*Operator's Manual*

PCS™
STANDARD/SCAN/DTMF
PORTABLE RADIO

ERICSSON ⧳

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# INTRODUCTION

The PCS™ Standard/Scan/DTMF portable radios are lightweight, full-featured radios that provide reliable two-way communications. The PCS comes in 2-, 8-, and 16-channel versions. The SCAN function exists on the 8- and 16-channel radios and allows monitoring of all channels. Any channel may be scanned with or without a priority level. One channel can be programmed for Priority 1 (**P1**) and another for Priority 2 (**P2**), with any or all remaining channels programmed as non-priority channels. It also allows HOME channel selection or Emergency mode transmission.

The User (also known as Universal) Device Connector (UDC), located on the side of the radio, provides connections for external audio accessories. This connector also allows the radio system personnel to connect programming equipment and program the per-channel and overall radio features. Consult the radio system personnel to determine the programmed features of your radio. Features that are programmable on a per-channel basis include:

- Receive Frequency

- Transmit Frequency

- High/Low Transmit Power

- Channel Busy Lock-Out

- Squelch Tail Elimination (STE)

- Channel Guard Encode/Decode (Tone or Digital)
- Type 99 Tone Decode
- Automatic Number Identification (ANI)
- Telephone Interconnect (DTMF Dial)

Features that are programmable on an overall radio basis include:

- Carrier Control Timer (CCT)
- Display Backlighting
- Alert Tones
- HOME Channel or Emergency Channel (on SCAN versions)
- Three (3) Auto-Dial Telephone Numbers (on SCAN versions)
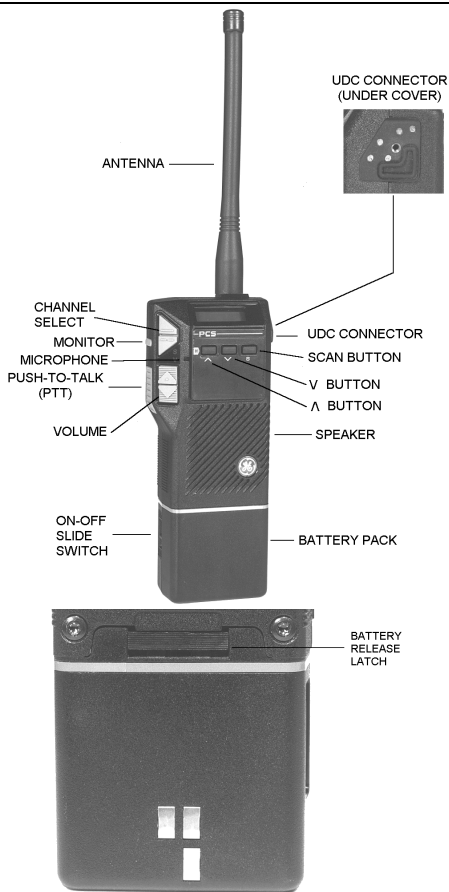
Figure 1 - PCS Standard/Scan Radio

# CONTROLS

ON/OFF SWITCH
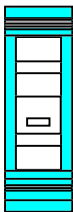
The ON/OFF switch is located on the battery pack. Sliding this switch up to the "ON" position will supply power to the radio from the battery pack. An audible "click" will be heard.

When the radio is turned on, it will resume operation at the last operating state (channel, volume, etc.) and the power-up alert tones will be sounded. Three (3) beeps indicate the radio is in the normal (receive mode); four (4) beeps indicate the radio is scanning. The operating status of the radio will be displayed in the Liquid Crystal Display (LCD) window.

PTT BUTTON
(Push-to-Talk)

Pressing the **PTT** button on the side of the radio will key the radio transmitter.

If the radio is not scanning, it will transmit on the selected (displayed) channel. If the radio is scanning when the **PTT** button is pressed, the radio may be programmed to transmit on the

**PTT BUTTON**
**(Push-to-Talk)**
**(cont'd)**

selected channel or on the current receive SCAN channel.

If the selected channel is programmed with Type 99 Tone Decode enabled, pressing the **PTT** button will disable Type 99 Tone Decode by switching the radio from the Selective Call mode to the Monitor mode. The **PTT** button must be released and then pressed a second time to key the radio.

**MONITOR**
**BUTTON**

The **MON**itor button has several functions. Its operation will vary depending upon programming.

If the **MON**itor button is programmed for "squelch" operation, pressing it unsquelches the receiver for the first three (3) seconds the button is held. All transmission will be heard, even if Channel Guard protected. This allows channel monitoring before transmitting. If the button is held for more than three (3) seconds, Channel Guard decode will toggle ON or OFF (if it is programmed on the selected channel).

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|---|---|
| MONITOR BUTTON (cont'd) | If the **MON**itor button is programmed for "Channel Guard" operation, pressing and releasing it within one (1) second will toggle Channel Guard ON or OFF. Pressing and holding for more than one (1) second will unsquelch the receiver after one (1) second and allow channel monitoring as long as the button is held; Channel Guard status will not be affected. |
| | The **MON**itor button is also used to reset the radio after a Type 99 call is received. Quickly press and release the button to reset the radio to receive the next Type 99 call. |
| VOLUME CONTROLS | The speaker volume level is controlled by the two buttons on the side of the radio. Pressing the VOLUME UP ($\Delta$) button will increase volume and pressing the VOLUME DOWN ($\nabla$) button will decrease the volume. The relative volume level is indicated in the LCD window by four (4) bars. |
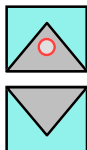
**VOLUME CONTROLS (cont'd)**

The relative volume level is indicated in the LCD window by four (4) bars. There are eight levels of volume. Two levels of volume are represented by each bar.

Changing the volume while the radio is squelched will cause the radio to beep, if programmed, at the new selected level. No beep is sounded if the radio is un-squelched.

**CHANNEL SELECTION**

Select the transmit/receive channel by pressing the CHANNEL UP ($\Delta$) or the CHANNEL DOWN ($\nabla$) button. The channel number will be displayed in the LCD window. Press the CHANNEL UP button to increase the channel and press the CHANNEL DOWN button to decrease the channel. Channel selection will wrap around (Channel 1 follows Channel 16 [or Channels 2 or 8] when increasing channels; Channel 16 [or 2 or 8] follows Channel 1 when decreasing channels).

The three (3) buttons (top three on the DTMF keypad) are used to control a variety of operations when used alone and to control SCAN operations when used in conjunction with the "**S**" button on the 8- and 16-channel radios. Details are as follows:

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**NOTE**

These three buttons are also used to place telephone calls ("1" - "3" digits) when the telephone interconnect feature is enabled. In addition, the "∆" UP ARROW button (HOME or digit "1") selects the HOME/EMERGENCY channel (on the SCAN versions).

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∆

The ∆ or "**H**" button allows the following (see SCAN Controls for further details):

H 〉 1
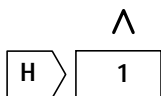
1. Add channels to Scan list when used in conjunction with the "**S**" button (for 8- and 16-channel radios). SCAN must be off when adding channels.

2. Programming of a HOME or EMERGENCY channel (when used alone). This applies only to SCAN versions.

3. BACKLIGHT the LCD (for 2-channel radios). The backlight will

| | |
|---|---|
| Δ<br>(Cont'd) | stay on as long as the button is pressed and will remain on for five (5) seconds after the button is released, providing the button was held for at least one second. |
| **"S"**<br><br>**S**<br><br>**3** | Pressing the "**S**" button will turn the SCAN function on and off (8- or 16-channel radios ). For 2-channel radios, this button functions as an on/off switch for Talk Around mode. When in Talk Around mode, the radio will transmit on the pro-grammed receive frequency with the receive Channel Guard (if pro-grammed). |
| ∇<br><br>∨<br><br>**2** | Pressing the ∇ button allows you to delete a channel(s) when used in conjunction with the "**S**" button (8- and 16-channel radios). On the 2-channel radio, this button is the POWER SET button. Pressing this button toggles the TX power between the high and low setting if the feature is enabled by the PC programmer. |

## SCAN CONTROLS

Holding the "**S**" button and then pressing Δ or ∇ keys (buttons) enables the following functions. (These functions apply only to the 8- and 16-channel radios.)

Δ    Holding the "**S**" button while pressing the Δ button will add the selected channel to the Scan list. Repeating this sequence will toggle SCAN status between non-priority SCAN, Priority 2 SCAN, and Priority 1 SCAN. When a channels' SCAN status is changed, the status indicators in the LCD window will be updated. If a new Priority 1 or Priority 2 channel is selected, the previous corresponding Priority channel will become a non-priority channel.

∇    Holding the "**S**" button while pressing the ∇ button will delete the selected channel from the Scan list. The SCAN Priority status indicator in the display window will turn off.

SCAN must be off to add or delete channels from the Scan list. (See the SCAN operating procedures for more information.)

**DTMF KEYPAD** Telephone Interconnect calls can be placed using the 12-button DTMF keypad option. This keypad is enabled when a DTMF-programmed channel is selected and the PTT button is pressed. See the telephone interconnect operating procedures and Figure 2 for more details.

**HOME CHANNEL SELECTION/ EMERGENCY MODE** The HOME/EMERGENCY button, located on the 12-button DTMF keypad (digit "1" or H) can be programmed as a HOME channel button or as an EMERGENCY button. See the HOME/ EMERGENCY button operating procedures for more details.

## INDICATORS

The Liquid Crystal Display (LCD) indicates the channel number and volume. In addition, seven (7) status indicators show SCAN status, Type 99 Tone Decode status, transmitter keyed, and a low battery condition. (See Figure 3.)

LCD backlighting will turn on anytime a control button is pressed. It will remain on for five (5) seconds after the button is released. Backlighting may be programmed to remain off at all times.

(For 2-channel radios the Δ or '**H**' button is programmed to turn on backlight for as long as the button is pressed, remaining illuminated for 5 seconds after the button has been released, providing the button is held for at least one second.)

## CHANNEL AND VOLUME INDICATORS

The selected channel number is displayed in the LCD window. In 2-channel radios, the "**P1**" pixel will be illuminated when high TX power is selected, otherwise the "**P2**" pixel will be lit to indicate a low TX power setting. If programmed, the ∇ button will toggle the TX power setting. If this feature is disabled through programming, the "**P1**" and "**P2**" pixels will not be displayed. Changing the channel after setting the TX power will cause the EEPROM setting to be reloaded.

Current volume level is displayed by the volume bars. The radio has eight different volume levels which are represented by four bars (2 levels per bar).
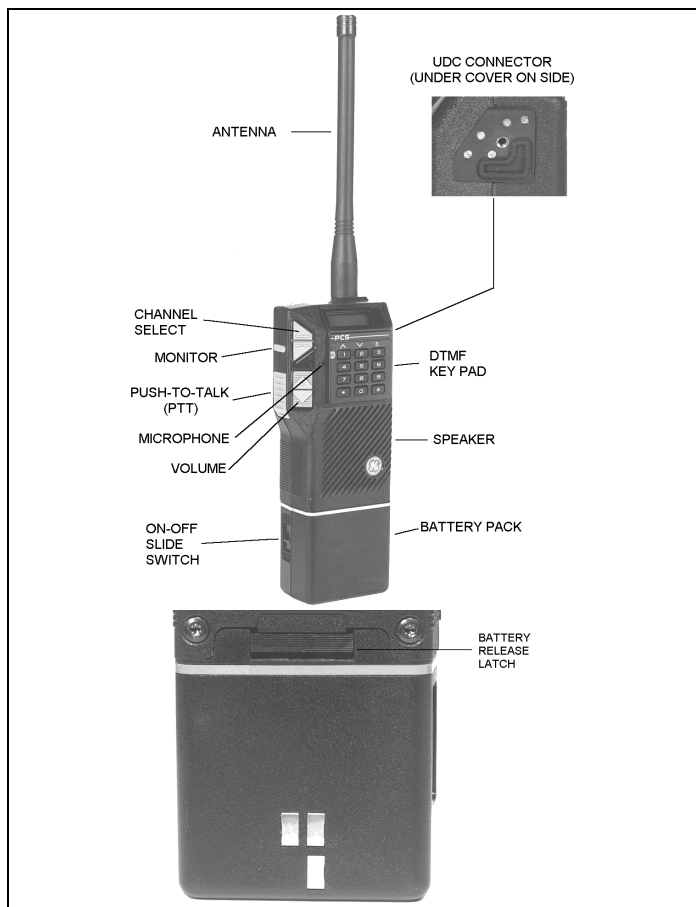
Figure 2 - PCS Standard/Scan/DTMF Keypad

## STATUS INDICATORS

**SCN**        This status indicator turns on when the radio is scanning (8- or 16-channel radios).

**S**        When this indicator is on, the selected channel is a non-Priority SCAN channel (for 8- or 16-channel radios). When this indicator is lit in a 2-channel radio, it indicates a selected channel is in Talk Around mode.

**P1**        When this indicator is illuminated, the selected channel is a Priority 1 SCAN channel. This applies to the 8- and 16-channel radios only. On 2-channel radios, if this feature is enabled, this indicator is lit when the high TX power setting is selected.

**P2**        When this indicator is on, the selected channel is a Priority 2 SCAN channel. This applies to the 8- and 16-channel radios only. On 2-channel radios, if this feature is enabled, this indicator is lit when the low TX power setting is selected.

| | |
|---|---|
| **\ | /**<br>**PG**<br>**/ | \** | This status indicator will turn on when the channel is programmed as a paging channel (Type 99 Selective calls). It will flash when the Selective call mode has been disabled and the radio is in Monitor mode. |
| **TX** | This status indicator turns on when the radio is transmitting. |
| **BAT** | If the battery pack charge is low and requires charging, this status indicator will turn on. |
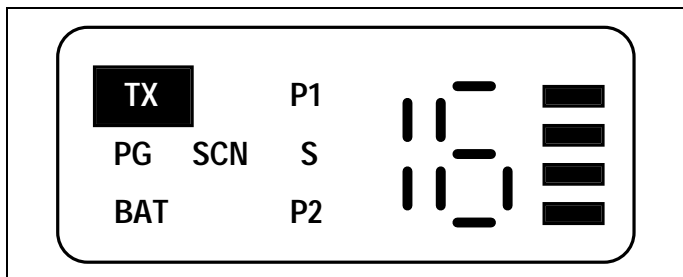


Figure 3 - Liquid Crystal Display (LCD)

**ALERT TONES**

Alert tones or "beeps" are sounded when a button is pressed and when the operating status of the radio changes. All alert tones may be programmed off.

## POWER-UP SELF-TEST

Each time the radio is turned on it will perform a power-up self-test. All display segments will turn on, and after successful completion of the test, the radio will change to the last operating state (channel, volume, etc.) and sound three (3) or four (4) beeps. Three beeps sound if the radio is operating in the normal (not SCAN) state. Four beeps will sound if the radio is scanning. The status will be indicated in the LCD. If the radio fails the self-test, no beeps will be sounded.

## CARRIER CONTROL TIMER

This feature, programmable on a per-channel basis, prevents unnecessary channel traffic and radio damage if the transmit timer limit is exceeded. If the programmed timer times-out during a transmission, the radio will beep and stop transmitting. The beeping tone will continue until the operator releases the **PTT** button. Releasing the **PTT** button resets the timer.

## CHANNEL BUSY LOCK-OUT

If the radio is receiving a signal when the **PTT** button is pressed, a beep will warn the operator that the radio is receiving a carrier and the transmission will not occur. The beep is sounded as long as the **PTT** button is pressed. The channel-busy feature is programmable on or off on a per-channel basis.

Type 99 decode and Channel Busy Lock-Out are mutually exclusive. If Channel Busy Lock-Out is programmed, T99 decode will not occur.

## RECEIVE-ONLY CHANNEL

If the selected channel is programmed for receive-only, the radio will beep if a transmission is attempted.

## TYPE 99 ALERT TONE

The Type 99 alert tone, indicating a receive Type 99 call, may be enabled or disabled by PC programming. If the alert tone is enabled, the level may also be programmed to sound at the present volume control setting or at maximum volume, regardless of volume control setting. If the alert tone is disabled, no alert tone will be present when a Type 99 call is received.

## ANI ALERT TONE

The ANI (Automatic Number Identification) alert tone beep can be enabled or disabled by PC programming. If the alert tone is enabled, a beep will sound after the **PTT** is pressed, to indicate to the user to begin voice transmission. Some communication systems require a time delay before voice transmission begins. If the alert tone is disabled, no beep will be sounded.

## PRIORITY-ONE (P1) SCAN

If the radio receives a signal on the Priority 1 channel when scanning, the radio will sound a beep if the Priority 1 alert tone is programmed on.

## RADIO/CHANNEL FAILURE

The simultaneous flashing of the "**BAT**" status indicator and the sounding of beeps indicates the synthesizer is unable to correctly lock on the selected channel. If this happens when transmitting, transmissions are inhibited (no transmission is made). Select another channel, change the battery pack, or have the radio repaired.

## OPERATION

### RECEIVING A MESSAGE

1. Turn the radio on by sliding the **ON/OFF** switch on the battery pack to the "ON" position. A yellow area will be visible. After the radio has successfully completed its power-up self-test, it will begin operation at the last operating state (channel, volume, etc.). The operating status of the radio will be displayed in the LCD window. If programmed on, the power-up alert tones (three or four beeps) will be sounded.

2. Select the desired operating channel by pressing the CHANNEL UP or CHANNEL DOWN buttons. The channel number will be displayed in the LCD window.

3. When a message is received (and the correct Channel Guard or Type 99 signal is decoded, if programmed and enabled), the receiver will unsquelch and the message will be heard in the speaker.

4. Adjust the volume as necessary.

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**NOTE**

If the **MON**itor button is programmed for "squelch" operation, pressing it unsquelches the receiver for the first three (3) seconds the button is held. All transmissions will be heard, even if Channel Guard protected. If it is held for more than three seconds, Channel Guard will toggle on or off (if it is programmed for the selected channel).

If the **MON**itor button is programmed for "Channel Guard" operation, pressing and releasing it within one (1) second will toggle Channel Guard on or off. Pressing and holding it for more than one second will unsquelch the receiver after one second to allow channel monitoring as long as the button is held; Channel Guard status will not be affected.

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## SENDING A MESSAGE

1. Turn the radio on and select the desired operating channel as described in "RECEIVING A MESSAGE."

2. Press the **MON**itor button to determine if the channel is in use. Never interrupt another transmission.

3. Hold the radio so the antenna is vertical and press and hold the **PTT** button when you are ready to transmit. Speak directly into the grill or across the face of the radio or external microphone. Release the **PTT** button when you are finished talking. Messages cannot be received when the **PTT** button is pressed.

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**— NOTE —**

When transmitting on a paging channel (Type 99, if programmed), the **PTT** button must be pressed twice. The first press takes the radio out of Paging mode. The second press keys the transmitter for normal transmitter operation.

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## TYPE 99 OPERATION

The PCS Conventional/DTMF radio may be programmed to operate in the Selective mode or in the Monitor mode when it is turned on. If the Selective mode is programmed and a Type 99 channel is selected, the

"**PG**" status indicator will illuminate (does not flash). If the Monitor mode is programmed and a Type 99 channel is selected, the "**PG**" status indicator will flash.

When the radio is operating in the Selective mode, it operates as a tone and voice receiver and only those calls that are coded for it will be heard.

When the radio is operating in the Monitor mode, all calls (with the correct Channel Guard, if programmed) will be heard.

In either mode, when a Type 99 channel has been selected and a valid code is received, a series of beeps will alert you of the incoming call. The "**PG**" status indicator will flash at a slow rate. If the radio is in the Selective mode, it will automatically switch to the Monitor mode.

### Type 99 Selective Call Receiving and Sending

1. Select the appropriate channel to receive the Type 99 tone signal. The "**PG**" status indicator will show in the display window.

2. After the Type 99 call is received and the beeps are sounded, press the **PTT** button and answer the call. When the communication sequence is completed, press the **MON**itor button to reset the radio for the next call.

3. When the radio is reset (Selective Call mode), Type 99 operation can be disabled by pressing

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and releasing the **PTT** button. The "**PG**" indicator will flash, indicating Monitor mode and the radio will beep. No transmission occurs. A second press of the **PTT** button will result in a normal transmission.

4. To return to Type 99 Selective Call mode, press the **MON**itor button. The "**PG**" status indicator will stop flashing and turn on continuously.

## SCAN OPERATION
## (8- AND 16-CHANNEL RADIOS ONLY)

The PCS Conventional/DTMF radio may be programmed for an operator-selectable SCAN and Priority channel, a fixed Priority 1 channel, or a selected channel Priority 1 channel. SCAN rate will vary depending upon the number of channels on the Scan list and Channel Guard programming. Fewer channels on the Scan list will result in a faster SCAN rate.

### Adding Channels To and Deleting Channels From the Scan List

1. SCAN must be off to add channels or delete channels from the Scan list. If the "**SCN**" status indicator is on, press the "**S**" button to turn SCAN off.

2. Select the desired channel to be added to or deleted from the Scan list.

3.  To add the channel, press and hold the "**S**" button and then repeatedly press the Δ or **H** button until the desired Priority indicator appears: "**S**" for non-priority, "**P2**" for Priority 2, or "**P1**" for Priority 1.

4.  If a new Priority 1 or Priority 2 channel is selected, the previously corresponding priority channel will become a non-priority SCAN channel.

5.  To delete a channel from the Scan list, press and hold the "**S**" button and then press the ∇ button. The SCAN priority indicator will turn off.

## Using SCAN

When SCAN mode is off, press and release the "S" key to go into SCAN mode. SCAN mode will not be in effect until the "S" key is released. The "**SCN**" status indicator will turn on when the radio is scanning.

To exit SCAN mode, press and hold the "S" key for a minimum of 1 second and then release.

If no priority channels are on the Scan list (or programmed), the radio will scan in the manner indicated in the following paragraphs. When a carrier is detected, and, if programmed, the correct Channel Guard is decoded, the display will indicate the detected channel number. Scanning will stop and the radio will remain on the channel until the carrier ceases. After the carrier ceases, the radio will resume scanning.

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If a Priority channel(s) is on the Scan list (or programmed) the radio will scan in the following manner. The Priority 1, Priority 2, and then the non-priority channels will be scanned. When a carrier is detected, and, if programmed, the correct Channel Guard is decoded, the LCD will indicate the channel number. Sampling of the Priority 1 and Priority 2 channels will continue. The radio will switch to a priority channel if a priority channel carrier is detected, while a non-priority channel is being received.

If the **PTT** button is pressed when SCAN is on, the radio can be programmed to transmit on the selected channel or on the current receive SCAN channel.

## TELEPHONE INTERCONNECT CALLS

The keypad on the DTMF radio's front panel allows the operator to make telephone interconnect calls on radio systems equipped with this option. Telephone numbers may be manually dialed, or one (1) of three (3) programmed numbers can be selected and dialed automatically. Most systems require an "**\***" to be sent at the beginning of a transmission to get a dial tone. Others require a "**#**." After the dial tone is received, the number is sent.

Communication takes place in a simplex mode. In other words, you cannot talk and listen at the same time. You must press and hold the **PTT** button each time you wish to talk (transmit) and release it when you wish to listen (receive).

At the completion of the call, most systems require a "**#**" to be sent to disconnect the user from the telephone system. Others require an "**\***".

Specific procedures for placing a telephone interconnect call from the PCS DTMF radio are determined by the radio system and the individual radio programming. Consult a system representative for the exact operating procedures necessary for your system and radio.

## 12-Button DTMF Keypad

The top three (3) buttons on the 12-button DTMF keypad are used for the following:

| In 2-channel radios: | a.) Backlight |
| | b.) TX power toggle |
| | c.) Talkaround |
| | d.) Manually dialed calls (digits 1-3) |
| In 8- and 16-channel radios: | a.) Select an autodial number |
| | b.) Control SCAN operation |
| | c.) Select a Home/ Emergency Channel |
| | d.) Manually dialed calls (digits 1-3) |

Except for these three (3) buttons, the keypad is normally inactive. When placing a manually dialed call, the DTMF keypad is active only when the **PTT** is pressed

and held.  Automatically dialed calls do not require the **PTT** button be held after the call sequence is started.

### Placing a Manually Dialed Call

1. Select a channel in your radio system that has telephone interconnect capability. The radio should be programmed for DTMF operation on this channel.

2. Press and hold the **PTT** button to key the transmitter.

3. While holding the **PTT** button, press either the "**\***" key or the "**#**" key, as required by the radio system, to obtain a telephone line. The radio will transmit the selected tone.

4. Release the **PTT** button and listen for a dial tone.

5. When the dial tone is received, press and hold the **PTT** button and dial the desired telephone number.  As you dial each digit and as the radio transmits the DTMF tone, the DTMF sidetone will be heard in the speaker.

6. Release the **PTT** button when the dial sequence is complete.

7. When the called party answers, press and hold the **PTT** button each time you wish to speak

(transmit) and release it each time you wish to listen (receive).

8. At the completion of the call, press and hold the **PTT** button and then press the "**#**" or the "**\***" key as the telephone interconnect system requires. Release the **PTT** button.

**Placing an Automatically Dialed Call**
**(8- and 16-Channel Radios Only)**
(Number Programmed with a Preceding "*")

1. Select a channel in your radio system that has telephone interconnect capability. The radio should be programmed for DTMF operation on this channel.

2. Press and hold the **PTT** button and then press one of the channel buttons (CHANNEL UP or CHANNEL DOWN). The radio will transmit for a minimum of five (5) seconds. The **PTT** button may be released after one of the channel buttons has been pressed.

3. Press the button ("1," "2," or "3") corresponding to the memory location (1, 2, or 3) of the telephone number you wish to dial. The DTMF sidetones will be heard in the speaker as the radio transmits the DTMF tones. It is not necessary to hold the **PTT** button while the radio is automatically dialing the number.

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4.  When the called party answers, press and hold the **PTT** button each time you wish to speak (transmit) and release it when you wish to listen (receive).

5.  At the completion of the call, press and hold the **PTT** button and then press the "**#**" or "**\***" key as required by the telephone interconnect system. Release the **PTT** button.

### Placing an Automatically Dialed Call
### (8- and 16-Channel Radios Only)
(Number Not Programmed with a Preceding "**\***")

1.  Select a channel in your radio system that has telephone interconnect capability. The radio should be programmed for DTMF operation on this channel.

2.  Press and hold the **PTT** button and then press the "**\***" key. Release the **PTT** button and listen for a dial tone.

3.  After the dial tone is received, press and hold the **PTT** button and then press one of the channel buttons (CHANNEL UP or CHANNEL DOWN). This action causes the radio to transmit for a minimum of five (5) seconds. The **PTT** button may be released after a channel button is pressed.

4.  Press the button ("1," "2," or "3") corresponding to the memory location (1, 2, or 3) of the

telephone number you wish to dial. The DTMF sidetones will be heard in the speaker as the radio transmits the DTMF tones. It is not necessary to hold the **PTT** button while the radio is automatically dialing a number.

5. When the called party answers, press and hold the **PTT** button while you wish to speak (transmit) and release it when you wish to listen (receive).

6. At the completion of the call, press and hold the **PTT** button and then press the "**#**" or "**\***" key as required by the telephone interconnect system. Release the **PTT** button.

## Δ OR "H" BUTTON OPERATION
## (8- and 16-Channel Radios Only)

The Δ or "**H**" button, located on the 12-button DTMF keypad (digit 1) can be programmed as a HOME channel button, an EMERGENCY channel button, or can be used to ADD channels to the Scan list (see SCAN OPERATION). This applies only to the 8- and 16-channel radios.

### HOME Button Programmed

If programmed as a HOME button, pressing the "1" key will instantly switch the radio to the programmed HOME channel.

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Pressing the HOME button when the radio is scanning will temporarily stop SCAN for five (5) seconds. Pressing the **PTT**, CHANNEL UP, or CHANNEL DOWN buttons within the five second interval will turn SCAN off and the radio will remain on the HOME channel. The radio will resume scanning if one of the above mentioned buttons is not pressed within the five second interval.

### EMERGENCY Button Programmed

If programmed as an EMERGENCY button and no HOME channel is programmed, press and hold the EMERGENCY button for at least one (1) second to transmit the emergency ANI code on the selected channel. If the radio is programmed with a HOME channel, the emergency ANI code will be transmitted on the HOME channel instead of the selected channel.

If the radio is scanning when the EMERGENCY button is pressed and no HOME channel is programmed, the radio will stop scanning, transmit the emergency ANI code on the selected channel, and resume scanning. If the radio is scanning when the button is pressed and a HOME channel is programmed, the radio will stop scanning, transmit the emergency ANI code on the HOME channel, switch receive operation to the HOME channel, and resume scanning.

Emergency transmissions can only be disabled by turning the radio off and then back on.

## BATTERY PACKS

The following battery packs are available for use with the PCS radios:

| | |
|---|---|
| PCPA1J (19A705293P2) | Rechargeable Battery Pack, High Capacity |
| PCPA1K (19A705293P2) | Rechargeable Battery Pack, Extra High Capacity |

**CAUTION**

Battery packs used with the PCS radio must be supplied by Ericsson Inc.

## INSTALLING THE BATTERY PACK

1. Ensure the ON/OFF switch on the battery pack is in the "OFF" position.

2. Hold the radio and the battery pack with the back of them facing you. (See Figure 4.)

3. Align the grooves on the top of the battery pack with the grooves on the bottom of the radio.

4. Slide the battery pack fully into the radio until the battery release latch clicks into place.

Figure 4 - Installing the Battery Pack

**REMOVING THE BATTERY PACK**

1.  Ensure that the ON/OFF switch on the battery pack is in the "OFF" position.

2.  Press down on the battery release latch and slide the battery pack out in the direction of the release latch. (See Figure 5.)

Figure 5 - Removing the Battery Pack

## CHARGING THE BATTERY PACKS

After receiving a new battery pack from the factory, it should be fully charged before placing it into service. This also applies to battery packs that have been stored for long periods of time. When the battery pack requires charging, the "BAT" indicator in the LCD window will illuminate and the radio will sound an alert tone.

There are several different styles of charger available for the PCS radio and each has a different charge rate. The battery packs may be charged with the radio still connected or the battery pack can be disconnected from the radio and charged alone. For specific operating instructions regarding your charger, refer to the applicable charger operating manual.

## **Memory Effect in Nickel-Cadmium Batteries**

Rechargeable batteries (nickel-cadmium) used with the radio can develop a condition called "Memory Effect" or reduced battery capacity. This condition occurs when the battery is continuously overcharged for long periods of time or when a regularly performed duty cycle allows only a portion of the battery's capacity to be expended.

If the nickel-cadmium battery is only sparingly or seldom used and/or is left on continuous charge for one or two months at a time, it could develop "Memory Effect." On the first discharging cycle, the output voltage could be reduced enough to minimize the battery's hours of useful service. The most common method of causing "Memory Effect" is regularly performing short duty cycles. This is when the battery is operated so that only a portion (50%) of its capacity is expended. This type of operation can cause the battery to become temporarily inactive and show a severe decrease in the ability to deliver at full rated capacity.

Any nickel-cadmium battery showing signs of reduced capacity should be checked for the "Memory Effect" before being returned under warranty or being scrapped. If it is determined that "Memory Effect" is the probable cause, a procedure for reconditioning it should be performed as follows:

1. A complete discharge (deep discharge) of the battery should be made. This can be accomplished by turning the radio "ON" and allowing the battery to discharge overnight.

2.  A full charging cycle should be performed using an appropriate Ericsson GE charger.

3.  Repeat the preceding steps again. Performing the deep discharge and charge cycle at least twice should sufficiently restore the battery.

## RECHARGEABLE BATTERY PACK DISPOSAL
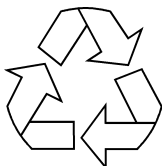


The product you have purchased contains a rechargeable battery. The battery is recyclable. At the end of it's useful life under various state and local laws it may be illegal to dispose of this battery into the municipal waste stream. Check with your local solid waste officials for details concerning recycling options or proper disposal in your area. Call Toll Free 1-800-822-9362 for information and/or procedures for returning rechargeable batteries in your state.

## INTRINSICALLY SAFE USAGE

Selected portable radios with appropriate factory installed F4 Options are certified as Intrinsically Safe by the Factory Mutual Research Corporation. Intrinsically Safe approval includes Class I, II, III, Division 1 hazardous locations in the presence of Groups C, D, E, F and G atmospheres. Non-Incendive approval includes

Class I, Division 2 hazardous locations in the presence of Groups A, B, C and D atmospheres.

Hazardous locations are defined in the National Electrical Code. Useful standards NFPA 437A and NFPA 437M for the classifications of hazardous areas can be ordered from the National Fire Protection Association, Batterymarch Park, Quincy, MA 02269.

## BATTERY PACKS

Only battery packs identified with a green latch shall be used with a portable radio that is rated and labeled as Factory Mutual Intrinsically Safe. Use of nonspecified battery packs voids Factory Mutual approval. The following battery pack option is approved for use in intrinsically safe radios.

PCPA1L    Rechargeable Battery Pack
          Extra High Capacity (Tall Case)

## ACCESSORIES

The accessories that follow are approved for use with intrinsically safe radios. Use of accessories other than those listed voids Factory Mutual Approval.

PCAC1J    Earpiece

PCAE1X    Speaker/Microphone

PCNC1P    Antenna, 136-174 MHz, Helical

PCNC3A    Antenna, 403-470 Mhz, Whip

| PCNC3B | Antenna, 470-512 MHz, Whip |
| PCNC3D | Antenna, 440-470 Mhz, Helical |
| PCAC1C | UDC Connector |
| PCZM1A | Earpiece kit |
| PCHC5S | Leather Case, with Swivel and Belt Loop (Short Case) |
| PCHC5T | Leather Case, with Swivel and Belt Loop Antenna Retaining Strap (Short Case) |
| PCHC5U | Leather Case, with Swivel and Belt Loop (Tall Case) |
| PCHC5V | Leather Case, with Swival and Belt Loop Antenna Retaining Strap (Tall Case). |
| PCHC1C | Belt Clip |
| PCHC1D | Swival Mount with Belt Clip |

### SWIVEL MOUNT REMOVAL AND REPLACEMENT

To remove the swivel mount, slide a flat blade screwdriver underneath the spring retainer and twist. While twisting, slide the swivel mount out from under the holder.  See Figure 6.

To Replace the swivel mount, place the end of the swivel in the grooves in the back of the radio and slide the mount up until it snaps into place.

Figure 6 - Swivel Mount Removal and Replacement

## OPERATING TIPS

Antenna location and condition are important when operating a two-way radio. Operating the radio in low terrain areas, under power lines or bridges, inside of a vehicle, or inside a metal- or steel-framed building can severely reduce the operating range of the unit. Mountains and buildings can also reduce the range of the unit.

In areas where transmission or reception is poor, some improvement may be obtained by insuring that the antenna is vertical. Moving a few yards in one direction or another or moving to a higher elevation may also improve communication.

Battery condition is another important factor in the trouble-free operation of the radio. Always properly charge the batteries. (See Battery Packs section for more information.)

Always observe all of the Federal Communication Commission's (FCC's) rules and regulations.

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### NICKEL-CADMIUM BATTERY WARRANTY

*A. Ericsson Inc. (hereinafter "Seller") warrants to the original purchaser for use (hereinafter "Buyer") that nickel-cadmium batteries supplied by Seller shall be free from defects in material and workmanship, and shall conform to its published specifications for a period of twelve (12) months from the date of purchase.*

*B. For purposes of this warranty, batteries shall be deemed defective if (1) the battery capacity is less than 80% of rated capacity, or (2) the battery develops leakage.*

*C. If any battery fails to meet the foregoing warranty, Seller shall correct the failure by issuing a replacement battery upon receipt of the defective battery at an Authorized Service Center (ASC). To obtain the name and address of an ASC, ask your salesperson, consult the Yellow Pages, or call the number printed at the bottom of this page.*

*D. Replacement batteries shall be warranted only for the remaining unexpired warranty period of the original battery. This warranty becomes void if:*

*(1) The battery has been subjected to any kind of misuse, detrimental exposure, or has been involved in an accident.*

*(2) The battery is used in equipment or service other than the radio equipment for which it is specified.*

*E. The preceding paragraphs set forth the exclusive remedies for claims (except as to title) based upon defects in or non-conformity of any battery, whether the claim is in contract, warranty, tort (including negligence), strict liability or otherwise, and however instituted. Upon the expiration of the warranty period, all such liability shall terminate. The foregoing warranties are exclusive and in lieu of all other warranties, whether oral, written, expressed, implied or statutory. NO IMPLIED OR STATUTORY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR PARTICULAR PURPOSE SHALL APPLY. IN NO EVENT SHALL THE COMPANY BE LIABLE FOR ANY INCIDENTAL, CONSEQUENTIAL, SPECIAL, INDIRECT OR EXEMPLARY DAMAGES.*

This warranty applies only within the United States.

ECX-841C

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# EMERGENCY NUMBERS

Police

State Police

Fire

Poison Control

Ambulance

Life Saving and

Rescue Squad