MOTOROLA *SOLUTIONS*

PROFESSIONAL DIGITAL TWO-WAY RADIO
MOTOTRBO™
CP200d
NON-KEYPAD PORTABLE RADIO

USER GUIDE

en-US

fr-CA

MARCH 2022

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Contents

Supplier's Declaration of Conformity

Supplier's Declaration of Conformity
Per FCC CFR 47 Part 2 Section 2.1077(a)

Responsible Party

Name: Motorola Solutions, Inc.

Address: 2000 Progress Pkwy, Schaumburg, IL. 60196

Phone Number: 1-800-927-2744

Hereby declares that the product:

Model Name: **CP200d**

conforms to the following regulations:

FCC Part 15, subpart B, section 15.107(a), 15.107(d), and section 15.109(a)

Class B Digital Device
As a personal computer peripheral, this device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1 This device may not cause harmful interference, and

2 This device must accept any interference received, including interference that may cause undesired operation.

NOTE:
This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.

- Increase the separation between the equipment and receiver.

- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

- Consult the dealer or an experienced radio or TV technician for help.

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.

Any modification to this device, not expressly authorized by Motorola Solutions, may void the user's authority to operate this device.

Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.

This radio transmitter has been approved by Industry Canada to operate with Motorola Solutions-approved antenna with the maximum permissible gain and required antenna impedance for each antenna type indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

Notice to Users (FCC)

This device complies with Part 15 of the FCC rules per the following conditions:

• This device may not cause harmful interference.

• This device must accept any interference received, including interference that may cause undesired operation.

• Changes or modifications made to this device, not expressly approved by Motorola Solutions, could void the authority of the user to operate this equipment.

Notice to Users (Industry Canada)

The operation of your Motorola Solutions radio is subject to the Radiocommunications Act and must comply with rules and regulations of the Federal Government's department of Industry Canada. Industry Canada requires that all operators using Private Land Mobile frequencies obtain a radio license before operating their equipment.

Software Version

All the features described in the following sections are supported by the software version **R01.21.01.0000** or later.

Contact your dealer or administrator for more information.

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As defined by the WEEE directive, this crossed-out wheelie 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.

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

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

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https://businessonline.motorolasolutions.com

Radio Care

This section describes the basic handling precaution of the radio.

Table 1: IP Specification

IP Specification	Description
IP54	Allows your radio to withstand adverse field conditions such as being exposed to water splashed from all directions or dust protected for 2–8 hours.

- Keep your radio clean and exposure to water should be avoided to help ensure proper functionality and performance.

- To clean the exterior surfaces of the radio, use a diluted solution of mild dishwashing detergent and fresh water (for example, one teaspoon of detergent to one gallon of water).

- These surfaces should be cleaned whenever a periodic visual inspection reveals the presence of smudges, grease, and/or grime.

⚠ **CAUTION:**
The effects of certain chemicals and their vapors can have harmful results on certain plastics. Avoid using aerosol sprays, tuner cleaners, and other chemicals.

- When cleaning your radio, do not use a high pressure jet spray on radio as this may cause water to leak into your radio.

Introduction

This user guide covers the operation of your radios.

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

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

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

1.1
Icon Information

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

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

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

1.2
Conventional Analog and Digital Modes

Each channel in your radio can be configured as a conventional analog or conventional digital channel.
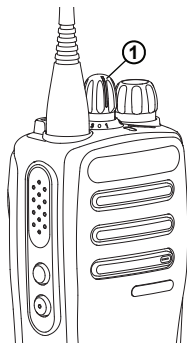
NOTE:
Your radio also switches between digital and analog modes during a dual mode scan. See for more information.

1 : Channel Selector Knob

For Analog-only radios, each channel can only be configured as a conventional analog channel. Use the Channel Selector Knob to switch between an analog or a digital channel.

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

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

A Software License Key sold separately is required to upgrade analog-only radios to digital radios.

Getting Started

Getting Started provides instructions to prepare your radio for use.

2.1
Charging the Battery

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

Turn off your radio when charging.

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

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

Batteries charge best at room temperature.

2.2

Attaching the Battery

Follow the procedure to attach the battery to your radio.

1 Ensure that the battery latch is unlocked before attaching the battery.
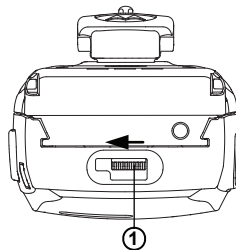
① **1: Battery Latch**

2 Slide the battery latch to the right and slide downwards to unlock the battery.
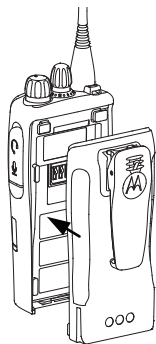
3 Align the battery with the rails on the back of the radio.

4 Press the battery firmly, and slide upwards until the latch snaps into place.

5 Slide battery latch into lock position.

> **NOTE:**
> If your radio is attached with a non-supported or wrong battery, immediately swap with the correct battery.

2.3
Removing the Battery

Follow the procedure to remove the battery from your radio.

Ensure that the radio is turned off.

1 Move the battery latch into unlock position and hold.
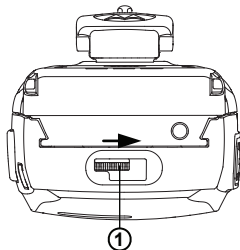
1: Battery Latch

2 Slide the battery down and lift off the rails.

2.4
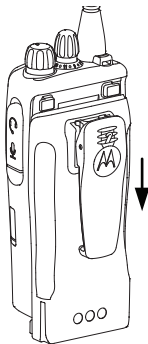
Attaching the Antenna

Turn off your radio.

Set the antenna in the receptacle and turn clockwise.

> **NOTE:**
> To protect best against water and dust, ensure that antenna is tightly fitted.
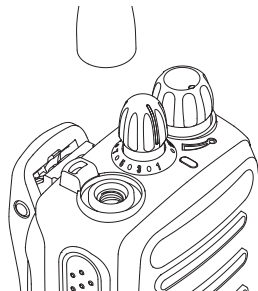
> **NOTE:**
> To remove the antenna, turn the antenna counterclockwise.

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

2.5
Attaching and Removing the Belt Clip

Attaching the Belt Clip

Align the grooves on the clip with the grooves on the battery and press it downwards until it clicks.
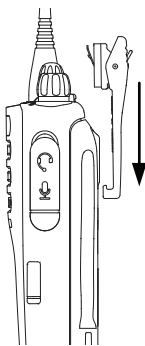
Removing the Belt Clip

1 To remove the clip, press the belt clip tab away from the battery.

2 Slide the clip upwards and away from the radio.

2.6
Turning the Radio On

Rotate the **On/Off/Volume Control** knob clockwise until it clicks.

If successful, your radio shows the following indications:

• A tone sounds.

> NOTE:
> If the Tones/Alerts function is disabled, there is no tone upon powering up.

• The green LED lights up.

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

2.7
Turning the Radio Off

Rotate the **On/Off/Volume Control** knob counterclockwise until it clicks.

2.8
Adjusting the Volume

To adjust the volume of your radio, perform one of the following actions:

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

• To decrease the volume, turn the **On/Off/Volume Control** 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.

Radio Controls

This chapter explains the buttons and functions to control the radio.
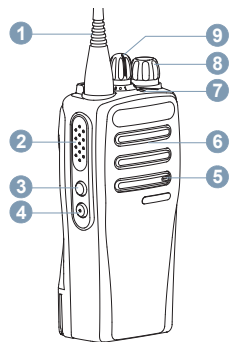
1 Antenna

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

3 Side Button 1[1]

4 Side Button 2[1]

5 Microphone

6 Speaker

---

[1] These buttons are programmable.

7 LED Indicator

8 On/Off/Volume Control Knob

9 Channel Selector Knob

3.1
Programmable Buttons

Depending on the duration of a button press, your dealer can program the programmable buttons as shortcuts to **radio functions** or **preset channels/groups.**

Short press
Pressing and releasing rapidly.

Long press
Pressing and holding for the programmed duration.

Hold down
Keeping the button pressed.

The programmed duration of a button press is applicable to all assignable radio/utility functions or settings.

3.1.1
Assignable Radio Functions

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

Analog Scrambling 🔴
Toggles analog scrambling on or off.

Battery Strength
Indicates battery strength by using the LED Indicator.

Manual Site Roam 🔵
Starts the manual site search.

Mic AGC
Toggles the internal microphone automatic gain control (AGC) on or off.

Monitor
Monitors a selected channel for activity.

Nuisance Channel Delete
Temporarily removes an unwanted channel, except for the Selected Channel, from the scan list. The Selected Channel refers to the selected zone or channel combination of the user from which scan is initiated.

One Touch Access 🔵
Directly initiates a predefined Private, Phone or Group Call, a Call Alert, or Home Revert.

Permanent Monitor
Monitors a selected channel for all radio traffic until function is disabled.

Privacy 🔵
Toggles privacy on or off.

Repeater/Talkaround
Toggles between using a repeater and communicating directly with another radio.

Scan
Toggles scan on or off.

Trill Enhancement
Toggles trill enhancement on or off.

Voice Announcement
Plays zone, channel and programmable button announcement voice messages for the current channel. This function is unavailable when Voice Announcement is disabled.

Voice Announcement On/Off
Toggles voice announcement on or off.

Voice Operating Transmission (VOX)
>   Toggles VOX on or off.

3.1.2
Assignable Settings or Utility Functions

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

Tones/Alerts
>   Toggles all tones and alerts on or off.

Analog Scrambling Codes 🔴
>   Toggles scrambling codes between 3.29 kHz and 3.39 kHz.

Power Level
>   Toggles transmit power level between high and low.

3.2
Push-To-Talk Button

The Push-to-Talk **(PTT)** button serves two basic purposes:

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

The microphone is activated when the **PTT** button is pressed.

• While a call is not in progress, the **PTT** button is used to make a new call.
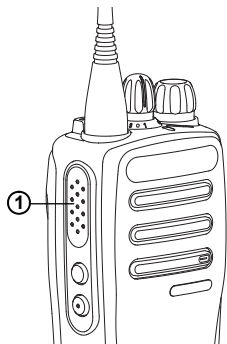
1: Push-to-Talk button

Long press the **PTT** button to talk. Release the **PTT** button to listen.

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

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

🔵 You hear a continuous Talk Prohibit Tone if your call is interrupted. You should release the **PTT** button if you hear a continuous Talk Prohibit Tone.

Status Indicators

This chapter explains the status indicators and audio tones used in the radio.

4.1
LED Indicators

LED indicators show the operational status of your radio.

Blinking Red
Radio has failed the self-test upon powering up.

Radio is transmitting in low battery state.

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

Solid Green
Radio is powering up.

Radio is transmitting.

Indicates full battery capacity when the programmed **Battery Strength** button is pressed.

Blinking Green
Radio is receiving a call or data.

Radio is detecting activity over the air.

NOTE:
While in conventional mode, when the LED blinks green, it indicates the radio detects activity over the air. Due to the nature of the digital protocol, this activity may or may not affect the radio's programmed channel.

Double Blinking Green
Radio is receiving a privacy-enabled call or data.

Solid Yellow
Radio is monitoring a conventional channel.

Indicates fair battery capacity when the programmed **Battery Strength** button is pressed.

Blinking Yellow
Radio is scanning for activity.

Radio has yet to respond to a Call Alert.

Double Blinking Yellow
Radio has yet to respond to a Group Call Alert.

Radio is locked.

4.2
Tones

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

☐

High Pitched Tone

■

Low Pitched Tone

4.2.1
Audio Tones

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

Continuous Tone

A monotone sound. Sounds continuously until termination.

Periodic Tone

Sounds periodically depending on the duration set by the radio. Tone starts, stops, and repeats itself.

Repetitive Tone

A single tone that repeats itself until it is terminated by the user.

Momentary Tone

Sounds once for a short duration set by the radio.

4.2.2
Indicator Tones

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

Positive Indicator Tone

Negative Indicator Tone

Channel Selections

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

Your radio supports up to 16 channels.

Each channel can be programmed with different features and or support different groups of users.

5.1
Selecting Channels

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

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

Calls

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

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

Programmed One Touch Access Button

This method is used for Group and Private Calls only.

You can only have one ID assigned to a **One Touch Access** button with a short or long programmable button press. Your radio can have multiple **One Touch Access** buttons programmed.

Your radio must have the Privacy feature enabled on the channel to send a privacy-enabled transmission. Only target radios with the same Privacy Key as your radio will be able to unscramble the transmission. See Privacy on page 42. ⬤

Volume/Channel Selector Knob

This method manually selects a subscriber alias or ID, or group alias or ID.

6.1

Group Calls

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

6.1.1

Making Group Calls

Follow the procedure to make Group Calls on your radio.

1 Do one of the following:

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

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

The green LED lights up.

3 Do one of the following:

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

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

The green LED blinks when the target radio responds.

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

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

6.1.2
Responding to Group Calls

To receive a call from a group of users, your radio must be configured as part of that group. Follow the procedure to respond to Group Calls on your radio.

When you receive a Group Call:

• The green LED blinks.

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

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

The green LED lights up.

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

The green LED lights up.

3 Do one of the following:

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

• 🔴 Wait for the **PTT** Sidetone to end and speak clearly into the microphone if enabled.

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

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

6.2
Private Calls

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

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

Use the Call Alert features to contact an individual radio. See Call Alert Operation on page 41 for more information.

6.2.1
Making Private Calls

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

1 Do one of the following:

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

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

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

The green LED lights up.

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

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

The green LED blinks when the target radio responds.

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

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

6.2.2
Responding to Private Calls

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

When you receive a Private Call:

- The green LED blinks.

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

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

  The green LED lights up.

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

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

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

6.3
All Calls

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

6.3.1
Receiving All Calls

When you receive an All Call:

- A tone sounds.

- The green LED blinks.

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

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

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

You cannot respond to an All Call.

📝 **NOTE:**
The radio stops receiving the All Call if you switch to a different channel while receiving the call. You are **not** able to continue with any programmed button functions until the end of an All Call.

6.4
Selective Calls 🔴

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

6.4.1
Responding to Selective Calls 🔴

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

When you receive a Selective Call:

• The green LED blinks.

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

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

The green LED lights up.

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

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

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

6.5
Broadcast Voice Calls

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

The Broadcast Voice Call feature allows only the call initiating user to transmit to the talkgroup, while the recipients of the call cannot respond (no Call Hang Time).

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

6.5.1
Making Broadcast Voice Calls

Program your radio to make Broadcast Voice Calls.

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

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

The radio returns to the previous menu after the call ends.

6.5.2
Receiving Broadcast Voice Calls

When you receive a Broadcast Voice Call:

- A tone sounds.

- The green LED blinks.

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

A Broadcast Voice Call does not wait for a predetermined period before ending.

You cannot respond to a Broadcast Voice Call.

NOTE:
The radio stops receiving the Broadcast Voice Call if you switch to a different channel while receiving the call. You **cannot** continue with any programmed button functions until the end of the Broadcast Voice Call.

6.6
Unaddressed Calls

An Unaddressed Call is a group call to one of the 16 predefined group IDs.

This feature is configured using CPS-RM. A contact for one of the predefined IDs is required to initiate and/or receive an Unaddressed Call. Check with your dealer or system administrator for more information.

6.6.1
Making Unaddressed Calls

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

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

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

A momentary tone sounds.

---

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

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

6.6.2
Responding to Unaddressed Calls

When you receive an Unaddressed Call:

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

1 Do one of the following:

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

- If the Voice Interrupt feature is enabled, press the **PTT** button to interrupt the audio from the transmitting radio and free the channel for you to respond.

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

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

6.7
Open Voice Channel Mode (OVCM)

An Open Voice Channel Mode (OVCM) allows a radio that is not preconfigured to work in a particular system to both receive and transmit during a group or individual call.

The OVCM group call also supports broadcast calls. Program your radio to use this feature. Check with your dealer or system administrator for more information.

6.7.1
Making OVCM Calls

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

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

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

6.7.2
Responding to OVCM Calls

When you receive an OVCM Call:

- The green LED blinks.

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

1 Do one of the following:

- If the Channel Free Indication feature is enabled, you hear a short alert tone the moment the transmitting radio releases the **PTT** button,

indicating the channel is free for you to respond. Press the **PTT** button to respond to the call.

- If the Voice Interrupt feature is enabled, press the **PTT** button to interrupt the audio from the transmitting radio and free the channel for you to respond.

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

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

Advanced Features

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

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

7.1
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.

7.1.1
Toggling Between Repeater and Talkaround Modes

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

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

2 One of the following tones sounds:

Positive Indicator Tone
Radio is in talkaround mode.

Negative Indicator Tone
Radio is in repeater mode.

7.2
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.

7.2.1
Monitoring Channels

Follow the procedure to monitor channels.

1 Long press the programmed **Monitor** button.

2 Depending on how your radio is programmed, you hear radio activity or total silence. This indicates that the channel is in use.

3 If you do not hear radio activity, the silence indicates that the channel is free. Press the **PTT** button to talk. Release the **PTT** button to listen.

7.2.2
Permanent Monitor

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

7.2.2.1
Turning Permanent Monitor On or Off

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

Press the programmed **Permanent Monitor** button.

When the radio enters the mode:

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

When the radio exits the mode:

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

7.3
Scan Lists

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

Your radio can support up to 250 scan lists, with a maximum of 16 members in a list.

Each scan list supports a mixture of both analog and digital entries.

7.4
Scan

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

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

There are two ways of initiating scan:

Main Channel Scan (Manual)
Your radio scans all the channels or groups in your scan list. On entering scan, your radio may, depending on the settings, automatically start on the last scanned active channel or group, or on the channel where scan was initiated.

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

7.4.1
Turning Scan On or Off

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

Do one of the following:

- Press the programmed **Scan** button to start or stop Scan.

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

If scan is enabled:

- The yellow LED blinks.

- A positive indicator tone sounds.

If scan is disabled:

- The LED turns off.

- A negative indicator tone sounds.

7.4.2
Responding to Transmissions During Scanning

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

1 ⬤ If the Channel Free Indication feature is enabled, you hear a short alert tone the moment the transmitting radio releases the **PTT** button, indicating

the channel is free for you to respond. Press the **PTT** button during hang time.

The green LED lights up.

2   Do one of the following:

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

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

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

7.4.3
Deleting Nuisance Channels

If a channel continually generates unwanted calls or noise, (termed a "nuisance" channel), you can temporarily remove the unwanted channel from the scan list. This capability does not apply to the channel designated as the Selected Channel. Follow the procedure to delete nuisance channels on your radio.

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

2   Release the programmed **Nuisance Channel Delete** button.

The nuisance channel is deleted.

7.4.4
Restoring Nuisance Channels

Follow the procedure to restore nuisance channels on your radio.

Do one of the following:

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

7.5

Vote Scan

Vote Scan provides you with wide area coverage in areas where there are multiple base stations transmitting identical information on different analog channels.

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

During a vote scan, the yellow LED blinks.

To respond to a transmission during a vote scan, see .

7.6

Call Indicator Settings

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

7.6.1

Alarm Tone Volume Escalation

Your radio can be programmed by your dealer to continually alert you when a radio call remains unanswered. This is done by automatically increasing the alarm tone volume over time. This feature is known as Escalert.

7.7

Call Alert Operation

Call Alert paging enables you to alert a specific radio user to call you back.

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

7.7.1

Making Call Alerts

Follow the procedure to make Call Alerts on your radio.

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

   The green LED lights up.

2 Wait for acknowledgment.

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

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

7.7.2
Responding to Call Alerts

When you receive a Call Alert:

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

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

7.8
Privacy ⓟ

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

Your radio must have privacy enabled on the channel to send a privacy-enabled transmission, although this is not a necessary requirement for receiving a transmission. While on a privacy-enabled channel, the radio is still able to receive clear or unscrambled transmissions.

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

Your radio only supports Basic Privacy.

To unscramble a privacy-enabled call or data transmission, your radio must be programmed to have the same 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.

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

7.8.1
Turning Privacy On or Off ⓟ

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

Press the programmed **Privacy** button.

7.9

Analog Scrambling

This analog-only feature prevents eavesdropping by unauthorized users on a channel.

Your radio must have analog scrambling enabled on the channel to send and receive an analog scrambling-enabled transmission. On an analog scrambling-enabled channel, the radio is not able to receive clear or unscrambled transmissions.

Your radio supports two analog scrambling codes that can be toggled by using the programmable button.

7.9.1

Turning Analog Scrambling On or Off

> To enable or disable this feature, press the programmed **Analog Scrambling** button.

7.10

Password Lock

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

Your radio supports a 4-digit password input.

These buttons function as a numeric keypad when entering password:

Channel Selector Knob
Position 1–9: Number 1–9

Position 10: Number 10

Side Buttons
Side Button 1 and 2: Number 1 and 2.

Your radio is unable to receive calls in locked state.

7.10.1

Accessing the Radio by Using Password

Turn on your radio.

1 Enter the four-digit password.

a To enter the first digit of the password, use the **Channel Selector Knob**.

b To enter each digit of the remaining three digits of the password, press Side Button 1 or 2.

When the second digit of the password is entered, your radio ignores any Channel Selector Knob position change.

A positive tone sounds for every digit entered.

2 Your radio automatically checks the validity of the password when you enter the last digit of the password.

If you enter the password correctly, the radio powers up.

If you enter the wrong password after the first and second attempt, your radio shows the following indications:

• A continuous tone sounds.

Repeat step 1.

If you enter the wrong password after the third attempt, your radio shows the following indications:

• A tone sounds.

• The yellow LED double blinks.

• Your radio enters into locked state for 15 minutes.

Wait for the 15-minute locked state timer to end and then repeat step 1.

 NOTE:
 If you turn off and turn your radio on again, the 15-minute timer restarts.

7.10.2
Unlocking Radios in Locked State

Your radio is unable to receive calls in locked state. Follow the procedure to unlock your radio in locked state.

Do one of the following:

• If the radio is powered on, wait for 15 minutes and then repeat the steps in Accessing the Radio by Using Password on page 43 to access the radio.

• If the radio is powered off, power up the radio. Your radio restarts the 15-minute timer for locked state. A tone sounds. The yellow LED double blinks.

Wait for 15 minutes and then repeat the steps in to access the radio.

7.11

Auto-Range Transponder System ⊕

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

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

Your radio provides indications of states as follows:

First-Time Alert
A tone sounds.

ARTS-in-Range Alert
A tone sounds, if programmed.

ARTS-Out-of-Range Alert
A tone sounds. The red LED rapidly blinks.

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

Utilities

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

8.1
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.

Normal
This is the default setting.

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

8.1.1
Setting Squelch Levels ⬤

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

Press the programmed **Squelch** button.

One of the following tone sounds:
Positive Indicator Tone
Radio is operating in tight squelch.

Negative Indicator Tone
Radio is operating in normal squelch.

8.2
Power Levels

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

High
This enables communication with radios located at a considerable distance from you.

Low
This enables communication with radios in closer proximity.

8.2.1
Setting Power Levels

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

Press the programmed **Power Level** button.

If successful:

- The Positive Indicator Tone sounds.

- Radio transmits at low power.

If unsuccessful:

- The Negative Indicator Tone sounds.

- Radio transmits at high power.

8.3
Voice Operating Transmission

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

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

- Turn the radio off and then power it on again to enable VOX.

- Prior to powering up the radio, connect the VOX-capable accessory to the accessory connector to enable VOX.

- Press the programmed **VOX** button and connect the VOX-capable accessory to the accessory connector to enable VOX.

- Change the channel by using the **Channel Selector** knob to enable VOX.

- Press the **PTT** button during radio operation to disable VOX.

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

8.3.1
Turning Voice Operating Transmission On or Off

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

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

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

8.4
Turning Voice Announcement On or Off

This feature enables the radio to audibly indicates the current channel the user has just assigned, or the programmable button the user has just pressed.

This audio indicator can be customized according to customer requirements. Follow the procedure to turn Voice Announcement on or off on your radio.

Press the programmed **Voice Announcement** button.

If successful:

- The Positive Indicator Tone sounds.

- All tones and alerts are turned on.

If unsuccessful:

- The Negative Indicator Tone sounds.

- All tones and alerts are turned off.

8.5
Turning Trill Enhancement On or Off

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

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

If successful:

- The Positive Indicator Tone sounds.

- All tones and alerts are turned on.

If unsuccessful:

- The Negative Indicator Tone sounds.

• All tones and alerts are turned off.

8.6
Turning Radio Tones/Alerts On or Off

You can enable and disable all radio tones and alerts, if needed, except for incoming Emergency alert tone [2]. Follow the procedure to turn tones and alerts on or off on your radio.

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

If successful:

• The Positive Indicator Tone sounds.

• All tones and alerts are turned on.

If unsuccessful:

• The Negative Indicator Tone sounds.

• All tones and alerts are turned off.

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[2] Emergency feature is not available for CP200d

8.7
Checking Battery Strength

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

Press the programmed **Battery Strength** button.

One of the following occurs:

• The LED lights up solid yellow indicating fair battery capacity.

• The LED lights up solid green indicating full battery capacity.

Authorized Accessories List

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

Table 2: Antenna

Part Number	Description
HAD9742_	VHF, 146–162 MHz, Stubby Antenna
HAD9743_	VHF, 162–174 MHz, Stubby Antenna
NAD6502_R	VHF, 146–174 MHz, Heliflex Antenna
PMAD4012_	VHF, 136–155 MHz, 9 cm Antenna
PMAD4014_	VHF, 136–155 MHz, 14 cm Antenna
PMAD4042_	VHF, 136–150.8 MHz, Heliflex Antenna
PMAE4002_	UHF, 403–433 MHz, 9 cm Stubby Antenna
PMAE4003_	UHF, 430–470 MHz, 9 cm Stubby Antenna

Part Number	Description
PMAE4016_	UHF, 403–520 MHz, Antenna Whip

Table 3: Batteries

Part Number	Description
NNTN4497_R	Core Li-Ion, 2250 mAh Battery
NNTN4851_	NiMH, 1400 mAh Battery
NNTN4970_	Slim Li-Ion, 1600 mAh Battery
PMNN4072_	NiMH, 1400 mAh MagOne Battery
PMNN4458_R	MagOne Li-Ion Battery, 2050 mAh min

Table 4: Cables

Part Number	Description
PMKN4128_	Programming Cable USB

Table 5: Carry Devices

Part Number	Description
1505596Z02	Case Adjustable Chest Pack
4280384F89	Universal RadioPAK™ Extension Belt for waist larger than 40 in
4280483B03_	2.5 in. Swivel Belt Loop
4280483B04_	3 in. Swivel Belt Loop
HLN6602_	Universal Chest Pack with Radio Holder, Pen Holder and Velcro Secured Pocket
HLN8255_	Spring Action 3 in. Belt clip
HLN9701_	Nylon case with belt loop and D-rings
HLN9985_	Waterproof Bag, includes large carrying strap
NTN5243_	Carry Case Shoulder Strap
RLN4570_	Breakaway Chest Pack
RLN4815_	Universal RadioPAK™ and Utility Case (fanny pack)

Part Number	Description
RLN5383_	Non-Display Leather case with Belt loop and D-rings
RLN5384_	Non-Display Leather case with 2.5 in. Swivel and D-rings
RLN5385_	Non-Display Leather case with 3 in. Swivel and D-rings
RLN5644_	Spring Action 2 in. Belt clip

Table 6: Chargers

Part Number	Description
EPNN7997_	10-hour Plug-in Charger
EPNN9288_	Rapid-rate Charger Transformer
PMLN5193_	Rapid-rate Charger with switch-mode power supply
PMLN6588_	120 V, 6 Unit Rapid Rate Charger
PMLN7089_	Vehicular Travel Charger
PMPN4173_	120 V, 90 Minute Rapid Rate CEC compliant Charger with Switch Mode Power Supply

Table 7: Earbuds and Earpieces

Part Number	Description
AARLN4885_	Receive-Only Earpiece with 3.5 mm Jack
BDN6720_	Flexible Ear Receiver
PMLN4620_	D-Shell Receive Only Earpiece (One Size) for Remote Speaker Microphone
PMLN6531_	Ear Receiver with In-Line Microphone/ PTT/VOX Switch (Mag One)
PMLN6532_	Swivel Earpiece with In-Line Microphone and PTT
PMLN6533_	Earset with combined microphone and PTT
PMLN6534_	Earbud with In-Line Microphone/PTT/VOX Switch (Mag One)
PMLN6535_	D-Style Earpiece with Microphone/PTT

Part Number	Description
PMLN6537_	Earset with Boom Mic and In-Line PTT/VOX Switch (Mag One)
PMLN7396_	Adjustable Receive-Only Earpiece with Remote Speaker Microphone
PMLN7560	Receive-Only Earpiece with Translucent Tube
RLN4941_	Receiver-Only Earpiece with Translucent Tube and Rubber Eartip
WADN4190_	Receive-Only Flexible Earpiece for Remote Speaker Microphone

Table 8: Headsets and Headset Accessories

Part Number	Description
PMLN6538_	Lightweight Headset with Swivel Boom Microphone
PMLN6541_	Lightweight Temple Transducer Headset

Part Number	Description
PMLN6542_	MagOne Ultra-Lite Headset, behind-the-head, adjustable with Boom Microphone and In-line PTT
PMLN6854_	Heavy Duty Headset, Noise Canceling Boom Mic Headset
PMLN7468_	Medium Weight Over-the-Head Dual Muff Headset

Table 9: Remote Speaker Microphones

Part Number	Description
PMMN4013_	Remote Speaker Microphone with 3.5 mm Audio Jack
PMMN4029_	Remote Speaker Microphone IP57
PMMN4092_	Remote Speaker Microphone (Mag One)

Table 10: Surveillance Accessories

Part Number	Description
PMLN6445_	2-Wire Surveillance Kit (Beige) with Clear Acoustic Earpiece (Palm Garden)
PMLN6530_	2-Wire Surveillance Kit, with Clear Acoustic Earpiece, Black (Palm Garden)
PMLN6536_	2-Wire Surveillance Kit with Quick Disconnect Acoustic Tube, Black (OTTO)

Batteries Warranty

The Workmanship Warranty

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

All CP Batteries	24 Months

The Capacity Warranty

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

Lithium-Ion (Li-Ion) Batteries	12 Months

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	One (1) Year
MagOne Accessories	Six (6) Months

Motorola Solutions, at its option, will at no charge either repair the Product (with new or reconditioned parts), replace it (with a new or reconditioned Product), or refund the purchase price of the Product during the warranty

period provided it is returned in accordance with the terms of this warranty. Replaced parts or boards are warranted for the balance of the original applicable warranty period. All replaced parts of Product shall become the property of Motorola Solutions.

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

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

Motorola Solutions cannot be responsible in any way for any ancillary equipment not furnished by Motorola Solutions which is attached to or used in connection with the Product, or for operation of the Product with any ancillary equipment, and all such equipment is expressly excluded from this warranty. Because each system which may use the Product is unique, Motorola Solutions

disclaims liability for range, coverage, or operation of the system as a whole under this warranty.

II. GENERAL PROVISIONS

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

III. STATE LAW RIGHTS:

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

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

IV. HOW TO GET WARRANTY SERVICE

You must provide proof of purchase (bearing the date of purchase and Product item serial number) in order to receive warranty service and, also, deliver or send the Product item, transportation and insurance prepaid, to an authorized warranty service location. Warranty service will be provided by Motorola 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.

- the damage or defect is caused by charging or using the battery in equipment or service other than the Product for which it is specified.

8 Freight costs to the repair depot.

9 A Product which, due to illegal or unauthorized alteration of the software/firmware in the Product, does not function in accordance with Motorola Solutions published specifications or the FCC certification labeling in effect for the Product at the time the Product was initially distributed from Motorola Solutions.

10 Scratches or other cosmetic damage to Product surfaces that does not affect the operation of the Product.

11 Normal and customary wear and tear.

VI. PATENT AND SOFTWARE PROVISIONS

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

those costs and damages finally awarded against the end user purchaser in any such suit which are attributable to any such claim, but such defense and payments are conditioned on the following:

1 Motorola Solutions will be notified promptly in writing by such purchaser of any notice of such claim,

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.

www.motorolasolutions.com/mototrbo

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