DPH- CMD
DIGITAL PORTABLE RADIO
Owner's Manual

BK Radio
7100 Technology Drive
West Melbourne, FL 32904
Telephone: (321) 984-1414
FAX: (321) 984-0434
www.relm.com

P/N 7001-30978-200   07-06

DEFINITIONS AND ACRONYMS

ANI	Automatic Numeric Identification
CLR	Clear
Cloning	The process of copying data from one radio, called "master," to other radios, called "slaves" or "clones."
Channel Guard	A sub-audible tone, a code (analog) or a Network Access Code (digital) for selective calling and receiving.
Command Group	A group of up to 20 channels selected by the user from any of the 500 channels in the radio.
Detent	The click/hesitation you feel as you turn a knob from one position to another.
DTMF	Dual Tone Multiple Frequency
DTMF Tones	Tones that sound like those used by a standard push-button telephone.
ENT	Enter
FCN	Function
GRP	Group Label
D	Digital reception/transmission
Individual Personality	The information programmed with a PC on both a global and by-channel basis that tells the radio exactly how to operate.
LCD	Liquid Crystal Display
Mixed Mode	Allows Analog and Digital operation on the same channel.
NAC	Network Access Code for digital channel.
PR	Priority Channel
PRG	Programming mode
PRI	Priority
PTT	Push To Talk
RTA	Repeater Talk Around
RTX Channel	Ready to Transmit Channel
RX	Receive
SCN	Scan
SQ	Squelch
Squelch	A control that eliminates background noise.
Talkback Scan	When scanning, if a signal is present, the scan will stop and you will hear the signal. If you can then push the PTT switch to talk back to the person, you are in Talkback Scan Mode.
Time-Out Timer	A feature that limits the duration of calls.
TX	Transmit
UNAC	User Selected Transmit Network Access Code
UTGID	User Selected Talk Group ID
UTXG	User Transmit Channel Guard

TABLE OF CONTENTS

INTRODUCTION

This manual contains information concerning the operation procedures for the BK Radio DPH-CMD radio. The DPH-CMD radio has been designed to meet the tough requirements of today's communications environment. Please take a moment to read the information in this manual so you can get optimum performance from your new radio.

FCC REQUIREMENTS

Your radio must be properly licensed by the Federal Communications Commission prior to use. Your BK Radio dealer can assist you in meeting these requirements. Your dealer will program each radio with your authorized frequencies, signaling codes, etc., and will be there to meet your communications needs as your system expands.

SAFETY PRECAUTIONS

- Do not operate the transmitter in close proximity to blasting caps.

- Do not operate the radio in an explosive atmosphere (petroleum fuels, solvents, dust, etc.) unless your radio is an intrinsically safe model designed for such use.

3. Remove battery pack from the radio.

NOTE: Periodically check the contacts on the battery pack for dirt that could prevent a good electrical contact with the charging base.
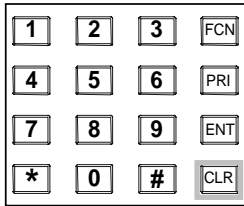
WARNING: EXPLOSION HAZARD
Do not drop a battery pack into fire.
An explosion may occur.

ANTENNA INSTALLATION

1. Insert the flexible helical-wound antenna into the radio's antenna connector and turn it clockwise until it is firmly seated.

NOTE: To stop the '**FAILURE**' Mode, press **[CLR]**, turn off both radios, and try again, starting with Step 1 on the previous page.

BATTERY INSTALLATION AND REMOVAL

BK Radio battery packs are available in a variety of sizes and types for special applications. Rechargeable battery packs can be charged separately or while attached to a radio.

NOTE: For safety reasons, rechargeable battery packs are shipped uncharged or only partially charged. Therefore, a rechargeable battery pack should be properly charged before use.

INSTALLING THE BATTERY
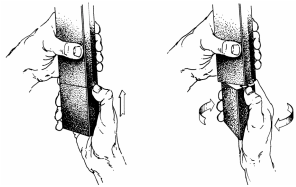
1. Locate the center hub on the radio base and place it in the recess of the battery pack.

2. Position the battery pack at the 30° offset, seating the two metal studs in their recess.

3. Apply upward pressure to the pack while twisting the pack to its final (in line with the radio) position. The metal tab will click, locking the pack in position.

REMOVING THE BATTERY

1. Turn the radio off.

2. As shown above, push up the metal tab on the side of the case while twisting the battery pack approximately 30°.

   NOTE: All information programmed into the radio is maintained even when the battery pack is removed.

RF ENERGY EXPOSURE AWARENESS AND CONTROL INFORMATION, AND OPERATIONAL INSTRUCTIONS FOR FCC OCCUPATIONAL USE REQUIREMENTS

BEFORE USING YOUR PORTABLE 2-WAY RADIO, READ THIS IMPORTANT RF ENERGY AWARENESS AND CONTROL INFORMATION AND OPERATIONAL INSTRUCTIONS TO ENSURE COMPLIANCE WITH THE FCC'S RF EXPOSURE GUIDELINES.

NOTICE: This radio is intended for use in occupational/controlled conditions, where users have full knowledge of their exposure and can exercise control over their exposure to meet FCC limits. This radio device is NOT authorized for general population, consumer, or any other use.

This 2-way radio uses electromagnetic energy in the radio frequency (RF) spectrum to provide communications between two or more users over a distance. It uses radio frequency (RF) energy or radio waves to send and receive calls. RF energy is one form of electromagnetic energy; other forms include electric power, radar, sunlight and x-rays. RF energy, however, should not be confused with these other forms of electromagnetic energy, which when used improperly can cause biological damage. Very high levels of x-rays, for example, can damage tissues and genetic material. The energy levels associated with radio waves from portable 2-way radios, when properly used, are not great enough to cause biological damage.

Experts in science, engineering, medicine, health and industry work with organizations to develop standards for exposure to RF energy. These standards provide recommended levels of RF exposure for both workers and the general public. These recommended RF exposure levels include substantial margins of protection. All 2-way radios marketed in North America are designed, manufactured and tested to ensure they meet government established RF exposure levels. In addition, manufacturers also recommend specific operating instructions to users of 2-way radios.

These instructions are important because they inform users about RF energy exposure and provide simple procedures on how to control it. Please refer to the following WEBSITES for more information on what RF energy exposure is and how to control your exposure to assure compliance with established RF exposure limits.

http://www.fcc.gov/oet/rfsafety/rf-faqs.html
http://www.osha.gov/SLTC/radiofrequencyradiation/index.html

FEDERAL COMMUNICATIONS COMMISSION REGULATIONS

The FCC rules require manufacturers to comply with the FCC RF energy exposure limits for portable 2-way radios before they can be marketed in the U.S. When 2-way radios are used as a consequence of employment, the FCC requires users to be fully aware of and able to control their exposure to meet occupational requirements. Exposure awareness can be facilitated by the use of a product label directing users to specific user awareness information. Your BK Radio 2-way radio has a RF exposure product label. Also, your BK Radio owner's and service manuals include information and operating instructions required to control your RF exposure and to satisfy compliance requirements.

COMPLIANCE WITH RF EXPOSURE STANDARDS

Your BK Radio 2-way radio is designed and tested to comply with a number of national and international standards and guidelines (listed below) for human exposure to radio frequency electromagnetic energy. This radio complies with the IEEE and ICNIRP exposure limits for occupational/controlled RF exposure environment at operating duty factors of up to 50% transmitting and is authorized by the FCC for occupational use only. In terms of measuring RF energy for compliance with the FCC exposure guidelines, your radio radiates measurable RF energy only while it is transmitting (during talking), not when it is receiving (listening) or in Standby Mode. Note: The approved batteries supplied with this radio are rated for a 5-5-90 duty factor (5% talk-5% listen - 90% standby), even though this radio complies with the FCC occupational RF exposure limits and may operate at duty factors of up to 50% talk.

Your BK Radio 2-way radio complies with the following RF energy exposure standards and guidelines:

- United States Federal Communications Commission, Code of Federal Regulations; 47 CFR §§ 1.1307, 1.1310, 2.1091 and 2.1093
- American National Standards Institute (ANSI) / Institute of Electrical and Electronic Engineers (IEEE) C95. 1-1992
- Institute of Electrical and Electronic Engineers (IEEE) C95.1-1999 Edition

INDUSTRY CANADA COMPLIANCE

This Class B digital apparatus complies with Canadian ICES-003. Cet appareil numerique de la classe B est conforme à la norme NMB-003 Canada.

```
PROG|DPHcmD
Cmnd group
```

```
PROG|DPHcmD
pick listS
```

```
 \ \ / /
CLONING
Group 01
```

```
 \ \ / /
FAILURE
Group 01
```

8. Long **[#]** keypresses will cause the second line of the display to cycle through the data blocks that can be transferred to the target radio.

Target	Valid Data
DPHCMD	GROUP 00 or GROUP 01 – 25 CMND GRP PICK LISTS

9. Once the data to be transferred has been selected, press the **[FCN]** key on the Master radio keypad. The top line of the display will flash '**CLONING**' while the program in the master is being downloaded to the clone.

10. If the download was successful, the display on the Master will again display the clone prompt (target and data to be transferred)**.**

    - To clone another channel group, press the Master radio's **[CLR]** key. Navigate to a '**CH**' prompt, then press and hold the **[#]** key to get the '**GRP**' prompt. Select '**GRP 0**' to clone global settings.

    - If cloning is finished, turn off the Clone and disconnect the cloning cable. Normal radio operation will occur when you turn on the Clone.

11. If the download was not successful, the master will flash '**FAILURE**' and multiple beeps will follow. Failure of downloading can be due to:

    - Improper connection

    - Failure to turn on the clone

    - Setting the clone in Programming Mode

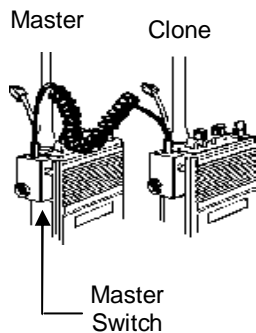   - Target radio's group 'locked' by PC Programming.

CMND CLN

When the Master's Command Group is cloned to a slave, the channel data that is 'pointed to' by the Command Group is transferred to a target group (not the Command Group) in the slave. The target group's label in the slave will be set to '**CMND CLN**'.

NOTE: Some groups may be "locked" by PC programming to prevent them from being overwritten. Only "unlocked" groups will accept incoming clones.

Master   Clone

Master Switch

1. Make sure the battery packs for both radios are charged.

2. Attach the master switch end of the cloning cable to the side connector of the Master radio.

   NOTE: One plug of the cloning cable has a push-button master switch. This plug must be attached to the Master radio.

3. Turn on the Master radio.

4. Put the Master radio in Programming Mode by pressing and holding the master switch then pressing and holding the **[FCN]** key until the display shows '**PSWRD-******'**. Enter the password of the selected group. The display shows '**PRG CH 00**.'

PSWRD-******

PRG

ch   00

5. Connect the other plug of the cable to the side connector of the radio you want to clone.

6. Turn on the clone and set it to the desired channel group.

Press and Hold **[#]** Key to Change Data

PROG|DPHcmD
Group 01

7. Press the **[*]** key on the Master radio keypad. The radio will respond showing the prompt '**PROG|DPHCMD**' on the first line and '**Group XX**' on the second line, where XX is the currently selected group.

RF EXPOSURE COMPLIANCE AND CONTROL GUIDELINES AND OPERATING INSTRUCTIONS

To control your exposure and ensure compliance with the occupational/controlled environment exposure limits always adhere to the following procedures.

Guidelines:
- Do not remove the RF Exposure Label from the device.
- User awareness instructions must accompany device when transferred to other users.
- Do not use this device if the operational requirements described herein are not met.
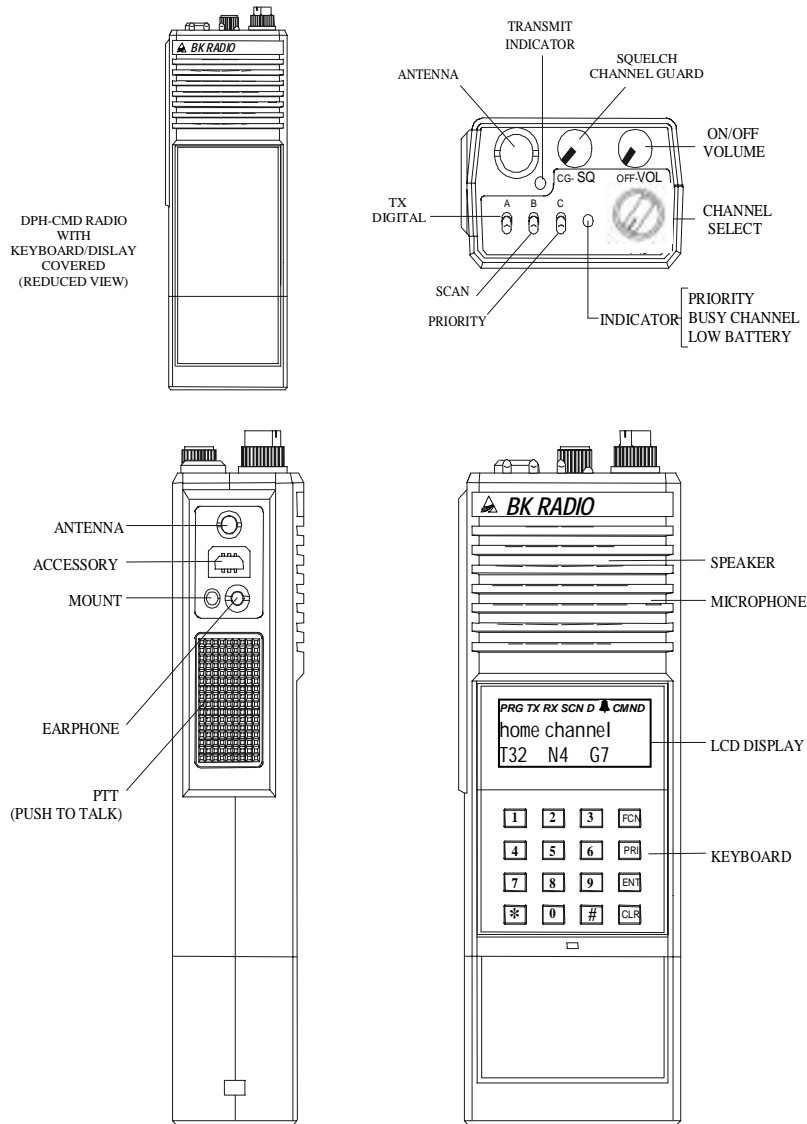
Operating Instructions:
- Transmit no more than the rated duty factor of 50% of the time. To transmit (talk), push the Push-To-Talk (PTT) button. To receive calls, release the PTT button. Transmitting 50% of the time, or less, is important because this radio generates measurable RF energy exposure only when transmitting (in terms of measuring for standards compliance).
- Hold the radio in a vertical position in front of face with the microphone (and the other parts of the radio, including the antenna) at least one inch (2.5 cm) away from the nose. Keeping the radio at the proper distance is important because RF exposures decrease with distance from the antenna. Antenna should be kept away from eyes.
- When worn on the body, always place the radio in a BK Radio approved clip, holder, holster, case, or body harness for this product. Using approved body-worn accessories is important because the use of BK Radio or other manufacturer's non-approved accessories may result in exposure levels which exceed the FCC's occupational/controlled environment RF exposure limits.
- If you are not using a body-worn accessory and are not using the radio in the intended use position in front of the face, then ensure the antenna and the radio are kept at least one inch (2.5 cm) from the body when transmitting. Keeping the radio at the proper distance is important because RF exposures decrease with increasing distance from the antenna.
- Use only BK Radio approved supplied or replacement antennas, batteries, and accessories. Use of non-BK Radio approved antennas, batteries, and accessories may exceed the FCC RF exposure guidelines. For a list of BK Radio approved accessories visit the following website : *http://www.relm.com*.

CONTACT INFORMATION

For additional information on exposure requirements or other information, visit website http://www.relm.com.

RADIO CONTROLS

DPH-CMD RADIO
WITH
KEYBOARD/DISLAY
COVERED
(REDUCED VIEW)

TRANSMIT
INDICATOR

ANTENNA

SQUELCH
CHANNEL GUARD

ON/OFF
VOLUME

CG-SQ   OFF-VOL

TX
DIGITAL

A B C

CHANNEL
SELECT

SCAN

PRIORITY

INDICATOR

PRIORITY
BUSY CHANNEL
LOW BATTERY

ANTENNA

ACCESSORY

MOUNT

EARPHONE

PTT
(PUSH TO TALK)

BK RADIO

SPEAKER

MICROPHONE

PRG TX RX SCN D 🔔 CMND

home channel
T32   N4   G7

LCD DISPLAY

1	2	3	FCN
4	5	6	PRI
7	8	9	ENT
*	0	#	CLR

KEYBOARD

PRG TX RX SCN D 🔔 CMND

home channel
T32   N4   G7

Alphanumeric Display

DPH-CMD Series portable radios can be programmed with the following features:

DISPLAY BACKLIGHTING

The DPH-CMD radios can be programmed by your dealer to backlight the display when a signal is received or when a key is pressed. The time duration of the backlighting can also be programmed.

CHANNEL AND GROUP LABELS

A   B   C

1	2	3	FCN
4	5	6	PRI
7	8	9	ENT
*	0	#	CLR
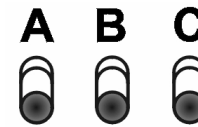
The radio can be programmed with a label for each of the 25 channel groups and a label for each of the 20 channels within each group.

To display a group label, turn scanning functions off, then:
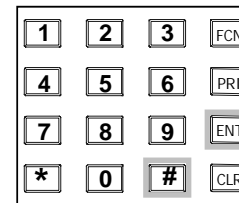
1. Press the **[#]** key on the keypad to display the group number.

2. Press and hold the **[#]** key to display the group label.

3. Press the **[ENT]** key or wait for about 5 seconds to revert to normal radio operation.

CLONING PROCEDURE

Any "Master" radio (a DPH-CMD with the desired radio frequencies and settings) is capable of transferring its program to another DPH-CMD radio. The radio receiving the program is referred to as the "Slave" or "Clone." The LAA0700 cloning cable will be required in the following procedure.

Data that can be cloned to another DPH-CMD radio includes:

- Group data (GRP 01-25)
- Command Group data
- Global data (GRP 00)
- User Pick Lists (UTXG, UNAC, and UTGID)

BUSY CHANNEL LOCKOUT WITH OVERRIDE
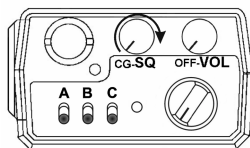
This mode operates in the same manner as Busy Channel Lockout except that the user can override and transmit by turning the Squelch knob off the Channel Guard detent. The transmitter is locked out only if the Squelch knob is set to the Channel Guard detent.

ALPHANUMERIC DISPLAY
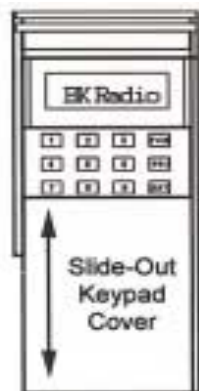
DPH-CMD radios may optionally have a slide-out keypad/display cover. To remove or install the cover, turn off the radio and remove the battery (see Battery Installation and Removal, page 40).

Display annunciators indicate the following information:

ALPHANUMERIC	INDICATION
PR	-Priority Channel
PRG	-Programming Mode
TX	-Transmit
RX	-Receive
SCN	-Scan List Channel
	-Flashing SCN indicates scanning in progress and RX SCN indicates receiving on a scanned channel.
D	-Digital Reception or Transmission
CMND	-Command Group Active
BELL ♪	Unit-to-Unit Mode
	Flashing bell indicates missed call

PRG TX RX SCN D ♪ CMND
home channel
T32   N4   G7

Alphanumeric Display

BASIC OPERATION

RECEIVE
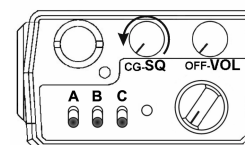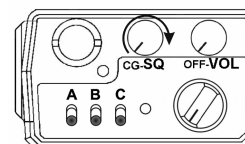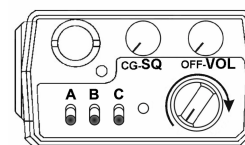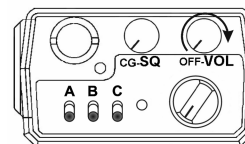
1. Turn power on by turning the Volume knob clockwise. A beep sounds, indicating the radio is operational. The LCD display shows the current channel.

2. Select a channel by rotating the Channel Selector knob. When the unstopped channel selector is rotated past the highest (20th) channel, the radio will emit a beep and remain on the highest channel. When rotated past the lowest (1st) channel, the radio will emit a beep and remain on the lowest channel.

3. Adjust squelch and volume by turning the Squelch knob clockwise until you hear noise. Set the volume to a comfortable level. Then turn the Squelch knob counterclockwise until the noise stops. This is called the Threshold Squelch setting.

Turning the Squelch knob fully counterclockwise past the detent places the receiver in Channel Guard. A message will be heard only when the proper Channel Guard value is received.

TRANSMIT
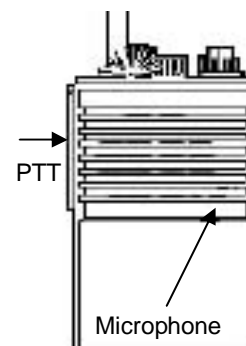
1. Press the PTT (Push-To-Talk) switch. When the transmitter is on, the red Transmit Indicator glows and **TX** appears in the display.

PTT

2. Talk in a normal voice with the microphone one to two inches from your mouth.

3. Release the PTT switch to stop transmitting.

Microphone
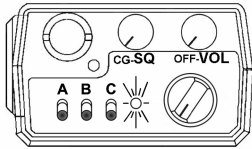
If the Transmit Indicator does not glow when you press the PTT switch, the battery pack may need to be charged. If so, the display will indicate **LOBATT**, and the yellow Low-Battery Indicator will flash. If the Transmit Indicator does not glow and a tone sounds, you are on a receive-only channel or the channel is busy (if Busy Channel lockout is enabled). Select an authorized transmit channel.

If the length of your message exceeds the preset Time-Out Timer setting, the transmitter automatically shuts off and a tone sounds. To continue transmission, release the PTT switch, and then press it again and continue talking.

CHANNEL GUARD OPERATION

ANALOG SQUELCH CONTROL

Sub-audible signaling (CTCSS/CDCSS) is used to allow a group of radios to be selectively called in a system. Programming the receive guard equal to zero allows for Carrier Squelch operation, where the radio will unmute whenever a carrier is detected.

APCO PROJECT 25 SQUELCH CONTROL

Network Access Codes (NACs) provide the digital equivalent of analog sub-audible signaling (CTCSS/CDCSS) allowing a group of radios to be selectively called within a system.

Users in the same area (using the same NAC) can be further divided into Talk Groups, with each group having its own Talk Group ID (TGID). Group Calls are made by designating both the users' NAC and TGID.

Each radio also has an individual P25 unit ID. A Unit-to-Unit call contains the addressee's NAC, and uses the addressee's P25 unit ID instead of the TGID.

BUSY CHANNEL INDICATION
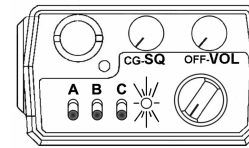
The yellow Busy Channel Indicator glows if there is carrier activity on the selected channel. If the selected channel is a Channel Guard channel and the proper Channel Guard value is not detected, the Busy Channel Indicator remains on for the duration of the carrier activity and no message is heard. During Scan and Priority Scan operation, the Busy Channel Indicator glows when activity is detected on any channel on the Scan List.
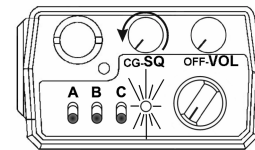
When scanning or priority scanning Channel Guard channels with the Squelch knob in the Channel Guard position and activity has been detected, the Busy Channel Indicator glows for the time period necessary to determine if the proper Channel Guard value has been received. This will cause the Busy Channel Indicator to flash at various rates.

BUSY CHANNEL LOCKOUT

The Busy Channel Lockout feature applies only to those channels programmed with a receive Channel Guard value. When carrier activity is detected on the channel selected, the radio checks the receive Channel Guard value. If the proper Channel Guard value is present, the radio can transmit on that channel, even if the Squelch knob is in the Channel Guard position.

If the radio detects an incorrect value or carrier activity only, the transmitter is disabled. If an attempt is made to transmit, an alert tone will be generated and the display will show the word **BUSY** until the channel becomes available or the PTT switch is released, whether the Squelch knob is in or out of the Channel Guard detent.

Channels not programmed with a receive Channel Guard value can be used to transmit regardless of carrier activity.
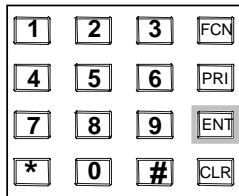
ANALOG DTMF ENCODING
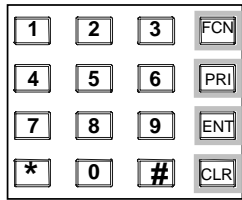
Radios can be programmed to enable DTMF (Dual Tone Multiple Frequency) encoding. To send DTMF tones (similar to the tones used by a standard push-button telephone):

1. Press and hold the PTT switch.

2. Press any of the keys on the keypad.

You will hear a sidetone.

The **FCN**, **PRI**, **ENT**, and **CLR** keys respond as DTMF tones A, B, C, and D, respectively.

ANALOG ANI ENCODING

ANI encoding (Automatic Numeric Identification), if enabled, transmits a sequence of DTMF tones each time you press the PTT switch. You will hear a sidetone. Your dealer can program the ANI number to be sent.

If DTMF and ANI are both enabled, the ANI tone sequence is transmitted only after the **[ENT]** key is pressed while the PTT switch is activated. You will hear a sidetone.

TIME-OUT TIMER

The transmit Time-Out Timer limits the duration of calls and guards against accidentally locking on the transmitter and tying up the radio system. Your dealer can program the duration of the Time-Out Timer (15-225 seconds, or disabled).

BUSY CHANNEL

If the radio has been programmed for Busy Channel operation, it will operate in one of the following three Modes:

- Busy Channel Indication
- Busy Channel Lockout
- Busy Channel Lockout with Override

When operating in Digital Mode, each channel can be programmed to use either Normal squelch or Selective squelch.

1. Normal squelch is used to mimic analog operation. Signals are only qualified with the programmed NAC. TGIDs and P25 Unit IDs are ignored. Each digital channel is programmed with a receive NAC and a transmit NAC. When an incoming signal's NAC matches the channel's programmed receive NAC, the radio unmutes. The default NAC is 659 ($293 hex). The digital equivalent of carrier squelch is achieved by programming the receive NAC = 3966($F7E hex) the radio will unmute when a digital signal with **any NAC** is detected. The 3966 ($F7E hex) NAC is reserved for receivers and is not allowed as a transmit NAC.

2. Selective squelch is used for processing 'Group Calls' and 'Unit-to-Unit Calls'. TGIDs are assigned on a per-channel basis. Users can be separated into Talk Groups with each group having its own TGID. Then, on channels programmed for Selective squelch, the incoming signal's NAC and TGID must match the channels programmed receive NAC and TGID for the radio to unmute. The default TGID is 1. The TGID value 65535 ($FFFF hex) is used to effect an "All Call". If the radio receives a signal with a matching NAC and the TGID = 65535 ($FFFF hex), it will unmute. Also, if the radio's programmed TGID is 65535 ($FFFF hex), it will open on any signal with a matching NAC, ignoring the incoming TGID. A TGID = 0 means "no one". If the radio is programmed with the TGID = 0, it will accept incoming group calls containing the "All Call" TGID, and correctly addressed Unit-to-Unit calls.
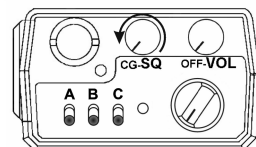
CHANNEL GUARD RECEIVE
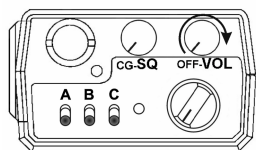
1. Turn power on by turning the Volume knob clockwise.
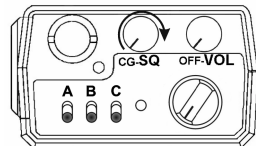
2. Select a Channel Guard channel by turning the Channel Selector knob.

3. Adjust volume by turning the Squelch knob clockwise until a noise is heard. Set the volume to a comfortable level.

4. Set Channel Guard Mode by turning the Squelch knob off (counterclockwise) into the Channel Guard position. A message will be heard only when the proper Channel Guard value is received.
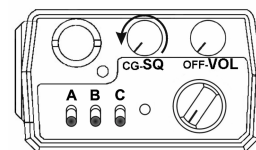
## CHANNEL GUARD TRANSMIT
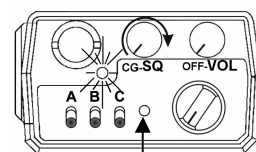
Busy Channel Indicator

1. Turn the Squelch knob on (clockwise) and monitor the Channel Guard channel before transmitting, or, if Busy Channel operation is enabled, check the yellow LED.

   NOTE: Do not transmit if the channel is busy.

2. Press the PTT switch. When the transmitter is on, the red Transmit Indicator glows and **TX** appears in the display.

3. If monitoring the channel, reset the squelch knob to the Channel Guard position to receive only the messages with the proper Channel Guard value. During extended transmissions, the squelch can be left open until the exchange has ended.
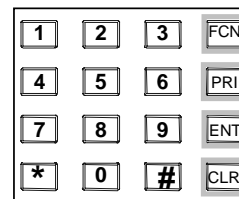
Press **[PRI]** to increment through the list or key in a number. Press **[ENT]** to exit the list viewer. (This feature is for viewing the list only. Pressing **[ENT]** when a list item is displayed does NOT associate the UTGID with the selected channel.)

Programming of the list (if programming is not locked out by PC software) can be accomplished as follows:

1. While viewing the list, press and hold the **[FCN]** key until the '**PRG**' annunciator lights.

2. Press **[CLR]** and then enter the new TGID. Valid entries are 1 – 65535. Press **[ENT]** to store the new value and return to the list viewer.

3. Select another TGID to program, or press **[ENT]** again to exit the list viewer.

OTHER OPERATIONAL FEATURES

The BK Radio DPH-CMD Series is based on a microprocessor core that allows extra features and operational characteristics to be programmed into the radio. Your dealer can help define the best operational settings for your system and program them into the radio.

SCAN DELAY

Scan delay lets the radio receive a response to a transmission before scanning the other channels for activity. If you find that your scanner is restarting before message replies are received, you can ask your dealer to increase the scan delay time (0-7.5 seconds).

This timer is also used to allow for Talkback Scan.

HI/LO POWER

Each channel in the radio can be individually programmed to always transmit in Low-Power Mode, regardless of the position of the radio's top switch (or keypad **[FCN]** menu setting). If the programming for the channel allows high-power transmissions, the power level can be selected with a top switch or the keypad menu.

Each long press of the '2' key toggles the rightmost character from A to B to C, then back to A.

Each long press of the '3' key toggles the rightmost character from D to E to F, then back to D.

To enter a 'letter' after another 'letter' or number, first enter any number, then toggle it with long '2' or '3' key presses.

3. Press **[ENT]** to store the new value and return to the list viewer.

4. Select another UNAC to program, or press **[ENT]** again to exit the list viewer.

USER TALK GROUP IDS

When the digital channels are being programmed with transmit and receive frequencies, a Talk Group ID is also assigned to each channel. On channels that have User Talk Group ID selection enabled, the user can choose TGIDs from a global UTGID Pick List containing 32 entries. To assign a UTGID for use on a channel, all scanning functions (Channel Scan, Group Scan, and Priority Scan) must be turned OFF.

```
LABEL 20
          G8
```

The user selects a channel, then presses and holds the "G" key (4 key) until "**G—**" appears on the 2nd line of the display. The keypad can then be used to enter a number from 1 to 32. When a UTGID is active, the second line of the display will show the number of the selected list entry **(GXX)**. Once a UTGID is assigned to a particular channel, it will be stored and used with that channel whenever the channel is selected.

```
Tgid - 01
         14
```

The UTGID Pick List can be viewed by pressing **[FCN],** then **[4] ([FCN]** then **[G])**. The display will show:

TGID – 01
XXXXX

MIXED MODE OPERATION

Analog
Operation

```
    RX
CH       12
```

```
    TX
CH       12
```

Digital
Operation

```
    RX     D
CH       12
```

```
    TX     D
CH       12
```

The receiver and transmitter are capable of operating in analog wide-band (25 kHz channel spacing), analog narrow-band (12.5 kHz channel spacing) and APCO Project 25 Digital Mode.

Each channel's Receive and Transmit Mode can be set independently as follows:

Mode	RX	TX
Analog	Receive qualified analog signals only	Transmit analog signals only
Digital	Receive qualified digital signals only	Transmit digital signals only
Mixed	Automatically receive qualified analog or digital signals	Transmit analog or digital signal, depending on the status of 'TX Digital' soft switch.

Digital receptions and transmissions will be indicated by illuminating the '**D**' annunciator in addition to the '**RX**' or '**TX**' annunciator.

MIXED MODE TALKBACK

If Mixed Mode Talkback is enabled, transmissions initiated while hold time remains will be in the same mode as the received signal, if the signal was received on the Ready to Transmit (RTX) channel. Depending on programming, the RTX channel can be the main channel, a held scan or priority channel if Talkback Scan is enabled, or the Priority 1 channel if TX on PR1 is enabled. TX Mode on the RTX channel must be set to **MIXED**.

```
   RX
CH       12
```

Press PTT
During Hold Time
(while the 'RX'
annunciator is lit)

While hold time after a reception remains, transmissions will be in the same mode as the received signal, regardless of the status of the 'TX Digital' soft switch. As in Talkback Scan, the RTX channel and receive annunciators will be displayed for the duration of the timer.

The talkback timer can be cleared by making the held channel invalid. For instance, if a scan channel is being held, turn scan off.

COMMAND GROUP

The DPH-CMD radio allows construction of a Command Group of up to 20 channels, drawn from any of the programmed channels in the radio. To modify the Command Group (add or delete channels) all scanning functions (Channel Scan, Group Scan, and Priority Scan) must be turned OFF.

BUILDING A COMMAND GROUP

```
Ent: add chan
 * : UNIT CALL
```

While operating in a group other than the Command Group (group 1 – 25), the user selects a channel in the radio and presses the **[*]** key. The display will prompt the user to press the **[ENT]** key to add the channel into the Command Group. If a channel is on the scan list in its home group, it will also be on the Command Group's scan list. Unprogrammed channels cannot be added to the Command Group. Up to 20 channels may be entered.

```
CMND CHAN  5
```

After adding a channel, the display momentarily shows '**CMND CHAN XX**' where XX is the channel number (1 – 20). Parameters associated with each selected channel, such as Bandwidth, Scan, and Power settings, are also used while operating in the Command Group.

```
CMND full
```

Once 20 channels are entered, subsequent presses of the **[*]** key, followed by the **[ENT]** key, will cause the radio to beep and momentarily display the message '**CMND FULL**'. When operating in the Command Group, the continuously rotating channel selector will "stop" at the highest programmed channel.
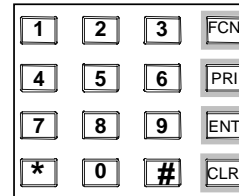
selected. Repeater Talk Around operation will use the pre-programmed RX NAC.

The UNAC Pick List can be viewed by pressing **[FCN],** then **[6] ([FCN]** then **[N])**. The display will show:

NAC – 01
XXXX

```
NAC - 01
659
```

```
[1] [2] [3] [FCN]
[4] [5] [6] [PRI]
[7] [8] [9] [ENT]
[*] [0] [#] [CLR]
```

To see the NAC displayed in hexadecimal format, press and hold the **[#]** key.

NAC – 01
$XXX

To return to the decimal display, press and hold the **[#]** key again.

Press **[PRI]** to increment through the list or key in a number. Press **[ENT]** to exit the list viewer. (This feature is for viewing the list only. Pressing **[ENT]** when a list item is displayed does NOT associate the UNAC with the selected channel.)

Programming of the list (if programming is not locked out by PC software) can be accomplished as follows:
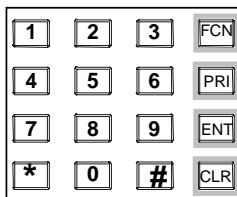
1. While viewing the list, press and hold the **[FCN]** key until the '**PRG**' annunciator lights.

2. Press **[CLR]** and then enter the new NAC.

   In decimal mode, valid entries are 0 – 4095. The values 3966 and 3967 are reserved for receivers and cannot be entered.

   In hexadecimal mode, valid entries are $0 - $FFF. The values $F7E and $F7F are reserved for receivers and cannot be entered.

   To enter hexadecimal characters A - F:

```
TONE - 01
000.00
```

The UTXG Pick List can be viewed by pressing **[FCN],** then **[8] ([FCN]** then **[T])**. The display will show:

TONE – 01	or	TONE – 01
XXX.X		DXXX

```
 1    2    3   FCN
 4    5    6   PRI
 7    8    9   ENT
 *    0    #   CLR
```

Press **[PRI]** to increment through the list or key in a number. Press **[ENT]** to exit the list viewer. (This feature is for viewing the list only. Pressing **[ENT]** when a list item is displayed does NOT associate the UTXG with the selected channel.)

Programming of the list (if programming is not locked out by PC software) can be accomplished as follows:

1. While viewing the list, press and hold the **[FCN]** key until the '**PRG**' annunciator lights.

2. Press **[CLR]** and then enter the new CxCSS. Press **[ENT]** to store the new value and return to the list viewer.

USER TRANSMIT NETWORK ACCESS CODES (NACS)

When digital channels are being programmed with transmit and receive frequencies, a receive NAC value and a transmit NAC value can also be assigned to each channel. On channels that have User NAC selection enabled, the user can choose NACs from a global UNAC Pick List containing 32 entries. To assign a UNAC for use when transmitting on a channel, all scanning functions (Channel Scan, Group Scan, and Priority Scan) must be turned OFF.

```
LABEL 20
    N18
```

The user selects a channel, then presses and holds the "N" key (6 key) until "N—" appears on the 2nd line of the display. The keypad can then be used to enter a number from 1 to 32. When a UNAC is active, the second line of the display will show the number of the selected list entry (NXX). Once a UNAC is assigned to a particular channel, it will be stored and used with that channel whenever the channel is

For example, if only 4 channels are programmed, when the channel selector is rotated past the 4th channel the radio will beep and remain on the 4th channel.

OPERATING FROM THE COMMAND GROUP

```
 1    2    3   FCN
 4    5    6   PRI
 7    8    9   ENT
 *    0    #   CLR
```
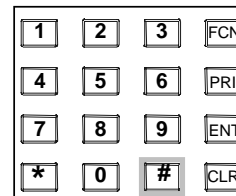
```
    SCN    CMND
LABEL     7
```

The Command Group can be entered by pressing the **[#]** key twice. Operation in the Command Group is indicated on the display by the '**CMND**' icon.

Adding or deleting a channel to/from the Command Group's scan list also changes the channel's status in its home group.

It is not valid for a priority channel to be set to a channel in the Command Group. If, while operating in the Command Group, the **[PRI]** key is pressed to designate a priority channel, the "target channel" that is pointed to by the Command Group channel will be marked as the priority channel.

MODIFICATION OF THE COMMAND GROUP

```
CLR: DEL chan
 * : UNIT CALL
```

When the Command Group is active some or all of the channels can be deleted. To delete the knob-selected channel, the user presses the **[*]** key. The display prompts the user to press the **[CLR]** key to delete the channel. If the **[*]** key is pressed and held (for about 4 seconds) all channels in the Command Group are deleted.

```
           CMND
Chan deleted
```

When a channel is deleted, the display momentarily shows '**CHAN DELETED**', and the following channels move up in the list. For example, if channel 5 is deleted, channel 6 becomes the new channel 5, channel 7 becomes the new channel 6, etc. When all channels are deleted, the radio beeps continuously and the display shows '**CMND EMPTY**' along with the '**CMND**' icon.
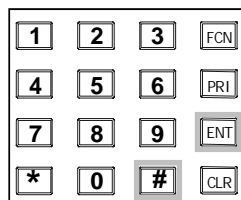
```
           CMND
cmnd empty
```

Exit the Command Group to add new channels.

CHANNEL GROUPS

Channels are arranged in 25 groups of up to 20 channels.

SELECT A GROUP/CHANNEL

The rotary knob selects channels in the group selected by the keypad:

1. Press the **[#]** key on the keypad to display the current group number.

2. Press number keys for the new group number, or press **[#]** again to select the Command Group.

   When changing groups, invalid entries will not be accepted, and the radio remains in the previously selected group.

3. Press the **[ENT]** key or wait 5 seconds. The radio returns to normal operation for the new group, and the selected channel is displayed. All selected scanning functions affect only the channels in the group you are operating in.

PROGRAMMABLE TOP SWITCHES/ FUNCTION MENU
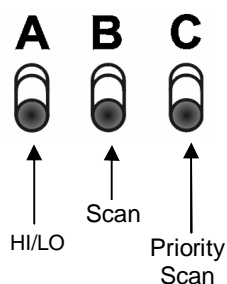
The following functions can be assigned to the three top switches or the keypad **[FCN]** key menu:

FUNCTION	FCN Key Menu Label
Low Power Select	TX LOW POWER
Channel Scan	CHANNEL SCAN
Priority Scan	PRI SCAN
Repeater Talk Around	TALK-AROUND
Group Scan	GROUP SCAN
Transmit Digital	TX DIGITAL

On channels programmed for analog transmissions, pressing PTT in Emergency Mode will result in a normal analog transmission. On channels programmed for Mixed Mode transmissions, pressing PTT will result in a digital transmission, regardless of the position of the 'TX Digital' switch.

When receiving a qualified emergency call, the radio will beep. The 1st line of the display will alternately flash the word 'EMERGENCY RX' and then the active channel's label for the duration of the reception, and during any hold time. If the radio is configured to show the caller's TGID or Unit ID[1] on the 2nd line, that information will be displayed along with the emergency message, but it will not flash. The RX and D icons will also be lit.

USER TRANSMIT CHANNEL GUARD

When the radio is being programmed with transmit and receive frequencies for each channel, a receive Channel Guard value and a transmit Channel Guard value can also be assigned to each channel. On channels that do not have a default transmit Channel Guard programmed, the user can choose CxCSSs from a global UTXG Pick List containing 32 entries. To assign a UTXG for use on a channel, all scanning functions (Channel Scan, Group Scan, and Priority Scan) must be turned OFF.

The user selects a channel, then presses and holds the "T" key (8 key) until "T—" appears on the 2nd line of the display. The keypad can then be used to enter a number from 1 to 32. When a UTXG is active, the second line of the display will show the number of the selected list entry (TXX). Once a UTXG is assigned to a particular channel, it will be stored and used with that channel whenever the channel is selected. Repeater Talk Around operation will use the pre-programmed RX CxCSS.

---

[1] If the Source ID is on the caller ID list, the alias will be displayed.

The number keys 2 – 9 allow for entry of the letters printed on the respective keys. For example, the first press of the **[2]** key enters the letter A, the second press enters a B, the third press enters a C, and the forth press enters a 2. The letters Q and Z are entered with keys 7 and 9.

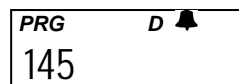Keys 0 and 1 can be used to enter the following characters:

0: **0, space, −, _, ., *, +**

1: **1, <, >, /, \, |, $, %, h**

Press the **[ENT]** key to store changes.

Press the **[FCN]** key to abandon changes.

PROGRAMMING A NUMERIC ID

Press **[ENT]** to display the numeric ID. Press **[CLR]** then enter the new ID (up to 7 digits). Press **[ENT]** to store the new ID. Select a new ID to be programmed, or press and hold **[ENT]** to exit Programming Mode (the *PRG* annunciator will be extinguished).

EMERGENCY CALL

Note: Emergency operation only applies to channels programmed for Digital or Mixed Mode transmissions.
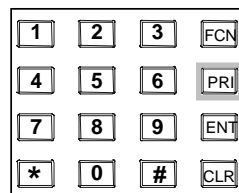
To place an emergency group call, press and hold the emergency button until the radio beeps and the display flashes. On some models, the emergency button may be the **[PRI]** key. All scanning and priority scanning functions will be disabled. Each subsequent press of PTT will cause the radio to transmit on the knob-selected channel with the emergency bit set, indicating an emergency condition. If the Channel Selector is changed, the Emergency Mode will follow to the newly selected channel. Cycle power to return the radio to normal operation.
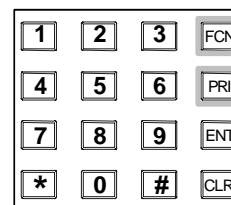
Your dealer can also assign more than one function to the same top switch. For example, both low-power select and RTA could be enabled by the same switch.

NOTE: Assume for this manual that Switch 'A' has been programmed for HI/LO Transmit Power, Switch 'B' has been programmed for Scan, and Switch 'C' has been programmed for Priority Scan.

To access functions on the keypad **[FCN]** key menu:

1. Press the **[FCN]** key to display the function menu.

2. Repeatedly press **[FCN]** to step through the menu.

3. Press **[PRI]** to toggle the function on/off when the desired menu item is displayed.
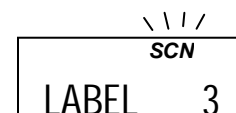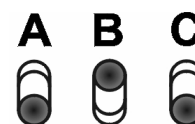
When the display flashes, the function is enabled.

KEYPAD LOCK

To lock/unlock the keypad, press and hold the **[FCN]** key. When locked, "LOCKED" will be displayed if a key is pressed and a low beep will sound.

LOCKOUT EXCEPTIONS:

PTT unlocks the keypad during transmit for enabled DTMF key presses.

SCAN OPERATION

1. Slide Switch B (scan) up.

2. Slide Switch C (priority) down.

The display indicates scan operation by flashing **SCN**.

Scan operates only while the radio is not transmitting. The radio checks for signals on channels in the preset Scan List, as well as the channel selected by the Channel Selector knob.

```
 ┌─────────────────┐
 │    RX SCN       │
 │ LABEL      6    │
 └─────────────────┘
```
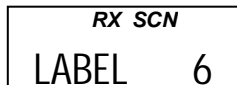
When a signal is detected, scanning stops and the message is received. The received channel is shown in place of the transmit channel.

Once the signal ends, the radio continues to monitor the channel for the preset scan delay time before it resumes scanning.

SCAN CHANNEL GUARD CHANNELS
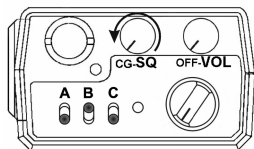
1. Slide Switch B (scan) up.

2. Turn the Squelch knob completely counterclockwise, past the detent, to the Channel Guard position.

When a signal is detected, scanning stops while the radio checks for the proper Channel Guard value. If the signal contains the proper Channel Guard value, the radio receives the message. Otherwise, the radio resumes scanning immediately.

NUISANCE CHANNEL DELETE
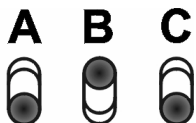
If your radio is programmed for Nuisance Channel Delete and Channel Scan is assigned to a top switch (Switch B, for example), a Nuisance Channel can be temporarily removed from the Scan List by sliding Switch B down and then back up.
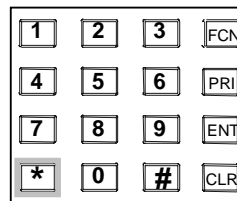
TRANSMIT WITH SCAN ON
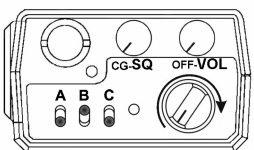
When Switch B (scan) is up, the radio transmits on the channel selected by the Channel Selector knob unless Talkback Scan is enabled or "Transmit on Priority-1" is enabled (see Priority Scan operation).

1. Select a transmit channel by turning the Channel Selector knob.

2. Press and hold the PTT switch and talk in a normal voice.

UNIT-TO-UNIT CALLBACK

If Unit-To-Unit callback is enabled, and a Unit-To-Unit call is received on the Ready-to-Transmit (RTX) channel, the user may press PTT before the hold time expires, causing the radio to enter Unit-To-Unit Mode and transmit using the received ID as the destination ID. If the callback timer expires before PTT is pressed, the radio will return to normal Operating Mode, but the bell icon will flash until the **[*]** key is pressed twice, bringing up the last active ID.

To exit Unit-To-Unit Mode, press and hold the [*] key.

The callback timer can be cleared by making the held channel invalid. For instance, if a scan channel is being held, turn scan off.

PROGRAMMING UNIT-TO-UNIT CALL LIST

Press **[*]** twice to enter Unit-to-Unit mode and bring up the last active ID. If the last active ID was a Call List ID, the ID's label will be displayed along with the bell icon. Otherwise, the ID number will be displayed along with the bell and D icon.

```
 ┌─────────────────┐
 │ PRG         ♪   │
 │ LABEL           │
 └─────────────────┘
```

Press a number key (0 – 9) to go directly to the desired Call List ID, or press **[PRI]** repeatedly to cycle to the label of the ID to be re-programmed. Press and hold the **[FCN]** key to enter ID Programming Mode (*PRG* icon will be illuminated). As in keypad Programming Mode, normal radio function will be disabled until ID Programming Mode is exited.

PROGRAMMING A LABEL

Press the **[CLR]** key. The display becomes blank.

Labels are edited from left to right. Pressing the **[PRI]** key moves the cursor to the next character. Pressing and holding the **[PRI]** key backspaces to the previous character.

INITIATING A UNIT-TO-UNIT CALL

ENT: ADD CHAN
* : UNIT CALL

To initiate a Unit-To-Unit call, press the **[*]** key. The display will prompt you to press **[*]** again to enter Unit-To-Unit Mode. The label of the last active (called or received) ID will appear on the display.

LABEL

Last Active Was Unit On Call List

If the last active ID was a Call List ID, its label will be displayed along with the bell icon, otherwise the numeric ID will be displayed along with the **bell** and **D** icon. If a label is displayed, press and hold **[#]** to view the corresponding numeric ID.

D

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Last Active Was Unit Not On Call List

To place a call to the displayed unit, press PTT. To choose another unit, use the keypad to enter the desired call list entry (0 - 9), or press **[PRI]** repeatedly to cycle through all call list entries, or press **[#]** to manually key in a new ID (up to 7 digits). To re-select the 'last active' ID, press the **[*]** key. Once the new unit ID is selected or entered, press PTT to place the call.

D

<

Prompt For Manual ID Entry

To exit Unit-To-Unit Mode, press and hold the [*] key.

RECEIVING A UNIT-TO-UNIT CALL

RX

LABEL

Incoming Call From Unit On Call List

RX   D

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Incoming Call From Unit Not On Call List

CH   5

Missed Call

When a Unit-To-Unit call is received while the radio is in normal Operating Mode, the radio will beep twice. The display will show the ID of the calling unit. If the ID matches one of the Call List IDs, the associated label will be displayed along with the RX and bell icons. Otherwise the numeric ID will be displayed along with the **RX**, **bell**, and **D** icons. The calling unit's ID will be displayed for the duration of the reception, and once the signal goes away, for a programmed hold time. When the hold time expires, the display will return to the normal Operating Mode display, but the bell icon will flash until the **[*]** key is pressed twice, putting the radio in Unit-To-Unit Mode, displaying the last active ID.

When the PTT switch is released, the radio continues to monitor the selected channel for the preset scan delay time before it resumes scanning.

TALKBACK SCAN

If your radio is programmed for Talkback Scan, press PTT while a channel is active or while scan delay time remains. You will be responding on the transmit frequency of the received channel.

Talkback Scan will not work if Priority Scan is also on and your radio is programmed to always transmit on the Priority 1 channel.

CHANGE THE SCAN LIST

SCN
LABEL   12

| 1 | 2 | 3 | FCN |
4	5	6	PRI
7	8	9	ENT
*	0	#	CLR
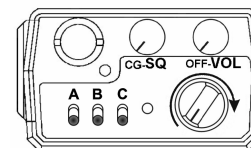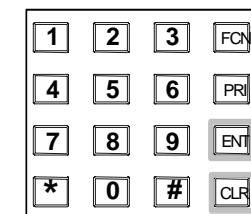
If the radio has not been programmed for Scan List Lock, the user may add or remove channels from the Scan List. If user changes are enabled, follow these steps to change the Scan List:

1. Slide Switches B (scan) and C (priority) down.

2. Select a channel to be added or removed from the Scan List by turning the Channel Selector knob. If the channel is already on the Scan List, **SCN** appears in the display.

3. Press the **[ENT]** key to add a channel to the Scan List. A short beep sounds and **SCN** appears in the display.

4. Press the **[CLR]** key to remove a channel from the Scan List. A short beep sounds and **SCN** disappears from the display.

GROUP SCAN

Channels on each "Channel Scan List" in groups on the "Group Scan List" are scanned sequentially. The selected group is always scanned when Group Scan is enabled, even if that group is not on the Group Scan List.

PRIORITY SCAN

A   B   C

SCN
LABEL   3

PR   SCN
LABEL   8
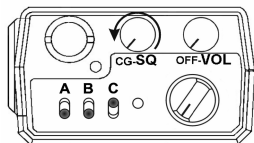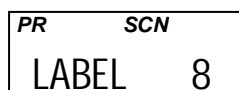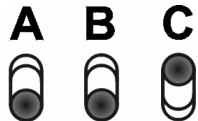
Priority Scan enables the radio to receive on any channel while monitoring for a message on the designated priority channel(s). The radio samples each priority channel at a preset rate (.25-2.0 seconds) regardless of activity on any other channel. Priority Scan operates only while the radio is not transmitting and can be used in combination with scan operation.

When Switch C (Priority) is up, the display flashes **SCN**. If a message is received on a priority channel, the Priority Indicator lights, and the radio receiver locks onto that channel for the duration of the transmission, unless a higher priority channel interrupts.
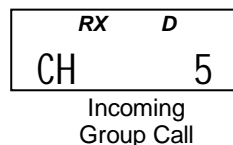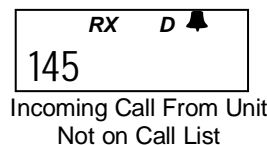
Priority Scan can be used in combination with Channel Guard with:

- Switch C (Priority) up

- The Squelch knob in the Channel Guard position (fully counterclockwise detent position) and

- The Priority Channel(s) programmed with Channel Guard

If a message is received on a priority channel, the radio receiver locks on to the priority channel and checks to see if the proper Channel Guard value is present. If the signal contains the proper Channel Guard value, the radio receives the message. Otherwise, the radio will re-check the channel every 4 seconds, until the activity on the channel ceases.

DUAL PRIORITY SCAN

Up to two of the radio's 500 channels can be designated as priority channels. These two, PR1 and PR2, are periodically tested for activity, even if a different transmission is being listened to. Activity on PR2 preempts activity on any of the non-priority channels. Receptions on PR1 have priority over any other channel, including PR2.

RX   D 🔔
145

Incoming Call From Unit
Not on Call List

RX   D
CH   5

Incoming
Group Call

RX
CH   5

Incoming
Analog Call
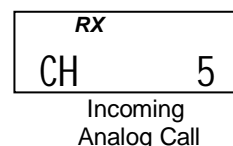
When a correctly addressed Unit-To-Unit call is received, the radio will beep twice. If the calling unit's ID matches one of the Call List IDs, the associated label will be displayed along with the RX and bell icon. Otherwise, the numeric ID will be displayed along with the RX, D, and bell icons.

If the calling unit is not the same unit displayed before the call was received, the calling unit's ID will be displayed for the duration of the reception. The previously displayed ID will remain the default transmit ID, but the interrupting ID will be captured as 'last active'.

To speak to the interrupting caller, press **[*]** to make the last active ID the new default transmit ID.

When a group call (or, if allowed, an analog signal) is received, the radio will display the RTX channel's label for the duration of the reception.

If the RTX channel's Digital Squelch Mode is set to 'normal', the radio performs as when the Squelch Mode is 'selective', except all individual calls will be received when the incoming NAC matches the channel's programmed receive NAC, not just individual calls addressed to the unit. Individual calls not addressed to the unit will be indistinguishable from group calls. Only the channel label will be displayed, not the ID of the calling unit.

If Unit-To-Unit Mode is entered when the RTX channel is programmed for analog-only transmissions, pressing PTT will cause the radio to beep until PTT is released. **The user must select a channel capable of digital transmissions before placing a Unit-To-Unit call**. If the RTX channel is programmed for Mixed Mode transmit, transmissions will be made as digital Unit-To-Unit calls while the radio is in Unit-To-Unit Mode, regardless of the position of the 'TX Digital' switch.

NOTE: If the radio is programmed for Dual Priority operation, only the Priority 1 channel can be changed with the **[PRI]** key.

NOTE: A channel can be the priority channel even if it is on the Scan List. Due to multiple sampling of the same channel, however, maximum performance occurs when the priority channels are not on the Scan List.

UNIT-TO-UNIT CALL

GROUP LABEL
UID   785
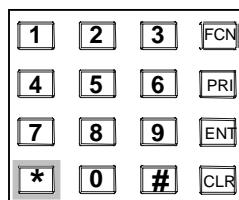
Radio Unit ID

P25 Unit IDs allow for Unit-To-Unit calls when the radio is operating in Digital Mode. The **[*]** key must be enabled by radio programming to allow this mode of operation. To view the radio's ID, press and hold the **[#]** key while not in Unit-To-Unit Mode. (Unit-To-Unit Mode is indicated by a bell icon in the upper right corner of the display). The display will show the group label, and the Unit ID. Channels programmed for analog only operation will not be able to transmit or receive Unit-To-Unit calls.

UNIT-TO-UNIT MODE

When the radio is in Unit-To-Unit Mode, all scanning functions will be disabled. The radio will receive and transmit on the Ready-to-Transmit (RTX) channel only. Depending on programming, the RTX channel can be the main channel, a held scan or priority channel if Talkback Scan is enabled, or the Priority 1 channel if TX on PR1 is enabled. To alert the user that the radio is in Unit-To-Unit Mode, a beep will periodically sound until the unit is returned to normal Operating Mode.

RX   🔔
LABEL

Incoming Call From
Unit on Call List

If the RTX channel's Digital Squelch Mode is set to 'selective', the radio will accept group calls, correctly addressed Unit-To-Unit calls, and if RX Mode is set to mixed, analog signals.
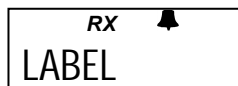
Either priority channel can be programmed as a fixed channel, tied to the Channel Selector knob, or programmed OFF. If the radio is programmed to transmit on the first priority channel, transmissions will occur on PR1 when operating in Priority Scan Mode.

If PR1 is a fixed channel, and the **[PRI]** key is not locked out, the user can use the keypad to change groups, if necessary, move the channel selector to a new channel and press the **[PRI]** key to choose a new PR1 channel.

OLD-STYLE BK PRIORITY SCAN

The radio can be programmed with one of three Priority Modes: A, B, or C. The table below shows how the priority channels and the transmit channels are selected in each mode.

	Mode A	Mode B	Mode C
Priority Channel	Channel Knob	Preset	Preset
Transmit Channel	Channel Knob	Channel Knob	Priority Channel

Priority Mode A With Scan

A   B   C

RX SCN
LABEL   12
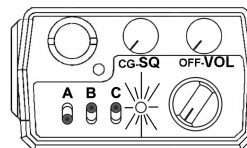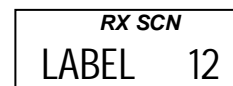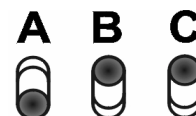
In Priority Mode A, the priority channel is set by the Channel Selector knob. Priority Mode A is seldom used by itself because the radio receives and transmits only on the knob-selected channel.

When Switches B (scan) and C (priority) are up, scanning occurs until an active scan channel is found. The radio receives the message while continuing to check the priority channel. The display shows the scan channel.

If the priority channel becomes active during this message, the Priority Indicator will light. The radio changes to the priority channel and holds for the duration of the message. The display shows the priority channel.

```
PR     RX SCN
 LABEL      3
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To reply to a message on the priority channel, press the PTT switch and the radio will transmit on the priority channel. Once activity ceases on the priority channel, the radio returns to scan operation.

Priority Mode B
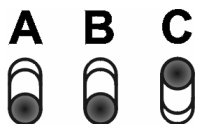
With Switch C (priority) up and Switch B (scan) down, the radio can receive on the knob-selected channel while sampling the priority channel. If the priority channel becomes active, the Priority Indicator lights up. The radio changes to the priority channel and holds for the duration of the transmission.
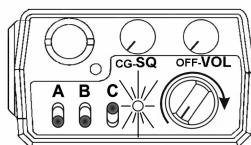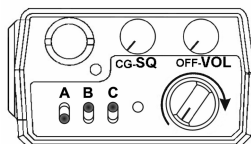
To reply to a message on the priority channel, use the keypad to change groups if necessary, turn the Channel Knob to select the priority channel, and then transmit.

Priority Mode B with Scan
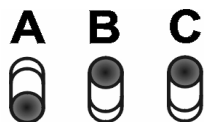
With Switches B (scan) and C (priority) up, the radio scans until it locks on to an active channel. The radio continues to sample the priority channel while listening to the active scan channel.
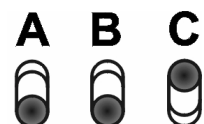
If activity occurs on the priority channel, the radio overrides the active scan channel, changes to the priority channel, and holds for the duration of the transmission.

To reply to a message on the priority channel, use the keypad to change groups if necessary, turn the Channel Knob to select the priority channel, and then transmit.
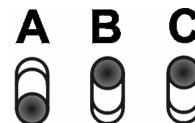
Once activity has ceased on the priority channel, the radio returns to scan operation.

Priority Mode C

With Switch C (priority) up and Switch B (scan) down, the radio samples the fixed priority channel at the preset rate. If activity occurs on the priority channel, the radio changes to the priority channel and holds for the duration of the transmission.

To reply to a message on the priority channel, press the PTT switch. The radio transmits only on the priority channel when Switch C (priority) is up. Once activity has ceased on the priority channel, the radio returns to the receive channel on the Channel Selector knob.

## Priority Mode C with Scan

With Switches B (scan) and C (priority) up, the radio scans until it locks on to an active channel. The radio continues to sample the priority channel while listening to the active channel. If activity occurs on the priority channel, the radio overrides the active scan channel, changes to the priority channel, and holds for the duration of the transmission.

To reply to a message on the priority channel, press the PTT switch. The radio transmits only on the priority channel when Switch C (priority) is up. Once activity has ceased on the priority channel, the radio returns to scan operation.

CHANGE THE PRIORITY 1 CHANNEL
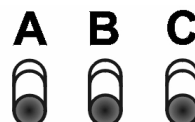
The Priority 1 channel can be permanently set or can be changeable. If the radio has a changeable priority channel, use the following steps to make this change:
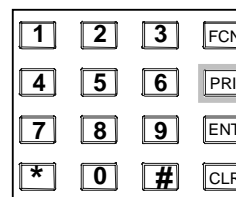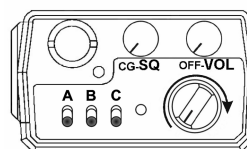
1. Slide Switches B (scan) and C (priority) down.

2. Use the keypad to change groups, if necessary. Turn the Channel Selector knob to the channel you want to enter as the new Priority 1 channel.

3. Press the **[PRI]** key. A short beep sounds and **PR** appears in the display, indicating that the displayed channel is now the Priority 1 channel.

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PR
 LABEL      3
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NOTES:

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