

MOTOTRBO™

PROFESSIONAL DIGITAL TWO-WAY RADIO

DP2000/DP2000e Series Portable Radio User Guide

FEBRUARY 2024

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■ The European Union's WEEE directive and the UK's WEEE regulation require that products sold into EU countries and the UK must have the crossed-out wheellie bin label on the product (or the package in some cases). As defined by the WEEE directive, this crossed-out wheellie bin label means that customers and end users in EU and UK countries should not dispose of electronic and electrical equipment or accessories in household waste.

Customers or end users in EU and UK countries should contact their local equipment supplier representative or service center for information about the waste collection system in their country.

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Please note that certain features, facilities, and capabilities described in this document may not be applicable to or licensed for use on a specific system, or may be dependent upon the characteristics of a specific mobile subscriber unit or configuration of certain parameters. Please refer to your Motorola Solutions contact for further information.

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Legal and Compliance Statements

Important Safety Information

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

 **CAUTION:** **This radio is restricted to Occupational use only.** Before using the radio, read the RF Energy Exposure and Product Safety Guide that comes with the radio. This guide contains operating instructions for safe usage, RF energy awareness, and control for compliance with applicable standards and regulations.

Warranty and Service Support

Limited Warranty

MOTOROLA SOLUTIONS COMMUNICATION PRODUCTS

I. WHAT THIS WARRANTY COVERS AND FOR HOW LONG:

Motorola Solutions, Inc. ("Motorola Solutions") warrants the Motorola Solutions 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:

Portable Radios	Two (2) Years
Product Accessories (Including Batteries and Chargers)	One (1) Year

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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 Solutions through one of its authorized warranty service locations. If you first contact the company which sold you the Product (for example, dealer or communication service provider), it can facilitate your obtaining warranty service. You can also call Motorola Solutions at 1-800-927-2744.

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 Solutions supplied equipment) which adversely affect performance of the Product or interfere with Motorola Solutions 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.
8. Rechargeable batteries if 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.
9. Freight costs to the repair depot.
10. A Product which, due to illegal or unauthorized alteration of the software/firmware in the Product, does not function in accordance with Motorola Solutions published specifications or the FCC certification labeling in effect for the Product at the time the Product was initially distributed from Motorola Solutions.

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12. Normal and customary wear and tear.

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2. Motorola Solutions 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 Solutions opinion be likely to become, the subject of a claim of infringement of a United States patent, that such purchaser will permit Motorola Solutions, 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 Solutions.

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VII. GOVERNING LAW

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

VIII. For Australia Only

This warranty is given by Motorola Solutions Australia Pty Limited (ABN 16 004 742 312) of Tally Ho Business Park, 10 Wesley Court, Burwood East, Victoria.

Our goods come with guarantees that cannot be excluded under the Australia Consumer Law. You are entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

Motorola Solutions Australia's limited warranty above is in addition to any rights and remedies you may have under the Australian Consumer Law. If you have any queries, please call Motorola Solutions Australia at 1800 457 439. You may also visit our website: http://www.motorolasolutions.com/XA-EN/Pages/Contact_Us for the most updated warranty terms.

Chapter 1

Read Me First

This user guide covers the basic operations of the radio models offered in your region.

Notations Used in This Manual

Throughout the text in this publication, you notice the use of **Warning**, **Caution**, and **Notice**. These notations are used to emphasize that safety hazards exist, and the care that must be taken or observed.



WARNING: An operational procedure, practice, or condition, and so on, which may result in injury or death if not carefully observed.



CAUTION: An operational procedure, practice, or condition, and so on, which may result in damage to the equipment if not carefully observed.



NOTE: An operational procedure, practice, or condition, and so on, which is essential to emphasize.

Special Notations

The following special notations are used throughout the text to highlight certain information or items:

Table 1: Special Notations

Example	Description
Menu key or PTT button	Bold words indicate a name of a key, button, or soft menu item.
Your radio shows Bluetooth On.	Typewriter words indicate the MMI strings or messages displayed on your radio.
< <i>required ID</i> >	The courier, bold, italic, and angle brackets indicate user input.
Setup → Tone → All Tones	Bold words with the arrow in between indicate the navigation structure in the menu items.

Feature and Service Availability

Your dealer or administrator may have customized your radio for your specific needs.



NOTE:

- Not all features in the manual are available in your radio. Contact your dealer or administrator for more information.

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

- What are the functions of each button?
- Which optional accessories may suit your needs?
- What are the best radio usage practices for effective communication?
- What maintenance procedures promote longer radio life?

1.1

Software Version

All the features described in the following sections are supported by the software version:

R02.24.01.1000 or later.

Contact your dealer or administrator for more information.

Chapter 2

Introduction

This user guide is written as per the highest tier model offered to the region.

The following table describes ways to access features for different radio models. You receive different indications depending on the radio model.

Table 2: The Feature Access and Indications of Different Radio Model

	Limited Keypad	Non-Keypad
Radio Model	Figure 1: DP2600/DP2600e	Figure 2: DP2400/DP2400e
		
Feature Access	<ul style="list-style-type: none"> • Menu • Programmable Button 	Programmable Button
Feature Indication	<ul style="list-style-type: none"> • Tone • LED indicator • Display • Voice Announcement or Text-to-Speech 	<ul style="list-style-type: none"> • Tone • LED indicator • Voice Announcement or Text-to-Speech

 **NOTE:** To understand which feature is available with the **Programmable Button**, you can refer to the [Programmable Buttons on page 24](#) topic.

Chapter 3

Radio Care

This section describes the basic handling precaution of the radio.

Table 3: IP Specification

IP Specification	Description
IP67	Allows your radio to withstand adverse field conditions such as being submersed in water between 15 cm and 1 m for 30 minutes or dust tight for 2–8 hours.

 **CAUTION:** Do not disassemble your 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 your radio has been submersed in water, shake your 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 your radio's battery contact area has been exposed to water, clean and dry battery contacts on both your radio and the battery before attaching the battery to radio. The residual water could short-circuit the radio.
- If your radio has been submersed in a corrosive substance (for example, saltwater), rinse radio and battery in fresh water then dry radio and battery.
- To clean the exterior surfaces of your radio, use a diluted solution of mild dishwashing detergent and fresh water (for example, 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 radio and your 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.
- Your radio with antenna attached properly is designed to be submersible to a maximum depth of 1 m (3.28 ft) and a maximum submersion time of 30 minutes. Exceeding either maximum limit or use without antenna may result in damage to your radio.
- When cleaning your radio, do not use a high-pressure jet spray on radio as this will exceed the 1 m depth pressure and may cause water to leak into your radio.

Chapter 4

Getting Started

This chapter provides instructions on how to prepare your radio for use.

4.1

Charging the Battery

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

Prerequisites: Turn off your radio when charging.

Procedure:

- Charge your battery only in non-hazardous areas. After battery is charged, allow your radio to rest for at least 3 minutes.
- To comply with warranty terms and avoid damage, charge the battery using a Motorola Solutions authorized charger.
- Charge a new battery 14 to 16 hours before initial use for best performance.
Batteries charge best at room temperature.
- 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 Solutions Premium battery warranty duration.

4.2

Attaching the Battery

Procedure:

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

Postrequisites:



NOTE:

If your radio's Certification Type is set to UL/FM and an unrecognized or wrong or unknown battery is attached, your radio shows the following indications:

- Unrecognized battery:
 - The red LED blinks.
 - The display shows `Unrecognized Battery` in 5 s periodic frequency.
- Wrong battery:
 - A low pitched warning tone sounds.
 - The red LED blinks.
 - The display shows `Wrong Battery`
 - The Voice Announcement or Text-to-Speech sounds if loaded using CPS.
- Unknown battery:
 - An alert tone sounds.
 - The display shows `Unknown Battery`.
 - Battery icon is disabled.

The certification of the radio is voided if you attach a UL battery to an FM approved radio or vice versa.

If your radio is attached with an unsupported, wrong, or unrecognized battery, immediately swap with the correct battery.

4.3

Removing the Battery

Prerequisites: Ensure that your radio is turned off.

Procedure:

Move the battery latch into unlock position and hold, and slide the battery down and off the rails.

4.4

Attaching the Antenna

Procedure:

1. Set the antenna in the receptacle.
2. Turn the antenna clockwise.



NOTE: Fastening the antenna blocks water and dust from entering the radio.



CAUTION: To prevent damages, replace the faulty antenna with only MOTOTRBO antennas.

4.5

Removing the Antenna

Procedure:

1. Turn the antenna counterclockwise.
2. Remove the antenna from the receptacle.

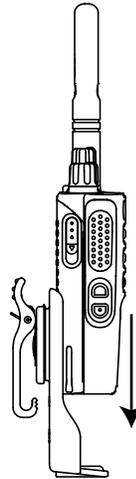
4.6

Attaching the Carry Holster

Procedure:

1. Align the rails on the carry holster with the grooves on the battery.
2. Press downwards until you hear a click.

Figure 3: Attaching the Carry Holster



4.7

Attaching the Universal Connector Cover

Procedure:

1. Insert the slanted end of the cover into the slots above the universal connector.
2. Press downwards on the cover to seat the cover properly on the universal connector.
3. Secure the connector cover to the radio by pushing the latch upwards.

4.8

Removing the Universal Connector Cover

Procedure:

1. Push the latch downwards.
2. Lift the cover up and slide the dust cover down from the universal connector.

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

4.9

Attaching the Accessory Connector

Procedure:

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.

Figure 4: Attaching the Accessory Connector to Limited Keypad Radio

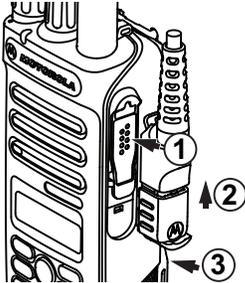
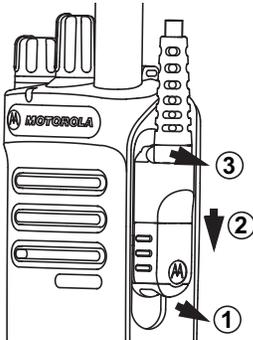


Figure 5: Attaching the Accessory Connector to Non-keypad Radio



4.10

Turning the Radio On

Procedure:

Turn the **On/Off/Volume** knob clockwise until a click sounds.

Result:

If your radio is turned on, your radio shows the following indications:

- A tone sounds.



NOTE: If the Tones/Alerts function is disabled, no tone sounds.

- The green LED illuminates.
- The Home screen lights up.



NOTE:

If your radio fails to turn on although your battery is charged and properly attached, contact your dealer for assistance.

4.11

Turning the Radio Off

Procedure:

Turn the **On/Off/Volume** knob counterclockwise until a click sounds.

Result: The display shows `Powering Down`.

4.12

Adjusting the Volume

Procedure:

Perform one of the following actions:

- To increase the volume, turn the **On/Off/Volume** knob clockwise.
- To decrease the volume, turn the **On/Off/Volume** 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.

Chapter 5

Radio Overview

Radio overview explains the buttons, icons, and LED indications of your radio.

Figure 6: Limited Keypad Model



Table 4: Callout Legend

Label	Item	Description
1	Channel Selector Knob	To select channel.
2	On/Off/Volume Knob	To turn your radio on or off and adjust volume.
3	LED Indicator	The red, green, and amber light-emitting diodes indicate operating status.
4	Push-To-Talk (PTT) button	To execute voice operations (for example, Group Call and Private Call).
5	Microphone	Allows the voice to be sent when PTT or voice operations are activated.

Label	Item	Description
6	Side Buttons	These buttons are field programmable using the Customer Programming Software (CPS).
7	Menu Navigation Buttons	Five buttons to provide menu navigation and selection interface.
8	Liquid Crystal Display (LCD)	65 x132 grayscale display provides visual information about many radio features.
9	Speaker	Outputs all tones and audio that are generated by the radio (for example, features like keypad tones and voice audio).
10	Universal Connector	Interface point for all accessories to be used with the radio. It has twelve points to which specific accessories will connect and be activated.
11	Antenna	Provides the needed RF amplification when transmitting or receiving.

Figure 7: Non-Keypad Model



Table 5: Callout Legend

Label	Item	Description
1	Channel Selector Knob	To select channel.
2	On/Off/Volume Knob	To turn your radio on or off and adjust volume.
3	LED Indicator	The red, green, and amber light-emitting diodes indicate operating status.
4	Push-To-Talk (PTT) button	To execute voice operations (for example, Group Call and Private Call).
5	Microphone	Allows the voice to be sent when PTT or voice operations are activated.
6	Side Buttons	These buttons are field programmable using the Customer Programming Software (CPS).
7	Speaker	Outputs all tones and audio that are generated by the radio (for example, features like keypad tones and voice audio).
8	Universal Connector	Interface point for all accessories to be used with the radio. It has twelve points to which specific accessories will connect and be activated.
9	Antenna	Provides the needed RF amplification when transmitting or receiving.

5.1

Keypad Overview

Figure 8: Keypad Overview



Table 6: Keypad Overview

Label	Button Name	Description
1	Left button	Press left to navigate through your options.
2	Menu button	Press to access Menu feature.
3	Programmable Button 1 (P1)	This button is field programmable using the Customer Programming Software (CPS).
4	Programmable Button 2 (P2)	This button is field programmable using the CPS.
5	Back/Home button	Press to return to previous screen. Press and hold to return to Home screen.
6	Right button	Press right to navigate through your options.
7	OK button	In the menu, use this key to select.

5.2

Programmable Buttons

You can program the programmable buttons as shortcuts to the following radio functions through programming software.



NOTE: Contact your dealer for more information.

Table 7: Assignable Radio Functions

Function	Description
Action List	Allows you to launch the action list and start the feature or function from the action list.
All Alert Tones	Allows you to toggle all tones and alerts to on or off.
Analog Scrambling	Allows you to toggle the Analog Scrambling feature to on or off.
Analog Scrambling Code	Allows you to toggle the Analog Scrambling Code feature to on or off.
Audio Profiles	Allows you to select the preferred audio profiles.
Audio Toggle	Allows you to toggle the audio routing between the internal radio speaker and the wired accessory speaker.
Backlight	Allows you to toggle the display backlight to on or off.
Backlight Brightness	Allows you to adjust the brightness level.
Battery Indicator	Allows you to check the current status of the battery level.
Call Alert.	Allows you to direct access to the contacts list and select the required contact to send a call alert.
Call Forwarding	Allows you to toggle the Call Forwarding to on or off.
Call Log	Allows you to select the call log list.
Channel Announcement	Allows you to play zone and channel announcement voice messages in the current channel.
Confirm	Allow you to confirm a feature.
Contacts	Provides direct access to the contacts list.
Emergency Off	Allows you to terminate an outgoing emergency call.
Emergency On	Allows you to set up an emergency call.
Intelligent Audio	Allows you to toggle intelligent audio to on or off.
Mic AGC	Allows you to toggle the internal microphone automatic gain control (AGC) to on or off.
Monitor	Allows you to monitor a channel.
Notifications	Allows you to direct access to the notification list.
Nuisance Delete	Allows you to temporarily remove an unwanted channel from the scan list, except the Selected Channel. The nuisance deleted channel will be restored into the scan list, for instance, when radio is powered off and back on again (not applicable in Capacity Plus).
One Touch Access	Allows you to direct access to the predefined call features.

Function	Description
Permanent Monitor	Allows you to monitor a selected channel for all radio traffic until function is disabled (not applicable in Capacity Plus).
Phone	Allows you to direct access to the phone contact list.
Power Level	Allows you to toggle the transmit power to high or low.
Privacy	Allows you to toggle the privacy to on or off.
Radio Alias and ID	Provide radio alias and ID.
Radio Check	Allows you to check if the radio is active in the system.
Radio Enable or Disable	Allows a target radio to be remotely enabled or disabled.
Repeater or Talkaround	Allows you to toggle between using a repeater and directly communicating with another radio.
Reset Home Channel	Allows you to select a new home channel.
Scan	Allows you to toggle the scan to on or off.
Silence Home Channel Reminder	Allows you to mute the Home Channel Reminder.
Text Message	Allows you to select the text message menu.
TX Interrupt Remote Dekey	Allows you to stop an on-going voice call by dekeying the transmitting radio or terminate the repeater call hang time in order to free up the channel. This button can also be used to end a Remote Monitor session.
Trill Enhancement	Allows you to toggle the trill enhancement to on or off.
Voice Announcement	Allows you to toggle the Voice Announcement to on or off.
Voice Operating Transmission (VOX)	Allows you to toggle the VOX to on or off.
Zone Selection	Allows you to select from a list of zones.

5.3

Icons

Icons are only available for radio with display.

Your radio display shows the radio status, text entries, and menu entries.

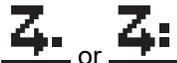
5.3.1

Display Icons

The following icons appear on the status bar at the top of the radio display. The icons are arranged left most in order of appearance or usage, and are channel-specific.

Table 8: Display Icons

Icon	Description
	Battery

Icon	Description
	Bluetooth Connected
	Bluetooth Not Connected
	Emergency
	High Volume Data
	Monitor
	Mute Mode
	Notification
	Over-the-Air Programming Delay Timer
	Power High
	Power Low
	Received Signal Strength Indicator (RSSI)
	Response Inhibit
	Scan ¹
	Scan Priority 1 or Priority 2 ¹
	Secure
	Service & Support
	Talkaround ¹
	Tones Disable
	Unsecure

¹ Not available in Capacity Plus.

Icon	Description
	Vote Scan

5.3.2

Advanced Menu Icons

The following icons appear beside menu items that offer a choice between two options or as an indication that there is a sub-menu offering two options.

Table 9: Advanced Menu Icons

Icon	Description
	Checkbox (Checked)
	Checkbox (Empty)
	Solid Black Box

5.3.3

Call Icons

The following icons appear on the display during a call. These icons also appear in the Contacts list to indicate alias or ID type.

Table 10: Call Icons

Icons	Description
	Private Call
	Group Call/All Call
	Phone Call as Group or All Call
	Phone Call as Private Call

5.3.4

Mini Notice Icons

The following icons appear momentarily on the display after an action to perform a task is taken.

Table 11: Mini Notice Icons

Icon	Description
	Failed Transmission (Negative)
	Successful Transmission (Positive)
	Transmission in Progress (Transitional)

5.3.5

Sent Items Icons

The following icons appear at the top right corner of the display in the Sent Items folder.

Table 12: Sent Items Icons

Icon	Description
 or 	In Progress
 or 	Send Failed
 or 	Sent Successfully

5.4

LED Indications

The LED Indicator shows the operational status of your radio.

A qualified technician can permanently disable the LED indication by preprogramming it.

Table 13: LED Indications

Indication	Status
Blinking Red	<ul style="list-style-type: none"> • The radio is indicating a battery mismatch.² • The radio has failed the self-test upon powering up. • The radio is receiving an emergency transmission. • The radio is transmitting in low battery state. • The radio has moved out of range if Auto-Range Transponder System is configured. • Mute Mode is enabled.

² Only applicable for models with the latest software and hardware.

Indication	Status
Solid Yellow	<ul style="list-style-type: none"> • The radio is monitoring a conventional channel.
Blinking Yellow	<ul style="list-style-type: none"> • The radio has yet to respond to a Call Alert. • The radio is scanning for activity.
Double Blinking Yellow	<ul style="list-style-type: none"> • The radio has Auto Roaming enabled. • The radio is actively searching for a new site. • The radio has yet to respond to a Group Call Alert. • The radio is locked. • The radio is not connected to the repeater while in Capacity Plus.
Solid Green	<ul style="list-style-type: none"> • The radio is powering up. • The radio is transmitting. • The radio is sending a Call Alert or an emergency transmission.
Blinking Green	<ul style="list-style-type: none"> • The radio is receiving a call or data. • The radio is retrieving the Over-the-Air Programming transmissions. • The radio is detecting activity over the air. <p data-bbox="630 974 1390 1033">  NOTE: The activity may or may not affect the programmed channel of the radio due to the nature of the digital protocol. </p>
Double Blinking Green	The radio is receiving a privacy-enabled call or data.

Chapter 6

System Overview

System overview explains what type of systems and modes available in the radio.

6.1

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 and analog to digital mode, whereas some are available in both.

There are minor differences on how each feature works but they do not affect the performance of your radio.

6.2

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. This is a conventional multi-site mode.

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. Contact your dealer for more information.

6.3

Capacity Plus

Capacity Plus is a cost effective and entry-level digital trunked system. It expands the capacity and extends the coverage for single and multi-sites. The single and multi-sites dynamic trunking offers better capacity and coverage.



NOTE: If you try to access a feature not applicable to Capacity Plus–Single-Site or Capacity Plus–Multi-Site by using a programmable button, you hear a negative indicator tone.

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 configuration allows your radio to efficiently utilize the number of available programmed channels while in Repeater Mode.

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

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. It is also known as Linked Capacity Plus.

It allows your radio to extend trunking communication beyond the reach of a single site, by connecting to different available sites which are connected with an IP network. It also provides an increase in capacity by efficiently utilizing the combined number of available programmed channels supported by each of the available sites.

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

Automatically

Your radio scans through all available sites when the signal from the current site is weak or unable to detect any signal and locks on to the repeater with the strongest RSSI value.

Manually

Your radio searches for the next site in the roam list that is currently in range 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 roam list. Your radio searches these channels during the automatic roam operation to locate the best site.



NOTE: You cannot manually add or delete an entry in the roam list.

Chapter 7

Zone and Channel Selections

A zone is a group of channels. You can program each channel with different features that support different groups of users.

Table 14: Number of Supported Zones and Channels

Model	Zones	Channels	Channels per Zone
Limited Keypad Radio	50	128	16
Non-Keypad Radio	4	64	16

7.1

Selecting Zones

Procedure:

From the menu, select **Zone** → *<required zone>*.

Result: The display shows *<zone>* Selected.



NOTE: For all Non-Keypad radio, you are recommended to enable Voice Announcement feature for selecting zone. The Voice Announcement feature can only be enabled through radio programming software.

7.2

Selecting Channels

Procedure:

Turn the **Channel Selector** knob.



NOTE: If **Virtual Channel Stop** is enabled, your radio stops proceeding beyond the first or the last channel, and a tone is heard.

Result: Your radio switches to your preferred channel.

Chapter 8

Types of Radio Calls

There are several ways that you can make a call with your radio depending on the types of calls and system available on your radio.

Table 15: Types of Radio Calls

Call Type	Description
Group Call	A Group Call is a point-to-multipoint call operation. Your radio must be configured as a member of the group for you to communicate with each other.
Broadcast Voice Call	A Broadcast Voice 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.
Private Call	A Private Call is a call from an individual radio to another individual radio. You can set up a Private Call after performing a radio presence check or call immediately.
Selective Call	A Selective Call is a call from an individual radio to another individual radio. This feature is only supported in Analog system.
All Call	An All Call is a call from an individual radio to every radio on the site or every radio at a group of sites. This feature is used to make an important announcement.
Unaddressed Call	An Unaddressed Call is a group call to one of the 16 predefined group IDs.
Open Voice Channel Mode (OVCM)	An OVCM is a call from a radio that is not preconfigured to work in a particular system during a group or individual call. The OVCM group call supports broadcast calls.

When a call is interrupted, you hear a continuous Talk Prohibit Tone. Releasing the **PTT** button allows you to receive the call.

Channel Free Indication feature can be programmed on your radio by your dealer. If the Channel Free Indication feature is enabled, you hear a short alert tone when the recipient releases the **PTT** button, indicating the channel is free for you to respond.

8.1

Making Calls on the Radio

Procedure:

Perform one of the following actions based on the type of calls:

Option	Actions
Making group calls, private calls, unaddressed calls, or selective calls	<ol style="list-style-type: none">Select a channel with an active ID or alias.To call, press and hold the PTT button.Wait for the Talk Permit Tone to end, and speak into the microphone.  NOTE: For Group Call, you are to wait for the PTT Sidetone to end, and speak into the microphone if enabled.To listen, release the PTT button.
Making broadcast calls, all calls, or OVCM calls	<ol style="list-style-type: none">Select a channel with an active group ID or alias.To call, press and hold the PTT button.

If your radio does not detect voice activity for a predetermined period, the call ends.

8.2

Receiving and Responding to Calls on the Radio

When you receive calls, your radio shows the following indications:

- The green LED blinks.
- Your radio unmutes and the incoming call sounds through the speaker.
- The display shows the ID and alias and call status.

 **NOTE:** You cannot respond to a Broadcast Call or All Call.

Procedure:

1. To respond, press and hold the **PTT** button.
2. Wait for the Talk Permit Tone to end, and speak into the microphone.

 **NOTE:** For Group Call, wait for the **PTT** Sidetone to end, and speak into the microphone if enabled.

3. To listen, release the **PTT** button.

Chapter 9

Phone Calls

A Phone Call is a call in between an individual radio or a group of radios and a telephone.

Depending on how the radio is configured, the following features may or may not be made available:

- Access code.
- Dual Tone Multi Frequency (DTMF) tone.
- De-access code.
- Displaying of caller alias or ID on receiving a phone call.
- Ability to reject or accept a phone call.

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

9.1

Making Phone Calls

Procedure:

1. Press the programmed **Phone** button and select the required alias or ID.
2. To call, press and hold the **PTT** button.
3. To listen, release the **PTT** button.
4. To end the call, press the programmed **Phone** button.

Result: If the call ends successfully, your radio shows the following indications:

- A tone sounds.
- The display shows `Call Ended`.

9.2

Receiving and Responding to Phone Calls

When you receive a phone call, your radio shows the following indications:

- The green LED blinks.
- Your radio unmutes and the incoming call sounds through the speaker.
- The display shows the Phone Call icon and the call status.

Procedure:

1. To respond to the phone call, press and hold the **PTT** button.
2. Wait for the Talk Permit Tone to end, and speak into the microphone.
3. To listen, release the **PTT** button.

4. To end the call, select the **Back/Home** button.



NOTE: Your 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 talk back during the call.

Result: If the call ends successfully, your radio shows the following indications:

- A tone sounds.
- The display shows `Call Ended`.

Chapter 10

Voice Interrupt

Voice Interrupt allows your radio to end any ongoing calls.

The Voice Interrupt feature uses the reverse channel signaling to interrupt any ongoing calls. You are allowed to make a voice transmission during the interruption.

The Voice Interrupt feature improves the probability of delivering a new call to the recipients when a call is in progress.

Voice Interrupt is accessible if this feature has been programmed in your radio. Contact your dealer for more information.

10.1

Enabling the Voice Interrupt

Procedure:

1. To interrupt the transmission during an on-going call, press and hold the **PTT** button.
2. Wait for the Talk Permit Tone to end, and speak into the microphone.

Chapter 11

Initiating Transmit Interrupt

Procedure:

To interrupt an ongoing call, perform one of the following actions:

- Press the **PTT** button.
- Press the **Emergency** button.
- Perform data transmission.
- Press the programmed **TX Interrupt Remote Dekey** button.

Result:

The receiving radio displays `Call Interrupted`.

Chapter 12

Advanced Features

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

12.1

Analog Message Encode

Your radio can send preprogrammed messages from the Message list to a radio alias or the dispatcher.

12.1.1

Sending MDC Encode Messages to Dispatchers

Procedure:

From the menu, select **Message** → **Quick Text** → *<required message>*.

Result:

If the request is successful, your radio shows the following indications:

- A positive indicator tone sounds.
- The display shows a positive mini notice.

If the request is unsuccessful, your radio shows the following indications:

- A negative indicator tone sounds.
- The display shows a negative mini notice.

12.1.2

Sending 5-Tone Encode Messages to Contacts

Procedure:

From the menu, select **Message** → **Quick Text** → *<required message>* → *<required contact>*.

Result:

If the request is successful, your radio shows the following indications:

- A positive indicator tone sounds.
- The display shows a positive mini notice.

If the request is unsuccessful, your radio shows the following indications:

- A negative indicator tone sounds.
- The display shows a negative mini notice.

12.2

Analog Status Update

Your radio can send preprogrammed messages from the Status List indicating your current activity to a radio contact (for 5-Tone systems) or the dispatcher (for Motorola Data Communication systems).

For Motorola Data Communication (MDC) systems, the last acknowledged message is kept at the top of the Status list. The other messages are arranged in alphanumeric order.

12.2.1

Sending Status Updates to Predefined Contacts

Procedure:

Perform one of the following actions:

- For Motorola Data Communication (MDC) systems, from the menu, select **Status** → *<required status>* → **Set as Default** → **Menu/OK**.
- For 5-Tone systems, from the menu, select **Status** → *<required status>* → **Set as Default**.

Result:

For MDC systems, if the request is successful, your radio shows the following indications:

- A positive indicator tone sounds.
- The display shows a positive mini notice.

For MDC systems, if the request is unsuccessful, your radio shows the following indications:

- A negative indicator tone sounds.
- The display shows a negative mini notice.

For 5-Tone systems, if the request is successful, your radio display shows a ✓ beside the acknowledged status.

For 5-Tone systems, if the request is unsuccessful, your radio display shows a ✓ beside the previous status.

12.2.2

Viewing 5-Tone Status Details

Prerequisites: Purchase the Software License Key.

Procedure:

From the menu, select **Status** → *<required status>* → **View Details**.

Result: The display shows details of the selected status.

12.3

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 as follows:

Table 16: Auto-Range Transponder System Indications

Indication	Description
First-Time Alert	<ul style="list-style-type: none"> • A tone sounds. • The display shows <i>In Range</i> after the channel alias.
ARTS-in-Range Alert	<ul style="list-style-type: none"> • A tone sounds, if programmed. • The display shows <i>In Range</i> after the channel alias.
ARTS-Out-of-Range Alert	<ul style="list-style-type: none"> • A tone sounds. • The red LED rapidly blinks. • The display shows <i>Out of Range</i> alternating with the Home screen.

12.4

Call Alert Operation

Call Alert paging enables you to alert the recipient to call you back when they can. This feature is applicable for subscriber aliases or IDs only.

12.4.1

Making Call Alerts

Procedure:

From the menu, select **Contacts** → *<required ID or alias>* → **Call Alert**.

Result:

If the request is successful, the display shows a positive mini notice.

If the request is unsuccessful, the display shows a negative mini notice.

12.4.2

Responding to Call Alerts

When you receive a Call Alert, your radio shows the following indications:

- A repetitive tone sounds.
- The yellow LED blinks.
- The display shows a notification list of the Call Alert and the ID of the caller.

Procedure:

Respond to the caller with a Private Call by pressing the **PTT** button.

12.5

Call Indicator Settings

This feature allows you to configure call or text message tones.

12.5.1

Activating or Deactivating Call Ringers

You can activate or deactivate call ringers for Private Calls, Text Messages, Call Alerts, Telemetry Status with Text, and Selective Calls.

Activating Call Ringers

Procedure:

1. From the menu, select **Utilities** → **Radio Settings** → **Tones/Alerts** → **Call Ringers**.
2. Select the required tone.

Result:

If you activate call ringers, your radio display shows a ✓ and the selected tone.

Deactivating Call Ringers

Procedure:

1. From the menu, select **Utilities** → **Radio Settings** → **Tones/Alerts** → **Call Ringers**.
2. Select **Off**.

Result:

If you deactivate call ringers, your radio display shows a ✓ beside **Off**.

12.5.2

Assigning Ring Styles

You can program your radio to play one of the 11 predefined ring tones when receiving Private Calls, Call Alerts, or Text Messages.

Procedure:

From the menu, select **Contacts** → *<required ID or alias>* → **View/Edit** → **Ringer** → *<required tone>*.

12.5.3

Ring Alert Type

You can program your radio to vibrate when receiving calls. Your radio vibrates once or repetitively depending on the selected ring style.

For radios with batteries that support the vibrate feature and are attached to a vibrating belt clip, the Ring Alert Type options are Silent, Ring, Vibrate, and Ring and Vibrate.

For radios with batteries that do not support the vibrate feature and are not attached to a vibrating belt clip, Ring Alert Type is automatically set to Ring. The available Ring Alert Type options are Silent and Ring.



NOTE: If All Tones status is enabled, your radio displays the ring alert type. If All Tones status is disabled, your radio displays the All Tone Mute icon.

12.5.3.1

Selecting Ring Alert Types

Procedure:

1. From the menu, select **Utilities** → **Radio Settings** → **Tones/Alerts** → **Ring Alert Type**.
2. Select one of the following options:
 - **Silent**
 - **Ring**

12.5.4

Configuring Vibrate Styles

When you attach a Vibrating Belt Clip to your radio that has a battery supporting the vibrate feature, Vibrate Style is enabled.

Procedure:

1. From the menu, select **Utilities** → **Radio Settings** → **Tones/Alerts** → **Vibrate Style**.
2. Select one of the following options:
 - **Short**
 - **Medium**
 - **Long**

12.6

Call Log Features

Your radio tracks all recent outgoing, answered, and missed Private Calls. The call log feature is used to view and manage recent calls.

Missed Call Alerts can be included in call logs depending on the system configuration on your radio. You can perform the following tasks in each call list:

- View Details
- Delete Calls

12.6.1

Viewing Recent Calls

Procedure:

1. From the menu, select **Call Log**.
2. Select one of the following lists:
 - **Missed**
 - **Answered**

- **Outgoing**

3. View calls by scrolling through the list.

Result: The display shows the most recent entry.

12.6.2

Deleting Calls from the Call List

Procedure:

From the menu, select → **Call Log** → *<required list>* → *<required ID or alias>* → **Delete Entry?** → **Yes**.



NOTE: If you select **No**, your radio returns to the previous screen. If the list is empty, a tone sounds and the display shows `List Empty`.

Result: The display shows `Entry Deleted`.

12.6.3

Viewing Details from the Call List

Procedure:

From the menu, select → **Call Log** → *<required list>* → *<required ID or alias>* → **View Details**.

12.7

Contacts Settings

The Contacts menu provides an address book function on your radio. Each entry corresponds to an ID for making calls. The entries are alphabetically sorted.

Each entry supports different call types depending on your settings. The contact entries display Call Type, Call Alias, and Call ID information.

You can assign entries to programmable number keys as quick dial. You see a check mark before each number key that is assigned to an entry. If the check mark is before the `Empty` interface, a number key is not assigned to the entry.

Personal Computer (PC) Calls and Dispatch Calls are data-related. These calls are only available with an application.

Your radio supports Analog and Digital contacts, with a maximum of 500 members for each Contacts Lists.

For Analog contacts list, you view or edit the subscriber IDs, and initiate a Call Alert. Only your dealer can add or delete the subscriber IDs.

For Digital contacts list, you can add or edit the subscriber IDs. Only your dealer can delete the subscriber IDs.

12.7.1

Making Group Calls or Private Calls with Contact List

Procedure:

1. From the menu, select **Contacts** → *<required ID or alias>*.
2. To call, press and hold the **PTT** button.

3. Wait for the Talk Permit Tone to end, and speak into the microphone.
4. To listen, release the **PTT** button.

12.7.2

Setting Default Contacts

Procedure:

From the menu, select → **Contacts** → *<required ID or alias>* → **Set as Default**.

Result:

If the setting is successful, your radio shows the following indications:

- A positive indicator tone sounds.
- The display shows a positive mini notice.
- The display shows a ✓ beside the selected contact.

12.8

Dynamic Caller Alias

This feature allows a Caller Alias to be configured in the radio.

When in a call, the receiving radio displays the Caller Alias of the transmitting radio.

The Caller Aliases list can store up to 500 Caller Aliases of transmitting radio. You can view or make Private Calls from the Caller Aliases list. When you turn off your radio, the history of receiving Caller Aliases is removed from the Caller Aliases list.

12.8.1

Viewing the Caller Aliases List

You can access the Caller Aliases list to view the transmitting Caller Alias details.

Procedure:

From the menu, select **Caller Aliases** → *<preferred list>* → **View Details**.

12.8.2

Initiating Private Calls From the Caller Aliases List

Procedure:

1. From the menu, select **Caller Aliases** → *<required Caller Alias>*.
2. To call, press and hold the **PTT** button.

12.9

Emergency Operation

Emergency Alarms are used to indicate critical situations. You can initiate an Emergency Alarm at any time even when there is activity on the current channel.

You can only assign one type of Emergency Mode to the Emergency button for each channel. Your radio supports the following Emergency Modes:

Table 17: Emergency Modes

Emergency Mode	Description
Emergency Alarm	An Emergency Alarm is not a voice call. This alarm is an emergency notification sent to radios that are programmed to receive them.
Emergency Alarm with Call	Your radio transmits an Emergency Alarm. When the Emergency Alarm is acknowledged, the group of radios can communicate over the assigned emergency channel. Press and hold the PTT button to talk.
Emergency Alarm with Voice to Follow	Your radio transmits an Emergency Alarm. When the Emergency Alarm is acknowledged, your radio microphone is automatically activated which is known as Hot Mic. Hot Mic allows you to communicate with the group of radios without pressing the PTT button. <div style="display: flex; align-items: flex-start;"> <div style="margin-right: 10px;"></div> <div> <p>NOTE:</p> <ul style="list-style-type: none"> ● If the Emergency Cycle Mode is enabled, repetitions of Hot Mic and receiving period are made for a programmed duration. ● If you press and hold the PTT button during the programmed Hot Mic receiving period, your radio proceeds to make a call and stops Hot Mic receiving period timer. Your radio remains in emergency mode. Once PTT button is released, Hot Mic receiving period timer restarts. ● If the Emergency Alarm request fails, the radio does not retry to send the request, and enters the Hot Mic directly. </div> </div>
Silent Emergency Alarm	Your radio transmits an emergency notification without any audio or visual indicators.
Silent Emergency Alarm with Call	Your radio transmits an emergency notification without any audio or visual indicators. Your radio suppresses all audio and visual indicators of the emergency until you press and hold the PTT button to talk.
Silent Emergency Alarm with Voice to Follow	Your radio transmits an emergency notification without any audio or visual indicators. When the Emergency Alarm is acknowledged, the Hot Mic is activated. You can communicate with the group of radios without pressing the PTT button. <div style="display: flex; align-items: flex-start;"> <div style="margin-right: 10px;"></div> <div> <p>NOTE: The indicators only appear when you press the PTT button.</p> </div> </div>

Your dealer can set the Emergency On or Off function and button-press duration of the Emergency button. Contact your dealer for more information.

Your dealer can program the Emergency Search tone. When the tone is programmed, the Emergency Search tone sounds. The tone mutes when your radio transmits or receives voice, and stops when your radio exits Emergency mode.

12.9.1

Sending Emergency Alarms

Procedure:

Press the programmed **Emergency On** button.

Result:

If the alarm is successfully sent, your radio shows the following indications:

- The Emergency tone sounds.

- The green LED blinks.
- The display shows `Alarm Sent`.

If the alarm is unsuccessful after all retries, your radio shows the following indications:

- A negative tone sounds.
- The display shows `Alarm Failed`.

12.9.2

Sending Emergency Alarms with Call

Procedure:

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

If the alarm is successfully sent, your radio shows the following indications:

- The Emergency tone sounds.
- The green LED blinks.
- The display shows `Alarm Sent`.

2. To call, press and hold the **PTT** button.
3. Wait for the Talk Permit Tone to end, and speak into the microphone.
4. To listen, release the **PTT** button.

If your radio does not detect voice activity for a predetermined period, the call ends.

12.9.3

Sending Emergency Alarms with Voice to Follow

Procedure:

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

If the alarm is successfully sent, the Emergency tone sounds and Hot Mic is activated.

2. Speak into the microphone without pressing the **PTT** button.

Your 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.

12.9.4

Receiving Emergency Alarms

When you receive an Emergency Alarm, your radio shows the following indications:

- A tone sounds.
- The red LED blinks.

- The display shows the Emergency Alarm List, Emergency Talkgroup ID, and ID of the transmitting radio.

Procedure:

1. When the Emergency Alarm List appears, perform one of the following actions:
 - Select **OK** button.
 - Select the *<required ID>*.
2. Select **OK** button to view the action options.

12.9.5

Reinitiating the Emergency Mode

Procedure:

Perform one of the following actions:

- Change the channel while the radio is in Emergency mode.
 -  **NOTE:** You can reinitiate emergency mode only if you enable emergency alarm on the new channel.
- Press the programmed **Emergency On** button during an emergency initiation or transmission state.

Result: The radio exits the Emergency mode, and reinitiates Emergency.

12.9.6

Exiting the Emergency Mode

Your radio automatically exits emergency mode when you are having the following scenarios:

- An acknowledgment is received from the system (for emergency alarms only).
- All retries to send the alarm are exhausted.
- Turning off your radio. When you turn on your radio, the emergency will not reinitiate automatically.
- Change your current channel to a channel with no Emergency.

Procedure:

Press the programmed **Emergency Off** button.

Result:

If you exited the Emergency successfully, your radio shows the following indications:

- The tone ceases.
- The red LED extinguishes.

12.10

Entering the Front Panel Programming

You can customize certain feature parameters in the Front Panel Programming (FPP) to enhance the use of your radio.

Procedure:

1. From the menu, select **Utilities** → **Program Radio**.
2. Enter your current eight-digit password.

3. Select the required setting.

12.11

Home Channel Reminder

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

When this feature is enabled and your radio is not set to the home channel for some time, the following indications occur periodically:

- A tone and the Home Channel Reminder announcement sounds.
- The display shows `Non Home Channel`.

12.11.1

Muting the Home Channel Reminder

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

Procedure:

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

Result:

The display shows `HCR Silenced`.

12.11.2

Setting New Home Channels

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

Procedure:

From the menu, select **Utilities** → **Radio Settings** → **Home Channel** → *<required channel>*.

Result:

The display shows a ✓ beside the selected home channel alias.

12.12

Lone Worker

This feature prompts an emergency if there is no user activity (button press or channel selector activation) for a predefined time.

When there is no user activity for a predefined time, the radio prewarns you using an audio indicator once the inactivity timer expires.

If there is no acknowledgment from you before the predefined reminder timer expires, the radio initiates an emergency condition as programmed by the dealer.

12.13

Monitor Feature

The feature allows you to remotely activate the microphone of a target radio. You can use this feature to monitor any audible activity surrounding the target radio.

12.13.1

Monitoring Channels

Procedure:

1. Press and hold the programmed **Monitor** button.
Your radio shows the following indications:
 - You hear the radio activity.
 - The yellow LED illuminates.
 - The display shows the **Monitor** icon.
2. To call, press and hold the **PTT** button.
3. To listen, release the **PTT** button.

12.13.2

Permanent Monitor

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

12.13.2.1

Setting the Permanent Monitor

Procedure:

Press the programmed **Permanent Monitor** button.

Result:

When your radio enters the mode, your radio shows the following indications:

- An alert tone sounds.
- The yellow LED illuminates.
- The display shows `Permanent Monitor On` and the Monitor icon.

When your radio exits the mode, your radio shows the following indications:

- An alert tone sounds.
- The yellow LED extinguishes.
- The display shows `Permanent Monitor Off`.

12.14

Priority Monitor

Priority Monitor allows your radio to receive transmission from talkgroups with higher priority during talkgroup call. This feature is only applicable to members in Receive Group List.



NOTE: This feature can only be accessed when Talkgroup Scan feature is enabled.

Priority talkgroups are Priority 1 (P1) and Priority 2 (P2). Your radio receives transmission according to the following priority:

1. Emergency Call for P1 Talkgroup.

2. Emergency Call for P2 Talkgroup.
3. Emergency Call for non-priority Talkgroup in the Receive Group List.
4. All Call.
5. P1 Talkgroup Call.
6. P2 Talkgroup Call.
7. Non-priority Talkgroup in the Receive Group List.

12.14.1

Receive Group List

Receive Group List allows you to create and assign members on the talkgroup scan list. You can have a maximum of 16 members in a list.



NOTE: To add member into the list, the talkgroup must first be configured in the radio.

For Other Systems, when your radio is programmed to edit the scan list, you can perform the following actions:

- Add or remove talkgroups.
- Add, remove, and edit priority for talkgroups.
- Add, remove, and edit affiliation talkgroups.
- Replace the existing scan list with a new scan list.

If a talkgroup is programmed as Permanent Talkgroup, you are unable to edit the talkgroup from the scan list.

12.15

Remote Monitor

This feature is used to turn on the microphone of a target radio with a subscriber ID. You can use this feature to remotely monitor any audible activity surrounding the target radio.

Both your radio and the target radio must be programmed to allow you to use this feature.

The Remote Monitor microphone selection of the target radio follows the programmed Hot Mic setting. There are two Hot Mic sources:

Hot Mic Source	Microphone Selection
Radio Microphone	<p>The Bluetooth microphone is used for Remote Monitor.</p> <p>If there is no Bluetooth microphone connected, the radio microphone is used.</p>
Wired Accessory Microphone	<p>The wired accessory microphone is used for Remote Monitor.</p> <p>If there is no wired accessory microphone connected, the Bluetooth microphone is used.</p> <p>If there is no Bluetooth microphone connected, the radio microphone is used.</p>

If initiated, the green LED blinks once on the target radio. This feature automatically stops after a programmed duration or when there is user operation on the target radio.

Remote Monitor comprises of two types:

- Remote Monitor without Authentication
- Remote Monitor with Authentication

When your radio turns on the microphone of a target radio with user authentication, a passphrase is required. The passphrase is programmed into the target radio through the radio programming softwares.

12.15.1

Initiating the Remote Monitor

Procedure:

1. Perform one of the following actions:

Option	Actions
Initiating Remote Monitor with Contact List	From the menu, select Contacts → <i><required ID or alias></i> → Remote Mon..
Initiating Remote Monitor with Manual Dial	<ol style="list-style-type: none">a. From the menu, select Contacts → Manual Dial → Radio Number.b. Either enter the ID or alias, or edit the previous dialed ID.c. Select Remote Mon..

2. Enter the passphrase if required.

Result:

If the request is successful, your radio shows the following indications:

- A positive tone sounds.
- The display shows a positive mini notice.
- The audio from the monitored radio starts playing for a programmed duration, and the display shows *Rem. Monitor*. When the timer expires, an alert tone sounds and the LED turns off.

If the request is unsuccessful, your radio shows the following indications:

- A negative tone sounds.
- The display shows a negative mini notice.

12.16

Mute Mode

Mute Mode provides an option to silence all audio indicators on your radio.

When Mute Mode is initiated, all audio indicators are muted except higher priority features such as emergency operations.

When Mute Mode is exited, your radio resumes playing ongoing tones and audio transmissions.

Mute Mode can be enabled for a predefined duration by setting the Mute Mode Timer. The duration of the timer is configured through the radio menu and can range between 0.5–6 hours. Mute Mode is exited once the timer expires.

If the timer is left at **0**, the radio remains in Mute Mode for an indefinite period until the radio is moved to a face-up position or the programmed **Mute Mode** button is pressed.



IMPORTANT: You can only enable either Face Down or Fall Alert one at a time. Both features cannot be enabled together.

12.16.1

Turning the Mute Mode On

Procedure:

Press the programmed **Mute Mode** button.

Result:

If Mute Mode is enabled, your radio shows the following indications:

- A positive tone sounds.
- The red LED blinks and continues blinking until Mute Mode is exited.
- The display shows `Mute Mode On`.
- The home screen shows the Mute Mode icon.
- Your radio mutes.
- If the Mute Mode Timer has been set, the timer begins counting down the duration that it is configured.

12.16.2

Setting the Mute Mode Timer

Procedure:

1. From the menu, select **Utilities** → **Radio Settings** → **Mute Timer**.
2. Edit the numeric value of each digit.

12.16.3

Exiting the Mute Mode

When the Mute Mode Timer expires, your radio automatically exits Mute Mode. You can also exit Mute mode manually.

Procedure:

Exit Mute Mode manually by performing one of the following actions:

- Press the programmed **Mute Mode** button.
- Press and hold the **PTT** button and speak into the microphone.
- Switch to any unprogrammed channel.

Result:

If Mute Mode is disabled, your radio shows the following indications:

- A negative tone sounds.
- The blinking red LED extinguishes.
- The display shows `Mute Mode Off`.
- The Mute Mode icon disappears from the home screen.
- Your radio unmutes and restores the speaker state.

- The Mute Mode Timer stops even if the timer has not expired.

12.17

Notification List

Your radio has a Notification list that collects all unread events on the channel, such as text messages, telemetry messages, missed calls, and call alerts.

The display shows the Notification icon when the Notification list has one or more events.

The list supports a maximum of 40 unread events. When the list is full, the next event automatically replaces the oldest event. After the events are read, they are removed from the Notification list.

The maximum number of notifications are 30 text messages and 10 missed calls or call alerts. This maximum number depends on individual feature (job tickets, text messages, missed calls, or call alerts) list capability.

12.17.1

Accessing the Notification List

Procedure:

From the menu, select **Notification**.

Result: The display shows all the available events.

12.18

Over-the-Air Programming

Your dealer can remotely update your radio through Over-the-Air Programming (OTAP) without any physical connection. Some settings can also be configured by using OTAP.

When your radio undergoes OTAP, the green LED blinks.

When your radio receives high volume data, your radio shows the following indications:

- If you press the **PTT** button, a negative tone sounds.
- The display shows the High Volume Data icon.
- The channel becomes busy.

When OTAP completes, your radio shows one of the following responses depending on the configuration:

- A tone sounds. The display shows `Updating Restarting`. Your radio restarts.
- Your radio displays the **Restart Now** or **Postpone** options. If you select **Postpone**, your radio returns to the previous screen. The display shows the OTAP Delay Timer icon until the automatic restart occurs.

When your radio turns on after automatic restart, your radio shows the following indications:

- If the program update is successful, the display shows `Sw Update Completed`.
- If the program update is unsuccessful, a tone sounds, the red LED blinks once, and the display shows `Sw Update Failed`.



NOTE:

If the programming update is unsuccessful, the update failure indications appear every time you turn on your radio. Contact your dealer to reprogram your radio with the latest software to eliminate the update failure indications.

12.19

Scan

Depending on the supported system available on your radio, your radio may have different behavior on Scan.

Channel Scan

When you start a scan, your radio scans through the programmed scan list for the current channel looking for voice activity. If you are on a digital channel, and your radio locks onto an analog channel, your radio automatically switches from digital mode to analog mode during the call and the same behavior occurs if you are on analog channel.

Table 18: Scan Methods

Method	Description
Main Channel Scan (Manual)	Your radio scans all the channels or groups in your scan list. When scanning, 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.

When you miss a call from a talkgroup or a channel that is in your scan list, you might be having the following situations:

- Scan feature is not on.
- Scan list member has been disabled through the menu.
- You are already participating in another call.



NOTE: If your radio joins a call for a Zone Scan List member from a different Zone and Call Hang Timer expires before you are able to respond, you must navigate to the Zone and Channel of the Scan List Member and start a new call to respond.

12.19.1

Turning the Scan On

Procedure:

From the menu, select **Scan** → **Scan State** → **Turn On**.

Result:

If scan is turned on, your radio shows the following indications:

- The yellow LED blinks.
- The display shows `Scan On` and the scan icon.

12.19.2

Turning the Scan Off

Procedure:

From the menu, select **Scan** → **Scan State** → **Turn Off**.

Result:

If scan is turned off, your radio shows the following indications:

- The LED extinguishes.
- The display shows *Scan Off* and the scan icon disappears.

12.19.3

Scan Talkback

The Talkback feature allows you to respond to a transmission while scanning.

Depending on how you configure the Scan Talkback feature, you will see two different scenarios if you press the PTT button when your radio scans into a call from the selectable group scan list.

Table 19: Scan Talkback Type

Type	Description
Scan Talkback Disabled	During an ongoing scanned call, if the PTT button is pressed, the scanned call is terminated and a new call is launched.
Scan Talkback Enabled	During an ongoing scanned call, if the PTT button is pressed, you can talkback to the scanned call.



NOTE:

If you face the following scenarios:

1. Scan into a call for a group that is not assigned to a channel position in the currently selected zone.
2. Miss the Hang Time of the call.

Perform the following actions:

1. Switch to the proper zone.
2. Select the channel position of the group to talk back to that group.

12.19.4

Nuisance Channels

Nuisance Channel is a channel that generates unwanted call continually.

You can temporarily remove the unwanted channel from the scan list and restore it back later on. This capability does not apply to the channel designated as the Selected Channel.

12.19.4.1

Deleting Nuisance Channels

Prerequisites: Your radio is scanned into the Nuisance Channel.

Procedure:

1. Press the programmed **Nuisance Delete** button until you hear a tone.
2. Release the programmed **Nuisance Delete** button.

12.19.4.2

Restoring Nuisance Channels

Procedure:

Perform one of the following actions:

- Restart your radio.
- Turn off and then turn on the scan.
- Change the channel using the **Channel Selector** knob.

12.19.5

Vote Scan

Vote Scan provides wide coverage in areas with 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.

During a vote scan, your radio shows the following indications:

- The yellow LED blinks.
- The display shows the Vote Scan icon.

12.19.6

Scan Lists

You can create and assign individual channels or groups in Scan Lists. 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. Scan List also known as Receive Group List.

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 analog and digital entries.

The Priority icon on the left of member ID indicates whether the member is on Priority 1 or Priority 2 channel list. You cannot have multiple Priority 1 and Priority 2 channels in a scan list. There is no icon if the priority is set to **None**.



NOTE: This feature is not applicable to Capacity Plus.

12.19.6.1

Editing Priority for the Scan List

Procedure:

1. To view and edit the priority of the talkgroup, from the menu, select **Scan** → **View/Edit List** → *<required alias>* → **Edit Priority**.
2. Perform one of the following actions:
 - To edit the required alias as Priority 1, select **Priority 1**.
 - To edit the required alias as Priority 2, select **Priority 2**.
 - To edit the required alias as no priority, select **None**.

3. If another talkgroup has been assigned to Priority 1 or Priority 2, you can overwrite the current priority when the display shows `Overwrite Existing?`.
 - To overwrite, select **Yes**.
 - To return to previous screen, select **No**.

12.19.6.2

Viewing the Scan List

Procedure:

1. From the menu, select **Scan** → **Scan List**.
2. Perform one of the following actions:
 - To do alias search, enter the required characters for the alias.
 - To search for the alias manually, scroll through the contact list with the **right** or **left** button.

12.19.6.3

Adding New Entries to the Scan List

Procedure:

1. From the menu, select **Scan** → **Scan List** → **Add Member** → *<required alias>*.
2. Perform one of the following actions:
 - To add the new alias as Priority 1, select **Priority 1**.
 - To add the new alias as Priority 2, select **Priority 2**.
 - To add the new alias as no priority, select **None**.
3. If another talkgroup has been assigned to Priority 1 or Priority 2, you can overwrite the current priority when the display shows `Overwrite Existing?`.
 - To overwrite, select **Yes**.
 - To return to previous screen, select **No**.
4. Perform one of the following actions:
 - To add another, select **Yes**.
 - To save the current list, select **No**.

12.19.6.4

Deleting Entries from the Scan List

Procedure:

1. From the menu, select **Scan** → **Scan List** → *<required alias>* → **Delete**.
2. Perform one of the following actions:
 - To delete the alias, select **Yes**.
 - To return to previous screen, select **No**.

12.19.7

Multi-Talkgroup Affiliation

Your radio can be configured for up to seven talkgroups at a site.

Up to seven talkgroups can be assigned as affiliation talkgroups from the 16 talkgroups in the Receive Group List. The selected talkgroup and the priority talkgroups are automatically affiliated.

12.19.7.1

Adding the Talkgroup Affiliation

Procedure:

1. From the menu, select **Scan** → **View/Edit List** → *<required ID or alias>* → **Edit Affiliation**.
2. To add the Talkgroup Affiliation, select **On**.

Result:

If affiliation is successfully added to the system, the display shows positive mini notice.

If maximum of seven talkgroups are selected for affiliation, the display shows `List Full`.



NOTE:

In the **View/Edit List**,  beside the talkgroups indicates registration in progress or adding talkgroup affiliation has failed.

The  beside the talkgroups indicates the talkgroup affiliation is successful.

12.19.7.2

Removing the Talkgroup Affiliation

Procedure:

1. From the menu, select **Scan** → **View/Edit List** → *<required ID or alias>* → **Edit Affiliation**.
2. To remove the Talkgroup Affiliation, select **Off**.

Result: In the **View/Edit List**,  disappears beside the selected Talkgroup ID.

12.20

Response Inhibit

This feature helps prevent your radio from responding to any incoming transmissions.



NOTE: Contact your dealer for more information.

If enabled, your radio does not generate any outgoing transmissions in respond to incoming transmissions, such as Radio Check, Call Alert, Radio Disable, Remote Monitor, Automatic Registration Service (ARS), and responding to Private Messages.

Your radio cannot receive Confirmed Private Calls when this feature is enabled. However, your radio is able to manually send transmission.

12.20.1

Setting the Response Inhibit

Procedure:

Press the programmed **Response Inhibit** button.

Result:

If the Response Inhibit is successfully turned off, your radio shows the following indications:

- A positive tone sounds.
- The display shows a momentary positive mini notice.

If the Response Inhibit fails to turn off, your radio shows the following indications:

- A negative tone sounds.
- The display shows a momentary negative mini notice.

12.21

Radio Check

If enabled, this feature allows you to determine if another radio is active in a system without disturbing the user of that radio. No audible or visual notification is shown on the target radio.

This feature is only applicable for subscriber IDs.

12.21.1

Sending Radio Checks

Procedure:

From the menu, select **Contacts** → *<required ID or alias>* → **Radio Check**.

Result:

If the target radio is active in the system, your radio shows the following indications:

- A tone sounds.
- The display shows `Target Radio Available`.

If the target radio is inactive in the system, your radio shows the following indications:

- A tone sounds.
- The display shows `Target Radio Not Available`.

12.22

Received Signal Strength Indicator

This feature allows you to view the Received Signal Strength Indicator (RSSI) values.

The display shows the RSSI icon at the top right corner.

12.22.1

Viewing RSSI Values

Procedure:

At the home screen, within 5 seconds, select the **Left** button three times and the **Right** button three times.

Result: The display shows the current RSSI values.

12.23

Rental Timer

The Rental Timer feature allows the radio rental dealer to set the permitted rental period of your radio and automatically disable the radio beyond the duration specified on the timer.

The radio can be programmed with a maximum rental period of 999 hours and a maximum rental period extension of 99 hours.

The timer calculates the radio usage time and disables the radio when the usage time reaches the predetermined rental period.

After the rental period expires, the radio ceases to function until the dealer resets the rental timer.



NOTE: This feature is applicable to DP2600e and DP2400e models only.

12.23.1

Accessing Rental Timer Information

Procedure:

From the menu, select **Utilities** → **Rental Timer** → **Information**.

Result: The display shows the hours.

12.23.2

Rental Expiry Reminder

The Rental Expiry Reminder feature provides a reminder when the rental period is expiring.

The radio provides a display and an audio reminder of the timer expiry.

For the audio reminder frequency, the voice announcement sounds as the followings:

- Every 1 hour after the first reminder, until the last 2 hours before the rental period expires.
- Twice for the last 2 hours before the rental period expires.
- Twice during the last 3 minutes, 2 minutes and 1 minute before the rental period expires.

For the display reminder, your radio display shows a momentary notice reminder referring to the number of hours before before the rental period expires.

For the last 3 minutes before expiry, your radio display shows a momentary notice reminder referring to the number of minutes before the rental period expires.

12.23.3

Extending the Rental Period

The radio can be programmed with a maximum of 99 hours rental period extension.

Procedure:

Perform one of the following actions:

Options	Actions
Extending the rental period through the menu	<p>a. From the menu, select Utilities → Rental Timer → Extension.</p> <p>b. Press the Menu/OK button.</p> <p> NOTE: You can only extend the rental period once. The extension check box is greyed out after you enable the feature.</p>
Extending the rental period through the button	<p>Press the Side Button 2 six times continuously.</p> <p> NOTE: You can only extend the rental period once. A negative indicator tone sounds if you press the button again.</p>

12.24

Security

This feature allows you to stun or revive any radio in the system.

For example, you may disable stolen radio to prevent unauthorized users from using and revive or 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 GNSS location reports and can be monitored remotely when it was stunned or disabled.

You can stun or revive a radio with or without authentication.

Authenticated Radio Disable is a selling feature and requires verification when you enable or disable a radio. When your radio disables a target radio with user authentication, a passphrase is required. The passphrase is preprogrammed in the target radio through the Customer Programming Software (CPS).

 **NOTE:** Contact your dealer to enable this feature.

12.24.1

Disabling Radios

Procedure:

1. From the menu, select **Contacts** → *<required ID or alias>* → **Radio Disable**.
2. Enter the passphrase if required.

Result:

If the request is successful, your radio shows the following indications:

- A positive indicator tone sounds.

- The display shows a positive mini notice.

If the request is unsuccessful, your radio shows the following indications:

- A negative indicator tone sounds.
- The display shows a negative mini notice.

12.24.2

Enabling Radios

Procedure:

1. From the menu, select **Contacts** → *<required ID or alias>* → **Radio Enable**.
2. Enter the passphrase if required.

Result:

If the request is successful, your radio shows the following indications:

- A positive indicator tone sounds.
- The display shows a positive mini notice.

If the request is unsuccessful, your radio shows the following indications:

- A negative indicator tone sounds.
- The display shows a negative mini notice.

12.25

Service and Support

You can identify the types of service and support that your radio needs through the service code.



NOTE: Service and Support features are only applicable for DP2000e Series Portable Radios.

For Full Keypad and Limited Keypad models, your radio shows the notification alert and service code on the radio display.

For Non-Keypad model, respective service code messages are only available through Voice Announcement.



NOTE: If the Voice Announcement feature is not enabled in the radio programming software, service mode and service-related announcements are not available for your Non-Keypad model.

For more information about the Service Code, refer to the MOTOTRBO™ Radios Service Codes Troubleshooting Guide, MN009539A01 at <https://learning.motorolasolutions.com>.

12.25.1

Accessing Notifications

You can identify the types of service and support that your radio needs through the notifications.

Procedure:

Perform one of the following actions:

Option	Actions
Accessing Single Notification Alert	If you receive a notification alert and the respective service code, perform one of the following actions: <ul style="list-style-type: none"> • To delete the service code, press Menu/OK → Yes. • To return to the previous screen, press the Back/Home button.
Accessing Multiple Notification Alert	If you receive a notification alert and a selection of notifications, perform the following actions: <ol style="list-style-type: none"> a. To view the service code details, select the <i><relevant notification></i>. b. Perform one of the following actions. <ul style="list-style-type: none"> • To delete the service code, press Menu/OK → Yes. • To return to the previous screen, press the Back/Home button.

12.25.2

Accessing Service and Support

You can identify the types of service and support that your radio needs through the service code.

Procedure:

Perform one of the following actions:

Option	Actions
Accessing The Service Codes From the Service & Support Menu	<ol style="list-style-type: none"> a. From the menu, select Service & Support → <i>< type of service code ></i> → <i><relevant notification></i>. b. Perform one of the following actions: <ul style="list-style-type: none"> • To delete the service code, press Menu/OK → Yes. • To return to the previous screen, press the Back/Home button.
Viewing The Get Support Link	<ol style="list-style-type: none"> a. From the menu, select Service & Support → Get Support. b. Type the URL into a web browser.

Option	Actions
<p>Accessing Service Mode</p> <p> NOTE: Only applicable for Non-Keypad model.</p>	<p>a. Press and hold the Side Button 1 for 5 seconds within 10 seconds after your radio is turned on.</p> <p>b. Perform one of the following actions:</p> <ul style="list-style-type: none"> • To listen to all service messages, press the Side Button 1 again. • To delete all service messages, press and hold the Side Button 2 until you hear a valid tone indicating successful deletion of all service messages. <p>c. To exit service mode, perform radio power cycle.</p> <p> NOTE: When the radio is in the service mode, normal radio operations are disabled.</p>

12.25.3

Viewing Service Contact

Viewing Service Contact feature is only available for radio models with display.

Procedure:

From the menu, select **Service & Support** → **Service Contact**.

Result: Your radio shows the service contact details.

12.26

Text Messaging

Your radio is able to receive data from another radio or a text message application.

There are two types of text messages, Digital Mobile Radio (DMR) Short Text Message and text message. The maximum length of a DMR Short Text Message is 23 characters. The maximum length of a text message is 280 characters, including the subject line. The subject line only appears when you receive messages from e-mail applications.



NOTE:

The maximum character length is only applicable for models with the latest software and hardware. For radio models with older software and hardware, the maximum length of a text message is 140 characters. Contact your dealer for more information.

12.26.1

Viewing Text Messages

Procedure:

1. From the menu, select **Messages**.
2. Perform one of the following actions:
 - For Text Messages or Telemetry Status, select **Inbox** → *<required messages>*.

- For Sent Text Messages, select **Sent Items** → *<required messages>*.

Result:

If the Inbox, Drafts, or Sent Items folder is empty:

- If the Keypad Tone is enabled, a tone sounds.
- The display shows `List Empty`.

If the Inbox, Drafts, or Sent Items folder is not empty, the display shows a subject line if the message is from an email application.

For Telemetry Status, you cannot reply to the message and your display shows `Telemetry: <Status Text Message>`.

12.26.2

Sending Text Messages

Prerequisites: Compose your message.

Procedure:

Perform one of the following actions:

Option	Actions
Sending Sent Text Messages	From your sent message, select Menu/OK → Resend .
Sending Quick Text Messages	<ol style="list-style-type: none">1. From the menu, select Messages → Quick Text.2. Perform one of the following actions:<ul style="list-style-type: none">○ Select the <i><required ID or alias></i>.
Resending Text Messages	Select Resend .

Result:

If your text message is successfully sent, your radio shows the following indications:

- A tone sounds.
- The display shows positive mini notice.

If your text message fails to send, the display shows the following options:

- Resend
- Forward
- Edit

12.26.3

Responding to Text Messages

When you receive a text message, your radio displays the following items:

- The Notification List with the ID or alias of the sender.

- The Message icon.



NOTE: If you press the **PTT** button, your radio exits the Text Message alert screen and makes a Private or Group Call to the sender.

Procedure:

Perform one of the following actions:

- To read the text message, select **Read**.
- To read the text message later, select **Read Later**.
- To delete the text message, select **Delete**.

12.26.4

Forwarding Text Messages

Procedure:

1. From the **Resend** option screen, select **Messages**.
2. To forward a Text Message from the Inbox or Sent Item folder, select *<required message>* → **Forward**.

Result:

If your text message is successfully forwarded, your radio shows the following indications:

- A positive tone sounds.
- The display shows positive mini notice.

If your text message fails to forward, the display shows the following indications:

- A negative tone sounds.
- The display shows negative mini notice.

12.26.5

Deleting Text Messages

Procedure:

1. From the menu, select **Messages**.
2. Perform one of the following actions:
 - To delete text messages, select **Inbox** → *<required text message>* → **Menu/OK** → **Delete**.
 - To delete all text messages, select **Inbox** → **Delete All**.
 - To delete sent text messages, select **Sent Items** → *<required text message>* → **Menu/OK** → **Delete**.
 - To delete all sent text messages, select **Sent Items** → **Delete All**.

Chapter 13

Utilities

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

13.1

Talkaround

This feature allows you to continue communicating when your repeater is non-operational, or when your radio is out of range from the repeater but within the talk 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.

13.1.1

Toggle Between Repeater and Talkaround Mode

Procedure:

1. From the menu, select **Utilities** → **Radio Settings** → **Talkaround**.
2. Select the **Menu/OK** button to toggle between Talkaround or Repeater mode.

Result:

When Talkaround mode is enabled, a ✓ appears beside **Enabled**.

When Talkaround mode is disabled, the ✓ disappears beside **Enabled**.

13.2

Setting Radio Tones and Alerts

Procedure:

1. From the menu, select **Utilities** → **Radio Settings** → **Tones/Alerts**.
2. Select one of the following options:
 - **All Tones**
 - **Talk Permit**
 - **Keypad Tone**
 - **Power Up Tone**
 - **Vol.Offset** → *<required volume>*.

Result: A ✓ appears beside the setting.

13.3

Setting Power Levels

Procedure:

1. From the menu, select **Utilities** → **Radio Settings** → **Power**.
2. Perform one of the following actions:
 - To enable communication with radios located at a considerable distance from you, select **High**.
 - To enable communication with radios in closer proximity, select **Low**.



NOTE: This feature is not applicable in Citizens Band channels that are in the same frequency.

13.4

Adjusting Display Settings

Procedure:

1. From the menu, select **Utilities** → **Radio Settings** → **Display**.
2. Select one of the following options:
 - **Day Mode/Night Mode**
 - **Brightness**
 - **Backlight Auto**
 - **Backlight Timer**
 - **Menu Timer**
 - **Intro Screen**

13.5

Setting Squelch Levels

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

Procedure:

1. From the menu, select **Utilities** → **Radio Settings** → **Squelch**.
2. Perform one of the following actions:
 - For a normal squelch level, select **Normal Squelch**.
 - To filter out unwanted calls or background noise, select **Tight Squelch**.



NOTE: This feature is not applicable in Citizens Band channels that are in the same frequency.

13.6

Keypad Lock Options

With this feature, you can avoid accidentally pressing buttons or changing channels when your radio is not in use. You can choose to either lock your keypad, channel selector knob, or both; depending on your requirements.

Your dealer can configure one of the following options with the radio programming softwares:

- Lock Keypad
- Lock Channel Selector Knob
- Lock Keypad and Channel Selector Knob

Contact your dealer to determine how your radio has been programmed.

13.6.1

Locking or Unlocking the Keypad

Procedure:

Perform one of the following actions:

- To lock the keypad, from the menu, select **Utilities** → **Radio Settings** → **Keypad Lock**.
- To unlock the keypad, press **Menu/OK** → *** or delete key**.

Result:

If the keypad is locked, the display shows a ✓ beside `Enabled`.

If the keypad is unlocked, the ✓ disappears beside `Enabled`.

13.7

Setting Languages

Procedure:

From the menu, select **Utilities** → **Radio Settings** → **Languages** → *<required language>*.

Result: A ✓ appears beside the selected language.

13.8

Setting LED Indicators

Procedure:

1. From the menu, select **Utilities** → **Radio Settings** → **LED Indicator**.
2. Perform one of the following actions:
 - To enable LED Indicator, select **Menu/OK** button.
 - To disable LED Indicator, select **Menu/OK** button.

Result:

If the LED Indicator is enabled, a ✓ appears beside `Enabled`.

If the LED Indicator is disabled, your radio shows the following indications:

- The ✓ disappears beside `Enabled`.

- The display backlight and keypad backlight are automatically turned off.

13.9

Password Lock

You can set a password to restrict access to your radio. Each time you turn on your radio, you must enter the password.

Your radio supports a four-digit password input.

Your radio is unable to receive calls in locked state.

13.9.1

Accessing Radios with Password

Prerequisites: Turn on your radio.

Procedure:

1. Enter your four-digit password.
2. Select the **Menu/OK** button.

Result:

If you enter the password correctly, your radio turns on.

If you enter the password incorrectly, a tone sounds, the yellow LED illuminates, and the display shows *Wrong Password*.



NOTE:

You may repeat the steps to enter the password. You are given three attempts before your radio enters into a locked state for 15 minutes. The display shows *Radio Locked*.

During locked state, your radio responds to inputs from the **On/Off/Volume knob** and the programmed **Backlight** button only.

If you restart your radio during the locked state, the timer restarts.

13.9.2

Unlocking Radios in Locked State

Procedure:

To unlock your radio in locked state, perform one of the following actions:

Option	Actions
Unlocking Radios in Locked State if your radio is turned on	<ol style="list-style-type: none">a. Wait for 15 minutes.b. Access the radio by following the steps in <i>Accessing Radios with Password</i>.

Option	Actions
Unlocking Radios in Locked State if your radio is turned off	<p>a. Turn on your radio.</p> <p> NOTE: Your radio restarts the 15 minutes timer for locked state.</p> <p>b. Wait for 15 minutes.</p> <p>c. Access the radio by following the steps in Accessing Radios with Password.</p>

13.9.3

Setting the Password Lock

Procedure:

1. From the menu, select **Utilities** → **Radio Settings** → **Passwd Lock** → *<required password>*.



NOTE: When using this feature for the first time, the display shows `New Password Setup` to set a new password. You must set a new password before setting the Password Lock feature.

2. Perform one of the following actions:
 - To enable Password Lock, select **Turn On**.
 - To disable Password Lock, select **Turn Off**.

13.9.4

Changing Passwords

Procedure:

1. From the menu, select **Utilities** → **Radio Settings** → **Passwd Lock** → *<required password>* → **Change PWD**.
2. Enter a new four-digit password.
3. To confirm the new password, re-enter the same four-digit password.

Result:

If the password is successfully changed, the display shows `Password Changed`.

If the password change is unsuccessful, the display shows `Password Do Not Match` and returns to the previous menu.

13.10

Voice Announcement

This feature enables the radio to audibly indicate the current Zone or Channel assigned. This audio indicator can be customized per customer requirements.



NOTE: The Voice Announcement feature can only be enabled through CPS. If enabled, the Text-to-Speech feature is automatically disabled.

13.10.1

Setting the Voice Announcement

Procedure:

1. From the menu, select **Utilities** → **Radio Settings** → **Voice Announcement**.
2. Perform one of the following actions:
 - To enable Voice Announcement, select the **Menu/OK** button.
 - To disable Voice Announcement, select the **Menu/OK** button.

Result:

If the Voice Announcement is enabled, a ✓ appears beside *Enabled*.

If the Voice Announcement is disabled, the ✓ disappears beside *Enabled*.

13.11

Setting the Automatic Call Forwarding

Procedure:

1. From the menu, select **Utilities** → **Radio Settings** → **Call Forward**.
2. Perform one of the following actions:
 - To enable Call Forwarding, select the **Menu/OK** button.
 - To disable Call Forwarding, select the **Menu/OK** button.

Result:

If the Call Forwarding is enabled, a ✓ appears beside *On*.

13.12

Setting the Microphone Automatic Gain Control

Procedure:

1. From the menu, select **Utilities** → **Radio Settings**
2. Perform one of the following actions:
 - For Analog Microphone Automatic Gain Control, select **Mic AGC-A**.
 - For Digital Microphone Automatic Gain Control, select **Mic AGC-D**.
3. Perform one of the following actions:
 - To enable Mic AGC, select the **Menu/OK** button.
 - To disable Mic AGC, select the **Menu/OK** button.

Result:

If the Mic AGC is enabled, a ✓ appears beside *Enabled*.

If the Mic AGC is disabled, the ✓ disappears beside *Enabled*.

13.13

Setting the Noise Suppress

Procedure:

1. From the menu, select **Utilities** → **Radio Settings** → **Noise Suppress**.
2. Perform one of the following actions:
 - To enable Noise Suppress, select **Basic**.
 - To disable Noise Suppress, select **Disabled**.

13.14

Setting the Acoustic Feedback Suppressor

Procedure:

1. From the menu, select **Utilities** → **Radio Settings** → **AF Suppressor**.
2. Perform one of the following actions:
 - To enable AF Suppressor, select the **Menu/OK** button.
 - To disable AF Suppressor, select the **Menu/OK** button.

13.15

Setting the Intelligent Audio

Procedure:

1. From the menu, select **Utilities** → **Radio Settings** → **Intelligent Audio**.
2. Perform one of the following actions:
 - To enable Intelligent Audio, select **On**.
 - To disable Intelligent Audio, select **Off**.



NOTE:

Your radio automatically adjusts the audio volume to overcome current background noise in the environment.

Intelligent audio feature is a receive-only feature.

This feature is not applicable during a Bluetooth session.

13.16

Privacy

This feature prevents 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 clear.

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

Some radio models may not offer Privacy feature, or may have different configuration. Contact your dealer for more information.



NOTE:

Only one type of privacy can be assigned at a time.

This feature is not applicable in Citizens Band channels that are in the same frequency.

The following table describes the type of privacy and the settings that appear on your radio.

Table 20: Privacy Types and Settings

Type	Setting
Basic Privacy	Privacy
Enhanced Privacy	Enhanced Privacy

13.16.1

Setting Privacy

Procedure:

1. From the menu, select **Utilities** → **Radio Settings**.
2. Depending on the configured type of privacy, select your privacy setting.
3. Perform one of the following actions:
 - To enable Privacy, select the **Menu/OK** button.
 - To disable Privacy, select the **Menu/OK** button.

Result:

If Privacy is enabled, a ✓ appears beside *Enabled*.

If Privacy is disabled, the ✓ disappears beside *Enabled*.

13.16.2

Privacy-Enabled Calls

Your radio must have the Privacy feature enabled for the currently selected channel position to send a privacy-enabled transmission. While on a privacy-enabled channel, the radio is still able to receive clear transmissions.

When privacy is enabled for the currently selected channel position, all voice transmission made by your radio is scrambled. The calls include Group Call, Multigroup Call, talkback during scanned calls, Site All Call, Emergency Call, and Private Call. Only receiving radios with the same Key Value and Key ID as your radio can unscramble the transmission.

To unscramble privacy-enabled call or data transmission, your radio must be programmed to have the same type of Privacy Key as the transmitting radio. If your radio receives a scrambled call that is of a different Privacy Key, you hear a garbled transmission.

13.17

Voice Operating Transmission

Voice Operating Transmission (VOX) allows you to initiate hands-free voice-activated calls on a programmed channel. When your VOX-capable accessory detects voice, your radio automatically transmits for a programmed period.



NOTE:

This feature is not applicable in Citizen Band channels that are in the same frequency.

Contact your dealer or administrator for more information.

13.17.1

Setting the Voice Operating Transmission

Procedure:

1. From the menu, select **Utilities** → **Radio Settings** → **VOX**
2. Perform one of the following actions:
 - To enable VOX, select **On**.
 - To disable VOX, select **Off**.

Result: If VOX is turned on, the display shows a ✓ beside **On**.

13.18

Accessing the Radio Information

Procedure:

1. From the menu, select **Utilities** → **Radio Info**.
2. To access the radio information, perform one of the following actions:
 - To check on battery information, select **Battery Info**.
 - To check on your radio ID and alias, select **My ID**.
 - To check on the firmware and Codeplug versions, select **Versions**.
 - To check on the latest software update information, select **SW Update**.

Chapter 14

Authorized Accessories List

Motorola Solutions provides a list of accessories to improve the productivity of your radio.

Table 21: Antenna

Part Number	Description
PMAD4116_	VHF, 144–165 MHz, Helical Antenna
PMAD4117_	VHF, 136–155 MHz, Helical Antenna
PMAD4118_	VHF, 152–174 MHz, Helical Antenna
PMAD4119_	VHF, 136–148 MHz, Stubby Antenna
PMAD4120_	VHF, 146–160 MHz, Stubby Antenna
PMAD4121_	VHF, 160–174 MHz, Stubby Antenna
PMAE4069_	UHF, 400–450 MHz, Stubby Antenna
PMAE4070_	UHF, 440–490 MHz, Stubby Antenna
PMAE4071_	UHF, 470–527 MHz, Stubby Antenna
PMAE4079_	UHF, 403–527 MHz, Slim Whip Antenna
PMAE4092_	UHF, 480–527 MHz Stubby Antenna Kit

Table 22: Batteries

Part Number	Description
PMNN4406_R	Core Slim Li-Ion, 1600 mAh IP56 Battery
PMNN4407_R	IMPRES Slim Li-Ion, 1600 mAh IP56 Battery
PMNN4409_R	IMPRES Li-Ion Non-FM, 2250 mAh IP56 Battery
PMNN4435_R	Li-Mn 1400 mAh low temp -30 °C IP67 Submersible Battery
PMNN4463_	Battery Li-Ion, IP57 2050 mAh
PMNN4488_	IMPRES Li-Ion, 3000 mAh, IP68 Battery for Vibrating Belt Clip
PMNN4490_ ³	IMPRES Li-Ion, 2900 mAh TIA4950 HAZLOC IP68 Battery
PMNN4491_	IMPRES Slim Li-Ion, 2100 mAh IP68 Battery
PMNN4493_	IMPRES Li-Ion, 3000 mAh IP68 Battery, low voltage
PMNN4543_	Core Li-Ion, 2450 mAh IP68 Battery
PMNN4544_	IMPRES Li-Ion, 2450 mAh IP68 Battery

³ Applicable to DP2600e/DP2601e and DP2400e/DP2401e only.

Table 23: Carry Devices

Part Number	Description
PMLN4651_	Belt Clip for 2 in. Belt Width
PMLN5610_	2.5 in. Replacement Leather Swivel Belt Loop
PMLN5611_	3 in. Replacement Leather Swivel Belt Loop
PMLN5863_	Hard Leather Carry Case with 3 in. Fixed Belt Loop for Limited Keypad Radio
PMLN5865_	Hard Leather Carry Case with 3 in. Swivel Belt for Limited Keypad Radio
PMLN5867_	Hard Leather Carry Case with 2.5 in. Swivel Belt Loop for Limited Keypad Radio
PMLN5869_	Nylon Carry Case with 3 in. Fixed Belt Loop for Limited Keypad Radio
PMLN7008_	Belt Clip for 2.5 in. Belt Width
PMLN7296_	Vibrating Belt Clip for 2.5 in. Belt Width
RLN6486_	Leather Radio Strap
RLN6487_	Leather Radio Strap, Size XL
RLN6488_	Anti-Sway Leather Radio Strap

Table 24: Chargers

Part Number	Description
EPNN9288_	U.S. Switch Mode Power Supply
HKVN4036_	IMPRES Battery Fleet Management License Key
NNTN7392_	IMPRES Battery Reader
NNTN7616_	IMPRES Vehicular Charger
NNTN7677_	IMPRES Battery Fleet Management Multi-Unit Charger Interface Unit
NLN7967_	Wall Mount Bracket for IMPRES Multi-Unit Charger
NNTN8045_	IMPRES Battery Fleet Management Single-Unit Charger Interface Unit
NNTN8117_	Core Single Unit Charger
NNTN8224_	Standard Single-Unit Charger with Power Supply, Linear PRC
NNTN8226_	Standard Single-Unit Charger with Power Supply, Linear, 110 V ac US Plug
NNTN8275_	Standard Single-Unit Charger with Power Supply, Switch-Mode – 21 W, NA/LA
NNTN8525_	Travel Charger, Rapid Rate with Voltage Regulated Vehicular Charger Adapter, Custom Charger Base, Mounting Bracket, and Coil Cord
PMPN4174_	IMPRES Single-Unit Charger CEC Compliant
PMPN4527_	IMPRES Single-Unit Desktop Charger, Base Only

Part Number	Description
PMPN4571_	IMPRES Single-Unit Desktop Charger with Extension, Australia/New Zealand Plug
PMPN4572_	IMPRES Single-Unit Desktop Charger with Extension, United Kingdom/Hong Kong Plug
PMPN4573_	IMPRES Single-Unit Desktop Charger with Extension, Argentina Plug
PMPN4574_	IMPRES Single-Unit Desktop Charger with Extension, Korea Plug
PMPN4575_	IMPRES Single-Unit Desktop Charger with Extension, Brazil Plug
PMPN4576_	IMPRES Single-Unit Desktop Charger with Extension, United States Plug
PMPN4578_	IMPRES Single-Unit Desktop Charger with Extension, Japan Plug
PMPN4579_	IMPRES Single-Unit Desktop Charger with Extension, China Plug
PMPN4582_	IMPRES Single-Unit Desktop Charger with Extension, India Plug
WPLN4211_	IMPRES Multi-Unit Charger, Base Only
WPLN4212_	IMPRES Multi-Unit Charger, US/NA Plug
WPLN4218_	IMPRES Multi-Unit Charger with Display, Base Only
WPLN4219_	IMPRES Multi-Unit Charger with Display, US/NA Plug
WPLN4232_	IMPRES Single-Unit Charger with Switch Mode Power Supply
WPLN4243_	IMPRES Single-Unit Charger, Base Only
WPLN4253_	LTD Single-Unit Charger IMPRES (SMPS NA/LA)

Table 25: Earbuds and Earpieces

Part Number	Description
AARLN4885_	Receive-Only Covered Earbud with Coiled Cord, for Remote Speaker Microphone
PMLN4620_	D-Shell Receive-Only Earpiece (One Size) for Remote Speaker Microphone
PMLN5727_	Earpiece In-Line Mic/PTT Swivel, MagOne
PMLN5732_	Earset with Boom Microphone, MagOne
PMLN5733_	Earbud with In-Line Mic/PTT, MagOne
PMLN6757_	Adjustable D-Style with In-Line Mic and PTT
PMLN7396_	Adjustable Receive-Only Earpiece with Remote Speaker Microphone
PMLN7560_	Receive-Only Earpiece with Translucent Tube
RLN4941_	Receive-Only Earpiece with Translucent Tube and Rubber Eartip for Remote Speaker Microphone
RLN6511_	Clear EP7-Small Hearing Protectors [Sonic Defenders] Ultra Ear-plugs, 28 dB Noise reduction
RLN6512_	Clear EP7-Medium Hearing Protectors [Sonic Defenders] Ultra Ear-plugs, 28 dB Noise reduction

Part Number	Description
RLN6513_	Clear EP7-Large Hearing Protectors [Sonic Defenders] Ultra Ear-plugs, 28 dB Noise reduction
WADN4190_	Receive-Only Flexible Earpiece for Remote Speaker Microphone

Table 26: Headsets and Headset Accessories

Part Number	Description
PMLN5731_	Heavy Duty Headset, Noise Cancelling with In-Line PTT
PMLN6635_	Lightweight Over-the-Head Headset Single Muff with In-line Push-to-Talk and Boom Microphone
PMLN6759_	Temple Transducer
PMLN6760_	Next Generation Behind-the-Head Heavy Duty Headset Slim
PMLN6761_	Breeze Headset, MagOne
PMLN6763_	Next Generation Behind-the-Head Heavy Duty Headset, Slim TIA 4950
PMLN7464_	Over-the-Head Heavy Duty Headset, Slim
PMLN7465_	Over-the-Head Heavy Duty Headset/TIA, Slim
RLN6490_	XBT Behind-the-Neck, Non-secure Wireless Heavy Duty Headset

Table 27: Remote Speaker Microphones

Part Number	Description
PMMN4071_	IMPRES Remote Speaker Microphone Large, Noise Cancelling with 3.5 mm Jack
PMMN4073_	IMPRES Remote Speaker Microphone Small with 3.5 mm Jack
PMMN4075_	Remote Speaker Microphone Small, No Emergency, IP57
PMMN4076_	Remote Speaker Microphone Small with 3.5 mm Jack
PMMN4108_	IMPRES Remote Speaker Microphone Windporting, IP67

Table 28: Surveillance Accessories

Part Number	Description
PMLN6754_	3-Wire Surveillance Kit with Quick Disconnect Adapter and Clear Acoustic Tube, Black
PMLN6755_	3-Wire Surveillance Kit with Quick Disconnect Adapter and Clear Acoustic Tube, Beige
PMLN7269_	2-Wire Surveillance Kit with Quick Disconnect Adapter and Clear Acoustic Tube, Black
PMLN7270_	2-Wire Surveillance Kit with Quick Disconnect Adapter and Clear Acoustic Tube, Beige

Table 29: Wireless

Part Number	Description
NNTN8125_	Non-secure Wireless Accessory Kit, Operational Critical Wireless Earpiece, standard pair, 12 in. Cable
NNTN8189_	Non-secure Wireless Bluetooth Accessory Kit, Operational Critical Wireless Earpiece, 12 in. Cable, No Charger
NTN2572_	Earpiece 12 in. Cable, for use with Bluetooth POD
PMLN7052_	Operations Critical Wireless 1-Wire Surveillance Kit with Translucent Tube
NNTN8295_	Non-secure Operational Critical Wireless Earbud with 45.7 in. Cable
NNTN8294_	Non-secure Operation Critical Wireless Earbud with 11.4 in. Cable
PMLN6462_	Non-secure Wireless Accessory Kit
PMLN7696_	Completely Discreet Earpiece Kit
NNTN8385_	Wireless Neckloop Y-adapter and retention hook for Completely Discreet Kit
NNTN8296_	Wireless Covert Kit, includes two sets of 2-Wire Earbuds (1 Black and 1 White), 1-Wire Earbud (Black), and a 3.5 mm Adapter to plug into any off-the-shelf headphones
RLN6500_	Bluetooth Accessory Kit with NA Power Supply
RLN6550_	Swivel Earpiece with In-line Microphone, Bluetooth Accessory Kit Pod, pack of 3
RLN6556_	Flexible Earpiece with Boom Microphone, Bluetooth Pod, Charging Cradle
PMLN7181_	MOTOTRBO Bluetooth Accessory Kit, Flexfit Earpiece with NA Power Supply
PMLN7203_	Flexible Fit Swivel Earpiece with Boom Microphone, Bluetooth Accessory Kit Pod, Multipack, pack of 3

Table 30: Miscellaneous Accessories

Part Number	Description
HLN6602_	Universal Chest Pack
HLN9985_	Waterproof Bag, Includes Large Carry Strap
NTN5243_	Adjustable Black Nylon Carrying Strap (Attaches to D-Ring on Carry Case)
RLN4295_	Small Clip, Epaulet Strap
RLN4570_	Break-A-Way Chest Pack
RLN4815_	Universal Radio Pack and Utility Case, Fanny Pack
1505596Z02	Replacement Strap for RLN4570_ and HLN6602_
4280384F89	Universal Radio Pack, Extension Belt
4200865599	Wide Leather Belt, 1.75 in.
0104058J40	Dust Cover