1 | GTX Portable Radio

Contents

Introduction

Getting Started

Basic Radio Operation

Scan Operation

Trunked Telephone Operation

Trunked Private Conversation™ Call Operation (800 MHz Only)

Contents (cont.)

3 | Introduction

Basic Radio Features

Welcome to the Motorola GTX portable radio. GTX Portable radios are sophisticated, state-of-the-art communication units, with 90-modes available in the 800 MHz and 900 MHz frequency ranges. Pioneering the latest technology in radio electronics, Motorola GTX Portable radios provide features that were once only available in more expensive radios. Intelligent and flexible software increases the radio's capability, decreases the radio's physical size, and permits many of the radio's features to be customized for you.

Inspection and Unpacking

Inspect the shipping carton for any signs of damage. Remove and check the contents to be sure that all ordered items have been shipped. Inspect all items thoroughly. If any items have been damaged during transit, report the damage to the shipping company immediately.

Radio Packing Box Contents

- Radio
- Antenna
- Nickel-Cadmium Battery
- User's Guide
- Quick Start (Part of User's Manual)

Warnings, Cautions, and Notes

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 care must be taken or observed.

WARNING: 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.
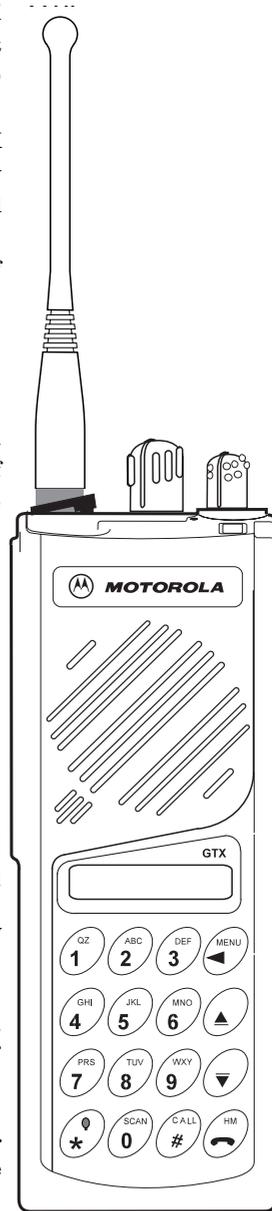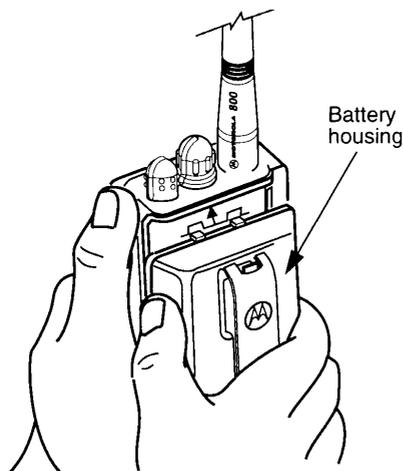
Battery Installation

1. Hold the radio with its back facing you (knobs turned upwards).

2. Hold the battery with its name plate facing you.

3. Insert the projected upper end of the battery into the cut openings located at the lower end of the radio, and slide the battery to the top of the radio until the battery clicks into place.

Note:

The battery is shipped uncharged. Batteries must be charged before use **(See Battery Information section)**.

Battery housing
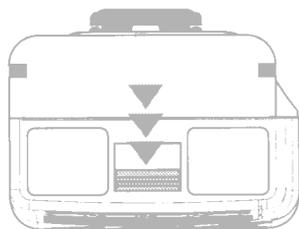
Battery Removal

1. Turn off the radio and hold it so that the battery side of the radio is tilted down.

2. Press the battery release lever.

3. With the release lever pressed, gently slide out the battery.

Getting Started (cont.)

Controls, Switches, Indicators, and Connectors

1. **Radio ON/OFF and Volume Control Knob**
2. **Rotary Mode Selector Knob**
3. **Push-To-Talk (PTT) Switch**
4. **Monitor**
5. **Select Button**
6. **Accessory Connector Cover**
7. **Accessory Connector**
8. **Keypad**
9. **Display**
10. **Indicator LED**
11. **Antenna Connector**
12. **Microphone**
13. **Speaker**

Keypad

Menu and Backspace Button

System Up/Scroll Up

System Down/Scroll Down

Backlight and
Asterisk Button

Home and Phone Button

Scan and Zero
Button

Private Call (PC) and Call Alert (CA) Button
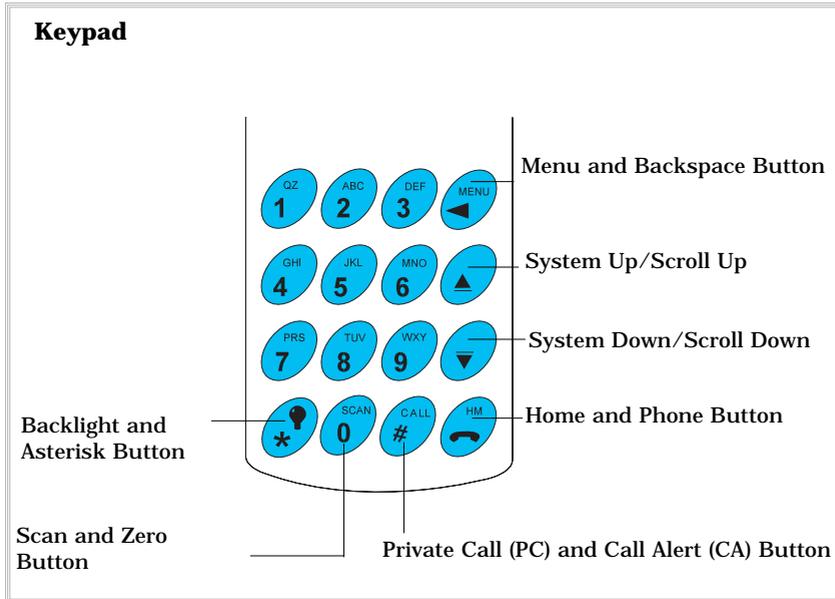
Display

The GTX radio has a one-line liquid-crystal display **(LCD)** which displays either numeric messages or feature information. Seven status annunciators located above the character display, indicate some of the radio's operating conditions.

$$SLF\ tSt$$

Status Indicators and LEDs

The status annunciators indicate the status of certain radio functions:
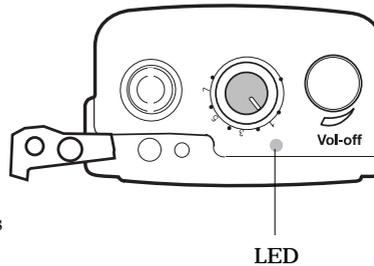
- LEDs

  RED when the radio is transmitting   LED

  Green when radio is receiving

  OFF when radio is not transmitting.

- **Status Indicators**

  Battery Status (▬ ▪) – Solid when the battery is low.

  Carrier Squelch (♭ – Indicates when the active conventional mode is being monitored; ON = BEING MONITORED/ OFF = NOT BEING MONITORED.

  Scan (↗) –   Indicates when the radio is scanning.

  Programming Mode (▢) – Indicates when the radio is in the programming mode; ON = IN PROGRAMMING MODE/OFF = NOT IN PROGRAMMING MODE.

  Direct (↦) – Indicates whether you are talking directly to another radio (talkaround), or through a repeater in Conventional mode; ON = DIRECT/OFF = REPEATER.

  (⊘)   – Not in use.

  (LO)   – Not in use.

Alert Tone Indications

The GTX radio generates a number of audible tones to indicate radio operating conditions:

- **Low Battery** – A low-battery condition is indicated by a high-pitched, cricket-like "chirp-chirp". There are two low battery conditions. The low battery alert will be heard if the battery voltage falls below the low voltage level. The tone will be emitted when the PTT is released in the transmit mode, and when the low battery condition is detected in the receive mode.

- **Successful Power-Up** – When the radio is first turned on, a short high-pitched tone indicates that the radio has passed its power-up self test and is ready for use.

- **Unsuccessful Power-Up** – When the radio is first turned on, a short low-pitched tone indicates that the radio has failed to pass its power-up self test and is not ready for use. Contact your nearest Motorola Service Shop.

- **Invalid Mode** – A continuous, low-pitched tone is heard when an invalid or unprogrammed operation is performed on the radio.

- **Valid (Good) Key Press** – A short, medium-pitched tone when a key is pressed indicates that the key instruction has been accepted.

- **Invalid (Bad) Key Press** – A short, low-pitched tone when a key is pressed indicates that the key instruction has been rejected.

- **Time-Out Timer Warning** – Your radio's time-out timer limits the duration of your transmission time. When you are pressing the PTT switch **(transmitting)**, a short, low-pitched warning tone will sound four seconds before the allotted time will expire.

- **Time-Out Timer Timed-Out** – If your phone conversation is longer than the time allotted to the time-out timer, a continuous, low-pitched tone will sound, indicating that your transmission has been cut off. This tone will continue until you depress the PHON button.

- **Failsoft (Trunked Systems Only)** – A faint "beeping" tone every ten seconds indicates that the radio is operating in the failsoft mode.

- **Phone Busy** – A "bah-bah-bah-bah" tone when telephone interconnect is accessed, indicates that all available channels are busy and the radio is in queue for the next available phone channel.

- **DTMF Tones (During Dialing)** – When a digit **(0 to 9, ∗ and #)** is dialed, a DTMF tone will be heard.

- **Out of Range Tone** – When the radio is Out of Range from the selected Trunking site, a continues, low pitched tone is heard while the PTT is pressed.

Alert Tone Indications (cont.)

- **Call Alert™ (Page) Received** – A group of four medium-pitched tones every five seconds indicates that your radio has received a Call Alert page.

- **Call Alert™ (Page) Sent** – A single medium-pitched tone **(central acknowledge)**, followed by a group of four medium-pitched tones indicates that a Call Alert page sent by your radio has been received by the target radio.

- **Private Conversation™ Call Received** – Two medium-pitched tones indicate that your radio has received a Private Conversation call.

- **Trunked System Busy (Trunked Systems Only)** – When a trunked system is accessed, a "bah-bah-bah-bah" tone indicates that all available channels are busy.

Time-Out Timer

The time-out timer feature is programmed through the RSS. It limits the time period of continuous transmission. If the radio is transmitting longer than the allotted time, then :

- A pre-alert warning tone is given ten seconds before termination of your transmission, to warn you that your conversation is about to be cut off.

- An alert tone is given to indicate that your transmission and system access has been terminated.

Trunked or Conventional Radio Operation

Your GTX radio is capable of both trunked and conventional operation:

- **Trunked Operation** – During trunked operation, your GTX Portable radio offers a number of advantages, including faster system access, enhanced privacy, and ease of operation. In a trunked system, there is no need for you to monitor a mode before transmitting.

- **Conventional Operation** – During conventional operation, your GTX portable radio performs like a conventional two-way radio. Therefore, you must monitor the selected mode before transmitting by checking whether the receive mode LED **(green)** is solid. In GTX radio, the monitor feature is active only in the conventional mode.

Note:

Home Display is a trunking or conventional mode through which all mode dependent features can be activated.

For example, in this manual we have shown all displays with 1-A as the trunking home mode and 01 as the conventional home mode. Any one of the modes **(trunking or conventional)** can be selected as a home display by the user.

Radio On/Off; Power-Up

1. Turn the radio on by turning the Volume Control knob clockwise. The radio goes through a power-up self test and, if it passes the check, the display momentarily shows **"SLF tSt"** for about two seconds. A good-power-up, high-pitched tone sounds to indicate that the radio has passed the self check. The radio goes to personality # 1 and the display shows **"1-A"** or to that **"personality"** system the radio operated at before power down.

In case of test failure

In case of self test failure, the display shows **"FAtAL 05"** or "**Error 06**" and the illegal continuous tone is sounded. Turn off the radio and remove the battery. Check the battery, reinsert it and turn the radio on again. If the radio still does not pass the self check, a problem exists in the radio. Contact the nearest Motorola Service Shop.

Note:
- The power-up self check verifies that the radio's microprocessor-based systems are working, but it does not check all the RF components, nor does it check the operation of all customer-specific features. Motorola recommends that the functioning of the radio be checked periodically by an authorized Motorola service shop.

2. Turn the radio off by turning the volume knob counter -clockwise.

Selecting a Menu Mode

Functions programmed into the radio can be selected either directly through a preprogrammed dedicated button or indirectly through the menu button.

The following features are included in the menu list:

- Scan List Programming/Viewing
- Force Site Search
- Site Lock/Unlock
- Phone List Programming
- ID Programming
- Keypad Tones Mute On/Off
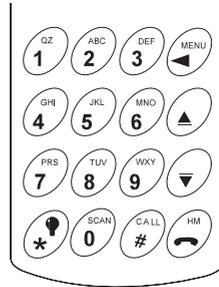
Any item, if pre-programmed, can be selected from the menu list by pressing the menu button and thereafter repeatedly pressing the menu button until the required item is displayed on the list. Every time you press the menu button takes you to the next item on the list.

Note:

To deselect any feature, go to the menu list. When the "off" status is displayed, press the select button.

Muting/Unmuting the Keypad Tones

Press the menu button to select the menu list. Repeatedly press the menu button until mute on is displayed.

Press the select button located just above the PTT switch to select mute on.
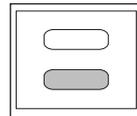
The radio automatically returns to the home display.

To unmute repeat the above steps.

Monitor On/Off

Note:

The monitoring feature is available when the radio is in conventional mode and Coded Squelch PL or DPL is preprogrammed for the receiver frequency.

Monitor Button

Select Button
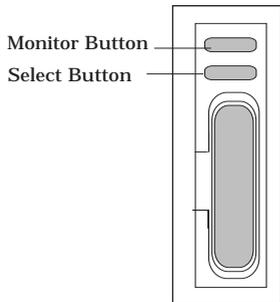
Press the monitor button located on the side (first button from the top) to turn monitoring on.

The speaker is enabled when the monitor icon is displayed.

To turn monitoring OFF, again press the monitor button.
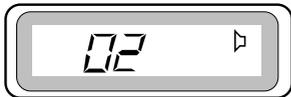
Failsoft Operation (Trunked Systems Only)

Note:

Failsoft capability can be programmed in the codeplug.

The failsoft system ensures that you will continue to have radio communications capability in case of trunked system failure. During trunked operation, if the central trunking controller fails, the radio automatically switches to ***"failsoft"*** operation according to predefined codeplug programming. Thus, your radio display shows Failsoft Mode or Failsoft Personality Mode **(see display)**. In ***"failsoft"*** operation your radio can transmit and receive on a conventional predetermined frequency, as opposed to trunked mode. When you are in failsoft operation, you hear a faint beeping sound every ten seconds, your display shows the failsoft group and FS if the radio has been programmed for failsoft.

If the radio has been programmed for system Failsoft **(i.e one failsoft frequency for all talkgoups in the system)**, then the display shows the system and FS.

Failsoft per Mode

Failsoft per Personality Mode

Selecting a Mode
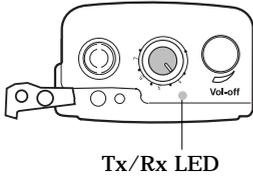
A mode is a trunking system or a conventional channel with features slaved or programmed to it. Before you send or receive calls, set the radio to the desired mode.

Tx/Rx LED
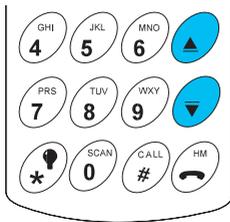
To select trunking system or conventional channels, press the ▲ or ▼ buttons. To select trunking talkgroup use the channel selector group located on the top panel of the radio and rotate the knob to the desired location.

Receiving a Call

Conventional Modes

1. Turn the radio on and select the desired mode.

2. Listen until you hear activity, then adjust the volume control for a comfortable listening level.

> **Note:**
>
> The squelch opening level setting may be reprogrammed at an authorized service facility.

3. Your radio is now set to receive calls on the selected mode.

Trunked Systems

1. Turn the radio on and select the desired mode

2. Listen until you hear activity, then adjust the volume control for a comfortable listening level.

3. Your radio is now set to receive calls on the selected mode.

15 | Basic Radio Operation (cont.)

Transmitting

Conventional Modes

1. Turn the radio on and select the desired mode.

2. Do not interrupt another user. If the mode on which you are transmitting is programmed to receive PL **(Private Line)** or DPL **(Digital Private Line)**, ensure that the channel is not in use by listening to activity. If the green LED is solid while receiving (PTT released), this will indicate that the channel is currently busy and you should not transmit.

3. When the channel is available, press and hold the PTT switch and speak slowly and clearly into the microphone. The red Tx LED will light continuously while the radio is transmitting. When you have finished talking **(transmitting)**, release the PTT to listen **(receive)**.
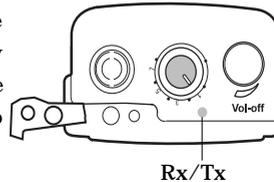
   Note:

   • If a mode is programmed for receive only, any attempt to transmit on that mode will cause an invalid-mode tone to sound until the PTT switch is released.

Rx/Tx
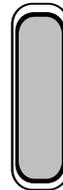
Trunked Systems

1. Turn the radio on and select the desired trunked mode.

2. Press the PTT switch. Speak slowly and clearly into the microphone area. The red Tx LED will light while the radio is transmitting. When your transmission is completed, release the PTT to listen.

   Notes:

   • If you hear a busy tone (a low-frequency **"bah-bah-bah-bah"**), release the PTT switch and wait for a call-back tone (sounds like **"di-di-dit"**). When you hear the call-back tone you will have three seconds to press the PTT switch, allowing you to make your call without getting another busy signal.

   • If a continuous talk-prohibit tone is heard when the PTT switch is pressed, it means that the radio is out of range and you will not be able to transmit.

Rx/Tx
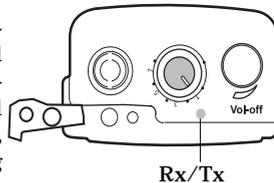
Introduction

The scan feature allows you to monitor activity on different conventional and trunked modes by scanning a *"scan list"* of modes. The radio can have only one scan list; it can contain up to eight different members **(trunk and conventional)**. The modes to be scanned in a scan list can be programmed with the radio service software **(RSS)** or by using the scan list programming/viewing option. Refer to the RSS manual for detailed information:

• Talkgroup Scan—Includes conventional modes and trunked modes from more than one trunking system. Priority of operation is not available in this radio.

Turning Scan On/Off

1. To turn scan on, press the ⓪ **(Scan)** button.

2. The scan status icon appears on the display, indicating that scan is active, and the radio begins scanning. The scan annunciator will remain on until scan is turned off or if the radio is turned off.

3. To turn scanning off, press the ⓪ **(Scan)** button once again.

4. The scan status annunciator turns off, indicating that scan is off, and the radio stops scanning.

    Note:
    • To initiate a call properly during scan mode, press PTT for a few seconds.

Deleting Nuisance Modes

While scanning, if you find that a certain mode is noisy and disturbs, you can delete it temporarily from the scan list by pressing the select button when the display shows the nuisance channel. As a result, the radio excludes this mode and continues to scan the remaining modes in the list. To include the deleted mode back into the scan list, exit and reenter scan.
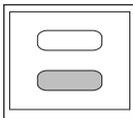
Talkback Delay

You may talkback during a detected activity for a pre-programmed (RSS) time period after the activity ends. After this time period, the radio will resume scan.

Scan List Programming/Viewing

If you desire to make changes in the scan list, follow the steps given below:

1. Press the menu button until "SCAn PrG" is displayed.

2. Press Select button located above the PTT switch.
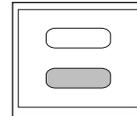
3. Four beeps are sounded and display shows the default home channel and the scan status. The scan icon indicates that the displayed mode is in the scan list.

4. To add a member or delete a member from the list, press the select button. To scroll through active scan members list, press **(Scan)** button; but to scroll through all modes in the radio (trunk and conventional) use the scroll ▲ or scroll ▼ button.

   If you want to add a member to the list, and the list is full, the radio indicates this with a medium beep.
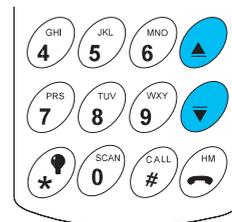
5. When you have finished scan programming/viewing, press the **(Home)** button to exit.

General Information

The trunked telephone feature is similar to that of a standard telephone.

Receiving a Telephone Call - land to Mobile

1. When you receive a telephone call, you hear the telephone ring and the characters PH will be displayed with the talkgroup currently in use.

2. Press the Phone button to answer the call. The display shows "PHonE". Press the PTT switch to talk and release to listen.
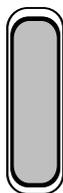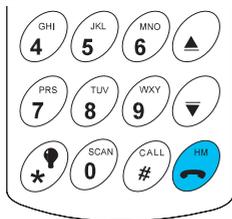
Note:

- Incoming phone-call numbers are not stored in the phone list.

3. If during the conversation you need DTMF overdial, use the keypad. Use the scroll ▲ or ▼ button to scroll through the list then press PTT switch to send the numbers.

4. Press the PTT switch to talk and release to listen.

5 When you have finished your conversation, press the (Home) button to hang-up.

6. The radio will return to the Home display.
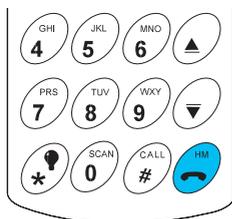
Calling the Last Number Dialed

```
1-A
```

1.   Press the 📞 **(Phone)** button to make a phone call.

2.   If the system access is successful, you will hear a dial tone and the last number dialed will be displayed.

```
ACCESS
```

```
02605011
```

Notes:

•   If you are out of the trunked system range or the phone interconnect is out of service, "**no PHonE**" is displayed for six seconds after trying to access the system, and a continuous low-pitched tone is emitted.

```
no PHonE
```

•   If the trunked phone interconnect is in use, a busy tone sounds and "**PH buSY**" is displayed. If you hang up, you will lose your place in the queue.

```
PH  buSY
```

•   This is a timed message. If you cannot access the telephone system (no dial tone heard), you need to press the 📞 **(Home)** button to hang up, and start again from step 1 of this procedure.
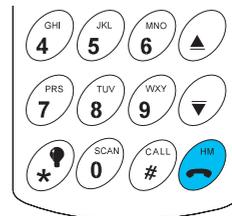
Calling the Last Number Dialed (cont.)

3. To redial the last number called, press the PTT switch.

4. The telephone number will be sent out by pressing the PTT switch, and you will hear tones as they are being sent. After the complete number has been dialed, you will hear either a busy tone or ring tone. If you hear a busy tone, follow step 5 given below.

5. When you have finished your conversation, or if the number you are calling is busy or there is no answer, press the (**Home)** button to hang-up.

6. The radio will return to the home display.

Calling a Stored Number using Direct Access

1. To make a phone call, press the ⌒ **(Phone)** button.

1-A

7 8 9 ▼
* 0 # ⌒
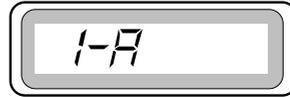
2. Access will be displayed momentarily and then the last dialed phone number.

ACCESS

Notes:

- If you are out of the trunked system range or the phone interconnect is out of service, "**no PHonE**" is displayed for six seconds after trying to access the system, and a continuous low-pitched tone is emitted.

02605011

no PHonE

- If the trunked phone interconnect is in use, a busy tone sounds and "**PH buSY**" is displayed.   If you hang up, you will lose your place in the queue.

- This is a timed message. If you cannot access the telephone system (no dial tone heard), you need to press the ⌒ to hang up, and start again from step 1 of this procedure.

PH buSY

4 5 6 ▲
7 8 9 ▼
* 0 # ⌒
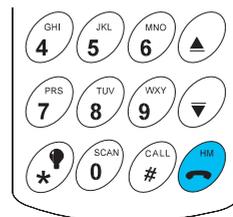
Note:

- The display is able to accommodate eight digits. If the last dialed number is more than eight digits then the first eight and the digits after the first eight digits are displayed alternately.

Calling a Stored Number using Direct Access (cont.)

3. To scroll through the phone list, use the scroll ▲ or scroll ▼ button.

   Upon entering the scroll option, use the direct entry which will take you to the direct location on the list.

`PHLoC1`

`535201`
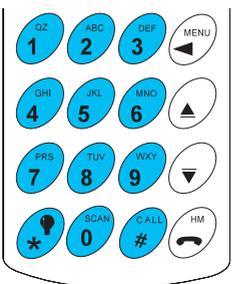
4. When you have selected the member you wish to call, press the PTT switch.

5. When you have finished your conversation, or if the number you are calling is busy or there is no answer, press the ☎ (**Home)** button to hang-up.

`1-A`

6. The radio will return to the home display.

Storing A New Phone Number

1. To store a new telephone number, press ◀ **(Menu)** button, until *"PHon PrG"* appears on the display.

2. Press the Select button.
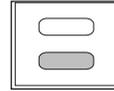
3. *"PH LoC1"* will be displayed momentarily, and then the phone number to indicate the first stored number is selected.
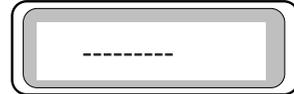
4. Use the scroll ▲ up and scroll ▼ down buttons to scroll through the list or directly press your allotted digit **(0 through 9)** for your required location number.

5. After you have reached the memory location where you would like to store the number, press the SELECT button.
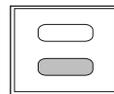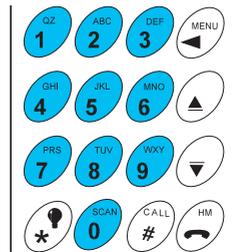
Note:

The factory default number or last stored number will be displayed
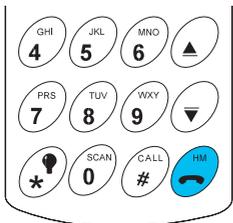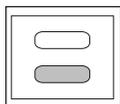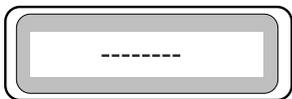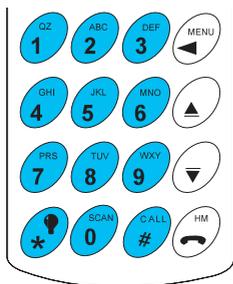
Storing A New Phone Number (cont.)

6. The new telephone number can now be entered from the keypad, using any of the numeric (**0 – 9**) keys, as well as the "*" and "#" button. You can also enter a pause in the telephone number by using the button bearing the asterisk sign and then the button bearing the pound sign.

7. The display changes to show the numbers as they are being entered. 16 digits can be entered but only 8 can be displayed.

   Note:
   • Once you have started entering numbers, the (**Menu**) button will function as a delete key.
     • When the last digit on the display has been erased, an additional press of this key will cause a bad key chirp.

8. After dialing the desired number, press the select button to store the new number. The display will first show the location number momentarily, and then the new stored number.

   Note:
   • At this point another location/s can be changed by repeating the steps 4 through 8.

9. When you have finished phone programming/ viewing, press the (**Home**) button to exit.

10. The radio will return to the home display.

Introduction

The Private Conversation feature allows you to carry on a conversation that is heard only by two parties. In this feature, if you want to view the calling radio's ID number before answering, press the #️ **(Call)** button.

Answering a Private Conversation Call

1. When your radio receives a Private Conversation call, you will hear two alert tones, the display will show *"1-A PC"* and you will hear the caller.

2. Press the #️ **(Call)** button. The display will show PC momentarily and then the incoming caller's ID number.

    CAUTION: If you press the PTT button before you press the CALL button, the response will be transmitted to everyone in the talkgroup (see dispatch mode operation).
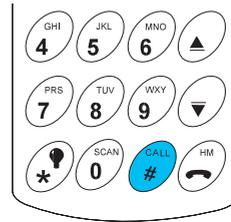
    Note:

    When in home display mode, if the PTT is pressed before the repeater hang-up time, then the call remains a private call.

3. Press the PTT switch to carry on a Private Conversation with the caller. The caller's ID number will remain on the display for the duration of the call.

    Notes:

    •   If there is a delay in answering your incoming call and the system happens to be busy, then a busy tone will be heard. When a channel becomes available, you will receive a call back tone, and your radio automatically keys up for three seconds so that you can start your conversation. Press PTT to talk.

    •   When the radio is Out of Range from the selected Trunking site, a continuous low pitched tone is heard.

4. When you have finished your conversation, press the 📞 **(Home)** button to return to the home display.
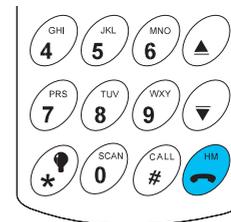
Calling the Last ID Number Transmitted or Received

1. To call the last ID number transmitted or received, press the [#] (**Call)** button.

2. The display shows PC momentarily and then the last called ID.

3. Press and hold the PTT switch to carry on a Private Conversation.

   Notes:

   • If there is a delay in answering your incoming call and the system happens to be busy, then a busy tone will be heard. When a channel becomes available, you will receive a call back tone, and your radio automatically keys up for three seconds so that you can start your conversation. Press PTT to talk.

   • When the radio is Out of Range from the selected Trunking site, a continuous low pitched tone is heard.

4. Pause for a second to allow the alert tone to sound in the receiving radio, then begin talking. Speak slowly and clearly into the microphone.

5. If the party you are calling does not respond, then press the [Home] **(Home)** button to exit the Private Conversation feature and return to the home display.

Direct Entry of the ID Number to be Called

1. Press the 🔵 **(Call)** button to call the ID number directly.

2. The display shows **"PC"** momentarily and then changes to show the last ID number transmitted or received or blank display with six dashes if last ID was not stored. You can now enter the ID number to be called.

3. Enter the new six-digit ID number using the keypad.

4. On the display, the old ID number disappears. The new digits appear as they are being entered. The cursor shifts to the right to indicate the location of the next number to be entered.

   Note:

   • If you press PTT after entering an illegal ID number, then illegal tone is heard and the display shows **"iLLEG Id"** . A few moments after the PTT is released, the illegal number you have entered will be displayed.

   • Use 🔵 **(Backspace)** button to delete the displayed digits. Use the keypad to enter the desired number.

Direct Entry of the ID Number to be Called (cont.)

5. Press the PTT switch. Wait for a second to allow the alert tone to sound in the receiving radio, then begin talking.

    Notes:

-   If there is a delay in answering your incoming call and the system happens to be busy, then a busy tone will be heard. When a channel becomes available, you will receive a call back tone, and your radio automatically keys up for three seconds so that you can start your conversation. Press PTT to talk.

-   When the radio is Out of Range from the selected Trunking site, a continuous low pitched tone is heard.

6a. If the party you are calling does not respond, then press the ☎ **(Home)** button to exit the Private Conversation feature.

    or

6b. If the party you are calling does answer the call, you will hear his/her voice.

7. Press the PTT switch to carry on a Private Conversation with the called party.

8. When you have finished your conversation, or if the radio you are calling does not answer or is not in service, press the ☎ **(Home)** button; the radio will return to the home display.

Scrolling to an ID Number in the Call List

1. To scroll to a certain ID number on the preprogrammed call list, press the ⧗ **(Call)** button to initiate the Private Call feature.

   Note:

• Each trunking system has its unique PC/Call Alert list. The same list is shared by both Private Conversation and Call Alert features.

2. The display shows **"PC"** momentarily and then changes to show the last ID number that was transmitted or received, or blank display with six dashes if the last ID was not stored. You can now enter the ID number to be called.

3. To scroll through the call list, use the scroll ▲ or scroll ▼ button.

4. When scrolling through the list, first *Id LoCx"* **(x can be any location number from 1 to 8)** is displayed momentarily with the location number, and then the ID number.

   Note:

• The last location in the list bears the radio ID number.

Scrolling to an ID Number in the Call List (Cont.)

5. Press the PTT switch. Wait for a second to allow the alert tone to sound in the receiving radio, then begin talking.
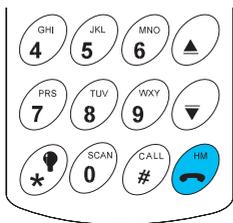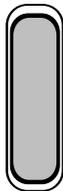
   Notes:

• If there is a delay in answering your incoming call and the system happens to be busy, then a busy tone will be heard. When a channel becomes available, you will receive a call back tone, and your radio automatically keys up for three seconds so that you can start your conversation. Press the PTT switch to talk.

• When the radio is Out of Range from the selected Trunking site, a continuous low pitched tone is heard.

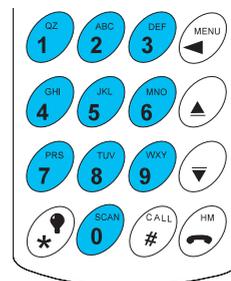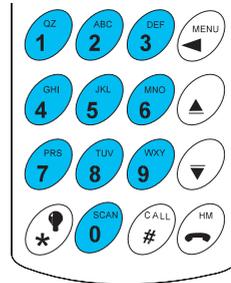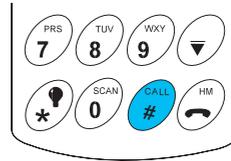6a. If the party you are calling does not respond, then press the (Home) button to exit the Private Conversation feature.

   or

6b. If the party you are calling does answer the call, you will hear his/her voice.

7. Press the PTT switch to carry on a Private Conversation with the called party.

8. Press the (Home) button after completing your call; the radio will return to the home display.

Calling an ID Number at a Location in the Call List

1. You can also call an ID number at a particular location in the preprogrammed call list. To scroll to a certain ID number on the preprogrammed call list, press ⌗ **(Call)** button to initiate the Private Call feature.

2. The display shows **"PC"** momentarily and then changes to show the last ID number that was transmitted or received, or blank display with six dashes if the last ID was not stored. You can now enter the ID number to be called.

3. To reach the required known location, enter the list, and press scroll ▲ or scroll ▼ button. The scroll ▲ button will take you forward to the first or next member on the list; the scroll ▼ button will take you backward to the last or previous member on the list.

   Note:

• When scrolling through the list, first **"Id LoCx"** **(x can be any location number from 1 to 8)** is displayed momentarily with the location number, and then the ID number.

4. When **"Id LoCx"** is displayed, use keypad digits 1 through 8 for the stored ID members location. Digit 9 displays the owner's ID and 0 the last ID.

Calling an ID Number at a Location in the Call List (Cont)

5. Press the PTT switch. Wait for a second to allow the alert tone to sound in the receiving radio, then begin talking.
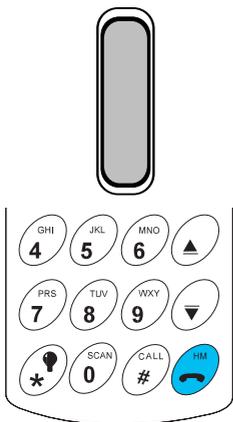
   Notes:

• If there is a delay in answering your incoming call and the system happens to be busy, then a busy tone will be heard. When a channel becomes available, you will receive a call back tone, and your radio automatically keys up for three seconds so that you can start your conversation. Press PTT to talk.

• When the radio is Out of Range from the selected Trunking site, a continuous low pitched tone is heard.

6a. If the party you are calling does not respond, then press the ☎ **(Home)** button to exit the Private Conversation feature.

   or

6b. If the party you are calling does answer the call, you will hear his/her voice.

7. Press the PTT switch to carry on a Private Conversation with the called party.

8. Press the ☎ **(Home)** button after completing your call; the radio will return to the home display.

Introduction

The Call Alert page feature enables your radio to function like a pager **(beeper)**. Your radio **(as programmed by the RSS)** can receive and respond to pages from other radios, and send pages to them.
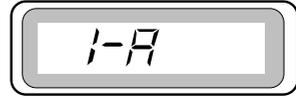
Answering a Call Alert Page

1. When a Call Alert page is being received, you will hear a recurring four-beep tone until you answer the call or reset the radio. The display will show *"1-A CA"*.
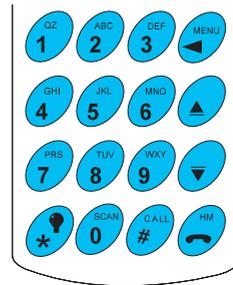
2. To terminate the call alert page, press the PTT switch or any button from the keypad. The display will show the current talkgroup and the audible alert will turn off. The ID number of the radio that paged you is stored as *"the last ID number received"*.

Sending a Call Alert to the Last ID Number Transmitted or Received

1. To send a Call Alert to the last ID number transmitted or received, press the ⏸ **(Call)** button.

   Note:

• If the radio is programmed with both Private Call **(PC)** or Call Alert **(CA)** features, then press the call button twice to enter the CA mode.

2. The display shows *"CA"* momentarily and then the last ID number.

3. Press the PTT switch to send the ID number.

3a. If you hear one beep, it indicates that the ID number has been received by the system, the radio you are paging is not on the air, and your radio remains in the Call Alert mode. You can either go back to step 3 and press the PTT switch to send the ID number again, or press the ⏸ **(Home)** button to return to the home display.

   Note:

• If after six seconds the called radio fails to acknowledge the alert, a low-pitch alert tone sounds and the display changes to *"no rESP"*. You may try this sequence again.

   or

3b. If you hear five beeps, it indicates that the ID number has been received by the system, the radio you are paging is on the air and has received your page. The display shows *"SCC"* momentarily and the radio automatically returns to the home display.

Direct Entry of the ID Number to be C all Alert Paged

1. Press the ⊘ **(Call)** button to directly enter the ID number to be called.

   Note:

- If the radio is programmed with both Private Call **(PC)** or Call Alert **(CA)** features, then press the call button twice to enter the CA mode.

2. The display shows **"CA"** momentarily and then the last ID number transmitted or received, or blank display with six dashes if the last display was not stored. You can now enter the ID number to be paged.

3. Enter the new six-digit ID number from the keypad. On the display, the old ID number disappears, and the new digits appear as they are being entered. The cursor flashes to indicate the location of the next number to be entered.

   Notes:

- If you press PTT after entering an illegal ID number, then illegal tone is heard and the display shows **"iLLEG Id"**. A few moments after the PTT is released, the illegal number you have entered will be displayed.

- Once you have started entering numbers, the ◀ **(Backspace Delete)** button will function as a backspace key. Pressing this key will cause the last digit entered to be erased, and the cursor to move to the left. When the last digit has been erased, an illegal tone will sound,
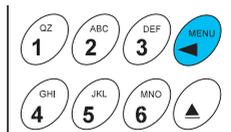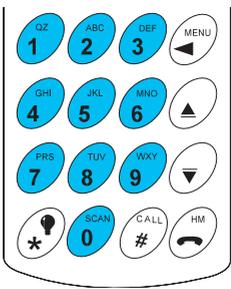
Direct Entry of the ID Number to be C all Alert Paged (Cont.)

4. Press the PTT switch to send the ID number.

5a. If you hear one beep, it indicates that the ID number has been received by the system, the radio you are paging is not on the air, and your radio remains in the Call Alert mode. You can either go back to step 3 and press the PTT switch to send the ID number again, or press the **(Home)** button to return to the home display.

Note:

• If after six seconds the called radio fails to acknowledge the alert, a low-pitch alert tone sounds and the display changes to **"no rESP"**. You may try this sequence again.

or

5b. If you hear five beeps, it indicates that the ID number has been received by the system, the radio you are paging is on the air and has received your page. The display shows **"SCC"** momentarily and the radio automatically returns to the home display.

Scrolling to an ID Number in the Call List

1. To scroll to an ID number to be Call Alert paged from the preprogrammed call list, press the (Call) button.
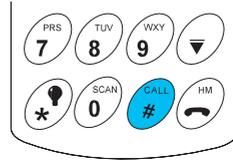
   Note:

• If the radio is programmed with both Private Call **(PC)** or Call Alert **(CA**) features, then press the (Call) button twice to enter the CA mode.

2. The display shows **"CA"** momentarily and then the last ID number transmitted or received, or blank display with six dashes if the last display was not stored. You can now scroll to the ID number in the call list.

3. To enter the list, press scroll or scroll button. The scroll button will take you forward to the first or next member on the list; the scroll button will take you backward to the last or previous member on the list.

4. When scrolling through the list, first **"Id LoCx" (x can be any location number from 1 to 8)** is displayed momentarily with the location number, and then the ID number.

   Note:

• The last number in the list is the radio ID number.

5. Press the PTT to initiate the page.

6. To exit press the (Home) button.

Paging an ID Number at a Location in the Call List

1. You can also Call Alert page an ID number at a particular location in the preprogrammed call list.

2. To page an ID number from the preprogrammed call list, press the (Call) button.

Note:

• If the radio is programmed with both Private Call **(PC)** or Call Alert **(CA)** features, then press the call button twice to enter the CA mode.

3. The display shows *"CA"* momentarily and then the last ID number transmitted or received, or blank display with six dashes if the last display was not stored. You can now scroll to the ID number in the call list.
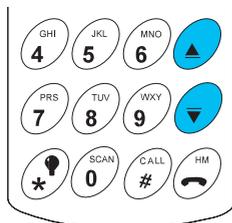
4. The scroll button will take you forward to the first or next member of the list; the scroll button will take you backward to the last or previous member of the list.

Paging an ID Number at a Location in the Call List (Cont.)

5. When scrolling through the list, first *"Id LoCx"* **(x can be any location number from 1 to 8)** is displayed momentarily with the location number, and then the ID number.

$$Id \; LoC1$$

$$753520$$

$$------$$

Note:

•   The last number in the list is the radio ID number.

6. When you have selected the member you wish to call, press the PTT switch. The display freezes to show the selected member's ID number which is to be transmitted.

    or

6b. Press the 🔵 **(Home)** button to exit.
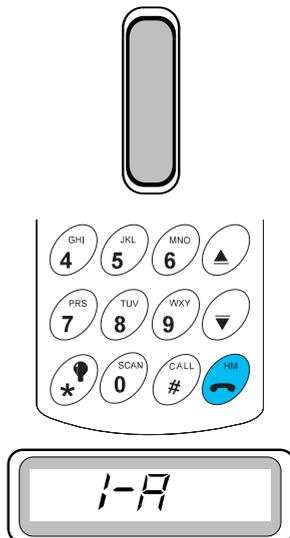
$$1-A$$

Paging an ID Number at a Location in the Call List (Cont.)

```
 GHI   JKL   MNO
  4     5     6    ▲

 PRS   TUV   WXY
  7     8     9    ▼

       SCAN  CALL   HM
  *     0     #
```

```
I-A
```

7a. If you hear one beep, it indicates that the ID number has been received by the system, the radio you are paging is not on the air, and your radio remains in the Call Alert mode. You can either go back to step 3 and press PTT switch to send the ID number again, or press the ⌒ **(Home)** button to return to the home display.

Note:

If after six seconds the called radio fails to acknowledge the alert, a low-pitch alert tone sounds and the display changes to "***no rESP"*** You may try this sequence again.

```
no rESP
```

or

```
SCC
```

```
I-A
```

7b. If you hear five beeps, it indicates that the ID number has been received by the system, the radio you are paging is on the air and has received your page. The display shows "***SCC***" momentarily and the radio automatically returns to the home display.

Trunked Enhanced Private Conversation™ Call Operation (900 MHz Only)

Introduction

As with regular telephone call, conversation in an trunked enhanced private conversation call is heard only by the called party. With this feature, you are able to determine whether the radio you are calling is in service. If the called party does not answer your call, then you can choose to leave your radio's ID (via call alert) so that you can be called back.

1-A

Answering a Trunked Enhanced Private Conversation Call

1. When your radio receives a Trunked Enhanced Private Conversation call, your display will show "*I-A PC*" . Your radio will sound two beeps to indicate a call being received. You will have 20 seconds to answer the call before the radio automatically returns to the home display.

1-A PC

1-A

2. Press the ⊘ **(Call)** button. The display will show the incoming caller's ID number, and the call received annunciator will turn off. After viewing the caller's ID number, you can decide to either talk privately **(go to step 3)**, or not answer the call by letting the remainder of the 20 seconds elapse and returning to the home display.

753520

Note:

•   If you press the PTT switch before you press the ⊘ **(Call)** button, the response will be transmitted to everyone in the talkgroup.

Answering a Trunked Enhanced Private Conversation Call (Cont.)

`753520`	3. If you decide to answer the call, press the PTT switch to carry on a Private Conversation with the caller. The caller's ID number will remain on the display for the duration of the call.
`I-A`	4. When you have finished your conversation, press the ☹ **(Home)** button or the call response button to hang up; the radio will return to the home display.

Enhanced calling the Last ID Number Transmitted or Received

l-A

1. To call the last ID number transmitted or received, press the #️⃣ **(Call)** button.

PC

2. The display will show **"PC"** momentarily and then the last ID or **"------"** if there is no last ID.

753520

------

3. Press the PTT switch: the ID number is transmitted. If the radio you are calling is on the air, you will hear telephone type ring for 20 seconds, or until the called radio answers the call.

   Note:

   If the radio you are calling is not in service, you will not hear the ringing and the display will show **"no rESP"**. Go to step 6 to hang up.

no rESP
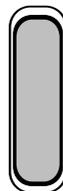
4a. If the party you are calling does not answer the call within twenty seconds, the display will show **"no AnS"**; the telephone ringing will stop and an alert tone will sound. At this point you can either send a Call Alert™ page (go to step 1 of "Leaving a Call Alert Page when the called party does not answer the Private Conversation Call"), or go to step 6 of this procedure to hang up.

no AnS

or

4b. If the party you are calling does answer the call, you will hear his/her voice.

5. Press the PTT switch to carry on a Private Conversation with the called person.

6. When you have finished your conversation, or if the radio you are calling does not answer or is not in service, press the 🔵 **(Home)** button to hang up; the radio will return to the home display.

l-A

1-A

Direct Entry of the ID Number to be Called

1. Press the (Call) button to call the ID number directly.

PC

753520

2. The display shows **"PC"** momentarily and then changes to show the last ID number transmitted or received or blank display with six dashes if last ID was not stored. You can now enter the ID number to be called.

------

3. Enter the new six-digit ID number using the keypad.

4. On the display, the old ID number disappears. The new digits appear as they are being entered. The cursor shifts to the right to indicate the location of the next number to be entered.

Note:

• If you press PTT after entering an illegal ID number then illegal tone is heard and the display shows **"iLLEG Id"** . A few moments after the PTT is released, the illegal number you have entered will be displayed.

iLLEG Id

• Use (**Backspace**) button to delete the displayed digits. Use the keypad to enter the desired number.

Direct Entry of the ID Number to be Called (Cont.)

5.   Press the PTT switch. Wait for a second to allow the alert tone to sound in the receiving radio, then begin talking.

Notes:

•   If there is a delay in answering your incoming call and the system happens to be busy, then a busy tone will be heard. When a channel becomes available, you will receive a call back tone, and your radio automatically keys up for three seconds so that you can start your conversation. Press PTT to talk.

•   When the radio is Out of Range from the selected Trunking site, a continuous low pitched tone is heard.

Note:

If the radio you are calling is not in service, you will not hear the ringing and the display will show **"no rESP"**. Go to step 6 to hang up.

6a.   If the party you are calling does not answer the call within twenty seconds, the display will show **"no AnS"**; the telephone ringing will stop and an alert tone will sound. At this point you can either send a Call Alert™ page (go to step 1 of "Leaving a Call Alert Page when the called party does not answer the Private Conversation Call"), or go to step 8 of this procedure to hang up.

or

6b.   If the party you are calling does answer the call, you will hear his/her voice.

7.   Press the PTT switch to carry on a Private Conversation with the called person.

8.   When you have finished your conversation, or if the radio you are calling does not answer or is not in service, press the ☏ **(Home)** button to hang up; the radio will return to the home display.

Scrolling to an ID Number in the Call List

1. To scroll to a certain ID number on the preprogrammed call list, press the **(Call)** button to initiate the Enhanced Private Call feature.

   Note:

• Each trunking system has its unique EPC/Call Alert list. The same list is shared by both Private Conversation and Call Alert features.

2. The display shows **"PC"** momentarily and then changes to show the last ID number that was transmitted or received, or blank display with six dashes if the last ID was not stored. You can now enter the ID number to be called.

3. To scroll through the call list, use the scroll or scroll button.

4. When scrolling through the list, first **"Id LoCx"** **(x can be any location number from 1 to 8)** is displayed momentarily with the location number, and then the ID number.

   Note:

• The last location in the list bears the radio ID number.

Scrolling to an ID Number in the Call List (Cont)

5. Press the PTT switch. Wait for a second to allow the alert tone to sound in the receiving radio, then begin talking.

   Notes:

• If there is a delay in answering your incoming call and the system happens to be busy, then a busy tone will be heard. When a channel becomes available, you will receive a call back tone, and your radio automatically keys up for three seconds so that you can start your conversation. Press the PTT switch to talk.

• When the radio is Out of Range from the selected Trunking site, a continuous low pitched tone is heard.

   Note:

• If the radio you are calling is not in service, you will not hear the ringing and the display will show **"no rESP"**. Go to step 6 to hang up.

6a. If the party you are calling does not answer the call within twenty seconds, the display will show **"no AnS"**; the telephone ringing will stop and an alert tone will sound. At this point you can either send a Call Alert™ page (go to step 1 of "Leaving a Call Alert Page when the called party does not answer the Private Conversation Call"), or go to step 8 of this procedure to hang up.

or

6b. If the party you are calling does answer the call, you will hear his/her voice.

7. Press the PTT switch to carry on a Private Conversation with the called person.

8. When you have finished your conversation, or if the radio you are calling does not answer or is not in service, press the 🔵 **(Home)** button to hang up; the radio will return to the home display.

Calling an ID Number at a Location in the Call List

1. You can also call an ID number at a particular location in the preprogrammed call list. To scroll to a certain ID number on the preprogrammed call list, press # **(Call)** button to initiate the Enhanced Private Call feature.

2. The display shows **"PC"** momentarily and then changes to show the last ID number that was transmitted or received, or blank display with six dashes if the last ID was not stored. You can now enter the ID number to be called.

3. To reach the required known location, enter the list, and press scroll ▲ or scroll ▼ button. The Scroll ▲ button will take you forward to the first or next member on the list; the scroll ▼ button will take you backward to the last or previous member on the list.

    Note:

•   When scrolling through the list, first **"Id LoCx"** (**x can be any location number from 1 to 8)**is displayed momentarily with the location number, and then the ID number.

4. When **"Id LoC"** is displayed, use keypad digits 1 through 8 for the stored ID members location. Digit 9 displays the owner's ID and 0 the last ID.

Calling an ID Number at a Location in the Call List (Cont.)

5. Press the PTT switch. Wait for a second to allow the alert tone to sound in the receiving radio, then begin talking.

    Notes:

•   If there is a delay in answering your incoming call and the system happens to be busy, then a busy tone will be heard. When a channel becomes available, you will receive a call back tone, and your radio automatically keys up for three seconds so that you can start your conversation. Press PTT to talk.

•   When the radio is Out of Range from the selected Trunking site, a continuous low pitched tone is heard.

    Note:

•   If the radio you are calling is not in service, you will not hear the ringing and the display will show **"no rESP"**. Go to step 6 to hang up.
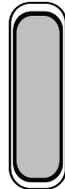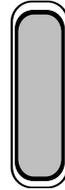
6a. If the party you are calling does not answer the call within twenty seconds, the display will show **"no AnS"**; the telephone ringing will stop and an alert tone will sound. At this point you can either send a Call Alert™ page (go to step 1 of "Leaving a Call Alert Page when the called party does not answer the Private Conversation Call"), or go to step 8 of this procedure to hang up.

or

6b. If the party you are calling does answer the call, you will hear his/her voice.

7. Press the PTT switch to carry on a Private Conversation with the called person.

8. When you have finished your conversation, or if the radio you are calling does not answer or is not in service, press the 📞 **(Home)** button to hang up; the radio will return to the home display.

Leaving Call Alert Page When Called Party Does Not Answer

1. If the party you are private calling does not answer the call within twenty seconds, the display will show **"*no AnS*"**; the telephone ringing will stop and an alert tone will sound. At this point you can send a Call Alert™ page to the party you are calling. This will leave your radio's ID number with the called radio so that you can be called back later.

2. Press the PTT switch to send the Call Alert page. You will hear five beeps to indicate that the number has been received by the system, the radio you are paging is on the air and has received your page. The display shows **"*SCC*"** momentarily and the radio automatically returns to the home display. For more details see the Call Alert Page Operation on page 33.

3. Press the HOME key and the radio will return to the home display

Note:

•   Once engaged in a private conversation, if the radio is left idle for more than one minute, a momentary warning alert will sound every six seconds to remind you that dispatch calls are not being heard. After two minutes, a permanent invalid mode tone will be heard.

SmartZone™ Operation

GTX portables have the ability to operate on specially equipped Type II systems for roaming, most commonly referred to as Smartzone™.

- **SmartZone** - provides an efficient use of channel resources. Efficient channel utilization is achieved via a new capability called Dynamic Site Assignment. This capability provides for the keying of a voice channel only at the sites necessary to reach the talkgroup members in a group call or individuals in selective calls.

- **SmartZone** - supports Private Conversation, Call Alert and Telephone Interconnect. Since SmartZone™ supports 48,000 unique IDs, the normal type II ID is used to make calls across different systems.

- **Automatic Site Registration**

  Smartzone radios have a new feature called Site Registration. This feature enables the radio to automatically send in its talkgroup affiliation and talkgroup ID whenever it changes sites. The site registration information, along with a knowledge of the site of its origin, enables the SmartZone system to know where all active members of a talkgroup are located. This feature allows the SmartZone system to assign a channel only at the sites necessary to reach all active talkgroup members.

Locking and Unlocking a Site

1. If the radio is programmed to include SmartZone or AMSS, it requires to designate the site from which it should start operating on the system. To do so, choose the proper mode from the mode list.

2. To verify whether the radio is presently locked onto the site, press the (**Menu)** button. *"SitE L" or "Site uL"* is displayed.
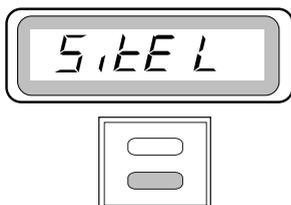
3. If you wish to lock on a specific site, verify *"SitE L"* appears on the display.

4. Press the Select button. The display automatically reverts to the **home** display.

5. If you wish to unlock a specific site, verify that **"*SitE uL"*** appear on the display. To change the selection, press the Select button. As a result, the radio will unlock the required site.
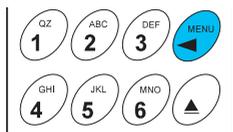
Forcing a Site Change

1. Repeatedly press the menu button until *"ForCd SS "* is displayed.

2. Press the select button.

3. The radio starts searching for a new site and the display reverts to the home display.
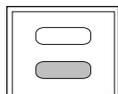
AMSS Feature

AMSS feature is available either in the automatic **(unlocked)** or manual **(locked)** mode. In the automatic mode, the radio switches as it goes out of range of the system and another system comes within range. In the manual mode, the site used is the site that is selected when you have entered the manual mode. A forced site search **(FSS)** can be initiated either in the automatic or manual mode.

Conventional Phone Operation Feature

The conventional telephone feature allows you to use your conventional radio similar to a standard telephone.

- To make a call, press the ☎ **(Phone)** button. The display will show PH with the current conventional system.

- In this mode, for every number entered from the keypad including * and # buttons, the corresponding DTMF tone will be sent.

- Type the relevant access code to enter the telephone system. If the access is successful, you will hear dial tone.

- Dial the required telephone number. Each digit is sent on each key press.
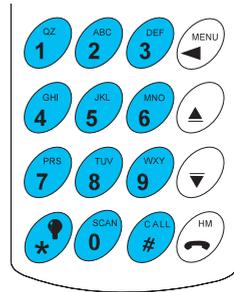
- If the calling party answers, carry on with the conversation in the usual way. Press the PTT to talk and release the PTT to listen.
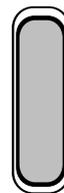
- When you have completed your conversation, or if the number you have dialed is busy, or does not answer, press the ☎ **(Home)** button to hang up.

Battery Information

The GTX portable radio receives its power (7.5Vdc) from a rechargeable nickel-cadmium battery. This battery is a safe, dependable power source for your radio. Proper care of the battery will ensure its effectiveness and allow for peak radio performance.

Recharging Nickel-Cadmium Batteries

Recharge the battery before use to ensure optimum capacity and performance. The battery is designed specifically to be used with a Motorola charger. Charging with non-Motorola equipment may lead to battery damage and void the battery warranty.

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

WARNING: Do not attempt to change or charge the battery in a hazardous atmosphere.

Charging Temperature

The battery should be at about 77°F (room temperature) whenever possible. Charging a cold battery (below 50° F) may result in leakage of electrolyte, and ultimately, in failure of the battery. Charging a hot battery (above 95°F) results in reduced discharge capacity, affecting the performance of the radio.

Short Circuit

Care should be taken to avoid external short circuiting of the battery.

WARNING: A sustained high-rate discharge (for example, a paper clip placed accidentally across the battery contacts) may permanently damage the battery, void the battery warranty, and create a burn or fire hazard.

Memory Effect (Reduced Charge Capacity)

Memory effect is a phenomenon caused by temporary loss in battery capacity or voltage due to repetitive shallow discharging or long-term overcharging. This memory effect has been virtually eliminated from Motorola batteries by the use of new cell technology.

Rechargeable Battery Care

These battery tips will help assure you the highest performance and longest cycle life from your Motorola rechargeable battery.

- Charge your new battery overnight (14-16 hours) before using it. This is referred to as "initializing" and will enable you to obtain maximum battery capacity.

- New batteries can be stored up to two years without significant cycle loss.

- Store new/unused batteries at room temperature in a cool dry area.

- Batteries which have been in storage should be charged overnight.

- When using a Motorola rapid charger, leave battery in charger for an additional 1-2 hours after the green light appears.

- Do Not leave your radio & battery in the charger when not charging. Continuous charging will shorten battery life. (Don't use your charger as a radio stand).

- Only charge batteries when they need it. If it isn't fully discharged, don't recharge it. (We recommend you purchase a second battery for multiple/longer duty cycle applications).

- Do not return fully charged batteries to the charger for an "extra boost". This action will significantly reduce cycle life.

- Stabilize battery to room temperature (72 degrees Fahrenheit) before charging. Charging below 40 degrees Fahrenheit and above 104 degrees Fahrenheit will decrease cycle life.

- For optimum battery life and operation use only Motorola brand chargers. They were designed to operate as an integrated energy system.

- These simple instructions protect your rechargeable batteries from extreme temperatures and enhance their performance and life.

Battery Disposal

For disposal, nickel-cadmium sealed rechargeable batteries should be delivered to an authorized metals reclamation dealer, or returned to Motorola.

Nickel-metal-hydride batteries, although they contain no designated toxic metals, are recommended to be disposed of through an authorized metals reclamation dealer.

WARNING: Do not dispose of any batteries in a fire, as they may explode!

This product is powered by a nickel-cadmium rechargeable battery. At the end of its useful life, the battery can be recycled. However, recycling facilities may not be available in all areas. Under various state or local laws, the battery must be recycled or disposed of properly, and cannot be disposed of in landfills or incinerators.

In addition, U.S. Environmental Protection Agency (EPA) regulations classify used nickel-cadmium batteries as hazardous waste, unless certain exemptions apply.

Motorola fully endorses and encourages the recycling of nickel-cadmium batteries. You can ship, postpaid, your used Motorola nickel-cadmium batteries to INMETCO, an EPA-approved recycling facility, at the address given on the next page. Should you have any questions, contact the facility first.

Consideration should be given to the methods of collecting, labeling, and shipping used nickel-cadmium batteries. Your federal, state, or local EPA should be consulted for specific requirements and for recycling options in your area.

Motorola, as a responsible corporate citizen, has always been concerned with the protection of the environment. For further information, you may call the Motorola America's Parts Division, Customer Service Department, toll-free at 1-800-422-4210.

Nickel-Cadmium Battery Recycling Facility

INMETCO, Bin #M1

P.O. Box 7202

245 Pottersville Road

Ellwood City, PA 16117

Phone: (412) 758-2800

Fax: (412) 758-9311

For additional information on Motorola's batteries,

write to:

Motorola

Energy Products Division

Customer Care Department

1700 Belle Meade Court

Lawrenceville, GA 30243-5854

List of Accessories

Chargers

HTN9630	Single Unit, Rapid Charger 110 Volts
HTN9802	Single Unit, Rapid Charger, European Plug, 220 Volts
HTN9803	Single Unit, Rapid Charger, UK Plug, 240 Volts
HTN9702	Single Unit, Standard Charger, 110 Volts
HTN9804	Single Unit, Standard Charger, European Plug, 220 Volts
HTN9805	Single Unit, Standard Charger, UK Plug, 240 Volts
HLN9719	Vehicular Chargers, Adapter/Bracket 12 Volts for use with Single Unit Rapid Chargers
HLN9748	Multiple Unit, Rapid Charger 110 Volts.
HLN9811	Multiple Unit, Rapid Charger, European Plug, 220 Volts
HLN9812	Multiple Unit, Rapid Charger, UK Plug, 240 Volts
HLN9944	Wall Mounting Bracket for Multiple Unit Chargers\

Antennas

NAF5042	806-941 MHz 1/4 Wavelength Whip
NAF5037	806-870 MHz 1/2 Wavelength Whip
NAF5038	896-941 MHz 1/2 Wavelength Whip (Flex)

Batteries

HNN9628	1200 mAH Standard Battery
HNN9701	1200 mAH Fully Approved Factory Mutual Battery
HNN8308	600 mAH Slim Battery
HNN9808	600 mAH Fully Approved Factory Mutual Slim Battery

List of Accessories (Cont.)

Carrying Accessories

HLN9428	DTMF Standard Leather Carry Case w/Belt Loop
HLN9750	Nylon Belt Loop Carry Case for High Capacity Battery
HLN9421	DTMF Standard Leather Carry Case w/Swivel
HLN9076	Standard Molded Carry Holder with Belt Clip
HLN9429	DTMF Leather Carry Case w/Belt Loop for Fully Approved FM 1200 mAH Battery
HLN9426	DTMF Leather Carry Case w/Swivel for Fully Approved FM 1200 mAH Battery
HLN9149	Swivel Belt Loop Adapter for Use with Carry Cases HLN9750.
HLN9427	DTMF Leather Carry Case w/Swivel for Fully Approved FM 600 mAH Battery
HLN9431	DTMF Leather Carry Case w/Belt Loop for Fully Approved FM 600 mAH Battery
TDN1002	Swiveller- includes holster, belt and strap
HLN8255	Spring Action 3" Belt Clip
NTN5243AR	Shoulder Strap (for use with all Carry Cases)

Audio Accessories

HMN9725DR	Remote Speaker Microphone w/Coil Cord and Clip Back
HMN9727BR	Earpiece w/out Volume Control
HMN9752BR	Earpiece w/Volume Control
HMN9754DR	2-piece Surveillance Microphone, PTT and Microphone are combined in 1 piece
BDN6720	Ear Receiver w/GP300 style connector
BDN6706	Ear Receiver w/vox
FLN8660	Accessories Clamp Plug

Transmitting Distance

Several conditions determine the distance that your radio will transmit a clear data/voice communication. The following list describes many conditions and their typical affect on your radio's transmitting distance.

radio's power	more power	longer distance
radio's tuning	properly tuned radio (on frequency, more power)	longer distance
stormy weather	adverse atmospheric conditions	shorter distance
at sea	better ground plane (clearer line-of-sight)	longer distance
city	large/tall buildings (interference problems)	shorter distance
in a building	structural boundaries (interference problems)	shorter distance
on a tall building's roof	less interference (clearer line-of-sight)	longer distance
in a subway	below ground level (interference problems)	shorter distance
on top of a hill	less interference (clear line-of-sight)	longer distance
intervening hills	more interference (no line-of-sight)	shorter distance
inside a vehicle	metal structure (interference problems)	shorter distance

Radio Care

Cleaning

Clean external surfaces of the radio with a mild detergent and a stiff, non-metallic, short-bristled brush. A suitable detergent solution may be mixed by adding one teaspoon of mild dishwashing detergent to one gallon of water (0.5% solution). Apply the detergent solution sparingly with the brush, being careful not to allow excess detergent to remain entrapped near connectors and controls or in cracks and crevices. Do not submerse the radio in the detergent solution. Dry the radio thoroughly with a soft, lint-free cloth.

Clean all battery contacts with a lint-free cloth to remove dirt, grease, or other foreign material that may prevent good electrical connections.

Handling

- Do not handle the radio roughly; do not pound, drop, or throw the radio. Do not carry the radio by the antenna.

- Avoid subjecting the radio to an excess of liquids. Never allow the radio to become submersed.

- Avoid subjecting the radio to corrosives, solvents, or spirits.

CAUTION

Clean the radio with the recommended solution only. Cleaning the radio with solvents or spirits may be harmful and permanently damage the radio housing.

Do not disassemble the radio in any way. Keep the connector cover in place until ready to use the accessory connector. Replace the cover immediately after the accessory has been disconnected.

Safety Standards

The Federal Communications Commission (FCC), has adopted a safety standard for human exposure to radio frequency electromagnetic energy emitted by FCC regulated equipment. Motorola subscribes to the same safety standard for the use of its products. Proper operation of this radio will result in user exposure substantially below FCC recommended limits:

- Do not hold the radio with the antenna very close to, or touching, exposed parts of the body, especially the face, ears, or eyes, while transmitting. Hold the radio in a vertical position with the microphone two to three inches away from the lips.

- Do not hold the transmit switch (PTT) on when not actually desiring to transmit.

- Do not allow children to play with any radio equipment containing a transmitter.

- Do not operate this equipment near electrical blasting caps or in an explosive atmosphere. Under certain conditions, radios can interfere with blasting operations. When you are in the vicinity of construction work, look for, and observe, signs cautioning against radio transmission. If radio transmission is prohibited, you must not transmit until out of the area. Furthermore, you must turn off your radio to prevent any accidental transmission.

- Do not replace or charge batteries in a hazardous atmosphere. Contact sparking may occur while installing or removing batteries and cause an explosion.

- Turn radio off when removing or installing a battery.

Important Safety Information: Intrinsically Safe Radios

FMRC Approved Equipment

Anyone intending to use a radio in a location where hazardous concentrations of flammable material exist (hazardous atmosphere) is advised to become familiar with the subject of intrinsic safety and with the National Electric Code NFPA 70 (National Fire Protection Association) Article 500 (hazardous [classified] locations).

An Approval Guide, issued by Factory Mutual Research Corporation (FMRC), lists manufacturers and the products approved by FMRC for use in such locations. FMRC has also issued a voluntary approval standard for repair service ("Class Number 3605").

FMRC Approval labels are attached to the radio to identify the unit as being FM Approved for specified hazardous atmospheres. This label specifies the hazardous Class/Division/Group along with the part number of the battery that must be used. Their Approval mark is shown below.

FM

APPROVED

WARNING

Do not operate radio communications equipment in a hazardous atmosphere unless it is a type especially qualified (e.g. FMRC Approved) for such use. An explosion or fire may result.

Do not operate the FMRC Approved Product in a hazardous atmosphere if it has been physically damaged (e.g. cracked housing). An explosion or fire may result.

Do not replace or charge batteries in a hazardous atmosphere. Contact sparking may occur while installing or removing batteries and cause an explosion or fire.

Do not replace or change accessories in a hazardous atmosphere. Contact sparking may occur while installing or removing accessories and cause an explosion or fire.

Do not operate the FMRC Approved Product unit in a hazardous location with the accessory contacts exposed. Keep the connector cover in place when accessories are not used.

Turn radio off before removing or installing a battery or accessory.

Do not disassemble the FMRC Approved Product unit in any way that exposes the internal electrical circuits of the unit.

Important Safety Information: Intrinsically Safe Radios (cont.)

Radios must ship from the Motorola manufacturing facility with the hazardous atmosphere capability and FM Approval labeling. Radios will not be "upgraded" to this capability and labeled in the field. A modification changes the unit's hardware from its original design configuration. Modifications can only be done by the original product manufacturer at one of its FMRC audited manufacturing facilities.

WARNING:
Failure to use an FMRC Approved Product unit with an FMRC Approved battery or FMRC Approved accessories specifically approved for that product may result in the dangerously unsafe condition of an unapproved radio combination being used in a hazardous location.

Unauthorized or incorrect modification of an FMRC Approved Product unit will negate the Approval rating of the product.

Repair of FMRC Approved Products
REPAIRS FOR MOTOROLA FMRC APPROVED PRODUCTS ARE THE RESPONSIBILITY OF THE USER.

You should not repair or relabel any Motorola manufactured communication equipment bearing the FMRC Approval label ("FMRC Approved Product") unless you are familiar with the current FMRC Approval Standard for repair service ("Class Number 3605").

You may want to consider using a repair facility that operates under 3605 repair service approval.

WARNING:
Incorrect repair or relabeling of any FMRC Approved Product unit could adversely affect the Approval rating of the unit.

Use of a radio that is not intrinsically safe in a hazardous atmosphere could result in serious injury or death.

FMRC's Approval Standard Class Number 3605 is subject to change at any time without notice to you, so you may want to obtain a current copy of 3605 from FMRC. Per the December, 1994 publication of 3605, some key definitions and service requirements are as follows.

Repair
A repair constitutes something done internally to the unit that would bring it back to its original condition Approved by FMRC. A repair should be done in an FMRC Approved facility.
Items not considered as repairs are those in which an action is performed on a unit which does not require the outer casing of the unit to be opened in a manner which exposes the internal electrical circuits of the unit. You do not have to be an FMRC Approved Repair Facility to perform these actions.

Relabeling
The repair facility shall have a method by which the replacement of FMRC Approval labels are controlled to ensure that any relabeling is limited to units that were originally shipped from the Manufacturer with an FM Approval label in place. FMRC Approval labels shall not be stocked by the repair facility. An FMRC Approval label shall be ordered from the original manufacturer as needed to

Important Safety Information: Intrinsically Safe Radios (cont.)

repair a specific unit. Replacement labels may be obtained and applied by the repair facility providing satisfactory evidence that the unit being relabeled was originally an FMRC Approved unit. Verification may include, but is not limited to: a unit with a damaged Approval label, a unit with a defective housing displaying an Approval label, or a customer invoice indicating the serial number of the unit and purchase of an FMRC Approved model.

Do Not Substitute Options or Accessories

The communications equipment package that Motorola submits to FMRC for testing and approval is tested as a system that consists of the communications unit itself and the battery, antenna and other options or accessories that make up the rest of the package to be approved. This approved package must be strictly observed and there must be no substitution of items, even if the substitute you wanted to consider appears as an approved accessory elsewhere in the Guide for some other communications equipment unit. Approved configurations are listed by FMRC Approved Product in the annual Approval Guide published by FMRC. That guide, and the Approval Standard Class Number 3605 document, can be ordered from the following address.

Training Resource Center, Publications-Order Processing Dept.
Factory Mutual Engineering and Research
1151 Boston-Providence Turnpike
PO Box 9102
Norwood, MA, 02062
telephone (617) 762-4300

Restrictions

Because this radio contains a transmitter, federal law prohibits unauthorized, non-licensed personnel from adjusting or maintaining it. If any operational difficulties should arise while using this product, report them to authorized service personnel as soon as possible.

WARNING Do not attempt any unauthorized modification to the radio or accessories.

Airbag Warning Statement

WARNING: VEHICLES EQUIPPED WITH AIR BAGS
An air bag inflates with great force. DO NOT place objects, including communication equipment, in the area over the air bag or in the air bag deployment area. If the communication equipment is improperly installed and the air bag inflates, this could cause serious injury.

Installation of vehicle communication equipment should be performed by a professional installer/technician qualified in the requirements for such installations. An air bag's size, shape and deployment area can vary by vehicle make, model and front compartment configuration (e.g., bench seat vs. bucket seats).

Contact the vehicle manufacturer's corporate headquarters, if necessary, for specific air bag information for the vehicle make, model and front compartment configuration involved in your communication equipment installation.

Read This Information Before Using Your Radio

- **Antenna Care and Replacement**

  Do not use the radio with a damaged antenna. If a damaged antenna comes into contact with the skin, a minor burn may result. Replace a damaged antenna immediately. Use only the supplied or approved antenna. Unauthorized antennas, modifications, or attachments could damage the radio and may violate FCC regulations.

- **Driving**

  Check the laws and regulations on the use of communication devices in the areas where you drive. Always obey them. Also, when using your mobile while driving, please:

- give full attention to driving,
- use hands-free operation, if available, and
- pull off the road and park before making or
  answering a call if driving conditions so require.

- **Electronic Devices**

  Most modern electronic equipment – for example, equipment in hospitals and cars – is shielded from RF energy. However, RF energy from your radio may affect some electronic equipment.

  Consult your physician or the manufacturer of any personal medical devices (such as pacemakers, hearing aids, etc.) to determine if they are adequately shielded from external RF energy. The operation of inadequately shielded medical devices may be adversely affected when a radio is ON.

  Turn your radio OFF in health care facilities when any regulations posted in the areas instruct you to do so. Always request permission before using your radio near medical equipment.

  RF energy may affect some electronic systems in motor vehicles. Check with your vehicle manufacturer's representative to be sure your radio will not affect the electronic system of your vehicle.

- **Aircraft**

  Turn your radio OFF before boarding any aircraft.

- Use it on the ground only with crew permission.

- Do not use in the air.

  To prevent possible interference with aircraft systems, Federal Aviation Administration (FAA) regulations require you to have permission from a crew member to use your radio while the plane is on the ground. To prevent interference with FCC regulations prohibit using your radio while the plane is in the air.

- **Children**

  Do not allow children to play with your radio. It is not a toy. Children could hurt themselves or others (by poking themselves or others in the eye with the antenna, for example). Children also could damage the radio.

- **Blasting Areas**

  To avoid interfering with blasting operations, turn your radio OFF when in a "blasting area" or in areas posted: "turn off two-way radio." Construction crews often use remote-control RF devices to set off explosives.

- **Potentially Explosive Atmospheres**

  Turn your radio OFF when in any area with a potentially explosive atmosphere. It is rare, but your radio or its accessories could generate sparks. Sparks in such areas could cause an explosion or fire resulting in bodily injury or even death.

  Areas with a potentially explosive atmosphere are often, but not always, clearly marked. They include: fueling areas such as gas stations, below deck on boats, fuel or chemical transfer or storage facilities, and areas where the air contains chemicals or particles, such as grain, dust, or metal powders.

  Do not transport or store flammable gas, liquid, or explosives in the compartment of your vehicle which contains your radio or accessories.

  Vehicles powered by liquefied petroleum gas (such as propane or butane) must comply with the National Fire Protection Standard (NFPA-58). For a copy of this standard, contact the National Fire Protection Association. One Batterymarch Park, Quincy, MA 02269, Attn: Publications Sales Division.

Service

Proper repair and maintenance procedures will assure efficient operation and long life for this product. A Motorola maintenance agreement will provide expert service to keep this and all other communication equipment in perfect operating condition. A nationwide service organization is provided by Motorola to support maintenance services. Through its maintenance and installation program, Motorola makes available the finest service to those desiring reliable, continuous communications on a contract basis.

Motorola's Customer Service Division is the largest service organization specializing in mobile communications. It includes over 900 authorized stations. In addition, our products are serviced throughout the world by a wide network of company or authorized independent distributor service organizations. For a contract service agreement, please contact your nearest Motorola service representative, authorized Motorola dealer, or Motorola sales representative. If you suspect a radio problem, check the following items before requesting service.

1. Radio Checks

   • Be sure the radio is turned on and the channel selector is in the proper position.

   • Replace or recharge the battery. The first time a new battery is used, it should charge a minimum of 16 hours.

   • Antenna must be screwed on properly, with the base flush against the radio top.

   • Be sure that the 3-position toggle switch is in the proper position.

   • Check that the radio problem is not caused by accessories improperly connected.

2. Operating Instructions

   Review your operation instructions to ensure proper radio use.

3. Problem(s) Not Solved

   After following steps 1 and 2, if your radio still exhibits a problem, review your service agreement and call the applicable Motorola service representative.

   If you do not have a service agreement on your radio, contact your nearest authorized Motorola service shop for guidance toward a prompt and expedient evaluation and/or repair, or call 1-800-247-2346, extension 8615.

Express Service Plus (ESP), U.S.A. only

Express Service Plus (ESP) is an optional extended service coverage plan. ESP provides for the repair of this product, at the Motorola Radio Support Center listed in step 3, below, for a period of three years (one year warranty plus two years of extended service) from the date of shipment from the factory, or the date of delivery if purchased from an authorized Motorola two-way radio dealer. If ESP has been purchased, the serial number of this product has been registered for coverage under Express Service Plus at the depot listed in step 3, below.

To obtain service under Extended Service Plus:

1. Check to make sure the battery or battery charger of the unit is not defective. (Batteries and chargers are excluded from this service plan).

2. Include the following information:
   Your name
   Company name
   Address
   Telephone number
   A brief description of the nature of the problem or failure (be specific)

3. Pack and ship the unit (prepaid) to:
   Motorola Radio Support Center
   3761 South Central Avenue
   Rockford, IL 61102-4294

Express Service Plus is subject to Motorola standard terms and conditions. ESP does not include repairs which will be necessary due to damage caused by accidents, physical abuse or misuse of the product(s), acts of God, and fires. Batteries, battery chargers, and external accessories are excluded from this plan. Service under ESP is available only at the service center listed herein.

If you are unsure as to whether your radio is covered under Express Service Plus, call the depot at (800) 227-6772 or (815) 489-1000.

Parts Information

7:00 A.M. - 7:00 P.M. (CST) Monday - Friday (Chicago, U.S.A.)
Domestic (U.S.A.) 1-800-422-4210 or 847-538-8023
1-800-826-1913 or 410-712-6200(Federal Government)
TELEX: 280127
FAX: 1-847-538-8198
FAX: 1-410-712-4991 (Federal Government)

Domestic (U.S.A.) after hours or weekends
1-800-925-4357
International 1-847-538-8023
TELEX: 403305 MOTO PART SHBU UD
FAX: 1-847-576-3023
TWX: 910-693-0869

No International weekend service is available.

Computer Software Copyrights

The Motorola equipment 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 the exclusive right to copy or reproduce in any form the copyrighted computer program. Accordingly, any copyrighted Motorola computer programs contained in the Motorola equipment described in this manual may not be copied or reproduced in any manner without the express permission of Motorola. Furthermore, the purchase of Motorola equipment 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 nonexclusive, royalty free license to use that arises by operation of law in the sales of a product.

Patent Disclosure

This product is covered by one or more of the following United States patents:

4,512,035	4,551,856	4,653,117	4,816,774
4,829,594	4,837,853	4,864,252	4,885,550
4,914,321	4,918,403	4,959,617	4,975,650
4,994,768	5,006,730	5,021,754	5,079,526