PROFESSIONAL DIGITAL TWO-WAY RADIOS

MOTOTRBO™
DP3441/DP3441e
NON-DISPLAY PORTABLE
USER GUIDE

| en | de-DE | fr-FR | it-IT | es-ES | tr | pl | ru | ar-EG |

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Important Safety Information

RF Energy Exposure and Product Safety Guide for Portable Two-Way Radios

ATTENTION!

This radio is restricted to Occupational use only. Before using the radio, read the RF Energy Exposure and Product Safety Guide for Portable Two-Way Radios which contains important operating instructions for safe usage and RF energy awareness and control for Compliance with applicable standards and Regulations.

For a list of Motorola-approved antennas, batteries, and other accessories, visit the following website:

http://www.motorolasolutions.com

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Software Version

All the features described in the following sections are supported by the software version **R02.50.10** or later.

Check with your dealer or system administrator for more information.

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U.S. Pat. Nos. #5,870,405, #5,826,222, #5,754,974, #5,701,390, #5,715,365, #5,649,050, #5,630,011, #5,581,656, #5,517,511, #5,491,772, #5,247,579, #5,226,084 and #5,195,166.

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Handling Precautions

The MOTOTRBO Series Digital Portable radio meets IP67 specifications, allowing the radio to withstand adverse field conditions such as being submersed in water. This section describes some basic handling precautions.

⚠️ **Caution:**
Do not disassemble the radio. This could damage radio seals and result in leak paths into the radio. Radio maintenance should only be done in service depot that is equipped to test and replace the seal on the radio.

- If the radio has been submersed in water, shake the radio well to remove any water that may be trapped inside the speaker grille and microphone port. Trapped water could cause decreased audio performance.
- If the radio's battery contact area has been exposed to water, clean and dry battery contacts on both the radio and the battery before attaching the battery to the radio. The residual water could short-circuit the radio.
- If the radio has been submersed in a corrosive substance (e.g. saltwater), rinse the radio and

battery in fresh water then dry the radio and battery.

- To clean the exterior surfaces of the radio, use a diluted solution of mild dishwashing detergent and fresh water (i.e. one teaspoon of detergent to one gallon of water).
- Never poke the vent (hole) located on the radio chassis below the battery contact. This vent allows for pressure equalization in the radio. Doing so may create a leak path into the radio and the radio's submersibility may be lost.
- Never obstruct or cover the vent, even with a label.
- Ensure that no oily substances come in contact with the vent.
- The radio with antenna attached properly is designed to be submersible to a maximum depth of 1 meter (3.28 feet) and a maximum submersion time of 30 minutes. Exceeding either maximum limit or use without antenna may result in damage to the radio.
- When cleaning the radio, do not use a high pressure jet spray on the radio as this will exceed the 1 meter depth pressure and may cause water to leak into the radio.

Introduction

This user guide covers the operation of the MOTOTRBO radios.

Your dealer or system administrator may have customized your radio for your specific needs. Check with your dealer or system administrator for more information.

You can consult your dealer or system administrator about the following:

• Is your radio programmed with any preset conventional channels?
• Which buttons have been programmed to access other features?
• What optional accessories may suit your needs?
• What are the best radio usage practices for effective communication?
• What maintenance procedures will help promote longer radio life?

Icon Information

Throughout this publication, the icons described are used to indicate features supported in either the conventional analog or conventional digital mode.

Indicates a conventional **Analog Mode-Only** feature.

Indicates a conventional **Digital Mode-Only** feature.

For features that are available in **both** conventional analog and digital modes, both icons are **not** shown.

For features that are available in a conventional multi-site mode, see *IP Site Connect* on page 10 for more information.

Selected features are also available on the single-site trunking mode, Capacity Plus-Single Site. See *Capacity Plus--Single Site* on page 11 for more information.

Selected features are also available in the multi-site trunking mode, Capacity Plus-Multi-Site. See

Conventional Analog and Digital Modes

Each channel in your radio can be configured as a conventional analog or conventional digital channel.

Certain features are unavailable when switching from digital to analog mode.

Your radio also has features available in both analog and digital modes. The minor differences in the way each feature works do **not** affect the performance of your radio.

> **Note:**
> Your radio also switches between digital and analog modes during a dual mode scan. See *Scan* on page 68 for more information.

IP Site Connect

This feature allows your radio to extend conventional communication beyond the reach of a single site by connecting to different available sites by using an Internet Protocol (IP) network.

> **Note:**
> This feature is not applicable in Capacity Plus.

When the radio moves out of range from one site and into the range of another, the radio connects to the repeater of the new site to send or receive calls or data transmissions. This is done either automatically or manually depending on your settings.

In an automatic site search, the radio scans through all available sites when the signal from the current site is weak or when the radio is unable to detect any signal from the current site. The radio then locks on to the repeater with the strongest Received Signal Strength Indicator (RSSI) value.

In a manual site search, the radio searches for the next site in the roam list that is currently in range but which may not have the strongest signal and locks on to the repeater.

> **Note:**
> Each channel can only have either Scan or Roam enabled, not both at the same time.

Channels with this feature enabled can be added to a particular roam list. The radio searches the channels in the roam list during the automatic roam operation to locate the best site. A roam list supports a

maximum of 16 channels, including the selected channel.

> **Note:**
> You cannot manually add or delete an entry in the roam list. A Software License Key sold separately is required to use this feature. Check with your dealer or system administrator for more information.

Capacity Plus

Capacity Plus--Single Site

Capacity Plus-Single Site is a single-site trunking configuration of the MOTOTRBO radio system, which uses a pool of channels to support hundreds of users and up to 254 Groups. This feature allows your radio to efficiently utilize the available number of programmed channels while in Repeater Mode.

You hear a negative indicator tone if you try to access a feature not applicable to Capacity Plus-Single Site via a programmable button press.

Your radio also has features that are available in conventional digital mode, IP Site Connect, and Capacity Plus. However, the minor differences in the way each feature works does **not** affect the performance of your radio.

Check with your dealer or system administrator for more information on this configuration.

Capacity Plus--Multi-Site

Capacity Plus-Multi-Site is a multi-channel trunking configuration of the MOTOTRBO radio system, combining the best of both Capacity Plus and IP Site Connect configurations.

Capacity Plus--Multi-Site allows your radio to extend trunking communication beyond the reach of a single site, by connecting to different available sites which are connected via an Internet Protocol (IP) network. It also provides an increase in capacity by efficiently utilizing the combined available number of programmed channels supported by each of the available sites.

When the radio moves out of range from one site and into the range of another, it connects to the new site's repeater to send or receive calls/data transmissions. Depending on your settings, this is done automatically or manually.

If the radio is set to do this automatically, it scans through all available sites when the signal from the

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current site is weak or when the radio is unable to detect any signal from the current site. It then locks on to the repeater with the strongest Received Signal Strength Indicator (RSSI) value.

In a manual site search, the radio searches for the next site in the roam list that is currently in range (but which may not have the strongest signal) and locks on to it.

Any channel with Capacity Plus--Multi-Site enabled can be added to a particular roam list. The radio searches these channels during the automatic roam operation to locate the best site.

Note:
You cannot manually add or delete an entry to the roam list. Check with your dealer or system administrator for more information.

Similar to Capacity Plus--Single Site, icons of features not applicable to Capacity Plus--Multi-Site are not available in the menu. You hear a negative indicator tone if you try to access a feature not applicable to Capacity Plus--Multi-Site via a programmable button press. A Software License Key sold separately is required to use this feature.

Check with your dealer or system administrator for more information.

Basic Operations

This chapter explains the operations to get you started on using the radio.

Charging the Battery

Your radio is powered by a Nickel Metal-Hydride (NiMH) or Lithium-Ion (Li-Ion) battery.

- To avoid damage and comply with warranty terms, charge the battery using a Motorola charger exactly as described in the charger user guide.

  All chargers can charge only Motorola authorized batteries. Other batteries may not charge. It is recommended your radio remains powered off while charging.

- Charge your IMPRES battery with an IMPRES charger for optimized battery life and valuable battery data. IMPRES batteries charged exclusively with IMPRES chargers receive a 6-month capacity warranty extension over the standard Motorola Premium battery warranty duration.

- Charge a new battery 14 to 16 hours before initial use for best performance.

Attaching the Battery

Follow the procedure to attach the battery to your radio.

1 Fit the battery into the slots at the bottom of the radio.
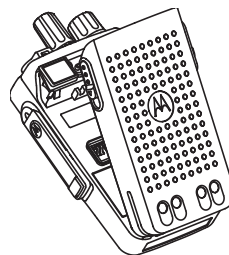
2 Push the top of the battery down until the latch snaps into place.

Removing the Battery

Follow the procedure to remove the battery from your radio.

Ensure that the radio is turned off.

Move the battery latch into unlock position and hold.

Attaching the Antenna

Follow the procedure to attach the antenna to your radio.

Ensure that the radio is turned off.

1 Set the antenna in its receptacle and turn clockwise.

2 To remove the antenna, turn the antenna counterclockwise.

⚠ **Caution:**
If antenna needs to be replaced, ensure that only MOTOTRBO antennas are used. Neglecting this will damage your radio. See *Antennas* for a list of available antennas.

Attaching the Carry Holster

Follow the procedure to attach the carry holster to your radio.

1 Align the rails on the carry holster with the grooves on the battery.

2 Press downwards until you hear a click.
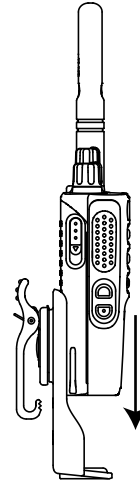
Attaching the Universal Connector Cover (Dust Cover)

The universal connector is located on the antenna side of the radio. It is used to connect MOTOTRBO accessories to the radio. Follow the procedure to attach the dust cover to your radio.

Replace the dust cover when the universal connector is not in use.

1 Insert the slanted end of the cover into the slots above the universal connector.

2 Press downwards on the cover to seat the dust cover properly on the universal connector.

3 Secure the dust cover to the radio by pushing the latch upwards.
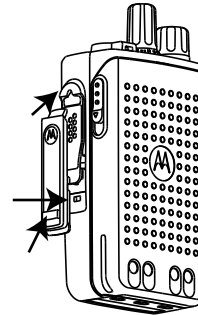
Cleaning the Universal Connector Cover (Dust Cover)

If the radio is exposed to water, dry the universal connector before attaching an accessory or replacing the dust cover. If the radio is exposed to salt water or contaminants, perform the following cleaning procedure.

1 Mix one tablespoon of mild dishwashing detergent with one gallon of water to produce a 0.5 percent solution.

2 Clean only the external surfaces of the radio with the solution. Apply the solution sparingly with a stiff, nonmetallic, short-bristled brush.

3 Dry the radio thoroughly with a soft and lint-free cloth. Ensure the contact surface of the universal connector is clean and dry.

4 Apply Deoxit Gold Cleaner or Lubricant Pen (Manufacturer CAIG Labs, Part number G100P) on the contact surface of the universal connector.

5 Attach an accessory to the universal connector to test the connectivity.

> **Note:**
> Do not submerge the radio in water. Ensure excess detergent does not get trapped in between the universal connector, controls, or crevices.

Clean the radio once a month for maintenance. For a harsher environment such as in petrochemical plants or in a high salt density marine environment, clean the radio more often.

Removing the Universal Connector Cover (Dust Cover)

Follow the procedure to remove the dust cover from your radio.

1 Push the latch downwards.

2 Lift the cover up and slide down the dust cover from the universal connector to remove it.

Replace the dust cover when the universal connector is not in use.

Attaching the Accessory Connector

The accessory connector is to be secured to the universal connector on the antenna side of the radio. Follow the procedure to attach the accessory connector to your radio.

1 Insert the slanted end into the slots above the universal connector.

2 Push connector upward.

3 Press downwards on the accessory connector until you hear a click.
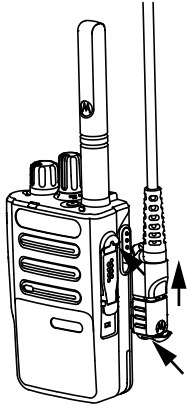
Removing the Accessory Connector

Follow the procedure to remove the accessory connector from your radio.

1 Pull the connector latch outward.

2 Slide the connector downward.

3 Pull the connector outward.
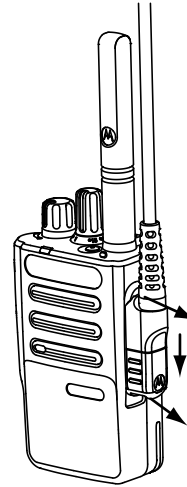
Powering Up the Radio

Follow the procedure to power up your radio.

Rotate the **On/Off/Volume Control Knob** clockwise until a click sounds.

• A tone sounds.
• The green LED lights up.

Note:
There is no tone upon powering up if the
Tones/Alerts function is disabled. See *Turning
Radio Tones/Alerts On or Off* on page 50 for
more information.

Check your battery if your radio does not power up.
Make sure that it is charged and properly attached.
Contact your dealer if your radio still does not power
up.

Turning Off the Radio

Follow the procedure to turn off your radio.

Rotate the **On/Off/Volume Control Knob**
counterclockwise until a click sounds.

Adjusting the Volume

Follow the procedure to change the volume level of
your radio.

Do one of the following:

- Turn the **On/Off/Volume Control Knob**
  clockwise to increase the volume.
- Turn the **On/Off/Volume Control Knob**
  counterclockwise to decrease the volume.

Note:
Your radio can be programmed to have a
minimum volume offset where the volume
level cannot be lowered past the
programmed minimum volume. Check with
your dealer or system administrator for
more information.

Radio Controls

This chapter explains the buttons and functions to control the radio.
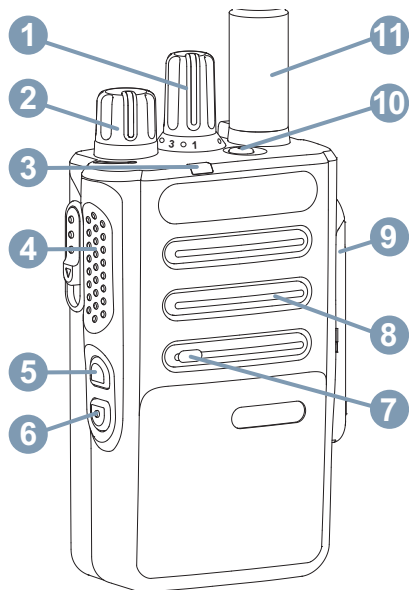
1 Channel Selector Knob
2 On/Off/Volume Control Knob
3 LED Indicator
4 Push-to-Talk (**PTT**) Button
5 Side Button 1 [*]
6 Side Button 2 [*]
7 Microphone
8 Speaker
9 Universal Connector for Accessories
10 Emergency Button
11 Antenna

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* These buttons are programmable.

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Capacity Max Operations

Capacity Max Operations

Push-To-Talk (PTT) Button

The **PTT** button serves two basic purposes.

- While a call is in progress, the **PTT** button allows the radio to transmit to other radios in the call. The microphone is activated when the **PTT** button is pressed.
- While a call is not in progress, the **PTT** button is used to make a new call (see *Calls* on page 28).

Press and hold the **PTT** button to talk. Release the **PTT** button to listen.

If the Talk Permit Tone or the **PTT** Sidetone is enabled, wait until the short alert tone ends before talking.

If the Channel Free Indication feature is enabled on your radio (programmed by your dealer), you will hear a short alert tone the moment the target radio (the radio that is receiving your call) releases the **PTT** button, indicating the channel is free for you to respond.

You hear a continuous Talk Prohibit Tone if your call is interrupted, for example when the radio receives an Emergency call. You should release the **PTT** button.

Programmable Buttons

Depending on the duration of a button press, your dealer can program the programmable buttons as shortcuts to radio functions.

Short press Pressing and releasing rapidly.

Long press Pressing and holding for the programmed duration.

Note:
See *Emergency Operation* on page 71 for more information on the programmed duration of the **Emergency** button.

Assignable Radio Functions

The following radio functions can be assigned to the programmable buttons by your dealer or system administrator.

Audio Toggle	Toggles audio routing between the internal radio speaker and the speaker of wired accessory.
Battery Strength	Indicates battery strength via the LED Indicator.
Bluetooth® Audio Switch	Toggles audio routing between internal radio speaker and external Bluetooth-enabled accessory.
Bluetooth Connect	Initiates a Bluetooth find-and-connect operation.
Bluetooth Disconnect	Terminates all existing Bluetooth connections between your radio and any Bluetooth-enabled devices.
Bluetooth Discoverable	Enables your radio to enter Bluetooth Discoverable Mode.
Cancel	Allows users to end selected calls.

Emergency	Depending on the programming, initiates or cancels an emergency.
Intelligent Audio	Toggles intelligent audio on or off.
Manual Site Roam	Starts the manual site search.
Mic AGC	Toggles the internal microphone automatic gain control (AGC) on or off. Not applicable during Bluetooth session.
One Touch Access	Directly initiates a predefined Broadcast, Private, Phone or Group Call, or a Call Alert.
Phone Exit	Ends a Phone Call.
Privacy	Toggles privacy on or off.
Reset Home Channel	Sets a new home channel.
Silence Home Channel Reminder	Mutes the Home Channel Reminder.

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Site Lock	When toggled on, the radio searches the current site only. When toggled off, the radio searches other sites in addition to the current site.
Trill Enhancement	Toggles trill enhancement on or off.
Voice Announcement	Toggles voice announcement on or off.
Voice Announcement for Channel	Plays zone and channel announcement voice messages for the current channel. This function is unavailable when Voice Announcement is disabled.
Wi-Fi	Toggles Wi-Fi on or off.
Zone Toggle	Allows radio user to toggle between Zone 1 and Zone 2.

Assignable Settings or Utility Functions

The following radio settings or utility functions can be assigned to the programmable buttons.

Tones/Alerts	Toggles all tones and alerts on or off.
Power Level	Toggles transmit power level between high and low.

Status Indicators

This chapter explains the icons, LED indicators, and audio tones used in the radio.

LED Indicator

The LED indicator shows the operational status of your radio.

Blinking Red	Radio has failed the self-test upon powering up.
	Radio is receiving or sending an emergency transmission.
	Radio is transmitting in low battery state.
	Radio has moved out of range if Auto-Range Transponder System is configured.
Solid Green	Radio is powering up.
	Radio is transmitting.

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	Indicates full battery capacity when the programmed **Battery Strength** button is pressed.
Blinking Green	Radio is receiving a non-privacy-enabled call or data.
	Radio is retrieving Over-the-Air Programming transmissions over the air.
	Radio is detecting activity over the air.

> **Note:**
>
> This activity may or may not affect the programmed channel of the radio due to the nature of the digital protocol.

Double Blinking Green	Radio is receiving a privacy-enabled call or data.
Solid Yellow	Radio is in Bluetooth Discoverable Mode.
	Indicates fair battery capacity when the programmed **Battery Strength** button is pressed.

Blinking Yellow	Radio is receiving a Call Alert.
Double Blinking Yellow	Radio has Auto Roaming enabled.
	Radio is actively searching for a new site.
	Radio has yet to respond to a Group Call Alert.
	Radio is locked.
	Radio is not connected to the system.

Tones

The following are the tones that sound through on the radio speaker.

☐	High Pitched Tone
■	Low Pitched Tone

Audio Tones

Audio tones provide you with audible indications of the status, or response to data received on the radio.

Continuous Tone	A monotone sound. Sounds continuously until termination.

☐ ☐ **Periodic Tone**	Sounds periodically depending on the duration set by the radio. Tone starts, stops, and repeats itself.
☐ **Repetitive Tone**	A single tone that repeats itself until it is terminated by the user.
◼ **Momentary Tone**	Sounds only once for a duration set by the radio.

Indicator Tones

Indicator tones provide you with audible indications of the status after an action to perform a task is taken.

◼◼☐	Positive Indicator Tone
☐◼☐	Negative Indicator Tone

Registration

There are a number of registration-related messages that the radio user may receive.

Registering

Typically, registration is sent to the system during power up, Talkgroup change, or during site roaming.

If a radio fails registration on a site, the radio automatically attempts to roam to another site. The radio temporarily removes the site where registration was attempted from the roaming list.

The indication means that the radio is busy searching for a site to roam, or that the radio has found a site successfully but is waiting for a response to the registration messages from the radio.

When a radio is registering, a tone sounds and the yellow LED double flashes to indicate a site search.

If the indications persist, the user should change locations or if allowed, manually roam to another site.

Out of Range

A radio is deemed to be out of range when the radio is unable to detect a signal from the system or from the current site. Typically, this indication means that the radio is outside of the geographic outbound radio frequency (RF) coverage range.

When a radio is out of range, a repetitive tone sounds and the red LED flashes.

Contact your dealer or system administrator if the radio still receives out of range indications while being in an area with good RF coverage.

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Talkgroup Affiliation Failed

A radio tries to affiliate to the Talkgroup specified in the channels or Unified Knob Position (UKP) during registration.

A radio that is in affiliation fail state is unable to make or receive calls from the Talkgroup that the radio is trying to affiliate to.

Contact your dealer or system administrator if the radio receives affiliation failure indications.

Register Denied

Registration denied indicators are received when the registration with the system is not accepted.

The radio does not indicate to the radio user the specific reason the registration was denied. Normally, a registration is denied when the system operator has disabled the access of the radio to the system.

When a radio is denied registration, the yellow LED double flashes to indicate a site search.

Zone and Channel Selections

This chapter explains the operations to select a zone or channel on your radio.

The radio can be programmed with a maximum of 250 Capacity Max Zones with a maximum of 160 Channels per zone. Each Capacity Max zone contains a maximum of 16 assignable positions.

Selecting Zones

Follow the procedure to select the required zone on your radio.

Press the programmed **Zone Toggle** button. One of the following tone sounds:

| **Positive Indicator Tone** | Radio is in Zone 2. |
| **Negative Indicator Tone** | Radio is in Zone 1. |

Selecting a Call Type

Use the Channel Selector Knob to select a call type. This can be a Group Call, Broadcast Call, All Call, or Private Call, depending on how your radio is programmed. If you change the Channel Selector Knob to a different position (that has a call type assigned to it), this causes the radio to re-register with the Capacity Max System. The radio registers with the Talkgroup ID that has been programmed for the new Channel Selector Knob position call type.

Your radio does not operate when selected to an unprogrammed channel, use the Channel Selector Knob to select a programmed channel instead.

Once the required zone is displayed set (if you have multiple zones in your radio), turn the programmed Channel Selector Knob to select the call type.

Selecting a Site

A site provides coverage for a specific area. In a multi-site network, the Capacity Max radio will automatically search for a new site when the signal level from the current site drops to an unacceptable level.

Roam Request

A Roam Request tells the radio to search for a different site, even if the signal from the current site is acceptable.

If there are no sites available:

- The radio display shows Searching and continues to search through the list of sites.
- The radio will return to the previous site, if the previous site is still available.

Note:
This is programmed by your dealer.

Press the programmed **Manual Site Roam** button. You hear a tone, indicating the radio has switched to a new site.

Site Lock On/Off

When toggled on, the radio searches the current site only. When toggled off, the radio searches other sites in addition to the current site.

Press the programmed **Site Lock** button.

If the **Site Lock** function is toggled on:

- You hear a positive indicator tone, indicating the radio has locked to the current site.

If the **Site Lock** function is toggled off:

- You hear a negative indicator tone, indicating the radio is unlocked.

Site Restriction

In Capacity Max system, your radio administrator has the ability to decide which network sites your radio is and is not allowed to use. The radio does not have to

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be reprogrammed to change the list of allowed and disallowed sites. If your radio attempts to register at a disallowed site, your radio receives indication that the site is denied. The radio then searches for a different network site.

When experiencing site restrictions, the yellow LED double flashes to indicate a site search.

Site Trunking

A site must be able to communicate with the Trunk Controller to be considered as System Trunking. If the site cannot communicate with the Trunk Controller in the system, a radio enters Site Trunking mode. While in Site Trunking, the radio provides a periodic audible and visual indication to the user to inform the user of their limited functionality.

When a radio is in Site Trunking, a repetitive tone sounds.

The radios in Site Trunking are still able to make group and individual voice calls as well as send text messages to other radios within the same site. Voice consoles, logging recorders, phone gateways, and data applications cannot communicate to the radios at the site.

Once in Site Trunking, a radio that is involved in calls across multiple sites will only be able to communicate with other radios within the same site. Communication to and from other sites would be lost.

Note:
If there are multiple sites that cover the current location of the radio and one of the sites enters Site Trunking, the radios roam to another site if within coverage.

Calls

This chapter explains the operations to receive, respond to, make, and stop calls.

You can select a subscriber alias or ID, or group alias or ID after you have selected a channel by using one of these features:

Programmed One Touch Access Button	This method is used for Group, Private, and Phone Calls only.
	Note: You can only have one ID assigned to a **One Touch Access** button with a short or long

	programmable button press.
Programmable Button	This method is used for Phone Calls only (see *Making Phone Calls with the Programmable Phone Button* on page 65).

Note:
To unscramble a privacy-enabled call, your radio must have the same Privacy Key, OR the same Key Value and Key ID (programmed by your dealer), as the transmitting radio (the radio you are receiving the call from).

See *Privacy* on page 77 for more information.

Group Calls

Your radio must be configured as part of a group to receive a call from or make a call to the group of users.

Making Group Calls

Follow the procedure to make Group Calls on your radio.

1 Do one of the following:

- Select a channel with the active group alias or ID. See *Selecting a Call Type* on page 26.
- Press the programmed **One Touch Access** button.

2 Press the **PTT** button to make the call.
The green LED lights up.

3 Do one of the following:

- Wait for the Talk Permit Tone to end and speak clearly into the microphone if enabled.
- Wait for the **PTT** Sidetone to end and speak clearly into the microphone if enabled

4 Release the **PTT** button to listen.
The green LED lights up when the target radio responds.

5 If the Channel Free Indication feature is enabled, you hear a short alert tone the moment the transmitting radio releases the **PTT** button, indicating the channel is free for you to respond. Press the **PTT** button to respond to the call.

The call ends when there is no voice activity for a predetermined period.

The call initiator can press the programmed **Cancel** button to end a Group Call.

Responding to Group Calls

Follow the procedure to respond to Group Calls on your radio.

When you receive a Group Call:

- The green LED blinks.
- Your radio unmutes and the incoming call sounds through the speaker.

1 Do one of the following:

- If the Channel Free Indication feature is enabled, you hear a short alert tone the moment the transmitting radio releases the **PTT** button, indicating the channel is free for you to respond. Press the **PTT** button to respond to the call.
- If the Voice Interrupt feature is enabled, press the **PTT** button to interrupt the audio from the transmitting radio and free the channel for you to respond.

The green LED lights up.

2 Release the **PTT** button to listen.

The call ends when there is no voice activity for a predetermined period.

Broadcast Call

A Broadcast Call is a one-way voice call from any user to an entire talkgroup.

The Broadcast Call feature allows only the call initiating user to transmit to the talkgroup, while the recipients of the call cannot respond.

The broadcast initiator can also end the broadcast call. To receive a call from a group of users, or to call a group of users, the radio must be configured as part of a group.

Making Broadcast Calls

Follow the procedure to make Broadcast Calls on your radio.

1 Do one of the following:

- Select a channel with the active group alias or ID. See *Selecting a Call Type* on page 26.
- Press the programmed **One Touch Access** button.

2 Press the **PTT** button to make the call.

The green LED lights up.

3 Do one of the following:

- Wait for the Talk Permit Tone to end and speak clearly into the microphone if enabled.
- Wait for the **PTT** Sidetone to end and speak clearly into the microphone if enabled.

The call initiator can press the programmed **Cancel** button to end the Broadcast Call.

Receiving Broadcast Calls

Follow the procedure to receive a Broadcast Call on your radio.

When you receive a Broadcast Call:

- The green LED blinks.
- Your radio unmutes and the incoming call sounds through the speaker.

Note:

Recipient users are not allowed to Talkback during a Broadcast Call. The Talkback Prohibit Tone will sound momentarily if the **PTT** button is pressed during a Broadcast Call.

Private Call

A Private Call is a call from an individual radio to another individual radio.

There are two ways to set up a Private Call.

- The first call type is called Off Air Call Set-Up (OACSU). OACSU sets up the call after performing a radio presence check and completes the call automatically.
- The second type is called Full Off Air Call Set-Up (FOACSU). FOACSU also sets up the call after performing a radio presence check. However, FOACSU calls require user acknowledgement to complete the call and allows the user to either Accept or Decline the call.

The type of call is configured by the system administrator.

Note:

Both the call initiator and recipient are able to terminate an on-going Private Call by pressing the programmed **Cancel** button.

Making Private Calls

Your radio must be programmed for you to initiate a Private Call. You hear a negative indicator tone when

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you initiate the call if this feature is not enabled.If the target radio is not available, you hear a short tone. Follow the procedure to make Private Calls on your radio.

1 Do one of the following:
   - Select a channel with the active subscriber alias or ID. See *Selecting a Call Type* on page 26.
   - Press the programmed **One Touch Access** button.

2 Hold the radio vertically 1 to 2 inches (2.5 to 5.0 cm) from your mouth.

3 Press the **PTT** button to make the call.
   The green LED lights up.

4 Wait for the Talk Permit Tone to end and speak clearly into the microphone if enabled.

5 Release the **PTT** button to listen.
   The green LED lights up when the target radio responds.

6 The call ends when there is no voice activity for a predetermined period.You will hear a short tone.

Both the call initiator and recipient are able to terminate an on-going Private Call by pressing the programmed **Cancel** button.

Making a Private Call with a One Touch Call Button

The One Touch Call feature allows you to easily make a Private Call to a pre-defined Private Call alias or ID. This feature can be assigned to a short or long programmable button press.

You can ONLY have one alias or ID assigned to a One Touch Call button. Your radio can have multiple One Touch Call buttons programmed.

1 Press the programmed **One Touch Call** button to make a Private Call to the pre-defined Private Call alias or ID.

2 Hold the radio vertically 1 to 2 inches (2.5 to 5.0 cm) from your mouth.

3 Press the **PTT** button to make the call.

   The LED lights up solid green.

   The display shows the Private Call alias or ID.

4 Wait for the Talk Permit Tone to finish (if enabled) and speak clearly into the microphone.

5 Release the **PTT** button to listen.

When the target radio responds, the LED blinks green.

If there is no voice activity for a predetermined period of time, the call ends.

Both the call initiator and recipient are able to terminate an on-going Private Call by pressing the programmed **Cancel** button.

Responding to Private Calls

When you receive a Private Call:

- The green LED blinks.
- Your radio unmutes and the incoming call sounds through the speaker.

Note:
Depending on how your radio is configured, either Off Air Call Set-Up (OACSU) or Full Off Air Call Set-Up (FOACSU), responding to Private Calls may or may not require user acknowledgement.

For the OACSU configuration, your radio unmutes and the call connects automatically.

The following are methods on how to respond to Private Calls configured as FOACSU.

- To decline a Private Call, perform the following action:
  - Press the programmed **Cancel** button.

- To accept a Private Call, perform the following action:
  - Press the **PTT** button on any entry.

- The green LED lights up.

- Wait for the Talk Permit Tone to end and speak clearly into the microphone if enabled.

- Release the **PTT** button to listen.

The call ends when there is no voice activity for a predetermined period.A tone sounds.

Note:
Both the call initiator and recipient are able to terminate an on-going Private Call by pressing the programmed **Cancel** button.

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All Calls

An All Call is a call from an individual radio to every radio on the site or every radio at a group of sites, depending on system configuration. An All Call is used to make important announcements, requiring full attention from the user. The users on the system cannot respond to an All Call.

Capacity Max supports Site All Call and Multi-site All Call. The system administrator may configure one or both of these in your radio.

Note:
Subscribers can support System-Wide All Calls but Motorola infrastructure does not support System-Wide All Calls.

Receiving All Calls

When you receive an All Call:

- A tone sounds.
- The green LED blinks.
- Your radio unmutes and the incoming call sounds through the speaker.

If the Channel Free Indication feature is enabled, you hear a short alert tone when the transmitting radio releases the **PTT** button, indicating the channel is free for you to use. You cannot respond to an All Call.

Note:
The radio stops receiving the All Call if you switch to a different channel while receiving the call. You are not able to continue with any programmed button functions until the call ends during an All Call.

Making All Calls

Your radio must be programmed for you to make an All Call. Follow the procedure to make All Calls on your radio.

1 Select a channel with the active All Call group alias or ID. See *Selecting a Call Type* on page 26.

2 Press the **PTT** button to make the call.
The green LED lights up.

3 Do one of the following:

- Wait for the Talk Permit Tone to end and speak clearly into the microphone if enabled.
- Wait for the **PTT** Sidetone to end and speak clearly into the microphone if enabled.

Users on the channel cannot respond to an All Call.

The call initiator can press the programmed **Cancel** button to end the All Call.

Phone Calls

A Phone Call is a call from an individual radio to a telephone.

In Capacity Max, your radio is able to receive calls and talkback even if the Phone Call capability is disabled.

The Phone Call capability can be enabled by assigning and setting up phone numbers on the system. Check with your system administrator to determine how your radio has been programmed.

Making Phone Calls
Follow the procedure to make Phone Calls on your radio.

Responding to Phone Calls as All Calls
When you receive a Phone Call as an All Call, the receiving radio is unable to talkback or respond. The recipient user is also not allowed to end the All Call.

When you receive a Phone Call as an All Call:

• The green LED blinks.
• Your radio unmutes and the incoming call sounds through the speaker.

Responding to Phone Calls as Group Calls
Follow the procedure to respond to Phone Calls as Group Calls on your radio.

When you receive a Phone Call as a Group Call:

• The green LED blinks.
• Your radio unmutes and the incoming call sounds through the speaker.

1 Press the **PTT** button to respond to the call.

2 Release the **PTT** button to listen.

3 If there is no voice activity for a predetermined period of time, the call ends.
You hear a short tone.

> **Note:**
> If Phone Call capability is not enabled in your radio, the radio is not able to terminate a phone call as a group call. The telephone user must end the call. The recipient user is only allowed to talkback during the call.

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Responding to Phone Calls as Private Calls

Follow the procedure to respond to Phone Calls as Private Calls on your radio.

When you receive a Phone Call as a Private Call:

- The green LED blinks.
- Your radio unmutes and the incoming call sounds through the speaker.

1 Press the **PTT** button to respond to the call.

2 Release the **PTT** button to listen.

3 If there is no voice activity for a predetermined period of time, the call ends.
You hear a short tone.

> **Note:**
> If Phone Call capability is not enabled in your radio, the radio is not able to terminate a phone call as a private call. The telephone user must end the call. The recipient user is only allowed to talkback during the call.

Call Preemption

Call Preemption allows a radio to stop any in-progress voice transmission and initiate a priority transmission.

With the Call Preemption feature, the system interrupts and preempts ongoing calls in instances where trunked channels are unavailable.

Higher priority calls such as an Emergency Call or an All Call preempt the transmitting radio to accommodate the higher priority call. If no other Radio Frequency (RF) channels are available, an Emergency Call preempts an All Call as well.

Voice Interrupt

Voice Interrupt allows the user to shut down an in-progress voice transmission.

This feature uses reverse channel signaling to stop the in-progress voice transmission of a radio, if the interrupting radio is configured to Voice Interrupt, and the transmitting radio is configured to be Voice Call Interruptible. The interrupting radio is then allowed to make a voice transmission to the participant in the stopped call.

The Voice Interrupt feature significantly improves the probability of successfully delivering a new transmission to the intended parties when a call is in progress.

Voice Interrupt is accessible to the user only if this feature has been set up in the radio. Check with your dealer or system administrator for more information.

Enabling Voice Interrupt
Follow the procedure to initiate Voice Interrupt on your radio.

Your radio must be programmed to allow you to use this feature. Check with your dealer or system administrator for more information.

1 Press the **PTT** button during an on-going call to interrupt the transmission.

   The radio sounds a negative indicator tone until the **PTT** button is released.

2 Wait for acknowledgement.
   If successful:

   • A positive indicator tone sounds.

   If unsuccessful:

   • A negative indicator tone sounds.

Advanced Features

This chapter explains the operations of the features available in your radio.

📝 **Note:**
Your dealer or system administrator may have customized your radio for your specific needs. Check with your dealer or system administrator for more information.

Home Channel Reminder

This feature provides a reminder when the radio is not set to the home channel for a period of time.

If this feature is enabled when your radio is not set to the home channel for a period of time, the following occurs periodically:

• The Home Channel Reminder tone and announcement sound.

You can respond to the reminder by performing one of the following actions:

• Return to the home channel.

- Mute the reminder temporarily via the programmable button.
- Set a new home channel via the programmable button.

Muting the Home Channel Reminder

When the Home Channel Reminder occurs, you can temporarily mute the reminder.

Press the **Silence Home Channel Reminder** programmable button.

Setting New Home Channels

When the Home Channel Reminder occurs, you can set a new home channel.

Press the **Reset Home Channel** programmable button to set the current channel as the new Home Channel.

Call Queue

When there are no resources available to process a call, Call Queue enables the call request to be placed in the system queue for the next available resources.

You hear a Call Queue Tone after pressing the **PTT** button indicating that the radio has entered Call

Queue State. The **PTT** button may be released once the Call Queue Tone is heard.

If the call setup is successful, the following occur:

- The green LED blinks.
- If enabled, the Talk Permit Tone sounds.
- The radio user has up to 4 seconds to press the **PTT** button to begin voice transmission.

If the call setup is unsuccessful, the following occur:

- If enabled, the Reject Tone sounds.
- The call is terminated and the radio exits the call setup.

Talkgroup Scan

This feature allows your radio to monitor and join calls for groups defined by a Digital Receive Group List. The Digital Receive Group List is programmed by the system administrator. When the radio detects a call in progress on one of these talkgroups, the radio plays the transmission. User can then push the **PTT** button and reply to that Talkgroup.

Your radio is only allowed to join a Talkgroup scan call at the site where another radio has already registered with using that Talkgroup, at the desired site.

Note:
Check with your system administrator to determine how your radio has been programmed.

Call Indicator Settings

Alarm Tone Volume Escalation
Your radio can be programmed by your dealer to continually alert you when a radio call remains unanswered.

This is done by automatically increasing the alarm tone volume over time. This feature is known as Escalert.

Call Alert Operation

Call Alert paging enables you to alert a specific radio user to call you back when they are able to do so.

This feature is accessible via a programmed **One Touch Access** button.

In Capacity Max, the Call Alert feature allows a radio user or a dispatcher to send an alert to another radio user requesting the radio user to call back the initiating radio user when available. Voice communication is not involved in this feature.

The Call Alert Operation can be configured by the dealer or the system administrator to allow the user to press the **PTT** button to respond directly to the call initiator by making a Private Call.

An Off Air Call Set-Up (OACSU) private call allows the user to respond immediately while an Full Off Air Call Set-Up (FOACSU) private call requires user acknowledgement for the call. OACSU type calls are therefore, recommended to be used for the call alert feature. See *Private Call* on page 31.

Responding to Call Alerts
Follow the procedure to respond to Call Alerts on your radio.

When you receive a Call Alert:

- A repetitive tone sounds.
- The yellow LED blinks.

  Press the **PTT** button within four seconds to respond with a Private Call.

Making Call Alerts

Follow the procedure to make Call Alerts on your radio.

1 Press the programmed **One Touch Access** button.

The green LED lights up.

2 Wait for acknowledgment.

If the Call Alert acknowledgment is received, a positive indicator tone sounds.

If the Call Alert acknowledgment is not received, a negative indicator tone sounds.

Emergency Operation

An Emergency Alarm is used to indicate a critical situation. You are able to initiate an Emergency at any time even when there is activity on the current channel.

In Capacity Max, the receiving radio can only support a single Emergency Alarm at a time. If initiated, a second Emergency Alarm will override the first alarm.

When an Emergency Alarm is received, the recipient may choose to either delete the alarm and exit the Alarm List, or respond to the Emergency Alarm by pressing the **PTT** button and transmitting non-emergency voice.

Your dealer or system administrator can set the duration of a button press for the programmed **Emergency** button, except for long press, which is similar with all other buttons:

Short Press Duration between 0.05 seconds and 0.75 seconds.

Long Press Duration between 1.00 second and 3.75 seconds.

The **Emergency** button is assigned with the Emergency On/Off feature. Check with your dealer for the assigned operation of the **Emergency** button.

Note:

If short press the **Emergency** button is assigned to turn on the Emergency mode, then long press the **Emergency** button is assigned to exit the Emergency mode.

If long press the **Emergency** button is assigned to turn on the Emergency mode, then short press the **Emergency** button is assigned to exit the Emergency mode.

Your radio supports three Emergency Alarms:

- Emergency Alarm
- Emergency Alarm with Call
- Emergency Alarm with Voice to Follow

In addition, each alarm has the following types:

Regular	Radio transmits an alarm signal and shows audio and/or visual indicators.
Silent	Radio transmits an alarm signal without any audio or visual indicators. Radio receives calls without any sound through the speaker, until you press the **PTT** button.
Silent with Voice	Radio transmits an alarm signal without any audio or visual indicators, but allow incoming calls to sound through the speaker.

![Note icon] **Note:**
Only one of the Emergency Alarms above can be assigned to the programmed **Emergency** button.

Sending Emergency Alarms
This feature allows you to send an Emergency Alarm, a non-voice signal, which triggers an alert indication on a group of radios. Follow the procedure to send Emergency Alarms on your radio.

Your radio does not display any audio or visual indicators during Emergency mode when it is set to Silent.

1 Press the programmed **Emergency On** button.

The green LED lights up.

![Note icon] **Note:**
If programmed, the Emergency Search tone sounds. This tone is muted when the radio transmits or receives voice, and stops when the radio exits Emergency mode. The Emergency Search tone can be programmed by the dealer or system administrator.

2 Wait for acknowledgment.
If successful:

- The Emergency tone sounds.
- The green LED blinks.

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If unsuccessful after all retries have been exhausted:

• A low-pitched tone sounds.

The radio exits the Emergency Alarm mode.

Note:

When configured for Emergency Alarm only, the emergency process consists only of the Emergency Alarm delivery. The emergency ends when an acknowledgement is received from the system, or when channel access attempts have been exhausted.

No voice call is associated with the sending of an Emergency Alarm when operating as Emergency Alarm Only.

Sending Emergency Alarms with Call

This feature allows you to send an Emergency Alarm with Call to a group of radios or a dispatcher. Upon acknowledgement by the infrastructure within the group, a group of radios can communicate over a programmed Emergency channel. Follow the procedure to send Emergency Alarms with call on your radio.

The radio must be configured for Emergency Alarm and Call to perform an emergency call after the alarm process.

1 Press the programmed **Emergency On** button. You see the following: The green LED lights up.

Note:
If programmed, the Emergency Search tone sounds. This tone is muted when the radio transmits or receives voice, and stops when the radio exits Emergency mode.

If an Emergency Alarm acknowledgment is successful received:

• The Emergency tone sounds.
• The green LED blinks.

If an Emergency Alarm acknowledgment is not successfully received:

• All retries are exhausted.
• A low-pitched tone sounds.
• The radio exits the Emergency Alarm mode.

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2 Press the **PTT** button to initiate a voice transmission.

The green LED lights up.

3 Do one of the following:

- Wait for the Talk Permit Tone to end and speak clearly into the microphone if enabled.
- Wait for the **PTT** Sidetone to end and speak clearly into the microphone if enabled.

4 Release the **PTT** button to listen.

5 If the Channel Free Indication feature is enabled, you hear a short alert tone the moment the transmitting radio releases the **PTT** button, indicating the channel is free for you to respond. Press the **PTT** button to respond to the call.

6 Press the **Emergency Off** button to exit the Emergency mode.

> **Note:**
> Depending on how your radio is programmed, you may or may not hear a Talk Permit tone. Your radio dealer or system administrator can provide more information on how your radio has been programmed for Emergency.

> **Note:**
> The Emergency Call initiator may press the programmed **Cancel** button to end an on-going emergency call. The radio returns to a call idle state.

Sending Emergency Alarms with Voice to Follow

This feature allows you to send an Emergency Alarm with Voice to Follow to a group of radios. Your radio microphone is automatically activated, allowing you to communicate with the group of radios without pressing the **PTT** button. This activated microphone state is also known as *hot mic*.

If your radio has Emergency Cycle Mode enabled, repetitions of *hot mic* and receiving period are made for a programmed duration. During Emergency Cycle Mode, received calls sound through the speaker.

If you press the **PTT** button during the programmed receiving period, you hear a prohibit tone, indicating that you should release the **PTT** button. The radio ignores the **PTT** button press and remains in Emergency mode.

If you press the **PTT** button during *hot mic*, and continue to press it after the *hot mic* duration expires,

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the radio continues to transmit until you release the **PTT** button.

If the Emergency Alarm request fails, the radio does not retry to send the request, and enters the *hot mic* state directly.

Note:

Some accessories may not support *hot mic*. Check with your dealer or system administrator for more information.

Follow the procedure to send Emergency Alarms with voice to follow on your radio.

1 Press the programmed **Emergency On** button.

The green LED lights up.

2 Once the Emergency tone sounds, speak clearly into the microphone.

The radio automatically stops transmitting when:

- The cycling duration between *hot mic* and receiving calls expires, if Emergency Cycle Mode is enabled.
- The *hot mic* duration expires, if Emergency Cycle Mode is disabled.

3 Press the **Emergency Off** button to exit the Emergency mode.

Receiving Emergency Alarms

The receiving radio can only support a single Emergency Alarm at a time. If initiated, a second Emergency Alarm will override the first alarm. Follow the procedure to receive and view Emergency Alarms on your radio.

When you receive an Emergency Alarm:

- A tone sounds.
- The red LED blinks.

Note:

Your radio automatically acknowledges the Emergency Alarm (if enabled).

You can silence the tone. Do one of the following:

- Press the **PTT** button to call the group of radios which received the Emergency Alarm.
- Press any programmable button.
- Exit Emergency mode.

Responding to Emergency Alarms

When an Emergency Alarm is received, the recipient may choose to either delete the alarm and exit the

Alarm List, or respond to the Emergency Alarm by pressing the **PTT** button and transmitting non-emergency voice. Follow the procedure to respond to Emergency Alarms on your radio.

1 If the Emergency Alarm Indication is enabled, the Emergency Alarm List appears when the radio receives an Emergency Alarm. Press or to the required alias or ID.

2 If the Channel Free Indication feature is enabled, you hear a short alert tone the moment the transmitting radio releases the **PTT** button, indicating the channel is free for you to respond. Press the **PTT** button to transmit non-emergency voice to the same group the Emergency Alarm targeted.
The green LED lights up.

3 Release the **PTT** button to listen.
When the emergency initiating radio responds:

- The red LED blinks.
- The display shows the **Emergency Call** icon, the Emergency Talkgroup ID or alias, and the ID or alias of the transmitting radio.

Note:
If the Emergency Call Indication is not enabled, the display shows the **Group Call** icon, Emergency Talkgroup ID or alias, and the ID or alias of the transmitting radio.

Responding to Emergency Alarms with Call
Follow the procedure to respond to Emergency Alarms with Call on your radio.

When you receive an Emergency Call:

- The Emergency Call Tone sounds if the Emergency Call Indication and Emergency Call Decode Tone is enabled. The Emergency Call Tone will not sound if only the Emergency Call Indication is enabled.
- Your radio unmutes and the incoming call sounds through the speaker.

1 If the Channel Free Indication feature is enabled, you hear a short alert tone the moment the transmitting radio releases the **PTT** button, indicating the channel is free for you to respond. Press the **PTT** button to respond to the call.
The green LED lights up.

2 Release the **PTT** button to listen.

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When the emergency initiating radio responds:

- The red LED blinks.

Multi-Site Controls

Starting Manual Site Search

Follow the procedure to start manual site search when the received signal strength is poor in order to attempt to find a site with better signal.

Press the programmed **Manual Site Roam** button.

- A tone sounds.
- The green LED blinks.

If the radio finds a new site:

- A positive indicator tone sounds.
- The LED turns off.

If the radio fails to find a new site:

- A negative indicator tone sounds.
- The LED turns off.

Site Lock On/Off

When toggled on, the radio searches the current site only. When toggled off, the radio searches other sites in addition to the current site.

Press the programmed **Site Lock** button.

If the **Site Lock** function is toggled on:

- You hear a positive indicator tone, indicating the radio has locked to the current site.

If the **Site Lock** function is toggled off:

- You hear a negative indicator tone, indicating the radio is unlocked.

Stun

Your radio can be disabled (stunned) or enabled (revived) in the system from the console. For example, you may want to disable a stolen radio to prevent unauthorized users from using it, and enable the radio when it is recovered.

When a radio is stunned, the radio cannot request nor receive any user initiated services on the system that performed the Stun procedure. However, the radio can switch to another system. The radio continues to send GPS location reports and can be remote monitored when it was stunned.

Note:
Check with your dealer or system administrator for more information.

Lone Worker

This feature prompts an emergency to be raised if there is no user activity, such as any radio button press or activation of the channel selector, for a predefined time.

Following no user activity for a programmed duration, the radio pre-warns the user via an audio indicator once the inactivity timer expires.

If there is still no acknowledgment by the user before the predefined reminder timer expires, the radio initiates an emergency condition as programmed by the dealer or system administrator.

See *Emergency Operation* on page 40 for more information.

> **Note:**
> Check with your dealer or system administrator for more information.

Password Lock Features

This feature allows you to restrict access to the radio by asking for a password when the device is turned on

Accessing Radios by Using Passwords

Follow the procedure to access your radio by using a password.

Use the **Channel Selector Knob** and the Side Buttons to enter password:

• **Channel Selector Knob** positions 1 to 9 represent numbers 1 to 9, and position 10 represents number 0.
• Side Buttons 1 to 2 represent numbers 1 to 2.

1 Enter the current four-digit password.

• Use the **Channel Selector Knob** to enter the first digit of the password.
• Press Side Button 1 or 2 to enter each digit of the remaining three digits of the password.

2 Your radio automatically checks the validity of the password.
If successful, the radio powers up.

If unsuccessful:

• You hear a continuous tone. Repeat Step *1*.
• After the third attempt, your radio enters into locked state.A tone sounds. The yellow LED

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double blinks. Your radio enters into locked state for 15 minutes.

Note:
In locked state, your radio responds to inputs from **On/Off/Volume Control Knob** only.

Unlocking Radios in Locked State
Your radio is unable to receive any call, including emergency calls, in locked state. Follow the procedure to unlock your radio in locked state.

1 Power up the radio.

Your radio restarts the 15-minutes timer for locked state.

2 Wait for 15 minutes.

Your radio responds only to **On/Off** button in locked state.

3 Repeat the steps in *Accessing Radios by Using Passwords* on page 47 to access the radio.

Changing Passwords
Follow the procedure to change passwords on your radio.

1 Press to access the menu.

2 Press or to Utilities.Press to select.

3 Press or to Radio Settings.Press to select.

4 Press or to Passwd Lock. Press to select.

5 Enter the current four-digit password, and press to proceed.

If the password is incorrect, the display shows Wrong Password and automatically returns to the previous menu.

6 Press or to Change PWD. Press to select.

7 Enter a new four-digit password, and press to proceed.

8 Re-enter the new four-digit password, and press to proceed.
If successful, the display shows Password Changed.

If unsuccessful, the display shows Passwords Do Not Match.

The screen automatically returns to the previous menu.

Bluetooth

This feature allows you to use your radio with a Bluetooth-enabled device (accessory) via a Bluetooth connection. Your radio supports both Motorola and COTS (Commercially available Off-The-Shelf) Bluetooth-enabled devices.

Bluetooth operates within a range of 10 meters (32 feet) line of sight. This is an unobstructed path between your radio and your Bluetooth-enabled device. It is not recommended that you leave your radio behind and expect your Bluetooth-enabled device to work with a high degree of reliability when they are separated.

At the fringe areas of reception, both voice and tone quality will start to sound "garbled" or "broken". To correct this problem, simply position your radio and Bluetooth-enabled device closer to each other (within the 10-meter defined range) to re-establish clear audio reception. The Bluetooth function of your radio has a maximum power of 2.5 mW (4 dBm) at the 10-meter range.

Your radio can support up to three simultaneous Bluetooth connections with Bluetooth-enabled devices of unique types. For example, a headset, a scanner, and a PTT-Only Device (POD). Multiple connections with Bluetooth-enabled devices of the same type are not supported.

Refer to the user manual of your respective Bluetooth-enabled device for more details on the full capabilities of your Bluetooth-enabled device.

Your radio connects to the Bluetooth-enabled device within range with either the strongest signal strength, or to one which it has connected to before in a prior session. Do not turn off your Bluetooth-enabled device or press the home back button during the finding and connecting operation as this cancels the operation.

Over-the-Air Programming

Your dealer can remotely update your radio via Over-the-Air Programming (OTAP) without physical connection. Additionally, some settings can also be configured via OTAP.

When your radio undergoes OTAP, the green LED blinks.

When your radio receives high volume data:

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- The channel becomes busy.
- A negative tone sounds if you press the **PTT** button.

> **Note:**
> Once the programming is complete, a tone sounds, and your radio restarts (powers off and on again).

Utilities

This chapter explains the operations of the utility functions available in your radio.

Turning Radio Tones/Alerts On or Off

You can enable and disable all radio tones and alerts, if needed, except for incoming Emergency alert tone. Follow the procedure to turn tones and alerts on or off on your radio.

Press the programmed **All Tones/Alerts** button. One of the following tone sounds:

Positive Indicator Tone	All tones and alerts are turned on.
Negative Indicator Tone	All tones and alerts are turned off.

Turning Voice Announcement On or Off

This feature enables the radio to audibly indicate the current zone or channel the user has just assigned, or the programmable button the user has just pressed. This audio indicator can be customized according to customer requirements. Follow the procedure to turn Voice Announcement on or off on your radio.

Press the programmed **Voice Announcement** button. One of the following tone sounds:

Positive Indicator Tone	All tones and alerts are turned on.
Negative Indicator Tone	All tones and alerts are turned off.

Text-to-Speech

The Text-to-Speech feature can only be enabled by your dealer or system administrator. If Text-to-Speech is enabled, the Voice Announcement feature is automatically disabled. If Voice Announcement is enabled, then the Text-to-Speech feature is automatically disabled.

This audio indicator can be customized per customer requirements.

Setting Text-to-Speech

Follow the procedure to set the Text-to-Speech feature.

Press the programmed **Text-to-Speech** button to listen to the received text message.

Turning Intelligent Audio On or Off

Your radio automatically adjusts the audio volume to overcome current background noise in the environment, inclusive of both stationary and non-stationary noise sources. This is a receive-only feature and does not affect transmission audio. Follow the procedure to turn Intelligent Audio on or off on your radio.

Press the programmed **Intelligent Audio** button.

Note:
This feature is not applicable during a Bluetooth session.

Turning Trill Enhancement On or Off

You can enable this feature when you are speaking in a language that contains many words with alveolar trill (rolling "R") pronunciations. Follow the procedure to turn Trill Enhancement on or off on your radio.

Press the programmed **Trill Enhancement** button to toggle the feature on or off.

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Other Systems

Other Systems

Push-To-Talk (PTT) Button

The **PTT** button serves two basic purposes.

- While a call is in progress, the **PTT** button allows the radio to transmit to other radios in the call. The microphone is activated when the **PTT** button is pressed.
- While a call is not in progress, the **PTT** button is used to make a new call (see *Calls* on page 28).

Press and hold the **PTT** button to talk. Release the **PTT** button to listen.

If the Talk Permit Tone or the **PTT** Sidetone 🔴 is enabled, wait until the short alert tone ends before talking.

🔵 If the Channel Free Indication feature is enabled on your radio (programmed by your dealer), you will hear a short alert tone the moment the target radio (the radio that is receiving your call) releases the **PTT** button, indicating the channel is free for you to respond.

🔵You hear a continuous Talk Prohibit Tone if your call is interrupted, for example when the radio receives an Emergency call. You should release the **PTT** button.

Programmable Buttons

Depending on the duration of a button press, your dealer can program the programmable buttons as shortcuts to radio functions.

| Short press | Pressing and releasing rapidly. |
| Long press | Pressing and holding for the programmed duration. |

✏️ **Note:**
See *Emergency Operation* on page 71 for more information on the programmed duration of the **Emergency** button.

Assignable Radio Functions

The following radio functions can be assigned to the programmable buttons.

Audio Toggle	Toggles audio routing between the internal radio speaker and the speaker of wired accessory.		messages for the current channel.
Battery Strength	Indicates battery strength via the LED Indicator.	**Emergency**	Depending on the programming, initiates or cancels an emergency.
Bluetooth® Audio Switch	Toggles audio routing between internal radio speaker and external Bluetooth-enabled accessory.	**Intelligent Audio**	Toggles intelligent audio on or off.
		Manual Site Roam[1]	Starts the manual site search.
Bluetooth Connect	Initiates a Bluetooth find-and-connect operation.	**Mic AGC**	Toggles the internal microphone automatic gain control (AGC) on or off. Not applicable during Bluetooth session.
Bluetooth Disconnect	Terminates all existing Bluetooth connections between your radio and any Bluetooth-enabled devices.		
Bluetooth Discoverable	Enables your radio to enter Bluetooth Discoverable Mode.	**Monitor**	Monitors a selected channel for activity.
Call Forwarding	Toggles Call Forwarding on or off.	**Nuisance Channel Delete[1]**	Temporarily removes an unwanted channel, except for the Selected Channel, from the scan list. The Selected Channel refers to the selected zone or channel combination
Channel Announcement	Plays zone and channel announcement voice		

of the user from which scan is initiated.

One Touch Access 🔵	Directly initiates a predefined Private, Phone or Group Call, or a Call Alert.
Permanent Monitor[1]	Monitors a selected channel for all radio traffic until function is disabled.
Phone Exit 🔵	Ends a Phone Call.
Privacy 🔵	Toggles privacy on or off.
Repeater/ Talkaround[1]	Toggles between using a repeater and communicating directly with another radio.
Reset Home Channel	Sets a new home channel.
Silence Home Channel Reminder	Mutes the Home Channel Reminder.
Scan [2]	Toggles scan on or off.

Site Lock[1]🔵	When toggled on, the radio searches the current site only. When toggled off, the radio searches other sites in addition to the current site.
Transmit Interrupt Remote Dekey	Stops an ongoing interruptible call to free the channel.
Trill Enhancement	Toggles trill enhancement on or off.
Voice Announcement	Toggles voice announcement on or off.
Voice Operating Transmission (VOX)	Toggles VOX on or off.
Wi-Fi	Toggles Wi-Fi on or off.
Zone Toggle	Allows radio user to toggle between Zone 1 and Zone 2.

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1 Not applicable in Capacity Plus.
2 Not applicable in Capacity Plus--Single Site

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Assignable Settings or Utility Functions

The following radio settings or utility functions can be assigned to the programmable buttons.

Tones/Alerts	Toggles all tones and alerts on or off.
Power Level	Toggles transmit power level between high and low.

Status Indicators

This chapter explains the icons, LED indicators, and audio tones used in the radio.

LED Indicators

LED indicators show the operational status of your radio.

Blinking Red	Radio has failed the self-test upon powering up.
	Radio is receiving or sending an emergency transmission.
	Radio is transmitting in low battery state.

Radio has moved out of range if Auto-Range Transponder System is configured.

Solid Green	Radio is powering up.
	Radio is transmitting.
	Indicates full battery capacity when the programmed **Battery Strength** button is pressed.
Blinking Green	Radio is receiving a non-privacy-enabled call or data.
	Radio is retrieving Over-the-Air Programming transmissions over the air.
	Radio is detecting activity over the air.

Note:

This activity may or may not affect the programmed channel of the radio due to the nature of the digital protocol.

There is no LED indication when the radio is detecting activity over the air in Capacity Plus.

Double Blinking Green	Radio is receiving a privacy-enabled call or data.
Solid Yellow	Radio is monitoring a conventional channel.
	Indicates fair battery capacity when the programmed **Battery Strength** button is pressed.
Blinking Yellow	Radio is scanning for activity.
	Radio is receiving a Call Alert.
	All Capacity Plus-Multi-Site channels are busy.
Double Blinking Yellow	Radio has Auto Roaming enabled.
	Radio is actively searching for a new site.
	Radio has yet to respond to a Group Call Alert.
	Radio is locked.
	Radio is not connected to the repeater while in Capacity Plus.
	All Capacity Plus channels are busy.

Tones

The following are the tones that sound through on the radio speaker.

☐	High Pitched Tone
■	Low Pitched Tone

Indicator Tones
Indicator tones provide you with audible indications of the status after an action to perform a task is taken.

■☐	Positive Indicator Tone
☐■	Negative Indicator Tone

Audio Tones
Audio tones provide you with audible indications of the status, or response to data received on the radio.

■ **Continuous Tone**	A monotone sound. Sounds continuously until termination.
☐☐ **Periodic Tone**	Sounds periodically depending on the duration set by the radio. Tone starts, stops, and repeats itself.

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▭▭▭▭ **Repetitive Tone**	A single tone that repeats itself until it is terminated by the user.
▮▮▮▮ **Momentary Tone**	Sounds only once for a duration set by the radio.

Zone and Channel Selections

This chapter explains the operations to select a zone or channel on your radio.

A zone is a group of channels. Your radio supports up to 32 channels and 2 zones, with a maximum of 16 channels per zone.

Transmissions are sent and received on a channel. Each channel may have been programmed differently to support different groups of users or supplied with different features.

Selecting Zones

Follow the procedure to select the required zone on your radio.

Press the programmed **Zone Toggle** button. One of the following tone sounds:

Positive Indicator Tone	Radio is in Zone 2.
Negative Indicator Tone	Radio is in Zone 1.

Selecting Channels

Follow the procedure to select the required channel on your radio after you have selected a zone.

Turn the **Channel Selector** knob to select the channel, subscriber ID, or group ID.

Calls

This chapter explains the operations to receive, respond to, make, and stop calls.

You can select a subscriber alias or ID, or group alias or ID after you have selected a channel by using one of these features:

Programmed One Touch Access Button	This method is used for Group, Private, and Phone Calls only. ✏️ **Note:** You can only have one ID assigned to a **One Touch Access** button with a short or long

Other Systems

	programmable button press.
Programmable Button	This method is used for Phone Calls only (see *Making Phone Calls with the Programmable Phone Button* on page 65).

Note:

To unscramble a privacy-enabled call, your radio must have the same Privacy Key, OR the same Key Value and Key ID (programmed by your dealer), as the transmitting radio (the radio you are receiving the call from).

See *Privacy* on page 77 for more information.

Group Calls

Your radio must be configured as part of a group to receive a call from or make a call to the group of users.

Responding to Group Calls

Follow the procedure to respond to Group Calls on your radio.

When you receive a Group Call:

- The green LED blinks.
- Your radio unmutes and the incoming call sounds through the speaker.

1 Do one of the following:

- If the Channel Free Indication feature is enabled, you hear a short alert tone the moment the transmitting radio releases the **PTT** button, indicating the channel is free for you to respond. Press the **PTT** button to respond to the call.
- If the Voice Interrupt feature is enabled, press the **PTT** button to interrupt the audio from the transmitting radio and free the channel for you to respond.

The green LED lights up.

2 Do one of the following:

- Wait for the Talk Permit Tone to end and speak clearly into the microphone if enabled.
- Wait for the **PTT** Sidetone to end and speak clearly into the microphone if enabled.

3 Release the **PTT** button to listen.

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The call ends when there is no voice activity for a predetermined period.

Making Group Calls

Follow the procedure to make Group Calls on your radio.

1 Do one of the following:

- Select a channel with the active group alias or ID. See *Selecting Channels* on page 58.
- Press the programmed **One Touch Access** button.

2 Press the **PTT** button to make the call.
The green LED lights up.

3 Do one of the following:

- Wait for the Talk Permit Tone to end and speak clearly into the microphone if enabled.
- 🔘 Wait for the **PTT** Sidetone to end and speak clearly into the microphone if enabled.

4 Release the **PTT** button to listen.
The green LED lights up when the target radio responds.

5 🔵 If the Channel Free Indication feature is enabled, you hear a short alert tone the moment the transmitting radio releases the **PTT** button, indicating the channel is free for you to respond.Press the **PTT** button to respond to the call.

The call ends when there is no voice activity for a predetermined period.

Private Calls 🔵

A Private Call is a call from an individual radio to another individual radio.

There are two ways to set up a Private Call. The first type sets up the call after performing a radio presence check, while the second type sets up the call immediately. Only one of these types can be programmed to your radio by your dealer.

You can use the Call Alert features to contact an individual radio. See *Call Alert Operation* on page 71 for more information.

Responding to Private Calls ⊕

Follow the procedure to respond to Private Calls on your radio.

When you receive a Private Call:

- The green LED blinks.
- Your radio unmutes and the incoming call sounds through the speaker.

1 Do one of the following:

- ⊕ If the Channel Free Indication feature is enabled, you hear a short alert tone the moment the transmitting radio releases the **PTT** button, indicating the channel is free for you to respond.Press the **PTT** button to respond to the call.
- ⊕ If the Transmit Interrupt Remote Dekey feature is enabled, press the **PTT** button to stop an ongoing interruptible call and free the channel for you to respond.

The green LED lights up.

2 Wait for the Talk Permit Tone to end and speak clearly into the microphone if enabled.

3 Release the **PTT** button to listen.

The call ends when there is no voice activity for a predetermined period.A tone sounds.

Making Private Calls ⊕

Your radio must be programmed for you to initiate a Private Call. You hear a negative indicator tone when you initiate the call when this feature is not enabled. Follow the procedure to make Private Calls on your radio.

1 Do one of the following:

- Select a channel with the active subscriber alias or ID.
- Press the programmed **One Touch Access** button.

2 Press the **PTT** button to make the call.

The green LED lights up.

3 Wait for the Talk Permit Tone to end and speak clearly into the microphone if enabled.

4 Release the **PTT** button to listen.

5 ⊕ If the Channel Free Indication feature is enabled, you hear a short alert tone the moment

the transmitting radio releases the **PTT** button, indicating the channel is free for you to respond.Press the **PTT** button to respond to the call.

The call ends when there is no voice activity for a predetermined period.A tone sounds.

All Calls

An All Call is a call from an individual radio to every radio on the channel. An All Call is used to make important announcements, requiring full attention from the user. The users on the channel cannot respond to an All Call.

Receiving All Calls 🔒

When you receive an All Call:

- A tone sounds.
- The green LED blinks.
- Your radio unmutes and the incoming call sounds through the speaker.

An All Call does not wait for a predetermined period before ending.

🔒 If the Channel Free Indication feature is enabled, you hear a short alert tone when the transmitting

radio releases the **PTT** button, indicating the channel is free for you to use. You cannot respond to an All Call.

> **Note:**
> The radio stops receiving the All Call if you switch to a different channel while receiving the call. You are not able to continue with any programmed button functions until the call ends during an All Call.

Making All Calls 🔒

Your radio must be programmed for you to make an All Call. Follow the procedure to make All Calls on your radio.

1 Select a channel with the active All Call group alias or ID.

2 Press the **PTT** button to make the call.
The green LED lights up.

3 Do one of the following:

- Wait for the Talk Permit Tone to end and speak clearly into the microphone if enabled.
- 🔴 Wait for the **PTT** Sidetone to end and speak clearly into the microphone if enabled.

Users on the channel cannot respond to an All Call.

Selective Calls 🔴

A Selective Call is a call from an individual radio to another individual radio. It is a Private Call on an analog system.

Responding to Selective Calls 🔴
Follow the procedure to respond to Selective Calls on your radio.

When you receive a Selective Call:

• The green LED blinks.
• Your radio unmutes and the incoming call sounds through the speaker.

1 🔵 If the Channel Free Indication feature is enabled, you hear a short alert tone the moment the transmitting radio releases the **PTT** button, indicating the channel is free for you to respond.

2 Press the **PTT** button to respond to the call.
The green LED lights up.

3 Wait for the Talk Permit Tone to end and speak clearly into the microphone if enabled.

4 Release the **PTT** button to listen.
The call ends when there is no voice activity for a predetermined period.A tone sounds.

Making Selective Calls
Your radio must be programmed for you to initiate a Selective Call. Follow the procedure to make Selective Calls on your radio.

1 Select a channel with the active subscriber alias or ID.

2 Press the **PTT** button to make the call.
The green LED lights up.

3 Wait for the Talk Permit Tone to end and speak clearly into the microphone if enabled.

4 Release the **PTT** button to listen.
The green LED lights up when the target radio responds.

5 🔵 If the Channel Free Indication feature is enabled, you hear a short alert tone the moment the transmitting radio releases the **PTT** button, indicating the channel is free for you to

respond.Press the **PTT** button to respond to the call.

The call ends when there is no voice activity for a predetermined period.

6 A tone sounds.

Phone Calls 🔵

Responding to Phone Calls as Group Calls 🔵
Follow the procedure to respond to Phone Calls as Group Calls on your radio.

When you receive a Phone Call as a Group Call:

- The green LED blinks.
- Your radio unmutes and the incoming call sounds through the speaker.

1 Press the **PTT** button to respond to the call.

2 Release the **PTT** button to listen.

3 The call ends when there is no voice activity for a predetermined period.
A tone sounds.

Responding to Phone Calls as Private Calls 🔵
Follow the procedure to respond to Phone Calls as Private Calls on your radio.

When you receive a Phone Call as a Private Call:

- The green LED lights up.
- Your radio unmutes and the incoming call sounds through the speaker.

1 Press the **PTT** button to respond to the call.

2 Release the **PTT** button to listen.

3 The call ends when there is no voice activity for a predetermined period.
A tone sounds.

Responding to Phone Calls as All Calls 🔵
When you receive a Phone Call as an All Call, you can respond to or end the call, only if an All Call type is assigned to the channel. Follow the procedure to respond to Phone Calls as All Calls on your radio.

When you receive a Phone Call as an All Call:

- The green LED blinks.

- Your radio unmutes and the incoming call sounds through the speaker.

An All Call does not wait for a predetermined period of time before ending.

Making Phone Calls with the Programmable Phone Button

Follow the procedure to make a phone call with the programmable phone button.

1 Press the programmed **Phone** button
The green LED lights up. You hear the dialing tone of the telephone user.

2 Press the **PTT** button to talk. Release the **PTT** button to listen.

3 🔵 If the Channel Free Indication feature is enabled, you hear a short alert tone the moment the transmitting radio releases the **PTT** button, indicating the channel is free for you to respond.Press the **PTT** button to respond to the call.

The call ends when there is no voice activity for a predetermined period.

A tone sounds when the telephone user ends the call.

During the call, when you press **One Touch Access** button with the deaccess code preconfigured, your radio attempts to end the call.

Stopping Radio Calls 🔵

This feature allows you to stop an ongoing Group or Private Call to free the channel for transmission. For example, when a radio experiences a "stuck microphone" condition where the **PTT** button is inadvertently pressed by the user. Your radio must be programmed to allow you to use this feature. Follow the procedure to stop calls on your radio.

1 Press the programmed **Transmit Interrupt Remote Dekey** button.

2 Wait for acknowledgment.
If successful:

- A positive indicator tone sounds.

If an interruptible call is stopped via this feature:

- A negative indicator tone sounds on the interrupted radio until the **PTT** button is released.

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If unsuccessful:

- A negative indicator tone sounds.

> **Note:**
> Check with your dealer or system administrator for more information.

Advanced Features

This chapter explains the operations of the features available in your radio.

> **Note:**
> Your dealer or system administrator may have customized your radio for your specific needs. Check with your dealer or system administrator for more information.

Talkaround

This feature allows you to continue communication when your repeater is not operating, or when your radio is out of range from the repeater but within talking range of other radios.

The talkaround setting is retained even after powering down.

> **Note:**
> This feature is not applicable in Capacity Plus--Single-Site, Capacity Plus--Multi-Site, and Citizens Band channels that are in the same frequency.

Toggling Between Repeater and Talkaround Modes

Follow the procedure to toggle between Repeater and Talkaround modes on your radio.

Press the programmed **Repeater/Talkaround** button.
One of the following tones sounds:

Positive Indicator Tone	Radio is in talkaround mode.
Negative Indicator Tone	Radio is in repeater mode.

Monitor Feature

The monitor feature is used to make sure that a channel is clear before transmitting.

 Note:
This feature is not applicable in Capacity Plus--Single-Site and Capacity Plus--Multi-Site.

Monitoring Channels

1 Press and hold the programmed **Monitor** button.

You hear radio activity or "white noise" if there is activity on the monitored channel.

You hear total silence if the monitored channel is free.

2 Press the **PTT** button to talk. Release the **PTT** button to listen.

Permanent Monitor

The Permanent Monitor feature is used to continuously monitor a selected channel for activity.

 Note:
This feature is not applicable in Capacity Plus.

Turning Permanent Monitor On or Off

Follow the procedure to turn Permanent Monitor on or off on your radio.

Press the programmed **Permanent Monitor** button.

When the radio enters the mode:

• An alert tone sounds.
• The yellow LED lights up.

When the radio exits the mode:

• An alert tone sounds.
• The yellow LED turns off.

Home Channel Reminder

This feature provides a reminder when the radio is not set to the home channel for a period of time.

If this feature is enabled via the CPS, when your radio is not set to the home channel for a period of time, the following occurs periodically:

• The Home Channel Reminder tone and announcement sound.

You can respond to the reminder by performing one of the following actions:

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- Return to the home channel.
- Mute the reminder temporarily via the programmable button.
- Set a new home channel via the programmable button.

Muting the Home Channel Reminder

When the Home Channel Reminder occurs, you can temporarily mute the reminder.

Press the **Silence Home Channel Reminder** programmable button.

Setting New Home Channels

When the Home Channel Reminder occurs, you can set a new home channel.

Press the **Reset Home Channel** programmable button to set the current channel as the new Home Channel.

Scan Lists

Scan lists are created and assigned to individual channels or groups. Your radio scans for voice activity by cycling through the channel or group sequence specified in the scan list for the current channel or group.

Your radio can support up to 250 scan lists, with a maximum of 16 members in a list. Each scan list supports a mixture of both analog and digital entries.

> **Note:**
> This feature is not applicable in Capacity Plus.

Scan

Your radio cycles through the programmed scan list for the current channel looking for voice activity when you start a scan.

> **Note:**
> This feature is not applicable in Capacity Plus.

The LED blinks yellow.

During a dual-mode scan, if you are on a digital channel, and your radio locks onto an analog channel, it automatically switches from digital mode to analog mode for the duration of the call which is also true for the reverse.

There are two ways of initiating scan:

| Main Channel Scan (Manual) | Your radio scans all the channels or groups in your scan list. On entering scan, your radio may, |

depending on the settings, automatically start on the last scanned active channel or group, or on the channel where scan was initiated.

Auto Scan (Automatic)	Your radio automatically starts scanning when you select a channel or group that has Auto Scan enabled.

Turning Scan On or Off

Follow the procedure to turn scan on or off on your radio.

Do one of the following:

- Press the programmed **Scan** button to start or stop Scan.
- Turn the Channel Selector Knob to select a channel programmed with a scan list.

Responding to Transmissions During Scanning

During scanning, your radio stops on a channel or group where activity is detected. The radio stays on that channel for a programmed duration known as hang time. Follow the procedure to respond to transmissions during scanning on your radio.

1 🔵 If the Channel Free Indication feature is enabled, you hear a short alert tone the moment the transmitting radio releases the **PTT** button, indicating the channel is free for you to respond. Press the **PTT** button during hang time.

The green LED lights up.

2 Do one of the following:

- Wait for the Talk Permit Tone to end and speak clearly into the microphone if enabled.
- 🔴 Wait for the **PTT** Sidetone to end and speak clearly into the microphone if enabled.

3 Release the **PTT** button to listen.

The radio returns to scanning other channels or groups if you do not respond within the hang time.

Deleting Nuisance Channels

If a channel continually generates unwanted calls or noise, termed as Nuisance Channel, you can temporarily remove the unwanted channel from the scan list. This capability does not apply to the channel

designated as the Selected Channel. Follow the procedure to delete nuisance channels on your radio.

1 When your radio locks on to an unwanted or nuisance channel, press the programmed **Nuisance Channel Delete** button until you hear a tone.

2 Release the **Nuisance Channel Delete** button. The nuisance channel is deleted.

Restoring Nuisance Channels
Follow the procedure to restore nuisance channels on your radio.

Do one of the following:

- Turn the radio off and then power it on again.
- Stop and restart a scan via the programmed **Scan** button.
- Change the channel using the **Channel Selector Knob**.

Vote Scan 🔘

Vote Scan provides you with wide area coverage in areas where there are multiple base stations

transmitting identical information on different analog channels.

Your radio scans analog channels of multiple base stations and performs a voting process to select the strongest received signal. Once that is established, your radio unmutes to transmissions from that base station.

During a vote scan, the yellow LED blinks.

Follow the same procedures as *Responding to Transmissions During Scanning* on page 69 to respond to a transmission during a vote scan.

Call Indicator Settings

Alarm Tone Volume Escalation
Your radio can be programmed by your dealer to continually alert you when a radio call remains unanswered.

This is done by automatically increasing the alarm tone volume over time. This feature is known as Escalert.

Call Alert Operation

Call Alert paging enables you to alert a specific radio user to call you back when they are able to do so.

This feature is accessible via a programmed **One Touch Access** button.

Responding to Call Alerts

Follow the procedure to respond to Call Alerts on your radio.

When you receive a Call Alert:

- A repetitive tone sounds.
- The yellow LED blinks.

 Press the **PTT** button within four seconds to respond with a Private Call.

Making Call Alerts

Follow the procedure to make Call Alerts on your radio.

1 Press the programmed **One Touch Access** button.
 The green LED lights up.

2 Wait for acknowledgment.

If the Call Alert acknowledgment is received, a positive indicator tone sounds.

If the Call Alert acknowledgment is not received, a negative indicator tone sounds.

Emergency Operation

An Emergency Alarm is used to indicate a critical situation. You are able to initiate an Emergency at any time even when there is activity on the current channel.

Your dealer can set the duration of a button press for the programmed **Emergency** button, except for long press, which is similar with all other buttons:

Short Press	Duration between 0.05 seconds and 0.75 seconds.
Long Press	Duration between 1.00 second and 3.75 seconds.

The **Emergency** button is assigned with the Emergency On/Off feature. Check with your dealer for the assigned operation of the **Emergency** button.

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Note:

If short press the **Emergency** button is assigned to turn on the Emergency mode, then long press the **Emergency** button is assigned to exit the Emergency mode.

If long press the **Emergency** button is assigned to turn on the Emergency mode, then short press the **Emergency** button is assigned to exit the Emergency mode.

Your radio supports three Emergency Alarms:

- Emergency Alarm
- Emergency Alarm with Call
- Emergency Alarm with Voice to Follow

In addition, each alarm has the following types:

Regular	Radio transmits an alarm signal and shows audio and/or visual indicators.
Silent	Radio transmits an alarm signal without any audio or visual indicators. Radio receives calls without any sound through the speaker, until you press the **PTT** button.
Silent with Voice	Radio transmits an alarm signal without any audio or visual indicators, but allow incoming calls to sound through the speaker.

Note:
Only one of the Emergency Alarms above can be assigned to the programmed **Emergency** button.

Receiving Emergency Alarms
Follow the procedure to receive Emergency Alarms on your radio.

When you receive an Emergency Alarm:

- A tone sounds.
- The red LED blinks.

Note:
Your radio automatically acknowledges the Emergency Alarm (if enabled).

You can silence the tone. Do one of the following:

- Press the **PTT** button to call the group of radios which received the Emergency Alarm.
- Press any programmable button.
- Exit Emergency mode.

Exiting Emergency Mode After Receiving the Emergency Alarm

Follow the procedure to exit Emergency mode after receiving Emergency alarm.

Change the channel.Press the **Emergency Off** button.

Sending Emergency Alarms

This feature allows you to send an Emergency Alarm, a non-voice signal, which triggers an alert indication on a group of radios. Follow the procedure to send Emergency Alarms on your radio.

Your radio does not display any audio or visual indicators during Emergency mode when it is set to Silent.

1 Press the programmed **Emergency On** button.

The green LED lights up.

Note:
If programmed, the Emergency Search tone sounds. This tone is muted when the radio transmits or receives voice, and stops when the radio exits Emergency mode.

The Emergency Search tone can be programmed via the CPS.

2 Wait for acknowledgment.
If successful:

- The Emergency tone sounds.
- The green LED blinks.

If unsuccessful after all retries have been exhausted:

- A low-pitched tone sounds.

The radio exits the Emergency Alarm mode.

Sending Emergency Alarms with Call

This feature allows you to send an Emergency Alarm with Call to a group of radios. Upon acknowledgement by a radio within the group, the group of radios can communicate over a programmed Emergency channel.

Follow the procedure to send Emergency Alarms with call on your radio.

1 Press the programmed **Emergency On** button.

The green LED lights up.

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Note:
If programmed, the Emergency Search tone sounds. This tone is muted when the radio transmits or receives voice, and stops when the radio exits Emergency mode.The Emergency Search tone can be programmed by your dealer or system administrator.

2 Wait for acknowledgment.
If successful:

- The Emergency tone sounds.
- The green LED blinks.

3 Press the **PTT** button to make the call.
The green LED lights up.

4 Do one of the following:

- Wait for the Talk Permit Tone to end and speak clearly into the microphone if enabled.
- Wait for the **PTT** Sidetone to end and speak clearly into the microphone if enabled.

5 Release the **PTT** button to listen.

6 If the Channel Free Indication feature is enabled, you hear a short alert tone the moment the transmitting radio releases the **PTT** button, indicating the channel is free for you to respond.Press the **PTT** button to respond to the call.

7 Press the **Emergency Off** button to exit the Emergency mode.

If you do not press the **Emergency Off** button to exit the Emergency mode, the red LED blinks and the radio stays in Emergency mode.

Sending Emergency Alarms with Voice to Follow

This feature allows you to send an Emergency Alarm with Voice to Follow to a group of radios. Your radio microphone is automatically activated, allowing you to communicate with the group of radios without pressing the **PTT** button. This activated microphone state is also known as *hot mic*.

If your radio has Emergency Cycle Mode enabled, repetitions of *hot mic* and receiving period are made for a programmed duration. During Emergency Cycle Mode, received calls sound through the speaker.

If you press the **PTT** button during the programmed receiving period, you hear a prohibit tone, indicating that you should release the **PTT** button. The radio ignores the **PTT** button press and remains in Emergency mode.

If you press the **PTT** button during *hot mic*, and continue to press it after the *hot mic* duration expires, the radio continues to transmit until you release the **PTT** button.

If the Emergency Alarm request fails, the radio does not retry to send the request, and enters the *hot mic* state directly.

Note:

Some accessories may not support *hot mic*. Check with your dealer or system administrator for more information.

Follow the procedure to send Emergency Alarms with voice to follow on your radio.

1 Press the programmed **Emergency On** button.

The green LED lights up.

2 Once the Emergency tone sounds, speak clearly into the microphone.

The radio automatically stops transmitting when:

- The cycling duration between *hot mic* and receiving calls expires, if Emergency Cycle Mode is enabled.
- The *hot mic* duration expires, if Emergency Cycle Mode is disabled.

3 Press the **Emergency Off** button to exit the Emergency mode.

Reinitiating Emergency Mode
This feature is only applicable to the radio sending the Emergency Alarm. Follow the procedure to reinitiate Emergency mode on your radio.

Do one of the following:

- Change the channel while the radio is in Emergency mode.

  The radio exits the Emergency mode, and reinitiates Emergency, if Emergency Alarm is enabled on the new channel.
- Press the programmed **Emergency On** button during an Emergency initiation or transmission state.

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The radio exits this state, and reinitiates Emergency.

Exiting Emergency Mode After Sending the Emergency Alarm

This feature is only applicable to the radio sending the Emergency Alarm.

Your radio exits Emergency mode when:

- An acknowledgment is received (for Emergency Alarm only).

    Note:
    If your radio has been programmed to remain on the Emergency Revert channel even after acknowledgment is received, you need to turn off the radio and then, power it on again.

- An Emergency Exit Telegram is received.
- All retries to send the alarm have been exhausted.
- Your radio is turned off.

    Note:
    Your radio does not reinitiate the Emergency mode automatically when it is powered up again.

Follow the procedure to exit Emergency mode on your radio.

Press the programmed **Emergency Off** button.

Man Down

Note:
This feature is applicable to DP3441e only.

This feature prompts an emergency to be raised if there is a change in the motion of the radio, such as the tilt of the radio, motion and/or the lack of motion for a predefined time.

Following a change in the motion of the radio for a programmed duration, the radio pre-warns the user via an audio indicator indicating that a change in motion is detected.

If there is still no acknowledgment by the user before the predefined reminder timer expires, the radio initiates an Emergency Alarm or an Emergency Call. You can program the reminder timer via CPS.

Turning the Man Down Feature On or Off

Note:
The programmed **Man Down** button and Man Down settings are assigned via CPS. Check

with your dealer or system administrator to determine how your radio has been programmed. If you disable the Man Down feature, the programmed alert tone sounds repeatedly until the Man Down feature is enabled. A device failure tone sounds when the Man Down feature fails while powering up. The device failure tone continues until the radio resumes normal operation.

You can enable or disable this feature by performing the following action.

Press the programmed **Man Down** button to toggle the feature on or off.

Privacy 🔒

This feature helps to prevent eavesdropping by unauthorized users on a channel by the use of a software-based scrambling solution. The signaling and user identification portions of a transmission are not scrambled.

Your radio must have privacy enabled on the channel to send a privacy-enabled transmission, although this is not a necessary requirement for receiving a transmission. While on a privacy-enabled channel,

the radio is still able to receive clear or unscrambled transmissions.

Your radio supports two types of privacy, but only **one** can be assigned to your radio. They are:

• Basic Privacy
• Enhanced Privacy

To unscramble a privacy-enabled call or data transmission, your radio must be programmed to have the same Privacy Key for Basic Privacy, or the same Key Value and Key ID for Enhanced Privacy as the transmitting radio.

If your radio receives a scrambled call that is of a different Privacy Key, or different Key Value and Key ID, you will either hear a garbled transmission for Basic Privacy or nothing at all for Enhanced Privacy.

The green LED lights up when the radio is transmitting, and blinks rapidly when the radio is receiving an ongoing privacy-enabled transmission.

Note:
Some radio models may not offer this Privacy feature, or may have a different configuration. Check with your dealer or system administrator for more information.

Turning Privacy On or Off 🌐

Follow the procedure to turn privacy on or off on your radio.

> Press the programmed **Privacy** button.

Multi-Site Controls

These features are applicable when your current radio channel is part of an IP Site Connect or Capacity Plus--Multi-Site configuration.

Starting Manual Site Search

Follow the procedure to start manual site search when the received signal strength is poor in order to attempt to find a site with better signal.

> Press the programmed **Manual Site Roam** button.
>
> - A tone sounds.
> - The green LED blinks.

If the radio finds a new site:

- A positive indicator tone sounds.
- The LED turns off.

If the radio fails to find a new site:

- A negative indicator tone sounds.

- The LED turns off.

Site Lock On/Off

When toggled on, the radio searches the current site only. When toggled off, the radio searches other sites in addition to the current site.

> Press the programmed **Site Lock** button.
>
> If the **Site Lock** function is toggled on:
>
> - You hear a positive indicator tone, indicating the radio has locked to the current site.
>
> If the **Site Lock** function is toggled off:
>
> - You hear a negative indicator tone, indicating the radio is unlocked.

Accessing Neighbor Sites List

This feature allows the user to check the adjacent sites list of the current home site. Follow the procedure to access the Neighbor Sites List:

1 Press to access the menu.

2 Press or to `Utilities`.Press to select.

3 Press or to `Radio Info`. Press to select.

4 Press or to `Neighbor Sites`. Press to select.

Lone Worker

This feature prompts an emergency to be raised if there is no user activity, such as any radio button press or activation of the channel selector, for a predefined time.

Following no user activity for a programmed duration, the radio pre-warns the user via an audio indicator once the inactivity timer expires.

If there is still no acknowledgment by the user before the predefined reminder timer expires, the radio initiates an Emergency Alarm.

Only one of the following Emergency Alarms is assigned to this feature:

- Emergency Alarm
- Emergency Alarm with Call
- Emergency Alarm with Voice to Follow

The radio remains in the emergency state, allowing voice messages to proceed until action is taken. See *Emergency Operation* on page 71 for more information on ways to exit Emergency.

Note:
Check with your dealer or system administrator for more information.

Password Lock Features

This feature allows you to restrict access to the radio by asking for a password when the device is turned on

Accessing Radios by Using Passwords
Follow the procedure to access your radio by using a password.

Use the **Channel Selector Knob** and the Side Buttons to enter password:

- **Channel Selector Knob** positions 1 to 9 represent numbers 1 to 9, and position 10 represents number 0.
- Side Buttons 1 to 2 represent numbers 1 to 2.

1 Enter the current four-digit password.

- Use the **Channel Selector Knob** to enter the first digit of the password.
- Press Side Button 1 or 2 to enter each digit of the remaining three digits of the password.

2 Your radio automatically checks the validity of the password.
If successful, the radio powers up.

If unsuccessful:

- You hear a continuous tone. Repeat Step *1*.
- After the third attempt, your radio enters into locked state.A tone sounds. The yellow LED double blinks. Your radio enters into locked state for 15 minutes.

> **Note:**
> In locked state, your radio responds to inputs from **On/Off/Volume Control Knob** only.

Unlocking Radios in Locked State
Your radio is unable to receive any call, including emergency calls, in locked state. Follow the procedure to unlock your radio in locked state.

1 Power up the radio.

Your radio restarts the 15-minutes timer for locked state.

2 Wait for 15 minutes.

Your radio responds only to **On/Off** button in locked state.

3 Repeat the steps in *Accessing Radios by Using Passwords* on page 47 to access the radio.

Bluetooth

This feature allows you to use your radio with a Bluetooth-enabled device (accessory) via a Bluetooth connection. Your radio supports both Motorola and COTS (Commercially available Off-The-Shelf) Bluetooth-enabled devices.

Bluetooth operates within a range of 10 meters (32 feet) line of sight. This is an unobstructed path between your radio and your Bluetooth-enabled device. It is not recommended that you leave your radio behind and expect your Bluetooth-enabled device to work with a high degree of reliability when they are separated.

At the fringe areas of reception, both voice and tone quality will start to sound "garbled" or "broken". To correct this problem, simply position your radio and Bluetooth-enabled device closer to each other (within the 10-meter defined range) to re-establish clear audio reception. The Bluetooth function of your radio

has a maximum power of 2.5 mW (4 dBm) at the 10-meter range.

Your radio can support up to three simultaneous Bluetooth connections with Bluetooth-enabled devices of unique types. For example, a headset, a scanner, and a PTT-Only Device (POD). Multiple connections with Bluetooth-enabled devices of the same type are not supported.

Refer to the user manual of your respective Bluetooth-enabled device for more details on the full capabilities of your Bluetooth-enabled device.

Your radio connects to the Bluetooth-enabled device within range with either the strongest signal strength, or to one which it has connected to before in a prior session. Do not turn off your Bluetooth-enabled device or press the home back button during the finding and connecting operation as this cancels the operation.

Connecting to Bluetooth Devices

Turn on your Bluetooth-enabled device and place it in pairing mode.

Press the programmed **Bluetooth Connect** button.

Your Bluetooth-enabled device may require additional steps to complete the pairing. Refer to the user manual of your Bluetooth-enabled device.

- A tone sounds.
- The yellow LED blinks.

Wait for acknowledgment.

If successful:

- A positive indicator tone sounds.

If unsuccessful:

- A negative indicator tone sounds.

Disconnecting from Bluetooth Devices

Press the programmed **Bluetooth Disconnect** button.
A positive indicator tone sounds when the device has been disconnected.

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Switching Audio Route between Internal Radio Speaker and Bluetooth Device

Follow the procedure to toggle audio routing between internal radio speaker and external Bluetooth device.

Press the programmed **Bluetooth Audio Switch** button.

A tone sounds when the audio route has switched.

Auto-Range Transponder System

The Auto-Range Transponder System (ARTS) is an analog-only feature designed to inform you when your radio is out-of-range of other ARTS-equipped radios.

ARTS-equipped radios transmit or receive signals periodically to confirm that they are within range of each other.

Your radio provides indications of states as follows:

First-Time Alert	A tone sounds.
ARTS-in-Range Alert	A tone sounds, if programmed.
ARTS-Out-of-Range Alert	A tone sounds. The red LED rapidly blinks.

Note:
Check with your dealer or system administrator for more information.

Over-the-Air Programming

Your dealer can remotely update your radio via Over-the-Air Programming (OTAP) without physical connection. Additionally, some settings can also be configured via OTAP.

When your radio undergoes OTAP, the green LED blinks.

When your radio receives high volume data:

- The channel becomes busy.
- A negative tone sounds if you press the **PTT** button.

Note:
Once the programming is complete, a tone sounds, and your radio restarts (powers off and on again).

Wi-Fi Operation

Wi-Fi® is a registered trademark of Wi-Fi Alliance®.

Note:
This feature is applicable to DP3441e only.

This feature allows you to setup and connect to a Wi-Fi® network. Wi-Fi supports updates for radio firmware, codeplug, and resources such as language packs and voice announcement.

Turning Wi-Fi On or Off

Note:

This feature is applicable to DP3441e only.

The programmed **Wi-Fi On or Off** button is assigned by your dealer or system administrator. Check with your dealer or system administrator to determine how your radio has been programmed.

You can turn on or turn off Wi-Fi® by performing the following action.

Press the programmed **Wi-Fi On or Off** button. Voice Announcement sounds Turning On Wi-Fi or Turning Off Wi-Fi.

Connecting to a Network Access Point

Note:

This feature is applicable to DP3441e only. The programmed **Wi-Fi Status Query** button is assigned by your dealer or system

administrator. Check with your dealer or system administrator to determine how your radio has been programmed.

When you turn on Wi-Fi®, the radio scans and connects to a network access point.

Press the programmed **Wi-Fi Status Query** button for the connection status via Voice Announcement. Voice Announcement sounds Wi-Fi is Off, Wi-Fi is On but No Connection, or Wi-Fi is On with Connection.

Utilities

This chapter explains the operations of the utility functions available in your radio.

Squelch Levels

You can adjust the squelch level to filter out unwanted calls with low signal strength or channels with a higher than normal background noise.

Normal	This is the default setting.
Tight	This setting filters out unwanted calls and/or background noise. Calls from remote locations may also be filtered out.

Setting Squelch Levels

Follow the procedure to set the squelch levels on your radio.

1 Press the programmed **Squelch** button.

2 One of the following tone sounds:

Positive Indicator Tone	Radio is operating in tight squelch.
Negative Indicator Tone	Radio is operating in normal squelch.

Power Levels

You can customize the power setting to high or low for each channel.

High	This enables communication with radios located at a considerable distance from you.
Low	This enables communication with radios in closer proximity.

Setting Power Levels

Follow the procedure to set the power levels on your radio.

Press the programmed **Power Level** button.

One of the following tone sounds:

Positive Indicator Tone	Radio is transmitting at low power.
Negative Indicator Tone	Radio is transmitting at high power.

Voice Operating Transmission

The Voice Operating Transmission (VOX) allows you to initiate a hands-free voice-activated call on a programmed channel. The radio automatically transmits, for a programmed period, whenever the microphone on the VOX-capable accessory detects voice.

You can enable or disable VOX by doing one of the following:

- Press the **PTT** button during radio operation to disable VOX.
- Turn the radio off and then power it on again to enable VOX.
- Change the channel via the **Channel Selector** knob to enable VOX.
- Turn VOX on or off via the programmed **VOX** button.

If the Talk Permit Tone is enabled, use a trigger word to initiate the call. Wait for the Talk Permit Tone to finish before speaking clearly into the microphone. See for more information.

Note:
Turning this feature on or off is limited to radios with this function enabled. Check with your dealer or system administrator for more information.

Turning Voice Operating Transmission On or Off
Follow the procedure to turn Voice Operating Transmission (VOX) on or off on your radio.

Press the programmed **VOX** button to toggle the feature on or off.

Turning Acoustic Feedback Suppressor On or Off

The feature allows you to minimize acoustic feedback in received calls. Follow the procedure to turn Acoustic Feedback Suppressor on or off on your radio.

Press the programmed **AF Suppressor** button. One of the following tone sounds:

Positive Indicator Tone	Acoustic Feedback Suppressor is activated.
Negative Indicator Tone	Acoustic Feedback Suppressor is not activated.

Turning Radio Tones/Alerts On or Off

You can enable and disable all radio tones and alerts, if needed, except for incoming Emergency alert tone. Follow the procedure to turn tones and alerts on or off on your radio.

Press the programmed **All Tones/Alerts** button. One of the following tone sounds:

Positive Indicator Tone	All tones and alerts are turned on.
Negative Indicator Tone	All tones and alerts are turned off.

Checking Battery Strength

Follow the procedure to check the battery level of your radio.

Press the programmed **Battery Strength** button.

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One of the following occurs:

- The LED lights up solid yellow indicating fair battery capacity.
- The LED lights up solid green indicating full battery capacity.
- The LED blinks red indicating low battery capacity.

Turning Voice Announcement On or Off

This feature enables the radio to audibly indicate the current zone or channel the user has just assigned, or the programmable button the user has just pressed. This audio indicator can be customized according to customer requirements. Follow the procedure to turn Voice Announcement on or off on your radio.

Press the programmed **Voice Announcement** button.
One of the following tone sounds:

Positive Indicator Tone	All tones and alerts are turned on.
Negative Indicator Tone	All tones and alerts are turned off.

Turning Text-to-Speech On or Off

This feature enables the radio to audibly indicate the content of the most recent received text message. Follow the procedure to turn Text-to-Speech on or off on your radio.

This feature does not function in accordance with the Voice Announcement feature. Check with your dealer or system administrator for more information.

Press the programmed **Text-to-Speech** button.

Switching Audio Route between Internal Radio Speaker and Wired Accessory

Follow the procedure to toggle audio routing between internal radio speaker and wired accessory.

You can toggle audio routing between the internal radio speaker and the speaker of a wired accessory with the condition that:

- The wired accessory with speaker is attached.
- The audio is not routed to an external Bluetooth accessory.

Press the programmed **Audio Toggle** button.

A tone sounds when the audio route has switched.

Powering down the radio or detaching the accessory resets the audio routing to the internal radio speaker.

Turning Trill Enhancement On or Off

You can enable this feature when you are speaking in a language that contains many words with alveolar trill (rolling "R") pronunciations. Follow the procedure to turn Trill Enhancement on or off on your radio.

Press the programmed **Trill Enhancement** button to toggle the feature on or off.

Turning GPS/GNSS On or Off

Global Navigation Satellite System (GNSS) is a satellite navigation system that determines the radio's precise location. GNSS includes Global Positioning System (GPS) and Global Navigation Satellite System (GLONASS).

Press the programmed **GPS/GNSS** button to toggle the feature on or off.

Note:
Selected radio models may offer GPS and GLONASS. GNSS constellation is configured via CPS. Check with your dealer or system administrator to determine how your radio has been programmed.

Turning Flexible Receive List On or Off

Follow the procedure to turn Flexible Receive List on or off.

Press the programmed **Flexible Receive List** button.

If enabled:

• The LED blinks yellow.
• A positive indicator tone sounds.

If disabled:

• The LED turns off.
• A negative indicator tone sounds.

Turning Intelligent Audio On or Off

Your radio automatically adjusts the audio volume to overcome current background noise in the environment, inclusive of both stationary and non-stationary noise sources. This is a receive-only feature and does not affect transmission audio. Follow the procedure to turn Intelligent Audio on or off on your radio.

Press the programmed **Intelligent Audio** button.

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Note:
This feature is not applicable during a Bluetooth session.

Limited Warranty

MOTOROLA COMMUNICATION PRODUCTS

I. WHAT THIS WARRANTY COVERS AND FOR HOW LONG:

MOTOROLA SOLUTIONS, INC. ("MOTOROLA") warrants the MOTOROLA manufactured Communication Products listed below ("Product") against defects in material and workmanship under normal use and service for a period of time from the date of purchase as scheduled below:

Digital Portable Radios	24 Months
Product Accessories (Excluding Batteries and Chargers)	12 Months

MOTOROLA, at its option, will at no charge either repair the Product (with new or reconditioned parts), replace it (with a new or reconditioned Product), or refund the purchase price of the Product during the warranty period provided it is returned in accordance with the terms of this warranty. Replaced parts or boards are warranted for the balance of the original applicable warranty period. All replaced parts of Product shall become the property of MOTOROLA.

This express limited warranty is extended by MOTOROLA to the original end user purchaser only and is not assignable or transferable to any other party. This is the complete warranty for the Product manufactured by MOTOROLA. MOTOROLA assumes no obligations or liability for additions or modifications to this warranty unless made in writing and signed by an officer of MOTOROLA.

Unless made in a separate agreement between MOTOROLA and the original end user purchaser, MOTOROLA does not warrant the installation, maintenance or service of the Product.

MOTOROLA cannot be responsible in any way for any ancillary equipment not furnished by MOTOROLA which is attached to or used in connection with the Product, or for operation of the Product with any ancillary equipment, and all such equipment is expressly excluded from this warranty. Because each system which may use the Product is unique, MOTOROLA disclaims liability for range, coverage, or operation of the system as a whole under this warranty.

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II. GENERAL PROVISIONS

This warranty sets forth the full extent of MOTOROLA'S responsibilities regarding the Product. Repair, replacement or refund of the purchase price, at MOTOROLA's option, is the exclusive remedy. THIS WARRANTY IS GIVEN IN LIEU OF ALL OTHER EXPRESS WARRANTIES. IMPLIED WARRANTIES, INCLUDING WITHOUT LIMITATION, IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED TO THE DURATION OF THIS LIMITED WARRANTY. IN NO EVENT SHALL MOTOROLA BE LIABLE FOR DAMAGES IN EXCESS OF THE PURCHASE PRICE OF THE PRODUCT, FOR ANY LOSS OF USE, LOSS OF TIME, INCONVENIENCE, COMMERCIAL LOSS, LOST PROFITS OR SAVINGS OR OTHER INCIDENTAL, SPECIAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE SUCH PRODUCT, TO THE FULL EXTENT SUCH MAY BE DISCLAIMED BY LAW.

III. STATE LAW RIGHTS:

SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES OR LIMITATION ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATION OR EXCLUSIONS MAY NOT APPLY.

This warranty gives specific legal rights, and there may be other rights which may vary from state to state.

IV. HOW TO GET WARRANTY SERVICE

You must provide proof of purchase (bearing the date of purchase and Product item serial number) in order to receive warranty service and, also, deliver or send the Product item, transportation and insurance prepaid, to an authorized warranty service location. Warranty service will be provided by MOTOROLA through one of its authorized warranty service locations. If you first contact the company which sold you the Product (e.g., dealer or communication service provider), it can facilitate your obtaining warranty service. You can also call MOTOROLA at 1-800-927-2744 US/Canada.

V. WHAT THIS WARRANTY DOES NOT COVER

1. Defects or damage resulting from use of the Product in other than its normal and customary manner.
2. Defects or damage from misuse, accident, water, or neglect.
3. Defects or damage from improper testing, operation, maintenance, installation, alteration, modification, or adjustment.
4. Breakage or damage to antennas unless caused directly by defects in material workmanship.
5. A Product subjected to unauthorized Product modifications, disassembles or repairs (including, without limitation, the addition to the Product of non-MOTOROLA supplied equipment) which adversely affect performance of the Product or interfere with MOTOROLA's normal warranty inspection and testing of the Product to verify any warranty claim.
6. Product which has had the serial number removed or made illegible.
7. Rechargeable batteries if:

- any of the seals on the battery enclosure of cells are broken or show evidence of tampering.
- the damage or defect is caused by charging or using the battery in equipment or service other than the Product for which it is specified.

8. Freight costs to the repair depot.
9. A Product which, due to illegal or unauthorized alteration of the software/firmware in the Product, does not function in accordance with MOTOROLA's published specifications or the FCC certification labeling in effect for the Product at the time the Product was initially distributed from MOTOROLA.
10. Scratches or other cosmetic damage to Product surfaces that does not affect the operation of the Product.
11. Normal and customary wear and tear.

VI. PATENT AND SOFTWARE PROVISIONS

MOTOROLA will defend, at its own expense, any suit brought against the end user purchaser to the extent that it is based on a claim that the Product or parts infringe a United States patent, and MOTOROLA will pay those costs and damages finally awarded against

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the end user purchaser in any such suit which are attributable to any such claim, but such defense and payments are conditioned on the following:

1 MOTOROLA will be notified promptly in writing by such purchaser of any notice of such claim,
2 MOTOROLA will have sole control of the defense of such suit and all negotiations for its settlement or compromise, and
3 Should the Product or parts become, or in MOTOROLA's opinion be likely to become, the subject of a claim of infringement of a United States patent, that such purchaser will permit MOTOROLA, at its option and expense, either to procure for such purchaser the right to continue using the Product or parts or to replace or modify the same so that it becomes non-infringing or to grant such purchaser a credit for the Product or parts as depreciated and accept its return. The depreciation will be an equal amount per year over the lifetime of the Product or parts as established by MOTOROLA.

MOTOROLA will have no liability with respect to any claim of patent infringement which is based upon the combination of the Product or parts furnished hereunder with software, apparatus or devices not furnished by MOTOROLA, nor will MOTOROLA have any liability for the use of ancillary equipment or software not furnished by MOTOROLA which is attached to or used in connection with the Product. The foregoing states the entire liability of MOTOROLA with respect to infringement of patents by the Product or any parts thereof.

Laws in the United States and other countries preserve for MOTOROLA certain exclusive rights for copyrighted MOTOROLA software such as the exclusive rights to reproduce in copies and distribute copies of such MOTOROLA software. MOTOROLA software may be used in only the Product in which the software was originally embodied and such software in such Product may not be replaced, copied, distributed, modified in any way, or used to produce any derivative thereof. No other use including, without limitation, alteration, modification, reproduction, distribution, or reverse engineering of such MOTOROLA software or exercise of rights in such MOTOROLA software is permitted. No license is granted by implication, estoppel or otherwise under MOTOROLA patent rights or copyrights.

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VII. GOVERNING LAW

This Warranty is governed by the laws of the State of Illinois, U.S.A.

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