

	Cincinnati Fire Department Fire Training Supplement DRILL BOOK	SECTION #1 General Fire Fighting
Date: February 2019	TOPIC TITLE: 800 MHz Portable and Apparatus Radios	Pages: 18
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Figure 1 Motorola APX 6000xe Model 2.5

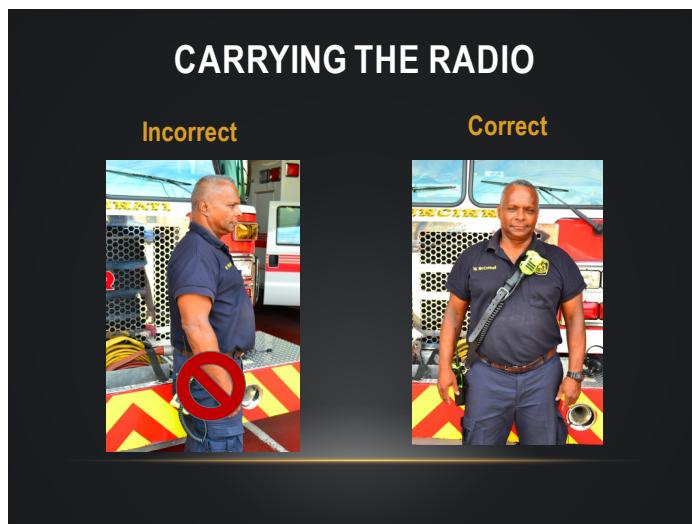
- The 800 MHz system is a digital radio system. The system is a “*Trunked System*” that gives the user a variety of Cincinnati Fire Department talkgroups in addition to other talkgroups for use in the county, region and state.
- Additional channels are included in the radio for analog and simplex (radio-to-radio) communication.
- The fact that the radio is on a repeater system means that there is a slight delay in the transmitting and receiving of voice communications.
- When you press the Push To Talk (PTT) button you must wait until you hear the “*chirp acknowledgement tone*” before talking. Anything said before this tone will not be transmitted. If you hear a solid “*bonk tone*”, someone else is transmitting and you must wait.
- Each fire company is issued 6 portable radios. Radios are assigned to the following company positions: Officer, FAO, FF1, FF2, FF3 and Aux. The Aux radio is routinely used by the Engine Company FAO with the headset attached. This way it can be deployed more easily during a fire incident. Medic Units are issued 2 portable radios each.
- Members in suppression will no longer be assigned take home radios.

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- No Fire Department member below the rank of District Chief will be assigned a personal radio. Radios are assigned to a position. If you are Car 501 and you are transferred, you will leave your radio for the member replacing you as Car 501.
- This radio is made for use on the fire ground but caution should still be taken in its handling. The user shall protect the radio from being dropped, burned, and submersed in any liquid or subject to any damage through recklessness or negligence.
- While wearing full PPE while engaging in firefighting operations, the radio will be carried in the radio pocket of the fire coat with the retaining flap secured. The radio should have the remote microphone attached to the Gear Keeper (retractable gear attachment system).

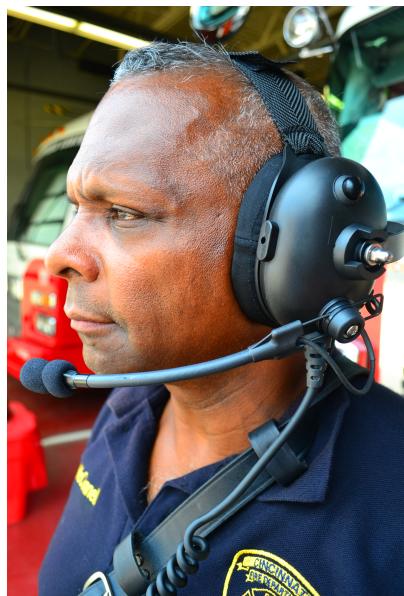


- The over-the-shoulder leather carrying case can be used while engaged in firefighting operations as an alternative.



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- The radio is not considered intrinsically safe.
- Incident Commanders, accountability personnel and Engine Company FAO's are encouraged to use the noise cancelling headset when performing duties on the fireground.



HEADSETS ENSURE NOTHING IS MISSED



FAO on Fireground



Accountability Officer

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Preparing the Radio for Use

Charging the Battery

To charge the battery, place the battery, with or without the radio, in the Motorola 6 bank charger, the single desk charger or the vehicle charger. The battery should be charged until the LED charging indicator light blinks green. This means the battery is at greater than 90% capacity.

Attaching the Battery

With the radio turned off, slide the battery into the radio's frame until **both** side latches lock into place. You should hear two distinct clicks as you engage the battery into place.

To remove the battery, turn the radio off. Squeeze both release latches at the bottom of the battery until the battery releases from the radio.

Attaching the Antenna

With the radio turned off, set the antenna in its receptacle and turn clockwise to attach it to the radio.

Removal is reverse of installation. Make sure the radio is off.

Using the Carry Holder

Position the radio within the carry holder with the main speaker facing outward. Slide the radio down into the carry holder until it clicks in place.

To remove the radio from the carry holder, place the tip of your fingers on the ledge of the carry holder and push at the bottom of the radio until the radio is released.

Turning On the Radio

Rotate the On/Off/Volume Control Knob clockwise until you hear a click. If the power-up test is successful, you see momentary SELFTEST on the radio's display, followed by the Home screen. If the power-up test is unsuccessful you will see ERROR. If the ERROR persists send radio in for repair.

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APX RADIO BUTTON CONFIGURATION

<p>MAIN LCD SCREEN</p> <p>1, 2 & 3 – Menu select buttons. The menu bar, found at the bottom of the LCD screen, changes according to context.</p> <p>4- Home Key. Press this key once and release to return to the current talk group. Holding this key for 2 seconds takes the user to zone B, channel 1.</p> <p>5- 4 way navigation button. Use this button to navigate various list and menus.</p> <p>6 – Data feature button. This button is used when programming the radio. (<i>Line personnel will never use this.</i>)</p>	 <p>NOTE: Activating the keypad lock will render these buttons useless.</p>
<p>TOP CONTROLS</p> <p>1- On/Off Volume Control Knob.</p> <p>2- 3 Position A/B/C Switch. This can be used to select zones A, B or C at anytime.</p> <p>3- 16-Channel Selection Knob. Use this to navigate between any of the 16 talk groups in a zone. This will work even with the keypad lock activated.</p> <p>4 – Emergency Button. (Orange) This button is activated by pressing and holding for 1.5 seconds. (Refer to Procedure 701.29). Press & hold 2 seconds to RESET.</p> <p>5 – Antenna Slot. The antenna goes here. It has been removed for clarity.</p> <p>6 - Top Display. This is the top LCD screen.</p> <p>7 – Keypad Lock Switch. This switch only locks the buttons located under the Main LCD. All side buttons and the Emergency buttons function as intended. This lock will not affect the channel selector knob. The keypad must be locked after selecting the appropriate talk group.</p>	

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<p><u>MAIN DISPLAY</u></p> <p>1- Signal strength. (Think Cell Phone)</p> <p>2- High Power Indicator. Displays that the radio is operating in hi-power mode.</p> <p>3-Battery Indicator (Think Cell Phone)</p> <p>4- Zone Name. Shows the name of the zone the user is currently using.</p> <p>5- Talk group- Shows which talk group in the zone user is currently using.</p> <p>6- Radio ID Alias. This will show what apparatus and position this radio is assigned to. (ie. Engine 5 Officer, Engine 5 FAO and so on.)</p> <p>7- Menu Bar. Use this bar to navigate the other functions of the radio by pressing one of the three menu select buttons.</p> <p>7- Memory Settings. Scrolling the menu bar to "MS1" will allow the user to set channels as preset memories. To set a channel, select the channel on the radio, press and hold the MS button until you hear a Beep. Then you can press the MS button to move the radio to this pre-set channel regardless of zone or channel selector position.</p>	
<p><u>TOP DISPLAY</u></p> <p>1- Signal strength. (Think Cell Phone)</p> <p>2- High Power Indicator. Displays that the radio is operating in hi-power mode.</p> <p>3-Battery Indicator (Think Cell Phone)</p> <p>4- Zone/Talk group Name. This will toggle automatically between the name of the zone and the name of the talk group currently in use.</p>	

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■ Display Status Icons

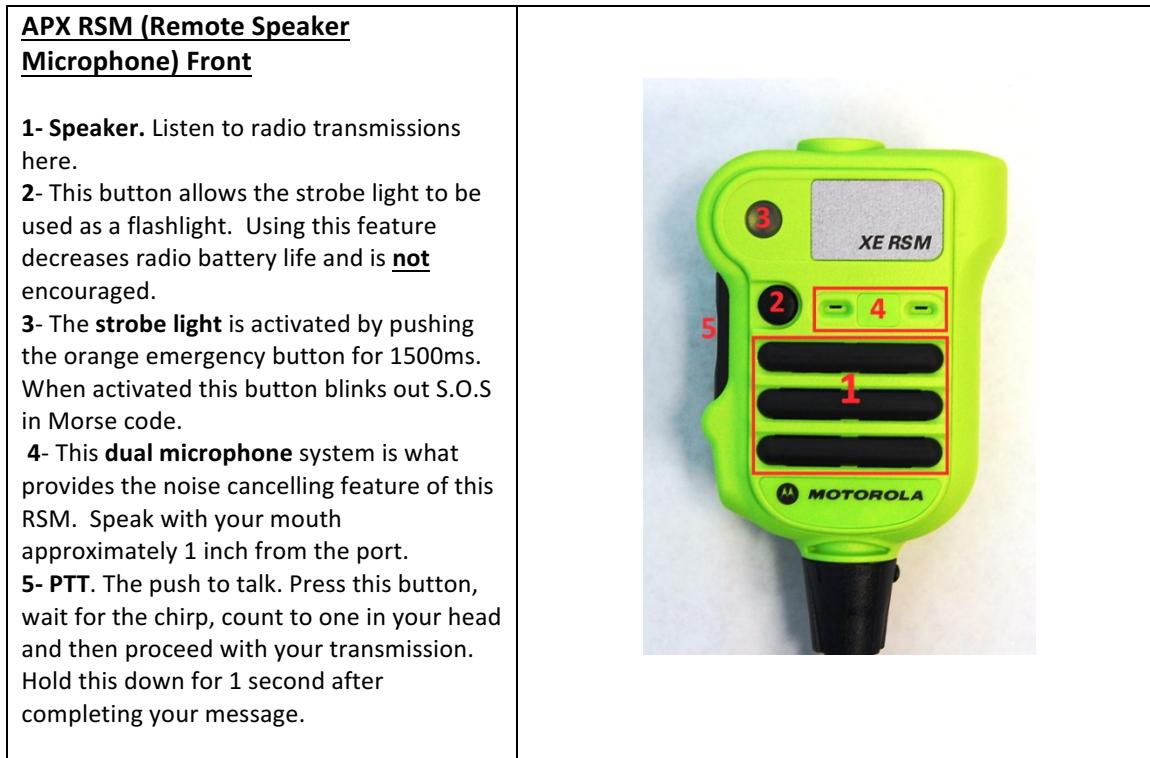
	Receiving a call or data
	Transmitting a call or data
	Blinks when the battery is low.
	The more stripes, the stronger the signal strength for the current site (trunking only).
	Direct radio to radio communication or connected through a repeater. On = Direct Off = Repeater
	This channel is being monitored.
	Scanning a scan list.
	Blinking dot = Detects activity on the Priority-One Channel during scan.
	Steady dot = Detects activity on the Priority-Two Channel during scan.

USING SCAN IS NOT RECOMMENDED ON INCIDENT SCENES. YOU CAN MISS RADIO TRAFFIC IN THIS MODE!

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<p>Left Side Controls</p> <p>1- Channel Voice ID. Pressing this button activates the voice channel id function. (Not available for every channel.) ZONE UP – Advances the radio to the next zone up (from A to B to C, etc) with each press of the button.</p> <p>2- PTT. Push to talk. It is important to speak into the device in which you have initiated the push to talk. When pressing the PTT on the radio chassis speak into one of the two microphones on the radio chassis. Pressing the PTT on the RSM speak into the RSM. The same goes for using the noise cancelling headphones. If you press the PTT on the chassis and speak into any other device your message will not be transmitted.</p> <p>3- Light- Pressing this button will activate the backlight on both LCD screens. Top and Rear. ZONE DOWN – Advances the radio to the next zone down (from C to B to A, etc) with each press of the button.</p> <p>4- Signal Strength – Shows the signal strength of the radio relative to the radio system. On the main screen you will see the text “RSSI” and a number.</p> <ul style="list-style-type: none"> • >100 – Very Good • 50-100 – OK • <50 – Not good, not reliable for use. <p>Direct/Repeater button-on simplex channels, pressing this button toggles the radio between direct and repeater mode.</p>	
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<p><u>APX RSM (Remote Speaker Microphone) Top</u></p> <p>1- Orange emergency button. This is set to a 1500ms delay. Press and hold this button until radio is placed in emergency mode. Activation of the EB will give your radio talk group priority.</p> <p>2- Volume Toggle Switch- this switch will raise or lower the volume of the remote speaker microphone. Raising or lowering the volume has no effect on transmission volume. It is impossible to turn the volume all the way down.</p>	
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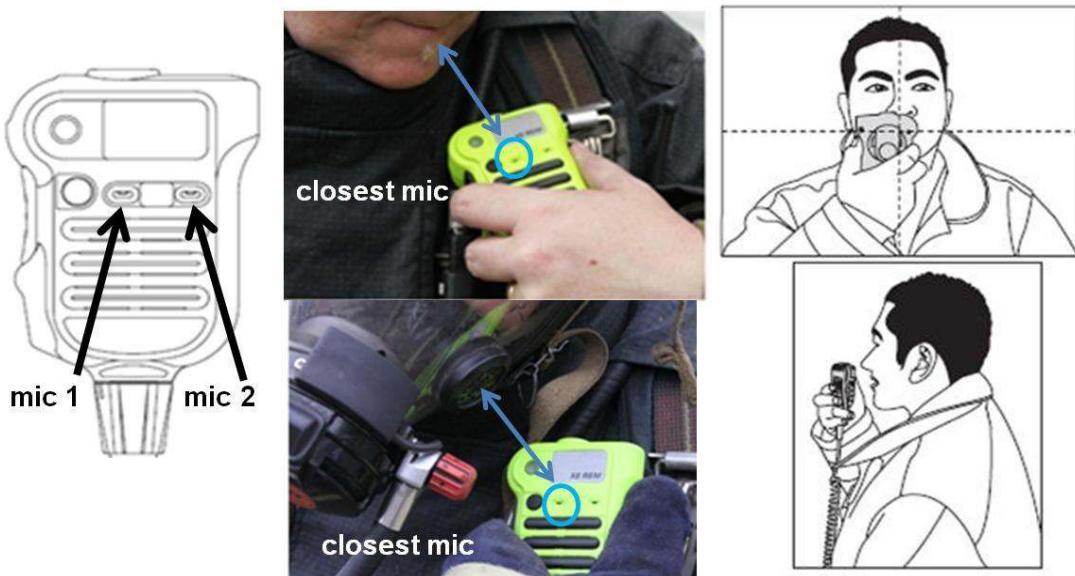
BestPractices

For the best performance in extreme environments, always follow 3 simple rules.

- 1. ALWAYS WEAR ORANGE BUTTON UP for best water drainage**



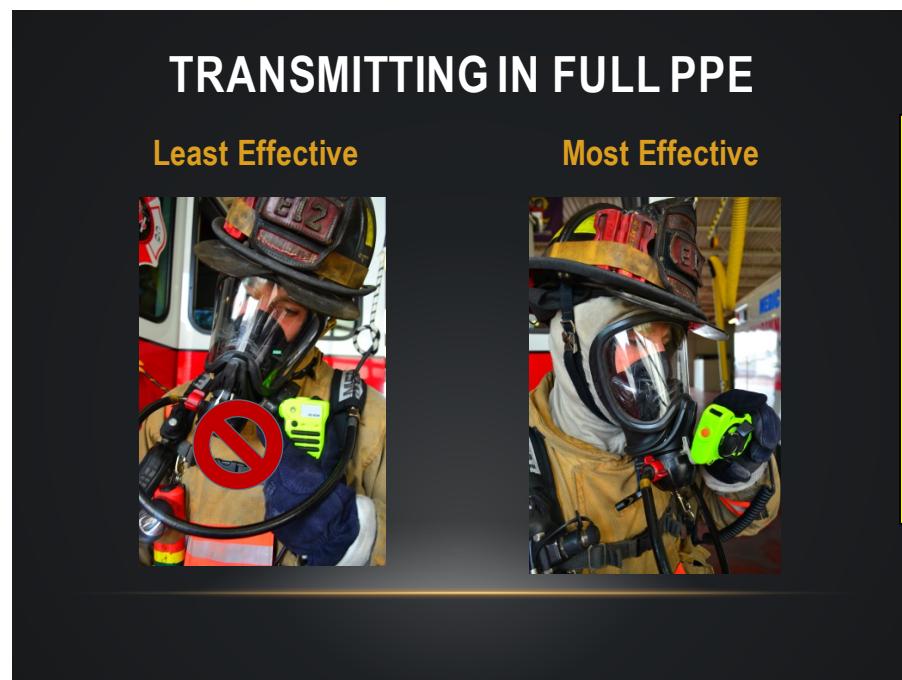
- 2. ALWAYS TALK TO the CLOSEST mic for best voice quality**



- 3. ALWAYS SHAKE to clear water then TALK**

Two or three brisk vertical shakes will cause water to drain faster.

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RSM to radio connection

Cover plate installed

RSM attachment

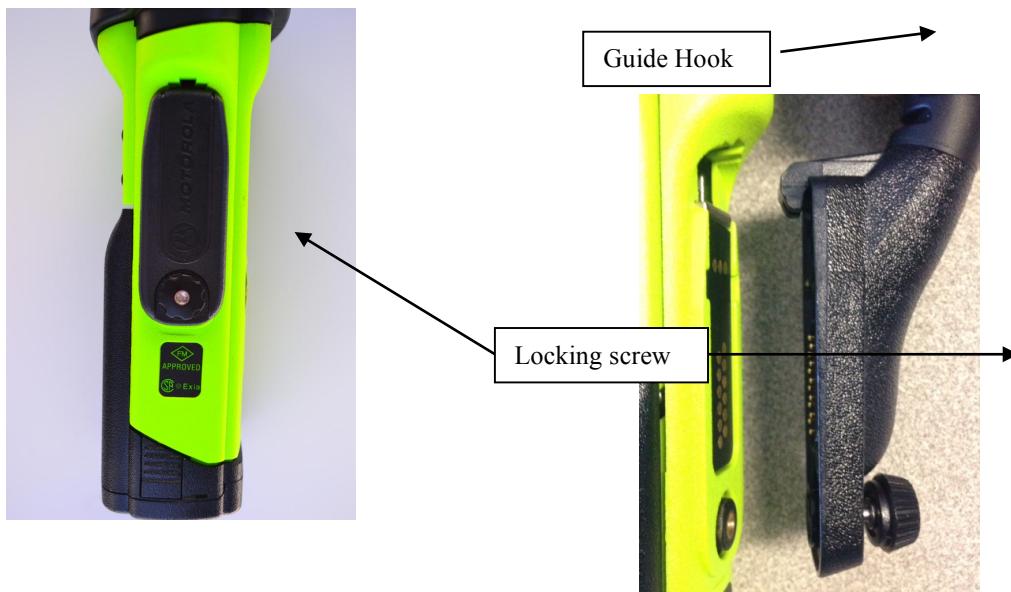


Figure #10

- To attach the RSM or cover plate to the radio body, place the guide hook on the attachment into the slot above the data plate on the radio body. Give slight downward pressure to seat it. Once in place, rotate the locking screw in a clockwise direction to secure the connection. Only tighten the locking screw HAND TIGHT or damage may occur to either pieces of equipment.

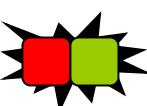
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Battery “gang” charger



- The battery charger has 6 charging ports. Each port has an LED or LCD display under it that shows the condition of the battery. There is an explanation of each light on the back of the unit.

LED charging indicators

Steady Red		Battery is in Rapid Charge Mode
Flashing Green		Battery >90% available capacity. Battery is in Top-Off charge (Trickle Charge).
Steady Green		Battery has completed charging and is fully charged.
Flashing Orange		Battery is recognized by charger but waiting to charge. (Battery voltage too low, temperature is too low/high to allow charging. When condition is corrected battery will begin charging.)
Flashing Red		Battery is unchargeable or not making proper contact.
Steady Orange		Battery in recondition mode. Length of time in this mode depends upon the batteries state of charge. (Fully charged batteries require more time to recondition than fully discharged batteries. (This can take up to 12 hrs to complete.)
Flashing Red/Green		Battery has completed charging and is fully charged. Battery continues to be usable, may be nearing the end of its rated service life.

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APPARATUS MOUNTED RADIO: APX 4500 digital mobile radio

Figure #12



The apparatus mounted radio should always be left on Main Dispatch.

- 1) The Power Button turns the radio on/off. The radio automatically comes on when the apparatus' batteries are activated.
- 2) The Volume knob allows manual adjustment of volume level.
- 3) The Scroll Buttons navigate through selection options on the LCD.
- 4) The Emergency Button will sound the emergency tone to Main Dispatch and the zone/channel the user is in.
- 5) The Home Button will take the radio to "Main Dispatch" in ZONE B by pressing for 2 seconds.
- 6) The Menu Select Buttons selection corresponds with the respective action located directly above each button in the LCD display.

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Template Notes:

- All zones are named for their content / use.
- Channel 1 in each of the CFD zones is Main Dispatch
- Zone “B” to “J” are all exactly the same and are designed to be used for multi-company fire incidents (1-alarm, haz-mat, etc).
- PF GRND is for communicating with Police Officers on the scene. Request dispatch to have the Police switch to this channel and meet them there.
- There is a “**MAYDAY**” channel at the end of both zones on channel 16. The Mayday channel is designed to be easily accessed by turning the channel select knob fully clockwise. The Mayday channel is to be used by all personnel at the fire scene to resume firefighting communications after a Mayday has been declared. The person or persons declaring the Mayday will stay on the initial fire ground channel with the RAT Team and the District Chief in charge of the rescue operation.
- The phonetic alphabet will be used for letter clarification as needed:

A	B	C	D	E
Alpha	Bravo	Charlie	Delta	Echo
F	G	H	I	J
Foxtrot	Golf	Hotel	India	Juliet
K	L	M	N	O
Kilo	Lima	Mike	November	Oscar
P	Q	R	S	T
Papa	Quebec	Romeo	Sierra	Tango
U	V	W	X	Y
Uniform	Victor	Whiskey	X-ray	Yankee
Z				
Zulu				



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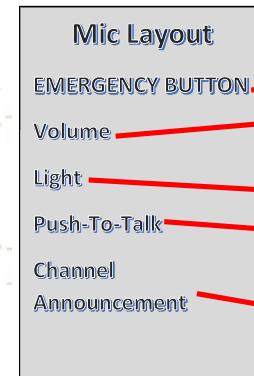
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	CFD EMS A	CFD FIRE B-J	CFD SPEC OPS	CFD EVENT	CFD TRAINING	CINTI POLICE	CMA	8 TAC-NWD
	CFA	CFB-J	OPS	EVT	CFT	CPD	CMA	NWD
1	31 MAIN DISP	MAIN DISP	MAIN DSP	MAIN DSP	MAIN DSP	MAIN DSP	CMA 1	MAIN DSP
2	31 EMS	COMMAND B	SOC 1	EVENT F1	TRAINING 2	PF GRND	CMA 2	HOSPITAL
3	31 MVC	STAGING B	SOC 2	EVENT F2	TRAINING 3	CPD DIST 1	CMA 3	UC HOSPITAL 1
4	31 DIST 1 OPS	B TAC 1	ODOT 8	EVENT F3	TRAINING 4	CPD C2C 1	CMA 4	UC HOSPITAL 2
5	31 DIST 2 OPS	B TAC 2	ODOT 8 OPS	EVENT F4	TRAINING 5	CPD DIST 2	CMA 5	CHILD HOSP 1
6	31 DIST 3 OPS	B TAC 3	DISASTER NET	EVENT F5	TRAINING 6	CPD C2C 2	CMA 6	CHILD HOSP 2
7	31 DIST 4 OPS	B TAC 4	USAR 1	PD EVENT 1	TRAINING 7	CPD DIST 3	CMA 7	
8	31 TRIAGE A	TRIAGE B	GC HAZMAT	PD EVENT 2	TRAINING 8	CPD C2C 3	CMA 8	INQ E
9	31 TREATMENT A	TREATMENT B	DIVE TEAM	PD EVENT 3	TRAINING 9	CPD DIST 4	CMA 9	ARSON E
10	31 TRANSPORT A	TRANSPORT B	COAST GUARD	PD EVENT 4	TRAINING 10	CPD C2C 4	CMA 10	INTRNL E
11	31 PF GRND	ALL CALL B	LUNKEN	PD EVENT 5	TRAINING 11	CPD DIST 5	CMA 11	
12	31 HOSPITAL	REPEATER 1	CVG POLICE	PD EVENT 6	TRAINING 12	CPD C2C 5	CMA 12	8 TAC 94
13	31 RIVER	REPEATER 2	31 C400	PD EVENT 7	TRAINING 13	UC POLICE	CMA 13	8 TAC 93
14	31 SIMPLEX A	SIMPLEX B	RIVER RUN	PD EVENT 8	TRAINING 14	XU POLICE	CMA 14	8 TAC 92
15	31 MAJ MED	SIMPLEX 2	NOD DSP	HCMA 5	ALL CALL M	CIN STATE PD	CMA 15	8 TAC 91
16	31 MAYDAY EMS	MAYDAY B	TROD DSP	HCMA 6	MAYDAY M	CVG POLICE	CMA 16	8 CALL90

SCREEN SYMBOL DEFINITIONS

	Blinks when the battery is low.
	The more stripes, the stronger the signal strength for the current site (trunking only).
	Direct radio to radio communication or connected through a repeater. On = Direct Off = Repeater
	L = Radio is set at Low power. H = Radio is set at High power.

	Scanning a scan list. Blinking dot = Detects activity on the Priority-One Channel during scan. Steady dot = Detects activity on the Priority-Two Channel during scan.
	On = Secure operation. Off = Clear operation.



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