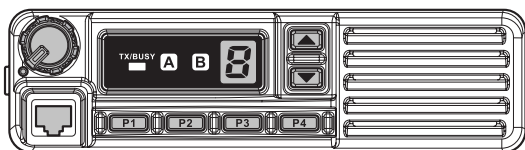




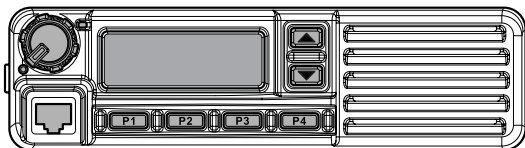
# VX-2100

# VX-2200

## OPERATING MANUAL



VX-2100



VX-2200

Motorola Solutions, Inc.

# Congratulations!

You now have at your fingertips a valuable communications tool: a Motorola Solutions two-way radio! Rugged, reliable and easy to use, your Motorola Solutions radio will keep you in constant touch with your colleagues for years to come, with negligible maintenance downtime.

Please take a few minutes to read this manual carefully. The information presented here will allow you to derive maximum performance from your radio, in case questions arise later on.

We're glad you joined the Motorola Solutions team. Call on us anytime, because communications is our business. Let us help you get your message across.

## SAFETY/WARNING INFORMATION

**WARNING - DO NOT** operate the **VX-2100/-2200** radio when any person(s) (bystanders) outside the vehicle are within the distances shown in the chart at the bottom of this section.

### Safety Training information:

Antennas used for this transmitter must not exceed an antenna gain of 0 dBd. The radio must be used in vehicle-mount configurations with a maximum operating duty factor not exceeding 50 %, in typical Push-to-Talk configurations.

This radio is restricted to occupational use, work related operations only where the radio operator must have the knowledge to control the exposure conditions of its passengers and bystanders by maintaining the minimum separation distance shown below.

### Antenna Installation:

For rear deck trunk installation, the antenna must be located at least the following distance away from rear-seat passengers.

For roof top installations, the antenna must be placed in the center of the roof.

**Minimum Distance From Properly Installed Antennas**

	VHF		UHF		
	25W	50W	25W	28W	45W
FCC	91.0	128.0	79.0	NA	105.0
ISED	113.0	160.0	102.0	NA	137.0
ICNIRP	91.0	128.0	91.0	96.0	122.0

Distances are in centimeters.



### Warning!

The 70.7 V RF voltage (@45/50 W/50 Ω) or 50.0 V RF voltage (@25 W/50 Ω) is applied to the antenna terminal of the transceiver while transmitting.

Do not touch the TX RF section absolutely while transmitting.



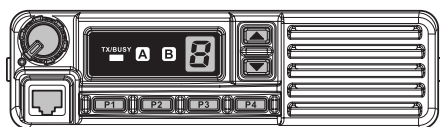
**Caution:** The radio can become hot.

- Do not operate this radio continuously in transmission mode for longer than 7 minutes. Ensure enough standby/reception time for cool-down between transmission periods. Be sure that TOT timer is correctly installed and properly working. Avoid touching the rear bottom of the transceiver's body while transmission.
- Do not install this radio in a confined space such as a book case or similar unit.
- Provide 2 inches (5 cm) or more space on either side of the radio.

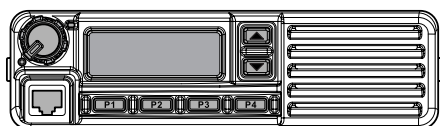
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# INTRODUCTION

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VX-2100



VX-2200

The **VX-2100/-2200** Series are full-featured FM transceivers designed for flexible mobile and base station business communications in the VHF or UHF Land Mobile bands. These transceiver are designed for reliable business communications in a wide variety of applications with a wide range of operating capability provided by their leading-edge design.

The **VX-2100** allows up to 8-channel memories. The **VX-2200** allows up to 128-channel memories which can each be programmed with an 8-character channel name. Important channel frequency data is stored in EEPROM and flash memory on the CPU, and is easily programmable by dealers using a personal computer and the Motorola Solutions **FIF-12** Programming Interface and **CE82** Software.

The pages which follow will detail the many advanced features provided on the **VX-2100/-2200** Series transceiver. After reading this manual, you may wish to consult with your Network Administrator regarding precise details of the configuration of this equipment for use in your application.

## **FOR NORTH AMERICAN USERS REGARDING 406 MHz GUARD BAND**

The U.S. Coast Guard and National Oceanographic and Atmospheric Administration have requested the cooperation of the U.S. Federal Communications Commission in preserving the integrity of the protected frequency range 406.0 to 406.1 MHz, which is reserved for use by distress beacons. Do not attempt to program this apparatus, under any circumstances, for operation in the frequency range 406.0 - 406.1 MHz if the apparatus is to be used in or near North America.

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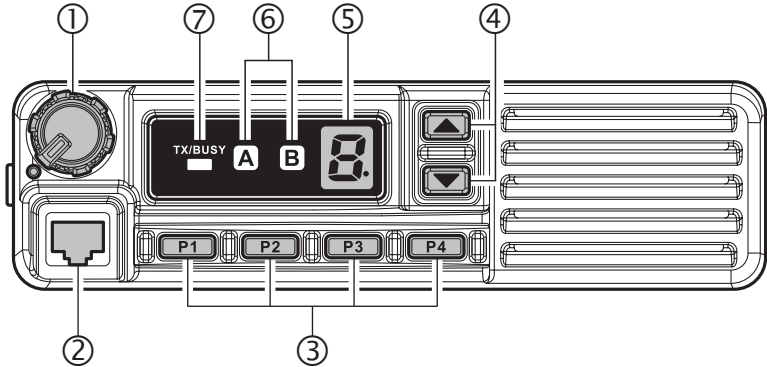
## CONTROLS & CONNECTORS (VX-2100)

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### Front Panel

**Important!** - All buttons located on the Front Panel are Programmable Function (PF) Buttons, configured according to your network requirements and programmed by your Motorola Solutions dealer. The instructions below describe a typically-configured radio.



#### ① VOL/PWR Knob

Turn this control clockwise to turn the radio on and to increase the volume. Turn it counterclockwise into the click-stop to turn the radio off.

#### ② Microphone Jack

Connect the microphone plug to this jack.

#### ③ [P1] - [P4] Buttons (Programmable Function Buttons)

These buttons can be set up for special applications, such as High/Low power selection, Monitor, Talk-Around, etc., as determined by your network requirements and programmed by your Motorola Solutions dealer.

#### ④ [▼]/[▲] Buttons (Programmable Function Buttons)

In the factory default, pressing either button changes the current channel (and displayed channel number or name). Holding in either button for more than 1.5 second causes the radio to begin stepping (repeatedly) upward or downward through the channels.

# CONTROLS & CONNECTORS (VX-2100)

## ⑤ Channel Number Indicator

Indicates the operating channel.

Blinks the squelch setting level (0-9, A, b, and C) while adjusting the squelch threshold level. Appear the decimal point “.” when selecting the Scan enable channel.

## ⑥ Transceiver Status Indicator

The “**A**” and “**B**” indicators show current transceiver status, which can be customized via programming by your Motorola Solutions dealer to meet your communications/network requirements. The possible “**A**” and “**B**” displays are explained below.

## ⑦ TX/BUSY Indicator

Indicates transceiver’s Transmit/Receive Status

- Steady Red: Transmitting in progress
- Steady Green: Signaling Off
- Blinking Green: Busy Channel/Squelch Off

**TRANSCIVER STATUS INDICATOR**

Status	INDICATOR		DESCRIPTION
	A	B	
<b>MONI</b>			This indicator is illuminated constantly when CTCSS- or DCS-controlled squelch is disabled. The indicator blinks while the audio is passing normally.
<b>LOW</b>			Illuminates the indicator when the radio’s transmitter is set to the “Low Power” mode.
<b>TA (Talk Around)</b>			Illuminates the indicator when the “Talk Around” function is activated.
<b>Encryption</b> (Requires Optional Unit)			Illuminates the indicator when the “Voice Scrambler” function is enabled.
<b>Emergency</b>			Illuminates the indicator when the “Emergency” feature is activated.
<b>Horn Alert</b>			Illuminates the indicator when the “Horn Alert” feature is activated.
<b>Public Address</b>			Illuminates the indicator when the radio is turned to a PA amplifier.
<b>Key Lock</b>			Illuminates the indicator when the front panel’s keys are locked.
<b>EXT ACC</b>			Illuminates the indicator when the output port on the Accessory Connector is turned to “ON.”
<b>RFC</b>			Illuminates the indicator when the radio is the “Ready for Communication” condition while operating with the 2-Tone or 5-Tone signaling.

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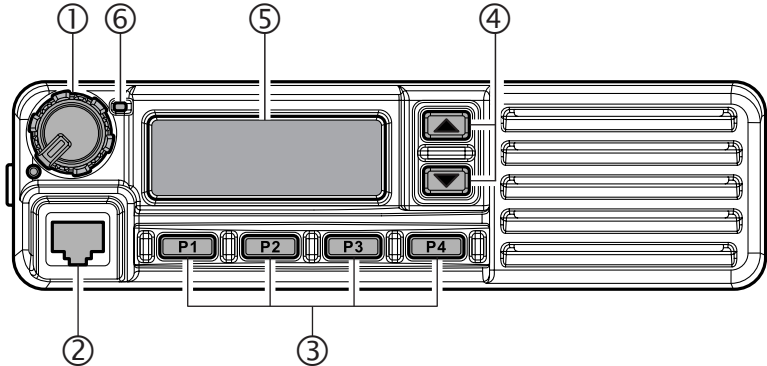
## CONTROLS & CONNECTORS (VX-2200)

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### Front Panel

**Important!** - All buttons located on the Front Panel are Programmable Function (PF) Buttons, configured according to your network requirements and programmed by your Motorola Solutions dealer. The instructions below describe a typically-configured radio.



#### ① VOL/PWR Knob

Turn this control clockwise to turn the radio on and to increase the volume. Turn it counterclockwise into the click-stop to turn the radio off.

#### ② Microphone Jack

Connect the microphone plug to this jack.

#### ③ [P1] - [P4] Buttons (Programmable Function Buttons)

These buttons can be set up for special applications, such as High/Low power selection, Monitor, Talk-Around, etc., as determined by your network requirements and programmed by your Motorola Solutions dealer.

#### ④ [▼]/[▲] Buttons (Programmable Function Buttons)

In the factory default, pressing either button changes the current channel (and displayed channel number or name). Holding in either button for more than 1.5 second causes the radio to begin stepping (repeatedly) upward or downward through the channels.

## CONTROLS & CONNECTORS (VX-2200)

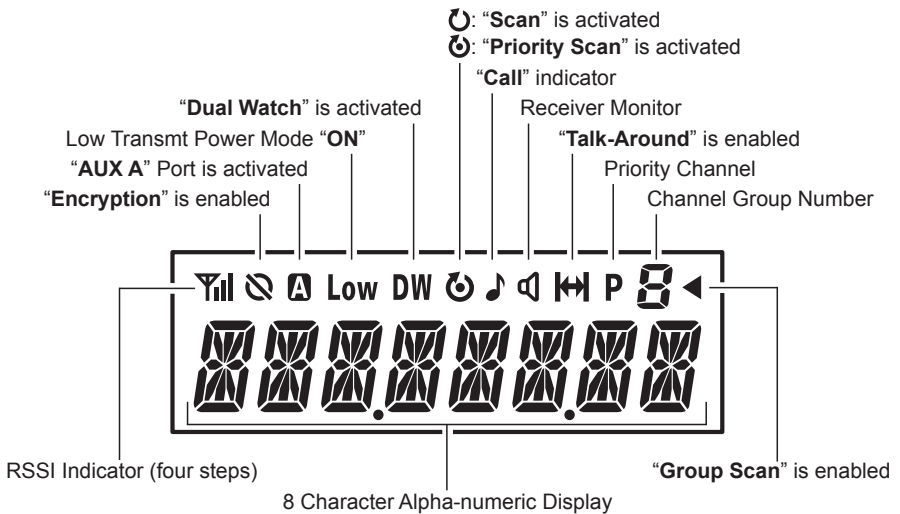
### ⑤ LCD (Liquid Crystal Display)

The display includes a 8-character alpha-numeric section showing Channel name tags/identity information and error messages, and an upper icon row displaying feature status (see below).

### ⑥ TX/BUSY Indicator

Indicates transceiver's Transmit/Receive Status

- Steady Red: Transmitting in progress
- Steady Green: Signaling Off
- Blinking Green: Busy Channel/Squelch Off



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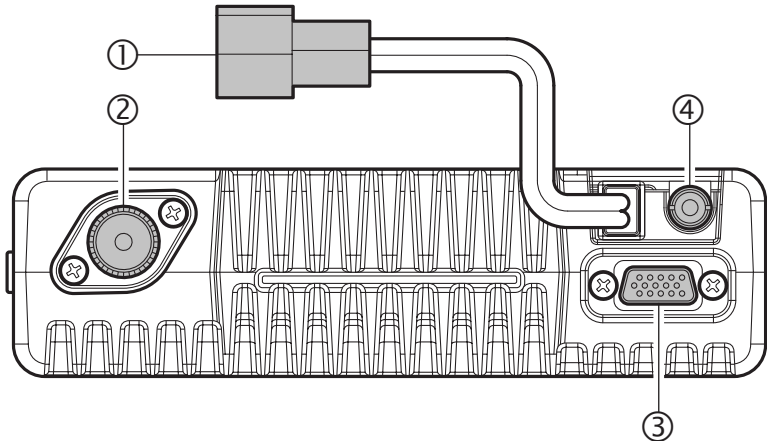
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## CONTROLS & CONNECTORS

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### Rear Panel



#### ① 13.6V DC Cable Pigtail with Connector (DC Input)

The supplied DC power cable must be connected to this 2-pin connector. Use only the supplied fused cable, extended if necessary, for power connection.

⚠ Replace only with the same or equivalent type fuse.

for 45/50 W model: Q0000075 (15 A, 32 V)

for 25 W model: Q0000112 (10 A, 32 V)

#### ② Antenna Socket

The 50-Ohm coaxial feedline to the antenna must be connected here, using a type-M (PL-259) plug.

#### ③ D-Sub 15-Pin Accessory Connector

External TX audio line input, PTT (Push To Talk), Squelch, and external RX audio line output signals may be obtained from this connector for use with accessories such as data transmission/reception modems, and external Channel control input etc.

#### ④ External Speaker Jack

An external loudspeaker may be connected to this 2-contact, 3.5-mm mini-telephone jack.

**Caution:** Do not connect either wire of this line to ground, and be certain that the speaker has adequate capability to handle the audio output (12 W) from the radio.



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## BASIC OPERATION OF THE TRANSCEIVER

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**Important!** - Before turning on the radio the first time, confirm that the power connections have been made correctly and that a proper antenna is connected to the antenna jack.

### Switching Power ON/OFF

- Turn the **VOL/PWR** knob turn on the radio. The display will become illuminated.
- Press the [▼]/[▲] button to choose the desired operating channel. A channel name will appear on the display in the **VX-2200**.
- In the **VX-2200**, if you want to select an operating channel from a different group, press the **PF** (Programmable Function) button which is programmed to the Group Up/Down feature to select the group you want before selecting the operating channel. See page 8 for more information on the Programmable Function keys.

### Setting the Volume

- Turn the **VOL/PWR** knob clockwise to increase the volume, and counter-clockwise to decrease it.

### Transmitting

- To transmit, monitor the channel and make sure it is clear.
- Press the **PF** button which is programmed to the Monitor feature to listen for channel activity.
- When receiving a call, transmit only after the incoming call ends. The radio cannot receive a call and transmit simultaneously.
- Press the **PTT** switch.
- If the channel is clear, the **TX/BUSY** indicator will glow red. The radio is now transmitting. While holding in the **PTT** switch, speak across the face of the microphone in a clear and normal voice. For best transmission, hold the microphone about 1-1/2 to 2 inches away from your mouth. Release the **PTT** switch to receive.
- If the Busy Channel Lockout feature has been programmed on a channel, the radio will not transmit when a carrier is present. Instead, the radio will generate a short beep three times and the **VX-2200** indicates “\* **ERROR** \*” on the display. Release the **PTT** switch and wait for the channel to be clear of activity.
- If CTCSS or Digital Coded Squelch (DCS) Lockout has been programmed on a channel, the radio can transmit only when there is no carrier being received or when the carrier being received includes the correct CTCSS tone or DCS code.

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## BASIC OPERATION OF THE TRANSCEIVER

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### Automatic Time-Out Timer

If the selected channel has been programmed for automatic time-out, you must limit the length of each transmission. While transmitting, a beep will sound 10 seconds before time-out. Another beep will sound just before the deadline; the red “**TX**” indicator will disappear and transmission will cease soon thereafter. To resume transmitting, you must release the **PTT** switch and wait for the “penalty timer” to expire.

### Key Lock

In order to prevent accidental frequency change or inadvertent transmission, various aspects of the transceiver’s keys may be locked out.

To activate the Locking feature, press and hold in the [**P1**] key while turning the radio on. To disable the Locking feature, repeat this power-on procedure.

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## ADVANCED OPERATION

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### Programmable Function (PF) Buttons

The **VX-2100/-2200** Series includes six Programmable Function (**PF**) Buttons. The PF button functions can be customized, via programming by your Motorola Solutions dealer, to meet your communications/network requirements. Some features may require the purchase and installation of optional internal accessories. The possible **PF** button programming features are illustrated below, and these functions are explained on the pages to follow. For further details, contact your Motorola Solutions dealer. For future reference, check the box next to the function that has been assigned to each **PF** button on your particular radio, and keep it handy.

## ADVANCED OPERATION

FUNCTION	PF BUTTON (PRESS KEY / PRESS & HOLD KEY)					
	P1	P2	P3	P4	▲	▼
MONI	/	/	/	/	/	/
SQL OFF	/	/	/	/	/	/
SQL SET	/	/	/	/	/	/
DIMMER	/	/	/	/	/	/
Channel Up	/	/	/	/	/	/
Channel Down	/	/	/	/	/	/
Continuous Channel UP	-/	-/	-/	-/	-/	-/
Continuous Channel Down	-/	-/	-/	-/	-/	-/
Group Up <sup>※1</sup>	/	/	/	/	/	/
Group Down <sup>※1</sup>	/	/	/	/	/	/
SCAN	/	/	/	/	/	/
SCAN SET	/	/	/	/	/	/
Group SCAN <sup>※1</sup>	/	/	/	/	/	/
Group SCAN SET <sup>※1</sup>	/	/	/	/	/	/
DW (Dual Watch)	/	/	/	/	/	/
Follow-Me SCAN	/	/	/	/	/	/
Follow-Me DW	/	/	/	/	/	/
LOW	/	/	/	/	/	/
TA (Talk Around)	/	/	/	/	/	/
TA SCAN	/	/	/	/	/	/
Encryption <sup>※2</sup>	/	/	/	/	/	/
Emergency	/	/	/	/	/	/
RESET	/	/	/	/	/	/
CALL 1	/	/	/	/	/	/
CALL 2	/	/	/	/	/	/
CALL 3	/	/	/	/	/	/
DTMF CODE SET <sup>※1</sup>	/	/	/	/	/	/
Code Up <sup>※1</sup>	/	/	/	/	/	/
Code Down <sup>※1</sup>	/	/	/	/	/	/
Code SET <sup>※1</sup>	/	/	/	/	/	/
Speed Dial <sup>※1</sup>	/	/	/	/	/	/
Public Address	/	/	/	/	/	/
EXT. ACC1	/	/	/	/	/	/
EXT. ACC2	/	/	/	/	/	/
Direct CH#1	/	/	/	/	/	/
Direct CH#2	/	/	/	/	/	/
AF Min Vr	/	/	/	/	/	/
Lone Worker	/	/	/	/	/	/
HA (Horn Alert)	/	/	/	/	/	/
Key Lock	/	/	/	/	/	/
SET <sup>※1</sup>	/	/	/	/	/	/

※1: These functions cannot assign to **VX-2100**

※2: Requires optional unit

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## **ADVANCED OPERATION**

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### **Description of Operating Functions**

#### **MONITOR (MONI)**

Press (or press and hold) the assigned programmable key to cancel CTCSS- and DCS-controlled squelch; the **TX/BUSY** indicator will glow green

#### **SQUELCH (SQL) OFF**

Press (or press and hold) the assigned programmable key to open the SQL to hear background noise (unmute the audio); the **TX/BUSY** indicator will blink green.

#### **SQUELCH (SQL) SET**

You can manually adjust the squelch level using this function:

- Press (or press and hold) the assigned programmable key. A tone will sound, and the current squelch level appears on the display.
- Press the [▼]/[▲] button to select the desired squelch level.
- Press this key again. A tone will sound, and the display will revert to the normal channel indication.

#### **DIMMER**

Press (or press and hold) the assigned programmable key to select the brightness level of the display. Available selections are four levels.

#### **CHANNEL UP/DOWN**

Press (or press and hold) the assigned programmable key (generally the [▼]/[▲] button) to select a different channel within the current group.

#### **CC UP/DOWN (CONTINUOUS CH UP/DOWN)**

Press and holding in the assigned programmable key causes the radio to begin stepping (repeatedly) upward or downward through the channels.

#### **GROUP UP/DOWN (This function is only available in the VX-2200)**

Press (or press and hold) the assigned programmable key to select a different group of channels

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## ADVANCED OPERATION

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### CHANNEL SCAN (SCAN)

The Scanning feature is used to monitor multiple channels programmed into the transceiver. While scanning, the transceiver will check each channel for the presence of a signal, and will stop on a channel if a signal is present.

#### **To activate scanning:**

- Press (or press and hold) the assigned programmable key to activate scanning on the current group.
- The scanner will search the programmed channels, looking for active ones; it will pause each time it finds a channel on which someone is speaking.
- Press (or press and hold) the assigned programmable key again to disable scanning. Operation will revert to the programmed revert channel.

*Note:* Your dealer may have programmed your radio to stay on one of the following channels:

- Current channel (“Talk Back”)
- “Last Busy” channel
- “Priority” channel
- “Scan Start” channel

### SCAN SET

Press (or press and hold) the assigned programmable key to delete the Current Memory channel from the Scanning.

In the **VX-2100**, when you delete a channel, the decimal point “.” will disappear from the Channel Number Indicator. To restore a particular channel to your scanning list, press (or press and hold) the assigned programmable key again; the decimal point “.” will appear on the Channel Number Indicator.

In the **VX-2200**, when you delete a Group or channel, “- **SKIP-**” will appear on the LCD for one second after pressing the assigned programmable key. To restore a particular channel to your scanning list, press (or press and hold) the assigned programmable key again; “- **STOP-**” will appear on the LCD for one second after pressing the assigned programmable key.

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## ADVANCED OPERATION

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### **GROUP SCAN** (This function is only available in the VX-2200)

The Scanning feature is used to monitor multiple channels programmed into the transceiver. While scanning, the transceiver will check each channel of the programmed group for the presence of the signal, and will stop on a channel if a signal is present.

Press (or press and hold) the assigned programmable key to activate the scanning on the selected groups.

### **GROUP SCAN SET** (This function is only available in the VX-2200)

You may wish to have the Scanner pass through more than one Group during the scanning process (normally, scanning is performed within the current group only). *To include the current Group in the scanning loop*, press (or press and hold) the assigned programmable key. *To remove a Group from Group Scan*, press (or press and hold) the assigned programmable key again.

### **DUAL WATCH (DW)**

The Dual Watch feature is similar to the SCAN feature, except that only two channels are monitored:

- The current operating channel; and
- The Priority channel.

#### **To activate Dual Watch:**

- ❑ Press (or press and hold) the assigned programmable key.
- ❑ The scanner will search the two channels; it will pause each time it finds a channel on which someone is speaking.

#### **To stop Dual Watch:**

- ❑ Press (or press and hold) the assigned programmable key.
- ❑ Operation will revert to the “Dual Watch Start” channel.

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## ADVANCED OPERATION

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### FOLLOW-ME SCAN

“Follow-Me” Scan feature checks a User-assigned Priority Channel regularly as you scan the other channels. Thus, if only Channels 1, 3, and 5 (of the 8 available channels) are designated for “Scanning,” the user may nonetheless assign Channel 2 as the “User-assigned” Priority Channel via the “Follow-Me” feature.

To activate “Follow-Me” scanning, first select the channel you want to designate as the “User-Assigned Priority Channel” and press (or press and hold) the assigned programmable key. Then press (or press and hold) the Channel Up/Down key (generally the [▼]/[▲] button) to recall to the “Scanning Start” channel which has been programmed by your dealer to activate the scanner. When the scanner stops on an “Active” channel, the User-assigned Priority Channel will automatically be checked every few seconds; if activity is found on the User-assigned Priority Channel, the radio will switch between it and the Dealer-Assigned Priority Channel, if any.

### FOLLOW-ME DUAL WATCH (DW)

To set up a “Dual Watch” frequency pair using the “Follow-Me” feature, select a channel using the Channel Up/Down key (generally the [▼]/[▲] button). Now press (or press and hold) the assigned programmable key; pressing the assigned programmable key locks the current channel as the User-assigned Priority Channel. Now press (or press and hold) the Channel Up/Down key to select another channel (not the “Scanning Start” channel). Your radio will now switch back-and-forth between the currently-selected channel and the User-assigned Priority Channel.

During “Follow-Me” scanning (after you have pressed the key), you can set up the “Dual Watch” feature by pressing (or press and holding) the Channel Up/Down key to another channel. The radio will then scan back and forth between the original User-assigned Priority Channel and the newly-selected channel.

The Priority Channel you have assigned (before pressing the key) will be retained in memory until you change it.

### LOW POWER (LOW)

Press (or press and hold) the assigned programmable key to set the radio’s transmitter to the “Low Power” mode. Press (or press and hold) the key again to return to “High Power” operation when in difficult terrain.

In the **VX-2200**, when the radio’s transmitter is set to “Low Power” mode, the “**Low**” icon will be indicated on the display.

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## ADVANCED OPERATION

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### TALK AROUND (TA)

Press (or press and hold) the assigned programmable key to activate the Talk Around feature when you are operating on duplex channel systems (separate receive and transmit frequencies, utilizing a “repeater” station). The Talk Around feature allows you to bypass the repeater station and talk directly to a station that is nearby. This feature has no effect when you are operating on “simplex” channels, where the receive and transmit frequencies are already the same.

In the **VX-2200**, when the “TA” function is activated, the “” icon will be indicated on the display.

Note that your dealer may have mode provision for “Talk Around” channels by programming “repeater” and “Talk Around” frequencies on two adjacent channels. If so, the key may be used for one of the other Pre-Programmed Functions.


### TA SCAN

The “TA SCAN” is one of “DW Scan” between Rx and Tx frequency. It works the Rx channel as priority channel and the radio will always transmit on the Tx Channel if the PTT is pressed in the TA SCAN mode.

Press (or press and hold) the assigned programmable key to activate/deactivate the TA SCAN feature.

### ENCRYPTION (OPTION)

When the Voice Scrambler feature is enabled, press (or press and hold) the assigned programmable key to toggle the voice encryption on and off.

In the **VX-2200**, when the Voice Scrambler feature is activated, the “” icon will be indicated on the display.

### EMERGENCY

The **VX-2100/-2200** series include an “Emergency” feature which may be useful if you have someone monitoring on the same frequency as your transceiver’s channel.

Press (or press and hold) the assigned programmable key to initiate an emergency call. For further details contact your Motorola Solutions dealer.

### RESET

Press (or press and hold) the assigned programmable key to reset the RFC (Ready for Communication) condition, or to reset the keypad entry condition.



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## ADVANCED OPERATION

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### CALL 1 TO CALL 3

Press (or press and hold) the assigned programmable key to send a 2-Tone or 5-Tone sequential burst which is pre-defined.

### DTMF CODE SET (This function is only available in the VX-2200)

Press (or press and hold) the assigned programmable key to start storing the DTMF dialing sequence. After completion to enter all DTMF digits, you can transmit the codes by pressing the **PTT** key.

### CODE UP/DOWN (This function is only available in the VX-2200)

Press (or press and hold) the assigned programmable key to select a 2-Tone or 5-Tone encode code from pre-defined encode list.

### CODE SET (This function is only available in the VX-2200)

Press (or press and hold) the assigned programmable key to change the 5-Tone encoding digit. To change the tones, select the desired digit using the [P1]/[P2] keys, then change the number using the [▼]/[▲] keys.

### SPEED DIAL (This function is only available in the VX-2200)

Your Dealer may have pre-programmed Auto-Dial telephone number memories into your radio.

To dial a number, press (or press and hold) the assigned programmable key, then press the microphone's key corresponding to the Auto-Dial memory number list provided by your Dealer if the keypad microphone is using, or press the **PTT** key if the normal (without keypad) microphone is using. The DTMF tones sent during the dialing sequence will be heard in the speaker.

### PUBLIC ADDRESS

Press (or press and hold) the assigned programmable key to use the transceiver as a PA amplifier.

In the **VX-2200**, when you enable this function, a tone sounds and "**PUBLIC A**" will appear on the display. The public address can be used even while scanning and receiving a call.

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## **ADVANCED OPERATION**

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### **EXT. ACC1**

Press (or press and hold) the assigned programmable key to toggle output port on “1” “on” and “off.”

### **EXT. ACC2**

Press (or press and hold) the assigned programmable key to toggle output port on “2” “on” and “off.”

### **DIRECT CH#1/CH#2**

Press (or press and hold) the assigned programmable key to recall the Dealer pre-programmed channel directly.

### **AF MIN VR**

Press (or press and hold) the assigned programmable key to reduce the audio output to the (lower) level programmed by your Dealer.

### **LONE WORKER**

Press (or press and hold) the assigned programmable key to toggle the Lone Worker feature “On” and “Off.”

The Lone Worker feature is designed to emit an alarm for 30 seconds when the Lone Worker Timer (programmed by your Dealer) has expired. If the user does not reset the timer by pressing the **PTT** switch, the radio switches to the Emergency mode.

To revive the radio from the Emergency mode, just press (or press and hold) the programmable key which is assigned the Emergency feature or turn off the radio.

### **HA (HORN ALERT)**

Press (or press and hold) the assigned programmable key to turn the Horn Alert function “ON” or “OFF.” If you receive a call from the base station with 2-Tone, 5-Tone or DTMF signaling, horn alert will be activated and your vehicles horn will sound.

In the **VX-2200**, when you turn the Horn Alert “ON,” a tone will sound and the “**HORN ALT**” will appear on the display.

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## ADVANCED OPERATION

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### **KEY LOCK**

Press (or press and hold) the assigned programmable key to lock the various aspects of the transceiver's keys. The precise lockout configuration must be programmed by your Motorola Solutions dealer.

### **SET (This function is only available in the VX-2200)**

Press the assigned programmable key to activate the "User Set" (Menu) Mode.

### **ARTS (Auto Range Transpond System)**

This system is designed to inform you when you and another ARTS-equipped station are within communication range.

During ARTS operation, when the radio receives an incoming ARTS signal, a short beep will sound, and "**IN SVC**" ("In Service") will be displayed on the LCD for 2 seconds<sup>✱</sup>. If you move out of range for more than two minutes, your radio senses that no signal has been received; a short triple-beep will sound, and "**OUT SVC**" ("Out of Service") will be displayed on the LCD for 2 seconds<sup>✱</sup>. If you subsequently move back into communication range, as soon as the other station transmits, a short beep will sound and "**IN SVC**" will be displayed again on the LCD for 2 seconds<sup>✱</sup>.

✱: **VX-2100** only.

### **DTMF Paging System**

**(Requires the optional FVP-25 Encryption/DTMF Pager Unit)**

This system allows paging and selective calling, using DTMF tone sequences.

When your radio is paged by a station bearing a tone sequence which matches yours, your radio's squelch will open and the alert will sound.

In the **VX-2200**, the three-digit code of the station which paged you will be displayed on your radio's LCD.

## USER SET MODE

The **VX-2200** includes a “User Set” (Menu) Mode which allows the user to define or configure various settings, such as Squelch, Display contrast, etc. To activate the “User Set” (Menu) Mode:

- Press the programmable key assigned to the “**SET**” function.
- Select the User Set Mode item you wish to change using the [**P1**]/[**P2**] keys, then use the [**▼**]/[**▲**] keys to adjust the setting of the selected item.
- Press the programmable key assigned to the “**SET**” function to exit to normal operation.

DISPLAY	DESCRIPTION
<b>SQL</b>	Sets the Squelch level.
<b>BEEP</b>	Enables/Disables the Key Beeper.
<b>BELL</b>	Enables/Disables the Bell function. (alert tone activated by incoming subaudible CTCSS/DCS tone)
<b>LIGHTING</b>	Enables/Disables the BUSY/TX LED.
<b>GROUP</b>	Select the desired Channel Group.
<b>SCAN</b>	Engages/Disengages Scanning (same as the programmable [ <b>SCAN</b> ] key).
<b>DW</b>	Engages/Disengages Dual Watch (same as the programmable [ <b>DW</b> ] key).
<b>TA</b>	Engages/Disengages Talk Around (same as the programmable [ <b>TA</b> ] key).
<b>ENCRYPT*</b>	Enables/Disables the disabling the Encryption Unit temporarily. <b>ENB</b> : Enables the disabling the Encryption Unit. <b>DIS</b> : Disables the disabling the Encryption Unit.
<b>AF MINVR</b>	Sets the minimum Audio Volume level.
<b>BEEP VR</b>	Sets the Beep Volume level.
<b>CONTRAST</b>	Sets the LCD Contrast level.
<b>DIMMER</b>	Sets the brightness of the LCD backlighting.

\*: Requires optional unit

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## OPTIONAL ACCESSORIES

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<b>MD-12A8J</b>	Desktop Microphone
<b>MH-67A8J</b>	Standard Microphone
<b>MH-75A8J</b>	16 Keypad Microphone
<b>MLS-100</b>	External Speaker (12 W Peak Power)
<b>MLS-200</b>	External Speaker (15 W Peak Power)
<b>FVP-25</b>	DTMF Paging/Voice Inversion Type Encryption Unit
<b>FVP-36</b>	Voice Inversion Type Encryption Unit
<b>FVP-35</b>	High Level Encryption Unit
<b>VME-100</b>	ANI Encode Unit (MDC-1200®/GE-STAR® ANI ENCODE)
<b>LF-1</b>	Line Filter
<b>CE82</b>	PC Programming Software
<b>FIF-12</b>	USB Programming Interface
<b>CT-104A</b>	Connection Cable for FIF-12
<b>CT-4</b>	Cloning Cable
<b>Q0000075</b>	Spare Fuse for 45/50 W model (15 A, 32 V)
<b>Q0000112</b>	Spare Fuse for 25 W model (10 A, 32 V)

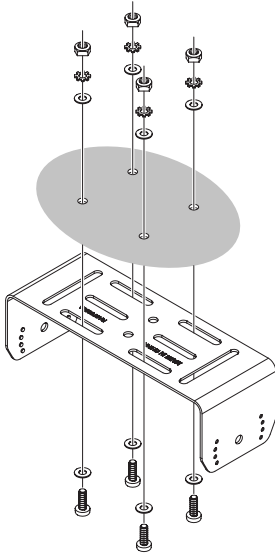
*Availability of accessories may vary; some accessories are supplied standard per local requirements, others may be unavailable in some regions.*

*Check with your Motorola Solutions Dealer for changes to this list.*

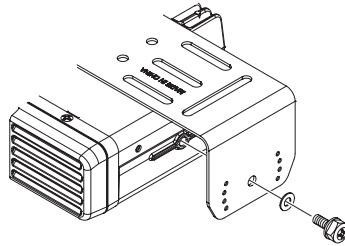
### NOTICE !

There are no owner-serviceable parts inside the transceiver. All service jobs must be referred to an authorized Motorola Solutions Service Representative. Consult your Authorized Motorola Solutions Dealer for installation of optional accessories.

## INSTALLATION TIPS



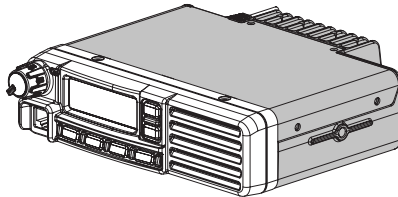
The **VX-2100/-2200** may be installed in almost any location, but should not be positioned near a heating vent nor anywhere where it might interfere with driving (either visually or mechanically). Make sure to provide plenty of space on all sides of the transceiver so that air can flow freely around the radio's case. We recommend 2 inches (5 cm) or more. Refer to the diagrams showing proper installation procedures.



### **WARNING**

This transceiver's body is designed as the heat sink, except the front panel. Therefore, the transceiver's body becomes very hot during transmission.

When install the transceiver, take the setting method that does not touch these areas (show in Gray Color at the illustration below) during usage.



### **DISPOSAL OF YOUR ELECTRONIC AND ELECTRIC EQUIPMENT**

Products with the symbol (crossed-out wheeled bin) cannot be disposed as household waste.

Electronic and Electric Equipment should be recycled at a facility capable of handling these items and their waste by products.

In EU countries, please contact your local equipment supplier representative or service center for information about the waste collection system in your country.



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# WARRANTY POLICY

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Motorola Solutions warrants, to the original purchaser only, its Motorola Solutions manufactured communications products against defects in materials and workmanship under normal use and service for a given period of time from the date of purchase.

## Limited Warranty Details:

Contact the authorized Motorola Solutions dealer in your country.

### ATTENTION IN CASE OF USE

This transceiver works on frequencies which are not generally permitted.

For frequency allocation, apply for a licence at your local spectrum management authority.

For actual usage contact your dealer or sales shop in order to get your transceiver adjusted to the allocated frequency range.

LIST OF THE PRACTICABLE AREA				
AUT	BEL	CYP	CZE	DNK
EST	FIN	FRA	DEU	GRC
HUN	ISL	IRL	ITA	LVL
LIE	LTU	LUX	MLT	NLD
NOR	POL	PRT	SVL	SVN
ESP	SWE	CHE	GBR	---

### MODEL DIFFERENCE

MODEL	FREQUENCY RANGE	TX POWER	MODEL	FREQUENCY RANGE	TX POWER
VX-2100-D0-25	134-174 MHz	25 W	VX-2100-G6-45	400-470 MHz	45 W
VX-2200-D0-25	134-174 MHz	25 W	VX-2200-G6-45	400-470 MHz	45 W
VX-2100-D0-50	134-174 MHz	50 W	VX-2100-G7-25	450-520 MHz	25 W
VX-2200-D0-50	134-174 MHz	50 W	VX-2100-G7-45	450-520 MHz	45 W
VX-2100-G6-25	400-470 MHz	25 W	VX-2200-G7-25	450-520 MHz	25 W
VX-2200-G6-25	400-470 MHz	25 W	VX-2200-G7-45	450-520 MHz	45 W

Part 15.21: Changes or modifications to this device not expressly approved by Motorola Solutions could void the user's authorization to operate this device.



## **Motorola Solutions, Inc.**

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