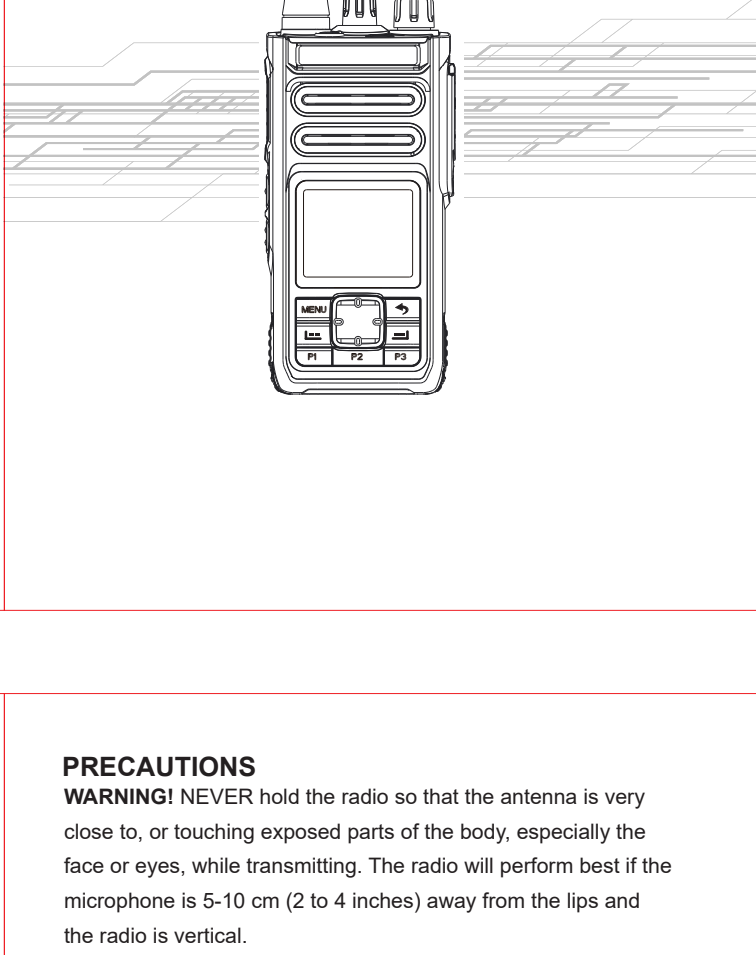


DMR DIGITAL  
TWO WAY RADIO  
USER MANUAL



PRECAUTIONS

**WARNING!** NEVER hold the radio so that the antenna is very close to, or touching exposed parts of the body, especially the face or eyes, while transmitting. The radio will perform best if the microphone is 5-10 cm (2 to 4 inches) away from the lips and the radio is vertical.

**WARNING!** NEVER operate the radio with a headset or other audio accessories at high volume levels.

Hearing experts advise against continuous high volume operations. If you experience a ring in your ears, reduce the volume or discontinue use.

**WARNING!** NEVER connects the radio to a power source that is DC fused at more than 5A. Accidental reverse connection will be protected by this fuse, but higher fuse values will not give any protection against such accidents and the radio will be ruined.

**DO NOT** push the PTT when he does not actually desire to transmit. Place the unit in a secure place to avoid inadvertent use by children.

**DO NOT** operate the radio near unshielded electrical blasting caps or in an explosive atmosphere.

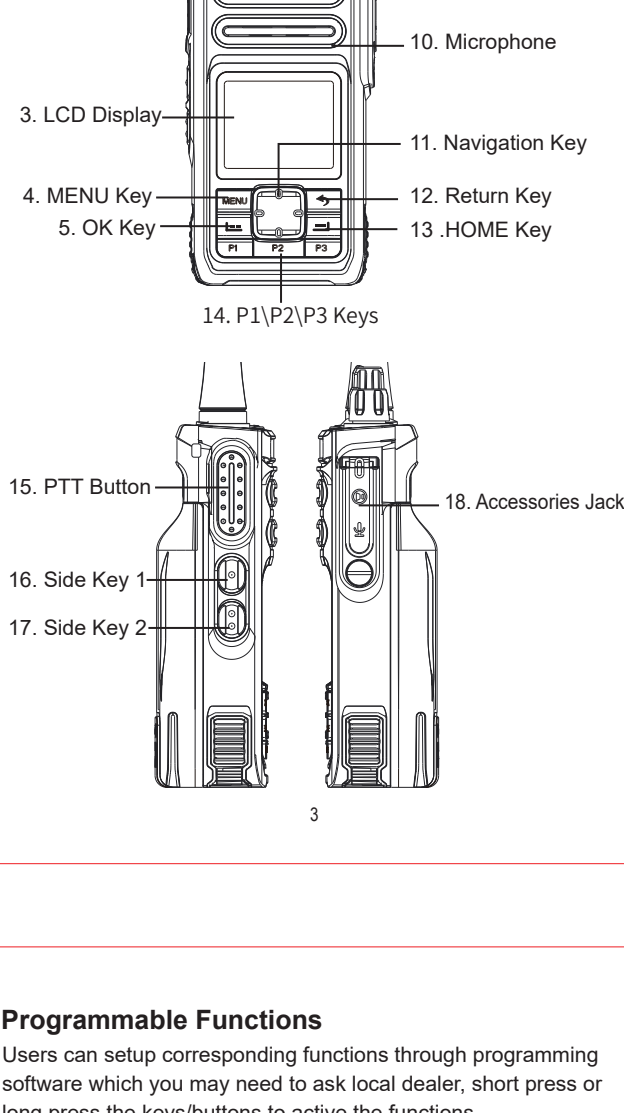
**AVOID** using or placing the radio in direct sunlight or in areas with the temperatures below -10°C(+14°F) or above +60 °C(+140°F). The use of non special battery packs/chargers may impair radio performance and invalidate the warranty.

INCLUDED IN YOUR PACKAGE

The box contains the following items. If any items are missing or damaged, immediately contact the dealer where you purchase the product.

1. Radio Body x 1
2. Antenna x 1
3. Battery Pack x 1
4. AC Adaptor x 1
5. Desk-top Charger x 1
6. Belt Clip(with screws) x 1
7. Hand Strap x 1
8. User Manual x 1

ABOUT THE RADIO



ABOUT THE RADIO

1.	Antenna
2.	Speaker: To receive voice
3.	LCD: Displays the current frequency/channel and various functional operation and status information
4.	MENU Key: MENU Key or Confirm Key
5.	OK Key: Enter the contact list
6.	Top Key (Programmable key): The function of the key can be programmed by software
7.	Dial knob: Turn the knob to select the channel
8.	Power / Volume Knob: Turn on/off or adjust volume
9.	LED Indicator light
10.	Microphone
11.	Navigation Keys (Up /Down /Left /Right keys): Select the function
12.	Return Key: Press the key return to the upper-level menu. When entering text, user can press it to delete the text
13.	HOME Key: Quickly return to the home screen
14.	P1/ P2/ P3 Keys (Programmable keys ): The function of the key can be programmed by software
15.	PTT Button: When launching, press this key and speak into the microphone. Release this key when receiving
16.	Side Key 1 (Programmable key 1): The function of the key can be programmed by software
17.	Side Key 2 (Programmable key 2): The function of the key can be programmed by software
18.	Accessories Jack (Programming port /headset port): Can be used for programming cable/ external headset and so on

When leaving the factory, the frequency band of the walkie talkie has been limited, and users cannot use the official CPS to set non licensed frequencies, nor can they add some software functions such as username, group alias, CTCSS, DCS, etc.

Programmable Functions

Users can setup corresponding functions through programming software which you may need to ask local dealer, short press or long press the keys/buttons to active the functions.

1	None	8	Zone Up
2	Scan ON/OFF	9	Zone Down
3	Monitor	10	VOX ON/OFF
4	Talk Around	11	Scrambler
5	High / Low Output Power	12	Beep ON/OFF
6	Emergency Alert	13	Contact List
7	One-Button Calling (CH1-5)		

LED Indicators

The LED indicators show the operational status of the radio.

Red light keeps on	Transmitting signal
Green light keeps on	Receiving signal
Red light flash	1.Low battery alert 2.Operating programming software to read the data from device
Green light flash	Operating programming software to write the data to device

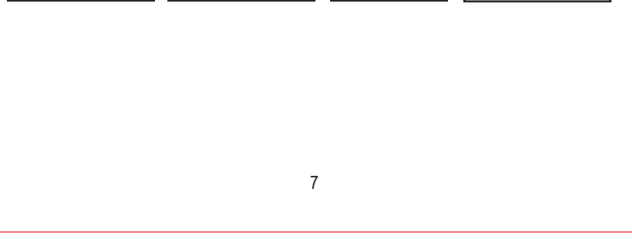
LCD Icons

Signal Strength Icons	Battery Bars
Strong signal	Full battery, 3 bars
Medium signal	70% battery, 2 bars
Weak signal	30% battery, 1 bars
No signal	Empty
Output Power Icon	Scanning Icons
High output power	Scanning state
Low output power	Receive priority channel status
	Receive non-priority channel status
Other Icons	
Recording function enabled	
Activate the emergency alarm function	
Beep On/Off	
DMO mode (2-Slot direct mode)	
Repeater mode	
Analogue mode	
Digital mode	

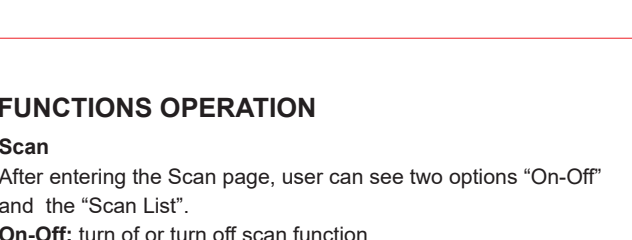
BASIC OPERATION

How To Use The MENU

Press the MENU key enter the analog MENU directly when the current channel of the device is an analog channel. Otherwise, press the Menu key will enter the digital mode menu if the current channel is a digital channel.



MENU Of Digital Mode



Functions & Features

General	
Channel Mode	Power Saving
DMO (2-Slot direct mode)	Beep Sound
High/Low Output Power Switch	Keyboard Locked/Unlock
Zone	Programmable Keys by Software
Scan	Launch Approval Condition
VOX	AES-256 Encryption
TOT (Time-out Timer)	Low Battery Alert
Voice Announcement	IP68 Standard

Digital Mode	
Contacts	Device Check
Incoming List	Device Active
Emergency Alert System	Device Killed
Voice Encryption	Remote Monitor
Voice Private Calling	Color Code
Voice Group Calling	SMS (Message)
Voice All Calling	AES-256 Encryption
Calling Prompt	Record Function (8 minutes, local playback)

Analog Mode	
Squelch Levels	
Tail Elimination	
Combandor	
Monitor	
Width Narrow Bandwidth Selective	
CTCSS / DCS	

Note: Some of the above functions require programming software operations to achieve.

FUNCTIONS OPERATION

Scan

After entering the Scan page, user can see two options "On-Off" and the "Scan List".

**On-Off:** turn of or turn off scan function.

**Scan List:** user can selective scan list setup in software before, check the channels in scan list or turn it off.

Zone

User can choose the Zone after setup by software. There's 32 channel zones and each zone contains a maximum of 32 channels. The radio will back to standby status after select the Zone.

Setting

After entering the Setting page, user can see four options "Audio Setting", "Radio Setting", "Radio Info" and "Factory Reset".

**Audio Setting:** we can fine adjustment the audio "Equalizer" here, select the value in the list. Or switch on or off in item "Mic Denoiser".

**Radio Setting:** user can setup below functions here.

1. Power Level: High / Low
2. Backlight: Infinite, SS, 10S, 15,...300S.
3. Brightness: Level 1-3
4. Tone: Silent (On/Off)
5. Vox: On/Off and Gain Level
6. SQL Level: On Open, SQL Normal and SQL Tight (Analog mode only)
7. Encryption: On/Off or Code list (Digital mode only)
8. Power Save: Off, Level 1-3
9. Tail Revert: Off, 55Hz, 62Hz, 134.4Hz, 120 Degree, 180 Degree and 240 Degree (Analog mode only)
10. TOT: Off, 30s, 60s, 90s, 120s, 150s, 180s
11. Language: Chinese / English
12. Key Lock: Off/ On

**Radio Info:** User can check the radio ID, alias, frequency range, firmware ver, and SN information here.

**Factory Reset:** the user can reset the device here. Please note that after a successful operation, all Settings will be restored to factory Settings.

Contacts

User can check all contacts information here after programmed by software.

Message

After entering the Setting page, user can see four options "Quick Text", "Inbox", "Outbox" and "Draft".

**Quick Text:** user can select the preset SMS from here for quick sending.

**Inbox:** user can operates all incoming SMS messages here.

**Outbox:** user can manipulate all outgoing SMS messages from here.

**Draft:** stores information that the user is editing or has finished editing but is still not sent.

Call Logs

User can check or operate all incoming or outgoing calls here.

Record

After entering the Setting page, user can see three options, "Record Setting", "Record File" and "Delete All".

**Record Setting:** user can switch On/Off record function here. Each recording can be recorded for up to 8 minutes. The device will recording every calls automatically after active this function.

**Record File:** user can delete the records all records here after finished recording. Or check and playback one by one.

**Delete All:** user can delete all records in one time here.

TECHNICAL SPECIFICATION

General	
Frequency	VHF: 136-174MHz (HR-330) UHF:400-470MHz (HR-550)
Channel Capacity	1024
Channel Spacing	12.5kHz/25KHz (Analog) 12.5KHz (Digital)
Frequency Stability	±1.0ppm
Normal Operating Voltage	7.4V
Battery Capacity	2200mAh
Operating Temperature	-20°C ~+55°C
Antenna Impedance	50Ω
Store Temperature	-40°C ~+ 60°C
Sizes	134mm x 61mm x 39mm
Weight	Around 305g
Waterproof and dustproof	IP68
TX Output Power	High: 5W/4W Low: 1W
Digital Protocol	ETSI TS 102 361-1, -2, -3

Receiving	
Frequency Stability	+/-1.0ppm
Analag Sensitivity	0.22uV/-120dBm (12dB SINAD)
Digital Sensitivity	0.3uV/-117.4dBm (5% BER)
Adjacent Channel Selectivity	TIAE03C: >55dB@12.5KHz ETSI: >55dB@12.5KHz
Intermodulation	55dB
Spurious Response rejection	60dB
Blocking	>44dB
Spurious Response rejection	-12~0 dB @12.5KHz -8~0 dB @25KHz
SNR	-40 dB@12.5KHz /-45 dB@25KHz
Receiving audio rating power	≥0.5W
Receiving audio MAX. Power	≥1W
Audio Distortion	≤3% (Typical value)
Conducted emission spurious	-57 dBm

Transmitting	
Output power (low power)	1W±0.3
Output power (high power)	5W±0.5
FM Modulation	12.5KHz : 11K0F3E / 25KHz: 16K0F3E
4FSK Digital Modulation	12.5KHz data only: 7K60F1D&7K60FXD 12.5KHz voice only: 7K60F1E&7K60FXE 12.5KHz voice and data: 7K60FXW
Conduction/radiation emission	-21dBm
Modulation Limiting	±2.5KHz @12.5KHz /±5.0KHz @25KHz
FM SNR	-40 dB@12.5KHz /-45 dB@25KHz
Adjacent Channel Power	60 dB@12.5KHz /65 dB @25KHz
Audio Distortion	3%

Note: The above specifications are tested in accordance with applicable standards. Due to the continuous development of technology, the above indicators are subject to change without prior notice.

FCC WARNING STATEMENT

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

The grantee is not responsible for any changes or modifications not expressly approved by the party responsible for compliance. Such modifications could void the user's authority to operate the equipment.

Replacement of any transmitter component (crystal, semiconductor, etc.) not authorized by the FCC equipment authorization for this radio could violate FCC rules.

**WARNINGS: MODIFICATION OF THIS DEVICE TO RECEIVE CELLULAR TELEPHONE SERVICE SIGNALS IS PROHIBITED UNDER FCC RULES AND FEDERAL LAW.**

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference to a residential installation.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

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

RF Exposure Statement

Our radio generates RF electromagnetic energy during transmit mode. This radio is designed for and classified as "Occupational Use Only" meaning it must be used only during the course of employment by individuals aware of the hazards and the ways to Minimize Such hazards.

This radio is NOT intended for use by the "General Population" in an uncontrolled environment. This radio has been tested and complies with the FCC RF exposure limits for "Occupational Use Only".

In addition, our radio complies with the following Standards and Guidelines with regard to RF energy and electromagnetic energy levels and evaluation of such levels for exposure to humans:

- IEEE Std. 1528.2013 and KDB447498, Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields.
- American National Standards Institute (C95.1 1992). IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields 3 kHz to 300 GHz.
- American National Standards Institute (C95.3-1992). IEEE Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields and Microwave.

The information listed above provides the user with the information needed to make him or her aware of RF exposure and what to do to as-sure that this radio operates with the FCC RF exposure limits of this radio.

Electromagnetic Interference/Compatibility

During transmissions, the radio generates RF energy that can possibly cause interference with other devices or systems. To avoid such interference, turn off the radio in areas where signs are posted to do so.

**DO NOT** operate the transmitter in areas that are sensitive to electromagnetic radiation such as hospitals, aircraft and blasting sites.

Occupational/Controlled Use

The radio transmitter is used in situations in which persons are exposed as consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure.

ISED WARNING STATEMENT

Use of the radio in Canada is subject to the rules & regulations of IC. Changes or modifications not expressly approved by our may void the user authority granted by the IC to operate this radio and should not be made. To comply with IC requirements, transmitter adjustments should be made only by or under the supervision of a person certified as technically qualified to perform transmitter maintenance and repairs in the private land mobile and fixed services as certified by an organization representative of the user of those services. Replacement of any transmitter component (crystal, semiconductor, etc.) not authorized by the IC equipment authorization for this radio could violate IC rules.

Note: Use of this radio outside the country where it was intended to be distributed is subject to government regulations and may be prohibited.

Important: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this device. Your radio is set up to transmit a regulated signal on an assigned frequency. It is against the law to alter or adjust the settings inside the radio to exceed those limitations. Any adjustments to your radio must be made by qualified technicians.

L'utilisation de la radio au Canada est assujettie aux règlements de la société radio - Canada.Toute modification ou modification qui n'est pas expressément approuvée par la compagnie peut invalider les droits d'utilisation accordés par IC pour l'exploitation de cette radio et ne devrait donc pas être modifiée ou modifiée.Pour se conformer aux exigences d'IC, le réglage de l'émission ne doit être effectué que par ou sous la supervision d'une personne techniquement qualifiée qui effectue l'entretien et la réparation de l'émetteur dans un Service mobile et fixe terrestre privé et qui est certifiée par un représentant de l'Organisation de l'utilisateur du service.Le remplacement de tout composant émetteur (cristal, semi - conducteur, etc.) qui n'est pas autorisé par l'équipement IC peut enfreindre les règles de l'IC.

Note:L'utilisation de cette radio à l'extérieur du pays où elle est destinée à être distribuée est soumise à des règlements gouvernementaux et peut être interdite.

Important:Toute modification ou modification qui n'est pas expressément approuvée par la partie responsable de la conformité peut priver l'utilisateur de l'autorisation d'utiliser cet appareil.Votre radio est réglée pour émettre le signal spécifié à la fréquence spécifiée.Il est illégal de modifier ou d'ajuster les réglages internes de la radio au - delà de ces limites.Tout réglage de la radio doit être effectué par un technicien qualifié.

RF Exposure compliance Statement and operating instructions

This EUT is compliance with SAR for controlled exposure limits in IC RSS-102 at operating duty factors of up to 50% and had been tested in accordance with the measurement methods and procedures specified in IEEE 1528 and IEC 62209. This equipment should be installed and operated with a minimum distance of 2.5cm must be maintained when held to face, and body worn operations are restricted to the approved original accessories (belt clip), a minimum distance of 0 cm.

CET EUT est conforme au SAR pour les limites d'exposition contrôlées dans IC RSS-102 à des facteurs de service allant jusqu'à 50% et a été testé conformément aux méthodes et procédures de mesure spécifiées dans IEEE 1528 et IEC 62209. Cet équipement doit être installé et utilisé avec une distance minimale de 2,5 cm doit être maintenu lorsqu'il est tenu face à face, et les opérations portées sur le corps sont limitées aux accessoires d'origine approuvés (clip de ceinture), une distance minimale de 0 cm.

AVERTISSEMENT: LES RÈGLES DE LA ISED ET LA LOI FÉDÉRALE INTERDISSENT LA MODIFICATION DE CET APPAREIL POUR RECEVOIR DES SIGNAUX DU SERVICE DE RADIOTÉLÉPHONIE CELLULAIRE.

Note:  
\* 25 kHz channels not available in the US.  
Availability is subject to individual country law and regulations.  
All specifications shown are guaranteed unless otherwise stated and are subject to Specifications are for unit excluding options, unless otherwise stated.

WARNING:

This product has been factory set to comply with the requirements of the US/Canada/European Union, and the user cannot program the product or manually enable the product to operate outside of the frequency bands regulated by the respective regulations.Users must comply with the laws of their region and must not use unofficial software or illegal techniques to enable the product to operate outside of the offending frequency bands. You will be penalized by law.