



USER MANUAL

PD60X UL913 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:

PD60X UL913 Digital Portable Radio (X may represent 2, 5, 6, or 8)

DIGITAL PORTABLE RADIO



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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 conformité aux limites DAS et/ou aux limites d'intensité de champ RF, les utilisateurs peuvent sur l'exposition aux radiofréquences et la conformité and compliance d'acquérir les informations correspondantes

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, 2012/19/EU, 2006/66/EC, and 2011/65/EU.

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

Contents

Intrinsically Safe Radio Information (Exi)	3
Product Marking	3
No Misoperations	3
Safety Instructions	3
Specifications	4
Compliance Standards	4
Informations sur la Radio intrinsèquement sûre (EXI) ...	5
Marquage de l'équipement	5
Mauvaises utilisations à éviter	5
Instructions de sécurité	5
Spécifications	6
Normes de conformité	6
Documentation Conventions	7
Packing List	8
Product Overview	9
Product Controls	9
Programmable Key	9
Before Use	10
Charging the Battery	10
Attaching the Battery	11
Attaching the Antenna	11
Attaching the Belt Clip	11
Attaching the Audio Accessory	11
Basic Operations	12
Turning the Radio On or Off	12
Adjusting the Volume	12
Checking the Battery Power	13
Switching the Operation Mode	13
Selecting a Zone and Channel	13
Checking LED Indications	13
Call Services	15
Group Call	15
Private Call	16

All Call	17
Broadcast Call (Trunking Only)	17
Include Call (Trunking Only)	18
Call on Analog Channel (Conventional Only)	18
Supplementary Features	18
Audio Optimization	19
MIC & SPK	19
One Touch Call/Menu	20
Scan	21
Hunt	21
Roam	22
Talk Around	22
Time-out Timer	22
VOX	22
Analog Services	22
Personal Safety Services	23
Communication Security Services	24
Troubleshooting	26

Care and Cleaning	28
Product Care	28
Product Cleaning	28
Optional Accessories	28
Abbreviations	28

Intrinsically Safe Radio Information (Exi)

Product Marking

SGS

I.S Class I, II, III, Division 1, Group C, D, E, F, G, T4

NI Class I, Division 2, Group A, B, C, D

-30°C to +55°C

Certificate Number

SGSNA/17/SUW/00279

No Misoperations

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

The safety or reliability of the product may be endangered when:

- The product is stored improperly.
- The product is faulty.
- The product works with overload.

- The product operates beyond the tolerance or threshold.
- The product is damaged during transportation.
- The product's housing is obviously damaged or cracked.
- The logo or characters on the product are 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 BL2020-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 only the Hytera-specified accessories. Do not replace the accessories in a hazardous area.
- Do not use a damaged antenna. Moving a damaged antenna towards your skin may cause a minor burn.
- 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 attempt to repair and 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.
- Improper usage of the product other than it is intended to be used for will impair safety of the product, yourself and surrounding environment.
- 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.

Specifications

Item	Specifications
Rated Operating Voltage	DC 7.4 V
Max. Operating Voltage	DC 8.4 V
Max. Operating Current	2.8 A
Sensitivity	0.3 μ V
Rated Audio Power Output	0.5 W

Item	Specifications
Audio Distortion	$\leq 3\%$
Operating Temperature	-30°C to +55°C
Storage Temperature	-40°C to +85°C
Charging Temperature	0°C to +40°C
Battery	Ex-battery BL2020-Ex (2000 mAh)
Charging Time	About 4 hours

Compliance Standards

- UL 913, 5th Ed. February 21,1997
- ANSI/TIA-4950-A, Rev. May 13, 2014
- CAN/CSA C22.2 No. 157-92 (R2016) +Upd1 +Upd2

Informations sur la Radio intrinsèquement sûre (EXi)

Marquage de l'équipement

SGS

I.S Classe I, II, III, Division 1, Groupe C,D,E,F,G ,T4

NI Classe I, Division 2, Groupe A,B,C,D

-30°C à +55°C

Numéro de certificate

SGSNA/17/SUW/00279

Mauvaises utilisations à éviter

Arrêtez d'utiliser ce produit et quittez l'atmosphère explosive immédiatement si la sécurité ou l'intégrité du produit sont compromises, puis retournez-le à votre revendeur local pour vérification.

Voici la liste des éléments susceptibles de compromettre la sécurité ou l'intégrité du produit:

- La radio n'est pas stockée correctement.
- La radio est défaillante.

- La radio fonctionne en surcharge.
- La valeur de seuil ou d'erreur de fonctionnement de la radio se trouve en dehors de la plage autorisée.
- La radio est endommagée au cours du transport.
- Le boîtier de la radio est visiblement endommagé ou fendillé.
- Le logo ou le modèle de la radio sont difficilement reconnaissables.

Instructions de sécurité



Avertissement

Pour vous protéger contre la perte de biens, les blessures corporelles ou même les risques mortels, assurez-vous de suivre les instructions de sécurité suivantes.

- N'utilisez que la batterie BL2020-Ex spécifiée par l'Entreprise. L'utilisation d'autres batteries peut entraîner une défaillance de la protection Ex (sûreté intrinsèque).
- Chargez uniquement la batterie dans une zone ne présentant aucun risque, à l'aide du chargeur prévu à cet effet.
- Ne retirez pas la batterie de la radio dans une zone à risques.
- Ne transportez pas de batterie de rechange dans une zone à risques.
- Utilisez uniquement les accessoires spécifiés par l'Entreprise. Ne remplacez pas les accessoires dans une zone à risques.

- N'utilisez pas une antenne endommagée. Si une antenne endommagée entre en contact avec votre peau, vous risquez des brûlures superficielles.
- N'exposez pas la radio à la lumière directe du soleil pendant une période prolongée. Ne la placez pas à proximité d'une source de chaleur.
- Tenez la radio en position verticale et gardez le micro à une distance de 2,5 à 5 cm de votre bouche pendant son utilisation.
- Si vous transportez une radio, assurez-vous que son antenne se trouve à une distance minimale de 2,5 cm de votre corps au cours de la transmission.
- N'essayez pas de réparer et d'entretenir la radio, les batteries et les accessoires. Veuillez contacter votre revendeur pour la réparation et l'entretien.
- Ne démontez pas la radio, ne la modifiez pas. Toute modification non autorisée de la radio peut compromettre la protection Ex (sûreté intrinsèque) de la radio.
- Une utilisation incorrecte du produit, autre que dans le cadre de l'utilisation prévue, peut compromettre la sécurité du produit, votre sécurité et celle de votre environnement.
- Ne transportez pas la radio dans des zones 0 et 20. Veuillez ne pas utiliser la radio en dehors des plages de température de fonctionnement spécifiées pour ce produit.

Spécifications



Élément	Spécifications
Tension nominale de fonctionnement	7,4 V CC
Tension maximum de fonctionnement	8,4 V CC
Intensité maximum de fonctionnement	2.8 A
Sensibilité	0.3 µV
Puissance nominale de sortie audio	0.5 W
Distorsion audio	≤ 3 %
Température ambiante	-30°C à +55°C
Température de stockage	-40°C à +85°C
Température de charge	0°C à +40°C
Batterie	Batterie Ex BL2020-Ex (Li-ion 2000 mAh)
Durée de chargement	Environ 4 heures

Normes de conformité

- UL 913 5e éd. 21 février 1997
- ANSI/TIA-4950-A, Rev. May 13, 2014
- CAN/CSA C22.2 No. 157-92 (R2016) +Upd1 +Upd2

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.

Item	Description	Example
" "	Denotes messages, directories, file names, folder names, and parameter values.	The screen displays "Invalid Battery!".
		Open "PDT_PSS.exe".
		Go to "D:/opt/local".
		In the Port text box, enter "22".
>	Directs you to access a multi-level menu.	Go to File > New .
<i>Italic</i>	Denotes document titles.	For details about using the DWS, refer to <i>Dispatch Workstation User Guide</i> .
Courier New	Denotes commands and their execution results.	To set the IP address, run the following command: <code>vos-cmd - m name IP</code>

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	User Manual	1

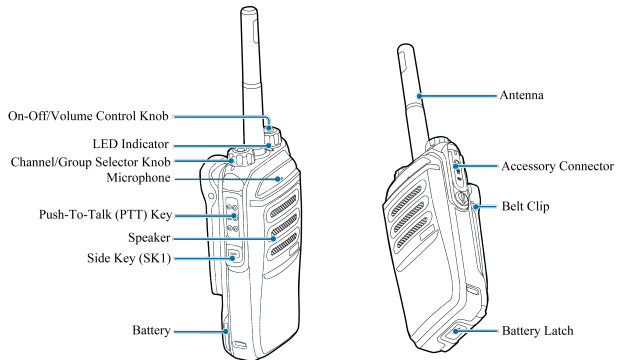


Note

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 Controls



Programmable Key

SK1 is programmed as a shortcut to emergency feature in digital trunking mode by default (short press: Emergency On; long press: Emergency Off). You can request your dealer to program **SK1** as a shortcut to other features. Please consult your dealer for assignable radio features.

Before Use

Charging the Battery

Caution

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

Before initial use, 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:

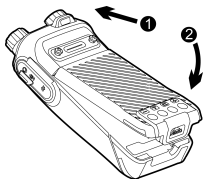
LED Indicator	Description
Glows red	The battery is charging.

LED Indicator	Description
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.
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



Note

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

Attaching the Antenna

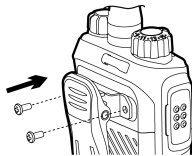


Caution

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. Loosen the screw fixing the accessory connector cover as shown below, and open the cover.

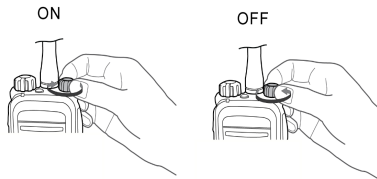


2. Align the accessory plug with the accessory connector, and then tighten the screw on the accessory plug as shown below.

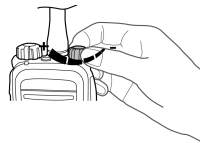


Basic Operations

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 either 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.

LED Indicator	Radio Status
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.
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 page 15.

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	√	√	√
LQO	√	√	√
Audio Feedback Suppression	√	×	√
MIC & SPK	√	√	√
One Touch Call/Menu	√	√	√
Scan	√	√	×
Hunt	×	×	√
Roam	√	×	√
Talk Around	√	√	×
Time-out Timer	√	√	√

Feature	Conventional		Trunking
	Digital	Analog	
VOX	√	√	√
Call Priority	×	×	√
Dynamic Group Number Assignment (DGNA)	×	×	√
GPS	√	√	√
Analog Services	×	√	×
Personal Security Services	√	√	√
Encrypt	√	×	√
Scrambler	×	√	×
Erasing Data in Emergency	√	√	√
Stun	×	√	√
Kill	√	×	√

Audio Optimization

Turning the LQO Feature On or Off

The LQO feature allows the radio to automatically adjust the volume and improve the quality of received voice in different environments.

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

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.
- **INTR & EXTR:** The radio uses both the internal speaker and external 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, radio check, remote monitor, radio enable, radio disable to a private contact. ● All call to an all call 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 Trunking Mode	<ul style="list-style-type: none"> ● Private call, emergency call, preemptive call to a private contact. ● Group call, broadcast call, emergency call, preemptive call, preemptive broadcast call, 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. With this feature enabled, the radio searches the scan list preset for the current channel and stays on a channel with activities.

Turning the Scan Feature On or Off

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

With the Scan feature enabled, 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 Services

The following features are 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.

Turning the Squelch Off Feature On or Off

The Squelch Off feature allows the radio's speaker to keep turned on no matter whether the squelch condition is satisfied.

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

To turn this feature off, press the preprogrammed **Squelch Off** key again or release the preprogrammed **Squelch Off 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 **SKI** and **PTT** key by turns twice, and make sure the press interval is less than 1.5 seconds. Then, press **SKI** 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.

Phenomena	Analysis	Solution
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 disconnect the power supply 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
LQO	Loudness and Quality Optimizer
PTT	Push-to-Talk
SK	Side Key
TOT	Time-out Timer
VOX	Voice Operated Transmit



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