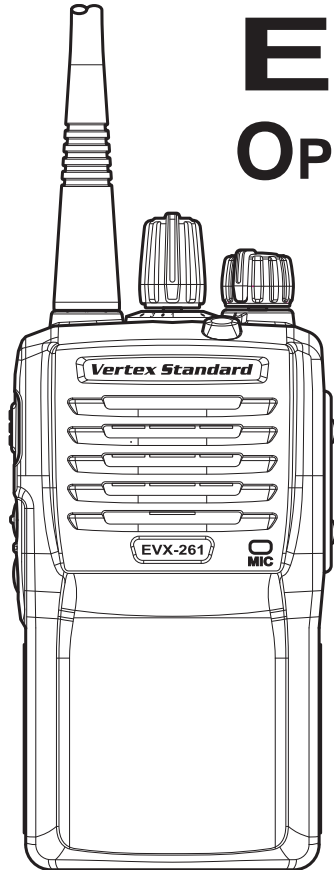




# EVX-261

## OPERATING MANUAL



### PROGRAMMABLE FUNCTIONS/FEATURES

- IP55 Water Resistant
- Two Programmable Function Keys
- 2-Tone Encode/Decode
- 5-Tone Encode/Decode
- MDC-1200® Encode (ANI Encode)
- DTMF Encode
- Scan
- Dual Watch
- Follow-Me Scan
- Talk Around Scan
- Encryption
- VOX
- Talk Around
- Emergency
- Selective Call (2-Tone/5-Tone/Digital)
- Remote Control Decoder (Digital only)
- Transmit Battery Saver
- ARTS™ (Auto Range Transpond System)

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### Congratulations!

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

#### Important Note

- There are no owner-serviceable parts inside the radio. All service jobs must be referred to an authorized Vertex Standard Service Representative.
- In order to maintain the specified water integrity performance, periodic maintenance is recommended.
- Should the radio sustain a severe shock (e.g. if it is dropped), the water integrity may be compromised, requiring service. Should this occur, contact your Authorized Vertex Standard Dealer.

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## INTRODUCTION

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The **EVX-261** is full-featured Hand-Held Digital/Analog Transceiver designed for business communications in the VHF/UHF Land Mobile bands. The **EVX-261** supports up to 16 user configurable channels supporting a wide variety of business applications.

Channel frequency data for the transceiver is stored in flash memory, which is easily programmed by Vertex Standard licensed dealers using a standard PC and the following Vertex Standard programming equipment:

- 1) **FIF-12** USB programming interface
- 2) **CT-106** radio programming cable
- 3) **CE156** PC programming Software

Additional radio to radio programming can be achieved with a **CT-27** Cloning cable.

This manual will describe in detail the many advanced features of the **EVX-261**. 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.

### **Important Notice 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.

Warning - Frequency band 406 - 406.1 MHz is reserved for use ONLY as a distress beacon by the US Coast Guard and NOAA. Under no circumstance should this frequency band be part of the pre programmed operating frequencies of this radio.

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## CLASS B DIGITAL DEVICE

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NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

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## WARNING! FCC RF EXPOSURE REQUIREMENTS

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THIS DEVICE COMPLIES WITH PART 15 OF THE FCC RULES. OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS: (1) THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE, AND (2) THIS DEVICE MUST ACCEPT ANY INTERFERENCE RECEIVED, INCLUDING INTERFERENCE THAT MAY CAUSE UNDESIRE OPERATION.

This Radio has been tested and complies with the Federal Communications Commission (FCC) RF exposure limits for Occupational Use/Controlled exposure environment. In addition, it complies with the following Standards and Guidelines:

- FCC 96-326, Guidelines for Evaluating the Environmental Effects of Radio-Frequency Radiation.
- FCC OET Bulletin 65 Edition 97-01 (2001) Supplement C, Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields.
- ANSI/IEEE C95.1-1992, IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz.
- ANSI/IEEE C95.3-1992, IEEE Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields - RF and Microwave.

**⚠ WARNING:**

This radio generates RF electromagnetic energy during transmit mode. This radio is designed for and classified as **Occupational Use Only**, meaning it must be used only during the course of employment by individuals aware of the hazards, and the ways to minimize such hazards. This radio is not intended for use by the General Population in an uncontrolled environment.

**⚠ CAUTION:**

To ensure that your expose to RF electromagnetic energy is within the FCC allowable limits for occupational use, always adhere to the following guidelines:

- This radio is NOT approved for use by the general population in an uncontrolled exposure environment. This radio is restricted to occupational use, work related operations only where the radio operator must have the knowledge to control his or her RF exposure conditions.**

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## WARNING! FCC RF EXPOSURE REQUIREMENTS

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- When transmitting, hold the radio in a vertical position with its microphone 1 inch (2.5 cm) away from your mouth and keep the antenna at least 1 inch (2.5 cm) away from your head.
- Transmit no more than the rated duty factor of 50% of the time. To transmit (talk), push the Push-To-Talk (PTT) button. To receive calls, release the PTT button. The PTT button may reside on the radio itself or may be hosted on approved accessories. Transmitting 50% of the time, or less, is important because this radio generates measurable RF energy exposure only when transmitting (in terms of measuring for standards compliance).  
The radio is transmitting when the red LED on the top of the radio is illuminated.
- In front of the face. Hold the radio in a vertical position with the microphone (and other parts of the radio including the antenna) at least 1 inch (2.5 cm) away from the nose or lips. Keeping the radio at a proper distance is important to ensure compliance.
- **Body Worn Operation:** When worn on the body, always place the radio in a Vertex Standard approved clip, holder, holster, case, or body harness for this product. Using approved body-worn accessories is important because the use of non-Vertex Standard approved accessories may result in exposure levels, which exceed the occupational/controlled environment RF exposure limits.
- Always use Vertex Standard authorized accessories.
- The information listed above provides the user with the information needed to make him or her aware of RF exposure, and what to do to assure that this radio operates with the FCC RF exposure limits of this radio.
- **Electromagnetic Interference/Compatibility**  
During transmissions, this radio generates RF energy that can possibly cause interference with other devices or systems. To avoid such interference, turn off the radio in areas where signs are posted to do so.  
Do not operate the transmitter in areas that are sensitive to electromagnetic radiation such as hospitals, health care facilities, aircraft, and blasting sites.

## WARNING! IC RSS GENERAL REQUIREMENT

### ENGLISH

- ❑ This device complies with Industry Canada’s license-exempt RSSs. Operation. Operation is subject to the following two conditions:
  - (1) This device may not cause interference; and
  - (2) This device must accept any interference, including interference that may cause undesired operation of the device.
- ❑ Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.
- ❑ This radio transmitter (identify the device by certification number, or model number if Category II) has been approved by Industry Canada to operate with the antenna types listed at the right with the maximum permissible gain and required antenna impedance for each antenna type indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.
 

VHF MODEL	UHF MODEL
ATV-8A: -2.15 dBi, 50-ohm	ATU-6A: -2.15 dBi, 50-ohm
ATV-8B: -2.15 dBi, 50-ohm	ATU-6B: -2.15 dBi, 50-ohm
ATV-8C: -2.15 dBi, 50-ohm	ATU-6C: -2.15 dBi, 50-ohm
ATV-6XL: -2.15 dBi, 50-ohm	ATU-6D: -2.15 dBi, 50-ohm
	ATU-6F: -2.15 dBi, 50-ohm
	ATU-6DS: -2.15 dBi, 50-ohm
- **When transmitting, hold the radio in a vertical position with its microphone 1 inch (2.5 cm) away from your mouth and keep the antenna at least 1 inch (2.5 cm) away from your head.**
- **The radio must be used with a maximum operating duty cycle not exceeding 50%, in typical Push-to-Talk configurations.**  
**DO NOT transmit for more than 50% of total radio use time (50% duty cycle). Transmitting more than 50% of the time can cause IC RSS General Requirement to be exceeded. The radio is transmitting when the red LED on the top of the radio is illuminated.**
- **Body Worn Operation: When worn on the body, always place the radio in a Vertex Standard approved clip, holder, holster, case, or body harness for this product. Using approved body-worn accessories is important because the use of non-Vertex Standard approved accessories may result in exposure levels, which exceed the occupational/controlled environment RF exposure limits.**

## WARNING! IC RSS GENERAL REQUIREMENT

### FRENCH

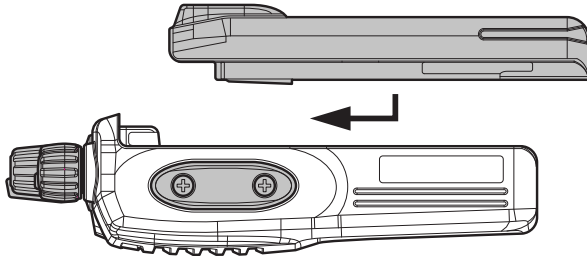
- ❑ Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :
    - (1) l'appareil ne doit pas produire de brouillage, et
    - (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.
  - ❑ Conformément à la réglementation d'Industrie Canada, le présent émetteur radio peut fonctionner avec une antenne d'un type et d'un gain maximal (ou inférieur) approuvé pour l'émetteur par Industrie Canada. Dans le but de réduire les risques de brouillage radioélectrique à l'intention des autres utilisateurs, il faut choisir le type d'antenne et son gain de sorte que la puissance isotrope rayonnée équivalente (p.i.r.e.) ne dépasse pas l'intensité nécessaire à l'établissement d'une communication satisfaisante.
  - ❑ Le présent émetteur radio (identifier le dispositif par son numéro de certification ou son numéro de modèle s'il fait partie du matériel de catégorie I) a été approuvé par Industrie Canada pour fonctionner avec les types d'antenne énumérés dans le droit et ayant un gain admissible maximal et l'impédance requise pour chaque type d'antenne. Les types d'antenne non inclus dans cette liste, ou dont le gain est supérieur au gain maximal indiqué, sont strictement interdits pour l'exploitation de l'émetteur.
- | VHF MODÈLE                 | UHF MODÈLE                 |
|----------------------------|----------------------------|
| ATV-8A: -2.15 dBi, 50-ohm  | ATU-6A: -2.15 dBi, 50-ohm  |
| ATV-8B: -2.15 dBi, 50-ohm  | ATU-6B: -2.15 dBi, 50-ohm  |
| ATV-8C: -2.15 dBi, 50-ohm  | ATU-6C: -2.15 dBi, 50-ohm  |
| ATV-6XL: -2.15 dBi, 50-ohm | ATU-6D: -2.15 dBi, 50-ohm  |
|                            | ATU-6F: -2.15 dBi, 50-ohm  |
|                            | ATU-6DS: -2.15 dBi, 50-ohm |
- **Pour émettre, tenez votre radio verticalement en plaçant le microphone entre 2,5 cm de la bouche. L'antenne doit toujours être à plus de 2,5 cm de votre tête.**
  - **Le temps total d'émission de la radio ne doit pas dépasser 50% du temps de fonctionnement dans une configuration normale avec alternat.**  
Par conséquent, vous ne devez PAS émettre pendant plus de 50% du temps total d'utilisation de la radio. La radio émet lorsque le voyant LED rouge (situé au sommet de la radio) est allumé.
  - **Utilisation lorsque la radio est portée sur soi: Lorsque la radio est portée sur soi, utilisez toujours une pince ou une attache de ceinture, placez-la dans un étui ou dans un harnais pour le corps approuvé par Vertex Standard pour ce produit. Il est important d'utiliser des accessoires ajustés au corps qui sont approuvés, car dans le cas contraire, l'utilisateur risque de s'exposer à des niveaux d'énergie de RF supérieurs aux limites établies pour les environnements professionnels ou à exposition contrôlée.**



## BEFORE YOU BEGIN

### Battery Pack Installation and Removal

- ❑ To install the battery pack, align the battery pack to the radio with an offset about 1/2 inch (1.5 cm) from the top edge of battery compartment, then slide the battery pack upward until it locks in place with a “Click.”



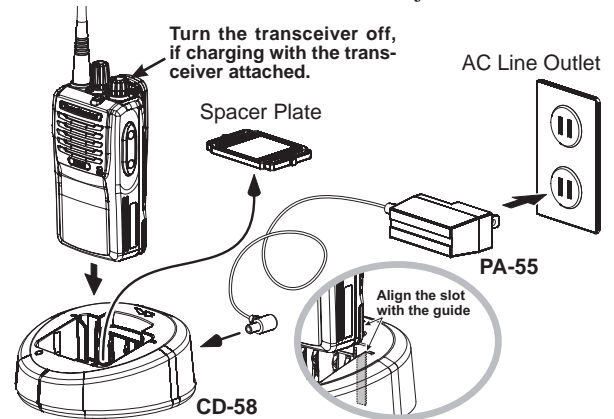
- ❑ To remove the battery, turn the radio off and remove any protective cases. Slide the Battery Pack Latch on the bottom of the radio toward the front panel while sliding the battery down about 1/2 inch (1.5 cm). Then lift the battery out from the radio.



**Do not attempt to open any of the rechargeable Lithium-Ion packs, as they could explode if accidentally short-circuited.**

### Battery Charging

- ❑ Remove the Spacer Plate from the nest of the optional **CD-58** Desktop Charger, if the Battery Spacer is installed.
- ❑ Insert the DC plug from the optional **PA-55** AC Adapter into the DC jack on the rear panel of the optional **CD-58** Desktop Charger, and then connect the **PA-55** AC Adapter to the AC line outlet.
- ❑ Insert the battery pack into the **CD-58** Desktop Charger while aligning the slots of the battery pack with the guides in the nest of the **CD-58**; refer to the following illustration for details on proper positioning of the battery pack. If charging with the transceiver attached, turn the transceiver off. The antenna jack should be at



## BEFORE YOU BEGIN

the left side when viewing the charger from the front.

- ❑ If the battery pack is inserted correctly, the LED indicator will glow red. A fully-discharged battery pack will charge completely in 1.5 - 4.5 hours (depending on the battery pack being charged).
- ❑ When charging is completed, the LED indicator will change to green.
- ❑ Disconnect the battery pack from the **CD-58** Desktop Charger and unplug the **PA-55** AC Adapter from the AC line outlet.



**1) Always use the Vertex Standard FNB-V133LI-UNI, FNB-V134LI-UNI Lithium-Ion Battery Pack, or FNB-V136-UNI Nickel-Metal Hydride Battery Pack.**

**2) Use only the Vertex Standard CD-58 Desktop Charger with the PA-55 AC Adapter, or Vertex Standard approved Charger.**

**3) To reduce the risk of explosion, recharge the batteries outside of hazardous locations.**

**4) Perform the battery charging where the ambient temperature range +41 °F to +104 °F (+5 °C to +40 °C). Charging outside of this temperature range could cause damage to the battery pack.**

**5) Battery Pack should not be exposed to excessive heat such as sunshine, fire, or similar heat sources.**

**6) Risk of explosion exists if battery is replaced by an incorrect type. Refer to the enclosed instructions for disposal of used batteries.**

**7) When charging a Battery Pack alone (not attached to the transceiver), do not allow any metal object to short the terminals of the Battery Pack.**

**8) Do not allow any metal objects to short the terminals in the nest of the CD-58 Desktop Charger, as a short-circuit could cause overheating of the charger circuitry and create an electrical hazard.**

**9) For further details and cautions of the charging, refer to the Operating Manual of the CD-58 Desktop Charger.**

### Low Battery Indication

As the battery discharges during use, the voltage gradually becomes lower. When the battery voltage becomes too low, substitute a freshly charged battery and recharge the depleted pack. The LED indicator on the top of the radio will blink red when the battery voltage is low.

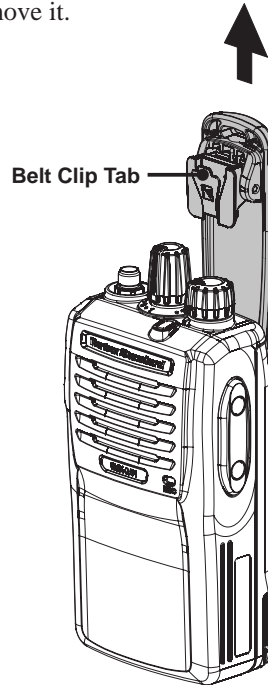
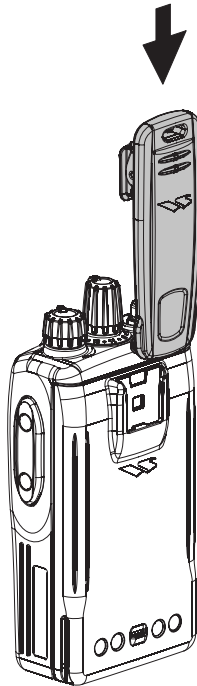
#### CAUTION

Danger of explosion if battery is replaced with an incorrect battery. Replace only with the same or equivalent type.

## BEFORE YOU BEGIN

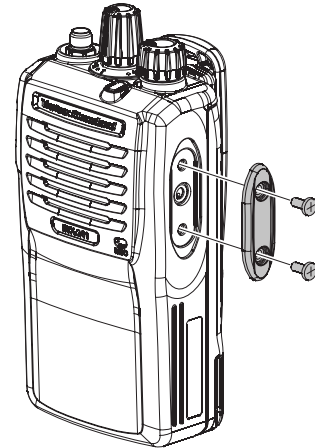
### Belt Clip Installation and Removal

- ❑ To install the Belt Clip: align the Belt Clip to the groove of the Battery pack, then press the Belt Clip downward until it locks in place with a “Click.”
- ❑ To remove the Belt Clip: use a flat head screw driver to press the Belt Clip Tab away from the battery pack to unlock the Belt Clip, then slide the Belt Clip upward to remove it.



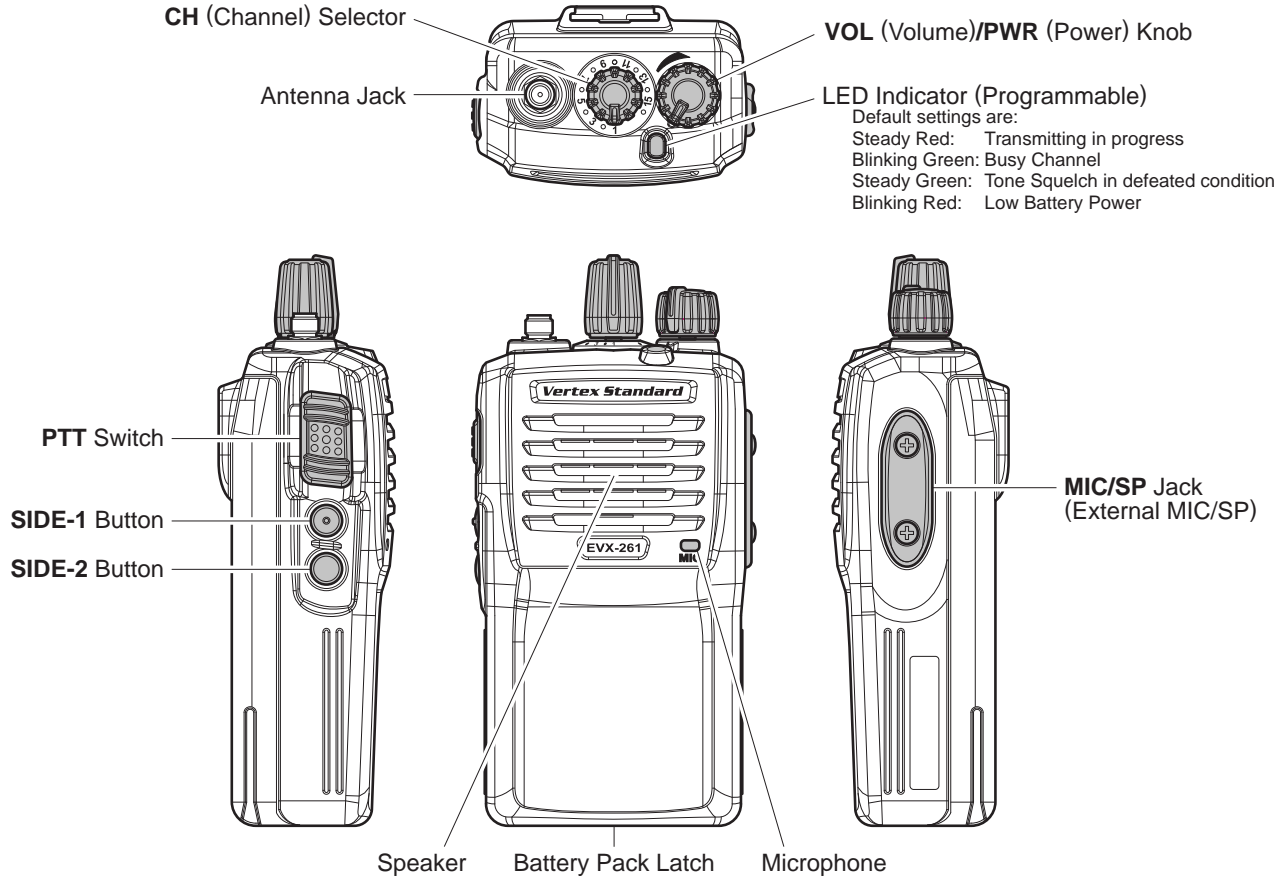
### MIC/SP CAP Installation

Install the **MIC/SP** cap with the supplied screws.



- ❑ Use only the supplied screws when install the **MIC/SP** cap.
- ❑ This radio does not keep the Water Resistant Rating (IP55) when the **MIC/SP** cap is not installed in the **MIC/SP** jack.

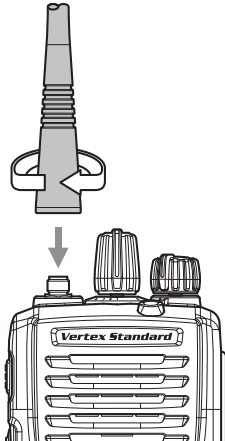
## CONTROLS & CONNECTORS



## OPERATION

### Preliminary Steps

- ❑ Install a charged battery pack onto the transceiver, as described previously.
- ❑ Screw the supplied antenna onto the Antenna jack.  
It is not recommended to operate this transceiver without an antenna connected.
- ❑ If you have a Speaker/Microphone, we recommend that it not be connected until you are familiar with the basic operation of the **EVX-261**. Refer to next page for more information about Speaker/Microphone usage.

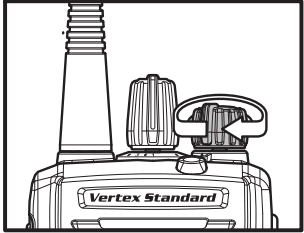
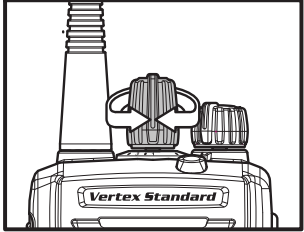
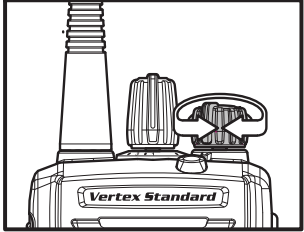


#### IMPORTANT NOTE

The water resistance rating of the transceiver (IP55) is assured only when the following conditions are met:

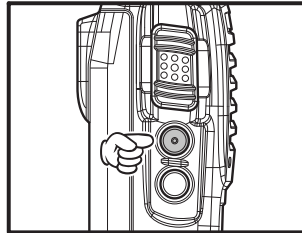
- ❑ Battery pack is attached to the transceiver;
- ❑ Antenna is connected to the antenna jack;
- ❑ **MIC/SP** cap is installed in the **MIC/SP** jack.
- ❑ Use of a speaker microphone in the **MIC/SP** jack negates the IP55 rating.

### Operation Quick Start

- ❑ Turn the top panel's **VOL/PWR** knob clockwise to turn the radio on.
- 
- ❑ Turn the top panel's **CH** Selector knob to choose the desired operating channel.
- 
- ❑ Rotate the **VOL/PWR** knob to set the volume level. If no signal is present, press (or press and hold) the Programmable key (assigned to the "**SQL OFF**" function: Normally **SIDE-1** button); background noise will now be heard, and you may use this to set the **VOL/PWR** knob for the desired audio level. Press (or press and hold) the Programmable key again to quiet the
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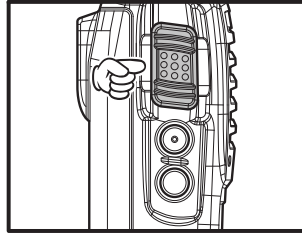
## OPERATION

noise and resume normal (quiet) monitoring.

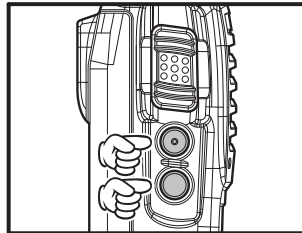


- ❑ To transmit, monitor the channel and make sure it is clear.

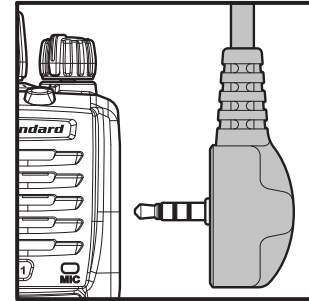
Press and hold the **PTT** switch. Speak into the microphone area of the front panel grille in a normal voice level. To return to the Receive mode, release the **PTT** switch.



- ❑ Press (or press and hold) the **SIDE-1** or **SIDE-2** button to activate one of the pre-programmed functions programmed using **CE156** software by your Vertex Standard authorized dealer. See the next chapter for details regarding feature availability for this radio.



- ❑ If a Speaker/Microphone is available, remove the plastic cap and its two mounting screws from the right side of the transceiver, then insert the plug of the Speaker/Microphone into the **MIC/SP** jack; secure the plug using the screws supplied with the Speaker/Microphone. Hold the speaker grille up next to your ear while receiving. To transmit, press the **PTT** switch on the Speaker/Microphone, just as you would on the main transceiver's body, and speak into the microphone on a normal voice level.



*Note 1): Save the original plastic cap and its mounting screws. They should be reinstalled when not using the Speaker/Microphone.*

*2) When you press the PTT switch on the Speaker/Microphone, it disables the internal microphone, and vice versa.*

- ❑ This radio have two modes of DMR operation to maximize spectrum efficiency. Standard operation requires use of a TDMA repeater (such as the **EVX-R70**) to utilize the repeater's dual time slot capability for doubling your radio fleet's communication paths for up

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## OPERATION

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to two simultaneous transmissions. The second mode is **Direct mode**, which enables two communications paths on a single frequency, doubling your capacity with only the subscriber radios. No repeater is necessary when operating in Direct mode.

- ❑ If the BCLO (Busy Channel Lockout) feature has been programmed on an **analog channel**, the radio will not transmit when a carrier is present. Instead, the radio will generate short beep three times. Release the **PTT** switch and wait for the channel to be clear of activity.
- ❑ If the BTLO (Busy Tone Lockout) feature has been programmed on an **analog channel** or CCLO (Color Code Lockout) feature has been programmed on a **digital channel**, the radio can transmit only when there is no carrier being received or when the carrier being received includes the correct tone (CTCSS tone or DCS code) on an **analog channel** or correct code on a **digital channel**.

### Digital Mode Specific Features

When operating on a **digital channel**, a priority user can be assigned a variety of control functionality when programmed with the CE156 software. The control feature descriptions are as follow:

#### Interrupt:

A priority user radio can interrupt a current transmission on an active channel, ending the transmission prematurely and opening the channel for a priority or critical message.

#### Stun:

A priority user (assigned when programming the radio) can temporarily disable or “stun” a radio in the fleet if the radio has been compromised or is being abused. The stunned radio can be revived using the “Revive” command on the radio that initiated the stun command.

#### Kill:

A priority user can completely disable or “kill” a radio in the fleet, preventing communication completely on compromised radios. To revive the radio, the “killed” radio must be returned to an authorized Vertex Standard Dealer.

#### Revive:

A stunned radio can be revived by a priority user through the use of the “Revive” command.

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## OPERATION

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### Remote Monitor:

A priority radio can force another radio in the fleet to open transmission for a pre-programmed period with the CE156 software for the priority radio to hear any audio on the radio being monitored.

For further details, contact your Vertex Standard dealer.

*Note:* The **EVX-261** cannot control other radio by the above features (decode only).

### Automatic Time-Out Timer

If the selected channel has been programmed with an Automatic Time-Out Timer, any transmission is limited to a fixed transmit time, dictated when programming the radio with **CE156** software. A 10 second warning tone/beep will sound before Automatic Time Out Timer is activated, with a second tone/beep sounding when the radio officially reaches the pre-set maximum transmission time. In addition, the top panel red LED (“**TX**” indicator) light will turn off and any transmission activity will stop. To resume transmission, the user must release the **PTT** switch and await expiration of the “penalty timer”.




## ADVANCED OPERATION

### Programmable Key Functions

The **EVX-261** provides two Programmable Function (**PF**) keys: **SIDE-1** and **SIDE-2** keys.

Both **PF** keys can be customized, via programming by your Vertex Standard dealer, to meet your communications/network requirements.

The possible **PF** key programming features are illustrated at the right, and their functions are explained in more detail in the next pages. For further details, contact your Vertex Standard dealer.

In this chapter, the  icon is used to indicate features supported only in “Analog” mode. For features that are available in both “Analog” and “Digital” modes, no icon is shown.

For future reference, the table on the right side of the page can be used to track each function assigned to the Programmable Function Keys on your radio.

FUNCTION	PROGRAMMABLE KEY (PRESS KEY / PRESS AND HOLD KEY)	
	SIDE-1	SIDE-2
None	/	/
Monitor	/	/
Monitor -Momentarily-	/—	/—
Low Power	/	/
Encryption	/	/
SQL OFF	/	/
SQL OFF -Momentarily-	/—	/—
Beep OFF	/	/
Whisper	/	/
VOX	/	/
VOX Anti-Trip	/	/
Emergency	/—	/—
Scan	/	/
Dual Watch	/	/
Follow-Me Scan	/	/
TA (Talk Around) Scan	/	/
Scan Set	/	/
Talk Around	/	/
Reset	/	/
Call	/	/
Call 1	/	/
Call 2	/	/
Call 3	/	/
Speed Dial	/	/
Duty	/	/
Transmit Battery Saver Disable	/	/

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## ADVANCED OPERATION

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### Description of Operating Functions

All functions listed in this section can be assigned to any **PF** Key. Up to two functions can be assigned per key, with the feature being activated by:

- Short Press (SP) - Press and release
- Long Press (LP) - Press and hold

#### **MONITOR**

Any signaling features can be activated/deactivated by an assigned **PF** key. The LED indicator will glow green when the signaling feature is deactivated.

#### **MONITOR -MOMENTARILY-**

Cancel any signaling features while pressing the assigned **PF** key. This function can not be assigned to a Long Press (LP) key function.

#### **LOW POWER**

Low power mode reduces the transmitter to a lower power for extension of battery life. Normal transmit power can be achieved by pressing the Low power **PF** key a second time.

#### **ENCRYPTION**

Analog Voice Inversion encryption can be activated/deactivated by an assigned **PF** key.

#### **SQL OFF**

SQL OFF opens the radio squelch/unmute the audio to hear background noise.

#### **SQL OFF -MOMENTARILY-**

Opens the SQL to hear background noise (unmute the audio) while pressing the assigned **PF** key. This function can not be assigned to a Long Press (LP) key function.

#### **BEEP OFF**

Activation of Beep off disables all radio beeps (alert tones) temporarily. Radio beeps will be restored by pressing the **PF** key again.

#### **WHISPER**

Whisper allows the user to increase the microphone gain, allowing the operator to speak in a low voice (whisper) temporarily when transmitting. The radio can go back to normal microphone gain by pressing the assigned **PF** key a second time.

#### **VOX** (REQUIRES OPTIONAL VOX COMPATIBLE HEADSET)

Enabling the VOX function will allow hands free, automatic voice activation of the transmitter as the microphone picks up audio. The **PTT** switch does not need to be pressed to open the channel when VOX is enabled.

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## ADVANCED OPERATION

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### VOX ANTI-TRIP

VOX Anti-trip prevents the transceiver from activating a VOX transmission from either internal or external radio alert tones (radio beeps).

### EMERGENCY

Emergency can either be programmed in analog or digital mode. When the emergency key is pressed, activate the pre-programmed functions programmed using CE156 software by your Vertex Standard authorized dealer, and requests the assistance. For further details of the pre-programmed function, contact your Vertex Standard dealer. This function can not be assigned to a Long Press (LP) key function.

To revive the radio from the Emergency mode, just press again the assigned **PF** key or turn off the radio.

### SCAN

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

**Note:** Your dealer may have programmed your radio to stay on one of the following channels if you press the **PTT** switch during scanning pause:

- “Scan Pause” channel (“Talk Back”)
- “Last Busy” channel
- “Priority” channel
- “User Programmed” channel (“Select Channel”)
- The channel the **CH** selector knob is currently tuned to.

### DUAL WATCH

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

- The current operating channel
- The Priority channel.

#### *To activate Dual Watch:*

- Press, (or press and hold), the assigned **PF** key to activate the Dual Watch feature.
- The scanner will search the two channels and pause when it finds a transmission on either channel.

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## ADVANCED OPERATION

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### *To stop Dual Watch:*

- ❑ Press, (or press and hold), the assigned **PF** key to disable the Dual Watch feature. The radio receives the channel which was selected by the **CH** Selector knob.

### **FOLLOW ME SCAN**

The Follow Me Scan feature checks a user-assigned priority channel in addition to the channels previously pre-programmed into a radio's scan list. For example, if only Channels 1, 3, and 5 (of the 8 available channels) are designated for "Scanning", the user may assign Channel 2 as the "user-assigned" priority channel via the Follow Me Scan.

To activate Follow Me Scan, first select the channel you want to designate as the "user-assigned priority channel" by positioning the **CH** Selector knob on the desired "priority" channel. Next, press, (or press and hold), the assigned **PF** key. Finally, rotate the **CH** Selector knob to the desired "operating channel".

The scanner will search the two channels (user-assigned priority channel and operating channel) and pause when it finds a transmission on either channel.

### **TA (TALK AROUND) SCAN**

Press, (or press and hold), the assigned **PF** key to toggle the TA Scan feature "On" and "Off".

When operating on a duplex channel system (for example, a repeater station), TA Scan allows the transceiver to search both transmit and receive frequencies on your duplex system.

When a signal is encountered on the receive frequency, the transceiver will pause until the signal disappears. When a signal is encountered on the transmit frequency, the transceiver will check for activity on the receive frequency every few seconds (interval programmed by your Vertex Standard dealer).

*Note:* The TA Scan feature does not activate on a Simplex Channel.

### **SCAN SET**

Scan Set enables the user to add or delete a current channel temporarily to a pre-programmed scan list.

### **TALK AROUND**

Talk Around is most commonly utilized when operating on duplex channel systems (separate receive and transmit frequencies, common with use of a repeater station). The Talk Around feature allows you to bypass the repeater station and talk directly to a nearby station or transceiver. This feature has no effect when you are operating on "simplex" channels, where the receive and transmit frequencies are already the same.

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## ADVANCED OPERATION

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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.

### **RESET**

When operating in the selective call feature, resets the communication by an assigned **PF** key.

### **CALL**

Send a pre-programmed 2 Tone call signal with a one touch **PF** key.

### **CALL 1 TO CALL 3**

Recalls the pre-programmed stations with a one touch **PF** key.

### **SPEED DIAL**

Your Vertex Standard dealer may have pre-programmed Auto-Dial telephone number memories into your radio.

To dial a number:

Press, (or press and hold), the assigned **PF** key to send a pre-defined DTMF tone. The DTMF tones sent during the dialing sequence will be heard in the speaker.

### **DUTY**

The Duty function is specific to paging operation. When Duty mode is “ON” the user will hear all traffic (specific to sub audio signaling) on the paging channel. The paging alert will sound when the programmed 2 Tone or 5 Tone sub audio signal is received.

If Duty mode is “OFF”, normal radio traffic is not heard on the paging channel. The radio will only unmute and sound the paging alert with the programmed 2 Tone or 5 Tone signal is received.

### **TRANSMIT BATTERY SAVER DISABLE**

The Transmit Battery Saver helps extend battery life by reducing transmit power when a very strong signal from an apparently nearby station is being received. Caution is advised when using this feature, as your transmission power could degrade the audio heard by the receiving radios in your communication path.

Disabling the Transmit Battery saver by pressing (or press and holding) the **PF** key is recommended if you are operating in a location where high power is almost always required.

Press again, (or press and hold again), the assigned **PF** key, the Transmit Battery Saver activates to reduce the transmit power when a very strong signal from an apparently nearby station is being received.

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## LOCK

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In order to prevent accidental channel changes or inadvertent transmissions, various aspects of the **CH** Selector knob, Programmable keys, and **PTT** switch may be locked. The precise lockout configuration is programmed by your Authorized Vertex Standard dealer.

To activate the locking feature, first turn the radio off. Then, press and hold the **PTT** and **SIDE-2** key while turning the radio on again.

To cancel the key locking, repeat this process.

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## ARTS™ (AUTO RANGE TRANSPOND SYSTEM)




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This system is designed to inform the operator when you and another ARTS™-equipped transceivers and stations are within communication range using the DCS Encoder/Decoder.

During ARTS™ operation, when the radio receives an incoming ARTS™ signal, a short single beep will sound. If you move out of range for more than two minutes, your radio senses that no signal has been received, causing a short triple beep to sound. Moving back into communications range, a short single beep will again sound as the ARTS™ signal transmission from another transceiver or station is back in range.

## OPTIONAL ACCESSORIES

<b>FNB-V133LI-UNI</b>	7.4V DC  1380 mAh Li-Ion Battery Pack	<b>ATV-8A</b>	VHF Antenna (134-151 MHz)
<b>FNB-V134LI-UNI</b>	7.4V DC  2300 mAh Li-Ion Battery Pack	<b>ATV-8B</b>	VHF Antenna (150-163 MHz)
<b>FNB-V136-UNI</b>	7.2V DC  1200 mAh Ni-MH Battery Pack	<b>ATV-8C</b>	VHF Antenna (161-174 MHz)
<b>CD-58</b>	Desktop Charger	<b>ATV-6XL</b>	VHF Antenna (Untuned)
<b>PA-55</b>	AC Adapter for CD-58	<b>ATU-6A</b>	UHF Antenna (400-430 MHz)
<b>VAC-UNI</b>	Desktop Charger (CD-58 + PA-55)	<b>ATU-6B</b>	UHF Antenna (420-450 MHz)
<b>VAC-6058</b>	Multi-Unit Charger	<b>ATU-6C</b>	UHF Antenna (440-470 MHz)
<b>MH-37<sup>A4B-1</sup></b>	Earpiece Microphone	<b>ATU-6D</b>	UHF Antenna (450-490 MHz)
<b>MH-66<sup>A4B</sup></b>	Noise Cancelling Speaker Microphone	<b>ATU-6F</b>	UHF Antenna (490-520 MHz)
<b>MH-100</b>	Receive Only Earpiece (for MH-45 <sup>B4B</sup> , MH-360S, & MH-450S)	<b>ATU-6DS</b>	UHF Stubby Antenna (450-490 MHz)
<b>MH-101<sup>A4B</sup></b>	1 Wire Surveillance Kit	<b>CN-3</b>	Antenna Adapter
<b>MH-102<sup>A4B</sup></b>	2 Wire Surveillance Kit	<b>CLIP-20</b>	Belt Clip
<b>MH-103<sup>A4B</sup></b>	3 Wire Surveillance Kit	<b>LCC-261</b>	Leather Case, Belt Loop (for FNB-V133LI-UNI)
<b>MH-201<sup>A4B</sup></b>	Heavy Duty Headset	<b>LCC-261H</b>	Leather Case, Belt Loop (for FNB-V134LI-UNI & FNB-V136-UNI)
<b>MH-360S</b>	Compact Speaker Microphone	<b>LCC-261S</b>	Leather Case, Swivel Belt Loop (for FNB-V133LI-UNI)
<b>MH-450S</b>	Speaker Microphone	<b>LCC-261SH</b>	Leather Case, Swivel Belt Loop (for FNB-V134LI-UNI & FNB-V136-UNI)
<b>VH-150A</b>	Behind Type VOX Compatible Microphone	<b>CE156</b>	PC Programming Software
<b>VH-150B</b>	Over the Head VOX Compatible Microphone	<b>FIF-12</b>	USB Programming Interface
<b>VCM-5</b>	Vehicular Charger Mounting Adapter for CD-58	<b>CT-106</b>	Connection Cable for FIF-12
		<b>CT-27</b>	Radio to Radio Cloning Cable

*Availability of accessories may vary; some accessories are supplied standard per local requirements, others may be unavailable in some regions. Check with your Vertex Standard Dealer for changes to this list.*

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## WARRANTY POLICY

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Vertex Standard warrants, to the original purchaser only, its Vertex Standard 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:

- North America customers (USA and Canada): <http://www.vertexstandard.com/lmr/warranty-terms.aspx>
- Customers outside of North America: contact the authorized Vertex Standard distributor in your country.



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## NOTE

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## NOTE

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The AMBE+2™ voice coding Technology embodied in this product is protected by intellectual property rights including patent rights, copyrights and trade secrets of Digital Voice Systems, Inc. This voice coding Technology is licensed solely for use within this Communications Equipment. The user of this Technology is explicitly prohibited from attempting to decompile, reverse engineer, or disassemble the Object Code, or in any other way convert the Object Code into a human-readable form.

U.S. Pat. Nos. #5,870,405, #5,826,222, #5,754,974, #5,701,390, #5,715,365, #5,649,050, #5,630,011, #5,581,656, #5,517,511, #5,491,772, #5,247,579, #5,226,084 and #5,195,166.

### **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.



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



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