrambler	×	√	×
Erasing Data in Emergency	√	√	√
Stun	×	√	√
Kill	√	×	√

MIC & SPK

The MIC & SPK feature allows you to select the microphone and speaker used by the radio for transmitting and receiving voice.

Selecting the Microphone

To set the way in which the radio uses the external or internal microphone, press the preprogrammed **Mic Set Switch** key. Four ways are available as below:

- **Follow PTT**: When you transmit by pressing and holding the radio's PTT key, the radio uses the internal microphone; When you transmit by pressing and holding the PTT key on external device, it uses the external microphone.
- **Only Internal**: The radio uses only the internal microphone.
- **Only External**: The radio uses only the external microphone.
- **External First**: When an audio accessory is connected, the radio uses the external microphone; otherwise, it uses the internal microphone.

Selecting the Speaker


To set the way in which the radio uses the external or internal speaker, press the preprogrammed **SPK Set Switch** key. Three ways are available as below:

- **External First**: When an audio accessory is connected, the radio uses the external speaker; otherwise, it uses the internal speaker.

- **Only Internal:** The radio uses only the internal speaker.
- **Only External:** The radio uses only the external speaker.

One Touch Call-Menu

The One Touch Call/Menu feature allows you to press the preprogrammed **One Touch Call/Menu** key to quickly access a service assigned by your dealer. The services available for assignment are as follows:

Service Type	Description
Voice Services in Conventional Mode	Analog Channel: Call to a 5-tone or 2-tone contact.
	Digital Channel: <ul style="list-style-type: none"> ● Group call to a group contact. ● Private call to a private contact. ● All call to an all call contact. ● Radio check, remote monitor, radio enable, radio disable to a private contact.
	 Note To initiate a one touch call on the digital channel in conventional mode, you need to press the PTT key after pressing the preprogrammed One Touch Call/Menu key.
Voice Services in	<ul style="list-style-type: none"> ● Private call, emergency call, preemptive call to a private contact.

Service Type	Description
Trunking Mode	<ul style="list-style-type: none"> ● Group call, broadcast call, emergency call, preemptive call, preemptive broadcast call, and emergency broadcast call to a group contact. ● All call to an all call contact.

Scan

In conventional mode, the Scan feature allows you to listen to activities on other channels, keeping track of your team members.

To turn the Scan feature on or off, press the preprogrammed **Scan** key.

With this feature enabled, the radio searches the scan list preset for the current channel, and the LED indicator slowly flashes orange. When detecting activities on a channel, the radio stays on it, and the LED indicator glows green.



Note

If you do not want to listen to the activities on a channel, press the preprogrammed **Nuisance Temporary Delete** key to temporarily remove the channel from the scan list.

Hunt

In trunking mode, the radio must register with a BS for normal operation. The Hunt feature allows the radio to:

- Hunt through the Trunked Station Control Channels (TSCCs) for an available BS for registration.

- Always work under a BS with higher signal strength after registration, ensuring smooth communication.

Turning the Background Hunt Feature On or Off

The Background Hunt feature allows the radio in standby mode to keep detecting the signal strength of the current BS. If the signal strength drops below the preset threshold, the radio switches to another BS with higher signal strength.

To turn this feature on or off, press the preprogrammed **Background Hunt** key.

Turning the Homestation Hunt Feature On or Off

The Homestation Hunt feature allows the radio operating on another channel to switch back to the homestation channel if the signal strength of the homestation channel reaches the preset threshold. This ensures smooth communication in an overlapping area. It is recommended that you request the dealer to set the frequently used channel as the homestation channel and enable this feature.

To turn this feature on or off, press the preprogrammed **HomeStation Hunt** key.

Turning the Handover Feature On or Off

The Handover feature allows the radio to automatically switch to another BS with higher signal strength if the signal strength of the current BS drops below the preset threshold during a call. This prevents call drops or discontinuous voice caused by low signal strength.

To turn this feature on or off, press the preprogrammed **Multi-site Handover** key.

Roam

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

In conventional mode, you can press the preprogrammed **Roam** key to turn this feature on or off.

In trunking mode, only your dealer can turn on or off this feature.

Talk Around

The Talk Around feature allows your radio to continue transmitting and receiving when the repeater is not operating, or when your radio is out of the repeater's coverage but within other radio's coverage.

To turn this feature on or off, press the preprogrammed **Talk Around** key.

Time-out Timer

The Time-out Timer (TOT) feature allows the radio to automatically stop transmission and keep beeping when the period preset by your dealer expires. To stop beeping, release the **PTT** key. You need to wait for a certain period (also preset by your dealer) to initiate transmission again.

This feature aims to prevent a radio user from occupying a channel for an extended period. It also avoids potential radio damage caused by overheating.

VOX

The VOX 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.

To turn this feature on or off, press the preprogrammed **VOX** key.

Analog Service

The following feature is available only on an analog channel in conventional mode.

Turning the Monitor Feature On or Off

The Monitor feature allows the radio to receive weak signals.

To turn this feature on, press the preprogrammed **Monitor** key or press and hold the preprogrammed **Monitor Momentary** key.

To turn this feature off, press the preprogrammed **Monitor** key again or release the preprogrammed **Monitor Momentary** key.

Personal Safety Services

The features described in this section ensure personal safety.

Using the Emergency Feature

The Emergency feature allows you to ask for help from your companion or the control centre in case of emergency.

In emergency mode, the radio gives different indications according to the preset emergency type. The available emergency types are as follows:

Emergency Type	Description
Siren Only	The radio sounds shrill alarm tones with visible indications.
Regular	The radio gives audible and visible indications.
Silent	The radio gives no audible or visible indication, and you cannot listen to a received call.
Silent w/ Voice	The radio gives no audible or visible indication, but you can listen to a received call.
Alarm w/ Siren	The radio sends an alarm and sounds shrill alarm tones with visible indications.

In addition, you can request your dealer to set one of the following emergency modes:

Emergency Mode	Description
Alarm	Allows you to send an emergency alarm.
Call Only	Allows you to initiate an emergency call.
Alarm W/Call	Allows you to send an emergency alarm and initiate an emergency call.

The three emergency modes can be combined with any of the following emergency types: **Regular**, **Silent**, and **Siren w/ Voice**.

Triggering the Emergency Mode

To trigger the emergency mode, press the preprogrammed **Emergency On** key. The radio then enters the preset emergency mode with or without indications depending on the preset emergency type.

If the Call to Follow feature is enabled by your dealer, the radio will transmit automatically. You can directly speak into the microphone in the preset period.

Exiting the Emergency Mode

To exit the emergency mode (as the initiating party) or emergency alert mode (as the receiving party), press the preprogrammed **Emergency Off** key or turn the radio off.

Turning the Man Down Feature On or Off

The Man Down feature allows the radio to enter the emergency mode when it tilts at an angle greater than the

specified angle or stays motionless for a preset period.

To turn this feature on or off, press the preprogrammed **Man Down** key.

Turning the Lone Worker Feature On or Off

The Lone Worker feature allows the radio to enter the emergency mode when no operation is detected for a preset period.

To turn this feature on or off, press the preprogrammed **Lone Worker** key.

Communication Security Services

The features described in this section ensure communication security.

Using the Encrypt Feature

The Encrypt feature allows the radio to automatically encrypt transmitted voice or data. Only the receiving radio with the same key value or ID can decrypt the voice or data. This prevents eavesdropping and ensures communication privacy.

To turn this feature on or off in conventional mode, press the preprogrammed **Scrambler/Encrypt** key.

To turn this feature on or off in trunking mode, press the preprogrammed **Encrypt** key.

Turning the Scrambler Feature On or Off

The Scrambler 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. This prevents eavesdropping and ensures communication privacy.

To turn this feature on or off, press the preprogrammed **Scrambler/Encrypt** key.

Erasing Data in Emergency

In case of emergency, you can erase encryption data from the radio to prevent the data from unauthorized access.

To erase the data, press the **SK1** and **PTT** key by turns twice, and make sure the press interval is less than 1.5 seconds. Then, press **SK1** to confirm.

Restoring the Stunned Radio

In case the radio has been stunned, you cannot initiate services such as call services.

To restore normal operation, request your dealer to program the radio or send a **Revive** command.

Restoring the Killed Radio

In case the radio has been killed, you can only turn the radio on or off.

To restore normal operation, request your dealer to burn the radio firmware.

Troubleshooting

Phenomena	Analysis	Solution
You cannot turn on the radio.	The battery may be installed improperly.	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 dirty or damaged battery contacts.	Clean the battery contacts or replace the battery.
During receiving, the voice is weak or intermittent.	The battery voltage may be low.	Recharge or replace the battery.
	The volume level may be low.	Increase the volume.
	The antenna may be loose or may be installed incorrectly.	Turn off the radio, and then remove and reattach the antenna.
	The speaker may be blocked.	Clean the surface of the speaker.
You cannot communicate with other group members.	The frequency or signaling type may be inconsistent with that of other members.	Verify that your TX/RX frequency and signaling type are correct.
	The channel type (digital or analog) may be set incorrectly.	Verify that you are on the correct digital or analog channel.
	You may be too far away from other members.	Move towards other members.
You hear unknown voices or noise.	You may be interrupted by radios using the same frequency.	Change the frequency, or adjust the squelch level.
	The radio in analog mode may be set with no signaling.	Request your dealer to set signaling for the current channel to avoid interference.
You are unable to hear anyone because of too much noise and hiss.	You may be too far away from other members.	Move towards other members.
	You may be in an unfavourable position. For example, your communication may be blocked by high buildings or blocked in an underground area.	Move to an open and flat area, restart the radio, and try again.
	It may be the result of external disturbance (such as electromagnetic interference).	Stay away from equipment that may cause interference.

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

Care and Cleaning

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

Product Care

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

Contact your local dealer for the optional accessories used with the product.



Caution

Use the approved accessories only; otherwise, we will not be liable for any loss or damage arising out of the use of any unauthorised accessories.

Abbreviations

Abbreviation	Full Name
DM	Direct Mode
LED	Light-emitting diode
PTT	Push-to-Talk
RM	Repeater Mode
SK	Side Key
TOT	Time-out Timer
VOX	Voice Operated Transmit



NOTE

Existing devices should be upgraded to Hytera's iM or iS before being used as part of a system. Speak to your Hytera dealer about how to upgrade your existing devices and for more information on Hytera's iM or iS firmware.



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