

CONTENTS

Computer Software Copyrights	3	Sending a Call	17
Radio Overview	5	Receiving a Call	17
Parts of the Radio	5	Radio Calls	19
Optional Enhanced DTMF (Keypad)		Making a Selective Call	19
Microphone (RMN4026)	6	Receiving a Selective Call	19
On/Off/Volume Knob	7	Sending a Call Alert™ Page	20
Channel Selector/Menu Navigation		Receiving a Call Alert Page	20
Buttons	7	Radio Check	21
LED Indicators	7	Sending a Status	21
Programmable Buttons	7	Sending a Message	22
Push-to-Talk (PTT) Button	10	Receiving a Message	23
Microphone	10	Sending an Emergency Alert	23
Menu Keys	10	Receiving Selective Radio Inhibit	24
Use with Optional Enhanced DTMF		Editing a Radio Call List	24
Microphone (RMN4026)	11	Repeater or Talkaround Mode	25
LCD Screen	13	Setting the Power Level	25
Audio Indicators for Programmable		Name and Call/Message Tone Tagging	26
Buttons	14	Scan	29
Getting Started	15	Starting or Stopping Scan	29
Turning the Radio On or Off	15	Talkback	30
Adjusting the Volume	15	Deleting a Nuisance Channel	30
Selecting a Zone	16	Restoring a Channel to the Scan List	30
Selecting a Radio Channel	16		

Editing a Scan List	30	Safety and Warranty	47
Adding or Deleting Channels in a		Safe and Efficient Operation of Motorola	
Scan List	31	Two-Way Radios	47
Prioritizing a Channel in a Scan List . .	32	Exposure to Radio Frequency	
Setting Priority Channels	32	Energy	47
Phone	35	Electromagnetic Interference/	
Making a Phone Call	35	Compatibility	48
Modifying the Phone List	36	Operational Warnings	48
Adding an Entry (when using		Vehicles with an Air Bag	48
the keypad microphone only)	36	Potentially Explosive Atmospheres . .	48
Deleting an Entry:	37	Blasting Caps and Blasting Areas . . .	49
Editing an Entry (when using		Mobile Radio Operation and EME	
the keypad microphone only)	38	Exposure	49
Editing an Access/Deaccess Code		Mobile Antenna Installation	50
(when using the keypad microphone		Control Station Operation	50
only)	39	Limited Warranty	50
Audio/Tone Settings	41	Accessories	55
Utilities	43	Audio	55
Setting the Time	45	Mounting	55
Displaying the Time	46	Antennas	56
Selecting the Display Language	46	Control Station	56

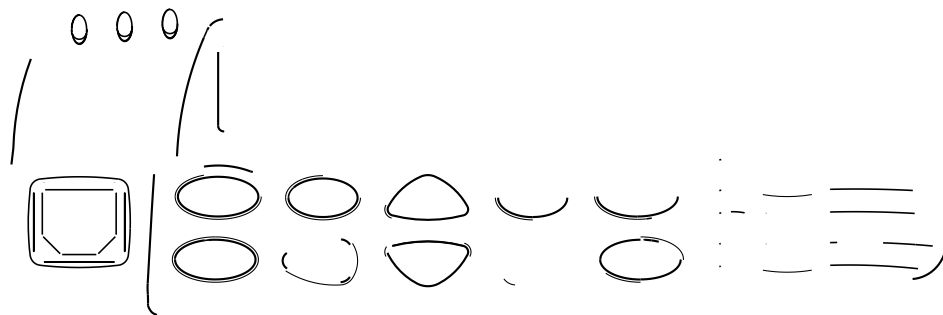
COMPUTER SOFTWARE COPYRIGHTS

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

Notes

RADIO OVERVIEW

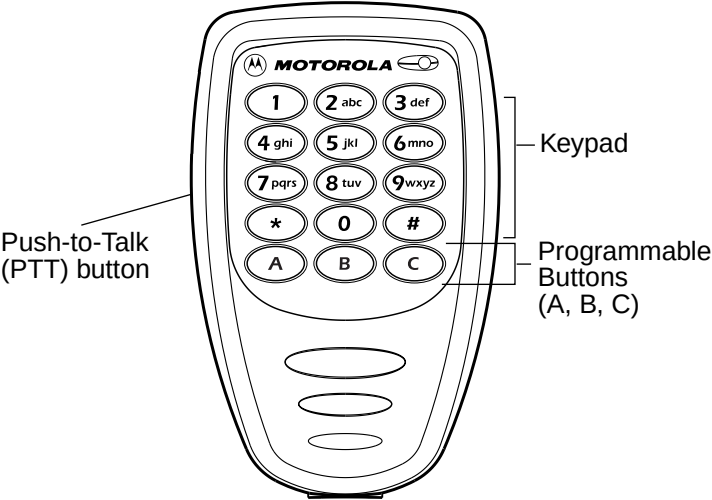
PARTS OF THE RADIO



**Optional Enhanced DTMF (Keypad)
Microphone (RMN4026)**

Your radio may be ordered with an optional DTMF (Dual-Tone Multi-Frequency) microphone that has a direct entry keypad.

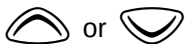
This keypad microphone has three buttons (A, B, C) below the keypad that can be programmed to conveniently activate select radio features.



On/Off/Volume Knob

Turns the radio on or off, and adjusts the radio's volume.

Channel Selector/Menu Navigation Buttons



Used for channel scrolling. When in menu mode, used for menu navigation.

LED Indicators

Indicates channel, scan, and monitor status, as well as receipt of a selective call.

Programmable Buttons

Your radio has several programmable buttons. Your dealer can program these buttons as shortcuts to various radio features.

Check with your dealer for a complete list of functions your radio supports.

Programmable buttons include the , , , and  buttons (see page 5).

Some buttons can access up to two features, depending on the type of button press:

- **short press**—quickly pressing and releasing the programmable buttons
- **long press**—pressing and holding the programmable buttons for a period of time (at least 1 1/2 seconds)
- **hold down**—pressing and holding down the programmable buttons while checking status or making adjustments

A summary of programmable radio features and corresponding page references appears beginning on page 8.

In the “Button” column, have your dealer record the name of the programmable button next to the feature that has been programmed to it.

The dealer can use the abbreviations (P1, P2, P3, P4) shown in the radio illustration on page 5.

Also, where appropriate, have your dealer indicate whether the button press requires a short press, a long press, or needs to be held down.

Function	Indicator	Short Press	Long Press	Hold Down	Page	Button
Volume Set	—	—	—	Sound a tone for adjusting your radio's volume level.	15	
Home Revert	—	Takes you directly to a pre-programmed zone/channel combination. [†]		—	16	
Direct Channel Access	—	Toggle the direct access channel feature. [†] (DTMF microphone required.)		—	16	
Direct Zone Access	—	Direct entry to zone selection menu. [†]		—	16	
PRTT (Priority Request- to-Talk)	—	Sends a priority access request to the dispatcher.		—	17	
Emergency	△	Initiate Emergency Alert.	Cancel Emergency status.	—	23	
Power Level	LH	Toggle transmit power level between High and Low. [†]		—	25	
Repeater/ Talkaround	↔	Toggle between using a repeater or transmitting directly to another radio. [†]		—	25	
Scan/Nuisance Channel Delete	↗	Toggle scan on and off.	Delete a nuisance channel while scanning.	—	29-30	
Phone	①	Access Phone Mode. [†]		—	35	

[†] This function is activated by **EITHER** a short **OR** a long press, but not both.

Function	Indicator	Short Press	Long Press	Hold Down	Page	Button
Speed Dial	—	Access your phone list directly. [†]		—	35	
Monitor		Toggle silent monitor operation (also turn off open squelch monitor when it has been activated).	Turn on open squelch monitor.	—	—	
Option Board (if one is installed)		Toggle between activating and deactivating the option board. [†]		—	—	
Radio Call	—	Access the radio call menu. [†]		—	—	
Light	—	Adjust brightness level (off/low/med/high). [†]		—	—	
Auxiliary Control (1/2)	—	Activates or deactivates a pin on the accessory connector. [†] (See your dealer.)		—	—	
Status	—	Direct entry to the status menu. [†]		—	—	
One-Touch Status	—	Immediately sends a preprogrammed status. [†]		—	—	
Message	—	Direct entry to the message menu. [†]		—	—	
One-Touch Message	—	Immediately sends a preprogrammed message. [†]		—	—	
Horn and Lights	—	Toggles external alarm feature or cancels a triggered alarm. [†]		—	—	

[†] This function is activated by **EITHER** a short **OR** a long press, but not both.

Push-to-Talk (PTT) Button

Press and hold down this button to talk; release it to listen.

Microphone

Hold the microphone 1 to 2 inches (2.5 to 5 cm) from your mouth, and speak clearly into it.

Menu Keys

Exit	Up	Menu/ Select
		
Left	Down	Right
		

Menu/Select Key

Used to enter Menu Mode. When in Menu Mode, this key is also used to make menu selections.

Exit Key

Used to move to the previous Menu level (short press) or to exit Menu Mode (long press).

Up Key and Down Key

Used for channel scrolling. When in Menu Mode, used for menu navigation.

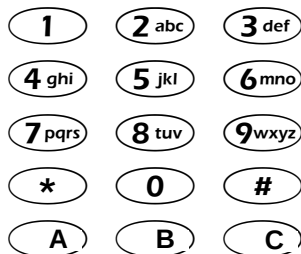
Right Key

Moves the cursor right or inserts a space when editing.

Left Key

Moves the cursor left or used as a backspace key when editing.

Use with Optional Enhanced DTMF Microphone (RMN4026)



These keys are used to:

- Dial a phone number
- Make a radio call
- Enter information when programming radio lists
- Directly access preprogrammed features

Each key can generate several different characters. For example, to enter the character "C," press the **2 abc** key three times. (Refer to the following table.)

Entering Characters Using the Keypad

	Number of Times Key is Pressed																
Key	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
0	0	(	)	<	>												
1	1	&	%	#	*												
2 abc	A	B	C	2	a	b	c	2	À	Á	Â	Ç	à	á	â	ç	
3 def	D	E	F	3	d	e	f	3	È	É	Ê	è	é	ê	ë		
4 ghi	G	H	I	4	g	h	i	4	Ì	Í	Î	ì	í	î	ï		
5 jkl	J	K	L	5	j	k	l	5									
6 mno	M	N	O	6	m	n	o	6	Ñ	Ò	Ó	Ô	ñ	ò	ó	ô	ö
7 pqrs	P	Q	R	S	7	p	q	r	s	7							
8 tuv	T	U	V	8	t	u	v	8	Ù	Ú	Û	ù	ú				
9 wxyz	W	X	Y	Z	9	w	x	y	z	9	Y	y					
*	*	/	+	-	=												
#	#	Blank Space	-	.	!	?	'	"	,	;	:						

LCD Screen

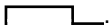
The top screen row displays radio status information:

Symbol	Indication
 Companding	The Companding feature is activated. When in narrow band, this feature improves audio quality.
 Power Level	Low Power "L" or High Power "H" is activated.
 Carrier Squelch (CSQ)	The radio is on a CSQ

AUDIO INDICATORS FOR

GETTING STARTED

TURNING THE RADIO ON OR OFF

ON	OFF
Push the On/Off/Volume Control knob until you hear a click. If power-up is successful, you will hear the Self-Test Pass Tone.  If the radio fails to power up, you will hear the Self-Test Fail Tone .	Push the On/Off/Volume Control knob until you hear a click and the display clears.

ADJUSTING THE VOLUME

Turn the **On/Off/Volume Control** knob clockwise to increase the volume, or counterclockwise to decrease the volume.

—or—

- 1 Hold down the **Volume Set** button (see page 8). You will hear a continuous tone.
- 2 Turn the **On/Off/Volume Control** knob to the desired volume level.
- 3 Release the **Volume Set** button.

SELECTING A ZONE

A zone is a group of up to 16 channels. Before you can access a channel in a zone, you must select the zone in one of two ways:

Method 1

- 1  to enter Menu Mode.
- 2  or  until 
- 3  to select 
- 4  or  until you see the desired zone name.
- 5  to select the zone.

Method 2 (if programmed by your dealer [see pages 8 -9]).

- 1 Press the **Direct Zone Access** button.
- 2  or  until you reach the desired zone.
- 3  to select the zone.

SELECTING A RADIO CHANNEL

Your radio offers 128 channels (8 zones of 16 channels each).

Note: Due to government regulations, some channels may not be programmed.
See your dealer for more information.

There are three ways to select a channel:

Method 1

- 1 Select the appropriate Zone, if required.
- 2  or  until you reach the desired channel, shown on LCD display.

Method 2 (if programmed by your dealer [see pages 8 -9]).

- 1 Press the **Home Revert** button.

Method 3 (if programmed by your dealer [see pages 8 -9]).

- 1 Press the **Direct Channel Access** button.

- 2 Enter the desired channel using the DTMF keypad microphone.

- 3  to confirm your selection.

SENDING A CALL

- 1 Turn your radio on.
- 2  or  to select the desired channel.
- 3 Hold the microphone vertically 1 to 2 inches (2.5 to 5 cm) from your mouth. Press the **PTT** to talk; release it to listen.

If your system uses the request-to-talk feature, use the following method to send a call:

- 1 Turn your radio on.
- 2  or  to select the desired channel.
- 3 Press the **PTT** (for priority requests to talk, the **PRTT** button) and wait for the talk permit tone.

- 4 Hold the microphone vertically 1 to 2 inches (2.5 to 5 cm) from your mouth. Press the **PTT** to talk; release it to listen.

- 5 Release the **PTT** to listen.

RECEIVING A CALL

- 1 Turn your radio on.
- 2 Adjust the radio's volume, if necessary (see page 15).
- 3 Select the desired channel.
- 4 Hold the microphone vertically 1 to 2 inches (2.5 to 5 cm) from your mouth. Press the **PTT** to talk; release it to listen.

RADIO CALLS

MAKING A SELECTIVE CALL

You can make a selective call to a particular radio or group of radios, provided the signalling protocol supports it.

To make a Selective Call:

- 1  to enter Menu Mode.
- 2  or  until Radio Call
- 3  to select Radio Call
- 4  or  until Selective Call
- 5  to select Selective Call
- 6  or  to locate the desired ID in the Radio Call List.
 –or–
 when using the keypad microphone only, enter the ID number of the radio you want to call.
- 7 Press the **PTT** to send the call. The radio sounds a continuous tone.

- 8 Press the **PTT** to talk; release it to listen.

- 9 When finished with the call,

 to return to

–or–

Hold down  to exit Menu Mode.

Selective Call

RECEIVING A SELECTIVE CALL 🎵

When you receive a selective call:

- You will hear two alert tones.
- The LED Indicator flashes yellow.
- The LCD screen displays 🎵 and the preprogrammed name or ID of the calling radio, if available.

SENDING A CALL ALERT™ PAGE

You can alert another person by sending a Call Alert page.

To send a Call Alert page:

1  to enter Menu Mode.

2  or  until

3  to select

4  or  until

5  to select

6  or  to locate the desired ID in the Radio Call List;

–or–

when using the keypad microphone only, enter the ID number of the radio you want to page.

7 Press the **PTT** to send the page.
You will see

RECEIVING A CALL ALERT PAGE

When your radio receives a Call Alert page, it sounds four alert tones continuously and the following are displayed until you respond: the  symbol, and the ID of the calling radio alternating with *Call Received*.

Press the **PTT** to answer the page, or press any other key to clear it.

Note: Your radio will display only the last Call Alert page received. Also, your radio will not receive any Selective Calls until you clear the page.

RADIO CHECK

This feature allows you to determine if a radio is in range without disturbing the user of the radio. Radio Check can also be used when attempts with Selective Call and Call Alert fail. (This feature is available only if your signalling protocol supports it.)

To perform a Radio Check:

- 1  to enter Menu Mode.
- 2  or  until **Radio Call**
- 3  to select **Radio Call**
- 4  or  until **Radio Check**
- 5  to select **Radio Check**
- 6  or  to locate the desired ID in the Radio Call List;
 –or–
 when using the keypad microphone only,
 enter the ID number of the radio you are checking.

- 7 Press the **PTT**.
 You will see **Call In Prog**
- 8 If the Radio Check is received,
 you will see **Acknowledge**
 If not, you will see **No Acknowledge**
- 9  to return to
 –or–
 Hold down  to exit Menu Mode. **Radio Check**

SENDING A STATUS

This feature gives you the ability to send a status update to the base. The status feature makes more efficient use of the channel compared to voice transmissions. Status updates of up to 14 characters may be programmed by your dealer.

To send a Status:

- 1  to enter Menu Mode.
- 2  or  until **Status**
- 3  to select **Status**

- 4  or  to locate the desired status in the pre-programmed list.

—or— when using the keypad microphone only,

enter the number of the status you wish to send.

—or— if programmed by your dealer (see pages 8 -9),

press the button that has been preprogrammed for a specific status.

Note: You cannot retransmit the current status update.

To send an electronic (data) message:

SENDING A MESSAGE

This feature gives you the ability to send and receive preprogrammed messages. Data messages make more efficient use of channels compared to voice transmissions. Messages of up to 14 characters may be programmed by your dealer.

RECEIVING A MESSAGE

When your radio receives a message:

- You will hear two alert tones.
- The LED indicator flashes yellow.
- The LCD screen

displays

Msg Received

alternating with the preprogrammed alias.

Note: If you receive a message that is programmed into your radio, the display will alternate with the following:

Me

and

SENDING AN EMERGENCY ALERT

A priority Emergency Alert can be sent to a specific radio or dispatch center by pressing:

- A button preprogrammed by your dealer (see pages 8 -9).
- The footswitch
- A pushbutton accessory

Emergency Alerts have priority over all other calls.

The  symbol will appear on the display when your radio is in the Emergency Alert state.

An Emergency Alert can be programmed to:

- Show  and sound a tone
–or–
- Show  (Silent Emergency)
–or–
- Activate the microphone so that all activity can be transmitted (for a predetermined amount of time). See your dealer for more information.

To cancel the Emergency Alert, press and hold down the **Emergency** button.

RECEIVING SELECTIVE RADIO INHIBIT

Your radio is equipped with a security feature that can temporarily render the unit inoperative.

This feature is commonly used to disable radios:

- In case of theft
- When your vehicle is being serviced
- For system control reasons

Note: When your radio has been disabled, all controls will be inoperative. When the radio is powered up, the display will show:

Radio Disabled

EDITING A RADIO CALL LIST

The ID numbers in your Radio Call List are preprogrammed by your dealer. However, you can edit the names associated with these IDs using the optional keypad microphone. The  symbol will appear on the display when you are editing.

Note: Your radio cannot receive any calls while you are editing.

To edit a Call List entry:

- 1  to enter Menu Mode.
- 2  or  until **Program Lists**
- 3  to select **Program Lists**
- 4  or  until **RadioCall List**
- 5  to select **RadioCall List**
- 6  or  until **Edit Entry?**
- 7  to select **Edit Entry?**
- 8  or  until you locate the desired entry.
- 9  to select the entry.
- 10 Use your keypad to edit the entry (see page 11).
- 11  to save your changes.
You will see **Entry Saved**
- 12  to return to **Edit Entry?**
—or—
Hold down  to exit Menu Mode.

REPEATER OR TALKAROUND |→| MODE

Talkaround Mode enables you to communicate with another radio when either:

- The repeater is not operating.
—or—
- Your radio is out of the repeater's range but within communicating distance of another radio. The |→| symbol appears on the display when Talkaround Mode is selected.

To select either Repeater Mode or Talkaround Mode:

Press the preprogrammed **Repeater/Talkaround** button (see page 8) to toggle between Repeater Mode and Talkaround Mode.

—or—

1  to enter Menu Mode.

2  or  until **Rptr/Talkarnd**

3  to select **Rptr/Talkarnd**

4  or  until

or until

Repeater Mode

Talkarnd Mode

5  to confirm your selection.

SETTING THE POWER LEVEL LH

Each channel in your radio has a predefined transmit power level that can be changed.

- High power (**H**)
- Low power (**L**)

You can set the power level in two ways:

Method 1

Press the preprogrammed **Power Level** button (see page 8) to toggle between *low* and *high*.

—or—

Method 2

1  to enter Menu Mode.

2  or  until **Utilities**

3  to select **Utilities**

- 4  or  until Power Level
- 5  to select Power Level
The display shows the current power level.
- 6  or  until Power High?
or until Power Low?
- 7  to confirm the selection.

NAME AND CALL/MESSAGE TONE TAGGING

You can program your radio to sound a particular alert tone when:

- a specific user is calling—**name tone tagging**, *or*
- a message is being sent to your radio, *or*
- your radio is receiving a type of radio call—**call tone tagging**.

There are seven alert tones to select from.

To tag a specific user's name or message:

- 1  to enter Menu Mode.
- 2  or  until Audio/Tones
- 3  to select Audio/Tones
- 4  or  until Name Tone Tag
or Msg Tone Tag
- 5  to select Name Tone Tag
or Msg Tone Tag
- 6  or  until you see the name or message you want to tag.
- 7  to confirm the selection.
- 8  or  until you hear one of the seven tones you want to use for this name or message.
- 9  to confirm the selection.
You will see Name Tag Set
or Msg Tone Tag

10  to return to

Name Tone Tag

or

Msg Tone Tag

–or–

Hold down  to exit Menu Mode.

To tag a type of radio **call**:

1  to enter Menu Mode.

2  or  until

Audio/Tones

3  to select

Audio/Tones

4  or  until

Call Tone Tag

5  to select

Call Tone Tag

6  or  until you see the call type you want to tag.

7  to confirm the selection.

8  or  until you hear the tone you want to use for this type of call.

9  to confirm the selection.

You will see

Call Tone Tag

10  to return to

Call Tone Tag

–or–

Hold down  to exit Menu Mode.

Notes

SCAN

Your radio can monitor multiple channels in a scan list. Your dealer can program up to 16 different channels into each scan list. When your radio detects activity on a scan list channel, it will automatically switch to that channel.

Note: The same channels can be assigned to different scan lists.

STARTING OR STOPPING SCAN

The  symbol, and the number of the channel you are transmitting on, will appear on the display when you start a scan operation.

The green LED indicator blinks during a scan operation and stops blinking when the radio switches to a channel.

Note: If you enter Menu Mode while the radio is scanning, scanning will stop. It will resume when you exit Menu Mode.

You can start or stop a scan operation either by:

pressing the preprogrammed **Scan** button (see page 8) to start or stop scanning;

—or—

1  to enter Menu Mode.

2  or  until **System Scan**

3  to select **System Scan**

4  or  until **Sys Scan On?**

—or—

Sys Scan Off?

5  to confirm your selection.

TALKBACK

The Talkback feature allows you to respond to a transmission while scanning. If a transmission on a channel is detected while scanning, the radio will stop on that channel for a preprogrammed period of time. During this “hangtime” you may respond by pressing the **PTT**.

Note: If transmission stops/ceases or if the **PTT** is not pressed for a preprogrammed duration, the radio will continue scanning. Also, the LED scan indicator stops blinking while the radio is in hangtime.

DELETING A NUISANCE CHANNEL

If a channel continually generates unwanted calls or noise (a “nuisance” channel), use the **Scan** button to temporarily delete the channel from the scan list.

Note: You cannot delete a priority channel (see page 32) or the last remaining channel in a scan list.

- 1 While the radio is on the nuisance channel, hold down the **Scan** button until you hear a tone.
- 2 Release the **Scan** button. The nuisance channel is deleted.

Restoring a Channel to the Scan List

To restore a previously deleted channel to the scan list, restart the scan operation or turn your radio off and on again.

EDITING A SCAN LIST

A scan list is a group of up to 16 channels. Each channel can have a scan list assigned to it. The same channel can be included in several scan lists, and the same scan list can be assigned to several Channel Selector positions. For example:

	Position 2	Position 14
C	1	1
h	3	2
a	5	3
n	6	11
e		
l		
s		

When you edit a scan list, you can either add, delete, or prioritize channels. The ☐ symbol will appear on the display while you are in edit mode.

Note: Your radio cannot receive any calls while you are editing a scan list.

Adding or Deleting Channels in a Scan List

To add or delete channels in a scan list:

- 1  to enter Menu Mode.
- 2  or  until **Program Lists**
- 3  to select **Program Lists**
- 4  or  until **Scan List**
- 5  to select **Scan List**
- 6  or  until **Add Entry?**
or until **Delete Entry?**
- 7  to confirm your selection.
- 8  or  until you see the channel you want to add or delete.
Note: You cannot delete the last remaining channel in a scan list.
- 9  to confirm your selection.

- 10 If you added a channel,
you will see

Entry Saved

—or—

If you deleted a channel,
you will see

 to confirm the deletion.

You will see

- 11  to return to

or to return to

—or—

Hold down  to exit Menu Mode.

Prioritizing a Channel in a Scan List

You may want to check the activity on one or two channels more frequently than others. You can do this by assigning them priority:

Note: Even if there may be activity on a non-priority channel, your radio will automatically switch to an active priority channel and indicate the activity with a short tone.

Priority Channel	Scanning Sequence
None specified	Ch1→Ch2→Ch3→Ch4→Ch1
Channel 2 (Priority 1)	Ch2→Ch1→Ch2→Ch3→Ch2→Ch4→Ch2→...Ch1
Channel 2 (Priority 1) Channel 8 (Priority 2)	Ch2→Ch1→Ch8→Ch3→Ch2→Ch4→Ch8→...Ch1

Setting Priority Channels

Note: You cannot reprioritize a *Priority 1* channel to *Priority 2*.

- 1  to enter Menu Mode.
- 2  or  until **Program Lists**
- 3  to select **Program Lists**
- 4  or  until **Scan List**
- 5  to select **Scan List**
- 6  or  until **Edit Priority?**
- 7  to select **Edit Priority?**
- 8  or  until **Priority #1?**
or until **Priority #2?**
- 9  to select the desired priority level.
- 10  or  until you see the channel you want to prioritize.

11  to prioritize that channel.

12  to return to

Edit Priority?

—or—

Hold down  to exit Menu Mode.

Note: If you want to reprioritize all channels, you must first delete each priority channel from the scan list, and then add it back.

NOTES

NOTES

PHONE

If your radio has access to a telephone system, you can make a phone call. To do this, your radio must send an access code to a station that connects it to a phone line. (Ask your dealer for more details.) After completing a call, your radio must send a deaccess code to hang up.

MAKING A PHONE CALL ①

You can make a phone call using the preprogrammed **Phone** button (see page 8) or the radio menu. The ① symbol appears on the LCD screen when you are in Phone Mode.

To initiate a phone call:

Press the **Phone** button.

—or—

Do the following:

1 Switch to the desired channel.

2  to enter Menu Mode.

3  or  until

Phone

4  to select

Phone

5 You will hear a series of tones indicating that an access code is being sent automatically. You will also see your access code displayed;

—or—

when using the keypad microphone only, enter your access code using the keypad.

6 When you hear a dial tone, enter or select a phone number:

when using the keypad microphone only, enter the phone number using the keypad.

—or—

 or  to select a number from the phone list.

—or—

when using a keypad microphone only,

a Press and release the preprogrammed **Speed Dial** button (see page 9) to use the Speed Dial feature.

b Press the key (1 to 8) corresponding to the number you want to call,

—or—

press "0" if you want to call the last number dialed.

Note: To redial the last number dialed (if not using Speed Dial), do not choose a number. Proceed to step 7.

Alternatively, if you entered your access code using the keypad, press the  key once to access the last number dialed; then press and release the **PTT**.

7 To end a phone call, do one of the following:

If your radio has the deaccess code preprogrammed, proceed to step 8.

—or—

Enter the deaccess code using the keypad.

8 Press the **Phone** button to exit Phone Mode.

—or—

 to exit Phone Mode

and return to

Phone

—or—

Hold down  to exit Menu Mode.

MODIFYING THE PHONE LIST

You can modify a phone list in one of the following ways:

- Add an entry
- Delete an entry
- Edit an existing entry
- Edit an Access/Deaccess code

When you are modifying the phone list, the  symbol will appear on the display.

Note: Your radio cannot receive any calls while you are modifying the phone list.

Adding an Entry (when using the keypad microphone only)

To add an entry:

1  to enter Menu Mode.

2  or  until **Program Lists**

3  to select **Program Lists**

4  or  until **Phone List**

5  to select **Phone List**

- 6  or  until **Add Entry?**
- 7  to select **Add Entry?**
You will see **Enter Name**
- 8 Use the keypad to enter the name (see page 11).
- 9  to store the name.
You will see **Enter Phone #**
- 10 Use the keypad to enter the phone number. You can also add a dash (press ) and a Pause Indicator (hold down  until the # character on the display changes to a "P").
- 11  to select the phone number.
- 12  or  until you see the location in the list where you want to store the phone number.
- 13  to store the phone number.
You will see **Entry Saved**

- 14  to return to **Add Entry?**
—or—
Hold down  to exit Menu Mode.

Deleting an Entry:

To delete an entry:

- 1  to enter Menu Mode.
- 2  or  until **Program Lists**
- 3  to select **Program Lists**
- 4  or  until **Phone List**
- 5  to select **Phone List**
- 6  or  until **Delete Entry?**
- 7  to select **Delete Entry?**
- 8  or  until you see the entry you want to delete.

- 9 to select the entry.

You will see

Delete?

- again to confirm the deletion.

You will see

Entry Deleted

- 10 to return to

Delete Entry?

–or–

Hold down to exit Menu Mode.

Editing an Entry (when using the keypad microphone only)

To edit an entry:

- 1 to enter Menu Mode.

- 2 or until

Program Lists

- 3 to select

Program Lists

- 4 or until

Phone List

- 5 to select

Phone List

- 6 or until

Edit Entry?

- 7 to select

Edit Entry?

- 8 or until you see the entry you want to edit.

- 9 to select the entry.

- 10 or until
to edit the name,

Edit Name?

–or– until

to edit the phone number,

Edit Number?

–or– until

to edit the location in the phone list.

Edit Location?

- 11 to confirm your selection.

- 12 Use the keypad to edit the entry (see page 11).

–or–

or until you see the location where you want to store the phone number.

- 13 to store the information.

- 14 to return to

Edit Entry?

–or–

Hold down to exit Menu Mode.

Editing an Access/Deaccess Code (when using the keypad microphone only)

To edit an access/deaccess code:

- 1  to enter Menu Mode.
- 2  or  until **Program Lists**
- 3  to select **Program Lists**
- 4  or  until **Edit Codes?**
- 5  to select **Edit Codes?**
- 6  or  until **Access Code?**
–or– until **Deaccess Code?**
- 7  to select **Access Code?**
–or– **Deaccess Code?**
- 8 Enter the number using the keypad microphone.
- 9  to select the entry.

10  or  to edit another code.

–or–

Hold down  to exit Menu Mode.

Notes

AUDIO/TONE SETTINGS

You can customize the audio and tone feature settings on your radio.

1  to enter Menu Mode.

2  or  until **Audio/Tones**

3  to select **Audio/Tones**

4  or  until you see the feature you want to change. (Refer to the table below.)

5  to select the feature. You will see the feature's current setting.

6  or  for available settings. (Refer to the table below.)

7  to select the desired setting.

Audio/Tone Settings

Feature	What it Does	Settings
Alert Vol Lvl	Makes the volume level of the audio and alert tones independent. These two volume levels can be adjusted independently.	Ind Alert Off Ind Alert On
Tone Disable	Turns all tones on or off.	Tones On Tones Off

Audio/Tone Settings

Feature	What it Does	Settings
Name Tone Tag	Assigns a specific tone to all calls from a specific user (see page 26 for details).	Standard Alert #1 – #7
Call Tone Tag	Assigns a specific tone when receiving a specific type of radio call (see page 27 for details).	Standard Alert #1 – #7
Msg Tone Tag	Assigns a specific tone when receiving a specific message (see page 26 for details).	Standard Alert #1 – #7
Escalert	Gradually increases the volume of the alarm tones when a call is not answered.	Escalert On Escalert Off
Companding (XPand™)	Approximates the same audio quality for 12.5kHz channels to that of 25kHz channels.	Compand On Compand Off
Keypad Tones	Turns keypad tones on or off.	Tones On Tones Off

UTILITIES

You can customize some of your radio's features by:

1  to enter Menu Mode.

2  or  until **Utilities**

3  to select **Utilities**

4  or  until you see the feature you want to change (see table below).

5  to select the feature. You will see the feature's current setting.

6  or  for available settings.

7  to select the desired setting.

Utilities Features

Feature	What it Does	Settings
Power Level	Changes the power level of the radio to high, low, or auto (see page 25).	Power High Power Low
Clock	Sets the time (see page 45).	Set Time Display Clock
Reminder Alarm	Sets the alarm and turns it on or off (see page 45).	Alarm On Alarm Off Set Time

Utilities Features

Feature	What it Does	Settings
Language Selection	Allows you to select the language displayed on the display.	English Spanish Portuguese French
Option board	Activates/deactivates the option board installed in your radio.	Opt Board On Opt Board Off
Software Ver #	Displays the radio's software version number.	—

SETTING THE TIME

To set the time:

1  to enter Menu Mode.

2  or  until **Utilities**

3  to select **Utilities**

4  or  until **Clock**

–or– until **Reminder Alarm**

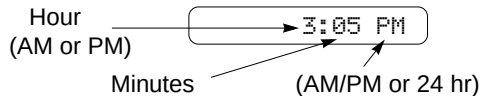
Note: You must access the clock menu to select AM/PM or “24 hr”. This selection cannot be made from Reminder Alarm menu.

5  to confirm your selection.

6  or  until **Set Time?**

7  to select **Set Time?**

8 When a setting (e.g., “hour”) is blinking, you can change it with  or .



9  to proceed to the next setting (e.g., from hour to minutes).

10  to save your changes.

11  to return to **Clock**

or to return to **Reminder Alarm**

–or–

Hold down  to exit Menu Mode.

DISPLAYING THE TIME

To display the time:

- 1  to enter Menu Mode.
- 2  or  until **Utilities**
- 3  to select **Utilities**
- 4  or  until **Clock**
- 5  to confirm your selection.
- 6  or  until **Display Clock?**
- 7  to select **Display Clock?**
The radio will display the time for a preprogrammed duration.
- 8  to exit the menu.

SELECTING THE DISPLAY LANGUAGE

To select the display language:

- 1  to enter Menu Mode.
- 2  or  until **Utilities**
- 3  to select **Utilities**
- 4  or  until **Language Select**
- 5  to confirm your selection.
- 6  or  until desired language is displayed.
- 7  to select desired language.
- 8  to exit the menu.

SAFETY AND WARRANTY

SAFE AND EFFICIENT OPERATION OF MOTOROLA TWO-WAY RADIOS

Exposure to Radio Frequency Energy

National and International Standards and Guidelines

Your Motorola Two-Way Radio, which generates and radiates radio frequency (RF) electromagnetic energy (EME), is designed to comply with the following National and International Standards and Guidelines regarding exposure of human beings to radio frequency electromagnetic energy:

- Federal Communications Commission Report and Order No. FCC 96-326 (August 1996)
- American National Standards Institute (C95.1 - 1992)
- National Council on Radiation Protection and Measurements (NCRP - 1986)
- International Commission on Non-Ionizing Radiation Protection (ICNRP - 1986)

- European Committee for Electrotechnical Standardisation (CENELEC):

ENV. 50166- 1 1995 E Human Exposure to Electromagnetic Fields Low Frequency (0Hz to 10kHz)

ENV. 50166- 2 1995 E Human Exposure to Electromagnetic Fields High Frequency (10kHz to 300GHz)

Proceedings of SC211/8 1996 Safety Considerations for Human Exposure to E.M.F.s from Mobile Telecommunications Equipment (M.T.E.) in the Frequency Range 30MHz - 6 GHz (E.M.F. - Electromagnetic Fields)

To assure optimal radio performance and that human exposure to radio frequency electromagnetic energy is within the guidelines set forth in the above standards, always adhere to the following procedures:

ELECTROMAGNETIC INTERFERENCE/COMPATIBILITY

- Note:** Nearly every electronic device is susceptible to electromagnetic interference (EMI) if inadequately shielded, designed, or otherwise configured for electromagnetic compatibility.
- To avoid electromagnetic interference and/or compatibility conflicts, turn off your radio in any facility where posted notices instruct you to do so. Hospitals or health care facilities may be using equipment that is sensitive to external RF energy.
 - When instructed to do so, turn off your radio when on board an aircraft. Any use of a radio must be in accordance with airline regulations or crew instructions.

OPERATIONAL WARNINGS



WARNING

Vehicles with an Air Bag

Do not place a radio in the area over an air bag or in the air bag deployment area. Air bags inflate with great force. If a radio is placed in the air bag deployment area and the air bag inflates, the radio may be propelled with great force and cause serious injury to occupants of the vehicle.

Potentially Explosive Atmospheres

Turn off your two-way radio when you are in any area with a potentially explosive atmosphere, unless it is a radio type especially qualified for use in such areas (for example, Factory Mutual or CENELEC approved). Sparks in a potentially explosive atmosphere can cause an explosion or fire resulting in bodily injury or even death.

Blasting Caps and Blasting Areas

To avoid possible interference with blasting operations, turn off your radio when you are near electrical blasting caps, in a blasting area, or in areas posted: “Turn off two-way radio.” Obey all signs and instructions.

Note: The areas with potentially explosive atmospheres referred to above include fueling areas such as: below decks on boats; fuel or chemical transfer or storage facilities; areas where the air contains chemicals or particles, such as grain, dust, or metal powders; and any other area where you would normally be advised to turn off a vehicle engine. Areas with potentially explosive atmospheres are often but not always posted.

Mobile Radio Operation and EME Exposure

To assure optimal radio performance and that human exposure to radio frequency electromagnetic energy is within the guidelines referenced earlier in this document, transmit only when people inside and outside the vehicle are at least the minimum distance away from a properly installed, externally mounted antenna.

Table 1 lists the minimum distance for several different ranges of radiated power.

Table 1: Radiated Power and Distance

Radiated Power of Vehicle-installed Mobile Two-way Radio	Minimum Distance From Transmitting Antenna
7 to 15 Watts	1 Foot (30.5 cm)
16 to 50 Watts	2 Feet (61 cm)
More than 50 Watts	3 Feet (91.5 cm)

Mobile Antenna Installation

Install the vehicle antenna *external* to the vehicle and in accordance with:

- The requirements of the antenna manufacturer/supplier
- Instructions in the Radio Installation Manual

CONTROL STATION OPERATION

When radio equipment is used to operate as a control station, it is important that the antenna be installed outside the building and away from places where people may be in close proximity.

Note: Refer to Table on page 49 for rated power and minimum distant values for transmitting antennas.

LIMITED WARRANTY

MOTOROLA COMMUNICATION PRODUCTS

I. WHAT THIS WARRANTY COVERS AND FOR HOW LONG:

MOTOROLA INC. ("MOTOROLA") warrants the MOTOROLA manufactured Communication Products listed below ("Product") against defects in material and workmanship under normal use and service for a period of time from the date of purchase as scheduled below:

_____ Mobile Units	Two (2) Years
Product Accessories	One (1) Year

Motorola, at its option, will at no charge either repair the Product (with new or reconditioned parts), replace it (with a new or reconditioned Product), or refund the purchase price of the Product during the warranty period provided it is returned in accordance with the terms of this warranty. Replaced parts or boards are warranted for the balance of the original applicable warranty period. All replaced parts of Product shall become the property of MOTOROLA.

This express limited warranty is extended by MOTOROLA to the original end user purchaser only and is not assignable or transferable to any other party. This is the complete warranty for the Product manufactured by MOTOROLA. MOTOROLA assumes no obligations or liability for additions or modifications to this warranty unless made in writing and signed by an officer of MOTOROLA. Unless made in a separate agreement between MOTOROLA and the original end user purchaser, MOTOROLA does not warrant the installation, maintenance or service of the Product.

MOTOROLA cannot be responsible in any way for any ancillary equipment not furnished by MOTOROLA which is attached to or used in connection with the Product, or for operation of the Product with any ancillary equipment, and all such equipment is expressly excluded from this warranty. Because each system which may use the Product is unique, MOTOROLA disclaims liability for range, coverage, or operation of the system as a whole under this warranty.

II. GENERAL PROVISIONS:

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

III. STATE LAW RIGHTS:

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

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

IV. HOW TO GET WARRANTY SERVICE:

You must provide proof of purchase (bearing the date of purchase and Product item serial number) in order to receive warranty service and, also, deliver or send the Product item, transportation and insurance prepaid, to an authorized warranty service location. Warranty service will be provided by Motorola through one of its authorized warranty service locations. If you first contact the company which sold you the Product (e.g., dealer or communication service provider), it can facilitate your obtaining warranty service. You can also call Motorola at 1-800-927-2744 US/Canada.

V. WHAT THIS WARRANTY DOES NOT COVER:

- A Defects or damage resulting from use of the Product in other than its normal and customary manner.
- B Defects or damage from misuse, accident, water, or neglect.
- C Defects or damage from improper testing, operation, maintenance, installation, alteration, modification, or adjustment.
- D Breakage or damage to antennas unless caused directly by defects in material workmanship.
- E A Product subjected to unauthorized Product modifications, disassemblies or repairs (including, without limitation, the addition to the Product of non-Motorola supplied equipment) which adversely affect performance of the Product or interfere with Motorola's normal warranty inspection and testing of the Product to verify any warranty claim.
- F Product which has had the serial number removed or made illegible.
- G Freight costs to the repair depot.

- H A Product which, due to illegal or unauthorized alteration of the software/firmware in the Product, does not function in accordance with MOTOROLA's published specifications or the FCC type acceptance labeling in effect for the Product at the time the Product was initially distributed from MOTOROLA.
- I Scratches or other cosmetic damage to Product surfaces that does not affect the operation of the Product.
- J Normal and customary wear and tear.

VI. PATENT AND SOFTWARE PROVISIONS:

MOTOROLA will defend, at its own expense, any suit brought against the end user purchaser to the extent that it is based on a claim that the Product or parts infringe a United States patent, and MOTOROLA will pay those costs and damages finally awarded against 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:

- A that MOTOROLA will be notified promptly in writing by such purchaser of any notice of such claim;
- B that MOTOROLA will have sole control of the defense of such suit and all negotiations for its settlement or compromise; and

- C should the Product or parts become, or in MOTOROLA's opinion be likely to become, the subject of a claim of infringement of a United States patent, that such purchaser will permit MOTOROLA, at its option and expense, either to procure for such purchaser the right to continue using the Product or parts or to replace or modify the same so that it becomes non-infringing or to grant such purchaser a credit for the Product or parts as depreciated and accept its return. The depreciation will be an equal amount per year over the lifetime of the Product or parts as established by MOTOROLA.

MOTOROLA will have no liability with respect to any claim of patent infringement which is based upon the combination of the Product or parts furnished hereunder with software, apparatus or devices not furnished by MOTOROLA, nor will MOTOROLA have any liability for the use of ancillary equipment or software not furnished by MOTOROLA which is attached to or used in connection with the Product. The foregoing states the entire liability of MOTOROLA with respect to infringement of patents by the Product or any parts thereof.

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

VII. GOVERNING LAW:

This Warranty is governed by the laws of the State of Illinois, USA.

ACCESSORIES

Motorola offers a number of accessories to enhance the productivity of your two-way radio. Many of the available accessories are listed below. For a complete list, see your Motorola dealer.

AUDIO

RMN4025	Compact Remote Speaker Microphone
RMN4026	Enhanced DTMF Keypad Microphone
RMN4038	Heavy Duty Microphone
RSN4001	External Speaker 13W
HSN8145	External Speaker 7.5W

MOUNTING

GLN7324	Low Profile Trunnion
RLN4780	High Profile Trunnion
HLN8097'	Removable Slide Mount
RLN4779	Key Lock Mount
RLN4774	3 Point Lowband Mount
RLN4782	DIN Mounting Kit (in dash)
RLN4802	Remote Mount Kit
RKN4077	Remote Mount Cable - 3 m
RKN4078	Remote Mount Cable - 5 m
RKN4079	Remote Mount Cable - 7 m

ANTENNAS

HAD4006	VHF 136-144 MHz, 1/4 Wave Roof Mount
HAD4007	VHF 146-150.8 MHz, 1/4 Wave Roof Mount
HAD4008	VHF 150.8-162 MHz, 1/4 Wave Roof Mount
HAD4009	VHF 162-174 MHz, 1/4 Wave Roof Mount
HAD4014	VHF 146-172 MHz, 30dB Gain Roof Mount
HAE4002	UHF 403-430 MHz, 1/4 Wave Roof Mount
HAE4003	UHF 450-470 MHz, 1/4 Wave Roof Mount
HAE4010	UHF 406-420 MHz, 3.5dB Gain Roof Mount
HAE4011	UHF 450-470 MHz, 3.5dB Gain Roof Mount
HAE4019	UHF 450-470 MHz, 5dB Gain Roof Mount
HAE4004	UHF 470-512 MHz, 1/4 Wave Roof Mount
HAE4012	UHF 470-494 MHz, 3.5dB Gain Roof Mount
HAE4013	UHF 494-512 MHz, 5dB Gain Roof Mount
HAB9405	Lowband 29.7-36 MHz
RAB4003	Lowband 36-42 MHz
RAB4004	Lowband 42-50 MHz
09-02105F01	BNC Connector

CONTROL STATION

GPN6145	Desktop Power Supply 1-25W (EMC)
HPN4002	Desktop Power Supply 1-25W
GPN6149	Desktop Power Supply 25-45W (EMC)
HPN4001	Desktop Power Supply 25-45W
RMN4030	Desktop Microphone
GLN7318	Desktop Tray without Speaker
GLN7326	Desktop Tray with Speaker

Note: A variety of interchangeable buttons are available for use in the P1-P4 locations on your radio (page 5). See your dealer for further details.

Sending a Call

1. Turn radio on and select appropriate zone and channel.
2. Press **PTT**, hold the microphone 1 to 2 inches (2.5 to 5 cm) from your mouth, and speak clearly into it.
3. Release **PTT** to listen.

Receiving a Call

1. Turn radio on and adjust volume to the desired level.
2. Select desired channel.
3. To receive incoming call, press **PTT**, hold the microphone 1 to 2 inches (2.5 to 5 cm) from your mouth, and speak clearly into it.

Deleting a Nuisance Channel During Scanning

1. While radio is on a nuisance channel, hold down preprogrammed **Scan** button until you hear a tone.
2. Release **Scan** button.

Making a Phone Call

1. Press **Phone** button, or select **Phone** from the menu.
2. If access code is not displayed, send access code if required.
3. Send phone number in one of the following ways:
 - Press and release **PTT** to send last dialed number.
—OR—
 - when using keypad microphone only, press preprogrammed **Speed Dial** button, followed by a keypad key (1–8), to access first nine numbers in your phone list. (Press **PTT** if buffered dial.)
—OR—
 - when using keypad microphone only, enter phone number using the keypad. (Press **PTT** if buffered dial.)
4. Press **PTT**, hold the microphone 1 to 2 inches (2.5 to 5 cm) from your mouth, and speak clearly into it.

Ending a Phone Call

1. Send deaccess code if required.
2. Press preprogrammed **Phone** button, or press .

Sending and Cancelling an Emergency Alert

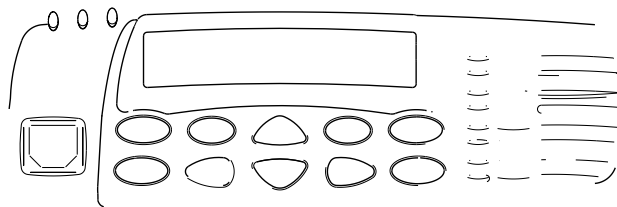
- To activate *Emergency Alert*., press preprogrammed **Emergency** button.
- To cancel, press and hold down **Emergency** button.



MOTOROLA

TM Quick Reference Card

Record the functions for your radio's programmable buttons in the table provided below. For further information, see pages 8 and 9 of this User Guide.



Menu Navigation Chart

(Refer to Menu Navigation guidelines—
lower, left-hand corner of this page)

