MICHIGAN STATE POLICE

*COMMUNICATIONS SECTION • MOBILE OFFICE UNIT*

# MOTOROLA APX 6000 & 7000

# Portable Radio Guide

*(Rev. 04/2015)*

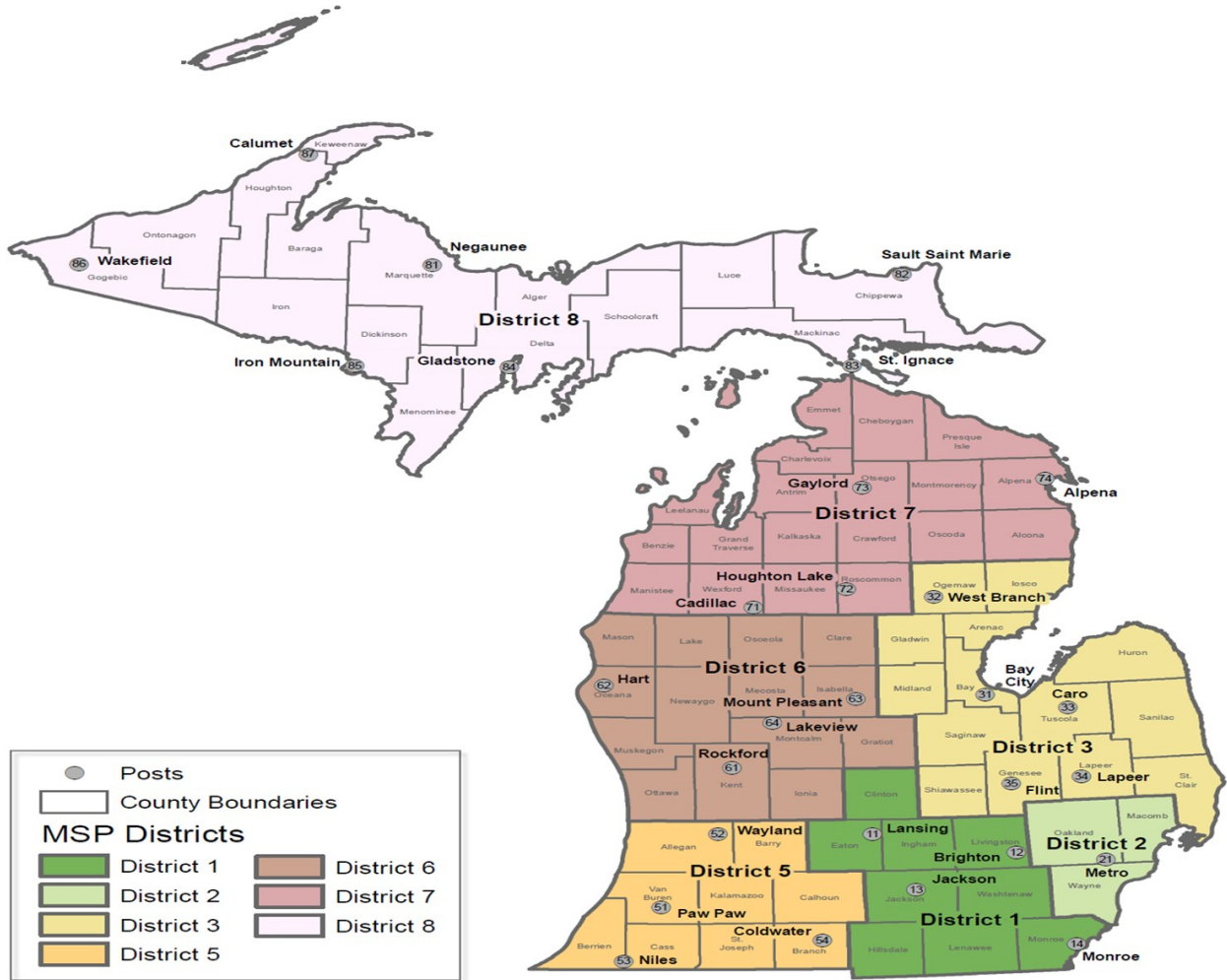MSP COMMUNICATIONS • 7050 HARRIS DRIVE • LANSING, MI 48913

(517) 284-3000 (SECTION MAIN)

# TABLE of CONTENTS

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# MOTOROLA APX PORTABLE RADIO OVERVIEW

The Motorola APX portable radios described in the guide operate on **Michigan's Public Safety Communications System**, often called the **MPSCS**. The MPSCS, a trunked 800 MHz digital system, enables all users across a wide-variety of disciplines and agencies to communicate together throughout or even across the entire state. Currently, nearly 1,600 different agencies encompassing nearly 70,000 individual radios use the MPSCS on a daily basis for their work; in fact, the MPSCS is one of the largest 800 MHz systems in the world today. These agencies include police departments, fire departments, EMS, public works or road commissions, federal agencies, hospitals, various state agencies, and the MSP. The purpose of this guide is not to instruct the reader on the system itself, but to explain what the various features of the radios are that used by our personnel on a daily or frequent basis.

MSP primarily fields two types of APX portable radios: the APX 6000 and the APX 7000. As mentioned, each of these radios operates on the MPSCS. However, the APX 7000 is also capable of operating in a dual-band capacity (e.g., the radio can use both the MPSCS or a conventional system such as VHF). Typically, the APX 7000 may be deployed to a post that has a centralized dispatch system still operating in a conventional radio band such as VHF. By using an APX 7000, those personnel can communicate on both the state system and the local system without the need to carry two portable radios.

As both radios are from the same APX family, and are programmed to MSP specifications, the various diagrams or illustrations used throughout this guide apply to both radios regardless of whether it is a 6000 or 7000. **MSP typically fields two types of radios from a specific APX series: the Model 2.5 radio, and the Model 3 radio.** Model 2.5 radios are typically issued to enforcement personnel working the road; troopers, motor carrier officers, undercover teams, etc. Model 3 radios are typically issued to sergeants and command. The differences between these two radios are minimal; the Model 3 radio has the ability to private call or page using the keypad on the radio, whereas the Model 2.5 has no keypad. Furthermore, Model 3 radios have a Bluetooth functionality built-in, enabling the use of wireless accessories such as earpieces and bone microphones.

The APX portable radios are programmable, just like a computer can be. *The various buttons, knobs, and switches on the radios can be programmed by the technician to do just about anything.* As a result, although one agency may have an APX 6000, and another agency has the exact same model radio, they may operate slightly differently. This guide encompasses radios maintained by the MSP.
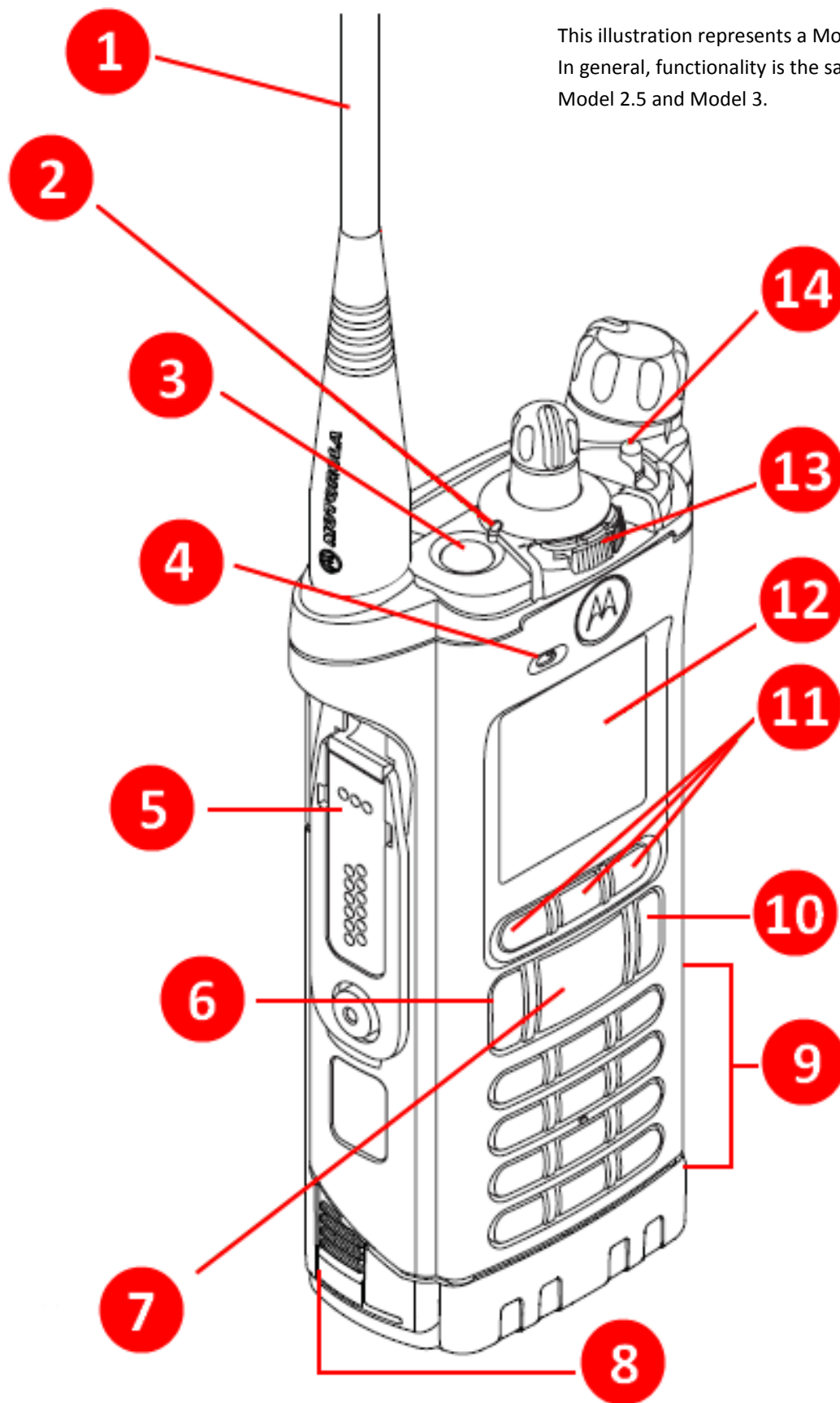
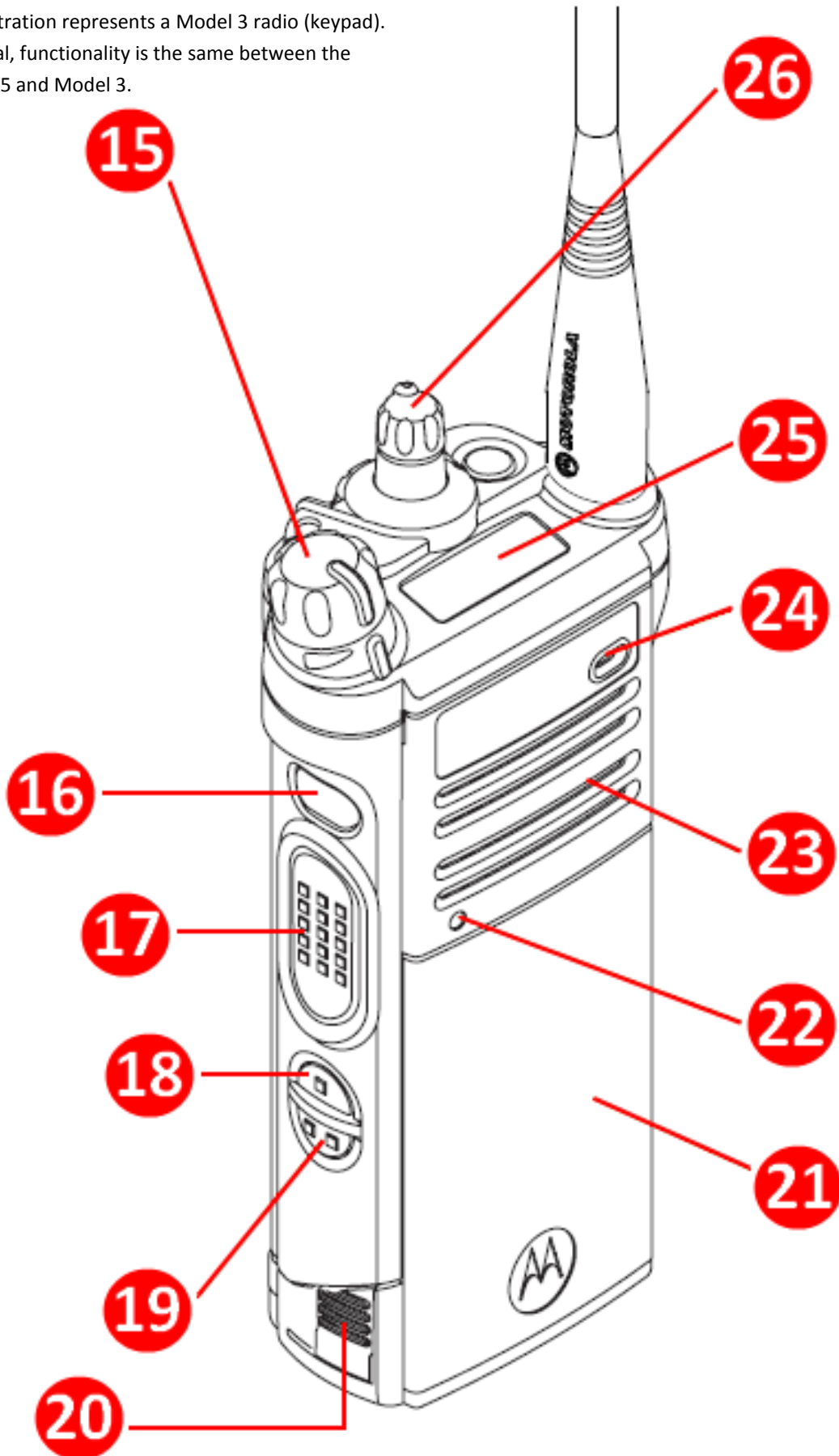This illustration represents a Model 3 radio (keypad). In general, functionality is the same between the Model 2.5 and Model 3.

This illustration represents a Model 3 radio (keypad). In general, functionality is the same between the Model 2.5 and Model 3.

# APX 6000 / 7000 Nomenclature—FRONT

| NUMBER | DESCRIPTION | NUMBER | DESCRIPTION |
|--------|-------------|--------|-------------|
| 1 | Antenna | 8 | Battery Latch |
| 2 | Multi-Color LED | 9 | Keypad *(Model 3 Only)* |
| 3 | Emergency Button | 10 | Computer Icon / "Future Use" |
| 4 | Front Microphone | 11 | Menu Select Buttons |
| 5 | Accessory / Shoulder Microphone Connector | 12 | Main Display |
| 6 | Home Button | 13 | Encryption On/Off |
| 7 | 4-Way Navigation Button | 14 | Scan On/Off |

# APX 6000 / 7000 Nomenclature—REAR

| NUMBER | DESCRIPTION | NUMBER | DESCRIPTION |
|--------|-------------|--------|-------------|
| 15 | On/Off / Volume | 22 | Bluetooth Dot |
| 16 | Answer Private Call | 23 | Speaker |
| 17 | Push-to-Talk (PTT) | 24 | Rear Microphone |
| 18 | One-Dot Button | 25 | Top Display |
| 19 | Two-Dot Button | 26 | Mode Knob (talkgroup select knob) |
| 20 | Battery Latch | | |
| 21 | Battery | | |

# USING THE APX PORTABLE RADIO—BASICS

## BATTERY:
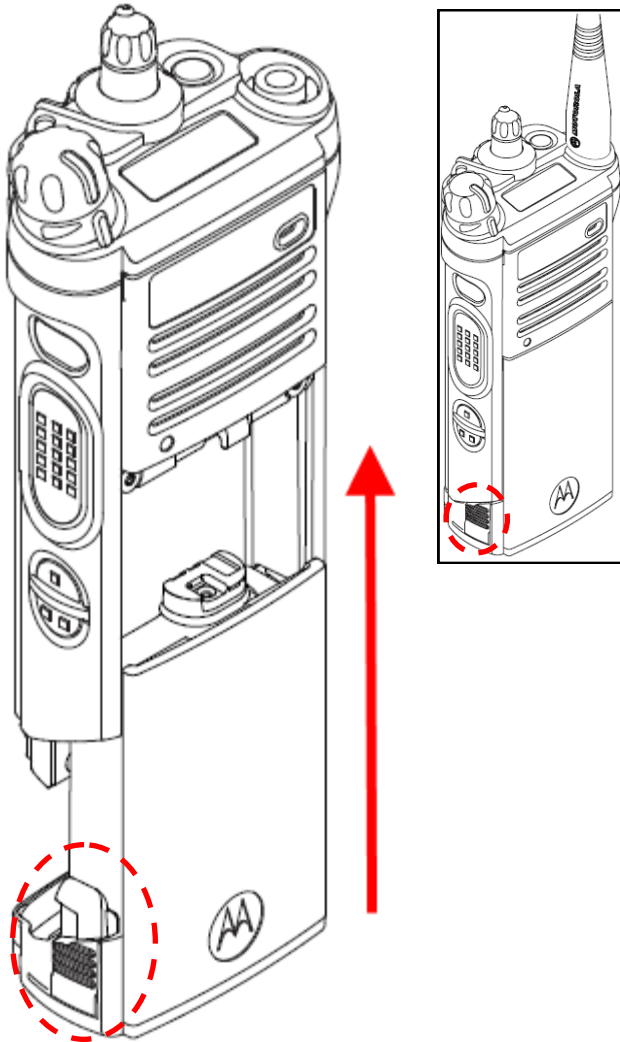
The APX 6000 & 7000 can accept a variety of different rechargeable batteries. Prior to replacing a battery, it is essential that the radio be turned off.  If the radio is powered up when the battery is removed, it could damage the radio.

To change or replace the battery, depress the small latches located on the bottom of the radio (*circled*). There is one latch to either side of the battery. Gently pull the battery downward until it separates from the radio.

To attach a battery, align it on the radio chassis and gently push upwards (*as indicated*) until you hear two small clicks.  These clicks indicate each of the two latches has engaged.  The radio may turn on if only one latch functions, but the battery will not be secure on the chassis and this could cause the radio to power down.

The APX radios are designed to be used with IMPRES batteries.  These batteries have a chip in them that communicate with an IMPRES charger. They will automatically recondition themselves on occasion; this helps to negate the "memory effect" sometimes seen in rechargeable batteries.

*See page 25 for additional information on battery care.*

## ON / OFF & VOLUME CONTROL:
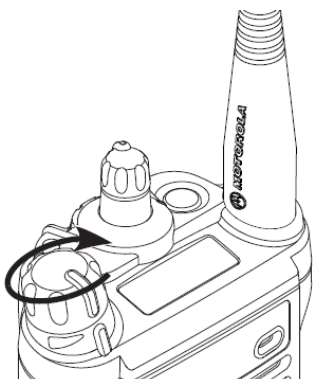
The large knob located on top of the radio opposite of the antenna is used to turn the radio on or off.  A "click" will be felt when the knob has been rotated far enough to either power the radio up or turn it off.  Continuing to turn the knob clockwise once the radio has powered up will adjust the volume; the further the knob is turned clockwise, the louder the speaker output will be.

Once the radio has been powered up, the display will read *"SELFTEST"* and it will automatically affiliate with a tower.  The radio will remember the talkgroup it was last tuned to prior to being powered down and will attempt to affiliate with this talkgroup.

# USING THE APX PORTABLE RADIO—BASICS

## SCAN ON/OFF SWITCH:
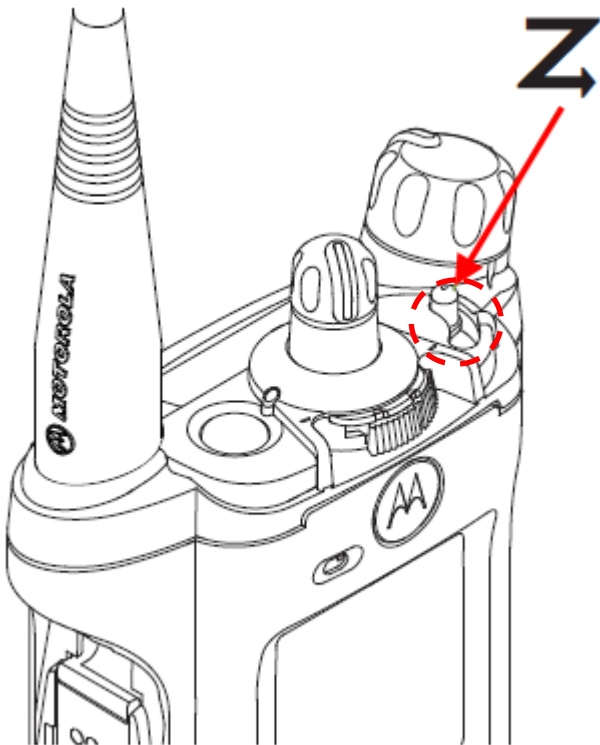
Adjacent to the on/off/volume knob is a small three-position switch labeled **A B C**. This switch can do different things depending on how the radio is programmed. For MSP radios and many radios on the MPSCS, this switch has been programmed as the scanning feature's on/off switch.

If the scan list has been programmed by the user, positions "A" and "B" of the switch function as "off." The "C" position functions as "on."

If the scan list is populated and the switch is turned to "C" you will see the indicated icon on the top and bottom display of your radio. If the switch is turned to "A" or "B," the icon will not appear as scanning is turned off.

If you attempt to turn scanning on without first programming your scan list, the display will read "*Empty list*" and the radio will tone until the switch is moved to the off position.

*See page 16 for information on how to program your scan list.*

## MODE KNOB & ENCRYPTION ON/OFF SWITCH:
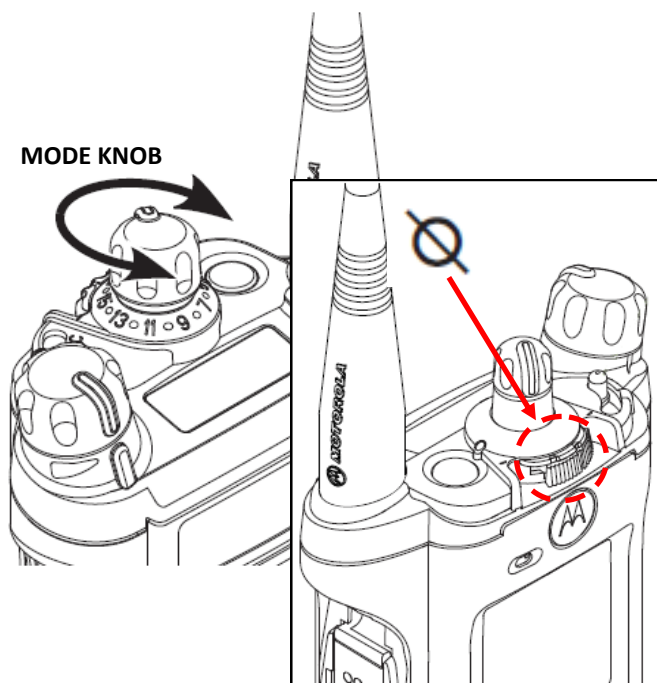
**MODE KNOB**

The sixteen-position knob on top of the APX portable radio is called the **mode knob** or "selector." It primarily functions to change back-and-forth between talkgroups within a particular zone.

The white line running down the side of the mode knob tells you what particular number the knob is currently set to; the knob will click as you rotate it.

Immediately underneath of the mode knob is the ***encryption on/off switch*** (*see inset*). This serves to turn the encryption on or off in your radio, allowing you to hear and transmit on encrypted channels. If the switch is set to " O " the radio is transmitting unencrypted. If the switch is set to " ⌀ " the radio is transmitting in encrypted mode.

If you attempt to transmit on an unencrypted talkgroup with the encryption enabled, the radio display will read "*Clear Tx only*" and the radio will tone. Turn encryption off and try again.

# USING THE APX PORTABLE RADIO—BASICS

## LED INDICATOR:
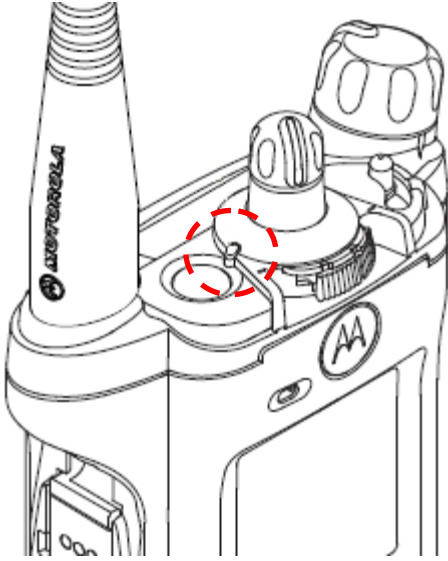
Next to the mode knob is a small LED indicator.  This LED has three colors: red, green, and yellow. The LED indicator is typically not illuminated.

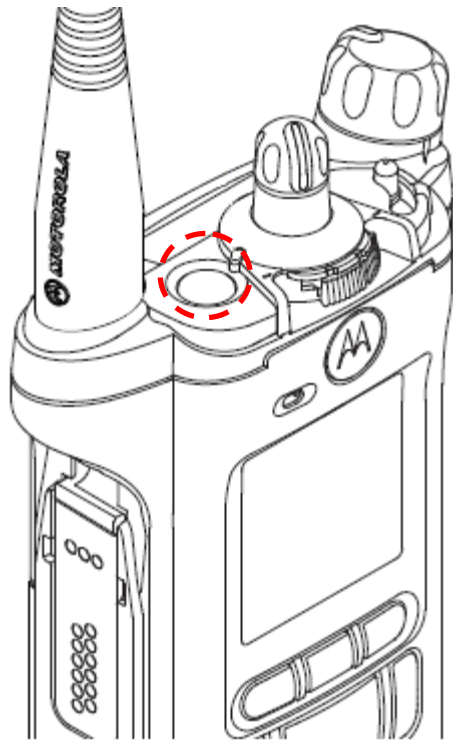| COLOR | MEANING |
|---|---|
| Solid Red | Radio is transmitting |
| Blinking Red | Burst transmission/data or low battery (constant) |
| Blinking Yellow | Radio is receiving an encrypted transmission |
| Solid Green | Radio is powering up |
| Blinking Green | Radio is receiving a private call or page |

## EMERGENCY BUTTON:

On radios that have the necessary equipment on the dispatch side, the large orange button on the top of the radio is programmed as the **emergency button.**  Some APX shoulder microphones also have a similar orange button on them that functions the same way.

Pressing this button *a single time* activates an emergency alert that only you and your dispatcher are aware of. *Pressing the PTT after pressing the emergency button* elevates the emergency alert to an emergency call.  This allows you to override other users of the system and transmit on the talkgroup.  All other users then become aware you have activated an emergency call as their radios will send off tones and their radio display will change colors and show your radio ID number.

*To cancel an emergency alert or call, press and hold the emergency button until you hear a solid tone.*  It may take a few seconds for the system to clear the emergency status.

*If activated unintentionally, do not cycle through the various talkgroups as this will set off an emergency status on all the talkgroups you turn to; turning off the radio also will not clear the emergency status. Always contact your dispatcher to advise of an accidental activation.*

# USING THE APX PORTABLE RADIO—BASICS

## PRIVATE CALL ANSWER ("BARNEY BUTTON"):
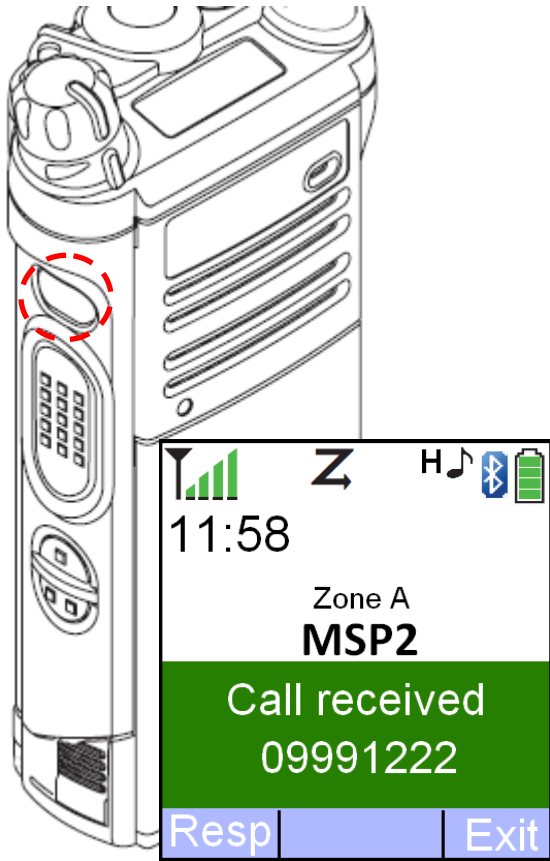
On the side of the radio is a large purple button sometimes referred to as the **Barney button**. On MSP radios and many radios on the MPSCS, this button is programmed to answer private calls on your APX portable radio.

When you receive a private call the radio will tone and the top display will turn green; the main display will read "*Call Received.*" At this point, simply pressing the PTT and speaking *will not* enter you into the private call; everyone else will hear you.

*When you receive a private call on your portable radio, you must first depress the Barney button.* You may also press the menu select key under *"Resp"* in the menu bar (*shown*). This is akin to picking up the handset on a telephone when you receive a phone call. Once the *Barney button* is pushed, then you may depress the PTT and will be in a private call with whomever was trying to reach you. *The Barney button only needs to be pressed once when you first receive the private call, and only needs to be pressed by the call's recipient.* To continue in the private call after first pressing the *Barney button* simply use your PTT.

**Display:**
11:58
Zone A
**MSP2**
Call received
09991222
Resp         Exit

## ONE-DOT BUTTON & TWO-DOT BUTTON:
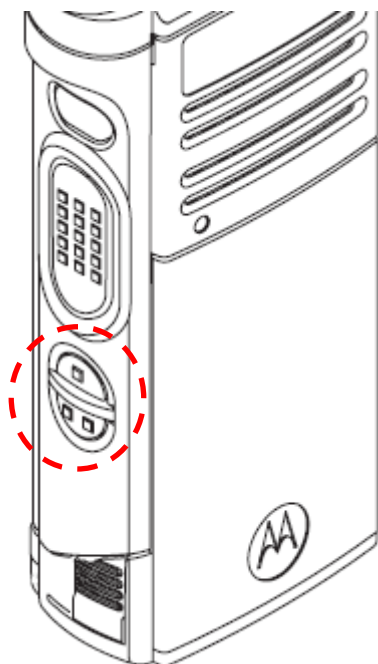
On the side of the APX portable radio, immediately below the PTT, there are two small buttons.

The top button as a single raised dot and is referred to as the **one-dot button**. The lower button has two raised dots and is called the **two-dot button**. Each button can do different things depending on the programming and how long it is pressed:

| One-Dot Button (*Short* Press) | Two-Dot Button (*Short* Press) |
|---|---|
| Backlight on / off | Site and RSSI (tower & signal) |
| **One-Dot Button (Long Press)** | **Two-Dot Button (Long Press)** |
| Flip top display | Site scan (switch towers) |

Also, if the radio is in the F Zone (analog) a short press on the *two-dot button* will select either direct or repeater mode.

# USING THE APX PORTABLE RADIO—BASICS

## MENU SELECT, HOME, AND 4-WAY NAVIGATION BUTTONS:
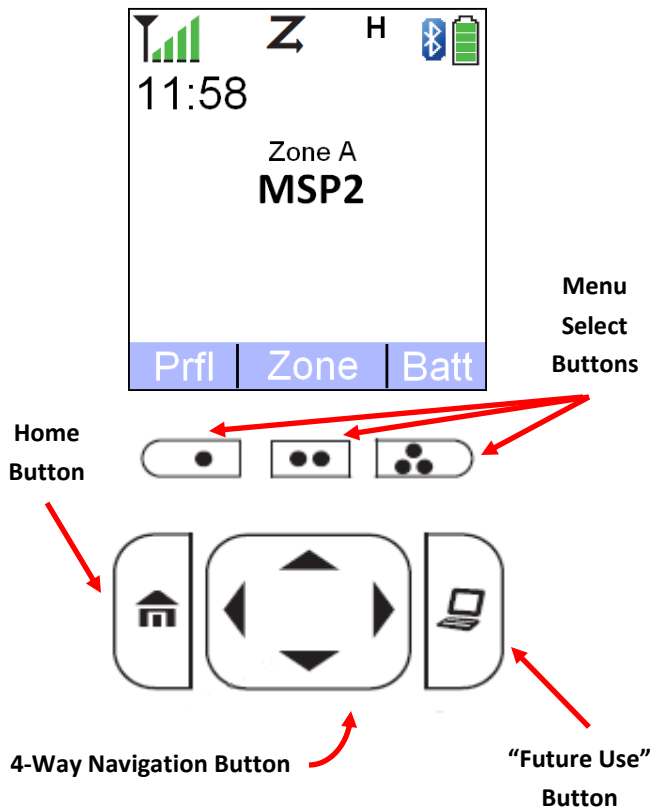


On the front of the radio, immediately below the main display, are a series of buttons.

The first set consists of three small buttons, each with a dot or series of dots. These buttons are called the **menu select buttons** and correspond to the menu option the screen above them is showing. For instance, in the example on the left pressing the middle button would bring up the zone menu.

Below the menu select buttons are another series of buttons. The button with the small house on it is called the **home button**. Pressing this button acts like an escape button on a computer. If you are lost deep in a menu, or have no idea how to get back to your home talkgroup, a long press on the *home button* will take you back to your home talkgroup. A short press on the *home button* is an easy way to acknowledge a page, as well.

The large button in the center is the **4-way navigation button**. This button allows you to navigate through the various menus on the radio.

To it's right is the **future use/computer button**. This button has no current use on all MSP radios and most other radios on the MPSCS.

## KEYPAD (APX 6000/7000 Model 3 Only):
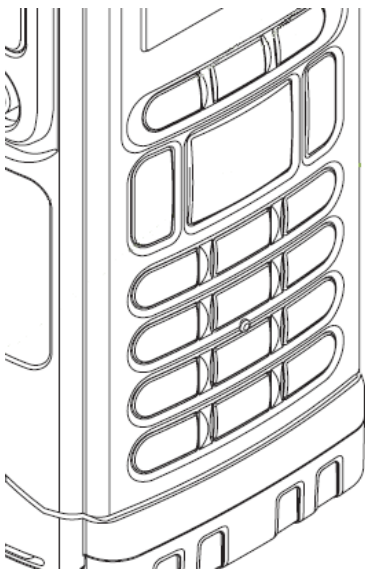


The keypad shown to the left is found on APX 6000/7000 Model 3 portable radios

This alphanumeric keypad, which appears nearly identical to the keypad found on a telephone, allows the user to private call or page any radio on the MPSCS by typing in the receiving radio's unique radio ID number.

In the MSP, Model 3 radios are typically issued only to command and certain specialty units.

While the keypad allows the user of a Model 3 radio to private call or page any radio, models lacking the keypad are still able to receive private calls and pages; in addition, there are ways these radios can send them as well.

*See page 15 for information on private calling and paging.*

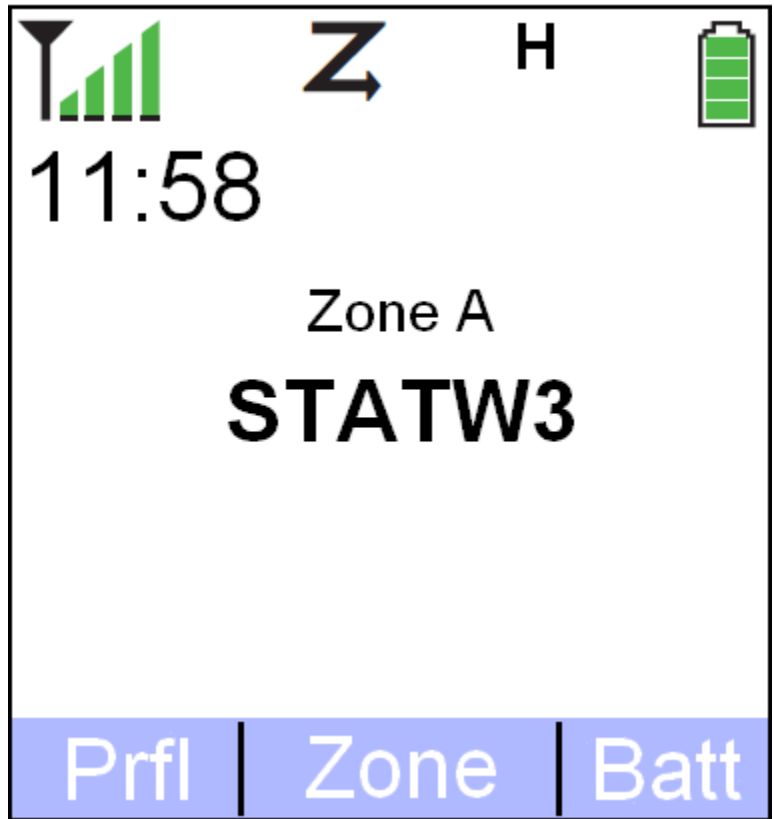# USING THE APX PORTABLE RADIO—MAIN DISPLAY

## MAIN DISPLAY:

The APX 6000/7000 has a color LCD display on the front of the radio. The 7000's display is slightly larger, owing to the larger size of the radio, but the functionality is the same.

The main display is how the radio shows you, at a glance, how your radio is operating and setup. *The example to the right only shows some of the more commonly seen icons; however, there are additional icons which may appear and these are indicated in the following list.*

At the top left of the screen is a signal strength indicator. This functions much as the "signal bars" you may have on your cell phone screen. Moving to the right we see a number of small icons arrayed at the top of the screen. In this example, we see that we have a scan list populated and the radio is actively scanning talkgroups within our scan list.

Adjacent to the scan icon we see a small H. The radios are set by default to "**H**igh Power," thus this icon will constantly remain on your screen. Adjacent to the H we can see a battery life indicator. This also functions much as the battery life indicator you may have on your cell phone. Moving towards the center of the display, we can see that the radio is currently set to Zone A and is tuned to talkgroup STATW3 within that zone. At the very bottom of the display we can see various menu options that can be accessed by pressing the corresponding *menu select button*. We can change the menu options at the bottom of the display by using the *4-way navigation button* to scroll between the various choices.

## MAIN DISPLAY ICONS:

| ICON | DESCRIPTION | ICON | DESCRIPTION | ICON | DESCRIPTION |
|---|---|---|---|---|---|
| | Displays the RSSI. The more bars, the stronger the signal. | | If displayed in the F Zone, the radio is in direct mode. If absent in the F Zone, the radio is in repeater mode. | | Displays the battery level. |
| | The radio is transmitting. | | Radio is set to high power by default; cannot be changed. | | Battery increments will drop as battery is depleted. |
| | *Solid:* Encryption is turned on. *Blinking:* The radio is receiving an encrypted transmission. | | *Absent:* GPS feature disabled. *Solid:* GPS feature available. *Blinking:* Seeking GPS signal. | | Battery display will flash when battery level is critical. |
| | A scan list is populated and the radio is currently scanning. | | Bluetooth is on and ready for a Bluetooth connection. | | On: IP packet data on. Off: IP packet data off. |
| | You are tuned to a talkgroup in your scan list that is currently broadcasting. | | Radio is currently connected to external Bluetooth accessory. | | Private call or page received. |

# USING THE APX PORTABLE RADIO—TOP DISPLAY

## TOP DISPLAY:
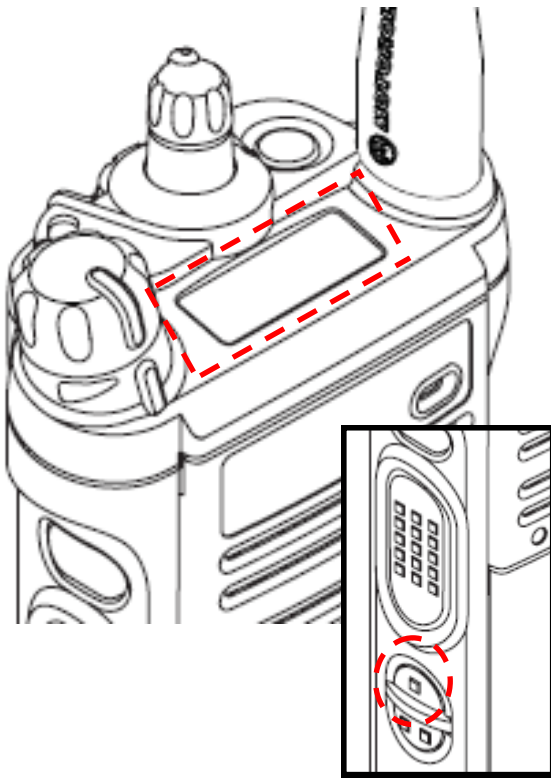
In addition to the large color display on the front of the radio, the APX 6000 & 7000 also have a smaller monochromatic display on the top of the radio.

This small display is observable to the user when the radio is worn on the duty belt and can eliminate the need to remove the radio from its holster to change talkgroups or setting.

The functionality of the small display mimics that of the larger display and many of the icons are the same, albeit in black-and-white. On the top display, the selected zone and talkgroup will alternate and flash continuously.

It is possible to flip the display so that the text is easier to understand to the user when the radio is worn on a duty belt.  To flip the display, press and hold the *one-dot button* located on the side of the radio *(inset)*.  The top display will change to all red when an emergency call is received; it will change to all green when a private call or page is received.
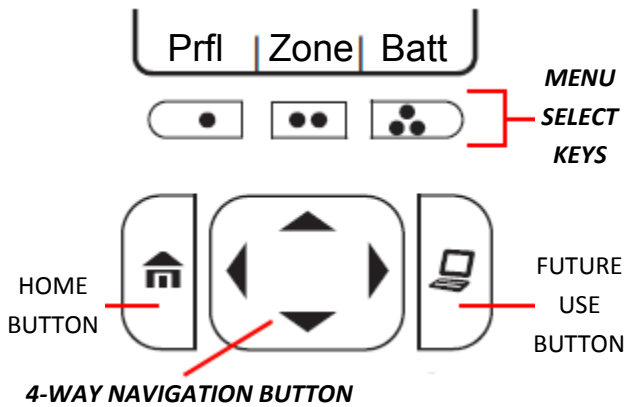
## TOP DISPLAY ICONS:

| ICON | DESCRIPTION | ICON | DESCRIPTION | ICON | DESCRIPTION |
|------|-------------|------|-------------|------|-------------|
| | Displays the RSSI. The more bars, the stronger the signal. | | You are tuned to a talkgroup in your scan list that is currently broadcasting. | | Displays the battery level. |
| | The radio is transmitting. | | If displayed in the F Zone, the radio is in direct mode. If absent in the F Zone, the radio is in repeater mode. | | Battery increments will drop as battery is depleted. |
| | Blinking: Radio is in a programming mode. | | Radio is set to high power by default; cannot be changed. | | Battery display will flash when battery level is critical. |
| | **Solid:** Encryption is turned on. **Blinking:** The radio is receiving an encrypted transmission. | | Bluetooth is on and ready for a Bluetooth connection. | | |
| | A scan list is populated and the radio is currently scanning. | | Radio is currently connected to external Bluetooth accessory. | | |

# USING THE PORTABLE RADIO—ZONES & TALKGROUPS

## CHANGING THE ZONE & TALKGROUP:



Prfl | Zone | Batt

MENU
SELECT
KEYS

HOME
BUTTON

FUTURE
USE
BUTTON

4-WAY NAVIGATION BUTTON

To change the zone, look at the display. If the word "Zone" does not appear in the menu selections on the bottom of the display, use the *4-way navigation button* to scroll over until it appears.

Once the word "Zone" appears in the menu, press the corresponding *menu select button* directly underneath of where it appears on the display. In the example to the left, the zone menu is accessed by pressing the center *menu select button* (which has two small dots).



H

11:58

Select Zone

Zone A

Zone B

Zone C

Zone D

Sel | Exit
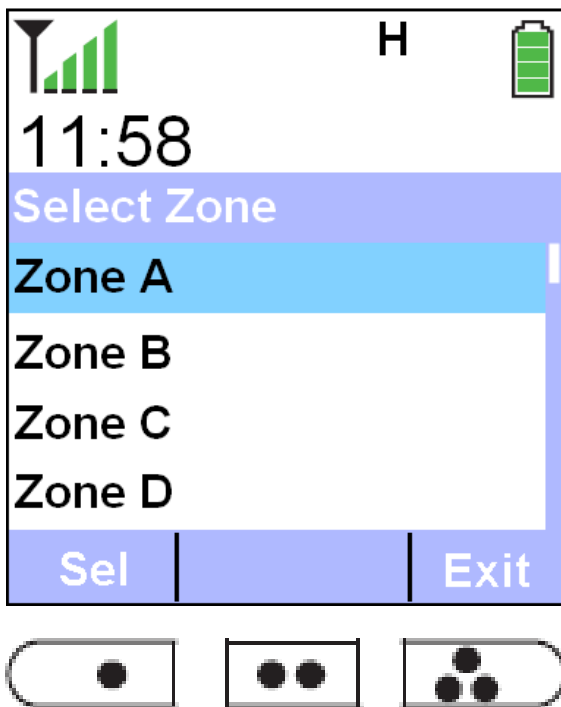
Once the zone menu is accessed, the display should appear similar to the example to the left. The currently selected zone is highlighted in light blue on your display. To scroll up and down through the various zones, use the up and down arrows on the *4-way navigation button*. As you move up and down through the zones, the area highlighted in light blue moves correspondingly, showing you what particular zone you currently have selected.

For example, if I need to use a talkgroup located within Zone A of my radio, I would move the navigation button until Zone A was highlighted in light blue on my screen *(as shown)*. Once Zone A is highlighted, I would press the *menu select button* corresponding to *"Sel"* as shown in the bottom left of the example. This selects Zone A, and you will automatically exit the zone selection menu. The radio's main display screen is then shown.
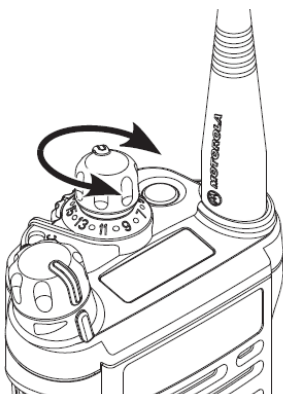


Once you have selected the zone you want, use the *mode knob* on the top of the portable radio to locate the talkgroup you wish to tune to.

Each zone is capable of holding up to 16 talkgroups. While many zones will contain the full amount, some will not.

If your display reads "*Unprogrammed*" and the radio begins to tone, simply rotate the mode knob counter-clockwise until you begin to see talkgroups.

# USING THE PORTABLE RADIO—PRIVATE CALLS & PAGES

## MAKING A PRIVATE CALL / PAGE:
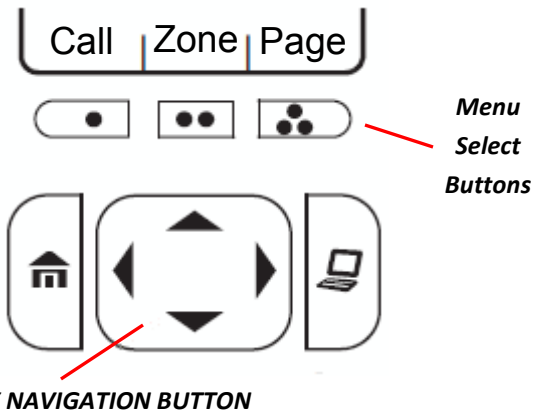
The APX 6000/7000 portable radio is capable of making private calls or pages even if it lacks the keypad found on the Model 3 series. The manner for making either a private call or page is the same; for this example we will use a private call.

First, use the *4-way navigation button* to scroll over until you see "*Call*" on the menu and press the *menu select button* below it.
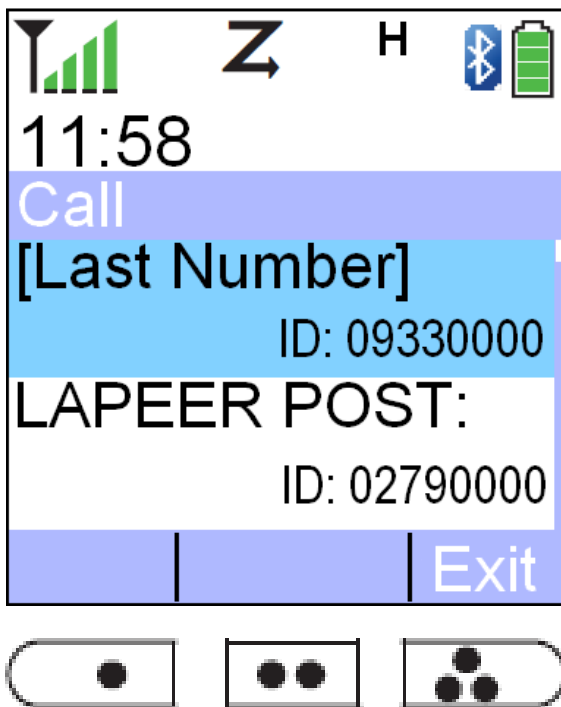
Once in the call screen, the first option available is "*Last Number*." *This is not your radio ID number;* the "*Last Number*" is the last radio ID that private called or paged your radio. To locate your radio's ID number, press the up arrow on the *4-way navigation button*. The screen will now indicate "*My ID*" and your radio ID number will be displayed.

Many radios in MSP also have one or more radio ID numbers hard-programmed into their memory; in this example we can see the Lapeer Post desk radio has been programmed as such. This enables Model 2 radios the ability to private call or page other radios even though they lack a keypad and the recipient radio may not have ever called or paged it.

To make the private call or page, select the radio you want to reach out to and press the PTT.
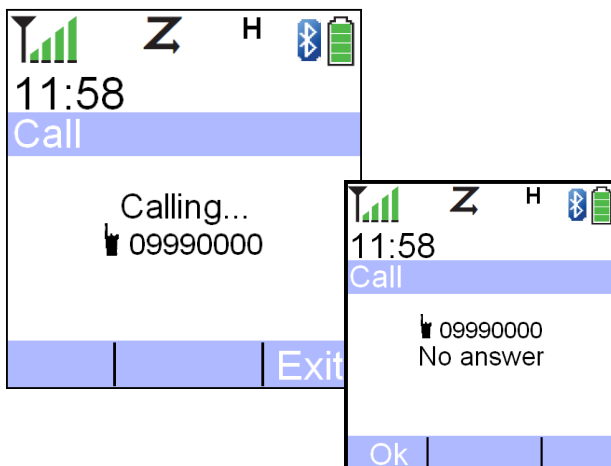
Your radio will begin to make a sound similar to a ringing telephone and the screen will display "*Calling…*" along with the recipient's radio ID number.

Once the recipient has entered the private call, communicate using the PTT as you would for a normal radio conversation.

If the recipient does not answer, the private call or page will not be completed. The display will indicate "*No answer/acknowledgement.*" Select "*Ok*" and you will exit the private call/page menu.

# USING THE PORTABLE RADIO—SCAN LIST & SCANNING

## BUILDING A SCAN LIST & SCANNING:



**Menu Select Buttons**
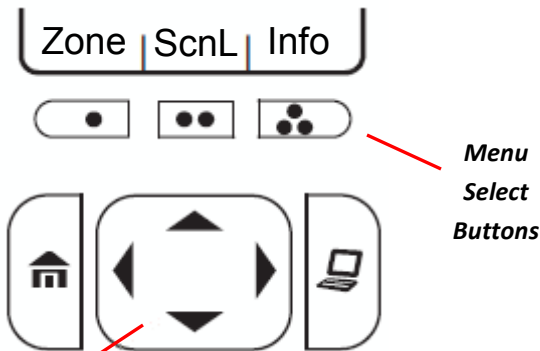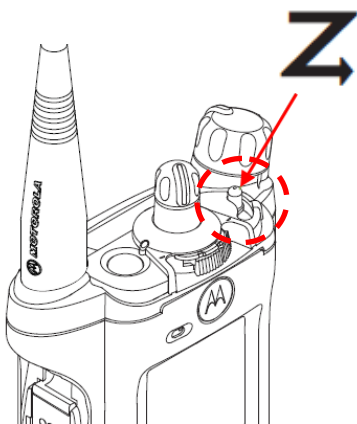
**4-WAY NAVIGATION BUTTON**

The APX 6000/7000 portable radio is capable of scanning other talkgroups in addition to the talkgroup your radio is tuned to.  In order for the radio to scan, it requires you build a scan list.  While it is possible to select a number of additional talkgroups, it is recommended that you not scan more than three in addition to your home talkgroup as the constant radio traffic can potentially become distracting.

Use the *4-way navigation button* to scroll the menu bar until you see "*ScnL.*"  This is shorthand for "**Sc**an **L**ist."  Select "*ScnL*" using the appropriate *menu select button*.
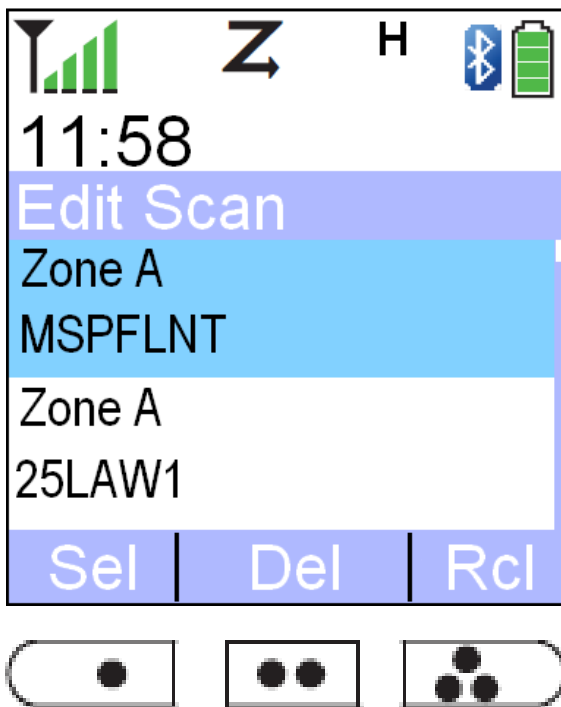


Once in the scan screen you can see three options on the bottom of the display:  "*Sel*" is select, "*Del*" is delete, and "*Rcl*" is recall.  Your talkgroup selection will be highlighted in light blue (*as shown*). If you select "*Rcl*," this will display talkgroups that have already been programmed into your list; each press brings up another scanned talkgroup.  If you wish to delete one from your list, select "*Del*." If there is not an existing scan list, the radio will tone and the highlighted bar will remain on a single talkgroup.

To navigate between zones, press either the left or right arrow key on the *4-way navigation button*.  Once your reach the zone you are looking for, press the up or down arrow keys until the talkgroup you wish to scan is highlighted in light blue.  To add this talkgroup to your scan list, press "*Sel*."



Once your scan list is built to your liking, use the "*A B C*" switch on the top of the radio *(shown at left)* to turn scan on or off. *A* and *B* are off, and position *C* is on.

If scan is active, the icon shown to the left will appear on the both the top and main display of the radio.

There are a variety of factors that impact scanning for users of the MPSCS.  Essentially, if you are affiliated with tower and no one else affiliated with that tower has selected *your* scanned talkgroup as *their primary* talkgroup, you will not hear it on scan.
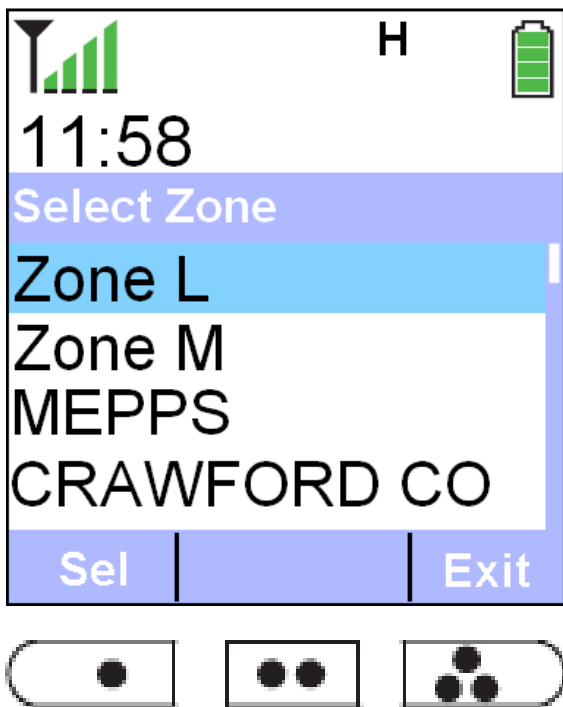
## SCANNING WITH THE APX 7000:
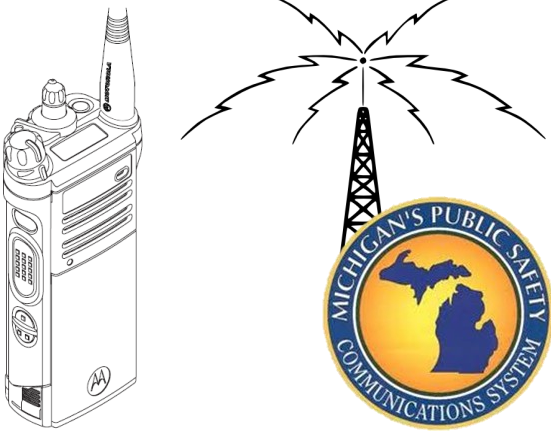
The APX 7000 is capable of transmitting and receiving using either the MPSCS 800 MHz system or a conventional (non-800 MHz) radio system such as VHF of UHF.

In the MSP, APX 7000's are typically deployed to those worksites that are operating in an area where a local dispatch center or centers are not on the MPSCS. Some specialty teams are also issued the APX 7000.

Using the APX 7000 in these areas can eliminate the need for personnel to carry two separate portable radios (one for each system).

Setting up a scan list on the APX 7000 is done in the same manner as on the APX 6000.

The conventional frequencies are located in the same "*Zone*" menu as the MPSCS zones (*shown at left*).

*It is important to know that cross-band scanning is not available on the APX 7000*; meaning, you cannot scan both an MPSCS 800 MHz talkgroup and a conventional talkgroup *at the same time*.

For example, as shown on the left, I could scan any talkgroups out of Zone L or Zone M.  I could also scan any frequencies of the Crawford County system, along with MEPPS.

However, I could not *simultaneously* scan both a talkgroup out of Zone L and a frequency out of the Crawford County system.
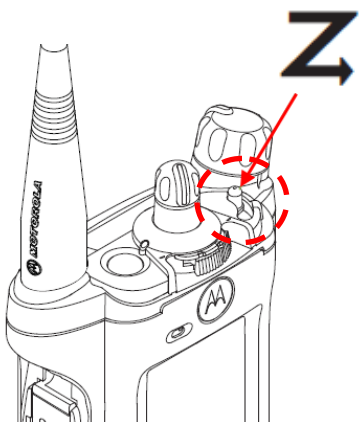
Once your scan list is built to your liking, use the "*A B C*" switch on the top of the radio *(shown at left)* to turn scan on or off. *A* and *B* are off, and position *C* is on.

If scan is active, the icon shown to the left will appear on the both the top and main display of the radio.

There are a variety of factors that impact scanning for users of the MPSCS.  Essentially, if you are affiliated with tower and no one else affiliated with that tower has selected *your scanned* talkgroup as *their primary* talkgroup, you will not hear it on scan.

# USING THE PORTABLE RADIO—GPS

## USING GPS:



**Menu Select Buttons**
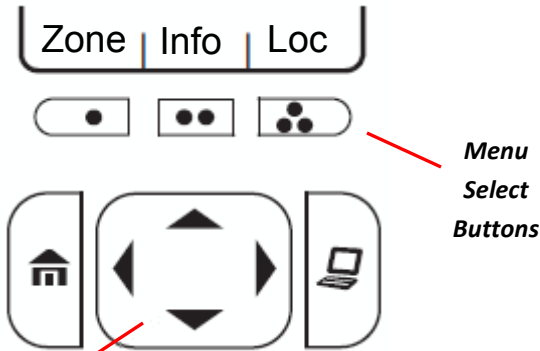
**4-WAY NAVIGATION BUTTON**

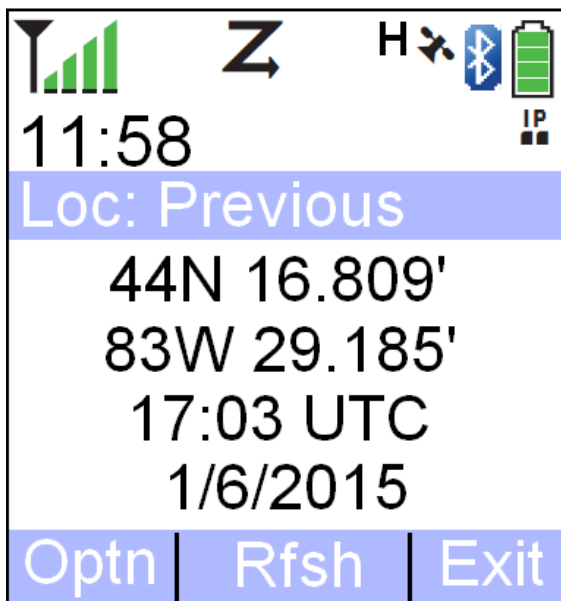Some APX 6000/7000 radios have a GPS feature built into the radio.  It communicates with the GPS system using the radio's antenna.  To access your latitude and longitude from the radio, use the *4-way navigation button* to scroll over until "*Loc*" appears on the menu.  Press the appropriate *menu select button* to access the location feature of the radio.



Once in the scan screen you can see three options on the bottom of the display:  "*Optn*" is option, "*Rfsh*" is refresh, and "*Exit*" leaves the GPS menu.

The option selection enables you to set waypoints using the GPS feature of the portable radio.

Refresh causes the radio to update its current location using data received from the Global Position System satellites in orbit around Earth.

Choosing exit simply enables you to go back to the main display.
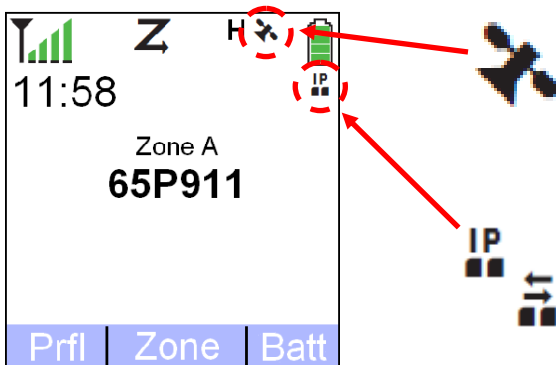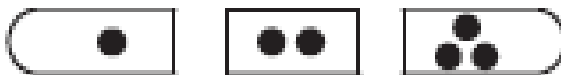


If the GPS feature of your radio is enabled, you will see a small satellite icon on the main display of your radio *(shown at left)*.  If the radio has a steady fix using the GPS system, the satellite icon will be solid.  If the satellite icon is blinking, it means the radio has lost touch with the GPS system.  This would be a common occurrence inside of buildings.  You may see a small "IP" icon on the display, as well.  This indicates data packets may be exchanged with a computer, most likely a CAD or mapping  program at a dispatch center that is capable of using the GPS feature of your radio.

# USING THE PORTABLE RADIO—GENERAL FEATURES

## CLOCK, PROFILE, & BATTERY:
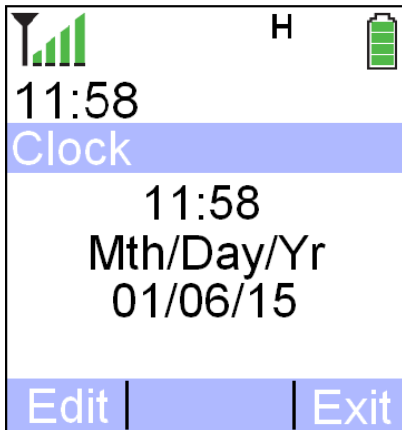
The APX 6000/7000 allows the user to change the day, date, and time of the radio.  For instance, users can opt to use a 12hr clock or a 24hr clock. This option is selected by pressing the menu select buttons under the "*Clck*" tab on the radio's menu bar.

This function of the radio is a matter of convenience and it has no bearing on the radio's functionality.  The clock will remember the time if the battery is removed; however, the user must manually adjust it to account for time changes.

The APX 6000/7000 enables the user to select radio profiles to suit his or her needs.   This menu is accessed by selecting "*Prfl*" on the menu bar.

As mentioned, these portable radios are heavily programmable for the end-user.  Thus, the profile menu may have many selections or very few available to choose from.

Profiles enable the user of the radio to tailor its operation regarding backlight, tones, and audio.  For instance, if I selected "*BACKLIGHT OFF*" as shown on the left, the radio's backlight would only turn on if I pressed the *one-dot button*.  If I selected "*BACKLIGHT ON*," the backlight would constantly be on in a subdued manner; pressing the *one-dot button* would make it brighter.
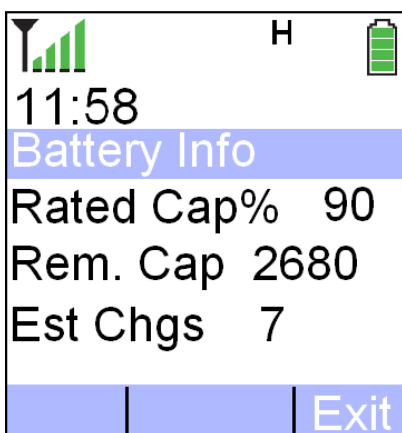
The APX 6000/7000 portable radios are designed to use Motorola IMPRES batteries.  IMPRES batteries have a chip in them that communicates with the charger; this helps to recondition the batteries and negate "memory effect."

In addition to the battery icon on the radio's displays, you can access the battery menu by selecting "*Batt*" on the menu bar.  It will allow you to see the battery's remaining life measured as a percentage, the remaining life measured in milliamp hours (mAh), and the estimated number of charging cycles the battery has gone through.

# USING THE PORTABLE RADIO—GENERAL FEATURES

## RECENT CALLS & INFO:
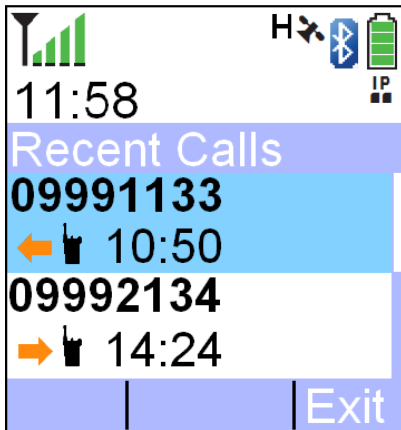
The APX 6000/7000 allows the user to quickly see the radio ID numbers of the radios were last called or paged *from* the radio, or the radio ID numbers of the radios that last called or paged *to* the radio.

To access the recent calls menu, use the *4-way navigation button* until "*Rcnt*" appears on the menu bar and press the appropriate *menu select button*.  To navigate within the recent calls menu, use the up and down arrows on the *4-way navigation button*.

Selecting "*Info*" from the menu bar brings up information regarding the radio itself.

Within the information menu, the first option you can select is "*Radio Info*."  This provides certain technical information about the radio, most of which is useful only to radio techs. However, if you press the down arrow on the *4-way navigation button* you will soon come to a section that will provide you with the model and serial number of the radio, eliminating the need to remove the battery and read the tiny print on the radio chassis (*shown lower left*).

The second option available on the menu screen is "*IP Info*." This provides technical information to the radio techs.

The third option, "*Control Map*," has a listing of the function each button, knob, or selector performs on your radio.  As the APX 6000/7000 is highly programmable by the end-user, this section could be useful if a department has several APX radios with differing programming between them.  MSP radios are typically programmed to be the same across the department; for instance, the "*A B C*" switch on top of the radio will always be the scan on/off switch regardless of what worksite you are at.

# USING THE APX PORTABLE RADIO—BLUETOOTH

## PAIRING A BLUETOOTH DEVICE:



**Blue Dot**
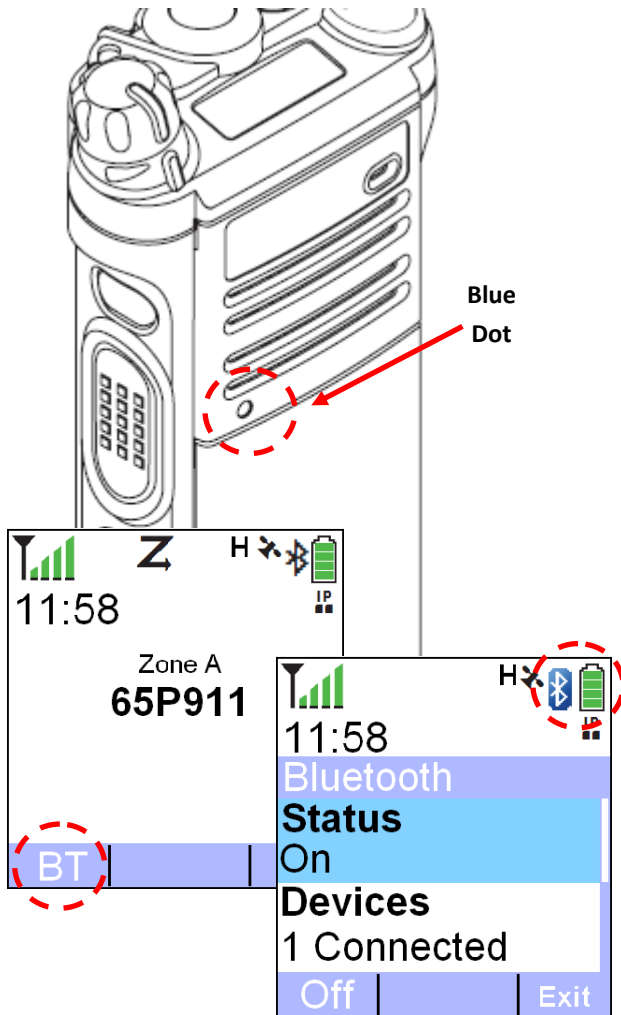
If the feature is enabled and the radio possesses the proper internal hardware, the APX 6000/7000 radio is capable of wirelessly connecting with Bluetooth devices such as speakers and shoulder or bone microphones.  In the MSP, Bluetooth capability is typically found on the Model 3 radios issued to command and certain specialty teams.

To enable a Bluetooth device, press the *menu select button* under "*BT*" on the menu bar, then select "*On*" from the menu bar once you are in the Bluetooth menu.  Pair the device by touching the blue dot on the powered-up device to the blue dot on the radio.  You may have to press and hold the wireless device's power button to enter the pairing mode.

Wireless ear devices will often verbally  prompt the user on what to do to pair it to the radio.  When the wireless device is turned on but not paired, it will say "*to pair, touch blue dots.*"  Once the blue dots are touched together, the radio will beep to inform you of a successful connection and the device itself will advise "*headset connected.*"

If Bluetooth is turned on within the radio, but no device is paired with it, the small Bluetooth icon next to the battery gauge will be grey (*as shown*) and the Bluetooth menu will indicate that no device is paired with it.

Once a wireless device has been successfully paired, the grey icon will turn blue and the menu will indicate the connected device (*as shown*).

*NOTE:*  All MSP APX portables radios have the Bluetooth dot on the radio, even if the internal hardware is not present.  Bluetooth capability is present on those radios with a "*BT*" option in the menu bar.

# USING THE APX PORTABLE RADIO—TONES & SOUNDS

## SOME OF THE TONES YOU MAY HEAR:

The APX 6000/7000 portable radios use various tones or sounds to keep you informed of how the radio is operating and if there is a problem.  Some you will hear everyday (such as the channel grant), and some you may never hear (such as the system busy tone). *Many of these tones are accompanied by a message on the main display screen.*

| TONE | DESCRIPTION |
|------|-------------|
| **Channel Grant / Talk Permit**<br><br>*Quick chirping sound (dah dah dit)* | Your transmission can proceed and will be broadcast. You must wait until the channel grant sound is finished. |
| **Bonk**<br><br>*Long, medium tone (boooooooonk)* | You can't talk.  Someone may be using the talkgroup you wish to use.  Wait until they are finished.  This tone is not the same as system busy. |
| **System Busy**<br><br>*Quick series of tones (like a fast telephone busy)* | All Intellirepeaters on the tower are busy and there is no open pathway for communication.  Continue pressing the PTT for up to four seconds as the system has you "in line" to talk. |
| **Ringing**<br><br>*Fast telephone ringing* | You are private calling another radio and awaiting their acceptance of the call. |
| **Battery Critical**<br><br>*Two short, high-pitched beeps* | Battery is critically low.  Replace your battery. |
| ***Site Trunking***<br><br>*Two short, increasing tone beeps* | Tower is in site trunking. |
| ***Emergency Alert/Call***<br><br>*Four high-pitched beeps* | You have initiated an emergency alert/call. |
| ***Emergency Received***<br><br>*Alternating high and low pitched tones* | Someone else has initiated an emergency alert/call. |
| ***Time-Out Warning***<br><br>*Quick beep while you are transmitting* | You have transmitted for 55 seconds.  The system will time you out at 60 seconds. |
| ***Time-Out***<br><br>*Long, medium tone* | System has timed you out.  Key your PTT to continue transmitting. |
| ***Private Call Received***<br><br>*Two short, high-pitched beeps* | You have received a private call. |
| ***Page Received***<br><br>*Four short, high-pitched beeps* | You have received a page. |

# USING THE APX PORTABLE RADIO—BATTERY CARE

## CHARGING AND CARING FOR YOUR BATTERY:

The APX 6000/7000 portable radios are designed to use Motorola IMPRES batteries.   IMPRES batteries contain a chip that communicates with the IMPRES charger; this batteries are considered "smart" as they know when they need to be reconditioned.  If you place your battery in the charger and the light turns yellow, this indicates the battery is undergoing recondition.  Following reconditioning the battery will charge normally. It is best to let the entire cycle conclude if possible.

*While cigarette-plug "travel chargers" are available for IMPRES batteries, the Communications Section does not recommend their use unless it is an emergency.  The "travel chargers" are not IMPRES and will dramatically shorten the life of the battery.*

The light on the IMPRES charger will tell you some information about the battery itself.  The table below explains this in detail.

| CHARGER LIGHT | DESCRIPTION |
|---|---|
| **Flashing  Yellow** | **Standby.** Battery is waiting to charge. Battery needs to cool down or warm up before charging. |
| **Steady Yellow** | **Reconditioning battery.** Battery is reconditioning and will then begin charging normally. |
| **Solid Red** | **Charging.** |
| **Flashing Red** | **Not chargeable.** The battery is not chargeable . |
| **Flashing Green** | **>90% charged.** Battery charging is nearly complete. |
| **Solid Green** | **Ready.** Battery is fully charged and ready for use. |
| **Flashing Alternating Red and Green** | **Service life.** Battery has reached the end of its service life.  Replace. |

If you are MSP personnel and are in need of additional or replacement batteries, please contact the regional communications sergeant assigned to your area.

If you need assistance with radio training, radio equipment, batteries, or peripherals and are an MSP member, please contact the unit directly or the communications sergeant assigned to your area.  Contact information is available on the MSP Intranet under the  eApps & Tech Support Contact section.

**MSP COMMUNICATIONS**

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"A PROUD tradition of SERVICE through EXCELLENCE, INTEGRITY, and COURTESY"