



ASTRO[®] XTS[™] 4000
Digital Portable Radio

User Guide

6871618L01-A

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

DECLARATION OF CONFORMITY

Per FCC CFR 47 Part 2 Section 2.1077(a)



Responsible Party

Name: Motorola, Inc.

Address: 8000 West Sunrise Boulevard

Plantation, FL 33322 USA

Phone Number: 1-888-567-7347

Hereby declares that the product:

Model Name: **XTS 4000**

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/TV technician for help.

Product Safety and RF Exposure Compliance



Caution

Before using this product, read the operating instructions for safe usage contained in the Product Safety and RF Exposure booklet enclosed with your radio.

ATTENTION!

This radio is restricted to occupational use only to satisfy FCC RF energy exposure requirements. Before using this product, read the RF energy awareness information and operating instructions in the Product Safety and RF Exposure booklet enclosed with your radio (Motorola Publication part number 68P81095C98) to ensure compliance with RF energy exposure limits.

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.

Documentation Copyrights

No duplication or distribution of this document or any portion thereof shall take place without the express written permission of Motorola. No part of this manual may be reproduced, distributed, or transmitted in any form or by any means, electronic or mechanical, for any purpose without the express written permission of Motorola.

Disclaimer

The information in this document is carefully examined, and is believed to be entirely reliable. However, no responsibility is assumed for inaccuracies. Furthermore, Motorola reserves the right to make changes to any products herein to improve readability, function, or design. Motorola does not assume any liability arising out of the applications or use of any product or circuit described herein; nor does it cover any license under its patent rights, nor the rights of others.

MOTOROLA, the Stylized M Logo and ASTRO are registered in the U.S. Patent & Trademark Office. All other product or service names are the property of their respective owners.

P25 radios contain technology patented by Digital Voice Systems, Inc.
© Motorola, Inc. 2006. All Rights Reserved. Printed in the U.S.A. 7/06.

Notes

General Radio Operation 1

Notations Used in This Manual	1
Your XTS 4000 Radio	2
Physical Features of the XTS 4000 Radio	3
Programmable Controls	3
Display	4
Keypad	10
Alert Tones	12
Standard Accessories	15
Radio On and Off	17
Set the Volume	17
Zones and Channels	18
Receive / Transmit	20

Common Radio Features 21

Transmit Power Level	21
Radio Lock	22
Ring Style	24
Audio Selection	25
Conventional Squelch Operation	26
Time-out Timer	27
Emergency	28
Lists	31
Scan	36
Telephone Calls (Trunking Only)	38
Private Calls (Trunking Only)	41
Selective Calls (ASTRO Conventional Only)	44
Call Alert Paging	46
Conventional Talkgroup Calls (Conventional Operation Only)	49
Status Calls (ASTRO 25 Trunking Only)	50
Repeater or Direct Operation	52
Smart PTT (Conventional Only)	53
Notes	54

Special Radio Features. 55

Secure Operations	55
Digital PTT ID	60
Dynamic Regrouping (Trunking Only)	61
Trunking System Controls	64

ARS User Login and Text Messaging Features 67

Automatic Registration Service (ARS)	67
ARS User Login Feature	69

Text Messaging	74
Helpful Tips	87
Radio Care	87
Service	89
Battery	90
Accessories.	93
Antennas	93
Batteries and Battery Accessories	93
Carry Accessories	93
Chargers	93
Surveillance Accessories	93
Notes	94
Appendix: Maritime Radio Use in the VHF Frequency Range.	95
Special Channel Assignments	95
Operating Frequency Requirements	96
Glossary	99
Commercial Warranty.....	105

General Radio Operation

Notations Used in This Manual

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



An operational procedure, practice, or condition, etc., which may result in injury or death if not carefully observed.

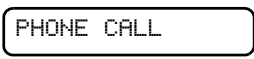


Caution

An operational procedure, practice, or condition, etc., which may result in damage to the equipment if not carefully observed.

Note: An operational procedure, practice, or condition, etc., which is essential to emphasize.

The following special notations identify certain items:

<i>Example</i>	<i>Description</i>
Secure button or 	Buttons and keys are shown in bold print or as a key symbol.
	Information appearing on the radio's display is shown using the special display font.
Phone	Menu entries are shown similar to the way they appear on the radio's display.
Press 	This means "Press the right side of the 4-way Navigation button."

Your XTS 4000 Radio



Physical Features of the XTS 4000 Radio

Table 1: Physical Features

No. Feature	No. Feature
1 Antenna	9 Internal Display
2 Home Button	10 Menu Select Buttons
3 Volume Rocker	11 Power Button
4 PTT (Push-to-Talk) Button	12 Data Button
5 External Display	13 4-Way Navigation Button
6 External Audio Speaker	14 Keypad
7 Battery	18 Audio Jack
8 Internal Audio Speaker	19 CE Connector

Programmable Controls

The following radio controls can be programmed to operate certain software-activated features.

No. Feature	No. Feature
15 Secure Button	17 Side and Keypad Buttons
16 Emergency Button	

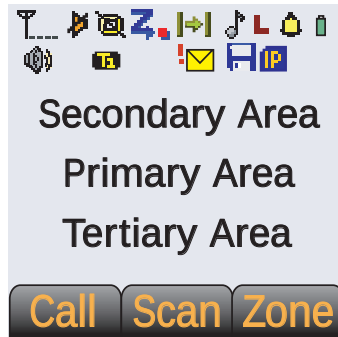
The features that can be assigned to these controls by a qualified radio technician, and the pages where these features can be found are listed in Table 2 on page 4. Check with your dealer for more information supporting the programmable buttons.

Any references in this manual to controls that are “preprogrammed” mean that a qualified radio technician must use the radio’s programming software to assign a feature to a control.

Table 2: Programmable Features

<i>Feature</i>	<i>Page</i>	<i>Feature</i>	<i>Page</i>	<i>Feature</i>	<i>Page</i>
Audio		Phone	38	Select	35
Call Alert	46	PL Defeat	26	Selective Call	44
Call Response	38	Private Call	41	Site Lock/ Unlock	65
Channel	19	Repeater/Direct	52	Site Search	66
Dynamic Priority	37	Reprogram Request	61	Status	50
Emergency	28	Ring Style	24	TX Power Level	21
Dim	5	Scan List Programming	33	Volume Set	17
Monitor	20	Scan On/Off	36	Zone	18
Nuisance Delete	36	Secure/Clear	55		

Display



The above screen is typical of what you will see on your radio. The 130 x 130 pixel liquid crystal display (LCD) shows radio status, text, and menu entries.

Adjusting the Display Brightness

Press the preprogrammed **DIM** button or access this feature through the menu to change the display brightness to one of three levels.

- Off to high
- High to medium
- Medium to off

The level of brightness will remain on for a preprogrammed time before they turn off automatically, or you can turn them off immediately by pressing the **Dim** button again.

Status Icons

The top two display rows contain icons that indicate radio operating conditions.

Table 3: Status Symbols

<i>Icon</i>	<i>Description</i>
	Call Received Flashes when an Individual Call is received.
	Received Signal Strength Indication (RSSI) The received signal strength for the current site, for trunking only. The more stripes in the symbol, the stronger the signal.
	Fuel Gauge Displays the level of charge in the battery. Blinks when battery is low.
	Ring Styles Indicates the type of ring style selected for incoming calls or pages.
	Direct • On = you are talking directly to another radio, not through a repeater, during conventional operation only • Off = you are talking through a repeater

Table 3: Status Symbols (Continued)

<i>Icon</i>	<i>Description</i>
	Loudspeaker - On = Audio is routed to the radio's external speaker - Off = Audio is routed to the radio's internal speaker
	Monitor (Carrier Squelch) The selected channel is being monitored during conventional operation only.
	In Call User Alert The radio is muted to normal dispatch calls.
	Secure Operation - On = secure operation - Off = clear operation - Blinking = receiving an encrypted voice call
	Scan The radio is scanning a scan list.
	Priority-One/Priority-Two Channel Scan Indicates scanning of a priority mode (blinking for Priority-One mode; steady for Priority-Two mode)
	Packet Data Activity Indicates the subscriber is transmitting and receiving data.
	Packet Data IP Indicates the subscriber is ready to access the FNE.
	Tx Indicates the radio is transmitting data. Will not be displayed when the radio is sending a silent emergency alarm.
	Rx Indicates the radio is receiving data. Will not be displayed when the radio is sending a silent emergency alarm.
	Tx Power Level Indicates the transmission power is LOW.

Table 3: Status Symbols (Continued)

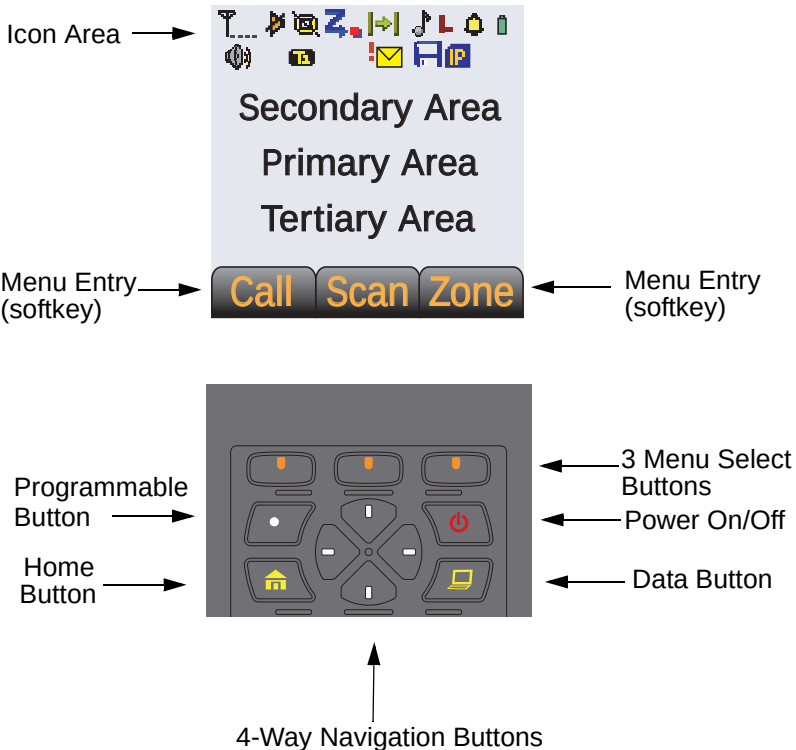
Icon	Description
	PPP Link Establishment Indicates the subscriber is ready to receive data through a data cable.
	Vote Scan Indicates the mode is in a voting scan system.
	Priority Message Indicates the radio has received a priority message. Icon is displayed together with the Inbox Full or New Message icon.
	Inbox Full Indicates the radio has received a new message and the inbox is full.
	New Message Indicates the radio has received a new message.

Menu Entry (Softkey)

The bottom row of the display contains one to three menu entries (also known as softkeys). The menu entries allow you to select one of several menus to access the radio's features. The menu entries are accessed through the **Menu Select** buttons.

Menu Select Buttons

The **Menu Select** buttons access the menu entries of features that have been activated by a qualified radio technician. Your radio may be programmed differently from the following example, but the display for turning Scan on or off might look like the example below. For instance, to turn Scan on, press  directly below Scan.



■ Menu Entry Features

Table 4: Menu Entries

<i>Feature</i>	<i>Menu Entry</i>	<i>Page</i>	<i>Feature</i>	<i>Menu Entry</i>	<i>Page</i>
Private Call / Selective Call	Call	42/44	Password	Pswd	22
Channel Selection	Chan	19	TX Power Level	Pwr	21
Repeater/Direct	Dir	52	Rekey Request	Reky	59
Key Zeroization	Eras	58	Reprogram Request	Rpgm	61
Key Selection	Key	56	Scan On/Off	Scan	36
Keyset Selection	Kset	57	Site Lock/Unlock	Site	65
Radio Lock	Logf	23	Loudspeaker	Spkr	25
Text Select	Name	33	Status Call	Sts	50
Number Select	Num	32	Ring Style	Styl	24
Call Alert Page	Page	47	Talkgroup Call	TGrp	49
Phone	Phon	39	View a List	View	31
Editing	Prog	32	Zone Selection	Zone	18

■ Home Button

The **Home** button,  always returns you to the home (default) display. In most cases, this is the current mode.

Some radio features that you can edit require saving information in memory. Pressing the **Home** button after editing those features causes information to be saved before going to the home display.

Some features do not require you to press the **Home** button to go to the home display. This reduces the required number of key presses.

■ ON/OFF Button

This button is used to power up or power down the radio.

■ Data Button

A CPS programmable button that can be programmed to launch specific data features such as text messaging and location service.

■ Programmable Buttons

The programmable buttons can be programmed for features as specified in the CPS. These buttons provide you convenient access to commonly used radio features.

■ 4-Way Navigation Button

This button is used to scroll through the radio's lists or items in the display, or both. It is also used to move the cursor while you are in data entry screen type.

Keypad



The 3 x 4-key alphanumeric keypad provides an interface to your radio's features.

The keypad functions in a manner similar to a standard telephone keypad when entering numeric digits.

When the keypad is used to edit a list, each key can generate different characters of the alphabet. Refer to Table 5, below, for a complete list of characters.

Table 5: Keypad Characters

Key	Number of times the key is pressed								
	1	2	3	4	5	6	7	8	9
0	0	(	)	<	>				
1	1	&	%						
2 abc	A	B	C	2	a	b	c		
3 def	D	E	F	3	d	e	f		

Table 5: Keypad Characters (Continued)

Key	<i>Number of times the key is pressed</i>								
	1	2	3	4	5	6	7	8	9
4 ghi	G	H	I	4	g	h	i		
5 jkl	J	K	L	5	j	k	l		
6 mno	M	N	O	6	m	n	o		
7 pqrs	P	Q	R	S	7	p	q	r	s
8 tuv	T	U	V	8	t	u	v		
9 wx yz	W	X	Y	Z	9	w	x	y	z
*	*	/	+	-	=				
#	#	.	!	?	,	;			

Alert Tones

An alert tone is a sound or group of sounds. Your radio uses alert tones to inform you of your radio's conditions. The following table lists these tones and when they occur.

Table 6: Alert Tones

<i>You Hear</i>	<i>Tone Name</i>	<i>Heard</i>
Short, Low-Pitched Tone	Invalid Key-Press	when wrong key is pressed
	Radio Self-Test Fail	when radio fails its power-up self test
	Reject	when unauthorized request is made
	Time-Out Timer Warning	four seconds before time out
Long, Low-Pitched Tone	No ACK Received	when radio fails to receive an acknowledgment
	Time-Out Timer Timed Out	after time out
	Talk Prohibit/ PTT Inhibit	(when PTT button is pressed) transmissions are not allowed
	Out-of-Range	(when PTT button is pressed) the radio is out of range of the system
	Invalid Mode	when radio is on an unprogrammed channel
	Individual Call Warning Tone	when radio is in an individual call for greater than 6 seconds without any activity
A Group of Low-Pitched Tones	Busy	when system is busy

Table 6: Alert Tones (Continued)

You Hear	Tone Name	Heard
Short, Medium-Pitched Tone	Valid Key-Press	when correct key is pressed
	Radio Self-Test Pass	when radio passes its power-up self test
	Clear Voice	at beginning of a non-coded communication
	Priority Channel Received	when activity on a priority channel is received
	Emergency Alarm Entry	when entering the emergency state
	Central Echo	when central controller has received a request from a radio
Long, Medium-Pitched Tone	Volume Set	when volume is changed on a quiet channel
	Emergency Exit	when exiting the emergency state
A Group of Medium-Pitched Tones	Failsoft	when the trunking system fails
	Automatic Call Back	when voice channel is available from previous request
	Talk Permit	(when PTT button is pressed) verifying system accepting transmissions
	Keyfail	when encryption key has been lost
	Console Acknowledge	when status, emergency alarm, or reprogram request ACK is received
	Received Individual Call	when Call Alert or Private Call is received
	Call Alert Sent	when Call Alert is received by the target radio
Short, High-Pitched Tone (Chirp)	Low-Battery Chirp	when battery is below preset threshold value

Table 6: Alert Tones (Continued)

<i>You Hear</i>	<i>Tone Name</i>	<i>Heard</i>
Short, Medium- Pitched Tone (Chirp)	GPS RSM Low Battery Chirp	when this accessory battery is below preset threshold value
Ringing	Fast Ringing	when system is searching for target of Private Call
	Enhanced Call Sent	when waiting for target of Private Call to answer the call
	Phone Call Received	when a land-to-mobile phone call is received
Gurgle	Dynamic Regrouping	(when the PTT button is pressed) a dynamic ID has been received

Standard Accessories

■ Battery



To avoid a possible explosion:

- **DO NOT** replace the battery in any area labeled “hazardous atmosphere”.
- **DO NOT** discard batteries in a fire.

Charging the Battery

The Motorola-approved battery shipped with your radio is uncharged. Prior to using a new battery, charge it for a minimum of 16 hours to ensure optimum capacity and performance.

For a list of Motorola-authorized batteries available for use with your XTS 4000 radio, see “Batteries and Battery Accessories” on page 93.

Note: *When charging a battery attached to a radio, turn the radio off to ensure a full charge.*

Battery Charger

To charge the battery, place the battery, with or without the radio, in a Motorola-approved charger. The charger’s LED indicates the charging progress; see your charger’s user guide. For a list of chargers, see “Chargers” on page 93.

■ Antenna

For information regarding available antennas, see page 93.

Attach the Battery

- 1 With the radio turned off, insert the bottom edge of the battery into the radio's frame.
- 2 Rotate the battery toward the radio and press down until the battery clicks into place.

Remove the Battery

- 1 With the radio turned off, press the release button on the top of the battery until the battery releases from the radio.
- 2 Remove the battery from the radio.

Note: *If your radio is programmed with volatile-key retention, encryption keys will be retained for approximately 30 seconds after battery removal. Consult a qualified radio technician for details.*

Radio On and Off

■ Turn the Radio On

Do the following:

- Turn the radio on with a short press of the power button at the top of keypad.

After a short time, the display lights up, indicating that the radio is powering up.

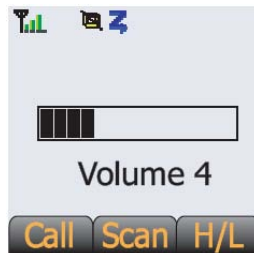
When the radio is fully powered on, the Zone and Channel text and menu items are displayed.

The radio then performs a self check.

Note: *If Fail ##/## appears in the display, the radio will not function until the condition has been corrected.*

If Error ##/## appears, some non-critical data has been changed. If either of these displays appear, if the display goes blank, or if the unit appears to be locked up, refer to the "Troubleshooting" section.

Set the Volume



Press the volume rocker to increase or decrease the volume.

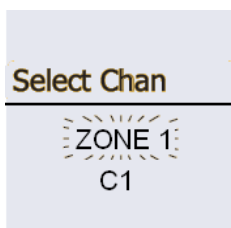
Zones and Channels

A zone is a grouping of channels. A channel is a group of radio characteristics, such as transmit/receive frequency pairs.

Before you use your radio to receive or send messages, you should select the zone and channel.

■ Select a Zone

Use the Menu



- 1 Press  to find Zone.
- 2 Press  directly below Zone.

The current zone (in this case, ZONE 1) flashes and the channel name (C1), does not flash.

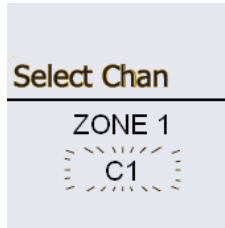
- 3 Press  to find the zone you want.
- 4 Press  to confirm the displayed zone and channel.

OR

Press the **PTT** button to transmit on the displayed zone/channel.

■ Select a Channel

Use the Menu



- 1 Press  to find Chan.
- 2 Press  directly below Chan.

The display shows the current channel name (in this case, C1) blinking and the zone (ZONE 1), not blinking.

- 3 Press  to find the channel name you want.

OR

Use the keypad to enter the channel number.

Note: If the channel you selected is unprogrammed, repeat step 3.

- 4 Press  to confirm the displayed zone and channel.

OR

Press the **PTT** button to transmit on the displayed zone/channel.

Receive / Transmit

Radio users who switch from analog to digital radios often assume that the lack of static on a digital channel is an indication that the radio is not working properly. This is not the case. Digital technology quiets the transmission by removing the “noise” from the signal and allowing only the clear voice or data information to be heard.

This section emphasizes the importance of knowing how to monitor a channel for traffic before keying up to send a transmission.

■ Without Using the Monitor Buttons

- 1 Turn the radio on and select the desired zone and channel.
- 2 Listen for a transmission.
- 3 Adjust the **Volume Rocker** if necessary.
- 4 Press and hold the **PTT** button to transmit. Tx icon appears on the display.
- 5 Release the **PTT** button to receive (listen).

■ Use the Preprogrammed Monitor Button

- 1 Turn the radio on and select the desired zone and channel.
- 2 Press the **Monitor** button and listen for activity. The Carrier Squelch indicator is displayed. (See the following **Conventional Mode Operation**.)
- 3 Adjust the **Volume Rocker** if necessary.
- 4 Press and hold the **PTT** button to transmit. Tx icon appears on the display.
- 5 Release the **PTT** button to receive (listen).

Common Radio Features

Transmit Power Level

This feature lets you select the power level at which your radio will transmit. The radio will always turn on to the default setting. This feature must be preprogrammed by a qualified radio technician.

- Select **Low** for a shorter transmitting distance and to conserve power.
- Select **High** for a longer transmitting distance.

■ Select Power Level

- 1 Press  to find **Pwr.**
- 2 Press  directly below **Pwr.** to toggle between **Low** and **High**.

Note: To exit without changing the setting, press  or the **PTT** button.

Radio Lock

This feature changes your radio to a more robust security system that protects the use of the secure encryption keys. If this feature is enabled in your radio by a qualified radio technician, when you turn the radio on, you see **Radio locked**.

■ Unlock Your Radio

- 1 Enter your numeric password.

Note:

- *Secure-equipped radios — 6 to 8 characters.*
- *Clear radios — 0 to 8 characters.*

If you make a mistake, press  to backspace.

- 2 Press the preprogrammed **Select** button after you enter your password. If the password is *correct*, the radio unlocks.

Note:

- *If the password is incorrect, the radio remains locked.*
- *If you enter three incorrect passwords in a row, you see **Deadlock**. Turn the radio off and then on, and begin again at step 1.*
- *Secure Radios Only — If you enter a total of 17 consecutive incorrect passwords (turning the radio off and on does not reset this number), the radio erases all of its encryption keys and shows “Deadlock.” See a qualified radio technician.*

■ Change Your Password

- 1 Press  to find **Pswd**.
- 2 Press  directly below **Pswd**.
- 3 Enter the old password.
- 4 Press  directly below **Sel**.

- 5 Enter the new password.
- 6 Press  directly below Sel.
- 7 Re-enter the new password.
- 8 Press  directly below Sel. The password is updated.

Note:

- *If the two passwords do not match, repeat steps 5 through 8.*
- *If you enter three incorrect old passwords, the radio exits the password feature. You cannot access this feature again until you turn the radio off and on.*

■ Enable or Disable the Radio Lock Feature (Secure Radios Only)

This feature (programmable by a qualified radio technician) allows you to enable or disable the radio lock feature.

- 1 Press  to find Logf.
- 2 Press  directly below Logf to toggle between “Pswd enabled” and “Pswd disabled”.

Ring Style

This feature allows you to select the type of alert when your radio receives incoming individual calls or pages.

<i>Ring Style</i>	<i>Icon</i>	<i>Description</i>
Vibrate and Ring		Radio vibrates and rings when incoming individual calls or pages are received.
Vibrate Only		Radio vibrates when incoming calls or pages are received.
Ring Only		Radio rings when incoming calls or pages are received.
Silent		Radio is in silent mode.

■ Select Ring Style

- 1 Press  to find Styl.
- 2 Press  directly below Styl.
- 3 Press  or  to select the ring style.

Note: The default factory setting is Vibrate and Ring.

- 4 Press  directly below Save.
- 5 Press  directly below Cncl to return to home display.

Audio Selection

This feature allows you to turn on the radio's external loudspeaker.

■ Change to External Loudspeaker

- 1 Press  to find **Aud**
- 2 Press  directly below **Aud** to switch on the external loudspeaker. The loudspeaker icon, , is shown on the display.

Note: *When the earpiece or headset is plugged into the radio's audio jack, the external loudspeaker will not work and the icon is not shown on the display.*

- 3 Press  directly below **Aud** again to route audio back to the internal speaker.

Conventional Squelch Operation

■ Digital Options

One or more of the following options may be programmed in your radio. Consult your service technician for more information.

<i>This option</i>	<i>Will allow you to hear</i>
Digital Carrier-Operated Squelch (COS)	any digital traffic.
Normal Squelch	any digital traffic having the correct network access code.
Selective Switch	any digital traffic having the correct network access code and correct talkgroup.

Time-out Timer

The time-out timer turns off your radio's transmitter. The timer is set for 60 seconds at the factory, but it can be programmed from 0 to 7.75 minutes (465 seconds) by a qualified radio technician.

- 1** Hold down the **PTT** button longer than the programmed time. You will hear a short, low-pitched warning tone, the transmission will cut-off.
- 2** Release the **PTT** button.
- 3** Press the **PTT** to re-transmit. The time-out timer restarts.

Emergency

If the top (orange) button is programmed to send an emergency signal, then this signal overrides any other communication over the selected channel.

Your radio can be programmed for the following:

- Emergency Alarm
- Emergency Call
- Emergency Alarm with Emergency Call
- Silent Emergency Alarm

Consult a qualified radio technician for emergency programming of your radio.

■ Send an Emergency Alarm

An emergency alarm will send a data transmission to the dispatcher, identifying the radio sending the emergency.

- 1 With your radio turned on, press the **Emergency** button. The current zone/channel is displayed alternately with **Emergency**, and a short, medium-pitched tone sounds.

If the selected channel does not support emergency, the display shows **No Emergency**. Select a channel that does show **Emergency**.

Note: *To exit emergency at any time, press and hold the **Emergency** button for about a second.*

- 2 When you receive the dispatcher's acknowledgment, you see **ACK Received**, four tones sound, the alarm ends, and the radio exits the emergency mode.

If no acknowledgement is received, you see **No Acknowledge**, the alarm ends, and the radio exits the emergency mode.

Note: ***For Emergency Alarm with Emergency Call:** The radio enters the Emergency Call state either after it receives the dispatcher's acknowledgment, or if you press the **PTT** button while in Emergency Alarm. Go to step 2 of "Send an Emergency Call", below.*

■ Send an Emergency Call

This type of dispatch gives your radio priority access on a channel.

The radio operates in the normal dispatch manner while in Emergency Call, except, if enabled, it will return to one of the following:

- Tactical/Non-Revert — You talk on the channel you selected before you entered the emergency state.
 - Non-Tactical/Revert — You talk on a preprogrammed emergency channel. The emergency alarm is sent on this same channel.
1. With your radio turned on, press the **Emergency** button. The current channel is displayed alternately with **Emergency**, and a short, medium-pitched tone sounds.

Note: *To exit emergency at any time, press and hold the **Emergency** button for about a second.*

- 2 Press and hold the **PTT** button and announce your emergency into the microphone.
- 3 Release the **PTT** button to end the transmission and wait for a response from the dispatcher.
- 4 Press and hold the **Emergency** button for about a second to exit emergency.

■ Send a Silent Emergency Alarm

- 1 With your radio turned on, press the **Emergency** button. The display does not change, the LED does not light, and you hear no tones.

Note: *To exit emergency at any time, press and hold the **Emergency** button for about a second.*

- 2 The silent emergency state continues until you:

Press and hold the

Emergency button for about a second to exit the emergency state.

OR

Press and release the **PTT** button to exit silent emergency and enter regular dispatch or emergency call.

Note: For ALL Emergency signals, when changing channels:

- If the new channel is also programmed for Emergency, you can change channels while in Emergency operation. The emergency alarm or call continues on the new channel.
- If the new channel is NOT programmed for Emergency, you see NO EMERGENCY, and hear an invalid tone until you exit the Emergency state or change to a channel programmed for emergency.

■ Emergency Keep-Alive

If the radio is in the Emergency state, with Emergency Keep-Alive enabled, you cannot turn off the radio by using the **On/Off Control** button.

With Keep-Alive, the radio will only exit the Emergency state using one of the ways mentioned in the previous sections (Emergency Alarm, Silent Emergency Alarm, or Emergency Call).

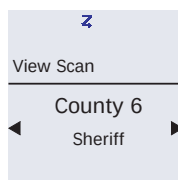
Lists

You can use lists to store frequently used numbers and associate them with names. There are four list types:

- Call
- Page
- Phone
- Scan

■ View a List

- 1 Press  to find View.
- 2 Press  directly below View.
- 3 Press  or  to see the names of available lists.
- 4 Press  directly below the name of the list you wish to view.



- 5 Press  or  to view other list members.
- 6 Press  to exit.

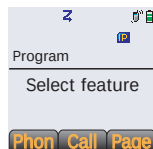
■ Scan List Empty

If you wish to view a scan list and the list has no entries, you see Empty List.

To end this display, turn scan off or edit the list.

■ Edit a Call, Page, or Phone List Number

- 1 Press  to find Prog.
- 2 Press  directly below Prog. You see the lists that can be changed.
- 3 Press  directly below the name of the list you wish to change. You see the first list member.



- 4 Press  or  to select the list member to be changed.

OR

You can use the keypad to enter the corresponding location number of the name in the list.

- 5 Press  directly below Num. The blinking cursor shows the location of the number to be added.

- 6 Press  to erase digits. (If you erase the entire number and then press  or , you exit editing without saving your changes.) Press a keypad button to add a digit (see “Keypad” on page 10).



- 7 Press  directly below Save to save your change. Return to step 4 to make more changes.

OR

Press  to return to the home display.

■ Edit a Call, Page, or Phone List Name

- 1 Press  to find Prog.
- 2 Press  directly below Prog. You see the lists that can be changed.
- 3 Press  directly below the name of the list you wish to change. You see the first list member.
- 4 Press  or  to select the list member to be changed.

OR

You can use the keypad to enter the corresponding location number of the name in the list.

- 5 Press  directly below Name. The blinking cursor shows the location of the character to be added.
- 6 Press  to erase characters. (If you erase the entire name and press  or , you exit editing without saving your changes.) Press a keypad button to add a character (see "Keypad" on page 10).
- 7 Press  directly below Save to save your change. Return to step 4 to make more changes.

OR

Press  to return to the home display.

■ Edit a Scan List

This feature lets you change scan list members and priorities.

- 1 Press  to find Prog.
- 2 Press  directly below Prog. You see the lists that can be changed.
- 3 Press  to find Scan.

4 Press  directly below Scan. You see the first list member.

5 Press  or  to find the member you want to change.

6 Press  directly below Sel or Del or Rcl.

Sel = add and/or change the priority of the currently displayed channel in the scan list.

Del = delete the currently displayed channel from the scan list.

Rcl = view the next member of the scan list.

Note: *The maximum number of members for a trunking priority monitor scan list is 15; for a conventional scan list, 15; and for a talkgroup scan list, 10.*

7 To change the priority of the currently displayed channel, press  below Sel additional times to see  or  or no icon.

 = this channel is in the scan list as a non-priority channel.

 = this channel is in the scan list as the *priority 2* channel. If dot flashing, this channel is in the scan list as the *priority 1* channel. You will hear all traffic on the priority 1 channel, regardless of traffic on non-priority channels.

no icon = this channel is deleted from the scan list.

Note: *You cannot delete a priority channel from a scan list. In a talkgroup scan list, priority cannot be assigned.*

8 Press  or  to select more channels to be added or deleted.

OR

Use the keypad to go directly to additional channels to be added or deleted.

9 Press  to exit scan list programming and return to the home display.

■ Use the Menu and the Preprogrammed Select (Top Side) Button

- 1 Press  to find Prog.
- 2 Press  directly below Prog. You see the lists that can be changed.
- 3 Press  to find Scan.
- 4 Press  directly below Scan. You see the first list member.
- 5 Press  or  to find the member you want to change.
- 6 Press the **Select** button once to add the currently displayed channel to the scan list.

AND/OR

Press the **Select** button one or more times to change the scan list status symbol of the currently displayed channel.

Note: *The maximum number of members for a trunking priority monitor scan list is 15; for a conventional scan list, 15; and for a talkgroup scan list, 10.*

 = this channel is in the scan list as a non-priority channel.

 = this channel is in the scan list as the *priority 2* channel. If dot is flashing, this channel is in the scan list as the *priority 1* channel. You will hear all traffic on the priority 1 channel, regardless of traffic on non-priority channels.

no icon = this channel is deleted from the scan list.

Note: *You cannot delete a priority channel from a scan list. In a talkgroup scan list, priority cannot be assigned.*

- 7 Press  or  to select more scan list members whose scan status you want to change.

OR

Use the keypad to go directly to that scan list member.

- 8 Press  to exit scan list programming and return to the home display.

Scan

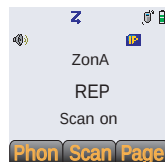
The scan feature allows you to monitor traffic on different channels by scanning a preprogrammed list of channels. Your radio can have up to 64 different scan lists. These lists must be preprogrammed by a qualified radio technician.

- To view your radio's scan lists, see “View a List” on page 31.
- To change your radio's scan lists, see “Edit a Scan List” on page 33.

■ Turn Scan On or Off

- 1 Press  to find Scan.
- 2 Press  directly below Scan to turn scan on.

The scan status symbol is displayed when scan is turned on.



- 3 Repeat step 2 to turn off Scan.

■ Delete a Nuisance Channel

When the radio scans to a channel that you do not wish to hear (nuisance channel), you can temporarily delete the channel from the scan list.

- 1 When the radio is locked onto the channel to be deleted, press the preprogrammed **Nuisance Delete** button.

Repeat this step to delete more channels.

Note: *You cannot delete priority channels or the designated transmit channel.*

- 2 The radio continues scanning the remaining channels in the list. To resume scanning the deleted channel, change channels or turn scan off and then back on again.

Conventional Scan Only

■ Make a Dynamic Priority Change

While the radio is scanning, the dynamic priority change feature lets you *temporarily* change any channel in a scan list (except the priority-one channel) to the priority-two channel. The replaced priority-two channel becomes a non-priority channel. This change remains in effect until scan is turned off, then scanning reverts back to the preprogrammed state.

- 1 When the radio is locked onto the channel to be designated as priority-two, press the preprogrammed **Dynamic Priority** button.

Note: The priority-one channel cannot be changed to priority-two.

- 2 The radio continues scanning the remaining channels in the list. To resume scanning the preprogrammed priority-two channel, you must leave and re-enter scan operation.

Telephone Calls (Trunking Only)

Use your radio to make calls similar to standard phone calls. A landline phone can be used to call a radio, or a radio can be used to call a landline phone.

■ Quick Access (One-Touch)

If your radio is preprogrammed for Quick Access (One-Touch) Phone Call, you can make a call to *one* preprogrammed phone number without having to select the feature or a phone number.

- 1 Press the **Quick Access Phone** button to dial the phone number.
- 2 If your call is answered, press the **PTT** button to talk; release the **PTT** to listen.

OR

If your call is not answered, go to “Phone Call Display and Alert Prompts” on page 40.

- 3 When your call is completed, press  to hang up. The radio returns to the home display.

■ Answer a Phone Call

Use the preprogrammed **Call Response** button to answer a call.

- 1 When a phone call is received, you hear a telephone-type ringing, the call received symbol () flashes, and Phone Call is displayed.
- 2 Press the **Call Response** button within 20 seconds after the call indicators begin.
- 3 Press and hold the **PTT** button to talk; release it to listen.
- 4 Press  to hang up and return to the home display.

■ Initiate a Phone Call

- 1 Press  to find Phon.
- 2 Press  directly below Phon. You see the last transmitted phone number.
- 3 Go to “Select a Phone Number” on page 39.

OR

Go to “Make a Phone Call” on page 39.

■ Select a Phone Number

Use the Menu

- 1 Press  to find the phone number you want.

Note: Press LNum to go to the last number dialed.

- 2 Go to “Make a Phone Call”, below.

Use the Keypad

- 1 Use the keypad to enter the phone number you want..
- 2 Go to “Make a Phone Call”, below.

■ Make a Phone Call

- 1 Press and release the **PTT** button to dial the phone number.
- 2 If your call is answered, press the **PTT** button to talk; release the **PTT** to listen.

OR

If your call is not answered, go to “Phone Call Display and Alert Prompts” on page 40.

- 3 When your call is completed, press  to hang up. The radio returns to the home display.

Table 7: Phone Call Display and Alert Prompts

When you press the PTT button and the phone system is not available, you hear a long tone. Press  to hang up. The radio returns to the home display.
When a channel is not available, you hear a busy tone. The radio automatically connects when a channel opens.
When the phone system is busy, you hear a long tone. Press  to exit the phone mode and try your call later.
The call is not acknowledged. Press  to hang up. The radio returns to the home display.
Notes: • <i>A high-pitched tone, generated when you release the PTT button, indicates to the landline party that he or she may begin talking.</i> • <i>You have the option of sending additional digits (overdial), such as an extension number, or credit card or PIN numbers, to the phone system. If the radio is programmed for live overdial, every digit entered after the call is connected is sent to the phone system.</i> • <i>If the radio is programmed for buffered overdial, the digits pressed are entered into memory and then sent when the PTT button is pressed. Press the PTT to send either digits or voice, but not both at the same time.</i>

Private Calls (Trunking Only)

These one-to-one calls between two radios are not heard by others in the current talkgroup. The calling radio automatically verifies that the receiving radio is active on the system and can display the caller's ID.

■ Quick Access (One-Touch)

If your radio is preprogrammed for Quick Access (One-Touch) Private Call, you can make a call to *one* preprogrammed ID number without having to select the feature or an ID number.

- 1 Press the **Quick Access Private Call** button to start the Private Call.

The called ID is momentarily displayed, then you see `Please Wait.`

- 2 When you are connected, you see the called ID. Press and hold the **PTT** button to talk; release the **PTT** to listen.

OR

If no acknowledgment is received, you see `No Acknowledge.`

OR

If the target radio does not respond before the time out, you see `No Answer.`

- 3 Press  to hang up and return to the home display.

■ Answer a Private Call

Use the preprogrammed **Call Response** button to answer a call.

- 1 When a Private Call is received, you hear two alert tones, the call received symbol () flashes, and **Call Received** is displayed.

- 2 Press the **Call Response** button within 20 seconds.

If the caller's name is in the call list, it will be displayed during the call.

OR

If the caller's name is not in the call list, the caller's ID number is displayed.

- 3 Press and hold the **PTT** button to talk; release it to listen.
- 4 Press  or the **Call Response** button to hang up and return to the home display.

■ Initiate a Private Call

- 1 Press  to find **Call**.
- 2 Press  directly below **Call**. You see the last transmitted or received ID number.
- 3 Go to "Select an ID Number", on the next page.

OR

Go to "Make a Private Call" on page 43.

■ Select an ID Number

Use the Menu

- 1 Press  to find the ID number you want.

Note: Press **LNum** to go to the last number dialed.

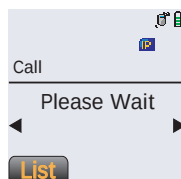
- 2 Go to “Make a Private Call” on page 43.

Use the Keypad

- 1 Use the keypad to enter the ID number you want.
- 2 Go to “Make a Private Call” on page 43.

■ Make a Private Call

- 1 Press the **PTT** button to start the Private Call. The called ID is momentarily displayed, then you see **Please Wait**.



- 2 When you are connected, you see the called ID. Press and hold the **PTT** button to talk; release the **PTT** to listen.

OR

If no acknowledgment is received, you see **No Acknowledge**.

OR

If the target radio does not respond before the time out, you see **No Answer**.

- 3 When your call is completed, press  to hang up. The radio returns to the home display.