Transition Day

To make Transition Day a little easier, MS (Memory Select) buttons should be pre-programed as follows:

MS1 – LMRN Local Profile
MS2 – AD-FleetNet Local Profile

When requested by your Communications Officer, you will be required to switch your Mobile Radio to the LMRN Local Profile (MS1).
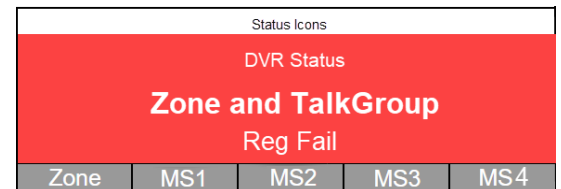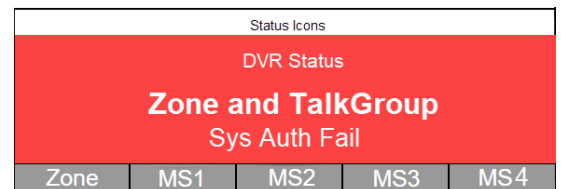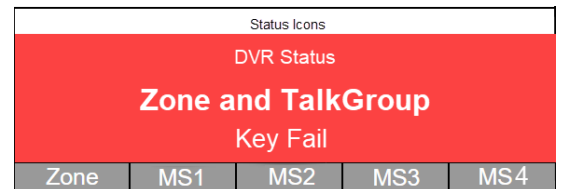
The following items may be identified when initially switching from FleetNet to LMRN

When a radio connects to the LMRN for the first time it normally does so without delay or issue. However, it is possible a delay of up to 90 seconds could be experienced before the radio authenticates on the new network. Once the radio connects there should be no further delays.

Error Messages and Troubleshooting

After an attempt to connect to the LMRN, there are three possible errors which have been identified that may appear on the mobile radio:

- **Key Fail –** Encryption Key does not match.

- **Sys Auth Fail –** System authentication Failure. The radio is unable to authenticate to the Network.

- **Reg Fail –** Registration Failure. The radio is not registered in the system.

Solution

If your mobile radio displays any of the above errors, switch back to your AD-FleetNet TalkGroup and inform your Communications Officer of the error. You will be notified how to proceed.
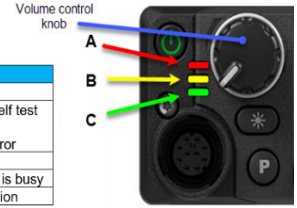
The DVR and Portable must also be switched to LMRN

Motorola APX2500 E5 Radio Control Head

Ontario

PSRN PUBLIC SAFETY RADIO NETWORK

1 - Power button
2 - Volume knob
3 - LCD Screen
4 - Channel knob
5 - Emergency button
Disabled
12 - 3 LED indicator lights
11 - Backlight button
10 - Microphone connection
9 - DVRS activation button*
8 - 5 Menu selection buttons
7 - 4-way navigation buttons
6 - Home button

* The "P" button is disabled on mobile radios not equipped with DVRS.

3-LED Indicators (#12)

Label	Description
A	Red LED
B	Yellow LED
C	Green LED

LED Status	Reason
Solid Red	Radio is transmitting
Rapid Blinking Red	Radio has failed the self test upon powering up or encountered a fatal error
Solid Green	Radio is powering up
Solid Yellow	Conventional channel is busy
Blinking Yellow	Receiving a transmission

Volume control knob
A
B
C

For the Mobile Radio and Network Portable Radio
Zone = CACC
Channel = TalkGroup

Change and Select a Zone and TalkGroup

1. Using the 4-way navigation buttons, scroll through the options until "Zone" appears in the lower Menu Selection
2. Using the five Menu selection buttons, select the button under Zone
3. From the next screen, use the 4-way navigation buttons or turn the channel control knob, to highlight the required Zone
4. Select the corresponding menu button under "Sel"

Once the Zone is selected:

5. Use the Channel Knob, turn to the required TalkGroup. After approximately 20 seconds on the selected TalkGroup, the radio will acknowledge the connection of the DVRS by 4 mid range tones and a short message "Ack Received"

While scrolling through the list of TalkGroups within a zone, the user will hear a soft midrange tone. This tone identifies the user has reached the bottom or last TalkGroup in the list.

Time-out Timer Alert

Four seconds prior to stop transmitting, a low pitch warning tone will sound. Releasing the PTT button will reset the timer. Press the PTT button to re-start your transmission.

Normal TalkGroup time out - 60 seconds
Hospital (ER) TalkGroup time out - 180 seconds

Programming a MS button:

1. Set the Radio Control Head to the Zone and TalkGroup you would like to save to an MS button
2. Using the 4-way navigation button, scroll through the menu options until the MS menu items are visible. (e.g., MS1-5)
3. Select the desired menu select button (MS1-5)
4. Long press the menu select button until a beep is heard

Short press the MS button to set the radio to the saved Zone & TG.
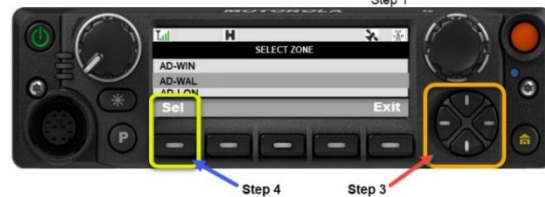
No Comms

When a radio attempts to connect to a tower that is not identified for the zone or TalkGroup which is selected, "**No Comms**" will appear on the LCD Display. If loss of coverage or No Comms message is received, a temporary solution would be to switch to PCOM (Provincial Common Channel) or switch to the local zone and TalkGroup.

Home Button (#6)

The Home button (# 6) has 2 functions:

1. Long press, holding for 3 seconds will revert the current TalkGroup to the first TalkGroup in the current zone list. This Channel will be Provincial Common Channel (Pcom)
2. When the radio is within a selected menu list, a single short press of the home button will place the menu back one menu screen.

Zone ID

FleetNet
AD-WIN = Advanced Deployment Windsor

LMRN
WIN = Windsor

Busy System

(Same for mobile radio and portable radio)
During times of peak activity, it is possible to receive a Busy tone rather than the go-ahead tone. There are two possible busy tones

1. Busy Bonk, a single low range tone received if the TalkGroup is busy
2. Busy tones, is a mid range short tone, repeated, sounds like a busy signal received on a telephone. Busy tones are heard if the Tower is busy

With either tones, if the PTT button is held while receiving either tone, the tone will change to the "Go-ahead" tone when the TalkGroup or Tower are free. If the PTT button is released, the "Go-ahead" tone will also be heard when become clear.

Out of Range

When the radio goes Out of Range of the network, the radio can no longer lock onto a tower and will be unable to communicate.

Causes:

1. The vehicle antenna is blocked by a structure or terrain (buildings, underground parking, in a valley, large rocks etc.)
2. The vehicle antenna is damaged or removed
3. Radio Tower has an outage, and the next closest tower cannot provide sufficient coverage.

Turn On DVR – Short Press the "P" Button.
- You will hear the DVR activation tones in the mobile radio speaker and the Portable
- Immediately following the 3 mid range DVR activation tones

When the DVR is activated, the VR Icon will appear in the upper right corner of the LCD display of the mobile radio.
- VR icon remains on – vehicle is in **Primary Mode** with full DVR capabilities
- VR icon blinks off and on – the vehicle is in **Secondary Mode** indicating your portables will repeat from another vehicle's DVR.

DVR Menu – Long Press "P" Button
Change VR Channel
1. Long Press (3 seconds) the "P" button to open the menu
2. Using the Channel Knob, select the desired VR Channel
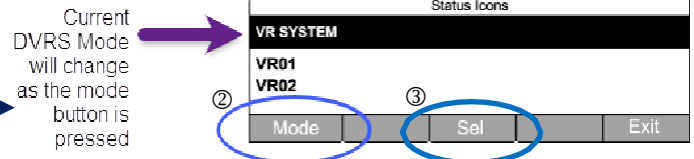3. Press the "Sel" Menu select button
4. Press "Exit"

DVR Mode
The DVR is equipped with 3 modes.
- **VR System** (VR SYS) – DVR is fully enabled, allows full communication between Portables and the network.
- **VR Local** (VR LOC) – Allows for communications only between Portables and the mobile Radio. The mobile radio has full communications with both the network and Portables. Portables can hear but not communicate with CACC.
- **VR off** (VR OFF) – DVR is off

To change the DVR mode:
1. Press and hold (long press) of the P button
2. From the next menu select the Mode soft button to switch between modes
3. Once the desired mode is showing, select the "Sel" soft button.

Hospital / Specialty PLC (portable level coverage)
When arriving at hospital or specialty location equipped with PLC, the user should follow these steps:
1. Do not turn on the mobile DVR in the vehicle
2. Turn the Portable on and switch to VR Channel 7 (announced as "Hospital"). You will be on the local CACCs operations channel for that area. When arriving at non-local hospitals on PLC VR Channel 7, crews should announce their presence to the local operations channel dispatcher.
3. When leaving the hospital, turn the Portable VR Channel back to your local operational VR Channel

Range - DVR to DVR:
- Urban setting – Up to 1.25km
- Rural setting - Up to 2.4 km

Range - DVR to portable:
- Urban setting - Up to 1 km
- Rural setting - Up to 2.3 kms

VR DISABLED
When changing the zone between AD and LMRN it's necessary to ensure the VR Channel also matches between VR Channel and a DVR Channel.

- AD zones use VR Channel – Vehicle Repeater Channel (Analog)
- LMRN zones use DVR Channel – Digital Vehicle Repeater Channel

This issue will only present a problem when traveling between a CACC which is on Fleetnet (analog) and a CACC which has transitioned to LMRN (digital).

If the VR Channel does not match the zone, the DVR will show "**VR DISABLED**".

Change the VR Channel to a DVR Channel, See Instructions above, "Change VR Channel".

Change Portable from AD to LMRN
After changing the mobile radio from VR Channels to DVR Channels, you must ensure the assigned portables zone are changed to match. From the Portable Radio…
1. Select "Zone" on the portable LCD front screen   2. Press the up or down arrows to choose the desired zone   3. Select "Sel"

See **Zone** under Motorola APX6000 Portable Radio (page 3) for more information.

DVR in secondary mode can take 30 to 60 seconds to realize the Primary DVR has left without being turned off. During this time, portables remaining on scene will have NO radio communications with CACC including Emergency Alert. Turning the DVR off prior to leaving scene will immediately switch a Secondary DVR to Primary DVR with no loss of communications.

**PUSH THE "P" BUTTON UPON ARRIVAL
PUSH THE "P" BUTTON WHEN DEPARTING**

**DVR Must be Turned OFF
*PRIOR TO DEPARTING SCENE***

Motorola APX6000 Portable Radio

Front view — Antenna, Emergency button, Microphone, Lapel mic. connection (Side), LCD display, Home button, Battery, Channel control knob**, Power & volume knob, ABC switch - disabled, Concentric Switch ***, 3 menu select buttons, Data programing button *, 4-way navigation button

Motorola P25 APX 6000 — Zone Prfl Batt

*** Disable on VR Portable
** Disabled on Network Portables
* Data programing button is used by radio technicians only.

Back view — Channel control knob *, Power & volume knob, DVR activation button*, PTT button, Lock keypad button, disabled, Antenna, LCD display, Microphone, Speaker, Battery, Battery release latches (1 on either side)

* This item is disabled on Network Portables

Portable Radio - Top View — LED light, Antenna, Emergency Button, VR Channel control knob*, Top LCD display, Power & volume knob, ABC switch - disabled, Concentric Switch **

* Disabled on Network Portables
** Disabled on VR Portables - Scan mode on Network Portable

Lapel Mic. — Hi/Low volume switch, PTT Button, DVR activation button*, Emergency button, Microphone, Speaker, 3.5mm ear jack connection

* DVR button is disabled on Network Portables

Portable Name – Identified to CACC when transmitting or Emergency Alert
Each portable is assigned to the vehicle.
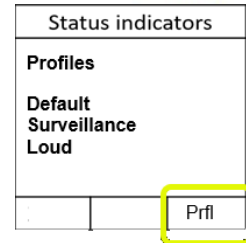Portable's name – [Vehicle #] [Service ID] [D or E for portables] = 2253 WR D

CACC Must be notified when changing Portables

Profiles
The profiles options allow the user to place the radio into different three profiles:
- **Default** – Places the portable radio in its normal operational setting.
- **Surveillance** – Surveillance mode should only be used for tactical purposes to reduce the user's visibility and sound profile. The following items will be disabled while in Surveillance mode:
  a. No back light on either LCD screen
  b. No audible tones (including emergency alert tones)
  c. Allows the user to turn audio volume to true zero (0% volume)
  d. Portable's main speaker is turned off. All transmissions can only be heard through the Label Mic at the volume set by the user
- **Loud** – The microphone's noise reduction filters are increased to reduce background noise and increase the user's voice at the receiving site.
Using the 4-way navigation buttons, select "Prfl". Scroll to the required profile.

Status indicators

Profiles	
Default	
Surveillance	
Loud	
	Prfl

For Paramedic safety CACC must be notified when placing their Portable Radio into or out of Surveillance mode.

DVRS Out of Range – DVRS OOR
Portable Radio is unable to connect to the signal of a DVR, it will be identified on the front LCD screen of the portable radio as "DVRS Out of Range."

DVRS OOR

VR Channel
Each DVR (mobile radio) is equipped with 6 VR Channels and each Portable is equipped with 7+ VR channels*.

The Portable Radio and the DVR on the mobile Radio <u>must</u> be on the same VR Channel for the Portable to operate. To change the Portable Radio's VR channel, rotate the Channel control Knob to the desired channel.

ZONE
There are only three zones to choose from on a Portable.
- LMRN DVR – New LMRN
- FN VR – Current Fleetnet
- INT – Interoperability
Select "Zone" by pressing the Menu Select button directly under the Zone menu item
1. The display will change to the "Select Zone" on the portable LCD front screen
2. Press the up or down arrows on the 4-way navigation button to choose the desired zone
3. Press the menu select button below the "Sel" menu item

Time-out Timer - All TalkGroups - 60 seconds

APX Portable Radio Channel (Quotations = Audio voice)	Function
Channel knob positions 1 through 5 – VR01 thru VR05 "VR1" or "DVR1"	Portable Radio to MOH vehicle DVR
Channel knob position 6 – VR06 – "ORNGE"	Used by Ornge vehicle DVR
Channel knob position 7 – VR07 – "Hospital"	Portable Radio to Hospital DVR
Channel knob position 8 – VR07 – "TYSSE" (Toronto York Subway System Extension)	Portable Radio function for the TTC Subway extension in York Region
Channel knob position 9 – VR07 – "Wasaga1"	Portable Radio function for Wasaga Beach – Beach Area 1 & 2
Channel knob position 10 – VR06 – "Wasaga2"	Portable Radio function for Wasaga Beach – Beach Area 5 & 6
Channel knob positions 11 – VR07 – WINTUNL "Windsor Tunnel"	Portable Radio function for Windsor-Detroit Tunnel
Channel knob position 12 to 16 – "Specialty"	Not assigned

DVR Activation from Portable Radio
The Portable Radio has two locations to activate the DVR.

1. Purple button directly above the PTT button on the Portable Radio
2. Button below the PTT button on the Lapel Mic

For the DVR to connect to the Portable, both the portable and mobile radio must be on the same VR Channel.

After pressing the DVR Activation button, connection to the DVR should be immediate. If the DVR tones are not heard within a few seconds, it should be assumed the DVR was NOT activated.

<u>Change the VR Channel and try again.</u>

Tone sound – when PTT is pushed	Description
3 high-pitched chirps	System mode – go ahead tone
3 low-pitched chirps	Local mode – go ahead tone
4 high-pitched chirps	Talkaround mode – go ahead tone
Low-pitched tone	Busy TalkGroup or Out of Range
Repeating short low-pitched tones	Busy Tower Site.

Emergency Alert from Portable
If the DVR is busy with other transmissions, the Portable will hold the Emergency Alert until the transmission is complete. Once the radio transmission is complete the Emergency Alert will be sent immediately, and the alerts will be activated on the Portable Radio. The maximum possible hold is 60 seconds as the PTT Time-out Timer will force the transmission to end. When the Emergency Alert is sent, it will send out the Portable's ID code identifying the Portable Radio to CACC.

If the DVR is off, it will automatically turn the DVR on to System mode. If the portable is unable to reach and connect to the DVR (DVRS OOR, e.g., wrong VR channel selected), the Emergency Alert will remain active in the Portable Radio. This alert will remain active until the portable is turned off or is connected to the Network. Once connected to the Network the Emergency Alert will be sent to CACC.

TalkAround Mode
Note: The Emergency Alert is not operational while in TalkAround Mode.
For TalkAround Mode to work each Portable must:
1. Be Out of Range of a DVR
2. Be on the same VR Channel
3. Be within portable range of each other (The range of a portable is restricted to line of site operation within a 2 km radius)
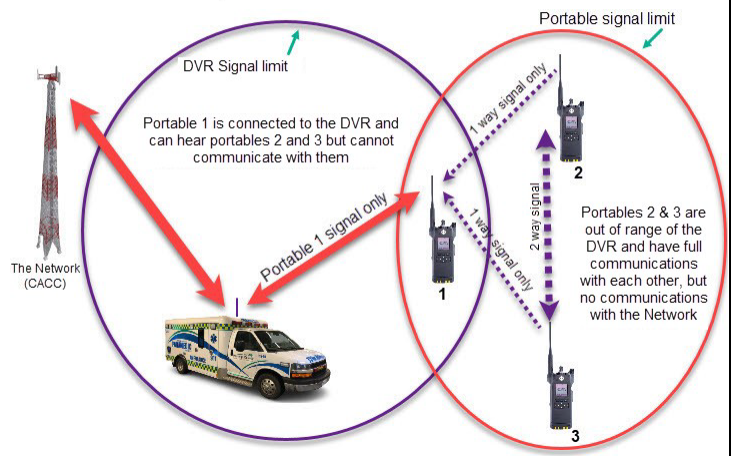
To engage TalkAround Mode:
1. When the Portable Radio is not connected to a DVR (DVRS OOR), push and continue to hold the PTT button on the portable and after approx. 5 to 10 seconds, you will hear low toned (busy bonk) followed by the 4 TalkAround mode chirps, keep holding PTT button, then,
2. Talk into the Portable
3. When you have finished talking, release the PTT button.

A Portable connected to a DVR will be able to hear Portables in TalkAround but cannot return any communications.

While transmitting in TalkAround mode, the portable radio will show "DVRS Out of Range" (or "DVRS OOR" top screen). There are no other indicators on the portable that you are transmitting in TalkAround mode.

Sys Out of Range
If the mobile radio is "Out of Range" when the Portable is actively connected to the DVR, the portable will show "sys out range" in a red banner. See Part II Chapter 1, page 1 for more information on Out of Range.

SYS OOR

Fall Back Mode
If the mobile radio should go "Out of Range" when the DVR is activated, the Portable Radio will identify "Sys Out of Range" or "Sys OOR". When this occurs, the DVR will automatically switch from System Mode to Local Mode. This allows the <u>portable users</u> to continue to communicate through Local mode to other Portables on the same VR Channel.

Communications cannot take place from the mobile radio if it goes Out-of-Range or in No Comms. Fall Back Mode only applies to the Portable Radios.

If the mobile radio regains the Network signal, the DVR will automatically switch back to System Mode.

Talk Around Mode
Talk Around mode allows VR portables, on the same VR Channel, talk to each other when not connected to the Network

When mobile…
The DVR Must be Turned OFF