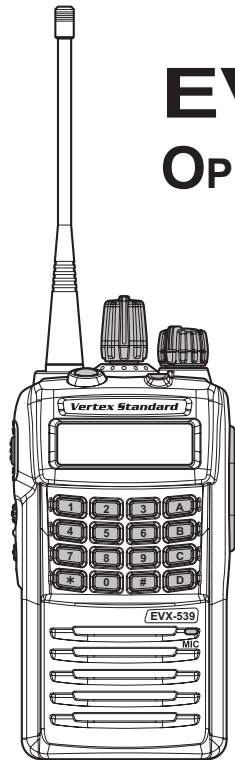


# **Vertex Standard**

## **EVX-539** **OPERATING MANUAL**



### PROGRAMMABLE FUNCTIONS/FEATURES

- IP57 Submersible (1 m/30 min.)
- 9 Programmable Function Keys
- 2-Tone Encode/Decode\*<sup>1</sup>
- 5-Tone Encode/Decode\*<sup>1</sup>
- MDC-1200® Encode/Decode\*<sup>1</sup>
- Scan
- Group Scan
- Dual Watch
- FM-Scan (Follow-Me Scan)
- TA Scan
- Encryption\*<sup>1</sup>
- Privacy\*<sup>2</sup>
- VOX
- Talk Around
- Emergency
- Lone Worker
- TX Save Disable
- Direct Channel Entry
- Code Up/Down\*<sup>1</sup>
- Code Set\*<sup>1</sup>
- Speed Dial\*<sup>1</sup>
- DTMF Code Set\*<sup>1</sup>
- ID Check\*<sup>1</sup>
- ARTS™\*<sup>1</sup>/ARTSII™ (Auto Range Transpond System)

\*<sup>1</sup>: Analog mode only

\*<sup>2</sup>: Digital mode only

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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-539** is full-featured Hand-Held Digital/Analog Transceiver designed for business communications in the VHF/UHF Land Mobile bands. This transceiver is 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 **EVX-539** allows to 512-channel capacity and 32 groups which can each be programmed with an 8-character Alpha-Numeric Tag.

Important channel frequency data is stored in the flash memory on the CPU, and is easily programmable by a Vertex Standard licensed dealers using a personal computer with Vertex Standard Programming equipment: **FIF-12** USB Programming Interface, and **CT-106** Connection cable with **CE142** Software. Or, once a single radio is programmed, cloning cable **CT-27** can be used to program additional radios directly.

The pages which follow will detail the many advanced features provided in the **EVX-539** 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.

### — 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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## WARNING! FCC RF EXPOSURE REQUIREMENTS

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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 Electro-magnetic 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 2 inches (5 cm) away from your mouth and keep the antenna at least 2 inches (5 cm) away from your head and body.**
- **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 FCC RF exposure compliance requirements to be exceeded. To keep the Body Worn configuration with the Vertex Standard CLIP-20 belt-clip, reduce the maximum operating duty cycle still more.**

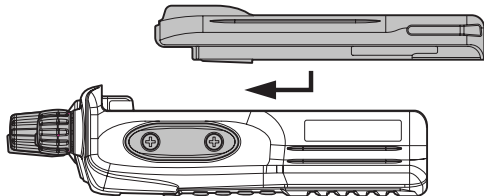
**The radio is transmitting when the red LED on the top of the radio is illuminated. You can cause the radio to transmit by pressing the P-T-T button.**
- **SAR compliance for body-worn use was only demonstrated for the specific belt-clip (CLIP-20). Other body-worn accessories or configurations may NOT comply with the FCC RF exposure requirements and should be avoided.**
- **When operate the radio with the Vertex Standard CLIP-20 belt-clip, make the transmission time as short as possible, to keep the Body Worn configuration.**
- **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.**

## 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*.”

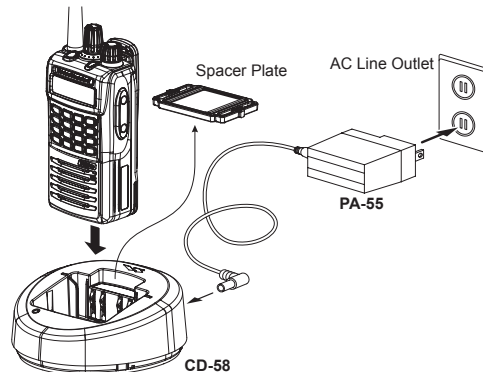


- ❑ To remove the battery, turn the radio off and remove any protective cases. Slide the Battery Pack Latch on the bottom of the radio toward the front panel while sliding the battery down about 1/2 inch (1.5 cm). Then lift the battery out from the radio.

**⚠ 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



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## BEFORE YOU BEGIN

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proper positioning of the battery pack. If charging with the transceiver attached, turn the transceiver off. The antenna jack should be at 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 - 3.0 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 or FNB-V134LI-UNI Lithium-Ion Battery Pack.*

*2) Use only the Vertex Standard CD-58 Desktop Charger and the Vertex Standard PA-55 AC Adapter.*

*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). Charge out of this range could cause damage to the battery pack.*

*5) Battery Pack shall not be exposed to excessive heat such as sunshine, fire, or the like.*

*6) Risk of explosion if battery is replaced by an incorrect type. Dispose of used batteries according to the instructions*

*7) 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 to 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.

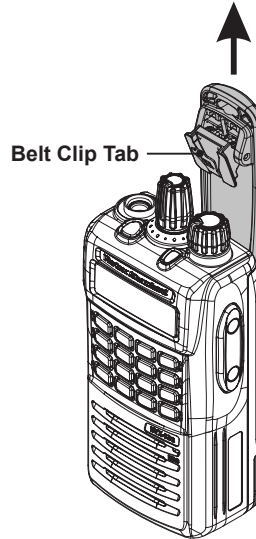
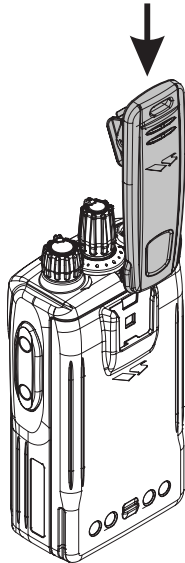
#### CAUTION

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

## BEFORE YOU BEGIN

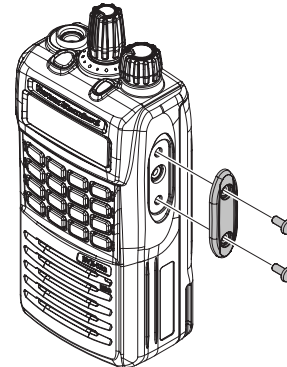
### Belt Clip Installation and Removal

- 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 submersible Rating (IP57: 1 meter / 30 minutes) when the **MIC/SP** cap is not installed in the **MIC/SP** jack.



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## NOTE

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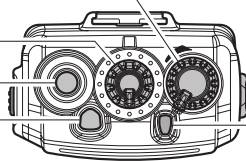
## CONTROLS & CONNECTORS

**VOL (Volume)/PWR (Power) Knob**

**CH (Channel) Selector**

**Antenna Jack**

**TOP SEL (Top Select) Key**



**LED Indicator (Programmable)**

Default settings are:

Steady Red: Transmitting in progress (Analog)

Steady Blue: Transmitting in progress (Digital)

Blinking Green: Busy Channel

Steady Green: Tone Squelch in defeated condition

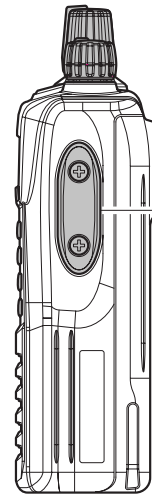
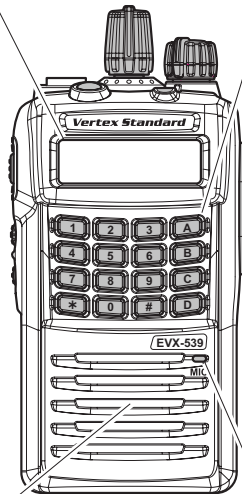
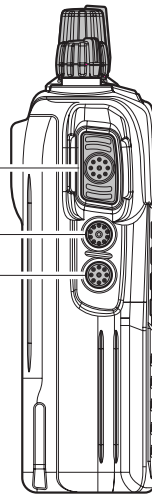
**LCD (Liquid Crystal Display)**

**16-Button DTMF Keypad**

**PTT Switch**

**SIDE-1 Button**

**SIDE-2 Button**



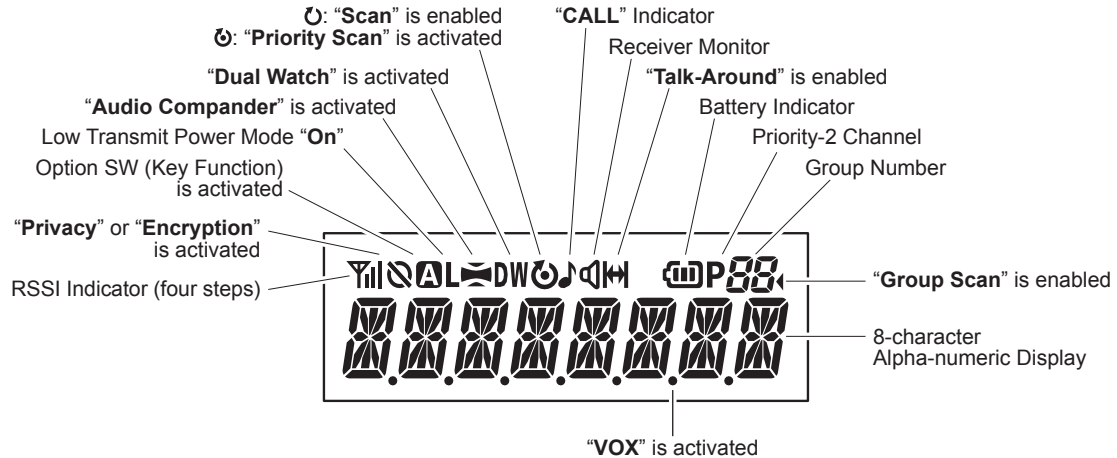
**MIC/SP Jack  
(External MIC/SP)**

**Speaker**

**Battery Pack Latch**

**Microphone**

## LCD ICONS & INDICATORS



## OPERATION

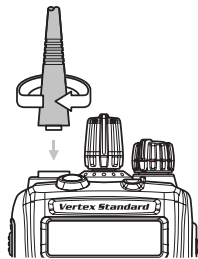
### Preliminary Steps

- ❑ 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-539**. Refer to page 11 for more information about Speaker/Microphone usage.



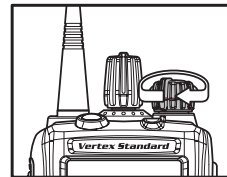
### IMPORTANT NOTE

Water resistance of the transceiver (IP57: 1 meter / 30 minutes) is assured only when the following conditions:

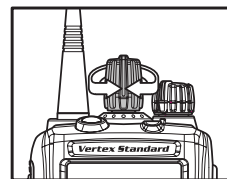
- ❑ Battery pack is attached to the transceiver;
- ❑ Antenna is connected to the antenna jack;
- ❑ and **MIC/SP** cap is installed in the **MIC/SP** jack.
- ❑ Use of a speaker microphone in the accessory connector negates the IP57 rating.

### 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. A channel name will appear on the LCD. The radio announces the channel number, if the Channel Announcement Feature is enabled via the clone editor software.

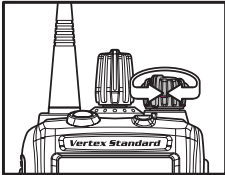
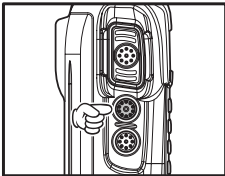


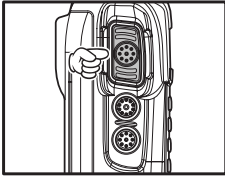
- ❑ If you want to select the operating channel from a different Channel Group, press (or press and hold) the Programmable key (assigned to the "**GROUP UP/DOWN**" function) to change desired Channel Group before selecting the operating channel.

*Note:* Some models are programmed so that the operating channels are selected by the Programmable key and the Channel Group is selected by the **CH** Selector knob.

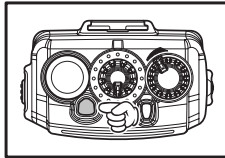
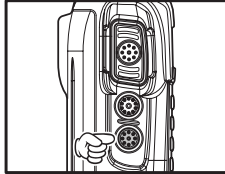
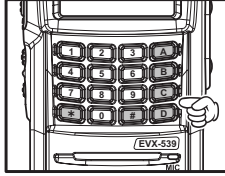
## OPERATION

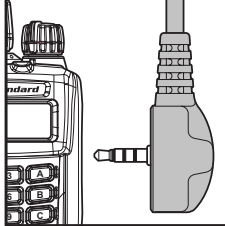
- ❑ Rotate the **VOL/PWR** knob to set the volume level. If no signal is present on the analog channel, press and hold in the **SIDE-1** button (under the **PTT** switch) more than 2 seconds; background noise will now be heard, and you may use this to set the **VOL/PWR** knob for the desired audio level. Press and hold the **SIDE-1** button more than 2 seconds (or press the **SIDE-1** button *twice*) to quiet the 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 the (Orange) **TOP SEL** key, **SIDE-2** button, or front panel's programmable keypad (**[A]**, **[B]**, **[C]**, **[D]**, **[\*]** and **[#]** keys) to activate one of the pre-programmed functions which may have been enabled at the time of programming by the dealer. See the next section 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 align the connector



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## OPERATION

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of the Speaker/Microphone on the radio; secure the connector pin 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.*

- ❑ 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*.

### 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 top panel's red LED ("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.

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## ADVANCED OPERATION

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### Programmable Key Functions

The **EVX-539** provides the nine programmable function (PF) keys: **TOP SEL**, **SIDE-1**, **SIDE-2**, **[A]**, **[B]**, **[C]**, **[D]**, **[\*]** and **[#]** keys. These **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 on the next page, and their functions are explained beginning after page 16. For further details, contact your Vertex Standard dealer.

In this chapter, the following icons are used to indicate features supported in either the “Analog” mode or “Digital” mode:

: Indicates a “Analog” mode only feature.

: Indicates a “Digital” mode only feature.

For features that are available in both “Analog” and “Digital” modes, no icon is shown.

For future reference, check the box next to each function that has been assigned to the **PF** key on your particular radio, and keep it handy.

## ADVANCED OPERATION

FUNCTION	PROGRAMMABLE KEY (PRESS KEY / PRESS AND HOLD KEY)								
	TOP SEL	SIDE-1	SIDE-2	[A]	[B]	[C]	[D]	[*]	[#]
None	/	/	/	/	/	/	/	/	/
Monitor	/	/	/	/	/	/	/	/	/
Monitor -Momentarily-	/-	/-	/-	/-	/-	/-	/-	/-	/-
Dimmer	/	/	/	/	/	/	/	/	/
Low Power	/	/	/	/	/	/	/	/	/
Privacy / Encryption	/	/	/	/	/	/	/	/	/
SET	/	/	/	/	/	/	/	/	/
SQL OFF	/	/	/	/	/	/	/	/	/
SQL OFF -Momentarily-	/-	/-	/-	/-	/-	/-	/-	/-	/-
SQL Set	/	/	/	/	/	/	/	/	/
Beep Off	/	/	/	/	/	/	/	/	/
AF Min Volume	/	/	/	/	/	/	/	/	/
CH Announcement	/	/	/	/	/	/	/	/	/
Whisper	/	/	/	/	/	/	/	/	/
VOX	/	/	/	/	/	/	/	/	/
VOX Set	/	/	/	/	/	/	/	/	/
VOX Anti-Trip	/	/	/	/	/	/	/	/	/
Emergency	/-	/-	/-	/-	/-	/-	/-	/-	/-
Lone Worker	/	/	/	/	/	/	/	/	/
Group Up	/	/	/	/	/	/	/	/	/
Group Down	/	/	/	/	/	/	/	/	/
Channel Up	/	/	/	/	/	/	/	/	/
Channel Down	/	/	/	/	/	/	/	/	/
Speed Channel Up	-/	-/	-/	-/	-/	-/	-/	-/	-/
Speed Channel Down	-/	-/	-/	-/	-/	-/	-/	-/	-/
RPI-2 Set	/	/	/	/	/	/	/	/	/
PRI-2 Disable	/	/	/	/	/	/	/	/	/
PRI-2	/	/	/	/	/	/	/	/	/
Direct CH 1	/	/	/	/	/	/	/	/	/
Direct CH 2	/	/	/	/	/	/	/	/	/
Direct CH 3	/	/	/	/	/	/	/	/	/
Direct CH 4	/	/	/	/	/	/	/	/	/
Direct CH Entry	/	/	/	/	/	/	/	/	/
Scan	/	/	/	/	/	/	/	/	/
Group Scan	/	/	/	/	/	/	/	/	/
Dual Watch	/	/	/	/	/	/	/	/	/
FM-Scan	/	/	/	/	/	/	/	/	/



## ADVANCED OPERATION

FUNCTION	PROGRAMMABLE KEY (PRESS KEY / PRESS AND HOLD KEY)								
	TOP SEL	SIDE-1	SIDE-2	[A]	[B]	[C]	[D]	[*]	[#]
Scan Set	/	/	/	/	/	/	/	/	/
Group Scan Set	/	/	/	/	/	/	/	/	/
TA Scan	/	/	/	/	/	/	/	/	/
Talk Around	/	/	/	/	/	/	/	/	/
Reset	/	/	/	/	/	/	/	/	/
Call 1	/	/	/	/	/	/	/	/	/
Call 2	/	/	/	/	/	/	/	/	/
Call 3	/	/	/	/	/	/	/	/	/
Call 4	/	/	/	/	/	/	/	/	/
Call 5	/	/	/	/	/	/	/	/	/
Code Up	/	/	/	/	/	/	/	/	/
Code Down	/	/	/	/	/	/	/	/	/
Code Set	/	/	/	/	/	/	/	/	/
Speed Dial	/	/	/	/	/	/	/	/	/
DTMF Code Set	/	/	/	/	/	/	/	/	/
Call	/	/	/	/	/	/	/	/	/
Status Set	/	/	/	/	/	/	/	/	/
Status Up	/	/	/	/	/	/	/	/	/
Status Down	/	/	/	/	/	/	/	/	/
Status Check	/	/	/	/	/	/	/	/	/
Duty	/	/	/	/	/	/	/	/	/
ID Check	/	/	/	/	/	/	/	/	/
ARTS Login	/	/	/	/	/	/	/	/	/
TX Save Disable	/	/	/	/	/	/	/	/	/
Lock	/	/	/	/	/	/	/	/	/

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## ADVANCED OPERATION

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### Description of Operating Functions

#### **MONITOR**

Press, (or press and hold), the assigned **PF** key to cancel any signaling features; the LED indicator will glow with a pre-defined color (Factory default: green).

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

Cancel any signaling features while pressing the assigned **PF** key.

#### **DIMMER**

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

#### **LOW POWER**

Press, (or press and hold), the assigned **PF** key to set the radio's transmitter to the "Low Power" mode, thus extending battery life. Press, (or press and hold), the key again to return to "Normal" transmit power when in difficult terrain.

When the radio's transmitter is set to "Low Power" mode, the "**L**" icon will be indicated on the display.

#### **PRIVACY**

Press, (or press and hold), the assigned **PF** key to toggle the Privacy feature "On" and "Off". The Privacy feature initiates an encryption algorithm that will protect your communication from unauthorized eavesdropping.

When the Privacy feature is activated, the "🔒" icon will be indicated on the display.

#### **ENCRYPTION**

When the Voice Scrambler feature is enabled, press, (or press and hold), the assigned **PF** key to toggle the Voice Encryption "On" and "Off".

When the Voice Scrambler is activated, the "🔒" icon will be indicated on the display.

#### **SET**

Press, (or press and hold), the assigned **PF** key to activate the "User Set (Menu)" mode. See page 29 for more information of the "User Set (Menu)" mode.

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## ADVANCED OPERATION

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### SQL OFF

Press, (or press and hold), the assigned **PF** key to open the SQL to hear background noise (unmute the audio).

### SQL OFF -MOMENTARILY-

Opens the SQL to hear background noise (unmute the audio) while pressing the assigned **PF** key.

### SQL SET

You can manually adjust the squelch level using this function:

- Press, (or press and hold), the assigned **PF** key. A tone will sound, and the current squelch level will appear on the display.
- Press the **SIDE-1/SIDE-2** buttons (or **[A]/[B]** keys) to select the desired squelch level. Available selections are “**SQLLV OP** (Open)”, “**SQLLV TH** (Threshold)”, “**SQLLV NM** (Normal)” and “**SQLLV TI** (Tight)”.
- Press the **[D]** key to store the new setting. The display indicates “- **SET** -” briefly, then reverts to the normal channel indication.  
You may cancel the new setting by pressing the **[C]** key. In this case, the display indicates “- **CANCEL** -” briefly.

### BEEP OFF

Press, (or press and hold), the assigned **PF** key, the display indicates “**BEEP OFF**” briefly, and disable the radio beeps and the channel announcement (if activated) temporarily. Again press, (or press and hold), the assigned **PF** key, the display indicates “**BEEP ON**” briefly, and enable the radio beeps and the channel announcement.

### AF MINIMUM VOLUME

Press, (or press and hold), the assigned **PF** key to reduce the audio output to the (lower) level programmed by your Vertex Standard dealer.

### CH ANNOUNCEMENT

Press, (or press and hold), the assigned **PF** key to select the channel change confirmation between “beep” (indicates “**BEEP**” briefly) and “announcement” (indicates “**ANNOUNCE**” briefly).

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## ADVANCED OPERATION

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### WHISPER

Press, (or press and hold), the assigned **PF** key, the display indicates “**WHISP ON**” briefly, and increase the microphone gain; thus you can speak in a low voice (whisper) temporarily. Press again, (or press and hold again), the assigned **PF** key, the display indicates “**WHISP OFF**” briefly, and resume normal microphone gain.

### VOX

Press, (or press and hold), the assigned **PF** key, the display indicates “**VOX O.N**” briefly, and activates the VOX function; allowing hands-free, automatic activation of the transmitter, based on voice input into the microphone. When the VOX function is activated, a small dot (“.”) will be indicated at the bottom right of the display. You may disable the VOX function temporarily by pressing the **PTT** switch.

Press again, (or press and hold again), the assigned **PF** key, the display indicates “**VOX OFF**” briefly, and resume normal operation.

### VOX ANTI-TRIP

Press, (or press and hold), the assigned **PF** key to toggle the VOX Anti-Trip feature “On” and “Off”.

When the VOX Anti-Trip feature is set to “On”, the display indicates “**ATRP ON**” briefly, and the transceiver does not activate the transmitter section from the receiver audio or own beep sound. Press again, (or press and hold again), the assigned **PF** key, the display indicates “**ATRP OFF**” briefly, and the VOX Anti-Trip feature is disabled.

### EMERGENCY

The **EVX-539** includes an “Emergency” feature in either analog or digital modes, which may be useful for alerting another party monitoring on the same frequency as your transceiver’s channel.

Press the assigned **PF** key, the “- **EMG** -” indication will be indicated on the display, and initiate an emergency call on the pre-defined channel. For further details contact your Vertex Standard dealer. To revive the radio from the Emergency mode, just press again the assigned **PF** key or turn off the radio.

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## ADVANCED OPERATION

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### **LONE WORKER**

Press, (or press and hold), the assigned **PF** key, the display indicates “**L-WK ON**” briefly, and activates the Lone Worker feature. The Lone Worker feature is designed to emit an alarm for 30 seconds when the Lone Worker Timer (programmed by your Vertex Standard dealer) has expired.

Press again, (or press and hold again), the assigned **PF** key, the display indicates “**L-WK OFF**” briefly, and the Lone Worker feature is disabled. If the user does not reset the timer by pressing the **PTT** switch, the radio switches to Emergency mode.

### **GROUP UP/DOWN**

Press, (or press and hold), the assigned **PF** key to select a different group of channels. A group name will appear briefly on the display.

### **CH UP/DOWN**

Press, (or press and hold), the assigned **PF** key to select a different channel. A channel name will appear briefly on the display.

### **PRI-2 SET**

Press, (or press and hold), the assigned **PF** key to toggle the current channel to the priority channel 2 “enable” and “disable”. When PRI-2 channel is recalled, the “**P**” icon will be indicated on the display.

### **PRI-2 DISABLE**

Press (or press and hold) the assigned **PF** key, the display indicates “**PRI2 DI**” briefly, and disable the priority channel 2 of the group temporarily.

Press again, (or press and hold again), the assigned **PF** key, the display indicates “**PRI2 EN**” briefly, and enabling the priority channel 2 of the group.

### **PRI-2**

Press, (or press and hold), the assigned **PF** key to recall the pre-programmed PRI-2 (Priority-2) Channel by your Vertex Standard dealer directly.

### **DIRECT CH 1 TO DIRECT CH 4**

Press, (or press and hold), the assigned **PF** key to recall the pre-programmed channel by your Vertex Standard dealer directly.

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## ADVANCED OPERATION

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### DIRECT CH ENTRY

You can recall the desired channel directly using this function:

- Press, (or press and hold), the assigned **PF** key. A tone will sound, and the current group/channel will appear on the display.
- Enter the desired group number (two digits) and channel number (two digits) from the keypad ([0] - [9] key).
- Press the [D] key to store the new setting. The display indicates “- SET -” briefly, then reverts to the normal channel indication.  
You may cancel the new setting by pressing the [C] key. In this case, the display indicates “- CANCEL -” briefly.

### SCAN

The Scanning feature is used to monitor multiple signals 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. **EVX-539** can scan both digital and analog frequency programmed channels simultaneously.

### *To activate scanning:*

- Press, (or press and hold), the assigned **PF** key to activate scanning.
- The scanner will search the channels of each channel, looking for active ones; it will pause each time it finds a channel on which someone is speaking.
- Press again, (or press and hold again), the assigned **PF** key 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 if you press the **PTT** switch during scanning pause:

- “Scan Pause” channel (“Talk Back”)
- “Last Busy” channel
- “Priority-2” channel
- “User Programmed” channel (“Select Channel”)
- The channel which defined in the **CH** Selector knob.

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## ADVANCED OPERATION

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### GROUP SCAN

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 **PF** key, the display indicates “**GRP SCAN**” briefly, and activate the scanning on the selected groups.

Press again, (or press and hold again), the assigned **PF** key to disable the group scan mode. Operation will revert to the programmed revert channel.

### DUAL WATCH

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

- The current operating channel; and
- The Priority-2 channel.

#### *To activate Dual Watch:*

- Press, (or press and hold), the assigned **PF** key. The “**DW**” icon will be indicated on the display.
- 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 **PF** key. The “**DW**” icon disappear from the display.
- Operation will revert to the “Dual Watch Revert” channel.

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## ADVANCED OPERATION

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### FM SCAN (FOLLOW-ME SCAN)

The FM Scan feature checks a user-assigned priority channel regularly as you scan 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 FM Scan.

To activate FM Scan, first select the channel you want to designate as the “user-assigned priority channel” and press, (or press and hold), the assigned **PF** key. The display indicates “**FM SCAN**” briefly. Then rotate the **CH** Selector knob 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.

### SCAN SET

Press, (or press and hold), the assigned **PF** key to add/delete the current channel to/from your scanning list.

To store a particular channel to your scanning list, press, (or press and hold), the assigned **PF** key; the display indicates “**-SCN SET-**” briefly and “**U**” icon will appear on the display. If you delete a channel from your scanning list, press, (or press and hold), the assigned **PF** key again; the display indicates “**-SCN SKIP-**” briefly and the “**U**” icon will disappear from the display.

When the scanner is stopped, you may remove the channel from the scan list temporarily by pressing, (or press and holding), the same key.

### GROUP SCAN SET

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 **PF** key (the “**◀**” icon will appear on the display). To remove a current Group from Group Scan, press, (or press and



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## ADVANCED OPERATION

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hold), the assigned **PF** key again (the “◀” icon will disappear from the display).

### TA SCAN


Press, (or press and hold), the assigned **PF** key to toggle the TA (Talk Around) scan feature “On” and “Off”.

While TA scan is proceeding, the transceiver will search both the transmit and receive frequencies (the “” icon will blink on the display). When a signal is encountered on the receive frequency, the transceiver will pause until the signal disappears (the “” icon will appear but not blink on the display). 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 the Simplex Channel.

### TALK AROUND (TA)

Press, (or press and hold), the assigned **PF** 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.

When the Talk Around feature is activated, the display indicates “-TA-” briefly and “” 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.

**Note:** The Talk Around feature does not activate on the Simplex Channel.

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## ADVANCED OPERATION

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### RESET

Press (or press and hold) the assigned **PF** key to reset the RFC (Ready for Communication) condition.

### CALL 1 TO CALL 5

Press, (or press and hold), the assigned **PF** key to send a pre-defined 2-tone Sequential Tone Group (on an *analog channel*) or a pre-defined Digital Contact List (on a *digital channel*).

### CODE UP/DOWN

Press, (or press and hold), the assigned **PF** key to select a 2-Tone or 5-Tone encode code from the pre-programmed encode list.

### CODE SET

You can change the desired digit of the 5-Tone encode code using this function:

- Press, (or press and hold), the assigned **PF** key.
- Enter the desired 5-Tone encode code directly from the keypad ([**0**] - [**9**] key and [**\***] (wild card) key).
- Press the [**D**] key to store the new setting. The display indicates “- **SET** -” briefly, then reverts to the normal channel indication.

You may cancel the new setting by pressing the [**C**] key. In this case, the display indicates “- **CANCEL** -” briefly.

### 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, then press the keypad ([**0**] - [**9**] key) corresponding to the Auto-Dial memory number list provided by your Vertex Standard dealer or Network Administrator. The DTMF tones sent during the dialing sequence will be heard in the speaker.

### DTMF CODE SET

- Press, (or press and hold), the assigned **PF** key to start entering the DTMF dialing sequence.
- Enter the DTMF digit directly from the keypad ([**0**] - [**9**] key).
- After entering all DTMF digits, press the **PTT** switch to transmit the DTMF code.

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## ADVANCED OPERATION

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### CALL **A**

Press, (or press and hold), the assigned **PF** key to send a 2-tone or 5-tone sequential tone.

### STATUS SET **A**

You can change the 5-tone status code using this function:

- Press, (or press and hold), the assigned **PF** key to change the 5-tone status code.
- Enter the 5-tone status code directly from the keypad ([0] - [9] key).
- Press the **[D]** key to store the new number to the 5-tone status code.

### STATUS UP/DOWN **A**

Press, (or press and hold), the assigned **PF** key to select a 5-tone status code from the pre-defined status list.

### STATUS CHECK **A**

Press, (or press and hold), the assigned **PF** key to check the 5-tone receive status code. When you press this key, the display will indicate the “Message” corresponding to the receive status condition per the pre-defined status list.

### DUTY

Press, (or press and hold), the assigned **PF** key to toggle the Duty function of the 2-tone, 5-tone, MDC1200® or Digital Call decoder “On” and “Off”.

When the Duty function is set to “On”, the display indicates “**DUTY ON**” briefly and the user will always hear (depending on the sub-audio signaling) all traffic on the paging channel. The radio will sound the paging alert when it receives the programmed 2-tone, 5-tone, MDC1200® or Digital Call code.

When the Duty function is set to “Off”, the display indicates “**DUTY OFF**” briefly and the user will NOT hear normal radio traffic on the paging channel. The radio will sound the paging alert and unmute only when it receives the programmed 2-tone, 5-tone, MDC1200® or Digital Call code.

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## ADVANCED OPERATION

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### ID CHECK **[A]**

This function allows logged ID of the DTMF Signaling and 5-tone Signaling to be reviewed and relayed (5-tone Signaling only) to a specific station:

- Press, (or press and hold), the assigned **PF** key to display the logged ID of the DTMF Signaling and 5-tone Signaling.
- Press the **[A]** key to select the category (“DTMF Signaling” or “5-tone Signaling”) to be reviewed, then press the **SIDE-1/SIDE-2** buttons to select the ID.
- Press the **[B]** key to toggle the display between the “ID code display” and “Tag display”.
- Press the **[C]** key to send the Call back, when recalling the ID of the “5-tone Signaling”, if desired.

You may cancel the Call back sending by pressing the **[C]** key. In this case, the display indicates “- CANCEL -” briefly.

### ARTS LOGIN

This function enable the displaying the logged ID of the MDC1200® ARTS™ (or ARTSII™).

- Press, (or press and hold), the assigned **PF** key to display the number of the logged station of the MDC1200® ARTS™ (or ARTSII™) for five seconds, and then the display indicates the “ID number” of the logged station.
- Press the **SIDE-1/SIDE-2** buttons to indicate the “ID number” of other stations, if needed.
- Press the **[C]** key to resume normal display.

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## ADVANCED OPERATION

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### **TX SAVE 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. Under some circumstances, though, your hand-held radio may not be heard well at the other end of the communication path, and high power may be necessary at all times.

Press, (or press and hold), the assigned **PF** key, the display indicates “**TXSAOFF**” briefly and disable the Transmit Battery Saver, if you are operating in a location where high power is almost always needed.

Press again, (or press and hold again), the assigned **PF** key, the display indicates “**TX SA ON**” briefly and the Transmit Saver activates to reduce the transmit power when a very strong signal from an apparently nearby station is being received.

### **LOCK**

Press (or press and hold) the assigned **PF** key to lock the **CH** Selector knob, Programmable keys, and **PTT** switch. The precise lockout configuration is programmed by your Vertex Standard Dealer.

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## LOCK

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In order to prevent accidental channel change or inadvertent transmission, various aspects of the **CH** Selector knob, Programmable keys, and **PTT** switch may be locked. The precise lockout configuration is programmed by your Dealer.

To locked out the key locking, turn the radio off. Now, press and hold the **PTT** and **SIDE-2** key while turning the radio on again.

To cancel locking, repeat this process.

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## ARTS™ (AUTO RANGE TRANSPOND SYSTEM)

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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. 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. If you subsequently move back into communication range, as soon as the other station transmits, a short beep will sound again.

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## ARTSII™ (AUTO RANGE TRANSPOND SYSTEM)

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The ARTSII™ system is enhanced feature of the ARTS™ which can be finding out the communication range of the radio individually by using the MDC-1200® Encode/Decoder.

## USER SET MODE

The **EVX-539** 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 assigned **PF** key assigned to the “**SET**” function.
- Press the [**D**] key to store the new configuration. You may cancel the selection by pressing the [**C**] key.
- Select the User Set Mode item you wish to change using the [**A**]/[**B**] keys, then use the **SIDE-1/SIDE-2** keys to adjust the setting of the selected item.
- Press the programmable key assigned to the “**SET**” function to exit to normal operation.

SET MODE ITEM	DESCRIPTION	AVAILABLE VALUES
<b>SQL</b>	Sets the Squelch level.	SQL OP (Open), SQL TH (Threshold), SQL NM (Normal), SQL TI (Tight)
<b>Beep</b>	Enables/Disables the Key Beeper.	BEEP ON, BEEP OFF
<b>Bell</b>	Enables/Disables the Bell function (Alert tone activated by incoming signaling).	BELL ON, BELL OFF
<b>Light</b>	Enables/Disables the back light of the display and keypad.	LIGHT ON, LIGHT OFF
<b>Key</b>	Enables/Disables the Key Lock function.	KEY FRE (Free), KEY LCK (Lock)
<b>PTT</b>	Enables/Disables the PTT Lock function.	PTT FRE (Free), PTT LCK (Lock)
<b>DIMMER</b>	Sets the LCD Brightness level.	DIMM 1, DIMM 2, DIMM 3
<b>Scan</b>	Engages/Disengages Scanning.	SCAN ON, SCAN FM (Follow-Me Scan), SCAN GRP (Group Scan), SCAN OFF
<b>DW</b>	Engages/Disengages Dual Watch.	DW ON, DW OFF
<b>AF</b>	Sets the minimum Audio Volume level.	AF 000 ~ AF 255
<b>CONTRAST</b>	Sets the LCD Contrast level.	CONTR 00 ~ 15
<b>TX Save</b>	Enables/Disables the TX Save function.	TXSV ON, TXSV OFF

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## OPTIONAL ACCESSORIES

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<b>FNB-V133LI-UNI</b>	7.4V, 1380 mAh Li-Ion Battery Pack	<b>CLIP-20</b>	Belt Clip
<b>FNB-V134LI-UNI</b>	7.4V, 2300 mAh Li-Ion Battery Pack	<b>CE142</b>	PC Programming Software
<b>CD-58</b>	Desktop Charger	<b>FIF-12</b>	USB Programming Interface
<b>PA-55</b>	AC Adapter	<b>CT-106</b>	Connection Cable for FIF-12
<b>MH-360S</b>	Compact Speaker Microphone	<b>CT-27</b>	Radio to Radio Cloning Cable
<b>MH-450S</b>	Speaker Microphone		
<b>MH-37A4B</b>	Earpiece Microphone		
<b>MH-66A4B</b>	Submersible Speaker Microphone		
<b>MH-81A4B</b>	Over-the-head VOX Compatible Headset		
<b>ATV-16A</b>	VHF Antenna (136-150 MHz)		
<b>ATV-16B</b>	VHF Antenna (150-162 MHz)		
<b>ATV-16C</b>	VHF Antenna (162-174 MHz)		
<b>ATV-16XL</b>	VHF Antenna (Untuned)		
<b>ATU-16B</b>	UHF Antenna (400-420 MHz)		
<b>ATU-16C</b>	UHF Antenna (420-450 MHz)		
<b>ATU-16D</b>	UHF Antenna (450-470 MHz)		
<b>ATU-16F</b>	UHF Antenna (470-520 MHz)		
<b>ATU-16BS</b>	UHF Stubby Antenna (400-430 MHz)		
<b>ATU-16DS</b>	UHF Stubby Antenna (450-490 MHz)		
<b>CN-2A</b>	Antenna Adapter		

*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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## NOTE

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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-term.aspx>
- Customers outside of North America: contact the authorized dealer in your country.

The AMBE+2TM 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.

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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