

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 27 for more detailed information.

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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 14 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 15 for more detailed information.

Receiving a General Call

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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 27 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).

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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).

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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.

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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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ADVANCED FEATURES

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 call 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.