



MOTOTRBO™ R7 Series

PORTABLE TWO-WAY RADIOS

User Guide

AUGUST 2022

© 2022 Motorola Solutions, Inc. All rights reserved



MN007848A01-AB

Contents

List of Figures.....	11
List of Tables.....	12
Legal and Support.....	13
Intellectual Property and Regulatory Notices.....	13
Legal and Compliance Statements.....	14
Supplier's Declaration of Conformity.....	14
Industry Canada WLAN Statement.....	15
Notice to Users (FCC).....	15
Notice to Users (Industry Canada).....	15
Important Safety Information.....	15
Citizens Band License.....	16
Citizens Band Repeater Operation.....	16
25 kHz Land Mobile Band to 12.5 kHz Narrow Band Transition.....	16
Maritime Radio Use in the VHF Frequency Range.....	17
Special Channel Assignments.....	17
Operating Frequency Requirements.....	17
Declaration of Compliance for the Use of Distress and Safety Frequencies.....	20
Technical Parameters for Interfacing External Data Sources.....	20
Regulatory Compliance Information.....	20
Warranty and Service Support.....	20
Batteries and Chargers Warranty.....	20
The Workmanship Warranty.....	20
The Capacity Warranty.....	20
Limited Warranty.....	21
MOTOROLA SOLUTIONS COMMUNICATION PRODUCTS.....	21
I. WHAT THIS WARRANTY COVERS AND FOR HOW LONG:.....	21
II. GENERAL PROVISIONS.....	21
III. STATE LAW RIGHTS:.....	21
IV. HOW TO GET WARRANTY SERVICE.....	22
V. WHAT THIS WARRANTY DOES NOT COVER.....	22
VI. PATENT AND SOFTWARE PROVISIONS.....	22
VII. GOVERNING LAW.....	23
VIII. For Australia Only.....	23
Chapter 1: Read Me First.....	24
1.1 Software Version.....	25

1.2 Specifications.....	25
Chapter 2: Radio Care.....	26
2.1 Cleaning and Disinfecting Your Radio.....	26
2.2 Storing Your New Radio.....	27
Chapter 3: Introduction.....	28
Chapter 4: Radio Overview.....	30
4.1 Keypad Overview.....	33
4.2 Programmable Buttons.....	34
Chapter 5: System Overview.....	38
5.1 Capacity Max.....	38
5.2 Conventional Analog and Digital Modes.....	38
5.3 IP Site Connect.....	38
5.4 Capacity Plus.....	39
5.5 Direct Mode or Dual Capacity Direct Mode.....	39
Chapter 6: Getting Started.....	41
6.1 Charging the Battery.....	41
6.2 Attaching or Detaching the Battery.....	41
Attaching the Battery.....	41
Detaching the Battery.....	42
6.3 Attaching or Detaching the Antenna.....	42
Attaching the Antenna.....	42
Detaching the Antenna.....	42
6.4 Attaching the Universal Connector Cover.....	43
6.5 Removing the Universal Connector Cover.....	43
6.6 Cleaning the Universal Connector Cover.....	43
6.7 Turning the Radio On or Off.....	44
Turning the Radio On.....	44
Turning the Radio Off.....	44
6.8 Holding Your Radio While Transmitting Audio.....	44
6.9 Adjusting the Volume.....	45
6.10 Using the Carry Case.....	45
Inserting the Radio into the Carry Case.....	45
Removing the Radio from the Carry Case.....	45
Chapter 7: Home Screen Overview.....	46
7.1 Status Indicators.....	46
7.1.1 Status Icons.....	47
7.1.2 Bluetooth Device Icons.....	48
7.1.3 Call Icons.....	49

7.1.4 Job Tickets Icons.....	49
7.1.5 Mini Notice Icons.....	50
7.1.6 LED Indications.....	50
7.2 Radio Control Widget.....	51
7.2.1 Lightbar Indicators.....	51
7.3 Notification Widget.....	52
7.3.1 Notification Widget Icons.....	53
7.4 Screen Saver.....	53
Chapter 8: Icon-Based Menu Overview.....	55
8.1 Icon-Based Menu Icons.....	55
8.2 Accessing Icon-Based Menu.....	56
Chapter 9: Basic Radio Operation.....	57
9.1 Registration.....	57
9.2 Site Overview.....	57
9.2.1 Site Trunking.....	58
9.2.2 Auto Roaming.....	58
9.2.3 Turning the Site Lock On.....	58
9.2.4 Turning the Site Lock Off.....	59
9.2.5 Enabling the Manual Site Search.....	59
9.2.6 Accessing Neighbor Sites List.....	59
9.3 Zone and Channel Selections.....	60
9.3.1 Selecting Zones.....	60
9.3.2 Selecting Zones Using Alias Search.....	60
9.3.3 Selecting Channels.....	60
9.3.4 Selecting Channels Using Direct Channel Dial.....	61
9.4 Responding to Notifications.....	61
9.5 Accessing Action List.....	61
9.6 Accessing the Radio Information.....	62
Chapter 10: General Radio Settings.....	63
10.1 Talkaround.....	63
10.1.1 Toggling Between Repeater and Talkaround Mode.....	63
10.2 Setting Date and Time.....	63
10.3 Setting Radio Tones and Alerts.....	64
10.4 Setting Power Levels.....	64
10.5 Adjusting Display Settings.....	64
10.6 Setting Squelch Levels.....	65
10.7 Keypad Lock Options.....	65
10.7.1 Locking or Unlocking the Keypad.....	65
10.8 Setting Languages.....	65

10.9	Setting the Global Navigation Satellite System.....	66
10.10	Setting LED Indicators.....	66
10.11	Password Lock.....	66
10.11.1	Accessing Radios with Password.....	66
10.11.2	Unlocking Radios in Locked State.....	67
10.11.3	Setting the Password Lock.....	67
10.11.4	Changing Passwords.....	67
10.12	Setting the Voice Announcement.....	68
10.13	Text-to-Speech.....	68
10.13.1	Setting the Text-to-Speech.....	68
10.14	Setting the Microphone Automatic Gain Control.....	69
10.15	Setting the Microphone Distortion.....	69
10.16	Setting the Noise Suppress.....	69
10.17	Setting the Audio Ambience.....	70
10.18	Setting Audio Profiles.....	70
10.19	Setting the Text Entry.....	70
10.20	Voice Operating Transmission.....	71
10.20.1	Setting the Voice Operating Transmission.....	71
Chapter 11:	Types of Radio Calls.....	72
11.1	Making Calls on the Radio.....	73
11.2	Making Calls with Contact List.....	73
11.3	Making Calls with Manual Dial.....	74
11.4	Making Calls with Programmable Number Keys.....	75
11.5	Receiving and Responding to Calls on the Radio.....	75
11.6	Accepting or Declining Private Calls.....	75
11.6.1	Accepting Private Calls.....	76
11.6.2	Declining Private Calls.....	76
Chapter 12:	Phone Calls.....	77
12.1	Making Phone Calls.....	77
12.2	Making Phone Calls with Contact List.....	77
12.3	Making Phone Calls with Manual Dial.....	78
12.4	Dual Tone Multi Frequency.....	78
12.4.1	Initiating the DTMF Tone.....	78
12.5	Receiving and Responding to Phone Calls.....	79
Chapter 13:	Audio Recording.....	80
13.1	Accessing Audio Playback.....	80
Chapter 14:	Switching Audio Route between Internal Radio Speaker and Wired Accessory.....	82
Chapter 15:	Connectivity.....	83

15.1 Wi-Fi Operation.....	83
15.1.1 Turning the Wi-Fi On or Off.....	83
15.1.2 Turning Wi-Fi On Remotely Using a Designated Radio.....	83
15.1.3 Turning Wi-Fi Off Remotely Using a Designated Radio.....	84
15.1.4 Network Access.....	84
15.1.4.1 Connecting to a Network Access Point.....	84
15.1.4.2 Checking Wi-Fi Connection Status.....	85
15.1.4.3 Refreshing Network Lists.....	85
15.1.4.4 Adding a Network.....	86
15.1.4.5 Viewing Details of Network Access Points.....	86
15.1.4.6 Removing Network Access Points.....	87
15.1.5 Accessing Enterprise Wi-Fi Network.....	87
15.2 Bluetooth®.....	87
15.2.1 Turning the Bluetooth On or Off.....	88
Turning Bluetooth On.....	88
Turning Bluetooth Off.....	88
15.2.2 Connecting to Bluetooth Devices.....	88
15.2.3 Disconnecting from Bluetooth Devices.....	89
15.2.4 Switching Audio Route between Internal Radio Speaker and Bluetooth Device...	89
15.2.5 Viewing Device Details.....	89
15.2.6 Editing Device Names.....	89
15.2.7 Deleting Device.....	89
15.2.8 Bluetooth Profiles	90
Chapter 16: Emergency Operation.....	91
16.1 Sending Emergency Alarms.....	92
16.2 Sending Emergency Alarms with Call.....	92
16.3 Sending Emergency Alarms with Voice to Follow.....	92
16.4 Responding to Emergency Alarms.....	93
16.5 Responding to Emergency Alarms with Call.....	94
16.6 Exiting Emergency Mode.....	94
Chapter 17: Man Down (Fall Alert).....	96
17.1 Turning the Man Down Feature On or Off.....	96
Turning the Man Down Feature On.....	96
Turning the Man Down Feature Off.....	96
Chapter 18: Lone Worker.....	97
Chapter 19: Call Alert Operation.....	98
19.1 Making Call Alerts.....	98
19.2 Responding to Call Alerts.....	98
Chapter 20: Call Log Features.....	99

20.1 Viewing Recent Calls.....	99
20.2 Storing Aliases or IDs from the Call List.....	99
20.3 Deleting Calls from the Call List.....	100
20.4 Viewing Details from the Call List.....	100
Chapter 21: Call Queue.....	101
21.1 Receiving Call Queues.....	101
Chapter 22: Priority Call.....	102
22.1 Switching the Priority Call Level.....	102
Chapter 23: Contacts Settings.....	103
23.1 Adding New Contacts.....	103
23.2 Setting Default Contacts.....	103
23.3 Assigning Entries to Programmable Number Keys.....	103
23.4 Removing Associations Between Entries and Programmable Number Keys.....	104
Chapter 24: Call Indicator Settings.....	105
24.1 Activating or Deactivating Call Ringers.....	105
Activating Call Ringers.....	105
Deactivating Call Ringers.....	105
24.2 Assigning Ring Styles.....	106
24.3 Ring Alert Type.....	106
24.3.1 Selecting Ring Alert Types.....	106
24.4 Escalating Alarm Tone Volume.....	106
Chapter 25: Privacy.....	107
25.1 Setting Privacy.....	107
25.2 Privacy-Enabled Calls	107
Chapter 26: Scan.....	109
26.1 Turning the Scan On.....	110
26.2 Turning the Scan Off.....	110
26.3 Scan Talkback.....	110
26.4 Nuisance Channels.....	111
26.4.1 Deleting Nuisance Channels.....	111
26.4.2 Restoring Nuisance Channels.....	111
26.5 Vote Scan.....	111
26.6 Priority Monitor.....	112
26.7 Receive Group List.....	112
26.8 Scan Lists.....	113
26.8.1 Accessing Scan List.....	113
26.9 Flexible Receive List	114
26.9.1 Turning the Flexible Receive List On.....	114

26.9.2 Turning the Flexible Receive List Off.....	114
26.9.3 Adding New Entries to the Flexible Receive List.....	115
26.9.4 Deleting Entries from the Flexible Receive List.....	115
26.10 Multi-Talkgroup Affiliation.....	115
26.10.1 Adding the Talkgroup Affiliation.....	115
26.10.2 Removing the Talkgroup Affiliation.....	116
Chapter 27: Security.....	117
27.1 Stun Radios.....	117
27.2 Reviving Radios.....	118
27.3 Radio Kill.....	118
Chapter 28: Indoor Location.....	119
28.1 Turning the Indoor Location On.....	119
28.2 Turning the Indoor Location Off.....	119
28.3 Accessing Indoor Location Beacons Information.....	120
Chapter 29: Job Tickets.....	121
29.1 Accessing the Job Ticket Folder.....	121
29.2 Logging In the Remote Server.....	122
29.3 Creating Job Tickets.....	122
29.4 Sending Job Tickets by Using Job Tickets Templates.....	122
29.5 Receiving and Responding to Job Tickets.....	123
29.6 Deleting Job Tickets.....	124
Chapter 30: Text Messaging.....	125
30.1 Viewing Text Messages.....	125
30.2 Composing Text Messages.....	125
30.3 Sending Text Messages.....	126
30.4 Responding to Text Messages.....	127
30.5 Forwarding Text Messages.....	127
30.6 Deleting Text Messages.....	128
30.7 Setting Text Message Alert Tones.....	128
Chapter 31: Status Message.....	129
31.1 Viewing Status Messages.....	129
31.2 Sending Status Messages.....	129
31.3 Replying Status Messages.....	130
31.4 Initiating Private Call	130
31.5 Deleting Status Messages.....	130
Chapter 32: Analog Message Encode.....	131
32.1 Sending MDC Encode Messages to Dispatchers.....	131
Chapter 33: Analog Status Update.....	132

33.1 Sending Status Updates to Predefined Contacts.....	132
33.2 Viewing 5-Tone Status Details.....	132
33.3 Editing 5-Tone Status Details.....	133
Chapter 34: Auto-Range Transponder System.....	134
Chapter 35: Dynamic Caller Alias.....	135
35.1 Editing the Caller Alias.....	135
35.2 Viewing the Caller Aliases List.....	135
35.3 Initiating Private Calls From the Caller Aliases List.....	135
Chapter 36: Dynamic Group Number Assignment.....	136
36.1 Making DGNA Calls.....	136
36.2 Making Non-DGNA Calls.....	137
36.3 Receiving and Responding to DGNA Calls.....	137
Chapter 37: Entering the Front Panel Programming.....	138
Chapter 38: Home Channel Reminder.....	139
38.1 Muting the Home Channel Reminder.....	139
38.2 Setting New Home Channels.....	139
Chapter 39: Monitor Feature.....	140
39.1 Monitoring Channels.....	140
39.2 Permanent Monitor.....	140
39.2.1 Setting the Permanent Monitor.....	140
Chapter 40: Remote Monitor.....	141
40.1 Initiating the Remote Monitor.....	141
Chapter 41: Radio Check.....	142
41.1 Sending Radio Checks.....	142
Chapter 42: Mute Mode.....	143
42.1 Turning the Mute Mode On.....	143
42.2 Setting the Mute Mode Timer.....	143
42.3 Exiting the Mute Mode.....	143
Chapter 43: Received Signal Strength Indicator.....	145
43.1 Viewing RSSI Values.....	145
Chapter 44: Response Inhibit.....	146
44.1 Setting the Response Inhibit.....	146
Chapter 45: Transmit Inhibit.....	147
45.1 Enabling or Disabling the Transmit Inhibit.....	147
Chapter 46: Call Preemption	148
Chapter 47: Voice Interrupt.....	149
47.1 Enabling the Voice Interrupt.....	149

47.2 Initiating Transmit Interrupt.....	149
Chapter 48: Over-the-Air Programming.....	150
Chapter 49: Authorized Accessories List	151

List of Figures

Figure 1: R7.....	28
Figure 2: R7, R7a	28
Figure 3: Keypad Overview.....	33
Figure 4: Action List Overview.....	61

List of Tables

Table 1: VHF Marine Channel List.....	18
Table 2: Technical Parameters for Interfacing External Data Sources.....	20
Table 3: Special Notations.....	24
Table 4: IP Specification.....	26
Table 5: The Feature Access and Indications of Different Radio Model.....	28
Table 6: Full Keypad Model Overview.....	30
Table 7: Non-Keypad Model Overview.....	32
Table 8: Keypad Overview.....	33
Table 9: Assignable Radio Functions.....	34
Table 10: Home Screen Overview.....	46
Table 11: Bluetooth Device Icons.....	48
Table 12: Call Icons.....	49
Table 13: Job Ticket Icons.....	49
Table 14: Mini Notice Icons.....	50
Table 15: LED Indications.....	50
Table 16: Notification Widget Overview.....	52
Table 17: Types of Site Search.....	58
Table 18: Number of Supported Zones and Channels.....	60
Table 19: Action List Overview.....	62
Table 20: Types of Radio Calls.....	72
Table 21: Bluetooth Profiles.....	90
Table 22: Emergency Modes.....	91
Table 23: Privacy Types and Settings.....	107
Table 24: Scan Methods.....	109
Table 25: Scan Talkback Type.....	110
Table 26: Auto-Range Transponder System Indications.....	134

Legal and Support

Intellectual Property and Regulatory Notices

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.

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.

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.

License Rights

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.

Open Source Content

This product may contain Open Source software used under license. Refer to the product installation media for full Open Source Legal Notices and Attribution content.

European Union (EU) and United Kingdom (UK) Waste of Electrical and Electronic Equipment (WEEE) Directive



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

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

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

© 2022 Motorola Solutions, Inc. All Rights Reserved

Legal and Compliance Statements

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: **R7**

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.

For country code selection usage (WLAN devices)



NOTE: The country code selection is for non-US model only and is not available to all US models. Per FCC regulation, all Wi-Fi products marketed in the US must be fixed to US operation channels only.

Industry Canada WLAN Statement



CAUTION:

- 1 The device for operation in the band 5150–5250 MHz is only for indoor use to reduce the potential for harmful interference to co-channel mobile satellite systems.
- 2 The maximum antenna gain permitted for devices in the bands 5250–5350 MHz and 5470–5725 MHz shall be such that the equipment still complies with the e.i.r.p. limit.
- 3 The maximum antenna gain permitted for devices in the band 5752–5850 MHz shall be such that the equipment still complies with e.i.r.p. limits specified for point-to-point and non-point-to-point operation as appropriate.
- 4 The worst case tilt angle(s) necessary to remain compliant with the e.i.r.p. elevation mask requirement set forth in Section 6.2.2 (3) shall be clearly indicated.
- 5 User should also be advised that high-power radars are allocated as primary users (i.e. priority users) of the bands 5250–5350 MHz and 5650–5850 MHz and that these radars could cause interference and/or damage to LE-LAN devices.

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.

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.

Citizens Band License

The use of the Citizens Band radio service is licensed in Australia by the Australian Communications and Media Authority (ACMA) Radiocommunications (Citizens Band Radio Stations) Class Licence and in New Zealand by the Ministry of Economic Development New Zealand (MED) General User Radio Licence (GURL) for Citizens Band Radio, and operation is subject to the conditions contained in those licences.

In Australia, a Citizens Band transmitter shall not be operated on UHF emergency channels 5 and 35 and no voice transmissions are permitted on data (telemetry/telecommand) channels 22 and 23, except in an emergency. The radio that complies to this Standard will inhibit voice operation on channels 22 and 23. In the event that additional telemetry/telecommand channels are approved by the ACMA, these channels shall be added to those currently listed where voice transmission is inhibited.

Always listen on a channel (or observe a channel-busy indicator) to ensure it is not already being used before transmitting.

Citizens Band Repeater Operation

A repeater is a station established at a fixed location that receives radio signals from one Citizens Band station and automatically retransmits the signal to another station using the corresponding output channel. UHF Citizens Band repeaters can be found in all states and enable the range of vehicle to vehicle communications to be significantly increased. Avoid operating on locally used repeater input channels (which are in the range of channels 31 to 38, and channels 71 to 78 when they are authorized) or locally used repeater receiving channels (which will be in the range channels 1 to 8, and channels 41 to 48 when they are authorized), unless long-distance communication via the repeater facility is specifically required.



NOTE: In Australia, channel 11 is the customary calling channel for establishing communication and channel 40 is the customary road vehicle channel.

25 kHz Land Mobile Band to 12.5 kHz Narrow Band Transition

The existing use of 25 kHz analogue land mobile channels is to cease by 1 November 2015. This period is in accordance with the minimum period (five years) specified in the Radio Regulations for giving notice of revocation of a licence of an undefined duration.

Land mobile frequency bands with an offset channel plan (E, EN, and ENX bands) require a different treatment to manage the introduction of digital land mobile radio (due to potential adjacent channel interference risks). The following items apply to these bands:

- Users of E band (25 kHz channels) wanting to transition to digital prior 1 November 2015, can migrate to the EE band (also in the VHF range) or any other band open for digital land mobile radio licensing.
- E band users wanting to continue operating analogue services after the five year transition period can migrate to 12.5 kHz analogue channels in the EN band (also in the VHF range) or any other band open for narrow band analogue land mobile radio.

- Introduction of digital land mobile radio in the EN and ENX bands prior to 1 November 2015 will be considered on a case by case basis. Licensing of digital land mobile radio in these bands will be possible in areas where E band users have vacated the band, or when rigorous engineering analysis guarantees no risk of interference to other band users.

For the list of currently authorized channels, please refer to the following websites:

- <https://www.acma.gov.au/licences/citizen-band-radio-stations-class-licence> (Australia)
- <https://www.rsm.govt.nz/licensing/frequencies-for-anyone/citizen-band-radio-gurl/> (New Zealand)

Maritime Radio Use in the VHF Frequency Range

This section is only applicable for United States and Canada only.

Special Channel Assignments

Emergency Channel

If you are in imminent and grave danger at sea and require emergency assistance, use VHF Channel 16 to send a distress call to nearby vessels and the United States Coast Guard. Transmit the following information, in this order:

- 1 "MAYDAY, MAYDAY, MAYDAY."
- 2 "THIS IS _____, CALL SIGN _____." State the name of the vessel in distress 3 times, followed by the call sign or other identification of the vessel, stated 3 times.
- 3 Repeat "MAYDAY" and the name of the vessel.
- 4 "WE ARE LOCATED AT _____." State the position of the vessel in distress, using any information that will help responders to locate you, e.g.:
 - latitude and longitude
 - bearing (state whether you are using true or magnetic north)
 - distance to a well-known landmark
 - vessel course, speed or destination
- 5 State the nature of the distress.
- 6 Specify what kind of assistance you need.
- 7 State the number of persons on board and the number needing medical attention, if any.
- 8 Mention any other information that would be helpful to responders, such as type of vessel, vessel length and/or tonnage, hull color, etc.
- 9 "OVER."
- 10 Wait for a response.
- 11 If you do not receive an immediate response, remain by the radio and repeat the transmission at intervals until you receive a response. Be prepared to follow any instructions given to you.

Non-Commercial Call Channel

For non-commercial transmissions, such as fishing reports, rendezvous arrangements, repair scheduling, or berthing information, use **VHF Channel 9**.

Operating Frequency Requirements

A radio designated for shipboard use must comply with Federal Communications Commission Rule Part 80 as follows:

- on ships subject to Part II of Title III of the Communications Act, the radio must be capable of operating on the 156.800 MHz frequency.
- on ships subject to the Safety Convention, the radio must be capable of operating:
 - in the simplex mode on the ship station transmitting frequencies specified in the 156.025–157.425 MHz frequency band, and
 - in the semiduplex mode on the two frequency channels specified in the table below.



NOTE: Additional information about operating requirements in the Maritime Services can be obtained from the full text of FCC Rule Part 80 and from the US Coast Guard.

Table 1: VHF Marine Channel List

Channel Number	Frequency (MHz)	
	Transmit	Receive
1	156.050	160.650
2	156.100	160.700
*1	156.150	160.750
4	156.200	160.800
5	156.250	160.850
6	156.300	–
7	156.350	160.950
8	156.400	–
9	156.450	156.450
10	156.500	156.500
11	156.550	156.550
12	156.600	156.600
13**2	156.650	156.650
14	156.700	156.700
15**2	156.750	156.750
16	156.800	156.800
17**2	156.850	156.850
18	156.900	161.500
19	156.950	161.550
20	157.000	161.600
*1	157.050	161.650
22	157.100	161.700
*1	157.150	161.750
24	157.200	161.800

¹ Simplex channels 3, 21, 23, 61, 64, 81, 82, and 83 cannot be **lawfully used** by the general public in US waters.

² Low power (1 W) only.

25	157.250	161.850
26	157.300	161.900
27	157.350	161.950
28	157.400	162.000
60	156.025	160.625
*1	156.075	160.675
62	156.125	160.725
63	156.175	160.775
*1	156.225	160.825
65	156.275	160.875
66	156.325	160.925
67**2	156.375	156.375
68	156.425	156.425
69	156.475	156.475
71	156.575	156.575
72	156.625	–
73	156.675	156.675
74	156.725	156.725
75	***3	***3
76	***3	***3
77**2	156.875	–
78	156.925	161.525
79	156.975	161.575
80	157.025	161.625
*1	157.075	161.675
*1	157.125	161.725
*1	157.175	161.775
84	157.225	161.825
85	157.275	161.875
86	157.325	161.925
87	157.375	161.975
88	157.425	162.025



NOTE: A – in the Receive column indicates that the channel is transmit only.

³ Guard band.

Declaration of Compliance for the Use of Distress and Safety Frequencies

The radio equipment does not employ a modulation other than the internationally adopted modulation for maritime use when it operates on the distress and safety frequencies specified in RSS-182 Section 7.3.

Technical Parameters for Interfacing External Data Sources

Table 2: Technical Parameters for Interfacing External Data Sources

	RS232	USB	SB9600
Input Voltage (Volts Peak-to-peak)	18 V	3.6 V	5 V
Max Data Rate	28 kb/s	12 Mb/s	9.6 kb/s
Impedance	5000 ohm	90 ohm	120 ohm

Regulatory Compliance Information



China

The CMIIT ID is shown on the radio equipment identification label.

Warranty and Service Support

Batteries and Chargers Warranty

The Workmanship Warranty

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

All MOTOTRBO Batteries	Please refer to the warranty statement of your region.
IMPRES Chargers (Single-Unit and Multi-Unit, with Display)	12 Months

The Capacity Warranty

The capacity warranty guarantees 80% of the rated capacity for the warranty duration. Please refer to the warranty statement for your region.

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

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.

VIII. For Australia Only

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

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

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

Chapter 1

Read Me First

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

Notations Used in This Manual

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



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



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



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

Special Notations

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

Table 3: Special Notations

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

Feature and Service Availability

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



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

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

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

1.1

Software Version

All the features described in the following sections are supported by the software version **R02.21.04.1000** or later.

Contact your dealer or administrator for more information.

1.2

Specifications

For more information about your radio specifications, refer to the data sheet of your radio model at motorolasolutions.com/r7-radio.

Chapter 2

Radio Care

This section describes the basic handling precaution of the radio.

Table 4: IP Specification

IP Specification	Description
IP66	Allows your radio to withstand high-pressure water jets from any direction.
IP68	Allows your radio to withstand two meters of water for two hours, and adverse field conditions such as water drops, snow, dirt, grease, or other surface contaminants.



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

- If your radio has been submersed in water, shake your radio well to remove any water that may be trapped inside the speaker grille and microphone port. Trapped water could cause decreased audio performance.
- If your battery contact area has been exposed to water, clean and dry battery contacts on both your radio and the battery before attaching the battery to radio. The residual water could short-circuit the radio.
- If your radio has been submersed in a corrosive substance (for example, saltwater), rinse radio and battery in fresh water then dry radio and battery.
- To clean the exterior surfaces of your radio, use a diluted solution of mild dishwashing detergent and fresh water (for example, one teaspoon of detergent to one gallon of water).
- Never poke the vent (hole) located on the radio chassis below the battery contact. This vent allows for pressure equalization in the radio. Doing so may create a leak path into radio and submersibility may be lost.
- Never obstruct or cover the vent, even with a label.
- Ensure that no oily substances come in contact with the vent.
- Your radio is designed to be submersible to a maximum depth of 2 m and a maximum submersion time of 120 minutes. Exceeding maximum limit may result in damage to your radio.

2.1

Cleaning and Disinfecting Your Radio

Cleaning Procedures

The following procedures describe the recommended cleaning agents and the methods to clean the external and internal surfaces of your radio. External surfaces include the front cover, housing

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



CAUTION: Use only chemicals as prescribed by the manufacturer. Follow all safety precautions as defined on the label or material safety data sheet. The effects of certain chemicals and their vapors can have harmful results on certain plastics. Avoid using aerosol sprays, tuner cleaners, and other chemicals.



NOTE: Only clean internal surfaces when your radio is disassembled for service or repair.

Disinfecting Procedures

Motorola Solutions is providing recommended cleaning and disinfecting guidelines for your radios, based on current and best understanding of radio hygiene. As per global health authorities, removing germs, dirt and impurities from surfaces lowers the risk of spreading infection.

The following disinfectants, can be used to disinfect your radio:

- Isopropyl alcohol 70%
- Ethanol 70%
- PDI Super Sani-Cloth Germicidal Disposable Wipe
- PDI Super Sani-Cloth Plus Wipes
- Lysol Disinfecting Wipes, all scents
- Clorox Commercial Solutions® Clorox® Disinfecting Wipes, Fresh Scent
- Metrex Vionex Healthcare Antiseptic Towelettes
- Dettol Cleansing Surface Wipes
- Medipal Disinfectant Wipes

For more information on recommended cleaning and disinfecting guidelines, refer to the following links.

- <https://youtu.be/cYjxoUNCXZo>
- <https://newsroom.motorolasolutions.com/mediakits/recommended-cleaning-and-disinfecting-guidelines-for-our-radios-body-worn-cameras-and-accessories.htm>

2.2

Storing Your New Radio

Procedure:

- 1 Detach the battery and accessories from your radio.
- 2 Keep your radio with the detached battery and accessories in the original packaging.
- 3 Store the packaging in a controlled environment.

The following are the conditions for the controlled environment:

- Dry
- Well ventilated
- Temperature ranges from 68 °F/20 °C to 86 °F/ 30 °C
- 30 % to 60 % humidity



NOTE: Minor discoloration may occur if you store the radio for an extended period. However, the discoloration typically does not impact the performance of your radio.

Chapter 3

Introduction

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

Your radio can be programmed using radio programming softwares such as Customer Programming Software (CPS) and Radio Management (RM).

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

Table 5: The Feature Access and Indications of Different Radio Model

	Full Keypad	Non-Keypad
Radio Model	Figure 1: R7	Figure 2: R7, R7a
	 <p>A Motorola R7 radio with a full keypad. The screen displays 'Zone B Management' and a missed call notification from 'Craig Siddoway' at 12:06 PM. The keypad includes P1, P2, OK, directional keys, and a standard 12-key numeric keypad.</p>	 <p>A Motorola R7 or R7a radio without a keypad. The screen is not visible, but the device has a large, textured push-to-talk button on the front.</p>
Feature Access	<ul style="list-style-type: none"> • Menu⁴ • Action List • Programmable Button 	Programmable Button

⁴ This is the main access method used in the manual.

	Full Keypad	Non-Keypad
Feature Indication	<ul style="list-style-type: none">• Tone• LED indicator• Display• Voice Announcement or Text-to-Speech	<ul style="list-style-type: none">• Tone• LED indicator• Voice Announcement or Text-to-Speech



NOTE:

To understand which feature is available with the **Programmable Button**, see [Programmable Buttons on page 34](#) topic.

To understand the feature availability on your menu, see [Icon-Based Menu Overview on page 55](#) chapter.

Chapter 4

Radio Overview



Table 6: Full Keypad Model Overview

Label	Name	Description
1	Antenna	Provides the needed RF amplification when transmitting or receiving.
2	LED Indicator	Provides operating status.
3	Front Microphone	Allows your voice to be sent when PTT or voice operations are activated.
4	3-Dot Programmable Feature button	Programmable button of an assignable radio function.
5	Push-to-Talk (PTT) button	Allows you to execute voice operations (for example, Group Call and Private Call).
6	1-Dot Programmable Feature button	Programmable button of an assignable radio function.
7	2-Dot Programmable Feature button	Programmable button of an assignable radio function.
8	Emergency button	Allows you to turn on and off the Emergency Operations.

Label	Name	Description
9	Display ⁵	The radio display screen.
10	Keypad ⁵	Keys that allows you to select and input characters for various text based operations.
11	Speaker	Outputs all tones and audio that are generated by the radio (for example, features like keypad tones and voice audio).
12	On/Off/Volume knob	Allows you to turn the radio on or off and adjust volume.
13	Channel Selector knob	Allows you to select channel.
14	Rear Microphone ⁶	Noise Cancellation Microphone.
15	Belt Clip Slot	Allows you to attach belt clip.
16	Charging Contacts	Charging point for the battery.
17	Charging Rail	Provides guideline for the placement during charging.
18	Device Labeling Area	Area for adhesive label with a recommended size of 34.5 mm (length), 12.8 mm (width), and 1.3 mm at the corner for customization.
19	Accessory Connector	Allows you to connect accessories to your radio.
20	Lanyard Hole	Allows you to attach lanyard to your radio.



⁵ Not for Non-Keypad models.

⁶ Not for R7a model.

Table 7: Non-Keypad Model Overview

Label	Name	Description
1	Antenna	Provides the needed RF amplification when transmitting or receiving.
2	LED Indicator	Provides operating status.
3	Front Microphone	Allows your voice to be sent when PTT or voice operations are activated.
4	3-Dot Programmable Feature button	Programmable button of an assignable radio function.
5	Push-to-Talk (PTT) button	Allows you to execute voice operations (for example, Group Call and Private Call).
6	1-Dot Programmable Feature button	Programmable button of an assignable radio function.
7	2-Dot Programmable Feature button	Programmable button of an assignable radio function.
8	Speaker	Outputs all tones and audio that are generated by the radio (for example, features like keypad tones and voice audio).
9	Emergency button	To turn on and off the Emergency Operations.
10	Channel Selector knob	Allows you to select channel.
11	On/Off/Volume knob	Allows you to turn the radio on or off and adjust volume.
12	Rear Microphone ⁶	Noise Cancellation Microphone.
13	Belt Clip Slot	Allows you to attach belt clip.
14	Charging Contacts	Charging point for the battery.
15	Charging Rail	Provides guideline for the placement during charging.
16	Device Labeling Area	Area for adhesive label with a recommended size of 34.5 mm (length), 12.8 mm (width), and 1.3 mm at the corner for customization.
17	Accessory Connector	Allows you to connect accessories to your radio.
18	Lanyard Hole	Allows you to attach lanyard to your radio.

4.1 Keypad Overview

Figure 3: Keypad Overview

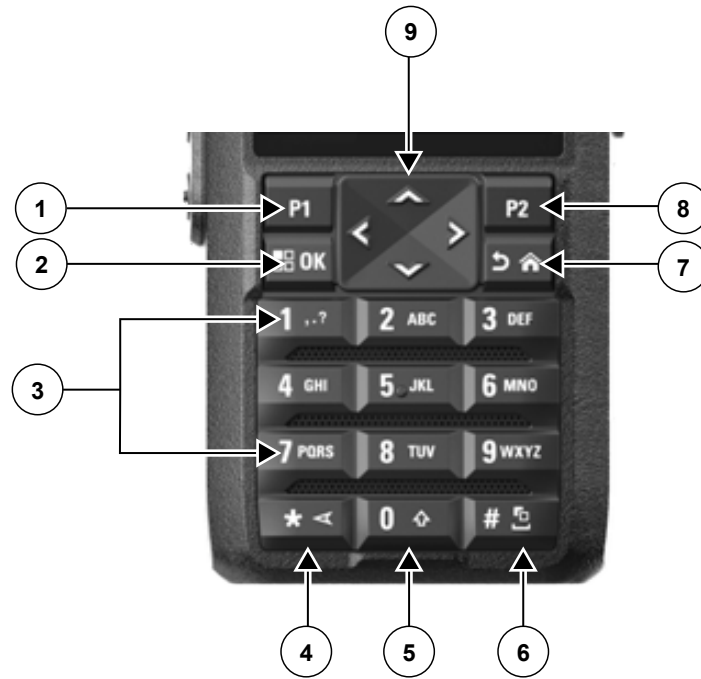


Table 8: Keypad Overview

Label	Button Name	Description
1	Programmable Button 1 (P1)	This button is field programmable using the radio programming software.
2	Menu/OK button	Press to access Menu feature. In the menu, use this key to select.
3	Number keys	Press these keys repeatedly until the desired letter, number, punctuation, or symbol appears.
4	* or delete key	During numeric entry, press this key to enter *. During text entry, press this key to delete a character.
5	0 key	Press to enter 0. Press and hold to enable or disable Caps Lock.
6	# or space key	During numeric entry, press this key to enter #. During text entry, press this key to insert a space. Press and hold this key to change text entry method.
7	Back/Home button	Press to return to previous screen. Press and hold to return to home screen.
8	Programmable Button 2 (P2)	This button is field programmable using the radio programming software.

Label	Button Name	Description
9	4-Way Navigation buttons	Press up, down, left, and right to navigate through your options.

4.2

Programmable Buttons

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



NOTE: Contact your dealer for more information.

Table 9: Assignable Radio Functions

Function	Description
Acoustic Feedback (AF) Suppressor	Allows you to toggle the AF Suppressor feature to on or off.
Action List	Allows you to launch the action list and start the feature or function from the action list.
All Alert Tones	Allows you to toggle all tones and alerts to on or off.
Audio Profiles	Allows you to select the preferred audio profiles.
Audio Record	Allows you to record all valid received calls
Audio Routing	Allows you to toggle the audio routing between internal and external speakers.
Audio Toggle	Allows you to toggle the audio routing between internal radio speaker and the wired accessory speaker.
Backlight	Allows you to toggle the display backlight to on or off.
Backlight Brightness	Allows you to adjust brightness level.
Battery Indicator	Allows you to check the current status of the battery level.
Beacon	Allows you to toggle the Beacon to on or off.
Beacon Reset	Allows you to reset the Beacon tone without disabling the beacon.
Bluetooth® Audio Switch	Allows you to toggle the audio routing between internal radio speaker and external Bluetooth-enabled accessory.
Bluetooth Connect	Allows you to initiate a Bluetooth find-and-connect operation.
Bluetooth Disconnect	Allows you to terminate all existing Bluetooth connections between your radio and any Bluetooth-enabled devices.
Bluetooth Discoverable	Allows you to enable your radio to enter Bluetooth Discoverable Mode.
Brightness	Allows you to adjust the brightness level.
Busy Queue Cancellation	When a non-Emergency call is initiated in a Busy Queue, this allows you to exit the busy mode. When a Emergency call is accepted in a Busy Queue, you cannot cancel it.

Function	Description
Call Alert	Allows you to direct access to the contacts list and select the required contact to send call alert.
Call Forwarding	Allows you to toggle the Call Forwarding to on or off.
Call Log	Allows you to select the call log list.
Cancel	Allows you to cancel an ongoing call. If call type is Group Call, then only call initiator can use this button to cancel an ongoing call. If call type is Private Call, then both the call initiator and receiver can use this button to cancel an ongoing call (applicable to Display model only).
Channel Announcement	Allows you to play zone and channel announcement voice messages in the current channel.
Confirm	Allow you to confirm a feature.
Contacts	Provides direct access to the contacts list.
Cellular	Allows you to toggle cellular to on or off.
Display Mode	Allows you to toggle to day or night mode
Emergency Off	Allows you to terminate an outgoing emergency call.
Emergency On	Allows you to set up an emergency call.
Global Navigation Satellite System (GNSS) On or Off	Allows you to toggle the satellite navigation system on or off.
Indoor Location	Allows you to toggle the Indoor Location to on or off.
Intelligent Audio	Allows you to toggle intelligent audio to on or off.
Job Ticket	Allows you to access the Job Tickets folder.
Keypad Lock	Allows you to toggle the keypad to lock or unlock.
Man Down Alarms	Allows you to toggle the Man Down alarms to on or off.
Man Down Alarms Reset	Allows you to cancel the Man Down alert tone and reset the feature timers without disabling the Man Down Alarms.
Manual Dial	Allows you to initiate Private Call by entering the subscriber ID.
Manual Site Roam	Allows you to start the manual site search.
Mic AGC	Allows you to toggle the internal microphone automatic gain control (AGC) to on or off.
Monitor	Allows you to monitor a channel.
Mute Mode	Allows you to turn Mute Mode on or off.
Notifications	Allows you to direct access to the notification list.
Nuisance Delete	Allows you to temporarily remove an unwanted channel from the scan list, except the Selected Channel. The nuisance deleted channel will be restored into the scan list, for instance, when radio is powered off and back on again (not applicable in Capacity Plus).
One Touch Access	Allows you to direct access to the predefined call features.
Option Board Feature	Allows you to toggle the option board feature(s) to enable or disable the option board-enabled channels.

Function	Description
Permanent Monitor	Allows you to monitor a selected channel for all radio traffic until function is disabled (not applicable in Capacity Plus).
Phone	Allows you to direct access to the phone contact list.
Phone Exit	Allows you to terminate a phone call (applicable to Non-Display or Numeric Display model, Digital mode only).
Play All/Stop Playing Audios	Allows you to play all recorded audios or stop playing the recorded audio.
Play Latest/Next Audio	Allows you to play the latest or next recorded audio.
Power Level	Allows you to toggle the transmit power to high or low.
Privacy	Allows you to toggle the privacy to on or off.
Radio Check	Allows you to check if the radio is active in the system.
Radio Enable or Disable	Allows a target radio to be remotely enabled or disabled.
Radio Name	Displays the radio alias on the radio display.
Remote Monitor	Allows you to turn on the microphone of a target radio without giving any indications.
Repeater or Talkaround	Allows you to toggle between using a repeater and directly communicating with another radio.
Reset Home Channel	Allows you to select a new home channel.
Reviving or Enabling radios	Allows you to revive or enable any radio in the system.
Ring Alert Type	Allows you to direct access the Ring Alert Type setting.
Roam Request	Allows you to request to search for a different site.
Scan	Allows you to toggle the scan to on or off.
Silence Home Channel Reminder	Allows you to mute the Home Channel Reminder.
Site Info	Allows you to view the current Capacity Max or Other Systems site name and ID.
Site Lock	Allows you to enable the site lock to search only in current site or disable the site lock to search in other sites as well.
Status	Allows you to select the status list menu.
Stunning or Disabling radios	Allows you to enable or disable any radio in the system.
Telemetry Control	Allows you to control the output pin on a local or remote radio.
Text Message	Allows you to select the text message menu.
Toggle Call Priority Level	Allows you to enable your radio to enter Call Priority Level High or Normal.
Transmit Inhibit	Allows you to block all transmission from the radio.
TX Interrupt Remote Dekey	Allows you to stop an on-going voice call by dekeying the transmitting radio or terminate the repeater call hang time in order to free up the channel. This button can also be used to end a Remote Monitor session.
Trill Enhancement	Allows you to toggle the trill enhancement to on or off.

Function	Description
Unassigned	Indicates that the button function has not yet assigned.
Voice Announcement	Allows you to toggle the voice announcement to on or off.
Voice Operating Transmission (VOX)	Allows you to toggle the VOX to on or off.
Wi-Fi	Allows you to toggle the Wi-Fi to on or off.
Zone Selection	Allows you to select from a list of zones.
Zone Toggle	Allows you to switch between 2 zones.

Chapter 5

System Overview

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

5.1

Capacity Max

Capacity Max is MOTOTRBO control channel based trunked radio system.

MOTOTRBO digital radio products are marketed by Motorola Solutions primarily to business and industrial users. MOTOTRBO uses the European Telecommunications Standards Institute (ETSI) Digital Mobile Radio (DMR) standard, that is, two-slot Time Division Multiple Access (TDMA), to pack simultaneous voice or data in a 12.5 kHz channel (6.25 kHz equivalent).

5.2

Conventional Analog and Digital Modes

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

Certain features are unavailable when switching from digital to analog mode, whereas some are available in both.

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

5.3

IP Site Connect

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

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

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

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



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

Channels with this feature enabled can be added to a particular roam list. The radio searches the channels in the roam list during the automatic roam operation to locate the best site. A roam list supports a maximum of 16 channels, including the selected channel.



NOTE: You cannot manually add or delete an entry in the roam list. Contact your dealer for more information.

5.4

Capacity Plus

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



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

Capacity Plus–Single-Site

Capacity Plus–Single-Site is a single-site trunking configuration of the MOTOTRBO radio system, which uses a pool of channels to support hundreds of users and up to 254 groups.

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

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

Capacity Plus–Multi-Site

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

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

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

Automatically

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

Manually

Your radio searches for the next site in the roam list that is currently in range which may not have the strongest signal, and locks on to it.

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



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

5.5

Direct Mode or Dual Capacity Direct Mode

If within the customer's required coverage area, any system user can directly communicate with all of the other system users with just the output power of the transmitter in their portable or mobile radio, then a direct mode or dual capacity direct mode system can be used.

Direct Mode or Dual Capacity Direct Mode (DCDM) is direct radio-to-radio communication for systems that do not use a repeater. When radios operate in direct mode or dual capacity direct mode, the radios always transmit and receive on the same frequency. Direct mode and dual capacity direct mode provide similar services to the end users, with the exception that dual capacity direct mode is only available in digital mode, and supports two simultaneous voice or data paths on a 12.5 kHz bandwidth

channel while direct mode supports only one. Additionally, there are some minor differences. For example, dual capacity direct mode channels may not be used as GPS revert channels.

The radios are not limited to one direct mode/dual capacity direct mode frequency. They can be programmed to have different frequencies, which are selectable with the channel selector knob.

Direct mode or dual capacity direct modes do not need over-the-air hang time for voice calls. The radio has an internal call ("talk back") timer. The channel access method used before the call timer expires is impolite, since the radio is still a member of an active call. This is independent of the Channel Access selection for call initiation (polite or impolite).

Chapter 6

Getting Started

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

6.1

Charging the Battery

Prerequisites: Turn off your radio when charging.

Procedure:

- 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 three to four hours before initial use for best performance. Batteries charge best at room temperature.
- If the charger LED blinks in red when charging, you must reinsert the radio. You may need to repeat the step every 15 minutes.
- Charge your IMPRES™ battery with an IMPRES charger for optimized battery life and valuable battery data.



NOTE: MOTOTRBO R7 IMPRES batteries comes with self calibration feature, and do not have to undergo the long hours of calibration or recondition process when charged with the compatible IMPRES Single-Unit Charger and IMPRES 2 Multi-Unit Charger (software version 2.00 and above). You can refer to [Authorized Accessories List on page 151](#).

6.2

Attaching or Detaching the Battery

Attaching the Battery

Procedure:

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

Postrequisites:



NOTE:

If the radio is attached with the wrong battery, your radio shows the following indications:

- A low pitched warning tone sounds.
- The red LED blinks.
- The display shows `Wrong Battery`.
- Voice Announcement or Text-to-Speech sounds "Wrong Battery" if the Voice Announcement or Text-to-Speech is loaded using the radio programming software.

If the radio is attached with an unsupported battery, your radio shows the following indications:

- An alert tone sounds.
- The display shows `Unknown Battery`.
- Battery icon is disabled.

For R7a UL capable radio model, to enable UL battery detection, set the radio certification type as `UL` in MOTOTRBO CPS 2.0 or Radio Management (RM) programming software.

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

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

Detaching the Battery

Prerequisites: Ensure that your radio is turned off.

Procedure:

- 1 Move the battery latch into the unlock position.
- 2 Hold and slide the battery down and off the rails.

6.3

Attaching or Detaching the Antenna

Attaching the Antenna

Procedure:

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



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



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

Detaching the Antenna

Procedure:

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

6.4

Attaching the Universal Connector Cover

Procedure:

- 1 Insert the slanted end of the cover into the slots above the universal connector.
- 2 Press downwards on the cover to seat the cover properly on the universal connector.
- 3 Secure the connector cover to the radio by turning the thumbscrew clockwise.

6.5

Removing the Universal Connector Cover

Procedure:

- 1 Turn the thumbscrew counterclockwise.
- 2 Slide the connector cover up and out of the slanted end of the universal connector.

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

6.6

Cleaning the Universal Connector Cover

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

Procedure:

- 1 Mix one tablespoon of mild dishwashing detergent with one gallon of water to produce a 0.5% solution.
- 2 Clean only the external surfaces of the radio with the solution. Apply the solution sparingly with a stiff, nonmetallic, short-bristled brush.
- 3 Dry the radio thoroughly with a soft and lint-free cloth. Ensure the contact surface of the universal connector is clean and dry.
- 4 Apply Deoxit Gold Cleaner or Lubricant Pen (Manufacturer CAIG Labs, Part number G100P) on the contact surface of the universal connector.
- 5 Attach an accessory to the universal connector to test the connectivity.

Postrequisites:



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

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

6.7

Turning the Radio On or Off

Turning the Radio On

Procedure:

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

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

- A tone sounds.



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

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



NOTE: If your radio fails to turn on although your battery is charged and properly attached, contact your dealer for more information.

Turning the Radio Off

Procedure:

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

The display shows `Powering Down`.

6.8

Holding Your Radio While Transmitting Audio

Procedure:

- 1 When using high audio, hold your radio vertically with the top microphone 5–10 cm away from your mouth.
- 2 Speak into the top microphone.



NOTE: Do not speak facing the bottom or the back of your radio.

- 3 Listen through speaker.
- 4 Keep the antenna at least 2.5 cm from your head and body.

The following shows the correct way of holding your radio while transmitting audio.



6.9

Adjusting the Volume

Procedure:

- 1 Perform one of the following actions:
 - To increase the volume, turn the **On/Off/Volume** knob clockwise.
 - To decrease the volume, turn the **On/Off/Volume** knob counterclockwise.



NOTE:

Your radio can be programmed to have a minimum volume offset where the volume level cannot be lowered past the programmed minimum volume.

Volume bar screen appears when you adjust the volume.

6.10

Using the Carry Case

Inserting the Radio into the Carry Case

Procedure:

- 1 Place your radio in the carry case.
- 2 Button the carry case.

Removing the Radio from the Carry Case

Procedure:

- 1 Unbutton the carry case.
- 2 Remove the radio from the carry case.

Chapter 7

Home Screen Overview

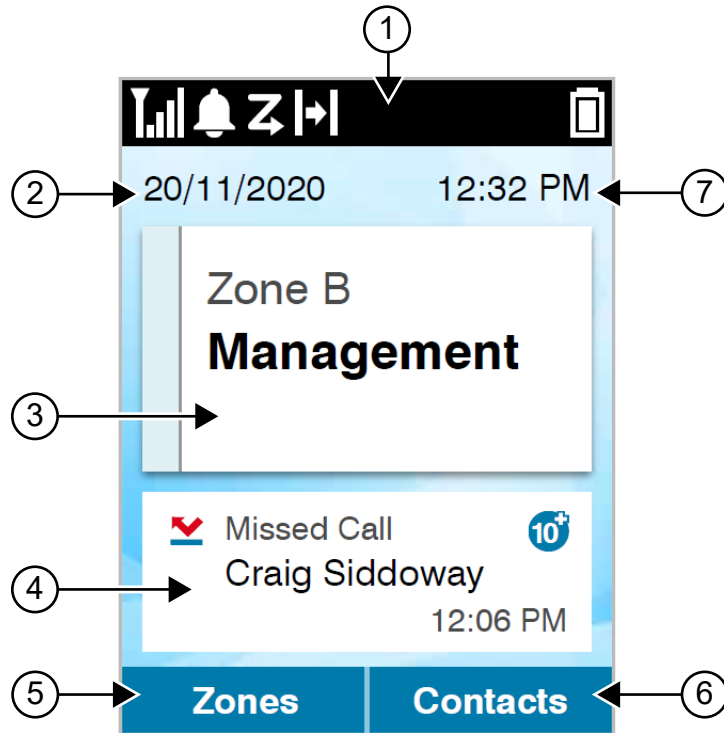


Table 10: Home Screen Overview

No.	Name	Description
1	Status Bar	Status icons appear in the status bar to provide device status and feature notifications.
2	Date	The date format available is DD/MM/YYYY (default) and MM/DD/YYYY.
3	Radio Control Widget	Displays channel errors, trunking statuses, call states.
4	Notification Widget	Displays the most recent notification.
5	Programmable Button 1 (P1)	This button is field programmable using the radio programming softwares.
6	Programmable Button 2 (P2)	This button is field programmable using the radio programming softwares.
7	Time	The time format available is 12 hours (default) and 24 hours.

7.1






















Status Indicators

Status Indicators explain the Icons and LED indicators used in your radio.

















7.1.1

Status Icons

These icons appear at the status bar to provide device-specific information or status.

Icon	Name	Description
	Auto Roaming	Auto Roaming is enabled.
	Battery	The number of bars shown indicates the charge remaining in the battery.
	Bluetooth Connected	The Bluetooth feature is enabled. The icon stays lit when a remote Bluetooth device is connected. ⁷
	Call Priority High	Call Priority Level High is enabled.
	Collaboration App Link	Your radio is now paired and connected to the IoT devices.
	Dynamic Group Number Assignment (DGNA)	Your radio is in DGNA Talkgroup.
	Download	Your radio is currently downloading file or has a downloaded file.
	Emergency	Your radio is in Emergency mode.
	Global Positioning System (GPS)	GNSS feature is enabled. The icon stays lit when a position fix is available.
	GPS error	GNSS feature is enabled but is having issue receiving data from the satellite.
	GPS unavailable	GNSS feature is enabled but is not receiving data from the satellite.
	High Volume Data	Your radio is receiving high volume data and channel is busy.
	Location	Location status is on and available.
	Location unavailable	Location status is on but unavailable due to Bluetooth disabled or Beacons Scan suspended by Bluetooth.
	Keypad	Your radio keypad is in lock or unlock state.
	Monitor	Selected channel is being monitored.
	Notification	Your radio receives notification of an activity or event.
	Option Board	The Option Board is enabled.
	Option Board unavailable	The Option Board is disabled.
	Over-the-Air-Programming (OTAP) Delay Timer	Indicates time left before automatic restart of radio.
	Response Inhibit	Prevents your radio from responding to any incoming transmissions.

⁷ Not for R7a model.


Icon	Name	Description
	Received Signal Strength Indicator (RSSI)	The number of bars displayed represents the radio signal strength. Four bars indicate the strongest signal. This icon is only displayed while receiving.
	Out of Range	Your radio unable to detect a signal from the system or current site.
	Power Level	Your radio is set at low power. Icon disappears when the radio is in high power.
	Receiving	Your radio is receiving call.
	Transmitting	Your radio is transmitting call.
	Scan	Scan feature is enabled.
	Scan Priority	Your radio detects activity on the channel or group designated as Priority 1 or 2.
	Vote Scan	Vote scan feature is enabled
	Secure	The Privacy feature is enabled.
	Unsecure	The Privacy feature is disabled.
	Shared Frequency	Indicates that your radio is locking to shared control channel.
	Talkaround	In the absence of a repeater, radio is currently configured for direct radio to radio communication.
	Transmit Inhibit	Allows you to block all transmissions from your radio.
	Mute	Mute is enabled and speaker is muted.
	Ring Only	Ringling mode is enabled.
	Silent	Silent mode is enabled.
	Tone Disabled	Tones are turned off.
	Wi-Fi	Your radio is connected to a Wi-Fi network. The number of bars represents the signal strength of the Wi-Fi network. ⁷
	Wi-Fi unavailable	Wi-Fi network is not available. ⁷





7.1.2

Bluetooth Device Icons

The following icons appear next to items in the list of Bluetooth-enabled devices available to indicate the device type.

Table 11: Bluetooth Device Icons

Icon	Name
	Bluetooth Audio Device










Icon	Name
	Bluetooth Data Device
	Bluetooth PTT Device
	Bluetooth PAN Device
	Bluetooth Sensor Device

7.1.3

Call Icons

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

Table 12: Call Icons




Icon	Name
	Bluetooth PC Call
	DGNA Call
	Dispatch Call
	Group Call/All Call
	Non-IP Peripheral Individual call
	Non-IP Peripheral Group call
	Phone Call as Group or All Call
	Phone Call as Private Call
	Private Call






7.1.4

Job Tickets Icons

The following icons appear momentarily on the display in the Job Ticket folder.

Table 13: Job Ticket Icons

Icon	Name
	All Jobs
	New Jobs
	Job In Progress




Icon	Name
	Job Sent Failed
	Job Sent Successfully
	Priority 1 Job
	Priority 2 Job
	Priority 3 Job

7.1.5

Mini Notice Icons

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

Table 14: Mini Notice Icons

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

7.1.6

LED Indications

The LED Indicator shows the operational status of your radio.

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

Table 15: LED Indications

Indication	Status
Blinking Red	<ul style="list-style-type: none"> The radio is indicating a battery mismatch. The radio has failed the self-test upon powering up. The radio is receiving an emergency transmission. The radio is transmitting in low battery state. The radio has moved out of range if Auto-Range Transponder System is configured. Mute Mode is enabled.
Solid Yellow	<ul style="list-style-type: none"> The radio is in Bluetooth Discoverable Mode.⁸ The radio is monitoring a conventional channel.
Blinking Yellow	<ul style="list-style-type: none"> The radio has yet to respond to a Call Alert.

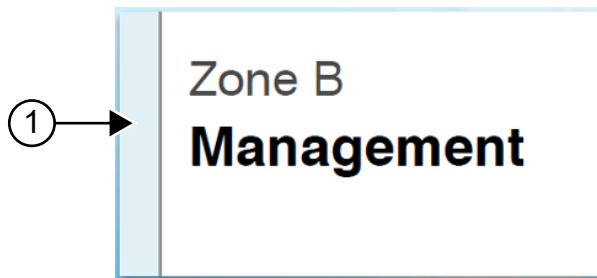
⁸ Not for R7a model.

Indication	Status
	<ul style="list-style-type: none"> The radio is scanning for activity. The radio has Flexible Receive List enabled. All Capacity-Plus–Multi-Site channels are busy.
Double Blinking Yellow	<ul style="list-style-type: none"> The radio has Auto Roaming enabled. The radio is actively searching for a new site. The radio has yet to respond to a Group Call Alert. The radio is locked. The radio is not connected to the repeater while in Capacity Plus. All Capacity-Plus channels are busy.
Solid Green	<ul style="list-style-type: none"> The radio is powering up. The radio is transmitting. The radio is sending a Call Alert or an emergency transmission.
Blinking Green	<ul style="list-style-type: none"> The radio is receiving a call or data. The radio is retrieving the Over-the-Air Programming transmissions. The radio is detecting activity over the air.
Double Blinking Green	The radio is receiving a privacy-enabled call or data.

7.2

Radio Control Widget

The Radio Control Widget displays the current zone and channel, channel errors, trunking statuses, and call states.



No.	Name
1	Lightbar

7.2.1

Lightbar Indicators

The Lightbar Indicator indicates the active call state of the radio.

Color	Call State
Light Blue	Idling
Yellow	Receiving Call
Red	Transmitting Call
Gray	Unprogrammed

7.3

Notification Widget

Notification Widget provides you with important notices. You can take an action directly from the Notification Widget.

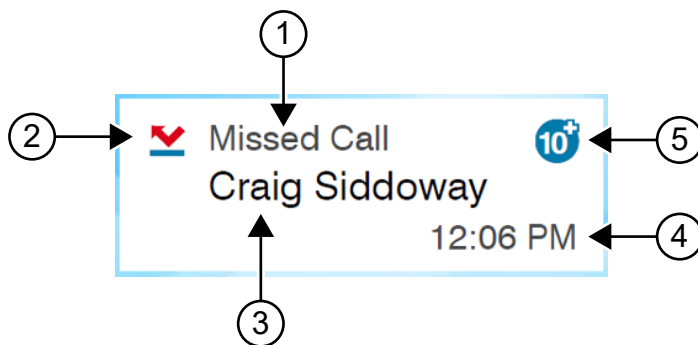



Table 16: Notification Widget Overview







No.	Name	Description
1	Notification Type	Displays the most recent notification.
2	Inline Icon	Displays the icon for the most recent notification. Refer to Notification Widget Icons on page 53 for more information.

No.	Name	Description
3	Caller or Sender ID Status Information	Displays caller or sender ID information based on the recent notification received.
4	Time stamp Information	Displays the time stamp of the received notification.
5	Total Number of Un-read Notification	Displays the total unread notifications. If the unread notifications are more than 10, the Notification Widget displays the total number as  .

7.3.1

Notification Widget Icons

These icons appear at the Notification Widget to provide indication for received notification.

Icon	Name
	Call Alert
	Emergency
	Job Ticket
	Miss Call
	Status Message
	Text Message

7.4

Screen Saver

The screen saver feature allows your radio to reduce battery consumption and increase battery life.

Under the following conditions, your radio will enter into screen saver mode after the Backlight Timeout Timer expires:

- In the radio programming softwares, the configuration for **Backlight→Timeout Timer (sec)** is not set to Infinite.
- Your radio remains in home screen.
- Your radio is not in any active voice call or in call hang time state.
- Your radio is not displaying any momentary notice such as home screen reminder or low battery warning.

Your radio will exit the screen saver mode if the following scenarios occur:

- Any user input detected.
 - Pressing the **PTT** button, **keypad** button, or **Programmable** button.
 - Launching an Emergency.



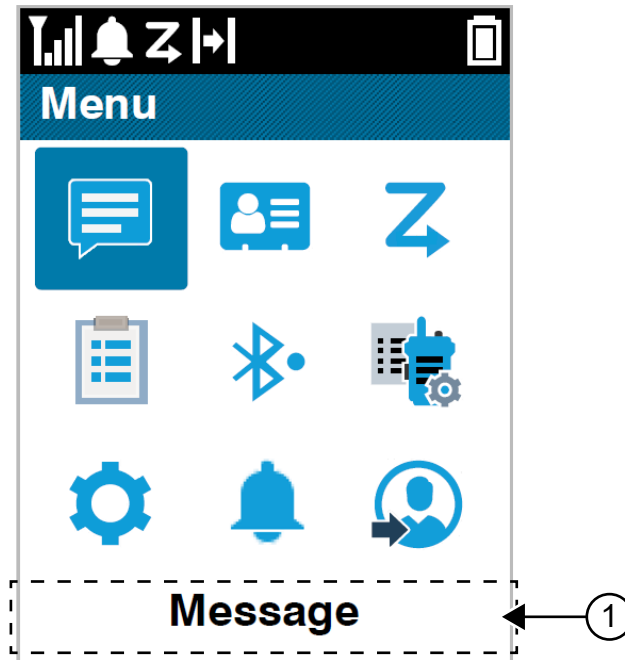
NOTE: If your Emergency is configured as Silent or Silent with voice, launching the Emergency will not exit the screen saver mode.

- Turning the **On/Off/Volume knob** or **Channel Selector knob**.
- Attaching or detaching any accessories.
- Your radio is receiving a voice call.
- Your radio is receiving nonvoice transmission activity such as Call Alert and Job Ticket.
- Your radio is displaying any momentary notice such as home screen reminder or low battery warning.

Chapter 8

Icon-Based Menu Overview

Icon-based menu populates up to nine menu icons per page. Your radio auto-populates Icon-based Menu based on the feature availability.















No.	Name	Description
1	Menu String	Displays the name of the corresponding selected menu icon.

8.1

Icon-Based Menu Icons

Icon	Name
	Audio Playback
	Bluetooth
	Call Log
	Caller Alias
	Contact

Icon	Name
	Emergency
	Job Tickets
	Log In
	Log Out
	Message
	Notification
	Radio Mode
	Scan
	Status
	Utilities
	Wi-Fi
	Zone

8.2

Accessing Icon-Based Menu

Procedure:

- 1 From the home screen, select the **Menu/OK** button.
- 2 Navigate the menu by using the **4-Way Navigation** button or **Number keys**.



NOTE: Each number on the **Number keys** is tied to each icon that appears on the menu.

Chapter 9

Basic Radio Operation

This section explains the basic operation that you can perform on your radio.

9.1

Registration

Your radio may receive registration-related messages from your Capacity Max system.

Registration

Your radio sends registration message to a system when you turn on your radio, change talkgroup, or site roam. If your radio fails to register on site, your radio automatically attempts to roam to another site, and temporarily removes the registration site attempted from the roaming list.

When site searches successfully, your radio shows the following indications:

- A tone sounds.
- The yellow LED double blinks.
- The display shows `Registering`.

When site registered successfully, your radio shows `Site <Number>`.

Out of Range

When your radio unable to detect a signal from the system or from the current site, your radio shows the following indications:

- A repetitive tone sounds.
- The RED blinks.
- The display shows `Out of range`.

Talkgroup Affiliation Failed

When your radio fails to attempt affiliation to the talkgroup, your radio shows `Affiliation Fail`.

Registration Denied

When registration with the system is not accepted, your radio shows the following indications:

- The yellow LED double blinks.
- The display shows `Registration Denied`.

9.2

Site Overview

A site provides coverage for a specific area.

In a multi-site network, the system will automatically search for a new site when the signal level from the current site drops to an unacceptable level.

9.2.1

Site Trunking

Site Trunking is only available with Capacity Max system. A site must be able to communicate with the Trunk Controller to be considered as System Trunking.

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

When a radio is in Site Trunking, the radio displays `Site Trunking` and a repetitive tone sounds.

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

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



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

9.2.2

Auto Roaming

Depending on your radio system, this feature allows your radio to roam to a required site.

A multi-site channel has auto roaming capability when it is attached with a site search list.

Your radio can roam to different sites through site search.

Table 17: Types of Site Search

Types	Description
Passive Site Search (PassiveSS)	When Site Lock is turned off, PassiveSS scans available sites and selects the strongest signal as current home.
Active Site Search (ActiveSS)	ActiveSS sends wakeup requests to the repeater.

9.2.3

Turning the Site Lock On

Procedure:

Press the programmed **Site Lock** button.

Your radio shows the following indications:

- A positive tone sounds.
- The display shows `Site Locked`.
- The radio searches in the current site only.

9.2.4

Turning the Site Lock Off

Procedure:

Press the programmed **Site Lock** button.


Your radio shows the following indications:

- A negative tone sounds.
- The display shows *Site Unlocked*.
- The radio searches a list of other sites including the current sites.

9.2.5

Enabling the Manual Site Search

Procedure:

- 1 From the menu, select  **Utilities**→**Radio Settings**→**Site Roaming**.
- 2 Disable the **Site Lock**.
- 3 Select **Active Search**.

Your radio shows the following indications:

- A tone sounds.
- The green LED blinks.

If your radio finds a new site, your radio shows the following indications:

- A positive tone sounds.
- The LED extinguishes.

If your radio fails to find a new site, your radio shows the following indications:

- A negative tone sounds.
- The LED extinguishes.

If a new site is within the range, but your radio is unable to connect to it, your radio shows the following indications:

- A negative tone sounds.
- The LED extinguishes.

9.2.6

Accessing Neighbor Sites List

Procedure:

From the menu, select  **Utilities**→**Radio Info**→**Neighbor Sites**.

9.3

Zone and Channel Selections

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

Table 18: Number of Supported Zones and Channels

Model	Zones	Channels	Channels per Zone
Display	250	1000	16
Non-Display	4	64	16

9.3.1

Selecting Zones

Procedure:

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

The display shows <Zone> Selected.




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

9.3.2

Selecting Zones Using Alias Search

Procedure:

- 1 From the menu, select  **Zone**.
- 2 Enter the required characters for the alias.

The display shows <Zone> Selected.



NOTE: The alias search is case-insensitive. If there are two or more entries with the same name, the display shows the entry listed first in the list.

9.3.3

Selecting Channels

Procedure:

- 1 Turn the **Channel Selector** knob.



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

Your radio switches to your preferred channel.

9.3.4

Selecting Channels Using Direct Channel Dial

Procedure:

At the home screen, select **1** → <Assigned number for the required channel>.

9.4

Responding to Notifications



NOTE: You can customize the notification widget on the home Screen for Private Call and Call Alert features through the **Respond Caller** setting in the radio programming softwares. When the **Respond Caller** is enabled, you can directly view a list of notifications for Private Call or Call Alert notification. If the **Respond Caller** is disabled, the notification is shown in notification widget.

Procedure:

- 1 From the home screen, select the **Down** button.
- 2 To view the notification detail, select the **Menu/OK** button.

9.5

Accessing Action List

The Action List contains configurable quick access features. Each feature in the Action List is identified with action list numbers.

Procedure:

- 1 From the home screen, select the **Up** button.

Figure 4: Action List Overview

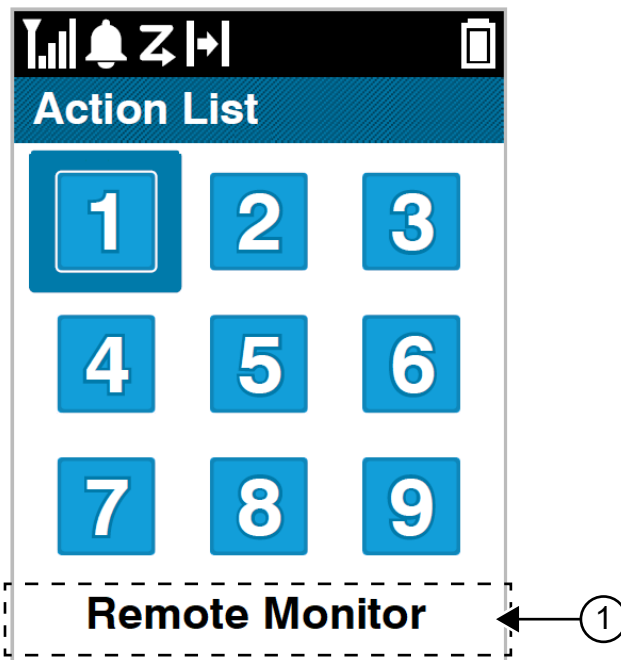


Table 19: Action List Overview

No.	Name	Description
1	Feature String	Displays the name of the corresponding selected features.




NOTE: You can configure the Action List and the feature string settings using the radio programming softwares.

9.6

Accessing the Radio Information

Procedure:

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

Chapter 10

General Radio Settings

This section explains the general settings that you can adjust on your radio.

10.1

Talkaround

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

The talkaround setting is retained even after powering down.




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

10.1.1

Toggle Between Repeater and Talkaround Mode

Procedure:

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


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

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

10.2

Setting Date and Time

Procedure:

- 1 From the menu, select  **Utilities**→**Radio Settings**→**Date & Time**.
- 2 Perform one of the following actions:
 - To automatically synchronize with an external time source, enable **Set Automatically Enabled** checkbox with **Menu/OK** button. Proceed to [step 7](#).
 - To adjust the date and time manually, disable **Set Automatically Enabled** checkbox with **Menu/OK** button. Proceed to [step 3](#).



NOTE: If you enable the **Set Automatically Enabled**, the date and time is synchronized with an external source such as Network Time Protocol (NTP) through Wi-Fi or Global Navigation Satellite System (GNSS).

- 3 To adjust **Time Zone**, select the **Left**, **Right** or **Menu/OK** button.
- 4 To enable **Daylight Savings**, select **Enabled**.
- 5 To adjust **Set Date**, select the **Menu/OK**→<preferred date>→**Menu/OK**.
- 6 To adjust **Set Time**, select the **Menu/OK**→<preferred time>→**Menu/OK**.

- 7 To adjust **Date Format**, select the **Left**, **Right**, or **Menu/OK** button.




NOTE: The date format available is DD/MM/YYYY (default) and MM/DD/YYYY.

- 8 To enable 24 hours **Time Format**, select **24-Hours Time**.

10.3

Setting Radio Tones and Alerts

Procedure:


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

A ✓ appears beside the setting.

10.4

Setting Power Levels


Procedure:

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

10.5

Adjusting Display Settings

Procedure:


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

10.6

Setting Squelch Levels

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

Procedure:

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

10.7

Keypad Lock Options

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

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

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


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

10.7.1

Locking or Unlocking the Keypad

Procedure:

Perform one of the following actions:

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

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

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

10.8

Setting Languages

Procedure:


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

A ✓ appears beside the selected language.

10.9

Setting the Global Navigation Satellite System

Procedure:

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


When GNSS is enabled, a ✓ appears beside `Enabled`.

When GNSS is disabled, a ✓ disappears beside `Enabled`.

10.10

Setting LED Indicators

Procedure:

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

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

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

- The ✓ disappears beside `Enabled`.
- The display backlight and keypad backlight are automatically turned off.

10.11

Password Lock

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

Your radio supports a four-digit password input.

Your radio is unable to receive calls in locked state.

10.11.1

Accessing Radios with Password

Prerequisites: Turn on your radio.

Procedure:

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

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

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



NOTE:

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

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


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

10.11.2

Unlocking Radios in Locked State

Procedure:


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

Option	Actions
Unlocking Radios in Locked State if your radio is turned on	<ol style="list-style-type: none"> a Wait for 15 minutes. b Access the radio by following the steps in Accessing Radios with Password on page 66.
Unlocking Radios in Locked State if your radio is turned off	<ol style="list-style-type: none"> a Turn on your radio. <div style="margin-left: 20px;">  NOTE: Your radio restarts the 15 minutes timer for locked state. </div> b Wait for 15 minutes. c Access the radio by following the steps in Accessing Radios with Password on page 66.

10.11.3

Setting the Password Lock

Procedure:

- 1 From the menu, select  **Utilities**→**Radio Settings**→**Passwd Lock**→<*required password*>.
- 2 Perform one of the following actions:
 - To enable Password Lock, select **Turn On**.
 - To disable Password Lock, select **Turn Off**.

10.11.4

Changing Passwords

Procedure:

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

- 2 Enter a new four-digit password.
- 3 To confirm the new password, re-enter the same four-digit password.


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

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

10.12

Setting the Voice Announcement

Procedure:

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

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

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

10.13

Text-to-Speech

This feature enables the radio to audibly indicate the following features:

- Current Channel
- Current Zone
- Programmed button feature on or off
- Content of received text messages
- Content of received Job Tickets




NOTE:

If Text-to-Speech is enabled, the Voice Announcement feature is automatically disabled. If Voice Announcement is enabled, then the Text-to-Speech feature is automatically disabled.

10.13.1

Setting the Text-to-Speech

Procedure:

- 1 From the menu, select  **Utilities**→**Radio Settings**→**Text-to-Speech**.
- 2 Select one of the following options:
 - **All**
 - **Messages**
 - **Job Tickets**
 - **Channel**
 - **Zone**


- **Program Button**

A ✓ appears beside the selected setting.

10.14

Setting the Microphone Automatic Gain Control

Procedure:

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


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

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

10.15

Setting the Microphone Distortion

Procedure:

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


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

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

10.16

Setting the Noise Suppress


Procedure:

- 1 From the menu, select  **Utilities**→**Radio Settings**→**Noise Suppress**.
- 2 Perform one of the following actions:
 - To enable Noise Suppress in a normal background, select **Enhance Auto**.
 - To enable Noise Suppress when noise higher than normal background, select **Basic**.
 - To disable Noise Suppress, select **Disabled**.

10.17

Setting the Audio Ambience

Procedure:


- 1 From the menu, select  **Utilities**→**Radio Settings**→**Audio Ambience**.
- 2 Perform one of the following actions:
 - For default factory settings, select **Default**.
 - To increase the volume of the speaker in noisy surroundings, select **Loud**.
 - To reduce the acoustic feedback when communicating with a group of radios that are near each other, select **Work Group**.

The display shows a ✓ beside the selected setting.

10.18

Setting Audio Profiles

Procedure:

- 1 From the menu, select  **Utilities**→**Radio Settings**→**Audio Preference**.
- 2 Perform one of the following actions:
 - To disable the previous selected audio profile and return to the default factory settings, select **Default**.
 - For audio profiles that compensate noise-induced hearing loss in adults above 40 years old, select **Level 1**, **Level 2**, or **Level 3**.


The display shows a ✓ beside the selected setting.

10.19

Setting the Text Entry

You can configure different text entries on your radio.

Procedure:

- 1 From the menu, select  **Utilities**→**Radio Settings**→**Text Entry**.
- 2 Perform one of the following actions:

Option	Actions
Setting your radio to learn common word sequences that you often enter	Select Word Predict .
Setting your radio to perform word correction	Select Word Correct .
Setting your radio to capitalize the first letter in the first word for every new sentence	Select Sentence Cap .
Setting custom words	<ul style="list-style-type: none">• To view custom words, select My Words→List of Words.

Option	Actions
	<ul style="list-style-type: none"> • To edit a custom word, select My Words→Edit. • To add a custom word, select My Words→Add New Word. • To delete a custom word, select My Words→<required word>→Delete. • To delete all custom words, select My Words→Delete All.

- If you select **Word Predict**, **Word Correct**, or **Sentence Cap**, a ✓ appears beside **Enabled**.
- If you select **My Words**, the display shows a transitional mini notice.

10.20

Voice Operating Transmission

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




NOTE:

This feature is not applicable in Citizen Band channels that are in the same frequency. Contact your dealer or administrator for more information.

10.20.1

Setting the Voice Operating Transmission

Procedure:

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

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

Chapter 11

Types of Radio Calls

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

Table 20: Types of Radio Calls

Call Type	Capacity Max	Conventional Modes	IP Site Connect	Capacity Plus
Group Call A Group Call is a point-to-multipoint call operation. Your radio must be configured as a member of the group for you to communicate with each other.	✓	✓	✓	✓
Broadcast Call A Broadcast Call is a one-way voice call from any user to an entire talkgroup. The Broadcast Call feature allows only the call initiating user to transmit to the talkgroup, while the recipients of the call cannot respond.	✓	✓	✓	✓
Private Call A Private Call is a call from an individual radio to another individual radio. There are two types of Private call which are: <ul style="list-style-type: none"> • Off Air Call Set-Up (OACSU) ⁹ • Full Off Air Call Set-Up (FOACSU) ¹⁰ 	✓	✓ ¹¹	✓	✓
All Call An All Call is a call from an individual radio to every radio on the site or every radio at a group of sites. It is used to make important announcement.	✓	✓	✓	✓
Selective Call A Selective Call is a call from an individual radio to another individual radio. It is a Private Call on an analog system.	✗	✓ ¹²	✗	✗

⁹ OACSU sets up the call after performing a radio presence check and completes the call automatically.

¹⁰ FOACSU sets up the call after performing a radio presence check. FOACSU calls require user acknowledgment to complete the call and allows the user to either Accept or Decline the call.

¹¹ Digital only

¹² Analog only

Call Type	Capacity Max	Conventional Modes	IP Site Connect	Capacity Plus
Unaddressed Call An Unaddressed Call is a group call to one of the 16 predefined group IDs.	✗	✓ ¹¹	✓	✗
Open Voice Channel Mode (OVCM) An OVCM is a call from a radio that is not preconfigured to work in a particular system during a group or individual call. The OVCM group call supports broadcast calls.	✗	✓ ¹¹	✓	✗

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

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



NOTE:

If you would like to make a 5-Tone Call, you are required to purchase for a Software License Key separately.

11.1

Making Calls on the Radio

Procedure:

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

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




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

11.2

Making Calls with Contact List

Procedure:

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


Option	Actions
Making group calls or private calls with Contact List	<p>a From the menu, select  Contacts.</p> <p>b Perform one of the following actions:</p> <ul style="list-style-type: none"> • To do alias search, enter the required characters for the alias. • To search for the alias manually, scroll down the contact list with the 4-Way Navigation button. <p>c To call, press and hold the PTT button.</p> <p>d Wait for the Talk Permit Tone to end, and speak into the microphone.</p> <p>e To listen, release the PTT button.</p>
Making broadcast calls or all calls with Contact List	<p>a From the menu, select  Contacts.</p> <p>b Perform one of the following actions:</p> <ul style="list-style-type: none"> • To do alias search, enter the required characters for the alias. • To search for the alias manually, scroll down the contact list with the 4-Way Navigation button. <p>c To call, press and hold the PTT button.</p> <p>d Wait for the Talk Permit Tone to end, and speak into the microphone.</p>
Making selective calls with Contact List	<p>a From the menu, select  Contacts→MDC.</p> <p>b Navigate to the <i><required alias></i> with the 4-Way Navigation button.</p> <p>c To call, press and hold the PTT button.</p> <p>d Wait for the Talk Permit Tone to end, and speak into the microphone.</p>

11.3

Making Calls with Manual Dial

The following steps are applicable to Private Call only.

Procedure:

- 1 From the menu, select  **Contacts**→**Manual Dial**→**Radio Number**.
- 2 To enter or edit the ID, enter the required numbers.
- 3 To call, press and hold the **PTT** button.
- 4 Wait for the Talk Permit Tone to end, and speak into the microphone.
- 5 To listen, release the **PTT** button.

11.4

Making Calls with Programmable Number Keys

Procedure:

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

Option	Actions
Making group calls or private calls with Programmable Number Keys	<ul style="list-style-type: none"> a From the home screen, to make a call to the predefined alias, press and hold the programmed number key. b To call, press and hold the PTT button. c Wait for the Talk Permit Tone to end, and speak into the microphone. d To listen, release the PTT button.
Making broadcast calls or all calls with Programmable Number Keys	<ul style="list-style-type: none"> a From the home screen, to make a call to the predefined alias, press and hold the programmed number key. b To call, press and hold the PTT button. c Wait for the Talk Permit Tone to end, and speak into the microphone.

11.5

Receiving and Responding to Calls on the Radio

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

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



NOTE: You cannot respond to a Broadcast Call or All Call. For Broadcast Call, the display shows `Talkback Prohibit` and the Talkback Prohibit tone sounds when the **PTT** button is pressed.

Procedure:

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

11.6

Accepting or Declining Private Calls

When you receive Private Calls configured as Full Off Air Call Set-Up (FOACSU), your radio shows the following indications:

- The green LED blinks.

- The display shows the alias and the Private Call icon.

Accepting Private Calls

Procedure:

- 1 To accept Private Calls, perform one of the following actions:
 - Select **Accept**.
 - Press and hold the **PTT** button.
- 2 Wait for the Talk Permit Tone to end, and speak into the microphone.
- 3 To listen, release the **PTT** button.

Declining Private Calls

Procedure:

To decline Private Calls, perform one of the following actions:

- Select **Reject**.
- Select the **Back/Home** button.
- For Non-Keypad radio, press the programmed **Cancel** button.

Chapter 12

Phone Calls

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

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

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

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

12.1

Making Phone Calls

Procedure:

- 1 From the menu, select **Phone**→<required ID>→<Access Code>.
- 2 To call, press and hold the **PTT** button.
- 3 To listen, release the **PTT** button.
- 4 While you are in the Phone call, you can perform any of the following actions if required:
 - Enter extra digits by using the **Keypad**.
 - To end the call, select the **Back/Home** button.
 - To deaccess a code, enter the deaccess code by using the **Keypad** when the display shows `De-Access Code:.`


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

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

12.2

Making Phone Calls with Contact List

Procedure:

- 1 From the menu, select  **Contact**.
- 2 Perform one of the following actions:
 - To do alias search, enter the required characters for the alias.
 - To search for the alias manually, scroll down the contact list with the **4-Way Navigation** button.
- 3 Select **Call Phone**→<Access Code>.
- 4 To call, press and hold the **PTT** button.

- 5 To listen, release the **PTT** button.
- 6 While you are in the Phone call, perform one of the following actions:
 - Enter extra digits by using the **Keypad**.
 - To end the call, select the **Back/Home** button.
 - To deaccess a code, enter the deaccess code when the display shows `De-Access Code :`.


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

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

12.3

Making Phone Calls with Manual Dial

Procedure:

- 1 From the menu, select  **Contact**→**Manual Dial**→**Phone Number**.
- 2 Enter the phone number and `<Access Code>`.
- 3 To call, press and hold the **PTT** button.
- 4 To listen, release the **PTT** button.
- 5 While you are in the Phone call, perform one of the following actions:
 - Enter extra digits by using the **Keypad**.
 - To end the call, select the **Back/Home** button.
 - To deaccess a code, enter the deaccess code when the display shows `De-Access Code :`.

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

- The display shows `Call Ended`.

12.4

Dual Tone Multi Frequency

The Dual Tone Multi Frequency (DTMF) feature allows your radio to operate in a radio system with an interface to the telephone systems.

12.4.1

Initiating the DTMF Tone

Procedure:

- 1 Press and hold the **PTT** button.
- 2 To initiate a DTMF tone, perform one of the following actions:
 - Enter the `<desired number>`.
 - Press the * or # button.



NOTE: Disabling all radio tones and alert will automatically turn off the DTMF tone.

12.5

Receiving and Responding to Phone Calls

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

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

Procedure:

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



NOTE: Your radio is not able to terminate a phone call as a group call. The telephone user must end the call. The recipient user is only allowed to talk back during the call.

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

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

Chapter 13

Audio Recording

This feature enables the radio to record valid received voice calls.

Radio records every received talkback transmission into separate audio files.

Maximum duration for each recording is 2 minutes. For received call longer than 2 minutes, the radio stops the recording even when the call is still ongoing.

Radio is able to record and store up to five latest valid received calls. The oldest recordings are deleted when it reaches the maximum number.



NOTE: You cannot manually delete any audio files. The audio files can only be deleted through the radio programming softwares. Contact your dealer or administrator for more information.


13.1


Accessing Audio Playback

Prerequisites: Ensure to enable **Audio Recording** in the radio programming softwares.

Procedure:

- 1 Perform one of the following actions:

Option	Actions
Accessing audio play back through Menu/OK button	<p>a To play the audio, select  Playback→Menu/OK→<required audio>.</p> <p>b To stop the audio, select the Menu/OK button.</p>

Option	Actions
Accessing audio play back through Programmable Button	<p>To play or stop the audio, press the programmed Play All/Stop Playing Audios or Play Latest/Next Audio.</p> <p> NOTE:</p> <ul style="list-style-type: none">• If you press the programmed Play All/Stop Playing Audios while the audio is playing, the radio stops the on-going playback.• If you press the programmed Play All/Stop Playing Audios when there is no playback is in progress, the radio plays all the audio in the list.• If you press the programmed Play Latest/Next Audio while playing a list of audio, the radio skips to the next audio.• If you press the programmed Play Latest/Next Audio when there is no playback is in progress, the radio plays the latest audio in the list.

Chapter 14

Switching Audio Route between Internal Radio Speaker and Wired Accessory

Prerequisites:

Attach a wired accessory with speaker to your radio.

Ensure that the audio is not routed to an external Bluetooth accessory.

Procedure:

- 1 Switch the audio route between the internal speaker of your radio and the speaker of the wired accessory by pressing the programmed **Audio Toggle** button.



NOTE: Turning off your radio or detaching the accessory resets the audio routing to the internal speaker of your radio.

If the audio route is switched, a tone sounds.

Chapter 15

Connectivity

You can connect your radio to other devices, accessories, or network through different types of connectivity.

15.1

Wi-Fi Operation

Wi-Fi® is a registered trademark of Wi-Fi Alliance®. You can set up and connect Wi-Fi network to update your radio firmware, codeplug, language pack, and voice announcement.

Your radio supports the following Wi-Fi networks.

Wi-Fi Enhanced Open

A new WFA security standard for public networks which provides encryption and privacy on open, non-password-protected networks in areas such as cafes, hotels and airports.

WPA/WPA2/WPA3-Enterprise Wi-Fi network

Designed for enterprise networks and requires a RADIUS authentication server. Your radio must be pre-configured with a certificate if certificate-based authentication is deployed and client certificate verification is required.

15.1.1

Turning the Wi-Fi On or Off

Procedure:

- 1 From the menu, select  **WiFi**→**WiFi Status**.
- 2 To turn on or off the Wi-Fi, select the **Menu/OK** button.

If the Wi-Fi is turned on, the display shows a  appears beside **Enabled**.



If the Wi-Fi is turned off, the  disappears beside **Enabled**.


15.1.2

Turning Wi-Fi On Remotely Using a Designated Radio


Procedure:


- 1 Perform one of the following actions:

Option	Actions
Selecting the required ID or alias with Contact List	From the menu, select  Contact →<required ID or alias>.
Selecting the required ID or alias with Manual Dial	<ol style="list-style-type: none"> a From the menu, select  Contact→Manual Dial→Radio Number. b Enter the ID. c Select the Menu/OK button.

Option	Actions
Selecting the required group ID or alias with Contact List	From the menu, select  Con- tact →<required group ID or alias>→ Wi-Fi Control .

- 2 Select **Wi-Fi Control**.
- 3 To turn on Wi-Fi, select **On**.

If Wi-Fi is turned on, the display shows .




If Wi-Fi fails to turn on, the display shows  .

15.1.3

Turning Wi-Fi Off Remotely Using a Designated Radio

Procedure:

- 1 Perform one of the following actions:

Option	Actions
Selecting the required ID or alias with Contact List	From the menu, select  Con- tact →<required ID or alias>.
Selecting the required ID or alias with Manual Dial	<ol style="list-style-type: none"> a From the menu, select  Con- tact→Manual Dial→Radio Number. b Enter the ID. c Select the Menu/OK button.
Selecting the required group ID or alias with Contact List	From the menu, select  Con- tact →<required group ID or alias>→ Wi-Fi Control .

- 2 Select **Wi-Fi Control**.
- 3 To turn off Wi-Fi, select **Off**.

15.1.4

Network Access

15.1.4.1

Connecting to a Network Access Point

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

Procedure:

- 1 From the menu, select  **WiFi**→**Networks**→<required Network Access
Point>→**Connect**.



NOTE: For WPA-Enterprise Wi-Fi, if a network access point is not preconfigured, the **Connect** option is not available.

2 Perform one of the following actions:

- For WPA-Personal Wi-Fi, enter the password.
- For WPA-Enterprise Wi-Fi, the WPA is configured using the radio programming softwares.

If the password is correct, your radio automatically connects to the selected network access point.

If the password is incorrect, the display shows `Authentication Failure`, and automatically returns to the previous menu.

If the connection is successful, your radio displays a positive notice and the network access point is automatically saved into your profile list.

If the connection is unsuccessful, your radio displays a negative notice screen and returns to the previous menu.

15.1.4.2

Checking Wi-Fi Connection Status

Procedure:

Press the programmed **Wi-Fi Status** button.

If Wi-Fi connection is turned on and connected to a network, your radio shows the following indications:

- A voice prompt indicates that Wi-Fi is turned on.
- The display shows `WiFi On, Connected`.

If Wi-Fi connection is turned on but not connected to any network, your radio shows the following indications:

- A voice prompt indicating that Wi-Fi is turned on.
- The display shows `WiFi On, Disconnected`.

If Wi-Fi connection is turned off, your radio shows the following indications:

- A voice prompt indicating that Wi-Fi is turned off.
- The display shows `WiFi Off`.

15.1.4.3

Refreshing Network Lists

Procedure:

From the menu, select  **WiFi**→**Networks**→**Refresh**.

Your radio displays the latest network list.


15.1.4.4

Adding a Network



NOTE: This task is not applicable to WPA-Enterprise Wi-Fi networks.

Procedure:

- 1 From the menu, select  **WiFi**→**Networks**→**Add Network**.
- 2 Enter the Service Set Identifier (SSID).
- 3 Select **WPA/WPA2**.
- 4 Enter the password.
- 5 Select the **Menu/OK** button.

The display shows a mini positive notice.

15.1.4.5

Viewing Details of Network Access Points

Procedure:

From the menu, select  **WiFi**→**Networks**→<*required Network Access Points*>→**View Details**.

For WPA-Personal Wi-Fi networks, your radio shows the following details:

- For a connected network access point, your radio displays information on:
 - Service Set Identifier (SSID)
 - Security Mode
 - Media Access Control (MAC) address
 - Internet Protocol (IP) address
- For a non-connected network access point, your radio displays information on
 - SSID
 - Security Mode

For WPA-Enterprise Wi-Fi networks, your radio shows the following details:

- For a connected network access point, your radio displays information on
 - SSID
 - Security Mode
 - Identity
 - Extended Authentication Protocol (EAP) Method
 - Phase 2 Authentication
 - Cert Name
 - MAC address
 - IP address
 - Gateway
 - DNS1

- DNS2
- For a non-connected network access point, your radio displays information on
 - SSID
 - Security Mode
 - Identity
 - EAP Method
 - Phase 2 Authentication
 - Certificate Name

15.1.4.6

Removing Network Access Points



NOTE: This task is not applicable to WPA-Enterprise Wi-Fi networks.

Procedure:


From the menu, select  **WiFi**→**Networks**→<required Network Access Point>→**Remove**→**Yes**.

The display shows a positive mini notice.

15.1.5

Accessing Enterprise Wi-Fi Network

Procedure:

- 1 From the menu, select  **Utilities**→**Certificate Menu**→**Cert. 3**.
- 2 Perform one of the following actions:
 - To enroll the certificate, select **Enroll**.
 - To update the password, select **Password**→<new password>→**Menu/OK**.
 - To view the certificate details, select **View Details**.

If the certificate enrollment is completed successfully, a ✓ appears beside **Cert. 3**.

If the certificate fails to enroll, an error message appears and returns to the previous menu.

If updating the password successfully, the display shows a mini positive notice.

If the certificate is ready, you are able to view a list of details.

If the certificate is not ready, you are able to view the status only.

15.2

Bluetooth®

This feature allows your radio to connect to any Bluetooth enabled device through Bluetooth connection.

This is an unobstructed path between your radio and your Bluetooth enabled device. For high degree of reliability, Motorola Solutions recommends to not separate the radio and the Bluetooth enabled device.

If the voice and tone quality gets distorted or unclear, place your radio and the Bluetooth enabled device close to each other to re-establish clear audio reception.

Your radio can support up to three simultaneous Bluetooth connections with Bluetooth-enabled devices of unique types. Your radio connects to the Bluetooth-enabled device within range with either the strongest signal strength or last connected device.

For more details on the full capabilities, refer to the user manual of your respective Bluetooth-enabled device.



NOTE: Do not turn off your Bluetooth-enabled device or select the **Back/Home** button during the finding operation as this cancels the operation.


15.2.1

Turning the Bluetooth On or Off

Turning Bluetooth On

Procedure:


From the menu, select  **Bluetooth**→**My Status**→**On**.

If Bluetooth is turned on, the display shows a  beside `Bluetooth On`.

Turning Bluetooth Off

Procedure:


From the menu, select  **Bluetooth**→**My Status**→**Off**.

If Bluetooth is turned off, the display shows a  beside `Bluetooth Off`.

15.2.2

Connecting to Bluetooth Devices

Procedure:

- 1 From the menu, select  **Bluetooth**.
- 2 Perform one of the following actions:
 - To connect to an existing device, select **Devices**→<required device>→**Connect**.
 - To connect to a new device, select **Devices**→**Find Devices**→<required device>→**Connect**.
 - To connect to a device in discoverable mode, select **Find Me**.

If the Bluetooth device is successfully connected to the radio, your radio shows the following indications:

- A positive tone sounds.
- The display shows <Device> `Connected` and the **Bluetooth Connected** icon.

If the Bluetooth device is unsuccessfully connected to the radio, your radio shows the following indications:

- A negative tone sounds.

- The display shows `Connecting Failed`.



NOTE: If the Bluetooth device is still not connected to the radio, you can turn off and then turn on the Bluetooth again.

15.2.3

Disconnecting from Bluetooth Devices

Procedure:

From the menu, select  **Bluetooth**→**Devices**→<required device>→**Disconnect**.

If the Bluetooth device is successfully disconnected from the radio, your radio shows the following indications:

- A tone sounds.
- The display shows <Device> Disconnected.

15.2.4

Switching Audio Route between Internal Radio Speaker and Bluetooth Device

Procedure:

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

When the audio is routed to the Internal Radio Speaker, the display shows `Route Audio to Radio`.

When the audio is routed to the Bluetooth device, the display shows `Route Audio to Bluetooth`.

15.2.5

Viewing Device Details


Procedure:

From the menu, select  **Bluetooth**→**Devices**→<required device>→**View Details**.

15.2.6

Editing Device Names

Procedure:

From the menu, select  **Bluetooth**→**Devices**→<required device>→**Edit Name**→<New Name>.

The display shows a  and the new device name.


15.2.7

Deleting Device

Prerequisites: Disconnect the device.

Procedure:

From the menu, select  **Bluetooth**→**Devices**→<required device>→**Delete**.

The display shows a .

15.2.8

Bluetooth Profiles

Your radio supports a wide range of Bluetooth services.

Table 21: Bluetooth Profiles

Profile	Description
Serial Port Profile (SPP)	Provides access to SPP devices (for example a barcode scanner). Using SPP, each connected device can send and receive data just as if there were RX and TX lines connected between them.
Generic Attribute Profile (GATT)	Allows profile discovery and description services for Bluetooth Low Energy (BLE) protocol.
Headset Profile (HSP)	Provides support for the popular Bluetooth headsets to be used with mobile phones with ability to ring, answer a call, hang up, and adjust the volume.
Personal Area Network (PAN)	Allows the device to share Internet connection with another device (for example a laptop) and to access the Internet shared by another device (for example a Bluetooth enabled phone).
Dual-Mode: Bluetooth Classic and Bluetooth Low Energy	Provides support for the dual-mode devices, for example, WM500 (HSP + GATT). HSP is used for audio and GATT is used for the buttons control.



Chapter 16

Emergency Operation

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

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

Table 22: Emergency Modes

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

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

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

16.1

Sending Emergency Alarms

Procedure:

Press the programmed **Emergency On** button.

The **Radio Control Widget** shows Tx Alarm and the Talkgroup ID or Alias.

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

- The Emergency tone sounds.
- The green LED blinks.
- The **Radio Control Widget** shows Alarm Sent.

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

- A negative tone sounds.
- The **Radio Control Widget** shows Alarm Failed.

16.2

Sending Emergency Alarms with Call

Procedure:

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

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

- The Emergency tone sounds.
- The green LED blinks.
- The **Radio Control Widget** shows Alarm Sent and Emer : with the Talkgroup ID or Alias.

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

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

16.3

Sending Emergency Alarms with Voice to Follow

Procedure:

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

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

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

Your radio automatically stops transmitting when:

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

16.4

Responding to Emergency Alarms

You can only respond to one Emergency Alarm at a time. If more than one alarm is received, the second Emergency Alarm overrides the first alarm.

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

- A tone sounds.
- The red LED blinks.
- The **Radio Control Widget** and **Notification Widget** show **EA Received** and the Emergency talkgroup ID or alias of the transmitting radio.




NOTE: If your radio receives multiple Emergency Alarms, the **Radio Control Widget** and **Notification Widget** only show the latest Emergency talkgroup ID or alias of the transmitting radio.

Prerequisites: Enable the Emergency Alarm Indication.

Procedure:

- 1 When you receive an emergency notification, perform one of the following actions:

Option	Actions
Responding with a non-emergency voice to the same group that the Emergency Alarm targeted	<ol style="list-style-type: none"> Press and hold the PTT button. Wait for the Talk Permit Tone to end, and speak into the microphone. To listen, release the PTT button. <p> NOTE: Only the sender of the emergency alarm can transmit emergency voice. All recipients transmit non-emergency voice to allow other radios to send and receive Emergency Alarms in the same group.</p>
Exiting the Emergency Alarm by deleting the Emergency Alarm List	<ol style="list-style-type: none"> To view the Emergency Alarm List from the home screen, perform one of the following actions: <ul style="list-style-type: none"> • Select the Down button→Menu/OK button. • Select the Menu/OK button. To delete the Emergency Alarm List, perform one of the following actions:

Option	Actions
	<ul style="list-style-type: none"> • If there is one Emergency Alarm received, select the Menu/OK button→Yes. • If there are multiple Emergency Alarms received, select <i><Required Talkgroup ID or alias></i>→Menu/OK button→Yes.
Exiting the Emergency Alarm	Select the Back/Home button.

If you respond with a non-emergency voice to the same group that the Emergency Alarm targeted, when the sender of the emergency responds, your radio shows the following indications:

- For Capacity Max, the red LED blinks.
- For Other Systems, the green LED blinks.
- The display shows the Emergency talkgroup ID and the transmitting radio ID.

16.5

Responding to Emergency Alarms with Call

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

- If the Emergency Call Indication and Emergency Call Decode Tone are enabled, the Emergency Call Tone sounds.
- The **Radio Control Widget** and **Notification Widget** show *EA Received* and the Emergency talkgroup ID or alias of the transmitting radio.
- Your radio unmutes and plays the incoming call through the speaker.

Procedure:

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

When the sender of the emergency responds, your radio shows the following indications:

- For Capacity Max, the red LED blinks.
- For Other Systems, the green LED blinks.
- The display shows the Emergency talkgroup ID and the transmitting radio ID.

16.6

Exiting Emergency Mode

Exiting Emergency mode is only available for Capacity Max. Your radio automatically exits emergency mode when you are having the following scenarios:

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

Procedure:

Press and hold the programmed **Emergency Off** button.

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

- The tone ceases.
- The red LED extinguishes.
- When an acknowledgment is received, the **Radio Control Widget** shows `Emer Cancelled` and returns to the home screen.
- When no acknowledgment is received, the **Radio Control Widget** shows `Emer Cancel Failed` and returns to the home screen.



NOTE: If the Cancel Emergency configuration is enabled on the transmitting radio, the emergency alarm in your receiving radio will cease and the status is added to the Alarm List of the receiving radio.

Chapter 17

Man Down (Fall Alert)

The Man Down feature (henceforth known as Fall Alert) enables your radio to alert others when you are in danger.

If your radio tilts at a specified angle, is moving, or is stationary for a time, it prompts you with an Alert Tone. If you do not respond to the prompt before the predefined reminder timer expires, your radio automatically sends an Emergency Alarm or Emergency Call.

To prevent your radio from sending an Emergency Alarm or Emergency Call, you can take the following measures:

- For Tilt Alarm, you must restore the radio to the vertical position.
- For Movement Alarm, you must stop your radio from moving.
- For Anti-Movement Alarm, you must move your radio.

If more than one Man Down Alarm is enabled, your radio plays the Alert Tone when it detects the first movement violation.



NOTE:

Man Down Alarms are not supported when operating in Fallback Mode.

17.1

Turning the Man Down Feature On or Off

Turning the Man Down Feature On

Procedure:

From the menu, select  **Utilities**→**Radio Settings**→**Man Down** .

Turning the Man Down Feature Off

Procedure:

From the menu, select  **Utilities**→**Radio Settings**→**Man Down** .

If Man Down is turned on, the display shows a ✓ beside **Enabled**.

If Man Down is turned off, the ✓ disappears beside **Enabled**.

Chapter 18

Lone Worker

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

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

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

Chapter 19

Call Alert Operation


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

For Capacity Max, the Call Alert feature allows radio users or dispatchers to alert recipients to call back the caller when available. Voice communication is not involved in this feature. Off Air Call Set-Up (OACSU) private calls allows you to respond immediately. Full Off Air Call Set-Up (FOACSU) private calls requires you to acknowledge the call. OACSU type calls are recommended for the Call Alert feature.

19.1

Making Call Alerts

Procedure:

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

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

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

19.2

Responding to Call Alerts

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

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

Procedure:

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

Chapter 20

Call Log Features

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


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

- View Details
- Delete Calls
- Store Aliases or IDs to Contacts

20.1

Viewing Recent Calls

Procedure:


- 1 From the menu, select  **Call Log**.
- 2 Select one of the following lists:
 - **Missed**
 - **Answered**
 - **Outgoing**
- 3 View calls by scrolling through the list.

The display shows the most recent entry.

20.2

Storing Aliases or IDs from the Call List

Procedure:


- 1 From the menu, select  **Call Log**→<required list>→<required ID or alias>→**Store**.
- 2 When you see a blinking cursor, enter the rest of the characters of the alias.
You can store an ID without an alias.

The display shows a positive mini notice.

20.3

Deleting Calls from the Call List

Procedure:

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




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

The display shows `Entry Deleted`.

20.4

Viewing Details from the Call List

Procedure:

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

Chapter 21

Call Queue

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

21.1

Receiving Call Queues

Procedure:

Press and hold the **PTT** button until you hear the Call Queue Tone.

A tone is heard and the display shows `Call in Queue`.

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

- A positive indicator tone sounds.
- The green LED blinks.
- The display shows the call type icon, ID, or alias.

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

- A negative indicator tone sounds.
- The display shows the failure notice screen.
- Radio terminates the call and exits the call setup.

Chapter 22

Priority Call

Priority Call allows the system to preempt one of the ongoing non-priority calls and initiate the requested high priority call when all channels are busy.

With all channels occupied with high priority calls, the system does not preempt any calls, and places the requesting high-priority call into call queue. If the system fails to place the requesting high-priority call into call queue, it declares failure.

The default settings for Priority Call are preconfigured. When the following features are used, the call priority level reverts automatically to the preconfigured setting.

- All voice calls
- DMR III Text Message/Text Message
- Job Ticket
- Remote monitor

22.1

Switching the Priority Call Level

Procedure:

Press the programmed **Toggle Call Priority Level** button.

If High Priority is enabled, your radio shows the following indications:

- A voice announcement sounds.
- The display shows `Next Call: High Priority`.
- The Call Priority High icon appears on the home screen.

If Normal Priority is enabled, your radio shows the following indications:

- A voice announcement sounds.
- The display shows `Next Call: Normal Priority`.
- The Call Priority High icon disappears on the home screen.

Chapter 23

Contacts Settings

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

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


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

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

23.1

Adding New Contacts

Procedure:

- 1 From the menu, select  **Contacts** → **New Contact** → *<required contact type>*.
The contact type options are **Radio Contact** or **Phone Contact**.
- 2 Enter the contact number.
- 3 Enter the contact name.
- 4 Select the required ringer type.

23.2

Setting Default Contacts



NOTE: This is applicable to 5-Tone Contacts only.

Procedure:

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

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

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

23.3

Assigning Entries to Programmable Number Keys

Procedure:

- 1 From the menu, select  **Contacts** → *<required ID or alias>* → **Program Key**.

- 2 Select the chosen number key.
- 3 If the chosen number key is already assigned to an entry, perform one of the following actions:
 - To overwrite the existing number key assignment, select **Yes**.
 - To retain the existing number key, select **No** and select another number key.


If you overwrite the existing number key assignment, your radio shows the following indications:

- A positive tone sounds.
- The display shows `Contact Saved`.

23.4

Removing Associations Between Entries and Programmable Number Keys

Procedure:

- 1 From the menu, select  **Contacts**→<required ID or alias>→**Program Key**→**Empty**.
The display shows `Clear from all keys`.
- 2 Select **Yes**.

A positive tone sounds. The display shows `Contact Saved` and then automatically returns to the previous menu.



NOTE: When an entry is deleted, the association between the entry and programmed number key is removed.

Chapter 24

Call Indicator Settings

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


24.1

Activating or Deactivating Call Ringers

You can activate or deactivate call ringers for Private Calls, Text Messages, Call Alerts, Telemetry Status with Text (for Capacity Max and other systems), and Selective Calls (for other systems).

Activating Call Ringers

Procedure:


- 1 From the menu, select  **Utilities**→**Radio Settings**→**Tones/Alerts**→**Call Ringers**.
- 2 Select one of the following options:
 - **Call Alert**
 - **Private Call**
 - **Selective Call**
 - **Telemetry**
 - **Messages**
- 3 Perform one of the following actions:
 - If you want to activate call ringers for Private Call, select **Enabled**.
 - If you want to activate call ringers for other options, select the required tone.

If you activate call ringers, your radio shows the following indications:

- For the Private Call option, the display shows a ✓ beside **Enabled**.
- For the other options, the display shows a ✓ and the selected tone.

Deactivating Call Ringers

Procedure:

- 1 From the menu, select  **Utilities**→**Radio Settings**→**Tones/Alerts**→**Call Ringers**.
- 2 Select one of the following options:
 - **Call Alert**
 - **Private Call**
 - **Selective Call**
 - **Telemetry**
 - **Messages**
- 3 Perform one of the following actions:

- If you want to deactivate call ringers for Private Call, select **Enabled**.
- If you want to deactivate call ringers for other options, select **Off**.

If you deactivate call ringers, your radio shows the following indications:


- For the Private Call option, a ✓ disappears beside *Enabled*.
- For the other options, the display shows a ✓ beside *Off*.

24.2

Assigning Ring Styles

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

Procedure:

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

24.3

Ring Alert Type

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




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

24.3.1

Selecting Ring Alert Types

Procedure:

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

24.4

Escalating Alarm Tone Volume

You can program your radio to continually alert you when the radio calls remain unanswered. This alert automatically increases the alarm tone volume over time. This feature is called Escalert.

Procedure:

From the menu, select  **Utilities**→**Radio Settings**→**Tones/Alerts**→**Escalert**.

If Escalert is enabled, the display shows a ✓ beside *Enabled*.

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

Chapter 25

Privacy

This feature prevents eavesdropping by unauthorized users on a channel by the use of a software-based scrambling solution. The signaling and user identification portions of a transmission are clear.

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

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



NOTE:

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

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

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


Table 23: Privacy Types and Settings

Type	Setting
Symmetric Privacy ¹³	Sym Priv
Basic Privacy	Privacy
Enhanced Privacy	Enhanced Privacy

25.1

Setting Privacy

Procedure:

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

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

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

25.2

Privacy-Enabled Calls

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

¹³ Previously known as AES privacy.

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

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

Chapter 26

Scan

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

Talkgroup Scan

Talkgroup Scan is available for Capacity Max.

This feature allows your radio to monitor and join calls for groups defined by a Receive Group List.

When scan is enabled, your radio unmute to any member in its Receive Group List. When scan is disabled, your radio does not receive transmission from any members of the Receive Group List, except for All Call, Permanent Talkgroup, and the selected Talkgroup.

Channel Scan

Channel Scan is available for Other Systems.

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

Table 24: Scan Methods

Method	Description
Main Channel Scan (Manual)	Your radio scans all the channels or groups in your scan list. When scanning, your radio may, depending on the settings, automatically start on the last scanned active channel or group, or on the channel where scan was initiated.
Auto Scan (Automatic)	Your radio automatically starts scanning when you select a channel or group that has Auto Scan enabled.

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

- Scan feature is not on.
- Scan list member has been disabled through the menu.
- You are already participating in another call.
- For Multi-site system, no member of the scanned group is registered at your current site.



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

26.1

Turning the Scan On

Procedure:

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

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

- A positive indicator tone sounds.
- The yellow LED blinks.
- The display shows *Scan On* and the scan icon.

26.2

Turning the Scan Off

Procedure:

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

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

- A negative indicator tone sounds.
- The LED extinguishes.
- The display shows *Scan Off* and the scan icon disappears.

26.3

Scan Talkback

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

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

Table 25: Scan Talkback Type

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

Type	Description
Scan Talkback Enabled	During an ongoing scanned call, if the PTT button is pressed, you can talkback to the scanned call.



NOTE:

If you face the following scenarios:

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

Perform the following actions:

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

26.4

Nuisance Channels

Nuisance Channel is a channel that generates unwanted call continually.

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

26.4.1

Deleting Nuisance Channels

Prerequisites: Your radio is scanned into the Nuisance Channel.

Procedure:

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

26.4.2

Restoring Nuisance Channels

Procedure:

Perform one of the following actions:

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

26.5

Vote Scan

Vote Scan provides wide coverage in areas with multiple base stations transmitting identical information on different analog channels.

Your radio scans analog channels of multiple base stations, and performs a voting process to select the strongest received signal.

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

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

26.6

Priority Monitor

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



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

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

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

26.7

Receive Group List

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



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

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

- Add, remove, and edit priority for talkgroups.
- Add, remove, and edit affiliation talkgroups.

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

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

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

26.8

Scan Lists

You can create and assign individual channels or groups in Scan Lists. Your radio scans for voice activity by cycling through the channel or group sequence specified in the scan list for the current channel or group. Scan List also known as Receive Group List.

Full Keypad model radio can support up to 250 scan lists with a maximum 16 members in a list. For Non-Keypad model, your radio can support up to 64 scan with a maximum 16 members in a list. Each scan list supports a mixture of analog and digital entries.

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



NOTE: This feature is not applicable to Capacity Plus.

26.8.1

Accessing Scan List

Procedure:

- 1 From the menu, select  **Scan**→**View/Edit List**.
- 2 Perform one of the following actions:

Option	Actions
Setting Active Scan List	Perform one of the following actions: <ul style="list-style-type: none"> • When there is no active scan list, select preferred scan list. • To change to a new active scan list, select <i><current scan list></i>→Set Active Scan List→<i><preferred scan list></i>.
Editing Scan List	<ol style="list-style-type: none"> a Select required group name. b Perform one of the following actions: <ul style="list-style-type: none"> • To enable the group in the scan list, select Enable. • To disable the group in the scan list, select Disable.
Editing Priority for a Scan List	<ol style="list-style-type: none"> a Select <i><required alias></i>→Edit Priority. b To set the desired priority for the required alias, select one of the following options: <ul style="list-style-type: none"> • Priority 1. • Priority 2. • None. c If another talkgroup is assigned to Priority 1 or Priority 2, tap Yes display shows <i>Overwrite Existing?</i>: <ul style="list-style-type: none"> • To overwrite, select Yes. • To return to previous screen, select No.
Viewing Scan List	Perform one of the following actions:

Option	Actions
	<ul style="list-style-type: none"> • To perform alias search, enter the required alias. • To search for the alias manually, scroll down the contact list with the 4-Way Navigation button.
Adding New Entries to Scan List	<p>a Select Add Member→<<i>required alias</i>>.</p> <p>b To add new alias as the desired priority, select one of the following options:</p> <ul style="list-style-type: none"> • Priority 1. • Priority 2. • None. <p>c If another talkgroup is assigned to Priority 1 or Priority 2, perform one of the following actions when the display shows <i>Overwrite Existing?</i>:</p> <ul style="list-style-type: none"> • To overwrite, select Yes. • To return to previous screen, select No.
Deleting Scan List member	Select < <i>required alias</i> >→ Delete → Yes .

26.9

Flexible Receive List

The Flexible Receive List feature allows you to create and assign members on the receive talkgroup list.

Your radio can support a maximum of 16 members in the list.



NOTE: This feature is only applicable to Capacity Plus.

26.9.1

Turning the Flexible Receive List On

Procedure:

From the menu, select  **Utilities**→**Radio Settings**→**Flexible Rx List**→**Turn On**.

Your radio shows the following indicators:

- A positive tone sounds.
- The display shows `Flexible Rx List On`.

26.9.2

Turning the Flexible Receive List Off

Procedure:

From the menu, select  **Utilities**→**Radio Settings**→**Flexible Rx List**→**Turn Off**.

Your radio shows the following indicators:

- A negative tone sounds.

- The display shows `Flexible Rx List Off`.

26.9.3

Adding New Entries to the Flexible Receive List

Procedure:

- 1 From the menu, select  **Utilities**→**Radio Settings**→**Flexible Rx List**→**View/Edit List**→**Add Member**→<*required ID or alias*>.


Your radio prompts `Add Another?`.

- 2 Perform one of the following actions:
 - To add another new entry, select **Yes**.
 - To save current entry, select **No**.

26.9.4

Deleting Entries from the Flexible Receive List

Procedure:

- 1 From the menu, select  **Utilities**→**Radio Settings**→**Flexible Rx List**→**View/Edit List**.
- 2 Search for an alias by performing one of the following actions:
 - Enter the characters of the alias.
 - Scroll through the list with the **4-Way Navigation** button.
- 3 Select **Delete**.
- 4 Perform one of the following actions:
 - To delete the ID or alias, select **Yes**.
 - To return to the previous screen, select **No**.

26.10

Multi-Talkgroup Affiliation


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

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

26.10.1

Adding the Talkgroup Affiliation

Procedure:

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

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

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



NOTE:


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

The ✓ beside the talkgroups indicates the talkgroup affiliation is successful.

26.10.2

Removing the Talkgroup Affiliation

Procedure:

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

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

Chapter 27

Security

For Capacity Max this features allows you to stun, revive, and kill the radio. For Other Systems, the feature allows you to enable and disable radio.

For example, you may disable or stun stolen radio to prevent unauthorized users from using and revive or enable the radio when it is recovered.

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





NOTE: Contact your dealer to enable this feature.

27.1

Stunning Radios

Procedure:

- 1 Perform one of the following actions:

Option	Actions
Stunning or disabling radios with Contact List	From the menu, select  Con-tacts →<required ID or alias>→ Radio Disable .
Stunning or disabling radios with Manual Dial	<ol style="list-style-type: none"> a From the menu, select  Con-tacts→Manual Dial→Radio Number. b Enter the ID. c Select Radio Disable.

- 2 For Other Systems, enter the passphrase if required.

The green LED blinks and the display shows `Radio Disable: <ID>`.

If the radio is successfully stunned, your radio shows the following indications:

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

If the radio is unsuccessfully stunned, your radio shows the following indications:



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

27.2

Reviving Radios

Procedure:

- 1 Perform one of the following actions:

Option	Actions
Reviving or enabling radios with Contact List	From the menu, select  Con-tacts →<required ID or alias>→ Radio Enable .
Reviving or enabling radios with Manual Dial	<ol style="list-style-type: none">a From the menu, select  Con-tacts→Manual Dial→Radio Number.b Enter the ID.c Select Radio Enable.

- 2 For Other Systems, enter the passphrase if required.

The green LED illuminates and the display shows `Radio Enable: <ID>`.

If the radio is revived successfully, your radio shows the following indications:

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

If the radio is revived unsuccessfully, your radio shows the following indications:

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

27.3

Radio Kill

This feature is an enhanced security measure to restrict unauthorized access to a radio.

Radio Kill causes a radio to be rendered inoperable. For example, you may want to kill a stolen or misplaced radio to prevent unauthorized usage.

When powered on, a killed radio displays `Radio Killed` on the screen momentarily to indicate the killed state.



NOTE: A killed radio can only be revived at a Motorola Solutions service depot. Contact your dealer for more information.

Chapter 28

Indoor Location



NOTE: Indoor Location feature is applicable for models with the latest software and hardware. Check with your dealer or system administrator for more information.

You can use Indoor Location to keep track of the location of radio users. When Indoor Location is activated, the radio is in a limited discoverable mode. Dedicated beacons are used to locate the radio and determine the position.

28.1

Turning the Indoor Location On

Procedure:

From the menu, select  **Bluetooth**→**Indoor Location**→**InLoc Status**.

If Indoor Location successfully turns on, your radio shows the following indications:

- A positive tone sounds.
- The display shows `Indoor Location On`.
- The Indoor Location Available icon appears on the home screen.

If Indoor Location does not turn on, your radio shows the following indications:

- A negative tone sounds.
- The display shows `Turning On Failed`.

28.2

Turning the Indoor Location Off

Procedure:

From the menu, select  **Bluetooth**→**Indoor Location**→**InLoc Status**.

If Indoor Location successfully turns off, your radio shows the following indications:

- A positive tone sounds.
- The display shows `Indoor Location Off`.
- The Indoor Location Available icon disappears from the home screen.

If Indoor Location does not turn off, your radio shows the following indications:

- A negative tone sounds.
- The display shows `Turning Off Failed`.

28.3

Accessing Indoor Location Beacons Information

Procedure:

From the menu, select  **Bluetooth**→**Indoor Location**→**Beacons**.

The display shows information of the beacons.

Chapter 29

Job Tickets

This feature allows your radio to receive messages from the dispatcher listing out tasks to perform.



NOTE: This feature can be customized through the radio programming softwares according to user requirements. Contact your dealer for more information.

There are two folders that contain different Job Tickets:

My Tasks folder

Personalized Job Tickets assigned to your signed in user ID.

Shared Tasks folder

Shared Job Tickets assigned to a group of individuals.

You can respond to Job Tickets in order to sort into Job Ticket Folders. By default, the folders are **All**, **New**, **Started**, and **Completed**.

Job Tickets are retained even after the radio turns off and on again.

All Job Tickets are located in the **All** folder. Depending on how your radio is programmed, Job Tickets are sort by their priority level followed by time received. New Job Tickets, Job Tickets with recent changes in state, and Job Tickets with the highest priority are listed first.

After reaching the maximum number of Job Tickets, the next Job Ticket automatically replaces the last Job Ticket in your radio. Depending on your radio model, your radio supports a maximum of 100 or 500 Job Tickets. Your radio automatically detects and discards duplicated Job Tickets with the same Job Ticket ID.

Depending on the importance of the Job Tickets, the dispatcher adds a Priority Level to them. There are three priority levels. Priority 1 has the highest priority and Priority 3 has the lowest priority. There are also Job Tickets with no priority.


Your radio updates accordingly when dispatcher makes the following changes:

- Modify content of Job Tickets.
- Add or edit Priority Level of Job Tickets.
- Move Job Tickets from folder to folder.
- Canceling of Job Tickets.

29.1

Accessing the Job Ticket Folder

Procedure:

- 1 From the menu, select  **Job Tickets**.
- 2 Perform one of the following actions:
 - If you are not logged in with your user ID, select *<required folder>*→*<required Job Ticket>*.

- If you are logged in with your user ID, select **Shared Tasks**→<required folder>→<required Job Ticket>.




NOTE: My Task menu items can only be accessed if you are logged in with your user ID.


29.2

Logging In the Remote Server

You can log in or out the remote server with your user ID.

Procedure:

From the menu, select  **Log In**.

If you are already logged in, the menu displays  **Log Out**.

If the log in is successful, your radio shows the following indications:

- A positive tone sounds.
- The display shows `Sign In Successful`.

If the log in is unsuccessful, your radio shows the following indications:


- A negative tone sounds.
- The display shows `Sign In Failed`.

29.3

Creating Job Tickets

Your radio can create Job Tickets that are based on a Job Ticket template, and send out tasks that must be performed. Contact your dealer to configure the Job Ticket template using the radio programming softwares.

Procedure:

- 1 From the menu, select  **Job Tickets**.
- 2 Perform one of the following actions:
 - For Capacity Max, select **Create Tasks**.
 - For Other Systems, select **Create Ticket**.

29.4

Sending Job Tickets by Using Job Tickets Templates

Prerequisites: Depending on your configuration, choose the correct Job Tickets Template.

Procedure:

Perform one of the following actions:

Option	Actions
Sending Job Tickets using a single Job Ticket Template	a At the job ticket template, enter the required room number.

Option	Actions
	b Select Room Status →<required option>→ Send .
Sending Job Tickets using a multiple Job Tickets Template	At the job ticket template, select <required option>→ Send .
Resending Sent Job Tickets	From the My Task menu item, select Sent Tasks →<Required Sent Job Tickets>→ Menu/OK → Resend .
Editing and Sending Sent Job Tickets	<p>a From the My Task menu item, select Sent Tasks→<Required Sent Job Tickets>→Menu/OK→Edit.</p> <p>b Edit the <required field and option>.</p> <p>c To send the edited job ticket, select Send.</p>

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

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

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


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

29.5

Receiving and Responding to Job Tickets

When you receive a job ticket, your radio receives job tickets notifications.

Procedure:

- 1 To respond to a job ticket, perform one of the following actions:
 - To view to the latest job ticket notification received, tap **Notification Widget**.
 - To view the preferred job ticket, from the menu, select  **Job Tickets**→**Shared Tasks**→<required folder>→<required Job Ticket>.
- 2 Access the sub-menu by selecting the **Menu/OK** button and the required job ticket.
For a quick reply, select the number key, **1 to 9**.

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

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


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

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

29.6

Deleting Job Tickets

Procedure:

- 1 From the menu, select  **Job Tickets** .
- 2 Select one of the following folders:
 - **Shared Tasks**
 - **Sent Tasks**
 - **Trash Tasks**
- 3 Perform one of the following actions:
 - To delete the required Job Ticket, select the *<required Job Ticket>*→**Menu/OK**→**Delete**.
 - To delete all Job Tickets, select **Delete All**→**Yes**.

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

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

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

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

Chapter 30

Text Messaging

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

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




NOTE:

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

30.1

Viewing Text Messages

Procedure:

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

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

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


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

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

30.2

Composing Text Messages

Procedure:

- 1 From the menu, select  **Messages**→**Compose**.
- 2 Compose your message.
- 3 Perform one of the following actions:
 - To save a text message, select **Back/Home**→**Save**.

- To discard a text message, select **Back/Home**→**Discard**.



NOTE: If you accidentally select the **Back/Home** button, you can select **Edit** to continue composing your text message.

If your text message is saved, you can view and edit your text message in the Draft folder.

If your text message is discarded, your text message is deleted.


30.3

Sending Text Messages

Prerequisites: Compose your message.

Procedure:

- Perform one of the following actions:

Option	Actions
Sending Text Messages	<p>a From your composed message, select the Menu/OK button.</p> <p>b Perform one of the following actions:</p> <ul style="list-style-type: none">• Select the <i><required ID or alias></i>.• Select Manual Dial and enter the ID.
Sending Sent Text Messages	From your sent message, select Menu/OK → Resend .
Sending Quick Text Messages	<p>a From the menu, select  Messages→Quick Text.</p> <p>b Perform one of the following actions:</p> <ul style="list-style-type: none">• Select the <i><required ID or alias></i>.• Select Manual Dial and enter the ID.
Resending Text Messages	Select Resend .

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

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

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

- Resend
- Forward
- Edit

30.4

Responding to Text Messages

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




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



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

Procedure:


Perform one of the following actions:

Option	Actions
Responding to Text Messages from the Notification List	Perform one of the following actions: <ul style="list-style-type: none"> • From the menu, select  Notifications→Menu/OK→<required message>→Reply. • From the home screen, select the Down→<required message>→Menu/OK→Reply
Responding to Text Messages	From the menu, select  Messages → Inbox →<required message>→ Reply .
Responding to Text Messages with Quick Text	From the menu, select  Messages → Inbox →<required message>→ Quick Reply .

30.5

Forwarding Text Messages

Procedure:

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

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

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


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

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

30.6

Deleting Text Messages


Procedure:

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

30.7

Setting Text Message Alert Tones

Procedure:

- 1 From the menu, select  **Contacts**→<required ID or alias>→**Message Alert**.
- 2 Perform one of the following actions:
 - To have momentary tone, select **Momentary**.
 - To have repetitive tone, select **Repetitive**.

Chapter 31

Status Message

This feature allows your radio to send status messages to other radios.

The Quick Status list is configured using the radio programming softwares and comprises up to a maximum of 100 statuses.

The maximum length for each status message is 16 characters.

Received status messages can be viewed by accessing the Inbox or the Notification List.

Contact your dealer for more information.



NOTE: Every status has a corresponding digital value ranging from 0–99. An alias can be specified to each status for ease of reference.

31.1

Viewing Status Messages

Procedure:

From the menu, select  **Status** → **Inbox** → *<required status message>*.



Your radio displays the content of the selected status message.

31.2

Sending Status Messages

Procedure:

Perform one of the following actions:

Option	Actions
Sending a Status Message	From the menu, select  Sta- tus → Quick Status → <i><required status</i> <i>message></i> → <i><required ID or alias></i> .
Sending a Status Message with Contact List	From the menu, select  Con- tacts → <i><required ID or</i> <i>alias></i> → Send Status → <i><required</i> <i>status message></i> .

If your status message is sent successfully, the display shows a positive mini notice.

If your status message fails, the display shows a failure notice.



NOTE: In the **Quick Status**, the display shows a ✓ beside the most recently sent status message.

31.3

Replying Status Messages


Procedure:

From the menu, select  **Status**→ **Inbox**→<required status message>→
Reply→<required status message>.

31.4

Initiating Private Call


Procedure:

- 1 From the menu, select  **Status**→ **Inbox**→<required status message>
- 2 To call, press and hold the **PTT** button.

31.5

Deleting Status Messages

Procedure:

- 1 From the menu, select  **Status**.
- 2 Perform one of the following actions:
 - To delete a status message, select **Inbox**→<required status message>→**Menu/OK**→**Delete**→**Yes**.
 - To delete all status messages, select **Inbox**→**Delete All**→**Yes**.

Chapter 32


Analog Message Encode

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

32.1

Sending MDC Encode Messages to Dispatchers

Procedure:

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

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

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

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

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

Chapter 33

Analog Status Update

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



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

33.1

Sending Status Updates to Predefined Contacts

Procedure:

Perform one of the following actions:

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

For 5-Tone systems, if you press the **PTT** button while in the Status List, your radio sends the selected status update and returns to the home screen to start a voice call.

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

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

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

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

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


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

33.2

Viewing 5-Tone Status Details

Prerequisites: Purchase the Software License Key.

Procedure:


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

The display shows details of the selected status.

33.3

Editing 5-Tone Status Details

Procedure:

- 1 From the menu, select  **Status**→<*required status*>→**Edit**.
- 2 To edit the status details, use the following keys:
 - To move the cursor to the left or right, select the **4-Way Navigation** buttons.
 - To delete characters, select the * key.
 - To change the text entry method, select and hold the # key.
- 3 When editing is completed, select the **Menu/OK** button.

The display shows a positive mini notice.

Chapter 34

Auto-Range Transponder System

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

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

Your radio provides indications as follows:

Table 26: Auto-Range Transponder System Indications

Indication	Description
First-Time Alert	<ul style="list-style-type: none">• A tone sounds.
ARTS-in-Range Alert	<ul style="list-style-type: none">• A tone sounds, if programmed.• The Radio Control Widget shows <code>In Range</code>.
ARTS-Out-of-Range Alert	<ul style="list-style-type: none">• A tone sounds.• The red LED rapidly blinks.• The Radio Control Widget shows blinking <code>Out of Range</code>.

Chapter 35

Dynamic Caller Alias

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


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

35.1

Editing the Caller Alias

Procedure:

Perform one of the following actions:

Option	Actions
Editing the Caller Alias while turning on the radio	<p>a Turn on your radio.</p> <p>b Enter the new <i><Caller Alias></i>→Menu/OK.</p>
Editing the Caller Alias from the menu	<p>a From the menu, select  Utilities→Radio Info→My ID→Menu/OK→Edit→Menu/OK.</p> <p>b Enter the new <i><Caller Alias></i>.</p>


The display shows a positive mini notice.

35.2

Viewing the Caller Aliases List

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


Procedure:

From the menu, select  **Caller Aliases**→*<required Caller Alias>*→**View Details**.

35.3

Initiating Private Calls From the Caller Aliases List

Procedure:

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

Chapter 36

Dynamic Group Number Assignment

Dynamic Group Number Assignment (DGNA) is a feature that allows the third-party console to assign and remove talkgroup dynamically to a radio from over the air.

DGNA is only available with Capacity Max system.

When the console assigns DGNA to your radio, your current channel is in DGNA mode and shows the followings:

- A tone sounds.
- The display shows <DGNA Talkgroup Alias> Assigned momentarily before returning to the home screen.
- The DGNA icon appears in the status bar.
- The home screen displays DGNA talkgroup alias.

When the console removes DGNA from your radio, your radio restores the previous talkgroup and shows the followings:

- A tone sounds.
- The display shows <DGNA Talkgroup Alias> Removed momentarily before returning to the home screen.
- The DGNA icon disappears from the status bar.
- The home screen displays the previous talkgroup alias.

Depending on how your radio is programmed, you can view, edit, and listen to the original scan lists channels and the non-DGNA talkgroups.

When your radio is in DGNA mode, press and hold the **PTT** button action allows you to communicate only with the current DGNA talkgroup. To communicate with the previous non-DGNA talkgroup, program the programmed **One Touch Access** button.



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

36.1

Making DGNA Calls

Prerequisites: Ensure your current channel is in DGNA mode.

Procedure:

To call, press and hold the **PTT** button.

Your radio shows the following indications:

- A DGNA tone sounds.
- The display shows the DGNA icon and the alias.

36.2

Making Non-DGNA Calls

Procedure:

1 Perform one of the following actions:

- If your radio is in DGNA mode, press the programmed **One Touch Access** button.



NOTE:

If your radio is not in DGNA mode and you press the **One Touch Access** button, your radio sounds a negative tone, indicating error. The display remains unchanged.

- If your radio is not in DGNA mode, press and hold the **PTT** button.



NOTE:

When a PTT button is press before a negative tone sounds, your radio returns to the home screen. When your radio is in the home screen, a PTT press makes a call to the DGNA talkgroup.

If your radio is in DGNA mode, your radio shows the following indications:

- A positive tone sounds.
- Voice Announcement sounds.
- The display shows <Talkgroup Alias> and Press PTT momentarily.

36.3

Receiving and Responding to DGNA Calls

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

- A DGNA tone sounds.
- The display shows the DGNA icon and aliases.
- Your radio unmutes and the incoming call sounds through the speaker.

Procedure:


- 1 To call, press and hold the **PTT** button.
- 2 To listen, release the **PTT** button.

Chapter 37

Entering the Front Panel Programming

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

Procedure:

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

Chapter 38

Home Channel Reminder

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

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

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

38.1

Muting the Home Channel Reminder

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

Procedure:

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


38.2

Setting New Home Channels

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

Procedure:

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

The display shows a  beside the selected home channel alias.

Chapter 39

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.



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

39.1

Monitoring Channels

Procedure:

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

39.2

Permanent Monitor

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

39.2.1

Setting the Permanent Monitor

Procedure:

Press the programmed **Permanent Monitor** button.

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

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

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

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

Chapter 40

Remote Monitor

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

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

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

For Other Systems, Remote Monitor comprises of two types:

- Remote Monitor without Authentication
- Remote Monitor with Authentication



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

40.1

Initiating the Remote Monitor

Procedure:

Perform one of the following actions:

Option	Actions
Initiating Remote Monitor with Contact List	From the menu, select  Contacts →<required ID or alias>→ Remote Mon..
Initiating Remote Monitor with Manual Dial	<p>a From the menu, select  Contacts→Manual Dial→Radio Number.</p> <p>b Either enter the ID or alias, or edit the previous dialed ID.</p> <p>c Select Remote Mon..</p>

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

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

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

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

Chapter 41

Radio Check


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

This feature is only applicable for subscriber IDs.

41.1

Sending Radio Checks

Procedure:

- 1 From the menu, select  **Contacts**.
- 2 Send radio check by performing one of the following actions:

Option	Actions
Sending radio check with Contact List	a Select <i><required ID or alias></i> → Radio Check .
Sending radio check with Manual Dial	a Select Manual Dial → Radio Number . b Perform one of the following actions: <ul style="list-style-type: none">• Enter the <i><required ID or alias></i>.• Edit the previously dialed ID.

If the target radio is active in the system, the display shows a positive mini notice.

If the target radio is inactive in the system, the display shows a negative mini notice.

Chapter 42

Mute Mode

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

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

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

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

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



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

42.1

Turning the Mute Mode On

Procedure:

Place the radio in a face-down position momentarily.

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

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

42.2

Setting the Mute Mode Timer

Procedure:

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

42.3

Exiting the Mute Mode

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

Procedure:

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

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

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

- A negative tone sounds.
- The blinking red LED extinguishes.
- The display shows `Mute Mode Off`.
- The Mute Mode icon disappears from the home screen.
- Your radio unmutes and restores the speaker state.
- The Mute Mode Timer stops even if the timer has not expired.

Chapter 43

Received Signal Strength Indicator

This feature allows you to view the Received Signal Strength Indicator (RSSI) values.
The display shows the RSSI icon at the top right corner.

43.1

Viewing RSSI Values

Procedure:

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

The display shows the current RSSI values.

Chapter 44

Response Inhibit

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



NOTE: Contact your dealer for more information.

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

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

44.1

Setting the Response Inhibit

Procedure:

Press the programmed **Response Inhibit** button.

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

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

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

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

Chapter 45

Transmit Inhibit

The Transmit Inhibit feature allows you to block all transmissions from your radio.



NOTE: Bluetooth and Wi-Fi features are available in the Transmit Inhibit mode.

45.1

Enabling or Disabling the Transmit Inhibit

Procedure:

Select  **Utilities** → **Radio Settings** → **Tx Inhibit**.

If the Transmit Inhibit is enabled, a ✓ appears beside `Enabled`.

If the Transmit Inhibit is disabled, the ✓ disappears beside `Enabled`.



NOTE: The status of the Transmit Inhibit does not change after the radio turns on.

Chapter 46

Call Preemption

Call Preemption allows your radio to interrupt any ongoing calls and initiate a higher priority call.

With the Call Preemption feature, the system interrupts any ongoing calls whereby trunked channels are unavailable.

Thus your radio initiates a higher priority call such as an emergency call or all call. If no other Radio Frequency (RF) channels are available, emergency call will interrupt all call as well.

Chapter 47

Voice Interrupt

Voice Interrupt allows your radio to end any ongoing calls.

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

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

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

47.1

Enabling the Voice Interrupt

Procedure:

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

47.2

Initiating Transmit Interrupt

Procedure:

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

- Press the **PTT** button.
- Press the **Emergency** button.
- For Other Systems, perform data transmission.
- For Other Systems, press the programmed **TX Interrupt Remote Dekey** button.

Chapter 48

Over-the-Air Programming

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

When your radio undergoes OTAP, the green LED blinks.

When your radio receives update, your radio shows the following indications:

- If you press the **PTT** button, a negative tone sounds.
- If your radio undergoes OTAP through Radio Frequency (RF), the display shows the High Volume Data icon.
- The channel becomes busy.

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

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

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

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



NOTE:

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

Chapter 49

Authorized Accessories List

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

For more information about the accessories, UL accessories, and batteries supported for your radio, see <https://learning.motorolasolutions.com> with the following Manual Part Numbers:

- MN007867A01 *MOTOTRBO™ R7 Series Accessories Leaflet*
- MN007869A01 *MOTOTRBO™ R7 Series UL Manual*

© 2022 Motorola Solutions, Inc. Tous droits réservés

Déclarations juridiques et de conformité

Déclaration de conformité du fournisseur

Déclaration de conformité du fournisseur

Règlement CFR 47, partie 2, section 2.1077(a) de la FCC



Partie responsable

Nom : Motorola Solutions, Inc.

Adresse : 2000 Progress Pkwy, Schaumburg, IL. 60196

Numéro de téléphone : 1 800 927-2744

Déclare par les présentes que le produit :

Nom du modèle : **R7**

est conforme aux réglementations suivantes :

Partie 15, sous-partie B, section 15.107(a), 15.107(d) et section 15.109(a) des règlements de la FCC

Appareil numérique de classe B

En tant que périphérique d'ordinateur personnel, cet appareil est conforme aux dispositions de la partie 15 des règlements de la FCC. Son utilisation est assujettie aux deux conditions suivantes :

- 1 Cet appareil ne doit pas causer d'interférence nuisible; et

- 2 Cet appareil doit accepter toute interférence reçue, y compris les interférences pouvant entraîner un fonctionnement indésirable.



REMARQUE :

Cet équipement a fait l'objet de tests et a été déclaré conforme aux limites établies pour un appareil numérique de classe B, conformément à la section 15 des règlements de la FCC. Ces limites sont fixées afin d'offrir une protection suffisante contre des interférences nuisibles dans une installation résidentielle. Cet équipement génère, utilise et peut émettre de l'énergie de radiofréquence et, s'il n'est pas installé ou utilisé conformément aux instructions, il peut provoquer un brouillage nuisible aux communications radio. Cependant, il est impossible de garantir qu'il n'y aura aucune interférence dans une installation particulière.

Si cet appareil cause une interférence nuisible à la réception de la radio ou de la télévision, ce qui peut être déterminé en éteignant et en allumant l'appareil, vous êtes encouragé à remédier à la situation en prenant une ou plusieurs des mesures suivantes :

- Réorienter ou déplacer l'antenne réceptrice.
- Augmenter la distance entre l'équipement et le récepteur.
- Brancher l'appareil dans une autre prise sur un circuit différent de celui du récepteur.
- Consulter le distributeur ou un technicien de radio ou de télévision chevronné pour obtenir de l'aide.

Pour un usage en fonction de la sélection du code de pays (appareils WLAN)



REMARQUE :

La sélection du code de pays est pour les modèles non É.-U. seulement et n'est pas disponible sur tous les modèles américains. Conformément à la réglementation de la FCC, tous les produits Wi-Fi commercialisés aux États-Unis doivent être fixés sur des canaux fonctionnant aux États-Unis uniquement.

Déclaration relative au WLAN (Industrie Canada)



MISE EN GARDE :

- 1 L'appareil fonctionnant dans la bande 5 150 à 5 250 MHz est uniquement destiné à une utilisation à l'intérieur afin de limiter les risques d'interférences avec les systèmes mobiles satellites dans un canal commun.
- 2 Pour les dispositifs munis d'antennes amovibles, le gain maximal d'antenne permis pour les dispositifs utilisant les bandes de 5 250 à 5 350 MHz et de 5 470 à 5 725 MHz doit être conforme à la limite de puissance isotrope rayonnée équivalente (p.i.r.e).
- 3 Pour les dispositifs munis d'antennes amovibles, le gain maximal d'antenne permis pour les dispositifs utilisant la bande de 5 752 à 5 850 MHz doit être conforme à la limite de p.i.r.e spécifiée pour l'exploitation point à point et l'exploitation non point à point, selon le cas.
- 4 Les pires angles d'inclinaison nécessaires pour rester conforme à l'exigence de p.i.r.e applicable au masque d'élévation, et énoncée à la section 6.2.2 (3), doivent être clairement indiqués.
- 5 Les utilisateurs devraient aussi être avisés, d'une part, que les utilisateurs de radars de haute puissance sont désignés utilisateurs principaux (c.-à-d., qu'ils ont la priorité) des bandes de 5 250 à 5 350 MHz et de 5 650 à 5 850 MHz et, d'autre part, que ces radars pourraient causer du brouillage ou des dommages aux dispositifs de RL-EL.

Avis aux utilisateurs (FCC)

Cet appareil est conforme à la partie 15 des règlements de la FCC d'après les conditions suivantes :

- Cet appareil ne doit pas causer d'interférence nuisible.
- Cet appareil doit accepter toute interférence reçue, y compris les interférences pouvant entraîner un fonctionnement indésirable.
- Toute modification apportée à cet appareil sans l'autorisation explicite de Motorola Solutions peut annuler l'autorisation d'utiliser cet appareil.

Avis aux utilisateurs (Industrie Canada)

Le fonctionnement de votre radio Motorola Solutions est assujéti à la Loi sur la radiocommunication et doit se conformer aux règles et règlements du ministère Innovation, Sciences et Développement économique Canada du gouvernement fédéral. Industrie Canada exige que les utilisateurs de fréquences mobiles terrestres privées obtiennent une licence avant d'utiliser leur équipement.

Consignes de sécurité importantes

Radios bidirectionnelles portatives : exposition aux radiofréquences et sécurité du produit



MISE EN GARDE :

Cette radio doit être utilisée à des fins professionnelles uniquement. Avant d'utiliser la radio, lisez le guide Exposition aux radiofréquences et sécurité du produit inclus avec la radio. Ce guide contient d'importantes instructions de fonctionnement pour une utilisation sécuritaire et des informations sur l'exposition aux radiofréquences, dans le but d'assurer votre conformité aux normes et règlements en vigueur.

Toute modification apportée à cet appareil sans l'autorisation explicite de Motorola Solutions peut annuler l'autorisation d'utiliser l'appareil.

Selon la réglementation d'Industrie Canada, cet émetteur radio ne peut être utilisé qu'avec une antenne dont le type et le gain maximal (ou minimal) sont approuvés par Industrie Canada pour cet émetteur. Afin de limiter les interférences radio pour les autres utilisateurs, le type et le gain de l'antenne doivent être choisis de façon à ce que la puissance isotrope rayonnée équivalente (p.i.r.e) ne soit pas plus forte qu'il ne le faut pour établir la communication.

Cet émetteur radio a été approuvé par Industrie Canada pour utilisation avec une antenne approuvée par Motorola Solutions offrant le gain maximal autorisé et l'impédance requise pour le type d'antenne indiqué. Il est strictement interdit d'utiliser avec cet appareil tout type d'antenne ne figurant pas dans cette liste et présentant un gain supérieur au maximum indiqué pour le type.

Licence des bandes citoyennes

L'utilisation du service radio des bandes citoyennes est permise en Australie par la licence Radiocommunications (Citizens Band Radio Stations) Class de l'Australian Communications and Media Authority (ACMA) et en Nouvelle-Zélande par la licence General User Radio Licence (GURL) Ministère du développement économique Nouvelle-Zélande (MED) pour les bandes citoyennes, et son fonctionnement est soumis aux conditions contenues dans ces licences.

En Australie, un émetteur pour bandes citoyennes ne doit pas être utilisé sur les canaux d'urgence UHF 5 et 35, et les transmissions vocales ne sont pas autorisées sur les canaux de données (télémétrie/télécommande) 22 et 23, sauf en cas d'urgence. Une radio qui est conforme à cette norme empêchera l'utilisation de la voix sur les canaux 22 et 23. Dans le cas où d'autres canaux de télémétrie/télécommande sont approuvés par l'ACMA, ces canaux devront être ajoutés à ceux sur lesquels la transmission vocale est actuellement interdite.

Écoutez toujours un canal (ou observez l'indicateur d'occupation du canal) pour vous s'assurer qu'il n'est pas déjà utilisé avant la transmission.

Fonctionnement des bandes citoyennes avec répéteur

Un répéteur est une station établie dans un emplacement fixe qui reçoit les signaux radio provenant d'une station de bandes citoyennes et retransmet canaux le signal à une autre station à l'aide du canal de sortie correspondant. Des répéteurs de bandes citoyennes UHF se trouvent dans tous les États et permettent aux communications de véhicule à véhicule d'être considérablement augmentées. Évitez d'utiliser les canaux d'entrée de répéteur utilisés localement (qui sont dans la gamme de canaux 31 à 38, et 71 à 78 lorsqu'ils sont autorisés) ou les canaux de réception de répéteur utilisés localement (qui sont dans la gamme de canaux 1 à 8, et 41 à 48 lorsqu'ils sont autorisés), à moins qu'une communication à longue distance à partir du répéteur soit spécifiquement requise.



REMARQUE :

En Australie, le canal 11 est le canal d'appel habituel pour établir la communication et le canal 40 est le canal habituel pour les véhicules routiers.

Bande terrestre mobile à 25 kHz à transition sur bande étroite 12,5 kHz

L'utilisation existante de canaux analogiques terrestres mobiles de 25 kHz cessera le 1er novembre 2015. Cette période correspond à la durée minimale (cinq ans) spécifiée dans la réglementation sur les radios pour donner un avis de révocation de licence d'une durée non définie.

Les bandes de fréquences mobiles terrestre avec un plan de canal décalé (bandes E, EN et ENX) nécessitent un traitement différent pour gérer l'introduction des radios mobiles terrestres numériques (en raison d'éventuels risques d'interférences entre canaux adjacents). Les éléments suivants s'appliquent à ces bandes :

- Les utilisateurs de bande E (canaux de 25 kHz) qui veulent passer au numérique avant le 1er novembre 2015 peuvent migrer vers la bande EE (également dans la gamme VHF) ou toute autre bande ouverte pour licence de radio mobile terrestre numérique.
- les utilisateurs de bande E désireux de continuer à utiliser les services analogiques après la période de transition de cinq ans peuvent migrer vers les canaux analogiques de 12,5 kHz dans la bande EN (également dans la gamme VHF) ou toute autre bande ouverte aux radios mobiles terrestres analogiques à bande étroite.
- L'entrée de radios mobiles terrestres numériques dans les bandes EN et ENX avant le 1er novembre 2015 sera considérée au cas par cas. L'octroi de licences de radio mobile terrestre numérique sur ces bandes sera possible dans les zones où les utilisateurs ont abandonné la bande E, ou lorsque des analyses techniques rigoureuses garantissent l'absence de risques d'interférences pour les autres utilisateurs de la bande.

Pour obtenir la liste des canaux actuellement autorisés, reportez-vous aux sites Web ci-dessous :

- <https://www.acma.gov.au/licences/citizen-band-radio-stations-class-licence> (Australie)
- <https://www.rsm.govt.nz/licensing/frequencies-for-anyone/citizen-band-radio-gurl/> (Nouvelle-Zélande)

Utilisation de la radio maritime dans la gamme de fréquence VHF

Cette section ne s'applique qu'aux États-Unis et au Canada.

Affectations de canaux spéciaux

Canal d'urgence

Si vous êtes exposé à un danger grave et imminent en mer et avez besoin d'une aide d'urgence, utilisez le canal VHF 16 pour lancer un appel de détresse aux navires qui se trouvent à proximité et à la Garde côtière des États-Unis. Transmettez les renseignements suivants dans cet ordre :

- 1 « MAYDAY, MAYDAY, MAYDAY. »
- 2 « ICI _____, INDICATIF D'APPEL _____. » Dites le nom du navire en détresse trois fois, suivi de l'indicatif d'appel ou d'une autre identification du navire, en l'énonçant trois fois.
- 3 Répétez « MAYDAY » et le nom du navire.
- 4 « NOTRE POSITION EST _____. » Indiquez la position du navire en détresse en ajoutant tout renseignement pouvant aider les répondants à vous localiser, p. ex :
 - la latitude et la longitude;
 - le relèvement (dites si vous utilisez le nord géographique ou magnétique);
 - votre distance par rapport à un point de repère connu;
 - la route, la vitesse ou la destination du navire.
- 5 Énoncez la nature de la situation de détresse.
- 6 Précisez l'aide dont vous avez besoin.
- 7 Indiquez le nombre de personnes à bord du navire et le nombre de personnes nécessitant une assistance médicale, le cas échéant.
- 8 Mentionnez toute autre information pouvant être utile aux répondants, comme le type de navire, sa longueur ou son tonnage, la couleur de la coque, etc.
- 9 « TERMINÉ. »
- 10 Attendez une réponse.
- 11 Si vous ne recevez pas de réponse immédiate, restez près de la radio et répétez votre transmission à intervalles jusqu'à ce que l'on vous réponde. Soyez prêt à suivre les instructions qui vous seront données.

Canal d'appel non commercial

Pour transmettre des messages non commerciaux, comme des rapports de pêche, des arrangements de rendez-vous, des planifications de réparation ou des informations d'accostage, utilisez le **canal VHF 9**.

Exigences relatives à la fréquence de fonctionnement

Toute radio conçue pour la navigation doit être conforme à la section 80 des règlements de la Commission fédérale des communications (FCC), comme suit :

- sur les navires soumis à la section II du titre III de la Loi sur les communications (Communications Act) des États-Unis, la radio doit pouvoir fonctionner sur la fréquence 156,800 MHz;
- sur les navires soumis à la Convention de sécurité, la radio doit pouvoir fonctionner :
 - en mode simplex sur le poste du navire qui transmet les fréquences précisées sur la bande de fréquences 156,025 – 157,425 MHz, et
 - en mode semi-duplex sur les deux canaux de fréquence précisés dans le tableau ci-dessous.



REMARQUE :

Pour obtenir davantage de renseignements sur les exigences de fonctionnement des Services maritimes, consultez la version intégrale de la section 80 des règlements de la FCC ou communiquez avec la Garde côtière américaine.

Tableau 1 : Liste des canaux de la bande maritime VHF

Numéro de canal	Fréquence (MHz)
-----------------	-----------------

	Transmission	Réception
1	156,050	160,650
2	156,100	160,700
*1	156,150	160,750
4	156,200	160,800
5	156,250	160,850
6	156,300	–
7	156,350	160,950
8	156,400	–
9	156,450	156,450
10	156,500	156,500
11	156,550	156,550
12	156,600	156,600
13**2	156,650	156,650
14	156,700	156,700
15**2	156,750	156,750
16	156,800	156,800
17**2	156,850	156,850
18	156,900	161,500
19	156,950	161,550
20	157,000	161,600
*1	157,050	161,650
22	157,100	161,700
*1	157,150	161,750
24	157,200	161,800
25	157,250	161,850
26	157,300	161,900
27	157,350	161,950
28	157,400	162,000
60	156,025	160,625
*1	156,075	160,675
62	156,125	160,725
63	156,175	160,775
*1	156,225	160,825

¹ Les canaux simplex 3, 21, 23, 61, 64, 81, 82 et 83 ne peuvent être **utilisés légalement** par le grand public dans les eaux américaines.

² Faible puissance (1 W) seulement.

65	156,275	160,875
66	156,325	160,925
67**2	156,375	156,375
68	156,425	156,425
69	156,475	156,475
71	156,575	156,575
72	156,625	–
73	156,675	156,675
74	156,725	156,725
75	***3	***3
76	***3	***3
77**2	156,875	–
78	156,925	161,525
79	156,975	161,575
80	157,025	161,625
*1	157,075	161,675
*1	157,125	161,725
*1	157,175	161,775
84	157,225	161,825
85	157,275	161,875
86	157,325	161,925
87	157,375	161,975
88	157,425	162,025



REMARQUE :

Le symbole – dans la colonne Réception indique qu'il s'agit d'un canal de transmission seulement.

Déclaration de conformité pour l'utilisation des fréquences de détresse et de sécurité

L'équipement radio n'utilise pas de modulation autre que la modulation adoptée à l'échelle internationale pour l'usage en mer sur les fréquences de détresse et de sécurité spécifiées dans la section 7.3 du CNR-182.

³ Bande de garde.

Paramètres techniques d'interface avec des sources de données externes

Tableau 2 : Paramètres techniques d'interface avec des sources de données externes

	RS232	USB	SB9600
Tension d'entrée (tension crête à crête)	18 V	3,6 V	5 V
Débit binaire maximum	28 kbit/s	12 Mbit/s	9,6 kbit/s
Impédance	5000 ohms	90 ohms	120 ohms