



*APX™ 6500  
05 Control Head  
Interactive End  
User Toolkit (IEUTK)*

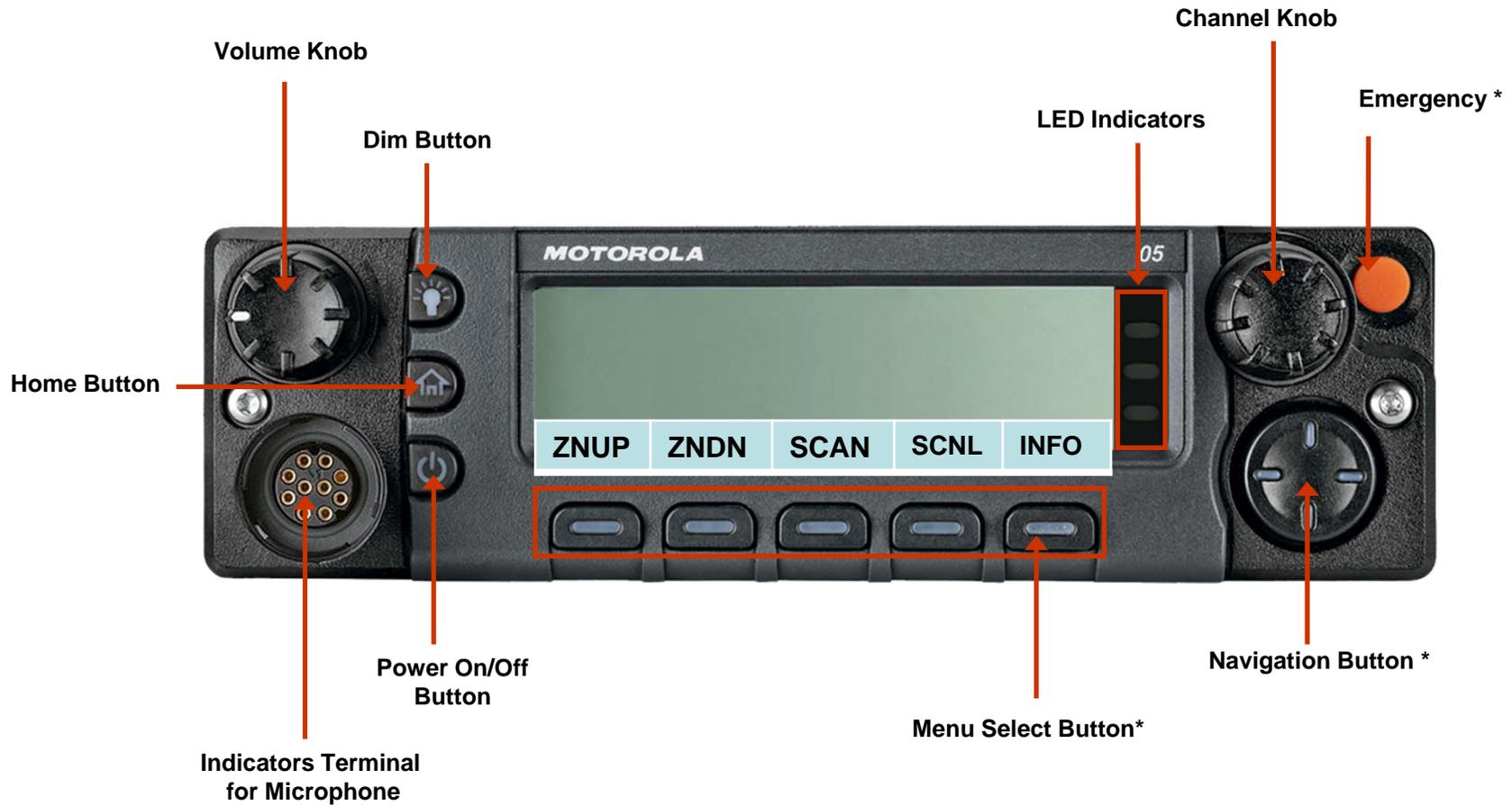


*APX™ Two-Way Radios*



**Caroline County Fire**





*\* These radio controls/buttons are programmable.*



## □ Turning on the Radio

Press the **Power On/Off Button** briefly to power on the radio.

After a short time, the red, yellow and green LEDs light up. The display then shows Zone and channel text, and menu items display on the screen.

The backlight will turn on to the last selected dim level.

**Note:** Pressing the **Power On/Off Button** before the LED lights up will be ignored.

If **FAIL ###/###** appears in the display, the radio will not function until the condition has been corrected.

If **ERROR ###/###** appears, some non-critical data has been changed.

If **CH MISMATCH** appears, means that either the Control Head has been connected to an incompatible transceiver, or vice versa.

If your radio does not power up, contact your dealer.

*To turn off the radio, press the **Power On/Off Button** after the LEDs light up.*

**NOTE:** Your radio may be installed to power up with vehicle start up and power down with vehicle shut down.





## □ Adjusting the Volume

To increase the volume, rotate the **Volume Knob** clockwise to increase the volume.

To decrease the volume, rotate the **Volume Knob** counterclockwise.





☐ Programmable Features

<b>Scan List Programming</b>	Selects the scan list for editing.
<b>Scan</b>	Toggles scan on or off.
<b>Secure/Clear</b>	Automatic when tuned to a secure talkgroup/channel
<b>Talkaround/Direct</b>	Toggles between using a repeater and communicating directly with another radio.
<b>Zone Select</b>	Allows selection from a list of zones.
<b>Dim</b>	Changes the display brightness.



## □ Accessing the Preprogrammed Functions

- Use the **Menu Select Button** (  ).

### Using the Menu Select Buttons

The **Menu Select Buttons** allow to access the menu entries of features.

**Note:** Check with your dealer or system administrator for the list of features activated in your radio.

Your radio may be preprogrammed differently from the following example, but the steps for selecting a channel may appear as shown below:

- Press the **Menu Select** button (  ) directly below **CHAN**.





## ❑ Push-To-Talk (PTT) Button

The **PTT** button on the side of the microphone serves two basic purposes:

- While a call is in progress, the **PTT** button allows the radio to transmit to other radios in the call.

Press and hold down **PTT** button to talk. Release the **PTT** button to listen.

The microphone is activated when the **PTT** button is pressed.

- While a call is not in progress, the **PTT** button is used to make a new call.

Push-to-Talk  
(PTT) Button





□ Status Icons (1/2)

	<b>Receiving</b> Radio is receiving a call or data.		<b>Priority-One Channel Scan</b> • <b>Blinking dot</b> = Radio detects activity on channel designated as Priority-One. • <b>Steady dot</b> = Radio detects activity on channel designated as Priority-Two.
	<b>Transmitting</b> Radio is transmitting a call or data.		<b>Scan</b> Radio is scanning a scan list.
	<b>Call Received</b> Radio has received an Individual Call.		<b>Location Signal</b> • <b>On</b> = Location feature is enabled, and location signal is available. • <b>Off</b> = Location feature is disabled. • <b>Blinking</b> = Location feature is enabled, but no location signal is available.
	<b>Received Signal Strength Indicator (RSSI)</b> The number of bars displayed represents the received signal strength for the current site, for trunking only. The more stripes in the icon, the stronger the signal.		<b>User Login Indicator (IP Packet Data)</b> • <b>On</b> = User is currently associated with the radio. • <b>Off</b> = User is currently not associated with the radio. • <b>Blinking</b> = Device registration or user registration with the server failed due to an invalid username or pin.
	<b>Direct</b> • <b>On</b> = Radio is currently configured for direct radio to radio communication (during conventional operation only). • <b>Off</b> = Radio is connected with other radios through a repeater.		
	<b>Monitor (Carrier Squelch)</b> Selected channel is being monitored (during conventional operation only).		
	<b>Power Level</b> • <b>L</b> = Radio is set at Low power. • <b>H</b> = Radio is set at High power.		



## ❑ Status Icons (2/2)

	<b>Secure Operation</b> <ul style="list-style-type: none"><li>• <b>On</b> = Secure operation.</li><li>• <b>Off</b> = Clear operation.</li><li>• <b>Blinking</b> = Receiving an encrypted voice call.</li></ul>
	<b>Data Activity</b> <p>Data activity is present.</p>
	<b>View/Program Mode</b> <p>Radio is in the view or program mode.</p> <ul style="list-style-type: none"><li>• <b>On steady</b> = View mode</li><li>• <b>Blinking</b> = Program mode</li></ul>



❑ LED Indicators

The LED indicator shows the operational status of your radio.

<b>Solid red</b>	Radio is transmitting.
<b>Rapidly blinking red</b>	Radio has failed the self test upon powering up or encountered a fatal error.
<b>Solid yellow</b>	Channel is busy.
<b>Blinking yellow</b>	Radio is receiving a secured transmission.
<b>Solid green</b>	Radio is powering up, or is on a non-priority channel while in the Scan List Programming mode.
<b>Blinking green</b>	Radio is receiving an individual or telephone call, or is on a Priority-Two channel while in the Scan List Programming mode.
<b>Rapidly blinking green</b>	Radio is on a Priority-One channel while in the Scan List Programming mode.





## □ Intelligent Lighting Indicators

This feature temporarily changes the backlight of the top display screen and the keypad, and adds a color bar to the main display screen to help signal that a radio event has occurred.

**Note:** This feature must be preprogrammed by a qualified radio technician.

Backlight and Bar Color	Notification	When
Orange	Emergency Alerts	The radio initiates an emergency alarm or call.
		The radio receives an emergency alarm or call.
Red	Critical Alerts	The radio is out of range.
		The radio enters failsoft mode.
		The radio is unable to establish a full connection with the system.
Green	Call Alerts	The radio receives a private call.
		The radio receives a phone call.
		The radio receives a call alert.
		The radio receives a selective call.



□ Alert Tones

An alert tone is a sound or group of sounds. Your radio uses alert tones to inform you of your radio's conditions.

The following table lists these tones and when they occur.

You Hear	Tone Name	Heard
<p><b>Short, Low-Pitched Tone</b></p>  <p>Play</p>	Radio Self Test Fail	When radio fails its power-up self test.
	Reject	When unauthorized request is made.
	Time-Out Timer Warning	Four seconds before time out.
	No ACK Received	When radio fails to receive an acknowledgment.
	Individual Call Warning Tone	When radio is in an individual call for greater than 6 seconds without any activity.
<p><b>Long, Low-Pitched Tone</b></p>  <p>Play</p>	Time-Out Timer Timed Out	After time out.
	Talk Prohibit/PTT Inhibit	(When <b>PTT</b> button is pressed) transmissions are not allowed.
	Out of Range	(When <b>PTT</b> button is pressed) the radio is out of range of the system.
	Invalid Mode	When radio is on an unprogrammed channel.



☐ Alert Tones

You Hear	Tone Name	Heard
<p><b>A Group of Low-Pitched Tones</b></p>  <p>Play</p>	<p>Busy</p>	<p>When system is busy.</p>
<p><b>Short, Medium-Pitched Tone</b></p>  <p>Play</p>	<p>Valid Key-Press</p>	<p>When correct key is pressed.</p>
	<p>Radio Self Test Pass</p>	<p>When radio passes its power-up self test.</p>
	<p>Clear Voice</p>	<p>At beginning of a non-coded communication.</p>
	<p>Priority Channel Received</p>	<p>When activity on a priority channel is received.</p>
	<p>Emergency Alarm Entry</p>	<p>When entering the emergency state.</p>
	<p>Central Echo</p>	<p>When central controller has received a request from a radio.</p>
<p><b>Long, Medium-Pitched Tone</b></p>  <p>Play</p>	<p>Volume Set</p>	<p>When volume is changed on a quiet channel.</p>
	<p>Emergency Exit</p>	<p>When exiting the emergency state.</p>



☐ Alert Tones

You Hear	Tone Name	Heard
<p><b>A Group of Medium-Pitched Tones</b></p> 	Failsoft	When the trunking system fails.
	Automatic Call Back	When voice channel is available from previous request.
	Talk Permit	(When <b>PTT</b> button is pressed) verifying system accepting transmissions.
	Keyfail	When encryption key has been lost.
	Console Acknowledge	When status, emergency alarm, or reprogram request ACK is received.
	Received Individual Call	When Call Alert or Private Call is received.
	Call Alert Sent	When Call Alert is received by the target radio.
	Site Trunking	When a SmartZone trunking system fails.



## ❑ Selecting a Zone Demo

A zone is a group of channels.

**Note:** Your radio must be preprogrammed to allow you to use these features.

- 1 ◀ Or ▶ to **ZNUP** or **ZNDN**.
- 2 Press the **Menu Select** button directly below **your choice**.
- The display shows the current zone and channel.
- 3 Press the UP or Down side of the navigation pad until the desired zone is displayed.
- 4 Press  or the **PTT** button to confirm the selected zone number.
- 5 Press the **PTT** button to begin transmitting on the displayed zone channel.





## ❑ Selecting a Radio Channel Demo

A channel is a group of radio characteristics, such as transmit/ receive frequency pairs.

**Note:** Your radio must be preprogrammed to allow you to use this feature. If you select a channel that is not within the preprogrammed band, the radio indicates that it is on an unsupported frequency with both audio and visual warnings.

Consult a qualified radio technician for the right choice between the following methods.

Rotate the **Channel knob** until the display shows the desired channel.





## ❑ Receiving and Responding to a Radio Call

Once you have selected the required channel and/or zone, you can proceed to receive and respond to calls.

*You see solid red while the radio is transmitting, and solid yellow when the radio is receiving a transmission (conventional mode only). There is no LED indication when the radio receives a transmission in trunking mode.*

*If the radio is receiving a secure transmission, the LED blinks yellow.*



## ❑ Receiving and Responding to a Talkgroup Call

To receive a call from a group of users, your radio must be configured as part of that talkgroup.

When you receive a talkgroup call (while on the Home screen), depending on how your radio is preprogrammed:

### 1 **ASTRO Conventional Only:**

The LED lights up solid yellow. The display shows the talkgroup alias or ID, and the caller alias or ID.

**OR**

### **Trunking Only:**

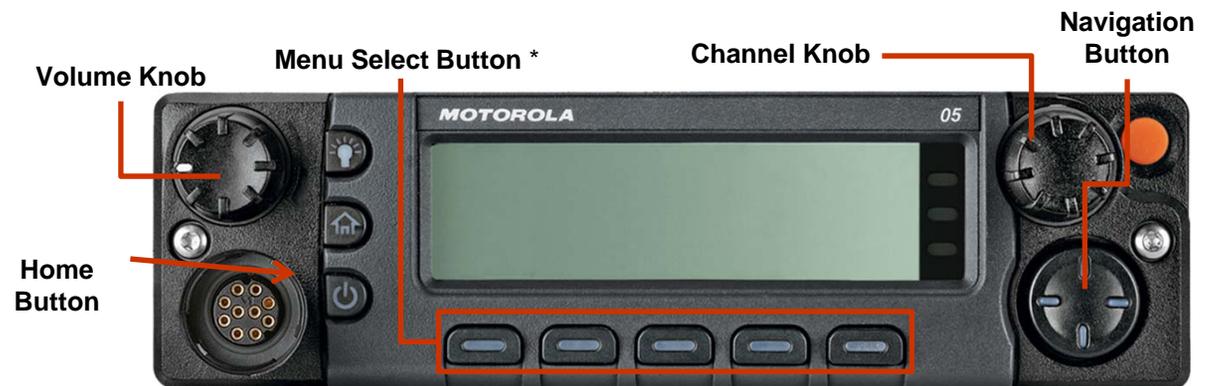
The display shows the caller alias or ID.

- 2 Hold the microphone vertically 1 to 2 inches (2.5 to 5.0 cm) from your mouth.
- 3 Press the **PTT** button to respond to the call. The LED lights up solid red.
- 4 Release the **PTT** button to listen.



## □ Viewing a Scan List Demo

- 1 ◀ OR ▶ to **SCNL**.
- 2 Press the **Menu Select** button directly below **SCNL**.
- 3 ◀ OR ▶ to view the members on the list.
- 4 Press the  to exit the current display and return to the Home screen.





## ❑ Editing the Scan List

This feature lets you change scan list members and priorities.

**Note:** The maximum number of members for a trunking priority monitor scan list is 50; for a conventional scan list, 30; and for a talkgroup scan list, 250.

Long press the preprogrammed **Scan List Programming** button and proceed to Step 3.

**OR**

1 ◀ or ▶ to **SCNL**.

2 Press the **Menu Select** button directly below **SCNL**.

The display shows the lists that can be changed.

3 ◀ or ▶ to the entry you want to edit.

4 Press the **Menu Select** button directly below **SEL** to add and/or change the priority of the currently displayed channel in the scan list. 

**OR**

Press the **Menu Select** button directly below **DEL** to delete the currently displayed channel from the scan list. 

**OR**

Press the **Menu Select** button directly below **RCL** to view the next member of the scan list. 

5 ◀ or ▶ to select more channels to be added or deleted.

**Note: Your #1 priority is what you are tuned to.  
Your #2 priority is your main dispatch talkgroup.**

**NOTE – for Caroline Fire and Rescue radios**

The Fire Rescue Dispatch Talk Group is set as the #1 priority in scanning. The selected talk group is #2

CCFR radios will NOT scan non-trunked channels, including the Fire Rescue Talk Around (FR T/A) channel



## Turning Scan On or Off

Demo

- 1 ◀ or ▶ to **SCAN**.
- 2 Press the **Menu Select** button directly below **SCAN**.
- 3 The display shows **SCAN OFF** if scan is disabled.  
Press the **Menu Select** button directly below **SCAN** to enable scan.  
**OR**  
The display shows **SCAN ON** and the scan status icon if scan is enabled. Press the **Menu Select** button directly below **SCAN** to disable scan.
- 4 The radio returns to the Home screen.





## ❑ Transmitting While the Scan is On

### **Radio Programmed for Non-Talkback Scan**

- 1 Press the **PTT** button at any time to transmit on the selected channel or fixed channel.

To make a Call Alert page, or Private Conversation call while scanning, press either the **Menu Select** button directly below **PAGE** or **CALL**. The call is entered on the selected channel and scanning is halted until the call is exited by pressing  or pressing the **Menu Select** button below either **PAGE** or **CALL**.





## ❑ Answering a Call Alert

- 1 When you receive a Call Alert page, you hear four repeating alert tone and the green LED blinks.
- 2 The call received icons blinks and the display shows **PAGE RECEIVED.**
- 3 Press the **PTT** button to answer.  
**OR**  
Press any button to clear the Call Alert page.



## □ Sending an Emergency Alarm with Emergency Call

This feature allows you send an Emergency Alarm to another radio. Upon acknowledgement, both radios can communicate over a preprogrammed Emergency channel.

If the radio has both emergency call and alarm features, it automatically proceeds to the call mode after the alarm is acknowledged.

- 1 Press and hold the preprogrammed **Emergency** button to for 1 second
- 2 The display alternates **EMERGENCY** and the home display.
- 3 A high-pitched tone sounds, indicating that the alarm has been received by the trunked system's central controller.

If a CCFR Radio User depresses the **Orange Emergency Button** while operating on a Caroline County Talk Group – the radio will switch to and send its alarm on the FR Dispatch primary talk group **UNLESS**:

The radio is selected on these talk groups:

- Tac 2 Tac 3
- Tac 4 Tac 5
- Tac 6 Tac 7
- Tac 8

A dispatcher acknowledgment (four high-pitched tones) follows, accompanied by an **ACK RECEIVED** display.

- 4 Hold the microphone vertically 1 to 2 inches (2.0 to 2.5 cm) from your mouth.
- 5 Press and hold the **PTT** button. Speak clearly into the microphone.
- 6 Release the **PTT** to end the transmission.
- 7 Press and hold the preprogrammed Emergency button until a tone sounds to exit Emergency mode.

*Turning the radio off also cancels the emergency state.*

**NOTE: Fire- You must press and hold the Emergency button for 1.5 seconds to activate. NO AUTO transmit.**



## ❑ Special Considerations for Emergencies

- If you press the emergency button while in a channel that has no emergency capability, a low-pitched tone sounds.
- If the unit is out of the range of the system and/or the emergency alarm is not acknowledged, a tone sounds and the display shows **NO ACKNOWLEDGE**.
- If you press the emergency button, then change to a mode that has no emergency capability, the display shows **NO EMERGENCY** and a continuous low-pitched tone sounds until a valid emergency mode is selected or until the emergency is cancelled.
- When an emergency is active, changing to another mode where emergency is enabled (trunked or conventional) causes an emergency alarm and/or emergency call to be active on the new mode.





## ❑ Selecting Secure Transmissions

Secure talkgroups are preprogrammed. Tuning to them is all that is needed.

**Note:** If the selected channel is preprogrammed for clear only operation – when you press the **PTT** button, an invalid mode tone sounds and the display shows **CLEAR TX** only.

The radio will not transmit until you set the **SECURE/CLEAR** switch to the clear position.





## ❑ Selecting Clear Transmissions

Clear or unsecure talkgroups are preprogrammed. Tuning to them is all that is needed.

**Note:** If the selected channel is preprogrammed for secure only operation – when you press the **PTT** button, an invalid mode tone sounds and the display shows **SECURE TX ONLY**.

The radio will not transmit until you set the **Secure/Clear** switch to the secure position.





## ❑ Using the Failsoft System

The failsoft system ensures continuous radio communications during a trunked system failure. If a trunking system fails completely, the radio goes into failsoft operation and automatically switches to its failsoft channel.

The failsoft condition is indicated by a faint beeping tone every nine seconds (radio unquenched) until the trunking system returns to normal operation.

To continue, in Failsoft, to communicate with other talkgroups, refer to the following procedure.

- 1 Rotate the **Channel Knob** to change to a different repeater frequency.
- 2 Press the **PTT** button to talk, and release the button to listen.

*When the trunking system returns to normal operation, your radio automatically leaves failsoft operation and returns to trunked operation.*





## □ Going Out-of-Range Demo

**OUT OF RANGE** when your radio goes out of the range of the system, it can no longer lock onto a control channel.

1 A low-pitched tone sounds.

**AND/OR**

The display shows the currently selected zone/channel combination and **OUT OF RANGE**.

2 Your radio remains in this out-of-range condition until:

It locks onto a control channel.

**OR**

It locks onto a failsoft channel.

**OR**

It is turned off.



## ❑ Controlling the Display Backlight

You can enable or disable the radio's display backlight as needed, if poor light conditions make the display difficult to read.

Depending on how your radio is preprogrammed, you can also maintain a minimum backlight level on the radio's display.

**Note:** The backlight setting also affects the Menu Select buttons, the Menu Navigation buttons and the keypad backlighting accordingly.

Press the  button to toggle the backlight off or on.

**OR**

Press any key of the keypad, the **Menu Select** or **Menu Navigation** buttons, or any programmable radio controls or buttons to turn the backlight on.





## ❑ Using the Time-Out Timer

This feature turns off your radio's transmitter. You cannot transmit longer than the preset timer setting.

If you attempt to do so, the radio automatically stops your transmission, and you hear a talk-prohibit tone.

The timer is set at 60 seconds, but it can be preprogrammed from 3 to 120 seconds, in 15-second intervals, or it can be disabled entirely for each radio mode, by a qualified radio technician.

**Note:** You will hear a brief, low-pitched, warning tone four seconds before the transmission times out.

- 1 Hold down the **PTT** button longer than the preprogrammed time. You hear a short, low-pitched warning tone, the transmission is cut-off, and the LEDs goes out until you release the **PTT** button.
- 2 Release the **PTT** button. The LEDs relight and the timer resets.
- 3 Press the **PTT** button to re-transmit. The time-out timer restarts and the red LED lights up.

