



PROFESSIONAL DIGITAL TWO-WAY RADIO

MOTOTRBO™

CP200d

NON-KEYPAD PORTABLE RADIO

USER GUIDE

en-US

fr-CA

OCTOBER 2018

© 2018 Motorola Solutions, Inc. All rights reserved.



68009615991-BC

Declaration of Conformity

This declaration is applicable to your radio only if your radio is labeled with the FCC logo shown below.

Declaration of Conformity

Per FCC CFR 47 Part 2 Section 2.1077(a)



Responsible Party

Name: Motorola Solutions, Inc.

Address: 1303 East Algonquin Road, Schaumburg, IL 60196-1078, U.S.A.

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. This device complies with Industry Canada licence-exempt RSS standard(s). 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.






NOTICE:





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.

Contents

Declaration of Conformity.....	2	Adjusting the Volume.....	19
Important Safety Information.....	7	Chapter 3: Radio Controls.....	21
Notice to Users (FCC and Industry Canada).....	8	Programmable Buttons.....	21
Software Version.....	9	Assignable Radio Functions.....	22
Copyrights.....	10	Assignable Settings or Utility Functions..	23
Computer Software Copyrights.....	12	Push-To-Talk Button	23
Handling Precautions.....	13	Chapter 4: Status Indicators.....	25
Chapter 1: Introduction.....	14	LED Indicators	25
Icon Information.....	14	Tones.....	26
Conventional Analog and Digital Modes.....	15	Audio Tones.....	26
Chapter 2: Basic Operations.....	16	Indicator Tones.....	26
Charging the Battery.....	16	Chapter 5: Zone and Channel Selections.....	27
Attaching the Battery.....	16	Selecting Channels.....	27
Removing the Battery	17	Chapter 6: Calls.....	28
Attaching the Antenna.....	18	Group Calls.....	28
Attaching the Belt Clip	18	Making Group Calls.....	28
Removing the Belt Clip	19	Responding to Group Calls.....	29
Powering Up the Radio.....	19	Private Calls 	30
Powering Off the Radio.....	19	Making Private Calls 	30
		Responding to Private Calls 	31
		All Calls.....	31

- Receiving All Calls..... 31
- Selective Calls  32
- Responding to Selective Calls  32
- Chapter 7: Advanced Features..... 33
- Talkaround..... 33
- Toggling Between Repeater and
 Talkaround Modes..... 33
- Monitor Feature  33
- Monitoring Channels..... 33
- Permanent Monitor..... 34
- Turning Permanent Monitor On
 or Off..... 34
- Scan Lists..... 34
- Scan..... 34
- Turning Scan On or Off 35
- Responding to Transmissions During
 Scanning..... 35
- Deleting Nuisance Channels..... 36
- Restoring Nuisance Channels..... 36
- Vote Scan  36
- Call Indicator Settings..... 37

- Alarm Tone Volume Escalation..... 37
- Call Alert Operation 37
- Making Call Alerts..... 37
- Responding to Call Alerts 37
- Privacy  38
- Turning Privacy On or Off  38
- Analog Scrambling  38
- Turning Analog Scrambling On or Off
  39
- Password Lock Features..... 39
- Accessing Radios by Using Passwords.. 39
- Unlocking Radios in Locked State..... 40
- Auto-Range Transponder System  40
- Chapter 8: Utilities..... 41
- Squelch Levels 41
- Setting Squelch Levels  41
- Power Levels..... 41
- Setting Power Levels..... 41
- Voice Operating Transmission 42
- Turning Voice Operating Transmission
 On or Off..... 42

Turning Voice Announcement On or Off	43
Turning Trill Enhancement On or Off.....	43
Turning Radio Tones/Alerts On or Off.....	44
Checking Battery Strength.....	44
Chapter 9: Authorized Accessories List.....	45
Batteries Warranty.....	48
The Workmanship Warranty.....	48
The Capacity Warranty.....	48
Limited Warranty.....	49
MOTOROLA SOLUTIONS COMMUNICATION PRODUCTS.....	49
I. WHAT THIS WARRANTY COVERS AND FOR HOW LONG:.....	49
II. GENERAL PROVISIONS.....	50
III. STATE LAW RIGHTS:.....	50
IV. HOW TO GET WARRANTY SERVICE.....	50
V. WHAT THIS WARRANTY DOES NOT COVER.....	51
VI. PATENT AND SOFTWARE PROVISIONS..	51
VII. GOVERNING LAW.....	52

Important Safety Information

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

ATTENTION!

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

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

<http://www.motorolasolutions.com>

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 and Industry Canada)

This device complies with Part 15 of the FCC rules and Industry Canada's license-exempt RSS's 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.

Software Version

All the features described in the following sections are supported by the software version **R01.01.30.0000** or later.

Check with your dealer or system administrator for more information.

Copyrights

The Motorola Solutions products described in this document may include copyrighted Motorola Solutions computer programs. Laws in the United States and other countries preserve for Motorola Solutions certain exclusive rights for copyrighted computer programs. Accordingly, any copyrighted Motorola Solutions computer programs contained in the Motorola Solutions products described in this document may not be copied or reproduced in any manner without the express written permission of Motorola Solutions.

© 2018 Motorola Solutions, Inc. All Rights Reserved

No part of this document may be reproduced, transmitted, stored in a retrieval system, or translated into any language or computer language, in any form or by any means, without the prior written permission of Motorola Solutions, Inc.

Furthermore, the purchase of Motorola Solutions products shall not be deemed to grant either directly or by implication, estoppel or otherwise, any license under the copyrights, patents or patent applications of Motorola Solutions, except for the normal non-exclusive, royalty-free license to use that arises by operation of law in the sale of a product.

Disclaimer

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 subscriber unit or configuration of certain parameters. Please refer to your Motorola Solutions contact for further information.

Trademarks

MOTOROLA, MOTO, MOTOROLA SOLUTIONS, and the Stylized M Logo are trademarks or registered trademarks of Motorola Trademark Holdings, LLC and are used under license. All other trademarks are the property of their respective owners.

European Union (EU) Waste of Electrical and Electronic Equipment (WEEE) directive



■ The European Union's WEEE directive requires that products sold into EU countries must have the crossed out trash bin label on the product (or the package in some cases).

As defined by the WEEE directive, this cross-out trash bin label means that customers and end-users in EU countries

should not dispose of electronic and electrical equipment or accessories in household waste.

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

Computer Software Copyrights

The Motorola Solutions products described in this manual may include copyrighted Motorola Solutions computer programs stored in semiconductor memories or other media. Laws in the United States and other countries preserve for Motorola Solutions certain exclusive rights for copyrighted computer programs including, but not limited to, the exclusive right to copy or reproduce in any form the copyrighted computer program. Accordingly, any copyrighted Motorola Solutions computer programs contained in the Motorola Solutions products described in this manual may not be copied, reproduced, modified, reverse-engineered, or distributed in any manner without the express written permission of Motorola Solutions. Furthermore, the purchase of Motorola Solutions products shall not be deemed to grant either directly or by implication, estoppel, or otherwise, any license under the copyrights, patents or patent applications of Motorola Solutions, except for the normal non-exclusive license to use that arises by operation of law in the sale of a product.

The AMBE+2™ voice coding Technology embodied in this product is protected by intellectual property rights including

patent rights, copyrights and trade secrets of Digital Voice Systems, Inc.

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

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

Open Source Software Legal Notices

This Motorola Solutions product contains Open Source Software. For more information regarding licenses, acknowledgements, required copyright notices, and other usage terms, refer to the documentation for this Motorola Solutions product at:

<https://businessonline.motorolasolutions.com>

Handling Precautions

The MOTOTRBO Series Digital Portable radio meets IP54 specifications, allowing your radio to withstand adverse field conditions such as being exposed to water or dust.

- 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.

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?

Icon Information



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

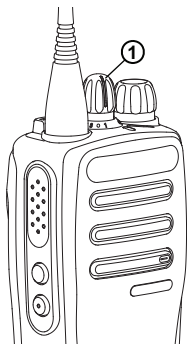


Indicates a conventional **Digital Mode-Only** feature.

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

Conventional Analog and Digital Modes

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



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.



NOTICE:

Your radio also switches between digital and analog modes during a dual mode scan. See [Scan on page 34](#) for more information.

Basic Operations

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

Charging the Battery

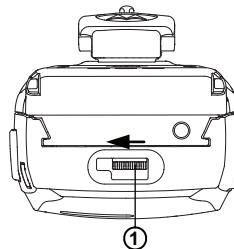
Your radio is powered by a Lithium-Ion (Li-Ion) battery.

- To comply with warranty terms and avoid damages, charge the battery using a Motorola Solutions charger exactly as described in the charger user guide.
- Charge a new battery 14 to 16 hours before initial use for best performance. Prior to charging a battery with the radio, Motorola Solutions recommends to turn the radio off.

Attaching the Battery

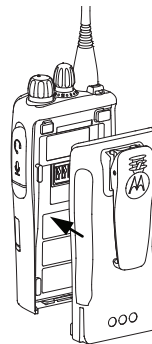
Follow the procedure to attach the battery to your radio.

- 1 Ensure that the battery latch is unlocked before attaching the battery.



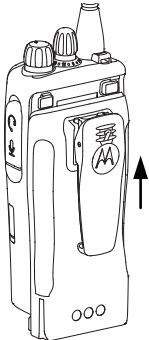
1: Battery Latch

- 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.

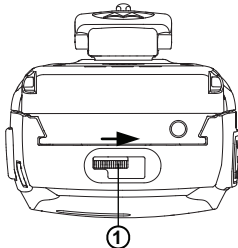


-
- 5 Slide battery latch into lock position.
-

Removing the Battery

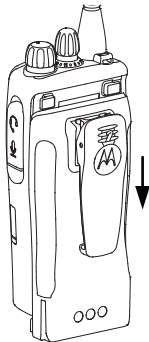
Follow the procedure to remove the battery from your radio. Ensure that the radio is turned off.

- 1 Move the battery latch into unlock position and hold.



1 : Battery Latch

-
- 2 Slide the battery down and lift off the rails.

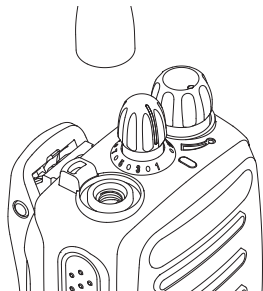


Attaching the Antenna

Follow the procedure to attach the antenna to your radio.

Ensure that the radio is turned off.

Set the antenna in the receptacle and turn clockwise until snug to provide best protection against water and dust.



NOTICE:

To remove the antenna, turn the antenna counterclockwise.



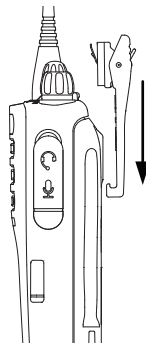
CAUTION:

If the antenna must be replaced, ensure that only CP200d antennas are used. Neglecting this damages your radio. See [Antenna](#) for a list of available antennas.

Attaching the Belt Clip

Follow the procedure to attach the belt clip to your radio.

Align the grooves on the clip with those on the battery and press downwards until you hear a click.



Removing the Belt Clip

Follow the procedure to remove the belt clip from your radio.

- 1 To remove the clip, press the belt clip tab away from the battery using a key.
- 2 Slide the clip upwards and away from the radio.

Powering Up the Radio

Follow the procedure to power up your radio.

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

If successful:

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

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

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

Powering Off the Radio

Follow the procedure to power off your radio.

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

Adjusting the Volume

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

Do one of the following:

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

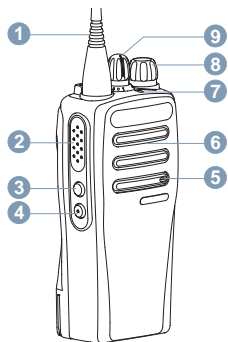


NOTICE:

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

Radio Controls

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



- 1 Antenna
- 2 Push-to-Talk (PTT) Button
- 3 Side Button 1¹
- 4 Side Button 2¹
- 5 Microphone
- 6 Speaker

- 7 LED Indicator
- 8 On/Off/Volume Control Knob
- 9 Channel Selector Knob

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.

¹ These buttons are programmable.

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.

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.

Squelch

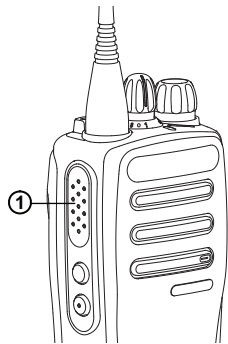
Toggles squelch level between tight and normal.

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.

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.



NOTICE:

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.

Tones

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



High Pitched Tone



Low Pitched Tone

Audio Tones

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



Continuous Tone

A monotone sound. Sounds continuously until termination.



Periodic Tone

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



Repetitive Tone

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



Momentary Tone

Sounds once for a short duration set by the radio.

Indicator Tones

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



Positive Indicator Tone



Negative Indicator Tone

Zone and Channel Selections

This chapter explains the operations to select a zone or channel on your radio. A zone is a group of channels.

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

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

Selecting Channels

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

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

Calls


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

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

Programmed One Touch Access Button

This method is used for Group 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 38](#). 

Volume/Channel Selector Knob

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

Group Calls


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

Making Group Calls

Follow the procedure to make Group Calls on your radio.


- 1 Do one of the following:
 - Select a channel with the active group alias or ID.
 - 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.


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.

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 37](#) for more information.

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.

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.

All Calls


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

Receiving All Calls

When you receive an All Call:

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

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

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

You cannot respond to an All Call.



NOTICE:

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.

Selective Calls

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

Responding to Selective Calls

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

When you receive a Selective Call:

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

- 1** 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.

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.

Talkaround

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

The talkaround setting is retained even after powering down.

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.

Monitor Feature

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

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.

Permanent Monitor

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

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.

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.

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.

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.


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.

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.

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**.
-

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.

Follow the same procedures as [Responding to Transmissions During Scanning on page 35](#), to respond to a transmission during a vote scan.

Call Indicator Settings

This feature allows the radio users to configure call or text message ringing tones.

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 Escalater.

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.

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.

Responding to Call Alerts

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

When you receive a Call Alert:

- A repetitive tone sounds.

- The yellow LED blinks.

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

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.

Turning Privacy On or Off

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

Press the programmed **Privacy** button.

Analog Scrambling

This is an analog-only feature designed 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 analog scrambling enabled on the channel to send and receive an analog scrambling-enabled transmission. While 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 via the programmable button.

Turning Analog Scrambling On or Off

Follow the procedure to turn analog scrambling on or off on your radio.

Press the programmed **Analog Scrambling** button to enable or disable this function.

Password Lock Features

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

Your radio supports a 4-digit password input.

Use the Channel Selector Knob and the two Side Buttons to enter password.

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

Accessing Radios by Using Passwords

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

- 1 Power up the radio.
A continuous tone sounds.
-
- 2 Enter the current four-digit password.
 - Use the **Channel Selector Knob** to enter the first digit of the password.
 - Press Side Button 1 or 2 to enter each digit of the remaining three digits of the password. When the second digit of the password is entered, your radio ignores any Channel Selector Knob position change.

A positive indicator tone sounds for every digit entered.
-
- 3 Your radio automatically checks the validity of the password when the last digit of the four-digit password is entered.
If successful, the radio powers up.
If unsuccessful:

- You hear a continuous tone. Repeat [step 2](#).
- After the third attempt, your radio enters into locked state. A tone sounds. The yellow LED double blinks. Your radio enters into locked state for 15 minutes.



NOTICE:

In locked state, your radio responds to inputs from **On/Off/Volume Control Knob** only. The radio is unable to receive calls while in locked state.

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 Radios by Using Passwords on page 39](#) 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 [Accessing Radios by Using Passwords on page 39](#) to access the radio.

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.



NOTICE:

Check with your dealer or system administrator for more information.

Utilities

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

Squelch Levels

You can adjust the squelch level to filter out unwanted calls with low signal strength or channels with 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.

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.

Power Levels

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

High

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

Low

This enables communication with radios in closer proximity.

Setting Power Levels

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

Press the programmed **Power Level** button.

If successful:

- The Positive Indicator Tone sounds.

- Radio transmits at low power.

If unsuccessful:

- The Negative Indicator Tone sounds.
 - Radio transmits at high power.
-

Voice Operating Transmission

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

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

- 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.



NOTICE:

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

Turning Voice Operating Transmission On or Off

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

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



NOTICE:

If the Talk Permit Tone is enabled, use a trigger word to initiate the call. Wait for the Talk Permit Tone to finish before speaking clearly into the microphone. See [Turning Talk Permit Tone On or Off](#) for more information.

Turning Voice Announcement On or Off

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

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

Press the programmed **Voice Announcement** button.

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.
-

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.
-

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.

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.

² Emergency feature is not available for CP200d.

Authorized Accessories List

Antenna

- VHF, 146–162 MHz, Stubby Antenna (HAD9742_)
- VHF, 162–174 MHz, Stubby Antenna (HAD9743_)
- VHF, 146–174 MHz, Heliflex Antenna (NAD6502_R)
- VHF, 136–155 MHz, 9 cm Antenna (PMAD4012_)
- VHF, 136–155 MHz, 14 cm Antenna (PMAD4014_)
- VHF, 136–150.8 MHz, Heliflex Antenna (PMAD4042_)
- UHF, 438–470 MHz Stubby Antenna (NAE6522_)
- UHF, 403–433 MHz, 9 cm Stubby Antenna (PMAE4002_)
- UHF, 430–470 MHz, 9 cm Stubby Antenna (PMAE4003_)
- UHF, 403–520 MHz, Antenna Whip (PMAE4016_)

Batteries

- Core Li-Ion, 2250 mAh Battery (NNTN4497_R)
- NiMH, 1400 mAh Battery (NNTN4851_)
- Slim Li-Ion, 1600 mAh Battery (NNTN4970_)

- NiMH, 1400 mAh MagOne Battery (PMNN4072_)
- MagOne Li-Ion Battery, 2050 mAh min (PMNN4458_R)

Cables

- Programming Cable USB (PMKN4128_)

Carry Devices

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

- Universal RadioPAK™ and Utility Case (fanny pack) (RLN4815_)
- Non-Display Leather case with Belt loop and D-rings (RLN5383_)
- Non-Display Leather case with 2.5 in. Swivel and D-rings (RLN5384_)
- Non-Display Leather case with 3 in. Swivel and D-rings (RLN5385_)
- Spring Action 2 in. Belt clip (RLN5644_)

Chargers

- 10-hour Plug-in Charger (EPNN7997_)
- Rapid-rate Charger Transformer (EPNN9288_)
- Rapid-rate Charger with switchmode power supply (PMLN5193_)
- 120 Volt - 6 Unit Rapid Rate Charger (PMLN6588_)
- Vehicular Travel Charger (PMLN7089_)
- 120 Volt - 90 Minute Rapid Rate CEC compliant Charger with Switch Mode Power Supply (PMPN4173_)

Earbuds and Earpieces

- Receive-Only Earpiece with 3.5 mm Jack (AARLN4885_)
- Flexible Ear Receiver (BDN6720_)
- D-Shell Receive Only Earpiece (One Size) for Remote Speaker Microphone (PMLN4620_)
- Ear Receiver with In-Line Microphone/ PTT/VOX Switch (Mag One) (PMLN6531_)
- Swivel Earpiece with In-Line Microphone and PTT (PMLN6532_)
- Earset with combined microphone and PTT (PMLN6533_)
- Earbud with In-Line Microphone/PTT/VOX Switch (Mag One)(PMLN6534_)
- D-Style Earpiece with Microphone/PTT (PMLN6535_)
- Earset with Boom Mic and In-Line PTT/VOX Switch (Mag One) (PMLN6537_)
- Adjustable Receive-Only Earpiece with Remote Speaker Microphone (PMLN7396_)
- Receive-Only Earpiece with Translucent Tube (PMLN7560)

- Receiver-Only Earpiece with Translucent Tube and Rubber Eartip (RLN4941_)
- Receive-Only Flexible Earpiece for Remote Speaker Microphone (WADN4190_)

Headsets and Headset Accessories

- Lightweight Headset with Swivel Boom Microphone (PMLN6538_)
- Lightweight Temple Transducer Headset (PMLN6541_)
- MagOne Ultra-Lite Headset, behind-the-head, adjustable with Boom Microphone and In-line PTT (PMLN6542_)
- Heavy Duty Headset, Noise Cancelling Boom Mic Headset (PMLN6854_)
- Medium Weight Over-the-Head Dual Muff Headset (PMLN7468_)

Remote Speaker Microphones

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

Surveillance Accessories

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

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.

Motorola Solutions will have no liability with respect to any claim of patent infringement which is based upon the combination of the Product or parts furnished hereunder with software, apparatus or devices not furnished by

Motorola Solutions, nor will Motorola Solutions have any liability for the use of ancillary equipment or software not furnished by Motorola Solutions which is attached to or used in connection with the Product. The foregoing states the entire liability of Motorola Solutions with respect to infringement of patents by the Product or any parts thereof.

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

VII. GOVERNING LAW

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