



DMR
DIGITAL MOBILE RADIO ASSOCIATION

Kydera®

PROFESSIONAL DIGITAL TWO-WAY RADIO

DM-6R User Manual

TO USER

Thank you for purchasing the digital / analog two way radios designed and produced by Quanzhou City New Century Communication Electronic Co., Ltd. This product is developed elaborately as a regular digital handheld radio according to EU standard and advanced international technology. The radio is endowed with ergonomic design and comprehensive function to deliver an advanced communication solution, which can definitively bring you a whole new operation and digital communication experience, improve your work efficiency and convenience, and provide a reliable safeguard for emergent communication.

Our serial products are tested strictly by rigorous testing procedures with advance international instruments and equipments.

Warm warning: To derive optimum performance from your radio, please read this manual and the supplied Safety Information Booklet carefully before use.

FCC Statement

This equipment has been tested and found to comply with the limits for part 90 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 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
- Operation is subject to the following two conditions:
1. This device may not cause harmful interference, and
 2. 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."

Attention:

This radio complies with IEEE and ICNIRP exposure limits for occupational/controlled RF exposure.environment at operating duty factors of up to 50% and is authorized by the FCC for occupational use only.

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 environment 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), push the Push-To-Talk (PTT) button. To receive calls, release the PTT button. Transmitting 50 % of the time, or less, is important because this radio generates

measurable RF energy exposure only when transmitting (in terms of measuring for standards compliance).

- Hold the radio in a vertical position in front of face with the microphone (and the other parts of the radio, including the antenna) at least one inch (2.5 cm) away from the nose. Keeping the radio at the proper distance is important because RF exposures decrease with distance from the antenna. Antenna should be kept away from eyes.
- When worn on the body, always place the radio in a approved clip, holder, holster, case, or body harness for this product. Using approved body-worn accessories is important because the use of our's or other manufacturer's non-approved accessories may result in exposure levels, which exceed the FCC's occupational/controlled environment RF exposure limits.
- If you are not using a body-worn accessory and are not using the radio in the intended use position in front of the face, then ensure the antenna and the radio are kept at least 2.5 cm (one inch) from the body when transmitting. Keeping the radio at the proper distance is important because RF exposures decrease with increasing distance from the antenna.
- Use only manufacturer's name approved supplied or replacement antennas, batteries, and accessories. Use of non-manufacturer-name approved antennas, batteries, and accessories may exceed the FCC RF exposure guidelines.

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Disclaimer

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Notices To The User

Government law prohibits the operation of unlicensed radio transmitters within the territories under government control. Illegal operation is punished by fine or imprisonment or both.

Safety:

- It's important that the operation is aware of and understand the general hazards to the operation of any transceiver.
- We can't guarantee the safety and operability of transceiver that using other accessories not sold by us.
- ▲ Disassembled and maintained by qualified technicians only.

Warning:

Turn off the transceiver in the following locations:

- In explosive atmospheres. (Inflammable gas, dust particles, metallic powders, grain powers, etc.).
- While taking on fuel or parking at gasoline service stations.

Precautions

▲ Observe the following precautions to prevent fire, personal injury and transceiver damage.

- Do not modify or attempt to adjust this transceiver for any reason by non-technicians.
- Do not expose the transceiver of direct sunlight for long time, nor place it close to heating appliances.
- Do not place the transceiver in a dusty, humid or wet area, nor place on unstable surface.
- If an abnormal odor or smoke is detected coming from the transceiver, switch OFF the transceiver immediately and remove the battery pack from the transceiver. And contact your dealer in time.

Getting Started :

Before you use this user manual, please review the following information carefully.


- ◆ How to use this user manual.
- ◆ What information that your dealer/ System Administrator can inform you.


How to use this user manual

This manual introduces the basic operation of Kydera

compatible DMR/Analog handheld transceiver. However, your dealer or system administrator may already preset features of this radio based on your working type and requirement. Please consult with your dealer or system administrator about the details.

For your convenience and easy familiar with this radio, the icons below are used for distinguishing operable and available features for analog mode and digital mode.

 This icon indicates the function is only available in Analog mode

 This icon indicates the function is only available in Digital mode

You can check with your dealer or system administrator for the following:

- ◆ Is your radio with default settings or any preset channels that the distributor usually set?
- ◆ Which buttons are have been designed to operate other features?
- ◆ What optional accessories can be used with your radio?

CONTENT (I)

PREPARATION FOR OPERATING THE RADIO

Please assemble your radio by following steps

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PREPARATION FOR OPERATING THE RADIO

CHARGING THE BATTERY PACK

Please use charger, adaptor and battery pack supplied only by us. The charger can indicate the charging status.

Charging diagram:



Charging steps:

1. Plug the AC adaptor into an AC outlet, like arrow ①
2. Plug the AC adapter cable into the adapter jack located on the back of the charger, like arrow ②
3. Place the battery pack or the radio with a battery pack into the charger, like arrow ③
4. The indicator lights red and charging starts.
5. When charging is completed, the indicator lights green. Then remove the battery pack or the radio from the charger.
6. For optimum battery life and performance, charge the battery pack or the radio (with a battery pack) at least 12 hours before initial use.

Charging indicators

LED indicator	Charger state	Description
LED Flashes red and then OFF	Electrify but on standby mode	No-load
LED Lights Red	Charging	Insert battery successfully
LED Lights Green	Fully charged	Charging completed
LED Flashes Red	Failure	For maintenances

Note:

1. It is normal if the charger LED flashes red for a short time when the charger is just connected.
2. If a second battery is replaced to charge, please wait until the current battery is fully charged (lights green). If the charger indicator flashes red during charging:
 - (1) Please check if the battery pack is well connected with the charger.
 - (2) The battery pack is damaged or failed
 - (3) The surrounding temperature is too high or too low.

Note: Please read the "Battery Safety Information" before use the charger.

INSTALLING THE BATTERY PACK

1. Align the battery pack to the battery slot like diagram ①
2. Sliding the battery pack to the battery slot till the battery lock to the right place like diagram ②.

PREPARATION FOR OPERATING THE RADIO



To remove the battery, turn off the radio firstly. Then slide the battery latch upwards to unlock the battery, like diagram ③.

INSTALLING THE ANTENNA

Turn off the radio, holding the base of antenna, and then screw it into the connector on the top of transceiver and turn clockwise until secure.



To remove the antenna, turn off the radio firstly, and rotate it anticlockwise.

INSTALLING THE BELT CLIP

Align the belt clip to the two screw holes on the back of the radio, and then tighten the screws by using special screw

driver.



To remove the belt clip, unscrew the screws.

INSTALLING THE COMMON INTERFACE FENDER (DUST COVER)

Insert / pull out the audio accessories / programming cable

1. Please open the cover of connector in diagram ①;
2. According to the direction of the arrow ② to connect to the connector of radio, then press insert slightly.
3. According to the direction of the arrow ③ to pull it out.
4. Then cover the fender.



Note:

After install, if the accessories can't use, please check this accessories is match or not or install is improper.

PREPARATION FOR OPERATING THE RADIO

TURNING THE RADIO ON

Short press the power switch for 3 seconds, you will hear the open tone or voice prompt. Then release the button, the radio has turned on.



Note:

1. If the alert or voice prompt function is disabled, the radio will not have open tone. If your radio can't turn on, kindly check the battery. Make sure the battery is charged and install properly. If your radio still can't open up, please contact your local dealer.
2. If you want to turn off the radio, short press the power for 3 seconds, you will hear the close tone. Then release the button, the radio has turned off.

ADJUSTING THE VOLUME

Rotate clockwise the volume control to increase the volume after power on.



Rotate anticlockwise the volume control to decrease the volume.



CONTENT (II)

KNOWING MORE ABOUT THE RADIO CONTROLS SETTING

Please review the following sub-directory firstly:

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RADIO CONTROLS INTRODUCTION

RADIO CONTROLS



Parts description:

NO	PART NAME	NO	PART NAME	NO	Part Name
1	PTT button	6	Volume control	11	MIC
2	Side key 1(*)	7	Channel selector	12	Battery latch
3	Power switch	8	LED indicator	13	Li-pol Battery pack
4	Antenna	9	Speaker	14	Belt clip
5	Lamp	10	MIC / SP connector		

Note: Buttons like [*] are programmable key.

RADIO CONTROLS INTRODUCTION

PROGRAMMABLE KEYS



You dealers can pre-set the programmable keys based on the length of a button press.

Pre-setting can be shortcuts of radio functions.








- ◆ Short press — Pressing and Releasing quickly (programmable range is from 50ms-750ms)
- ◆ Long press — Pressing and holding for programmed length (programmable range is from 500ms-5000ms)

Note: The programmable duration for a key press can be used for all radio functions / utility functions or setting, except Emergency Call feature. For detailed function operation, please refer to page 25.





Radios functions can be preset by programmable keys

- ▲ High/Low Power Selection — Switch power level between High and Low power.
- ▲ Voice Operating Transmission (VOX) ON / OFF — Switch between VOX feature ON and OFF
- ▲ Zone selection — Change the current working zone (allowed to select from a zone list)
- ▲ Scan on/off — Turn ON / OFF scanning feature
- ▲ Scanning Mode — Switch scanning mode in TO, CO, SE.
- ▲ Repeater / Talk around  — Switch between Repeater mode and Talk Around.
- ▲ Emergency mode ON / OFF  — Start or stop an emergency


alarm or call

- ▲ Encryption ON / OFF  — Turn ON / OFF encryption feature (Available only in Digital Working Mode)
- ▲ Radio activation  — It is allowed to enabled a target radio remotely. (Available only in Digital Working Mode)
- ▲ Radio Detection  — Detect and confirm if the radio is within the scope of the system activity without sending any indication or making visual inspection. (Available only in Digital Working Mode)
- ▲ Radio kill  — Disable a target radio remotely, which can protect stolen or missed radios being used by others. (Available only in Digital Working Mode)
- ▲ Remote monitor  — Remotely activate Mic and Transmitter of a target radio, and create a call silently without sending any indication or visual inspection message to target radio, etc. (Available only in Digital Working Mode)
- ▲ Analog Monitor  — Turn ON or OFF radio squelch to receive weak analog signal. (Available only in Analogue Working Mode)
- ▲ Permanent Monitor  — Same as Analog Monitor feature, monitoring the channel to make sure it is not occupied before transmitting. The only difference is once Permanent Monitor is on, the radio will always be in this Monitor mode, till you exit it.

RADIO CONTROLS INTRODUCTION

- ▲ Information Check — Switch to check current channel and battery strength status information
- ▲ Digital / Analog Mode — Switch between Digital Mode and Analog Mode.
- ▲ SQ Level  — Select the proper SQ level to get the best signal in different environments.
- ▲ P1  — Call Shortcut, press it to send corresponding call function. (Available only in radios without LCD display)
- ▲ P2  — Call Shortcut, press it to send corresponding call function. (Available only in radios without LCD display)
- ▲ P3  — Call Shortcut, press it to send corresponding call function. (Available only in radios without LCD display)
- ▲ Flashlight — Turn ON / OFF flashlight.




Other settings and utility functions can be pre-set by programmable keys

1. Flashlight ON / OFF — turn flashlight ON or OFF
2. Preset keys P1, P2 & P3 — Press call shortcuts to send corresponding calls
3. Information Check — Switch to check current channel and battery strength status information
4. SQ Level  — Select the proper SQ level to get the best signal in different environments.
5. High / Low power selection — Switch transmit power level between high and low.

PTT BUTTON

There are two basic functions of PTT button: Transmitting and Receiving.



- ◆ Press PTT button to transmit the signals to other radios
 - ◆ Release PTT button to receive signals from other radios
 - ◆ If the Individual / Group Call or Prompt Tones is activated, the PTT Sidetone will be heard when you press or release PTT button .
 - ◆ If the Individual / Group Call or Prompt Tone is activated, you will hear the PTT Sidetone when your radio is receiving or communication is finished .
- Note:** You can use programming software to turn off all radio alert tones and prompt tones or just disabled partial radio alert tones and prompt tone .

RADIO CONTROLS INTRODUCTION

SWITCHING BETWEEN DIGITAL AND ANALOG MODE

For your convenience, each channel can be programmed as either analog channel or digital channel.



- ◆ In standby mode, press [Digital / Analog] button for at least 3 seconds, the current channel will be switched between Analog and Digital mode.

Note: During scanning, the radio also can switch between Analog and Digital mode, but scanning mode will be disabled.

LED INDICATORS

LED indicators display the working status and modes of radios.



- ◆ When LED indicator lights up solid green, the radio is transmitting in analog mode.
- ◆ When green LED indicator flashes, the radio is receiving in analog mode.
- ◆ When LED indicator lights up solid blue, the radio is transmitting in digital mode.
- ◆ When blue LED indicator flashes, the radio is receiving in digital mode.

Note:

- ◆ In analog mode, if LED lights up or flashes green, it indicates there is active signal detected over the air;
- ◆ And then if Busy Channel Lock (BCL) function is turned on, the radio will refuse to transmit signal when you press the PTT key.

CONTENT (III)

INITIATING AND RECEIVING CALLS

After you understand how your radio is configured, you are able to use it more deftly.

Use this directory to familiar with the basic call feature:

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INITIATING AND RECEIVING CALLS

CHOOSE A ZONE

A zone is a group of channels. Your radio supports up to 16 zones, with a maximum of 16 digital channels and 16 analogue channels per zone.

Choose a working zone by following steps:

Procedure:

1. Press the preset "Zone Switch" key.
2. A confirmed prompt tone or voice prompt (if turned on) will be heard, indicating the radio changes from current zone to another zone successfully.

CHOOSE A CHANNEL, USER ID, OR GROUP ID

After choosing the desired zone (provided that there is multiple zones preset in the radio), choose a working channel, user alias or ID, or Group alias or ID with the Channel selector.



Prompt:

- ◆ When choosing a channel, a prompt tone of current channel will be heard. (The prompt tone type can be programmed)
- ◆ You can change current working channel mode by pressing [Analog / Digital] key. (Digital / Analog Mode)

RECEIVING AND ANSWERING TO A RADIO CALL

In the current channel, you can receive or answer the call from user(s) with the same user ID or group ID. In transmitting, the LED indicator is normally on, while in receiving, the LED indicator is flashing. (Provided that LED indicator is turned on).

Note:

- ◆ Blue LED indicator lights up solid blue or flashes, the radio is transmitting or receiving digital signal;
- ◆ Green LED indicator lights up solid green or flashes, the radio is transmitting or receiving analog signal.



NOTE: To decode an encrypted call, your radio must have same encryption key, or same Key Value and Key ID (preset by your dealer) as the transmitting radio. (The encryption can be preset by your dealer or yourself)

Please refer to **Encryption** on Page 28 for more detailed information.

INITIATING AND RECEIVING CALLS

Receiving and Answering to a Group Call

To receive a group call, your radio must be programmed as part of that group.

Procedure:

When receiving a group call:

- 1) Blue LED indicator is flashing (if the LED indicator function is turned on).
- 2) To answer / reply, hold the radio vertically 2.5cm to 5cm (1 to 2 inches) from your mouth.
- 3) If the "Prompt Tone" feature for group call is enabled, you will hear a short tone when the transmitting radio release the "PTT" Key, means your radio is free to response, at this moment, you can press the "PTT" key to answer the call.
- 4) You can press PTT key to answer the call, blue LED being normally on.
- 5) You can speak clearly into the microphone, after the "Tx Begin Tone" for group call is finished (if it is enabled).
- 6) Release "PTT" key to wait answering.
- 7) The call is end, if there is no audio activity in preset time. Please refer to **Initiate a Group Call** on Page 15 for more detailed information.

Receiving and Answering to a Private Call

A private call refers to a call from an individual radio to another individual radio.

Blue LED indicator will be normal on, if there is a private call is received.

Procedures:

When receiving a private call:

1. Blue LED indicator is flashing (if the LED indicator function is turned on).
 2. To answer/reply, hold the radio vertically 2.5cm to 5cm (1 to 2 inches) from your mouth.
 3. If the "Prompt Tone" feature for private call is enabled, you will hear a short tone when the transmitting radio release the "PTT" Key, means your radio is free to response, at this moment, you can press the "PTT" key to answer the call.
 4. You can press "PTT" key to answer the call, and LED indicator lights up solid blue.
 5. You can speak clearly into the microphone, after the "Tx Begin Tone" for private call is finished (if TX Begin Tone is enabled).
 6. Release "PTT" key to wait for answering.
 7. The call is ended, if there is no audio activity in preset time, and a short Prompt tone will be heard
- Please refer to **Initiate a Private Call** on Page 16 for more detailed information.


Receiving a General Call

INITIATING AND RECEIVING CALLS

A general call is a call from an individual radio to all radios in the same channel.

Procedure:

When receiving a general call:


- 1) Blue LED indicator is flashing (if the LED indicator function is turned on).
- 2) If the "Prompt Tone" for general call is enabled, you will hear a short tone when the transmitting radio release the "PTT" Key, means your radio is free to response.
- 3)  The call is end, if there is no audio activity in preset time.

Note:


1. If you switch to another channel while receiving the General Call, the radio will stop receiving that general call.
2. During a General Call, you are not able to use any pre-programmed key until the call ends.

INITIATE A RADIO CALL

You can choose a channel, user ID, or group alias by following instructions:

1. Use the Channel selector.
2.  Use preset keys (please refer to description of preset keys P1, P2 & P3).

Note: Your radio can only transmit voice with encryption only when the "Encryption" feature is turned on. Your target radio


must have the same encryption key OR the same Key Value and Key ID with your radio to decode the transmission. Please refer to **Encryption** on Page 28 for more detailed information .

USING THE CHANNEL SWITCH KNOB TO INITIATE A CALL

Initiating a Group Call

To initiate a group call, your radio must be programmed as part of that group.

Procedures:

1. Rotate the channel switch knob to choose the channel with preset group alias or ID.
2. Hold the radio vertically 2.5cm to 5cm (1 to 2 inches) from your mouth.
3.  Press the "PTT" key to initiate a call, and blue LED indicator is normal call (if LED indicator function is turned on)
4. You can speak clearly into the microphone, after the "Tx Begin Tone" for group call is finished (if TX Begin Tone is enabled).
5. Release the PTT key and listen to the response, when the target radio answers, blue LED indicators will flash (if LED indicator function is enabled).

INITIATING AND RECEIVING CALLS

6. If the "Prompt Tone" for group call is enabled, you will hear a short tone when the transmitting radio releases the "PTT" key, means the channel is free for you to answer. At this moment, you can press the "PTT" key to answer the call.

OR

The call is end, if there is no audio activity in preset time.

Initiating a Private Call

Your radios must be programmed to allow to initiating a private call firstly before it can receive or response private call initiated by an authorized single radio.

If it is not preset firstly, when you initiate a call by pressing preset keys or rotating channel switch knob, you will hear a refuse prompt tone (if prompt tone is turned on)


Procedures:

1. Rotate the channel switch knob.

OR

Press preset keys (press it in preset time).

2. Hold the radio vertically 2.5cm to 5cm (1 to 2 inches) from your mouth.

3.  Press the "PTT" key to initiate a call, and LED indicator lights up solid blue (if LED indicator is turned on)

4. You can speak clearly into the microphone, after the "Tx Begin Tone" or private call is finished (if TX Begin Tone is enabled).

5. Release the PTT key and listen to the response, when the target radio answers, blue LED indicator will flash (if LED indicator function is turned on)

6. If the "Prompt Tone" for private call is enabled, you will hear a short tone when the transmitting radio releases the "PTT" key, means the channel is free for you to answer. At this moment, you can press the "PTT" key to answer the call.

OR

The call is end, if there is no audio activity in preset time, and a short call free time prompt tone will be heard.

Initiating a General Call

Your radios must be programmed to allow to initiating a general call to all users in the current channel.

Procedures:

1. Rotate the channel switch knob to choose the channel with preset general alias or ID.

2. Hold the radio vertically 2.5cm to 5cm (1 to 2 inches) from your mouth.


3. Press the "PTT" key to initiate a call, and the LED indicator lights up solid blue (if LED indicator function is turned on)

4. You can speak clearly into the microphone, after the "Tx Begin Tone" for general call is finished (if TX Begin Tone is enabled).

INITIATING AND RECEIVING CALLS

Prompt:

Users on the channel can't answer to a general call.

 You can initiate a Group Call, Private Call and call alert by presetting P1, P2 & P3 buttons.

Preset keys' feature allows you to initiate a group call, private call and call alert to preset ID. This feature can be programmed as short press and long press operation.

You can set each preset keys as one ID, different radio models can have different preset keys.

Initiating a Group Call or Private Call

This feature allows you to transmit a call to all radios on the same channel. Your radios must be programmed to allow to using this feature.

Procedure:

1. Press preset keys to initiate a group or private call to preset alias or ID.
2. Hold the radio vertically 2.5cm to 5cm(1 to 2 inches) from your mouth.
3. Press the "PTT" key to initiate a call, and blue LED indicator is normally on (if LED indicator is turned on)
4. You can speak clearly into the microphone, after the "Tx Begin Tone" is finished (if TX Begin Tone is enabled).
5. Release the PTT key and listen to the response, when the target radio answers, blue LED indicator will flash (if LED

indicator function is turned on)

6. If you enable the "prompt tone" feature, you will hear a short beep when the target radio released the [PTT]key. Press [PTT] to answer.

Or

If there is no voice activity within a predetermined time then the call is terminated and you will hear a short beep.

TALK AROUND

You can continue to communicate by using talk around feature when the repeater is not operating, or when two way radio is out of the repeater's range but within the talking range of other radios. This is known as "talk Around"

Procedure:

1. Press preprogrammed "talk Around" key to switch between talk around and repeater mode..
2. If the prompt tone is enabled, you will hear a short beep which means (indicates) the radio is already in talk around mode.

Or

If the prompt tone is enabled, you will hear a beep which means (indicates) the radio is in Repeater mode.

Note: If the settings is set to Talk around mode when you turn off the radio, the settings will still maintain to Talk around mode.

INITIATING AND RECEIVING CALLS

MONITORING SETTINGS

Monitoring a Channel

Use the monitor feature to make sure a channel is free before transmitting.

Procedure:

1. Press and hold the preset **【analog monitor】** key and listen to the activity.
2. The LED indicator lights up solid green. (If LED indicator is enabled)
3. When you hear the activity of radio or "white noise" (the channel is free), press PTT to talk and release PTT to listen.

Permanent Monitor

Use permanent monitor feature to continuously monitor a channel.

Procedure:

1. Press the preset **【permanent monitor】** key and listen to activity.
2. The LED indicator lights up solid blue. (If LED indicator is enabled)
3. When you hear the activity of radio or "white noise" (the channel is free), press PTT to talk and release PTT to listen.

CONTENT (IV)

DMR SERVICE (PRE-PROGRAMMED BY PROGRAMMING SOFTWARE)

For more information on turn on or off the radios setting and advanced functions through preprogrammed (by programming software), please review the following details.

Please use these guides below to learn more about the DMR operation items:

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DMR OPERATION ITEMS (PROGRAMMING SOFTWARE)

Remote Monitoring duration

Users can limit the duration of the radio that being remote monitor by other users.

(Range from 10s to 120s)

Decoding Remote Monitoring

Users can turn on or off for allowing your radio to receive and process the remote monitor instruction from other radios through pre-programmed (by programming software).

This instructs indicate receiver radio within the range of remote monitor to revive its own Mic & transmitter. The radio will initiate a call silently and not give any notice to your radio about remote monitor.

Note:

This feature is only available in "digital" mode.

Radio Disable

Users can turn on or off to allow the radio to receive and process "radio kill" instruction from another radio, and disable it remotely through pre-programmed (by programming software)

Note:

This feature is available ONLY in "digital" mode.

Decoding Radio Detection

Users can turn on or off for allowing other radios to check whether your radio is active in the system with no bother to

that radio through pre-programmed (by programming software).

Note:

This feature is available ONLY in "digital" mode.

Decoding Remote Revive

Users can turn on or off for allowing your radio to receive and process "radio revive" (revive your radio remotely) instruction from other radio through pre-programmed (by programming software). This function can be used when a stolen or lost radio has been recalled.

Note:

This feature is available ONLY in "digital" mode.

Call Alert

Users can turn on or off to allow other radios use the alert function to request you call back when you are available through pre-programmed (by programming software). But No voice communication.

Note:

This feature is available ONLY in "digital" mode.

Encryption Level

This function can add encryption to selected digital channel. The encryption is a scrambling solution based on the software, but not very reliable, it just for preventing eavesdrops. The portions of transmission signal and the user identification are

DMR OPERATION ITEMS (PROGRAMMING SOFTWARE)

not encrypted. The receiver and transmitter radio must be preset to have the same encryption level or the same Key Value and Key ID, then can decrypt an encryption-enable call or receive encrypted transmitting data. You can enable or disable the encryption function through custom buttons of Short press or Long press (The Encryption ON / OFF) or Encryption ("Setting" menu). Your radio must enable "Encryption" function on the channel or the "Encryption" function of your radio to send an encrypted transmission signal. If the encryption function of Channel or your radio is enabled, the encryption icon will displays on the radio with LED.

Options:

- ◎OFF — Turn off all encryption function of your radio.
- ◎Low — Allow to add basic encryption to selected digital channel. For every radio, users must choose an initialization encryption key from preset list. If the initialization encryption key of receiving radio and the transmitting radio is different, you will hear a chaotic transmission.
- ◎Middle — Allow to add strong encryption to selected digital channel. Every channel with encryption ON must be connected with a initialization encryption key value. If the Key ID of the transmitting radio is not match with all Key ID of the receiving radio, the receiving radio will hear nothing.
- ◎High — Allow to add enhanced encryption to selected digital channel. Every channel with encryption ON must be connected with a s initialization encryption key value. If the Key ID of the

transmitting is not match with all Key ID of the receiving radio, the receiving radio will hear nothing.

Note:

The function is available ONLY in Digital mode. However, encryption function of a channel or a radio is not supported on some models.

Time Limit Launch

Users can set the longest time that can be transmitting for each call.

Talk Around Group Call time

Users can set the radio to receive the digital group ID and to answer and receive or continue calls to initiate the duration of the group call. If Off Network Group Call time fails, then the radio can use the CPS transmitter which is specified for the channel(Digital Group) to emit.

Talk Around Private Call time

Users can release the"one click" PTT)button and the radio will remain as Off Network Single Call time settings. This can prevent the PTT to make a call again each time. During this period, the channel is in idle mode so other radios are still capable of transmitting. If Off Network Private Call time fails, then the radio can use the CPS transmitter which is specified for the channel(Digital Group) to emit.

CONTENT (V)

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REPLY (OR TRANSMIT) TYPES DURING SCANNING

You can set the reply mode or transmit type of the scan list by the pre-programmed software.

Talkback

- ①. If software presets it ON, when a carrier signal on the scan list is received during scan, and disappear in 3s later. Press 【PTT】 button to reply the current channel member scanned.
- ②. If software presets it OFF, you can set the transmitting reply mode through 【Scan transmitting mode】.

Note:

- ◆ Option: ON / OFF
- ◆ Default: On

Scan transmitting mode

- ① Start channel — To reply call before scan initiated.
- ② Last active channel — To reply call on last previous active channel.
- ③ Appointed channel — To appoint a channel to reply call.

Allocated Channel

If to choose appointed channel for reply, when your radio receives a carrier signal scanned on a scan list during scanning, and when the signal disappears, press 【PTT】 to reply the call on that appointed channel.

Scan mode

If it is permitted by your dealer or system administrator, users can check or operate scan mode through the self-defined keys.

- ◆ You can choose of the following three modes:
- ◆ CO (carrier) — Once radio receives a scanned signal over the air, it will stay on that channel until signal disappears, and then continue to scanning.
- ◆ TO (Time) — Once the radio receives a scanned signal over the air, it will stay on that channel for a preset time. Once time is out, it will continue to scanning.
- ◆ SE (Seek) — Once the radio receives a scanned signal over the air, it will stay on that channel and stop scanning until you re-activate to scanning

Procedure:

Press the preset scanning key.

Note:

- ◆ Every time you press the scanning key, the scan mode will be change among three modes: carrier mode, time mode and research mode.

SCAN LIST

Users can preset scan lists and assign them to single channels or groups. Radio will scan cyclically to check if there is voice

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signal on current channel or group.

Your radio supports up to 16 scan lists, and each scan can contain a maximum of 512 channels. Each scan list supports both digital and analogue modes.

SCAN

When you initiate a scan, your radio cycles the channels or groups in the scan list to check if there is any voice activity. The LED indicator flashes blue and green speedily.

When mixed modes (analogue and digital) channels under scanning, if your radio stays on a digital channel, but radio scans an analogue signal and locked on the channel, then the radio will auto switch to analogue mode from digital mode during the calling duration, vice versa.

Note:

"Talkback" or "Scan TX mode" and "Appointed channels" etc scan detail settings can be preset by your dealer or system administrator.

Starting and Stopping Scan

Procedure:

1. Press the preset scan on/off key.
2. When the scan is activated, the LED indicator flashes blue and green speedily, and meanwhile you will hear an audible alert "ON" if activated.)

OR

Press the preset scan ON / OFF key again to stop. When the scan is OFF, the LED indication turns OFF, and meanwhile you will hear an audible "OFF" (if activated.)

Transmit during the scanning

Your radio will stay on an active channel or group talk during scan, the time period when radio stays on the channel or group talk is called "Idle time"

Procedure:

1. Hold the radio vertically 2.5cm to 5cm (1 to 2 inches) from your mouth.

If "Prompt Tone" is activated, you will hear a short tone when you release the **【PTT】**. It means that the channel is free to respond.

2. During the standby time(about 3 seconds), press **【PTT】**.

If the LED indicator lights blue, it is in digital mode. If it lights green, it is in analog mode.

3. After you hear the Tx Begin Tone (if activated), press

【PTT】 and speak clearly into the microphone.

4. Release the **【PTT】** to receive.

5. If nothing is done during the standby, the radio will resume scanning the rest channels or groups.

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CALL ALERT

Users can turn on or off to allow other radios use the alert function to request you call back when you are available by press pre-programming the direct call key.

Receive and respond to call alert

When you receive call alert:

1. You will hear a prompt tone repeatedly. The LCD indicator flashes blue speedily (if activated.)
2. You can press **【PTT】** to reply within 4 seconds after you receive the call alert.

Note:

If you do not press **【PTT】** within 4 seconds, the radio will exit the call alert automatically.

Initiate call alert by the direct alert key.

Procedure:

1. Press the direct call key and there will be a preset target radio ID.
2. Press **【PTT】** to transmit within the preset time. LED indicator will lights blue.
3. The radio will produce a prompt tone if the target radio receives the call alert.

OR

The radio will produce a lower prompt tone if the target radio does not receive the call alert.

EMERGENCY ALARM

The emergency alarm is mainly used in emergency circumstances. You can initiate emergency call at any time and any status, even when there is other activity on the channel.

◆ Your distributor can set the emergency MIC duration via the software.

- Short press - shorter than the long press time
- Long press - range from 500 milliseconds to 5000 milliseconds

◆ Your radio supports three emergency alarm modes:

- Emergency alarm
- Emergency alarm and call
- Emergency alarm and voice

The alarm is a non-voice signaling, which can enable another radio to respond. This function can be used when users press the emergency alert button.

◆ Your radio supports 3 emergency alarm modes:

- Disable — the radio can't send the alarm signal
- Standard?Radio Transmitter — the radio can send the alarm signal and show audio and visual alert
- Silent?Radio Alarm signaling — the radio can send the alarm signal, but don't provide any audio or visual prompt that indicates as "Emergency" mode, or in addition there will be no any sounds received.

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- Silent with Audio — Radio Alarm Signaling, the radio can send the alarm signal without showing audio or visual alert and radio will send the emergency alarm on the eligible channel.

Note:

- ▲ Only one of the above emergency alarm can be set to the emergency alarm key.
- ▲ This is available ONLY in digital mode.

Sending an Emergency Alarm

If users are allowed to send an emergency alarm, it is non-voice signal, the screen of the target radio will show the visual characters or icon as well as an alert tone.

Procedure:

1. Press the preset emergency mode ON / OFF key.
2. LED indicator lights blue.
3. If the target radio confirms that the emergency alarm is received, you will hear a confirming tone and the LED indicator flash blue speedily.

OR

If you don't receive any confirmations from the target radio, after several attempts (preset by the software), you will hear a lower prompt tone.

4. The radio exits emergency mode.

Note: If your radio is set to "silent" option, no audio or visible indication is shown to the your radio.

Sending an Emergency Alarm and Call

This feature allows users to send an emergency alarm to the target radio. After confirmation, both radios will communicate with a default emergency channel.

Procedure:

1. Press the preset emergency mode on/off key.
2. LED indicator lights blue.
3. If the target radio confirms that the emergency alarm is received, you will hear a confirming tone and the LED indicator flash blue speedily.

OR

If you don't receive any confirmations from the target radio, after several attempts (preset by the software), you will hear a lower prompt tone.

4. Hold the radio vertically 2.5cm to 5cm (1 to 2 inches) from your mouth.
5. Press **【PTT】** to call the target radio. The LED indicator lights blue (if activated).
6. After you hear the Tx Begin Tone (if activated), press **【PTT】** and speak clearly into the microphone.
7. Release the **【PTT】** to receive.
8. If "Prompt Tone" is activated, you will hear a short tone when the **【PTT】** of the target radio is released. It means that the channel is free to respond.

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OR

Press the preset **【emergency mode ON/OFF】** key to exit the emergency mode.

Note:

- ◆ If your radio is set to "silent" option, the screen will not send any sound or voice while in the emergency call mode, neither from the target radio to receive a respond to any call until users press the [PTT] key to initiate a call.
- ◆ If your radio is set to "silent with audio" option, no audio or visible indication is shown to the target radio. The radio will prompt only when you press [PTT] key to initiate or respond to a call.

Sending an Emergency Alarm and Voice

This feature allows users to send an emergency alarm to the target radio/radios. After confirmation, your radio microphone (MIC) and the transmitter will be automatically activated, allowing you to communicate with other target radios without the need to press [PTT] key. This activation of the microphone function is called an 报警emergency microphone?

If the user press [PTT] key during the programmed emergency microphone transmission period, the radio ignores the PTT press and remains in emergency mode.

Note:

- ◆ If the user presses the [PTT] key during emergency

microphone, and continue to press [PTT] key after the emergency microphone duration expires. Then the radio continues to transmit the call until you release the [PTT] key.

Procedure:

1. Press the preset emergency mode on/off key.
2. LED indicator lights blue.
3. After you hear the Tx Begin Tone (if activated), users can speak clearly with the microphone(MIC), when the 报警emergency microphone? is activated, radio will automatically start to transmit signals without needing to press the [PTT] key until a default emergency microphone time is over then it will stop to transmit.
4. During the transmission, the LED indicator lights blue (if activated).
5. After the emergency microphone is over, the radio will automatically stop transmit the signals. To start again, press [PTT] key to transmit.

Note:

- ◆ If your radio is set to "silent" option, no audio or visible indication is shown in the emergency call mode, neither from the target radio to receive any response, until an emergency mic transmitting time is over and you have to press the [PTT] key.

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◆ If your radio is set to "silent with voice" option in emergency call mode when you use the emergency microphone to initiate a call, or when the default emergency microphone time has ended, no audio or visible indication is shown but only when you press [PTT] key, these indication will appear again.

Re-initiate Emergency mode

Under the following two circumstances, you need to re-access the emergency mode:

1. Changing channel manually in emergency mode will force the radio to exit the emergency mode. If you need to activate the emergency alarm on the new channel, you have to press the preset **【Emergency mode】** key again.
2. Press the preset [emergency alarm ON/OFF] key while emergency alarm is activated and is transmitting, this will enable the radio to exit the emergency alarm mode, users need to re-press the preset [emergency alarm ON/OFF] key, and then restart the emergency alarm call.

Exit the emergency mode

The radio will exit emergency mode under the following three circumstances:

1. The emergency alarm acknowledgement is received while your radio is activating emergency alarm (For emergency alarm ONLY), your radio will exit emergency mode.

2. The maximum number of attempts to perform an emergency alarm call, it will automatically exit emergency alarm mode.
3. When the preset [emergency alarm switch] key is pressed, your radio will exit emergency alarm manually.

Note:

◆ If your radio is powered off during an emergency call, it will exist the emergency mode. The radio will not reinitiate the emergency mode when the radio is turned on.

ENCRYPTION

If this feature is enabled, it is advantageous to prevent other users from using the software encryption method without authorization. Part of the transmitted signal and user identification is not encrypted. The radio must enable the channel's encryption function to transmit the encrypted signal, although this is not required to receive / transmit. At the same time in the encryption of the channel, the radio can receive a clear transmission signal.

◆ Your radio supports the following types of encryption:

- Low — Basic encryption
- Middle — Strong encryption
- High — Enhanced encryption

Note:

▲ Only one of the above mentioned types can be assigned to a radio.

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◆ To decrypt the encrypted call or data transmission, user must have the same encryption key or the same key level, key value and key ID. If user receive a different encryption key, key value and ID key with encryption call, user can hear the confusing transmission of signals (basic encryption) or listen to nothing (Enhanced / super strong encryption).

Procedure:

1. Press the preset 【Encryption ON / OFF】 key

Note:

- ◆ Your radio must be pre-programmed to allocate the key values, Key ID and encryption type.
- ◆ Some types of radios may not provide a single channel encryption or not encryption function. Please contact your dealer or system administrator for further information.

ADVANCED SERVICES

Advanced services are needed to be programmed by software beforehand, and can be accessed by the user-defined keys.

Radio detection

If this is activated, you can check whether the target radio is available or not without disturbing. The target radio won't receive any audio or visible notice. This function is only available for the user alias or ID.

Procedure:

1. Press the preset 【radio detection】 key.
2. If the target radio is available in the system, your radio will sound alert.

Remote monitor

Use the remote monitor function to switch on the microphone of a target radio (user alias or ID only). No audio or visible indication is shown to the target radio. You can use this function to monitor the surrounding activities of the target radio.

Procedure:

1. Press the preset 【Remote monitor】 key.

Note:

- ◆ If the target radio is activated successfully, you will hear a prompt sound from the target radio.
- ◆ Your radio must be programmed through programming software to use this function.

Radio Kill

You can kill any other radios in the system. For example, you may want to kill a stolen radio to prevent the thief from using it, and re-activate that radio when it is retrieved.

Procedure:

1. Press the preset 【radio kill】 key.

Note:

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- ◆ If the target radio is killed successfully, your radio will receive a beep sound.
- ◆ Performing Radio Kill is limited to radios with these function activated. Check with your dealer or system administrator for detail information.
- ◆ Your radio must be programmed through programming software to use this function.

Radio Revive

Users can activate any other radios which have been killed. For example, users might want to re-activate and use a stolen radio which has been killed..

Procedure:

1. Press the preset 【Radio Revive】 key.

Note:

- ◆ While reviving, it will send out the remote revive signal to the target radio, if the signal is picked up successfully by the target radio, your radio will receive a beep sound.
- ◆ Only the radio with this function activated can carry out this function. Please contact your dealer or system administrator for further information.
- ◆ Your radio must be programmed to allow user to use this function.

SETTINGS

If your dealer or system administrator allows you to set the basic settings and operation through definable key, then you could check and set the following settings via definable key.

- ◆ You could check or set the following settings.

- High / low power selection
- Squelch level options
- Turn ON or OFF VOX
- Check battery power strength

High / low power setting

If your dealer or system administrator allows you to do preset, you could check and set the radio power level through definable key to prolong the battery working life.

Note:

- ▲ High power ensure a long distance communication with target radio.
- ▲ Low power ensure a short distance communication with target radio.

Procedure:

1. Press preset 【High/Low Power selection】 to switch the high power and low power.

Note: Once the power level is changed, the radio will do a sound prompt (If activated).

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Prompt tone type setting

If your dealer or system administrator allows you to do preset, when you do the radio operation, the radio will sound prompt tone or voice prompt.

- Power ON radio — Prompt tone, voice prompt, silence (Default: Voice prompt)
- Power OFF radio — Prompt tone, voice prompt, silence (Default: Voice prompt)
- Channel selection — Prompt tone, voice prompt, silence (Default: Voice prompt)
- Power level check — Prompt tone, voice prompt, silence (Default: Voice prompt)
- Low power alert — Prompt tone, voice prompt, silence (Default: Voice prompt)
- Power selection — Prompt tone, voice prompt, silence (Default: Voice prompt)
- Squelch level selection — Prompt tone, voice prompt, silence (Default: Voice prompt)
- Scan ON/OFF — Prompt tone, voice prompt, silence (Default: Voice prompt)
- Current channel check — Prompt tone, voice prompt, silence (Default: Voice prompt)
- Alarm ON/OFF — Prompt tone, voice prompt, silence (Default: Voice prompt)

- Private call prompt — Prompt tone, voice prompt, silence (Default: Voice prompt)
- Group call prompt — Prompt tone, voice prompt, silence (Default: Voice prompt)
- General call prompt — Prompt tone, voice prompt, silence (Default: Voice prompt)
- TOT prompt ---Prompt tone, voice prompt, silence (Default: Voice prompt)
- BS revive timeout — Prompt tone, voice prompt, silence (Default: Voice prompt)
- Encryption ON — Prompt tone, voice prompt, silence (Default: Voice prompt)
- Encryption OFF — Prompt tone, voice prompt, silence (Default: Voice prompt)
- VOX ON — Prompt tone, voice prompt, silence (Default: Voice prompt)
- VOX OFF — Prompt tone, voice prompt, silence (Default: Voice prompt)
- Zone Selection — Prompt tone, voice prompt, silence (Default: Voice prompt)

Prompt tone volume setting

You or your dealer or system administrator could set your radio sound prompt volume via programming software.

Options:

ADVANCED FEATURES

- 1 — minimum
- 13 — Maximum
- Default: 10

Squelch level setting

You could adjust the radio squelch level to eliminate some weak and useless signal call or channel with background noise higher than normal value

Setting: Normal default value is level 4. The highest level is 9.

Note: The highest squelch level may prevent some long distance call.

Procedure:

1. Press preset 【squelch level】 key
2. You will hear a prompt tone (if activated).

Options:

- 0 — Squelch ON
- 1 — Minimum
- 9 — Maximum
- Default : 4

Turn ON / OFF VOX

If required, you could turn ON the preset VOX feature, and no need to press PTT to issue a call. Whenever the microphone of accessories with VOX detects voice sound, the radio will transmit automatically, and keep transmitting during voice detected.

Note:

◆ You could adjust the VOX transmitting sensitivity through MIC gain via programming software.

◆ The higher VOX level the higher sensitivity to detect voice. User need to set it based on working environment.

◆ Level selection:

- 12 — Highest sensitivity
- 1 — Lowest sensitivity
- Increment: 1
- Default: 4

Procedure:

1. Press preset 【VOX ON / OFF】 key to turn on or off the feature.
2. A prompt tone will be sounded (if activated).

Note:

1. To turn it ON or OFF is only valid for the radio with VOX feature. Please contact your dealer or system administrator for more detail.

2. If prompt tone is activated, then please speak to radio microphone after a prompt tone heard.

Information Check

If your dealer or system administrator allow to preset, you could check the following information of radio through definable key defined with information check.

ADVANCED FEATURES

1. Power level
2. Battery strength level
3. Current channel mode
4. Current working zone

Procedure:

1. Press preset 【Information Check】 key.
2. A beep sound will be heard (if activated).

GENERAL GUIDE FOR FAULT HANDLING

Malfunction	Analysis of causes	Handling method
Fail to turn ON radio	Battery is installed incorrectly	Re-install battery
	Battery power lower than preset value	Please change or charge battery.
	Bad battery contacts or contacts in dirty.	Check and clear the battery. contacts.
The sound get lower or unclear or interrupted during receiving signal	Battery power get lower.	Please change or charge battery.
	Volume control at low value.	Adjust the volume to be higher.
	Antenna gets loose or antenna frequency is incorrect.	Power off radio, and re-install antenna, or change antenna with right frequency.
	Speaker is blocked or damaged.	Try to clear the outer speaker or contact your dealer.
	Using the radio under poor working environment or electromagnetic interference	Change working environment or shift antenna direction.
Fail to talk with group members	The current working channel frequency or signaling setting is different with other group members.	Change channel or reset signaling to be same as other group members
	The setting of Digital or analogue channel is incorrect.	Reprogram the current digital or analogue channel.
	Far away with that group members.	Get closer to that group members.
Pops up other communication or noise on the current channel.	To be interfered by other members.	To change frequency or channel.
	Did not program with relevant signaling	To program signaling for the group member to prevent same frequency interference.
Louder noise during communication	The communication distance is too far between members.	Get closer to other members
	To be blocked by high building, or be on lower landform or basement etc working environment.	Go for open air area, and turn on radio again for a try.

GENERAL GUIDE FOR FAULT HANDLING

Malfunction	Analysis of causes	Handling method
Louder noise during communication	To be interfered strongly by external environment or others.	Try to keep away with instruments or equipments which may cause interference.
GPS fail to positioning (Optional)	Radio without GPS feature; Or is working under poor working environment that fails to receive GPS signal.	To add GPS features or move to work in the open air.

Note: If the above methods fail to solve your problem, or you confront other different malfunctions, please contact your local dealer or appointed maintenance station for more supports.

MAINTENANCE AND CLEAN

To make sure the radio's best performance and prolong its working life, please be acquainted with the following contents, so that you can do well maintenance and clean for the radio.

Maintenance

- ◎ Please do not scratch or puncture the device with hard matter.
- ◎ Please do not place the device under the environment which can corrode electronic circuit or under sun direct radiation.
- ◎ Please do not carry the device by hanging its antenna or headset.
- ◎ Please make sure the SP-MIC be covered well if it is not in use.

Clean

Please clean your device regularly by using dry laid fabric or soft brush to wipe the dust on surface and charger contacts; The keypads, control knob and housing case of the device are easy get dirty. Please use nonwoven wipes to clean them. Please do not use chemical to clean it such as detergent, alcohol, spray or petroleum products, or the device surface or printing character maybe damaged. Before power on the radio, please make sure the device is dry completely.

STANDARD ACCESSORIES



AC Adaptor



Charger



Li-pol Battery



Antenna



Belt Clip



Tie

OPTIONAL ACCESSORIES



Air conduit earphone



Earphone-1



Earphone-2



Programmable cable



Speaker microphone

