# MOTOTRBO™
# DP2400
# NON-DISPLAY PORTABLE
# USER GUIDE

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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 radio's software version **R02.40.00** or later.

See *Checking the Firmware Version and Codeplug Version* to determine your radio's software version.

Check with your dealer or system administrator for more details of all the features supported.

# Computer Software Copyrights

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The AMBE+2™ voice coding Technology embodied in this product is protected by intellectual property rights including patent rights, copyrights and trade secrets of Digital Voice Systems, Inc.

This voice coding Technology is licensed solely for use within this Communications Equipment. The user of this Technology is explicitly prohibited from attempting to decompile, reverse engineer, or disassemble the Object Code, or in any other way convert the Object Code into a human-readable form.

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.

## Handling Precautions

The MOTOTRBO Series Digital Portable radio meets IP55 specifications, allowing the radio to withstand adverse field conditions such as being used in rain or dusty environment.

- If the radio has been exposed to water or rain, shake the radio well to remove any water that may be trapped inside the speaker grille, microphone port and aesthetic cover (if applicable). Trapped water in speaker grille and microphone port could cause decreased audio performance. If aesthetic cover is attached onto radio, trapped water in aesthetic cover could cause corrosion on the slim connector interface gold contacts.
- 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 exposed to 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).
- The radio with antenna attached properly is designed to be protected against dust and low pressure jets of water projected with nozzle 6.3 mm diameter at flow rate of 12.5 l/min, with water pressure at 30 kN/m$^2$ and from a distance of 2.5 meter to 3 meter for at least 3 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 may cause water to leak into the radio.

⚠️ **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.

# Getting Started

## How to Use This Guide

This User Guide covers the basic operation of the MOTOTRBO Portables.

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

Throughout this publication, the icons described next are used to indicate features supported in either the conventional Analog mode 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, **no** icon is shown.

## What Your Dealer/System Administrator Can Tell You

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?

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# Preparing Your Radio for Use

## Charging the Battery

**Important: ALWAYS** 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.

Your radio is powered by a Nickel Metal-Hydride (NiMH) or Lithium-Ion (Li-lon) battery. To avoid damage and to ensure compliance with warranty terms, charge the battery using a Motorola charger *exactly* as described in the charger user guide.

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

## Attaching the Battery

1 Align the battery with the rails on the back of the radio. Press the battery firmly, and slide upwards until the latch snaps into place.
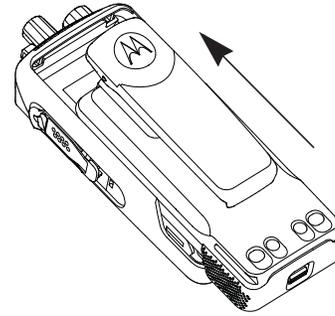


2 To remove the battery, turn the radio off. Move the battery latch (Ⓐ) into unlock position and hold, and slide the battery down and off the rails.
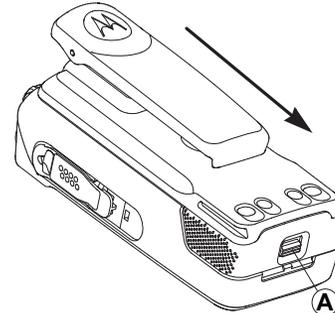
## Attaching the Antenna

⚠️ **Caution:** If antenna needs to be replaced, ensure that only MOTOTRBO antennas are used. Neglecting this will damage your radio.

**1** With the radio turned off, set the antenna in its receptacle and turn clockwise.
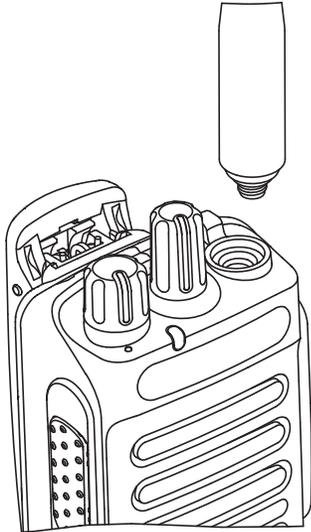


**2** To remove the antenna, turn the antenna counterclockwise.

## Attaching the Belt Clip

**1** To attach the belt clip, align the grooves on the clip with those on the battery and press downward until you hear a click.
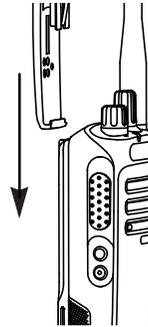


**2** To remove the belt clip, press the belt clip tab away from the battery using a key. Then slide the clip upward and away from the radio.

## 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.
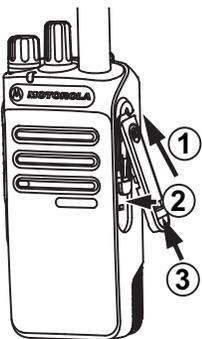


Insert the slanted end of the cover into the slots above the universal connector. Press downward on the cover to seat the dust cover properly on the Universal Connector.

Secure the dust cover to the radio by pushing the latch upwards.

To remove the dust cover, push the latch downwards. 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.

**1** To attach the accessory connector, refer to the steps shown in the diagram.
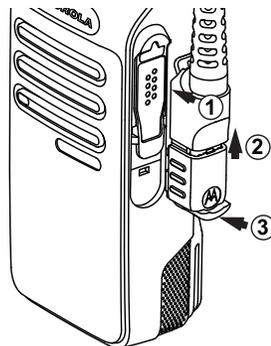
**2** To remove the accessory connector, refer to the steps shown in the diagram.



## Powering Up the Radio

Rotate the **On/Off/Volume Control Knob** clockwise until you hear a click. You see a welcome message or welcome image.

The LED blinks green (Ⓐ) if the backlight setting is set to turn on automatically.
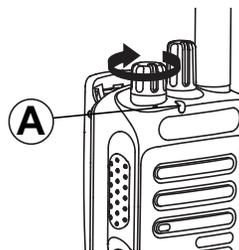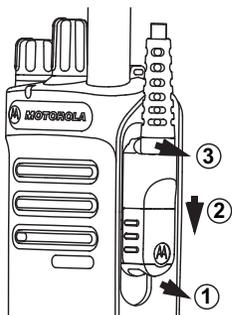


A brief tone sounds, indicating that the power up test is successful.

**Note:** There is no power up tone if the radio tones/ alerts function is disabled (see *Turning the Radio Tones/Alerts On or Off* on page 46).

If your radio does not power up, check your battery. Make sure that it is charged and properly attached. If your radio still does not power up, contact your dealer.

To turn off the radio, rotate this knob counterclockwise until you hear a click. You see a brief `Powering Down` on the radio's display.

## Adjusting the Volume

To increase the volume, turn the **On/Off/Volume Control Knob** clockwise.

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*To decrease the volume, turn this knob counterclockwise.*

**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.
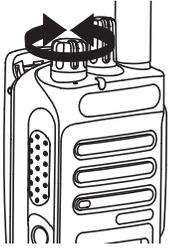
# Identifying Radio Controls

## Radio Controls



**1** Channel Selector Knob

**2** On/Off/Volume Control Knob

**3** LED Indicator

**4** Push-to-Talk (**PTT**) Button

**5** Side Button 1[1]

**6** Side Button 2[1]

**7** Microphone

**8** Speaker

**9** Universal Connector for Accessories

**10** Antenna

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[1] These buttons are programmable.

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## Additional Radio Controls

### Push-To-Talk (PTT) Button

The **PTT** button on the side of the radio (Ⓐ) serves two basic purposes:
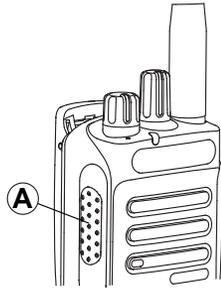


- While a call is in progress, the **PTT** button allows the radio to transmit to other radios in the call.

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

  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 *Making a Radio Call* on page 27).

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

🔵 During a call, 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 will also hear a continuous talk prohibit tone, if your call is interrupted, indicating that you should release the **PTT** button, for example when the radio receives an Emergency Call.

### Programmable Buttons

Your dealer can program the programmable buttons as shortcuts to radio functions depending on the duration of a button press:

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

- Hold down – Keeping the button pressed.

**Note:** The programmed duration of a button press is applicable for all assignable radio/utility functions or settings. See *Emergency Operation* on page 36 for more information on the programmed duration of the **Emergency** button.

## Assignable Radio Functions

| | |
|---|---|
| **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. |
| **Call Forwarding** | Toggles Call Forwarding on or off. |
| **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 On/Off** | Toggles the internal microphone automatic gain control (AGC) on or off. |
| **Monitor** | Monitors a selected channel for activity. |
| **Nuisance Channel Delete** | Temporarily removes an unwanted channel, except for the Selected Channel, from the scan list. The Selected Channel refers to the user's selected zone/channel combination from which scan is initiated. |
| **One Touch Access** 🔵 | Directly initiates a predefined Private, Phone or Group Call, a Call Alert or a Quick Text message. |
| **Permanent Monitor** | Monitors a selected channel for all radio traffic until function is disabled. |
| **Phone** 🔵 | Provides direct access to the Phone Contacts list |
| **Phone Exit** 🔵 | Ends a Phone Call. |

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| | |
|---|---|
| **Privacy** ⊕ | Toggles privacy on or off. |
| **Repeater/ Talkaround** | Toggles between using a repeater and communicating directly with another radio. |
| **Scan** | Toggles scan on or 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. |
| **Transmit Interrupt Remote Dekey** ⊕ | Stops an ongoing interruptible call to free the channel. |
| **Voice Announcement for Channel** | Plays zone and channel announcement voice messages for the current channel. This function is unavailable when Voice Announcement is disabled. |
| **Voice Announcement On/Off** | Toggles voice announcement on or off. |

| | |
|---|---|
| **Voice Operating Transmission (VOX)** | Toggles VOX on or off. |

**Assignable Settings or Utility Functions**

| | |
|---|---|
| **All Tones/Alerts** | Toggles all tones and alerts on or off. |
| **Power Level** | Toggles transmit power level between high and low. |
| **Squelch** ⊕ | Toggles squelch level between tight and normal. |

## Identifying Status Indicators

**LED Indicator**

The LED indicator (Ⓐ) shows the operational status of your radio.

[2] Not applicable in Capacity Plus and Linked Capacity Plus
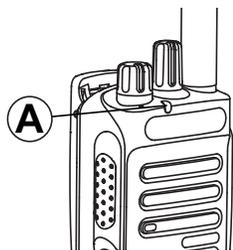
| Blinking red | Radio is transmitting at low battery condition, receiving an emergency transmission, has failed the self-test upon powering up, or has moved out of range if radio is configured with Auto-Range Transponder System. |
|---|---|
| Solid yellow | Radio is monitoring a conventional channel. Also indicates fair battery charge when programmable button is pressed. |
| Blinking yellow | Radio is scanning for activity or receiving a Call |

|  | Alert, flexible receive list is enabled or all local Linked Capacity Plus channels are busy. |
|---|---|
| Double blinking yellow | Radio is no longer connected to the repeater while in Capacity Plus or Linked Capacity Plus; all Capacity Plus or Linked Capacity Plus channels are currently busy. |
| Solid green | Radio is powering up or transmitting. Also indicates full charge of the battery when the programmable button is pressed. |
| Blinking green | Radio is powering up, receiving a non-privacy-enabled call or data, detecting activity, or retrieving Over-the-Air Programming transmissions over the air. |

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| **Rapidly blinking green** 🔵 | Radio is receiving a privacy-enabled call or data. |
|---|---|

## 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 short period of time defined by the radio. |

**Indicator Tones**

| High pitched tone ▢ | Low pitched tone ▮ |
|---|---|

| ▮▢ | Positive Indicator Tone |
|---|---|
| ▢▮ | Negative Indicator Tone |

## Switching Between Conventional Analog and Digital Mode

Each channel in your radio can be configured as a conventional analog or conventional digital channel. Use the Channel Selector Knob (Ⓐ) to switch between an analog or a digital channel.

Additional Radio Controls
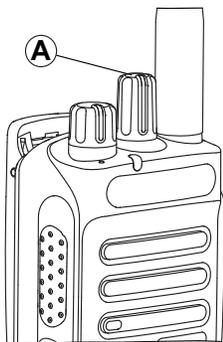
When switching from digital to analog mode, certain features are unavailable. Icons for the digital features (such as Messages) reflect this change by appearing 'grayed out'. Disabled features are hidden in the menu.

Your radio also has features available in both analog and digital mode. However, the minor differences in the way each feature works does **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 34).

## 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 which are connected via an Internet Protocol (IP) network.

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 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.

**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 channel(s) 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 to the roam list. Check with your dealer or system administrator for more information.

## Capacity Plus

Capacity Plus 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 via a programmable button press.

Your radio also has features that are available in conventional digital mode, IP Site Connect, Capacity Plus and Linked 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.

## Linked Capacity Plus

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

Linked Capacity Plus 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 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 Linked Capacity Plus 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, icons of features not applicable to Linked Capacity Plus are not available in the menu. You hear a negative indicator tone if you try to access a feature not applicable to Linked Capacity Plus via a programmable button press.

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

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# Making and Receiving Calls

## Selecting a Channel

Transmissions are sent and received on a channel. Depending on your radio's configuration, each channel may have been programmed differently to support different groups of users or supplied with different features. You can select the relevant channel required to transmit or receive on.
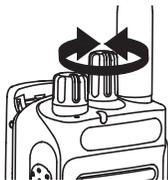


Turn the Channel Selector Knob to select the number that represents the channel, subscriber ID, or group ID.

## Receiving and Responding to a Radio Call

Once the channel, subscriber ID, or group ID is set, you can proceed to receive and respond to calls.

The LED lights up solid green while the radio is transmitting and blinks green when the radio is receiving.

**Note:** The LED lights up solid green while the radio is transmitting and blinks greenrapidly when the radio is receiving a privacy-enabled call and blinks green when receiving a non-privacy-enabled call.

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 41 for more information. 🔵

### Receiving and Responding to a Group Call

To receive a call from a group of users, your radio must be configured as part of that group.

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

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

- 🔵 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.

- 🔔 If the Voice Interrupt feature is enabled, press the **PTT** button to stop the current call from the transmitting radio and free the channel for you to talk/respond.

The LED lights up solid green.

**2** Wait for one of the following tones to finish (if enabled), and speak clearly into the microphone.

- The Talk Permit Tone.
- The **PTT** Sidetone. 🔔

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

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

See *Making a Group Call* on page 28 for details on making a Group Call.

### Receiving and Responding to a Private Call 🔔

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

When you receive a Private Call, the LED blinks . Your radio unmutes and the incoming call sounds through the radio's speaker.

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

- 🔔 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.
- 🔔 If the Voice Interrupt feature is enabled, press the **PTT** button to stop the current call from the transmitting radio and free the channel for you to talk/respond.

The LED lights up solid green.

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

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

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

See *Making a Private Call* on page 28 for details on making a Private Call.

**Receiving an All Call**

An All Call is a call from an individual radio to every radio on the channel. It is used to make important announcements requiring the user's full attention.

When you receive an All Call, a tone sounds and the LED blinks green.

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

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

🔘 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 now available for 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. During an All Call, you will **not** be able to use any programmed button functions until the call ends.

**Receiving and Responding to a Selective Call** 🔘

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

When you receive a Selective Call, the LED blinks green. Your radio unmutes and the incoming call sounds through the radio's speaker.

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

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

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

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

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

See *Making a Private Call* on page 28 for details on making a Private Call.

**Receiving and Responding to a Phone Call** 🔘

**Phone Call as a Private Call/Group Call**

When you receive a Phone Call as a Private Call or Group Call, the LED blinks green. Your radio unmutes and the incoming call sounds through the radio's speaker.

If Phone Call capability is not enabled in your radio, your radio mutes the call.

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

**2** Press the **PTT** button to talk and release it to listen.

**Phone Call as All Call**

When you receive a Phone Call as an All Call, the LED blinks green. Your radio unmutes and the incoming call sounds through the radio's speaker.

If Phone Call capability is not enabled in your radio, your radio mutes the call.

**Note:** When you receive a Phone Call as an All Call, you can respond to the call or end the call, only if an All Call type is assigned to the channel.

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

**2** Press the **PTT** button to talk and release it to listen.

## Making a Radio Call

After selecting your channel, you can select a subscriber alias or ID, or group alias or ID by using:

- The Channel Selector Knob.
- A programmed **One Touch Access** button (see *Making a Phone Call with the One Touch Access Button* on page 30). 
- A programmable button – This method is for Phone Calls only (see *Making a Phone Call with the Programmable Phone Button* on page 31).

**Note:** Your radio must have the Privacy feature enabled on the channel to send a privacy-enabled transmission. Only target radios with the same Privacy Key OR the same Key Value and Key ID as your radio will be able to unscramble the transmission.

**Note:** See *Privacy* on page 41 for more information. 🔒

### Making a Group Call

To make a call to a group of users, your radio must be configured as part of that group.

**1** Do one of the following.

- Select the channel with the active group alias or ID. See *Selecting a Channel* on page 24.
- 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 LED lights up solid green.

**4** Release the **PTT** button to listen.
When the target radio responds, the LED blinks green.

**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.

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

### Making a Private Call 🔵

While you can receive and/or respond to a Private Call initiated by an authorized individual radio, your radio must be programmed for you to initiate a Private Call.

There are two types of Private Calls. The first type, where a radio presence check is performed prior to setting up the call, while the other sets up the call immediately.

Only **one** of these call types can be programmed to your radio by your dealer.

You will hear a negative indicator tone, when you make a Private Call via the **One Touch Access** button, the programmed number keys, or the Channel Selector Knob, if this feature is not enabled.

**1** Do one of the following.

- Select the channel with the active subscriber alias or ID. See *Selecting a Channel* on page 24.
  - 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 LED lights up solid green.

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.

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.

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

**Making an All Call**

This feature allows you to transmit to all users on the channel. Your radio must be programmed to allow you to use this feature.

Users on the channel cannot respond to an All Call.

1   Select the channel with the active All Call group alias or ID. See *Selecting a Channel* on page 24.

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.

4   Wait for one of the following tones to finish (if enabled), and speak clearly into the microphone.

    - The Talk Permit Tone.
    - The **PTT** Sidetone. 🔴

### Making a Selective Call 🔘

Just like a Private Call, while you can receive and/or respond to a Selective Call initiated by an authorized individual radio, your radio must be programmed for you to initiate a Selective Call.

**1** Select the channel with the active subscriber alias or ID. See *Selective a Channel* on page 24.

**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.

**4** Wait for one of the following tones to finish (if enabled), and speak clearly into the microphone.

- The Talk Permit Tone.
- The **PTT** Sidetone. 🔘

**5** Release the **PTT** button to listen.
When the target radio responds, the LED blinks green.

🔘 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.

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

### Making a Phone Call with the One Touch Access Button

**1** Press the programmed **One Touch Access** button to make a Phone Call to the predefined ID.

If the entry for the **One Touch Access** button is empty, a negative indicator tone sounds.

If the call-setup is successful, the DTMF tone sounds. You hear the dialing tone of the telephone user.

If the call-setup is unsuccessful, a negative indicator tone sounds and the Phone Call attempt fails. Repeat Step *1*.

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

**3** Press the **PTT** button to talk and release it to listen.

**4** Press to end the call.

If the end-call-setup is successful, a tone sounds and your radio exits the Phone Call.

If the end-call-setup is unsuccessful, your radio returns to the Phone Call. Repeat Step *4* or wait for the telephone user to end the call.

**Making a Phone Call with the Programmable Phone Button** 🔵

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

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

**3** Press the **PTT** button to talk and release it to listen.

**4** Press ⟲ to end the call.

When you press **PTT** button while in the Phone Contacts screen, a tone sounds.

When the telephone user ends the call, a tone sounds.

## Stopping a Radio Call 🔵

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.

**1** Press the programmed **Transmit Interrupt Remote Dekey** button, while on the relevant channel.

**2** Wait for acknowledgement.

**Note:** Your radio sounds a negative indicator tone until you release the PTT button, if it is transmitting an interruptible call that is stopped via this feature.

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## Talkaround

You can continue to communicate when your repeater is not operating, or when your radio is out of the repeater's range but within talking range of other radios.

This is called "talkaround".

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

The Talkaround setting is retained even after powering down.

Press the programmed **Repeater/Talkaround** button.

| You hear ... | Indicating ... |
|---|---|
| Positive Indicator Tone | Radio is in Talkaround mode. |
| Negative Indicator Tone | Radio is in Repeater mode. |

## Monitoring Features

### Monitoring a Channel

Use the Monitor feature to make sure a channel is clear before transmitting.

This feature is not applicable in Capacity Plus and Linked Capacity Plus.

**1** Press and hold the programmed **Monitor** button and listen for activity.

The LED double blinks yellow when channel is busy.

**2** Press the **PTT** button to talk and release it to listen.

### Permanent Monitor

Use the Permanent Monitor feature to continuously monitor a selected channel for activity.

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

**1** Press the programmed **Permanent Monitor** button to activate permanent monitoring of the channel.
Radio sounds an alert tone, the LED lights up solid yellow.

**2** Press the programmed **Permanent Monitor** button to exit Permanent Monitor mode.
Radio sounds an alert tone, the LED turns off.

# Advanced Features

## Scan Lists

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

## Scan

When you start a scan, your radio cycles through the programmed scan list for the current channel looking for voice activity.

The LED blinks yellow.

There are two ways of initiating scan:

- **Main Channel Scan (Manual)**: Your radio scans all the channels/groups in your scan list. On

entering scan, your radio may – depending on the settings – automatically start on the last scanned "active" channel/group or on the channel where scan was initiated.
- **Auto Scan (Automatic)**: Your radio automatically starts scanning when you select a channel/group that has Auto Scan enabled.

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

### Starting and Stopping Scan

Do one of the following.

- Press the programmed **Scan** button.
- Use the Channel Selector Knob to select a channel programmed with Auto Scan enabled.

The LED blinks yellow and you hear a positive indicator tone, when Scan is enabled.

The LED turns off and you hear a negative indicator tone, when Scan is disabled.

### Responding to a Transmission During a Scan

During scanning, your radio stops on a channel/group where activity is detected. The radio stays on that

channel for a programmed time period known as "hang time".

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

    🔵 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 during hang time.
    The LED lights up solid green.

3. Wait for one of the following tones to finish (if enabled), and speak clearly into the microphone.

    - The Talk Permit Tone.
    - The **PTT** Sidetone. 🔴

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

    If you do not respond within the hang time, the radio returns to scanning other channels/groups.

### Deleting a Nuisance Channel

If a channel continually generates unwanted calls or noise (termed a "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.

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 a Nuisance Channel

To restore the deleted nuisance channel, do one of the following:

- Turn the radio off and then power it on again.
- Change the channel via 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.

The LED blinks yellow during the Vote Scan operation.

To respond to a transmission during a Vote Scan, follow the same procedures as *Responding to a Transmission During a Scan* on page 34.

## Call Indicator Settings

### Escalating Alarm Tone Volume

You can program your radio 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.

**Receiving and Responding to a Call Alert**

When you receive a Call Alert page, you hear a repetitive tone and the LED blinks yellow.

Press the **PTT** button within four (4) seconds of receiving a Call Alert page to respond to the Private Call.

**Making a Call Alert with the One Touch Access Button**

Press the programmed **One Touch Access** button to make a Call Alert to the predefined alias or ID.

The LED lights up solid green when your radio is sending the Call Alert.

If the Call Alert acknowledgement is received, two chirps sound.

If the Call Alert acknowledgement is not received, a low-pitch tone sounds.

## Emergency Operation

An Emergency Alarm is used to indicate a critical situation. You are able to initiate an Emergency at

any time, in any state, 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** | Between 0.05 seconds and 0.75 seconds. |
| **Long press** | 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 the short press for the **Emergency** button is assigned to turn on the Emergency mode, then the long press for the **Emergency** button is assigned to exit the Emergency mode.

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

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

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 radio's speaker, until you press the **PTT** button to initiate the call.

• **Silent with Voice** – Radio transmits an alarm signal without any audio or visual indicators, but allow incoming calls to sound through the radio's speaker.

**Receiving an Emergency Alarm**

When your radio receives an Emergency Alarm, a tone sounds and the LED blinks red until you exit the Emergency mode. Perform one of the following actions to silence the tone:

• Press the **PTT** button to call the group of radios which received the Emergency Alarm.

• Press any programmable button.

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- Exit Emergency mode.

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

### Exiting Emergency Mode After Receiving the Emergency Alarm

Exit the Emergency mode by performing one of the following actions:

- Changing the channel.
- Powering down the radio.
- Pressing the **Emergency Off** button.
- Pressing the **Emergency On** button. This action clears the alarm indication and initiates an emergency transmission.

### Sending an Emergency Alarm

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

If your radio is set to Silent, it does not display any audio or visual indicators during Emergency mode.

Press the programmed **Emergency On** button.

The LED lights up solid green.

When an Emergency Alarm acknowledgement is received, the Emergency tone sounds and the LED blinks green.

If your radio does not receive an Emergency Alarm acknowledgement, and after all retries have been exhausted, a low-pitched tone sounds.

Radio exits the Emergency Alarm mode.

### Sending an Emergency Alarm with Call

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

If your radio is set to Silent, it does not display any audio or visual indicators during Emergency mode, or allow any received calls to sound through the radio's speaker, until you press the **PTT** button to initiate the call.

If your radio is set to Silent with Voice, it does not display any audio or visual indicators during Emergency mode, but allow incoming calls to sound through the radio's speaker. The indicators only

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appear once you press the **PTT** button to initiate, or respond to, the call.

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

    The LED lights up solid green.

    When an Emergency Alarm acknowledgement is received, the Emergency tone sounds and the LED blinks green.

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

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

4   Wait for one of the following tones to finish (if enabled), and speak clearly into the microphone.

    •   The Talk Permit Tone.
    •   The **PTT** Sidetone. 🔴

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

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

7   Once your call ends, press **Emergency Off** button to exit the Emergency mode.

**Sending an Emergency Alarm with Voice to Follow** 🔵

This feature allows you to send an Emergency Alarm to a group of radios. Your radio's 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 you press the **PTT** button during the programmed hot mic transmission period, the radio ignores the **PTT** press and remains in Emergency mode.

**Note:** 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 your radio is set to Silent, it does not display any audio or visual indicators during Emergency mode, or allow any received calls to sound through the radio's

speaker, until the programmed hot mic transmission period is over, and you press the **PTT** button.

If your radio is set to Silent with Voice, it does not display any audio or visual indicators during Emergency mode when you are making the call with hot mic, but allow sound through the radio's speaker when the target radio responds after the programmed hot mic transmission period is over. The indicators only appear when you press the **PTT** button.

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

1 Press the programmed **Emergency On** button. The LED lights up solid green.

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

When hot mic has been enabled, the radio automatically transmits without a **PTT** button press until the hot mic duration expires. While transmitting, the LED lights up solid green.

3 The radio automatically stops transmitting when the cycling duration between hot mic and receiving calls expires, if Emergency Cycle Mode is enabled.

4 Once the hot mic duration expires, the radio automatically stops transmitting. To transmit again, press the **PTT** button.

**Reinitiating an Emergency Mode**

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

There are two instances where this can happen:

• You change the channel while the radio is in Emergency mode. This exits the Emergency mode. If Emergency Alarm is enabled on this new channel, the radio reinitiates Emergency.
• You press the programmed **Emergency On** button during an Emergency initiation/transmission state. This causes the radio to exit this state, and to reinitiate Emergency.

**Exiting Emergency Mode After Sending the Emergency Alarm**

Your radio exits Emergency mode when one of the following occurs:

- Emergency Alarm acknowledgement is received (for **Emergency Alarm** only).
- All retries to send the alarm have been exhausted.
- The **Emergency Off** button is pressed.

**Note:** If your radio is powered off, it exits the Emergency mode. The radio will not reinitiate the Emergency mode automatically when it is turned on again.

## Privacy 

If enabled, 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 (unscrambled) transmissions.

Your radio supports two types of privacy:

- Basic Privacy.

- Enhanced Privacy.

Only one of the privacy types above can be assigned to the radio.

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 a different Key Value and Key ID, you will either hear a garbled transmission (Basic Privacy) or nothing at all (Enhanced Privacy).

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

**Note:** Some radio models may not offer this Privacy feature. Check with your dealer or system administrator for more information.

**1**   or   to Utilities and press  to select.

**2**  Press the programmed **Privacy** button to toggle privacy on or off.

## Lone Worker

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

Before raising the emergency, when the inactivity timer expires, the radio warns the user via an audio indicator.

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

Only one of the following Emergency Alarms can be 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 36 on ways to exit Emergency.

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

## Password Lock Features

If enabled, this feature only allows you access your radio if the correct password is entered upon powering up. Use the Channel Selector Knob and the three Side Buttons to enter password (see *Radio Controls* on page 15).

• Channel Selector Knob positions 1 to 9 represent numbers 1 to 9; position 10 represents the number 0.
• Side Buttons 1 to 2 represent numbers 1 to 2.

**Accessing the Radio from Password**

**1**  Power up your radio.
You hear a continuous tone.

**2**  Use the Channel Selector Knob to enter the first digit of the password.

**3**  Press Side Button 1 or 2 to enter each digit of the remaining three digits of the password.

- Enter your current four-digit password with the radio's keypad. The second line of the display shows ●●●●. Press 🆗 to proceed.
- Enter your current four-digit password. Press ◁ or ▷ to edit each digit's numeric value. Each digit changes to ●. Press to move to next digit. Press 🆗 to confirm your selection.

You hear a positive indicator tone for every digit entered. When the second digit of the password is entered, your radio ignores any Channel Selector Knob position change. When the last digit of the four-digit password is entered, your radio automatically checks the validity of the password.

If the password is correct, your radio proceeds to power up. See *Powering Up the Radio* on page 13.

If the password is incorrect, you hear a continuous tone. Repeat Steps *2* and *3*.

After the third incorrect password, your radio enters into locked state. A tone sounds and the LED double blinks yellow.

Your radio enters into locked state for 15 minutes, and responds to inputs from **On/Off/Volume Control Knob** only.

**Note:** The radio is unable to receive any call, including emergency calls, in locked state.

**Unlocking the Radio from Locked State**

**1** If your radio was powered down after being in the locked state, power up the radio.
A tone sounds and the LED double blinks yellow.

**2** Wait for 15 minutes.
Your radio restarts the 15 minutes timer for locked state when you power up.

**3** Repeat Steps *1* and *2* in *Accessing the Radio from Password* on page 42.

**Changing the Password**

**1** 🔲 to access the menu.

**2** ◁ or ▷ to Utilities and press 🆗 to select.

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**3** ◀ or ▶ to `Radio Settings` and press OK to select.

**4** ◀ or ▶ to `Passwd Lock` and press OK to select.

**5** Enter the four-digit password.

See Step *2* in *Accessing the Radio from Password* on page 42.

**6** Press OK to proceed.
If the password is incorrect, the display shows `Wrong Password`, and automatically returns to the previous menu.

**7** If the password entered in the previous step is correct, ◀ or ▶ to `Change Pwd` and press OK to select.

**8** Enter a new four-digit password.
See Step *2* in *Accessing the Radio from Password* on page 42.

**9** Reenter the previously entered four-digit password. See Step *2* in *Accessing the Radio from Password* on page 42.

**10** Press OK to proceed.

If the reentered password matches the new password entered earlier, the display shows `Password Changed`.

If the reentered password does **NOT** match the new password entered earlier, the display shows `Passwords Do Not Match`.

The screen automatically returns to the previous menu.

## Auto-Range Transponder System (ARTS) 🔴

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 dealer can program your radio to transmit or receive the ARTS signal.

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 LED rapidly blinks red.

## Over-the-Air-Programming (OTAP)

Your radio can be updated by your dealer remotely, via OTAP, without needing to be physically connected. Additionally, some settings can also be configured via OTAP.

While undergoing OTAP, the LED blinks green.

**Note:** When the radio is receiving high volume data, the High Volume Data icon appears and channel is busy. A **PTT** button press at this time may cause a negative tone to sound.

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

## Utilities

### Setting the Squelch Level

You can adjust your radio's squelch level to filter out unwanted calls with low signal strength or channels that have a higher than normal background noise.

**Normal Squelch** is the default. **Tight Squelch** filters out (unwanted) calls and/or background noise; however, calls from remote locations may also be filtered out.

**1** ◁ or ▷ to Utilities and press ⓞⓚ to select.

**2** Press the programmed **Squelch** button.

| Tone heard ... | Radio operating in ... |
|---|---|
| Positive Indicator tone | Tight Squelch |
| Negative Indicator tone | Normal Squelch |

### Setting the Power Level

You can customize your radio's power setting to high or low for each channel.

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

Press the programmed **Power Level** button.

| Tone heard ... | Radio transmitting at ... |
|---|---|
| Positive Indicator tone | Low Power |
| Negative Indicator tone | High Power |

## Turning the Voice Operating Transmission (VOX) Feature On or Off

This feature 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.

Pressing the **PTT** button during radio operation will disable VOX. To re-enable VOX, do one of the following:

- Turn the radio off and power it on again.
- Change the channel via the Channel Selector Knob.

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

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

**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 the Radio Tones/Alerts On or Off

You can enable and disable all radio tones and alerts (except for the incoming Emergency alert tone) if needed.

Press the programmed **All Tones/Alerts** button.

| Tone heard ... | Indication |
|---|---|
| Positive Indicator tone | All tones and alerts are **ON**. |
| Negative Indicator tone | All tones and alerts are **OFF**. |

**Switching Audio Route between Internal Radio Speaker and Wired Accessory**

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

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

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

Press the programmed **Audio Toggle** button to toggle audio routing between the internal radio speaker and the speaker of wired accessory.

**Intelligent Audio**

Your radio can automatically adjust its audio volume to overcome background noise in the environment, inclusive of all stationary and non-stationary noise sources. This feature is a Receive-only feature and does not affect Transmit audio.

Press the programmed **Intelligent Audio** button.

**Turning the Acoustic Feedback Suppressor Feature On or Off** 🔊

This feature allows you to minimize acoustic feedback in received calls.

Press the programmed **Acoustic Feedback Suppressor** button.

You hear a positive indicator tone, indicating that Acoustic Feedback Suppressor is now enabled.

You hear a negative indicator tone, indicating that the radio is unable to activate Acoustic Feedback Suppressor.

**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. Press the programmed **Trill Enhancement On/Off** button to toggle trill enhancement on or off.

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# Batteries and Chargers Warranty

## The Workmanship Warranty

The workmanship warranty guarantees against defects in workmanship under normal use and service.

| | |
|---|---|
| All MOTOTRBO Batteries | 24 Months |
| IMPRES Chargers (Single-Unit and Multi-Unit, Non-Display) | 24 Months |
| IMPRES Chargers (Multi-Unit with Display) | 12 Months |

## The Capacity Warranty

The capacity warranty guarantees 80% of the rated capacity for the warranty duration.

| | |
|---|---|
| Nickel Metal-Hydride (NiMH) or Lithium-Ion (Li-Ion) Batteries | 12 Months |

| | |
|---|---|
| IMPRES Batteries, When Used Exclusively with IMPRES Chargers | 18 Months |

# 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 that MOTOROLA will be notified promptly in writing by such purchaser of any notice of such claim,
2 that 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.

**MOTOROLA**

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