

User's Manual P-801T Portable Radio

tyco / Electronics / **M/A-COM**



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11/22/00	Joe Xavier	Added Occupational Safety Information
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OTP 4.06

Notices to the User and Safety Training Information

**IMPORTANT INFORMATION ON SAFE AND OPTIMAL OPERATION.
READ THIS BEFORE USING YOUR P-801T PORTABLE RADIO**



Your P-801T radio generates RF electromagnetic energy during transmit mode. This radio is designed for and classified as “Occupational Use Only” meaning it must be used only during the course of employment by individuals aware of the hazards and the ways to minimize such hazards. This radio is NOT intended for use by the “General Population” in an uncontrolled environment.

This radio has been tested and complies with the FCC RF exposure limits for “Occupational Use Only.” In addition, your P-801T radio complies with the following Standards and Guidelines with regard to RF energy and electromagnetic energy levels and evaluation of such levels for exposure to humans:

- FCC OET Bulletin 65 Edition 97-01 Supplement C, Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields.
- American National Standards Institute (C95.1 – 1992), IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3kHz to 300 GHz.

This equipment generates or uses radio frequency energy. Changes or modifications to this equipment may cause harmful interference unless the modifications are expressly approved in the instruction manual. The user could lose the authority to operate this equipment if an unauthorized change or modification is made.

This equipment has been tested and found to comply with the limits for a Class B digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

Government law prohibits the operation of unlicensed transmitters within the territories under government control. Illegal operation is punishable by fine or imprisonment or both. Refer service to qualified technicians only. Do not operate your transceiver in explosive atmospheres (gases, dust, fumes, etc.).

This equipment generates and uses radio frequency energy and may cause harmful interference to radio communications if not installed and used in accordance with the instructions. However, there is no guarantee that the interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, the user is encouraged to try to correct the interference by one or more of the following measures:

- Re-orient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Consult a service center for technical assistance.

Occupational Safety Guidelines and Safety Training Information



CAUTION

To ensure that your exposure to RF electromagnetic energy is within the FCC allowable limits for occupational use, always adhere to the following guidelines.

Your P-801T portable radio may transmit using either an integral antenna or remote speaker microphone/antenna. When it is ON, it receives and also sends out radio frequency (RF) signals.

In 1996, the Federal Communications commission (FCC) adopted RF exposure guidelines with safety limits for portable devices, based on the recommended limits of the National Council on Radiation Protection and Measurements (NCRP) and the American National Safety Institute (ANSI).

The design of the P-801T Portable Radio complies with the FCC guidelines for Occupational / Controlled exposure to RF electromagnetic fields, as measured by the specific absorption rate (SAR). To assure optimal performance and make sure human exposure to RF electromagnetic energy is within the FCC guidelines, always adhere to the following:

1. Do not hold the radio less than 1 inch from your body, especially your face, ears, or eyes, while transmitting.
2. When using the radio, angle the antenna away from your body and do not allow the antenna to touch your body during transmission.
3. When using the remote speaker microphone/antenna, a separate accessory available to P-801T users, do not allow the antenna portion to be less than 1 inch from your body, especially the face, ears, or eyes, while transmitting. Do not let this antenna touch your body while transmitting.
4. The push-to-talk button should only be depressed when intending to send a voice message.
5. The radio should only be used for necessary work related communications.
6. The radio should only be used by authorized and trained personnel and should not be operated by children.
7. Do not operate your radio or replace/charge batteries in explosive atmospheres (gases, dust, fumes, etc.) or near explosive basking caps. Your radio should be turned off when installing and removing batteries.
8. Do not attempt any unauthorized modification to the radio. Changes or modifications to the radio may cause harmful interference. Any servicing of the radio should only be performed by qualified personnel.
9. Always use M/A-COM authorized accessories (antennas, batteries, belt clips, speakers/mics, etc.). Use of unauthorized accessories can cause the FCC RF exposure compliance requirements to be exceeded.

The information listed above provides the user with the information needed to make him or her aware of a RF exposure, and what to do to assure that this radio operates within the FCC exposure limits of this radio.

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OpenSky Overview

Overview

The P-801T Portable Radio is a key component of the OpenSky network.

This section gives an overview of:

- The OpenSky network, and
 - OpenSky features and benefits.
-

The OpenSky network

The P-801T Portable Radio is a part of the OpenSky network. The OpenSky network is an integrated voice and data communications system. The system provides a communication backbone that enables voice to be converted to digital information and then transmitted over a wireless network. Data applications can be used simultaneously with voice over the same network.

OpenSky features and benefits

OpenSky connects seamlessly with existing applications and provides significant user benefits.

OpenSky:

- Eliminates the need to carry more than one radio to communicate mission critical information by providing one communication system to many users and agencies.
 - Relieves radio users of the task of switching channels when moving to a new coverage area by automatically roaming between base stations.
 - Provides improved peak traffic performance for all voice and data information.
 - Eliminates waiting for a radio channel to be available by automatically switching your radio to the best available channel.
 - Provides simultaneous voice and data without having to change radio modes.
 - Locates users quickly and accurately with Global Positioning System (GPS) equipped radios.
 - Prioritizes communications, eliminating non-essential information and preventing information overload.
-

P-801: An Introduction

Introduction

The P-801T is a "soft" radio; its function is determined by software applications in much the same way that computer programs are used for different functions on a personal computer. Voice communication is handled digitally; this provides noise-free audio reception and allows for added features such as voice grouping to be supported.

Operating modes

The P-801T is a digital multi-mode radio that can operate in one of many modes. The principle operating modes are:

- OpenSky Trunked Protocol (OTP), or
 - OpenSky Conventional FM with Continuous Tone Coded Squelch System (CTCSS).
-

Terms and concepts you need to know

Before using the P-801T radio, you may want to become familiar with some terms and concepts relating to OpenSky voice features.

Term/Concept	See Page
User group	3
Profile	4
Talk and Listen Group	5
Radio Personality	6
Voice Feature Summary	7

Terms and Concepts

User Groups Explained

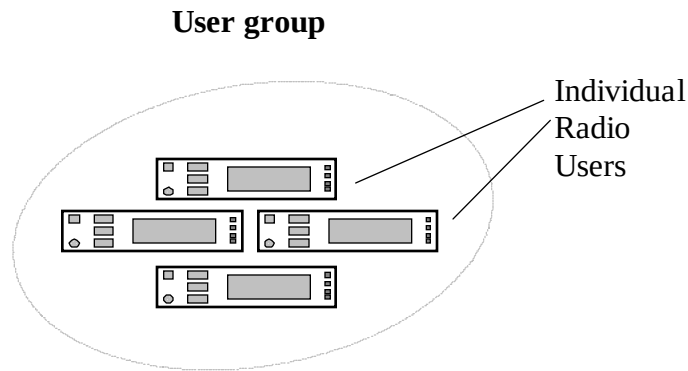
User group

A user group is a set of users who regularly need to communicate. There can be any number of users in a user group. Your OpenSky network administration personnel establish and organize user groups.

An OpenSky user group is similar to a channel in a conventional FM radio system.

Diagram

The figure below illustrates the user group concept.

**Example**

For a state police agency, the officers assigned to the same barracks might be in the same user group.

Profiles Explained

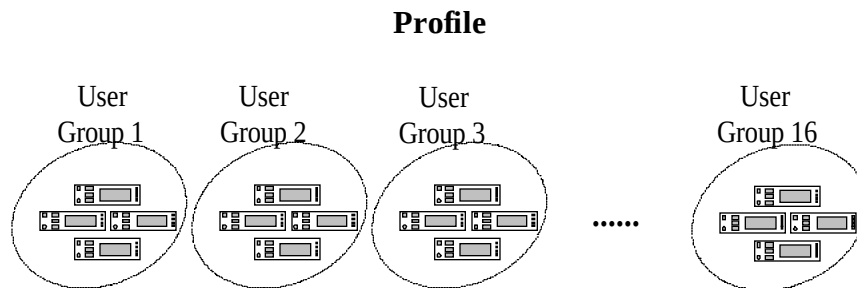
Profile

A profile is a set of up to 16 user groups.

An OpenSky profile is similar to a bank of channels in a conventional FM radio system.

Diagram

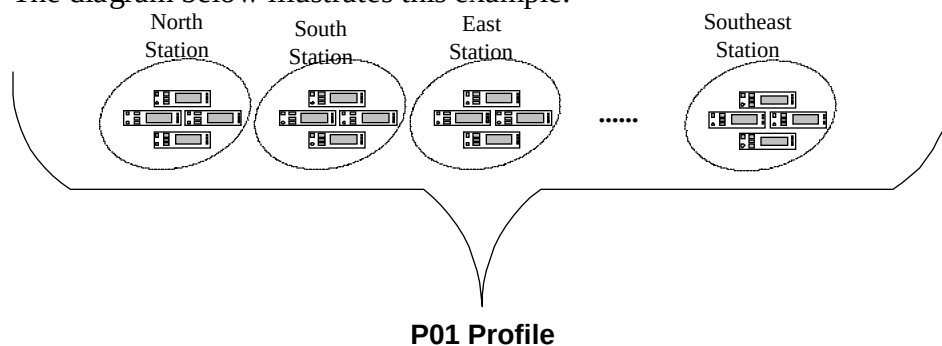
The figure below illustrates the profile concept.



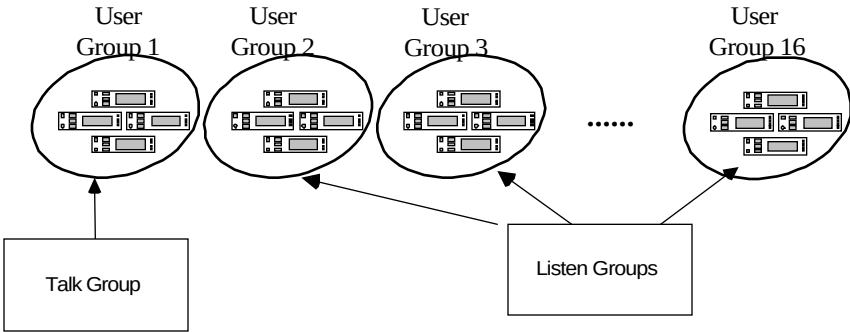
Example

Police officers on the same shift could be in the same profile – P01. The user groups that make up this profile might be organized by the physical location of the police stations.

The diagram below illustrates this example.



Talk and Listen Groups Explained

Overview	The concept of talk and listen groups is key to understanding how the radio scans active voice calls. You can change the way your radio scans for active voice calls.
Talk group	A talk group is the primary user group in a profile. This is the group of users you will talk with and listen to the most. The first user group in each profile is your talk group.
Listen group	The rest of the 15 possible user groups in a profile are listen groups. You normally hear the voice calls from the users in this group, but your voice does not transmit to them.
Diagram	The figure below illustrates the talk and listen group concepts.  <pre>graph LR; TG[Talk Group] --> UG1((User Group 1)); LG[Listen Groups] --> UG2((User Group 2)); LG --> UG3((User Group 3)); LG --> UG16((User Group 16)); UG1 --- UG2 --- UG3 --- Ellipsis[.....] --- UG16</pre>
Example	Police officers assigned to the North station could be in the same talk group. Officers from the North Station can listen to communications from groups of radio users from the South, East and Southeast Stations.

Radio Personality Explained

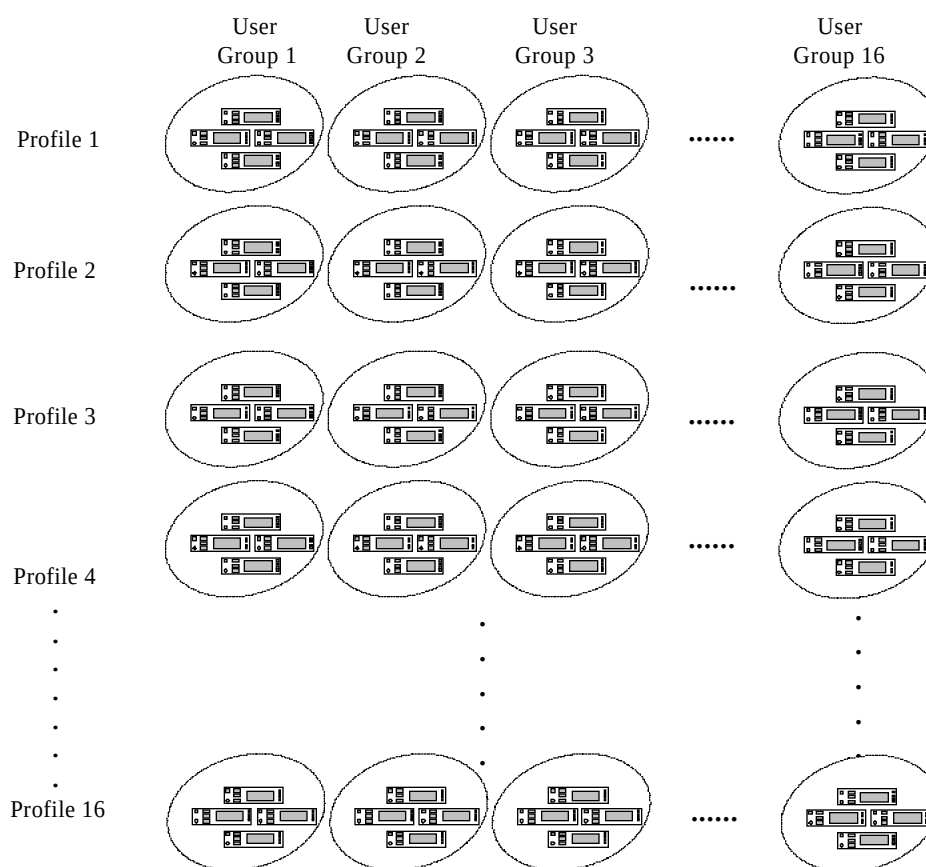
Radio personality

The radio personality is a collection of up to 16 profiles. When you turn on your radio, the personality is downloaded into the radio so that you have access to the profiles you need.

Of the 16 possible profiles, only one is active at any given time.

Diagram

The figure below illustrates the radio personality concept.



Example

The radio personality for a police officer could include the profiles: Profile 1, Profile 2, and Profile 3. These profiles could represent each of the shifts for a particular police agency.

Voice Feature Summary

Voice feature summary

User groups contain radio users who have a common need to communicate using the radio network. User groups are characterized as either *talk groups* or *listen groups*.

- Your talk group is the primary group of radio users that you will listen and talk to.
- Listen groups contain users that you normally only listen to. You do not normally transmit voice to users in your listen groups.

Profiles are comprised of up to 16 user groups and are used to organize your *radio personality* into categories defined by your network administrators.

Each time you turn on your radio, you access the OpenSky network and user features are loaded into your radio. These user features are known as your radio personality. Your radio personality establishes:

- Who you will communicate with over the network, and
- What calls have priority over others.

A radio personality is made up of up to 16 profiles.

Before You Start

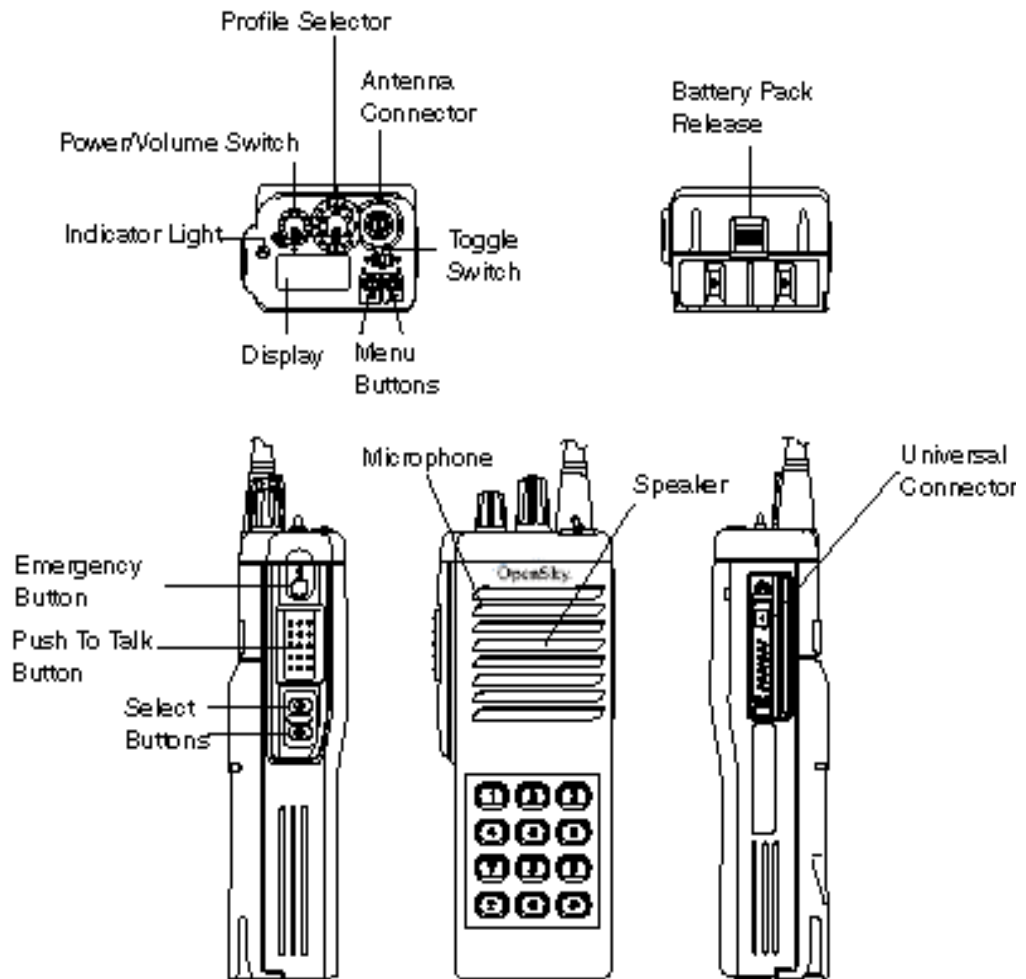
Controls and Indicators

General

Four top panel switches and four side panel switches provide user control of major radio functions. The display and status indicators show key operating information.

Diagram

The following diagram shows the controls and indicators for the P-801T radio.



Continued on next page

Controls and Indicators, Continued

Parts and Functions

The following table shows the parts of the P-801T radio and their related functions.

Part	Function
Power/ Volume Switch	Turns the radio on and off and sets the volume level of the speaker.
Profile Selector	Sets the active profile.
Antenna Connector	Provides a mounting location for antenna.
Toggle Switch	Turns display, indicator light, and side tones on or off.
Menu Buttons	Cycles through the menu of radio functions. When either the left or right menu buttons are pressed, the selected function appears on the radio display.
Display	Provides profile and user group information. When the menu or select buttons are pressed, the menu display temporarily changes to show the selected menu screen. If no buttons are pressed, the display returns to the primary menu.
Indicator Light	Turns red and blinks when transmitting. Turns green and blinks when receiving a call.
Emergency Button	Sends an emergency alert over the network and initiates an emergency call. Also used to cancel an emergency alert.
Push-to-talk Button	Turns the radio microphone on to transmit a voice call.
Select Buttons	Selects options within a radio menu when either the up or down button are pressed.
Microphone	Picks up your voice for calls to other users.
Speaker	Allows you to hear other users.
Universal Connector	Provides a connection for use of an external microphone and speaker.

Display Overview

Overview

The radio display shows the active user group and profile, menu selections, and status information. The display is divided into two major elements:

- Menu display & control area, and
- Status area.

Diagram

The picture below shows the components of the display area.



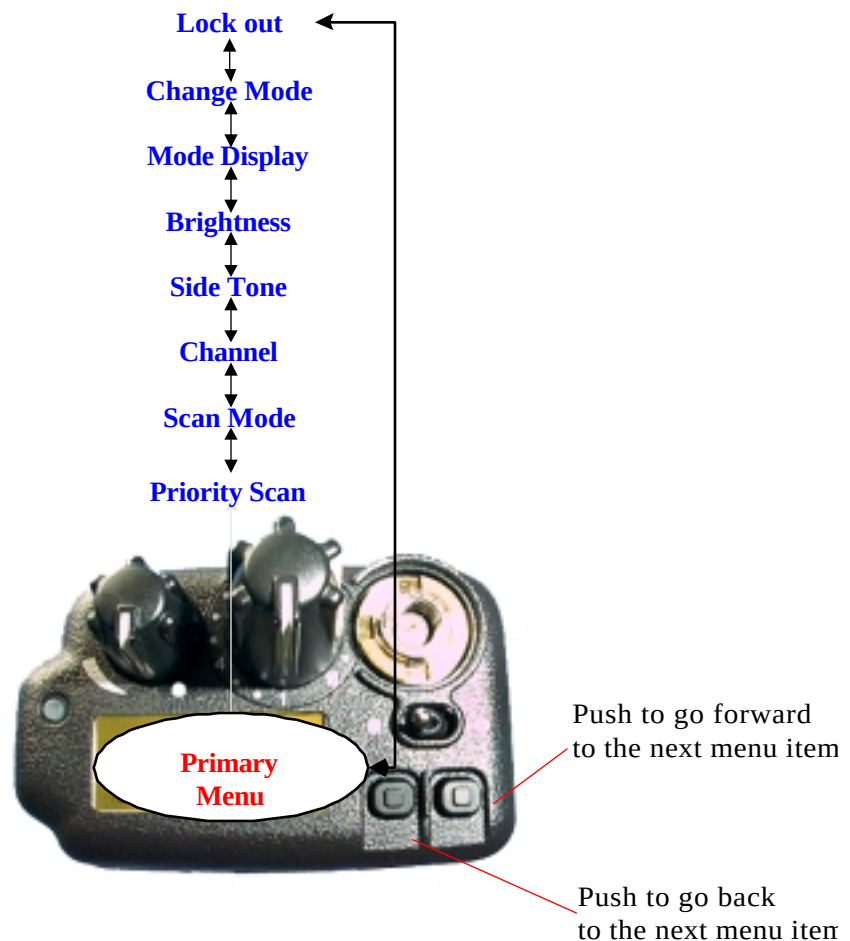
Parts and Functions

The table below describes the parts of the radio display and their functions.

Part	Function
Menu Display and Control Area	• The display panel normally provides profile and user group information to the user. • When Menu or Select buttons are pressed, the menu display and control area temporarily changes to show information relevant to the selected menu screen.
Status Area	• The bottom of the display shows mode related information and radio protocol status. – The : appears when you are connected to the OpenSky network. – The two-digit profile number is displayed. – SCN is displayed in the scanning menu. – MON is displayed in the mode menu. – LO is displayed in the lock out menu.

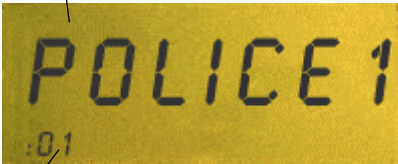
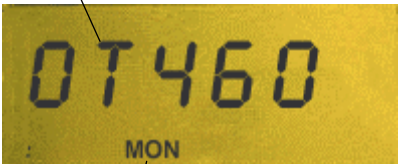
Menu Display and Control Area

Description	After you turn on the radio and the startup sequence finishes, the radio display shows the active profile, user group and menu selections. Pressing either Menu button changes the display to the next available menu item.
Background	The primary menu is displayed if you are not pressing the menu keys. If you move to another menu, the radio will return to the primary menu if no key is pressed for 10 seconds.
Diagram	The diagram below shows the menu items.



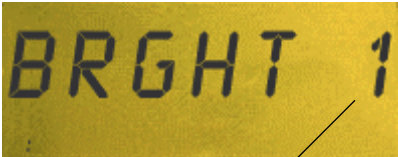
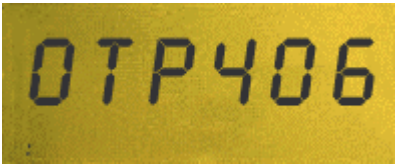
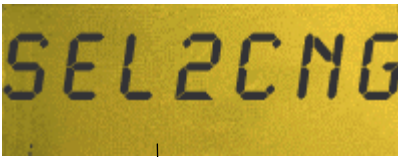
Menu Display and Control Area, Continued

Menu structure The table below describes the menu items and display formats for the radio.

Menu Name	Display Format (Menu Display & Control Area)	Menu Description
Primary Menu (Default Screen)	Profile  Profile number	Displays and changes the active profile. A profile is identified by its number and the name of the talk group.
Priority Scan	User group  Priority scan	Displays the available user groups in the currently selected profile and chooses one of those user groups as the priority scan user group.
Scan Mode	Identifies the chosen scan mode  Scan menu indicator	Changes the scan modes to either: • None • Normal, or • Talkback
Channel Change	Site name  Channel display indicator	Changes the active radio channel.

Continued on next page

Menu Display and Control Area, Continued

Side Tone	 ON or OFF based on selection	Switches side tones ON and OFF. Side tones are audible beeps that occur when you press a Menu or Select button.
Brightness	 Level ranges from 1 to 3	Increases or decreases the display brightness.
Mode		Displays active software and version number.
Change Mode	 "Select to Execute Mode Change"	Changes the mode of the radio. Once selected, the menu advances to the mode change menu sequence.
Lock out	User group  Indicates locked out (Blank for not locked out)	Prevents you from hearing voice calls from the selected user group. Does not lock out emergency or supervisory calls.

Basic Operation

Turning the Radio On and Adjusting the Volume

Procedure Follow the steps below to turn your radio on and adjust the volume.

Step	Action
1	Rotate the power/volume switch clockwise until it clicks. <i>The startup sequence lasts approximately 10 seconds. The radio is ready to use after this sequence.</i> Use the figure below to see how the radio may appear as it is ready for use. : Indicates you are connected to the OpenSky  Profile number displayed Talk group name
2	Turn the Power/Volume switch to adjust the volume. <i>Turning the switch clockwise increases the volume and counterclockwise decreases the volume.</i>

Turning the Radio Off

Procedure

Follow the step below to shut off the radio.

Step	Action
1	Turn the power/volume switch counter-clockwise until it clicks. Result: The display changes to show SHUTDWN and the radio shuts down. The operating mode of the radio is saved and recalled on the next start-up of the radio.

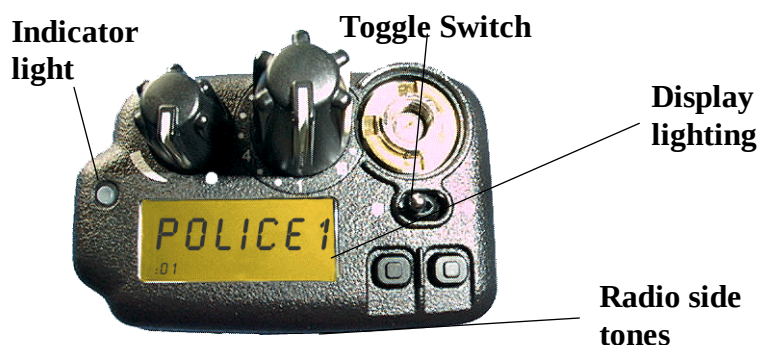
Turning off the Display Lighting and Side Tones

Background

For some users, it is important to be able to turn off the radio's display lights and side tones. For example, in covert operations, lights and sounds could inadvertently expose an otherwise unobservable radio user. For this purpose the radio has a toggle switch which disables the radio display light, indicator light and audible side tones.

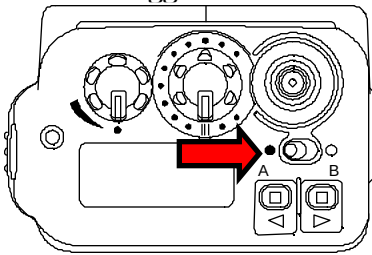
Figure

The following figure shows the location of the toggle switch and the features it controls.



Procedure

Follow the step below to turn off the display lighting and side tones.

Step	Action
1	Push the toggle switch in the direction of the arrow to position B.  Result: The display light, indicator light and side tones are disabled.

Listening to Voice Calls

Background Once the radio is turned on and active on your OpenSky network, you can begin to hear voice calls.

Process The table below describes what happens when you receive a voice call.

Stage	Description
1	Your radio display changes briefly to show the name of the user group that the call is coming from.
2	The indicator light will turn green and blink while the call is being received.
3	At the end of the call, you will hear a single end tone. This lets you know that the person speaking is through with that portion of their transmission.

Making a Voice Call

Background The steps for making a voice call are similar to those of a conventional portable radio.

Procedure Follow the steps below to make a voice call.

Step	Action						
1	If needed, turn on the radio by turning the power/volume switch clockwise until it clicks. <i>The radio will be ready to use following the startup sequence. When you see the primary profile displayed, you are ready to talk.</i>						
2	Choose your next step from the table below. <table><tr><th>If</th><th>Then</th></tr><tr><td>No one is talking</td><td>Continue to Step 3.</td></tr><tr><td>Someone is talking</td><td>Wait to hear a single end tone indicating they are done talking and continue to step 3.</td></tr></table> <i>A blinking green indicator light tells you that a call is being received.</i>	If	Then	No one is talking	Continue to Step 3.	Someone is talking	Wait to hear a single end tone indicating they are done talking and continue to step 3.
If	Then						
No one is talking	Continue to Step 3.						
Someone is talking	Wait to hear a single end tone indicating they are done talking and continue to step 3.						
3	Push the push-to-talk button and speak normally. • <i>For best results, hold the transceiver approximately 1-½ inches from your mouth.</i> • <i>If you hear 3 rapid beeps, the network is busy. Wait a few seconds and try your call again.</i> • <i>If you hear a 3-beep (medium-medium-high) sequence your call is in the queue. When the network is available, the radio automatically transmits for 10 seconds and the mode status indicator blinks red when you can make your call.</i>						
4	Release the push-to-talk button when you are done talking.						

Changing the Side Tone Setting

Background

Your radio will beep when you press the **VOL**, **MENU**, or **SEL** switch. These beeps are known as side tones. You can turn the beeps on or off to suit your needs.

Procedure

Follow the steps below to change the side tone setting.

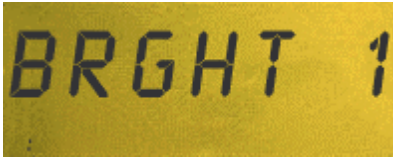
Step	Action						
1	Press a Menu button until the side tone menu shows. 						
2	Use the table below to determine your next step. <table><tr><th>If you want to...</th><th>Then...Press a Select button until the display shows:</th></tr><tr><td>Hear side tones</td><td>Press a Select button until the display shows SIDE ON.</td></tr><tr><td>Disable side tones</td><td>Press a Select button until the display shows SIDEOFF.</td></tr></table> Result: You will have changed the side tone setting.	If you want to...	Then...Press a Select button until the display shows:	Hear side tones	Press a Select button until the display shows SIDE ON .	Disable side tones	Press a Select button until the display shows SIDEOFF .
If you want to...	Then...Press a Select button until the display shows:						
Hear side tones	Press a Select button until the display shows SIDE ON .						
Disable side tones	Press a Select button until the display shows SIDEOFF .						
3	To return to the menu display, choose from the following table. <table><tr><th>To return...</th><th>Then</th></tr><tr><td>Immediately</td><td>Press a Menu button.</td></tr><tr><td>After a brief wait</td><td>Wait approximately 10 seconds.</td></tr></table> Result: The radio will return to the menu display.	To return...	Then	Immediately	Press a Menu button.	After a brief wait	Wait approximately 10 seconds.
To return...	Then						
Immediately	Press a Menu button.						
After a brief wait	Wait approximately 10 seconds.						

Note: When the radio is turned off, the side tone setting will be saved for your next use of the radio.

Adjusting the Display Brightness

Background You can adjust the display brightness to suit your needs.

Procedure Follow the steps below to change the display brightness.

Step	Action						
1	Press a Menu button until the brightness menu shows. 						
2	Use the table below to determine your next step. <table><tr><th>If you want to...</th><th>Then press...</th></tr><tr><td>Increase brightness</td><td>The upper Select button.</td></tr><tr><td>Decrease brightness</td><td>The lower Select button.</td></tr></table>	If you want to...	Then press...	Increase brightness	The upper Select button.	Decrease brightness	The lower Select button.
If you want to...	Then press...						
Increase brightness	The upper Select button.						
Decrease brightness	The lower Select button.						
3	To return to the menu display, choose from the following table. <table><tr><th>To return...</th><th>Then</th></tr><tr><td>Immediately</td><td>Press a Menu button.</td></tr><tr><td>After a brief wait</td><td>Wait approximately 10 seconds.</td></tr></table> Result: The radio will return to the menu display.	To return...	Then	Immediately	Press a Menu button.	After a brief wait	Wait approximately 10 seconds.
To return...	Then						
Immediately	Press a Menu button.						
After a brief wait	Wait approximately 10 seconds.						

Note: When the radio is turned off, the brightness setting will be saved for your next use of the radio.

Changing the Active Profile

Background

You can change the *active* profile of your radio from the default profile to any of the other profiles in your radio personality.

A change of the active profile enables you to change the list of talk groups and listen groups that you communicate with.

Procedure

Follow the step below to change the active profile.

Step	Action
1	Turn the Profile selector to move to the desired profile. Result: The displayed profile is now active. The radio display will change to show the name for the talk group in the selected profile and the new profile number.

Note: When turned on, the radio activates the profile corresponding to the position of the profile selector.

Using Your Radio in Emergency Situations

Background

Your radio is capable of sending an emergency alert and making emergency calls on the network. OpenSky handles emergency calls with the highest priority, allowing you or the people you serve to get needed help.

Procedure

The following table describes the procedure for using your P-801T radio in an emergency.

Step	Action
1	Press the orange emergency button on your radio to send the emergency alert. <i>Other users hear a distinctive 3 tone burst of sound. At the same time, an emergency talk group is enabled.</i>
2	Press the push-to-talk button to send your voice out on the emergency talk group. <i>All of the radios in the emergency talk group will hear your call and see the emergency talk group displayed on their radio.</i>
3	When the emergency ends, press and hold the orange emergency button for 3 seconds to clear the emergency alert and call. <i>Note: The user who made the initial emergency alert, must clear it.</i>

Advanced Operation

Increasing the Scanning Priority of a User group

Background Increasing the scanning priority lets you prioritize transmissions from one specific listen group over other listen groups in an active profile. The talk group is set as the default for scanning priority

Process The table below describes the process for increasing a user group's scanning priority.

Stage	Description
1	The profile containing the user group you wish to prioritize is activated.
2	The priority menu is accessed.
3	The desired user group is prioritized.

Procedure Follow the steps below to increase the scanning priority of a user group.

Step	Action
1	Turn the Profile selector to the profile containing the user group you wish to prioritize. 

Continued on next page

Increasing the Scanning Priority of a User group, Continued

Procedure (continued)

2	Press the Menu B button to access the priority menu. 						
3	Press the upper Select button until the user group you want to prioritize is displayed. Result: The selected user group's transmission priority is increased.						
4	To return to the menu display, choose from the following table. <table><tr><th>To return...</th><th>Then</th></tr><tr><td>Immediately</td><td>Press a Menu button.</td></tr><tr><td>After a brief wait</td><td>Wait approximately 10 seconds.</td></tr></table> Result: The radio will return to the menu display.	To return...	Then	Immediately	Press a Menu button.	After a brief wait	Wait approximately 10 seconds.
To return...	Then						
Immediately	Press a Menu button.						
After a brief wait	Wait approximately 10 seconds.						

Notes:

- Changing the priority of a listen group does not change your talk group.
 - You can prioritize one user group in each of the profiles in your radio personality.
 - The scanning priority settings are reset to the default talk group when the radio is turned off.
-

Changing the Scanning Mode

Background

Changing the scanning mode can broaden or narrow the span of your communications. Changing the scanning mode changes the way you interact with listen groups. Talk groups are not affected by changes to the scanning mode.

There are three available scanning modes:

- No scanning
- Normal scanning, or
- Talkback Scanning.

Choosing one of the three available scanning modes changes the way your radio scans all of the profiles for your radio personality.

Definitions

The following table defines each of the three scanning modes.

Mode	Definition
No Scanning	You do not hear calls from the listen groups.
Normal Scanning	You hear calls from the listen groups. This is the default setting.
Talkback Scanning	You hear calls from the listen groups. If you press the push-to-talk switch before a timer expires, you will be able to call the last listen group that you heard. If the talkback timer expires, your transmission will be placed on the talk group for your active profile. <i>Note:</i> Your network administrator sets the length of the talkback timer for each user group.

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Changing the Scanning Mode, Continued

Procedure

The following table details the procedure for changing the scanning mode of the radio.

Step	Action								
1	Press a Menu button until the scanning menu appears. 								
2	Choose the scanning mode: <table border="1"> <thead> <tr> <th>To ...</th><th>Press SEL until...</th></tr> </thead> <tbody> <tr> <td><i>Narrow</i> your scanning list to only the active talkgroup</td><td>SC NONE is displayed.</td></tr> <tr> <td>Use normal scanning</td><td>SC NORM is displayed.</td></tr> <tr> <td><i>Broaden</i> your voice transmissions to users beyond the active talkgroup</td><td>SC TLKB is displayed.</td></tr> </tbody> </table> Result: The scanning mode you chose is now active for all profiles in your radio personality.	To ...	Press SEL until...	<i>Narrow</i> your scanning list to only the active talkgroup	SC NONE is displayed.	Use normal scanning	SC NORM is displayed.	<i>Broaden</i> your voice transmissions to users beyond the active talkgroup	SC TLKB is displayed.
To ...	Press SEL until...								
<i>Narrow</i> your scanning list to only the active talkgroup	SC NONE is displayed.								
Use normal scanning	SC NORM is displayed.								
<i>Broaden</i> your voice transmissions to users beyond the active talkgroup	SC TLKB is displayed.								
3	To return to the menu display, choose from the following table: <table border="1"> <thead> <tr> <th>To return...</th><th>Then</th></tr> </thead> <tbody> <tr> <td>Immediately</td><td>Press a Menu button.</td></tr> <tr> <td>After a brief wait</td><td>Wait approximately 10 seconds.</td></tr> </tbody> </table> Result: The radio will return to the menu display.	To return...	Then	Immediately	Press a Menu button.	After a brief wait	Wait approximately 10 seconds.		
To return...	Then								
Immediately	Press a Menu button.								
After a brief wait	Wait approximately 10 seconds.								

Note: When the radio is turned off, the scanning mode selection will be saved for your next use of the radio.

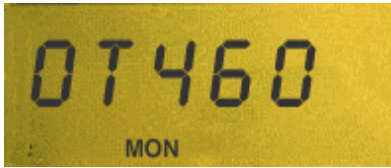
Changing the Active Radio Channel

Background

You can change the active radio channel of your radio. If your radio reception is poor or you are repeatedly denied channel access, you can manually change the radio to a different channel.

Procedure

The table below describes the procedure for displaying and changing the active radio channel.

Step	Action
1	Press a Menu button until the channel display shows. 
2	Press a Select button to display a different radio channel.
3	Wait until the radio synchronizes on the new channel. Result: You will see the : in the bottom right corner of the display. This shows that the radio is synchronized on the new channel.

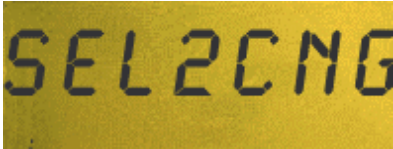
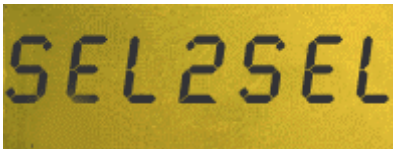
Changing the Operating Mode

Background

The radio normally uses OTP (OpenSky Trunked Protocol) to provide the full features of your digital voice and data network. To work with radios using other protocols such as conventional FM, you can manually change the mode of operation.

Procedure

The table below describes the steps to follow for changing the operating mode of the radio.

Step	Action						
1	Press a Menu button until the mode change menu appears. 						
2	Press the upper Select button to access the Change Mode 2 menu. 						
3	Choose the next step from the table below. <table><tr><th>To ...</th><th>Press...</th></tr><tr><td>Abort the mode change</td><td>Menu Result: The radio will display ABORTED and the change will be aborted.</td></tr><tr><td>Continue</td><td>Select</td></tr></table>	To ...	Press...	Abort the mode change	Menu Result: The radio will display ABORTED and the change will be aborted.	Continue	Select
To ...	Press...						
Abort the mode change	Menu Result: The radio will display ABORTED and the change will be aborted.						
Continue	Select						

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Changing the Operating Mode, Continued

Procedure (continued)

Step	Action						
4	Press the upper Select button until the desired mode is displayed. • OTP is OpenSky Trunking Protocol. • OCF is OpenSky Conventional FM. • OAT is Over the Air Trunked-Download.						
5	Press the Menu B button to change the mode.						
6	Choose the next step from the table below. <table><tr><th>To ...</th><th>Press...</th></tr><tr><td>Abort the mode change</td><td>Menu A Result: The radio will display ABORTED and the change will be aborted.</td></tr><tr><td>Continue</td><td>Select Result: The radio displays BOOTING and automatically shuts off and turns on in the selected operating mode.</td></tr></table>	To ...	Press...	Abort the mode change	Menu A Result: The radio will display ABORTED and the change will be aborted.	Continue	Select Result: The radio displays BOOTING and automatically shuts off and turns on in the selected operating mode.
To ...	Press...						
Abort the mode change	Menu A Result: The radio will display ABORTED and the change will be aborted.						
Continue	Select Result: The radio displays BOOTING and automatically shuts off and turns on in the selected operating mode.						

Note: When the radio is turned off, the operating mode is saved for your next use of the radio.

Locking Out User groups

Background To focus your voice communications, you can lock out user groups that you do not want to hear. Locking out a user group does not prevent you from getting emergency calls or calls that come from your priority scan group.

Process The lock out menu pertains to the active profile. As you receive voice calls, the lockout menu is loaded with the names of the calling user groups. You then select the name of the user group to be locked out from the menu.

Procedure Follow the steps below to lock out a user group.

Step	Action						
1	Press a Menu button until the lockout menu appears. 						
2	Choose the next step from the table below. <table><tr><th>If ...</th><th>Then...</th></tr><tr><td>NONE is displayed</td><td>There are no user groups to lock out because you have not received any voice calls from other users in the active profile.</td></tr><tr><td>A profile name and LO are displayed</td><td>Press upper Select button until the user group you want to lock out is displayed.</td></tr></table>	If ...	Then...	NONE is displayed	There are no user groups to lock out because you have not received any voice calls from other users in the active profile.	A profile name and LO are displayed	Press upper Select button until the user group you want to lock out is displayed.
If ...	Then...						
NONE is displayed	There are no user groups to lock out because you have not received any voice calls from other users in the active profile.						
A profile name and LO are displayed	Press upper Select button until the user group you want to lock out is displayed.						

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Locking Out User groups, Continued

Procedure (continued)

Step	Action						
3	Press the lower Select button to lock out the displayed user group. Result: You will not hear voice calls from the user groups you have locked out.						
4	To return to the menu display, choose from the following table. <table><tr><th>To return...</th><th>Then</th></tr><tr><td>Immediately</td><td>Press a Menu button.</td></tr><tr><td>After a brief wait</td><td>Wait approximately 10 seconds.</td></tr></table> Result: The radio will return to the menu display.	To return...	Then	Immediately	Press a Menu button.	After a brief wait	Wait approximately 10 seconds.
To return...	Then						
Immediately	Press a Menu button.						
After a brief wait	Wait approximately 10 seconds.						

Note:

- Changing the active profile removes any lockouts you have made.
 - Turning off the radio removes any lockouts you have made.
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Troubleshooting

Troubleshooting table

Use the table below as a troubleshooting guide if your radio does not operate properly. If additional assistance is required, contact a qualified service technician for help.

Symptom	Likely Cause	Suggested solutions
Radio will not turn on.	Low battery.	Change your battery pack to a fully charged pack.
No audio.	Speaker volume is muted.	Increase the volume level.
Poor audio.	You are in a poor coverage area or you are not on the network. Antenna connection is loose.	Move to a better coverage area. Ensure that the antenna is fully connected to the radio.
