VX-920/970 series Operating Manual

SAFETY TRANING INFORMATION

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 (1997) 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, 3kHz 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 environment. This radio is restricted to occupational use, work related operations only where the radio operator must have the knowledge to control its RF exposure conditions.**
- **When transmitting, hold the radio in a vertical position with its microphone 1 to 2 inches (2.5 to 5 cm) away from your mouth and keep the antenna at least 1 inch (2.5cm) 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 (PTT) 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.

  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 PTT button.

- DO NOT transmit when the radio is used in Body Worn configuration with the following accessory: belt-clip.
  It must be used ONLY for (1) there is a 4 cm distance from the body during transmitting, (2) monitoring purposes, using the speaker only and (3) for carrying purposes.
- **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.

1,Controls & Connectors

LED Indicator

Glows Green: Scan active

Blinks Green: Busy Channel (or SQL off)

Glows Red: Transmit

Blinks Red: Battery Voltage is low

Antenna Jack

PTT (Push to Talk) Switch

Monitor Button

Lamp Button

CH (Channel) Selector

VOL/PWR Knob

LCD (without VX-921/971 version)

SEL1 KEY (TOP)

SEL2 KEY (LEFT SIDE)

Toggle SW

MIC/SP Jack (External MIC/SP)

Speaker

Main Microphone

Sub Microphone (Noise Canceling Microphone)

Battery Pack Latch

16-Button DTMF Keypad (VX-929/979 version only)

4-Button DTMF Keypad (VX-924/974 version only)

2,Before You Begin

Battery Pack Installation and Removal

- ❒ To install the battery, hold the transceiver with your left hand, so your palm is over the speaker and your thumb is on the top of the belt clip. Insert the battery pack into the battery compartment on the back of the radio while tilting the Belt Clip outward, then close the Battery Pack Latch until it locks in place with a “Click.”
- ❒ To remove the battery, turn the radio off and remove any protective cases. Open the Battery Pack latch on the bottom of the radio, then slide the battery downward and out from the radio while unfolding the Belt Clip.

  Caution!: *Do not attempt to open any of the rechargeable Li-ion packs, as they could explode if accidentally short-circuited.*

Low Battery Indication

- ❒ As the battery discharges during use, the voltage gradually becomes lower. When the battery voltage reaches 6.0 volts, substitute a freshly charged battery and recharge the depleted pack. The **TX/BUSY** indicator on the top of the radio will blink ***red*** when the battery voltage is low.
- ❒ Avoid recharging Li-ion batteries often with little use between charges, as this can degrade the charge capacity. We recommend that you carry an extra, fully charged pack with you so the operational battery may be used until depletion (this “deep cycling” technique promotes better long-term battery capacity).

3,Operation

Preliminary Steps

- ❒ Install a charged battery pack onto the transceiver, as described previously.
- ❒ Screw the supplied antenna onto the Antenna jack. Never attempt 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 VX-920/970.

Operation Quick Start

- ❒ To turn the top panel's **VOL/PWR** knob clockwise to turn on the radio on.
- ❒ Pull and turn the top panel's **CH** selector knob to choose the desired operating channel. A channel number or channel name will appear on the LCD. (VX-924/929/974/979 version only)
- ❒ Rotate the **VOL/PWR** knob to set the volume level. If no signal is present, press and hold the Monitor button (the third button on the left side) 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 Monitor button more than 2 seconds (or press the Monitor button twice) to quiet the noise and resume normal (quiet) monitoring.
- ❒ To transmit, press and hold the **PTT** switch. Speak into the microphone area of the front panel grille (center right-hand corner) in a normal voice level. To return to the Receive mode, release the **PTT** switch.
- ❒ Press the top panel's **SEL1** and left side panel's **SEL2** button to active one of the preprogrammed functions that may have been enabled at the time of programming by the dealer. See the next section for details regarding the available features.
- ❒ Switch the top panel's **Toggle SW** position to active one of the preprogrammed functions which may have been enabled at the time of programming by the dealer. There are three positions of [**A** (left)], [**|** (center)] and [**B** (right)] in the toggle switch. See the next section for details regarding the available features.
- ❒ Press the **DTMF** keys on the telephone keypad to send DTMF tones. (VX-929/979 version only)
- ❒ If a Speaker/Microphone is available, remove the plastic cap and its two mounting screws from the right side of the transceiver, then make the connector of the Speaker/Microphone touch; secure the connector pin using the screw 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.

Note: Save the original plastic cap and its mounting screws. They should be re-installed when not using the Speaker/Microphone.

4,KEY and TOGGLE Functions

VX-920/970 have the **[SEL1], [SEL2], [MON], [LAMP] Key, ([A], [B], [C], [D] Key**: **VX-924/929/974/979** version only**)** and **Toggle SW**. The Key and SW function can be customized, via programmed by ***Vertex Standard*** dealer, to meet your communications requirements. Some features may require the purchase and installation of optional internal accessories. The possible KEY and SW programming features are illustrated below.

[SEL1], [SEL2], [MON], [LAMP],[A], [B], [C] and [D] Key

Monitor (Generally, it sets to MON Key)
Lamp (Generally, it sets to LAMP Key)
Channel Scan
Dual Watch
High/Low Power
Talk Around
TX Save Disable
Encryption Disable (only, when using DTMF/Encryption Unit)
Follow-Me DW
Group Up
Group Down
Channel Up
Channel Down
SET Mode
Call/Reset (only, when using DTMF/Encryption Unit)
Speed Dial (only, when using DTMP/Encryption Unit)
Emergency (only, when using DTMF/Encryption Unit)

TOGGLE Switch

Channel Scan
Dual Watch
High/Low Power
Talk Around
TX Save Disable
Encryption Disable (only, when using DTMF/Encryption Unit)
Follow-Me Scan
Lock

This device complies with Part 15 of the FCC Rules.
Operation is subject to the condition that this device does not cause harmful interference.

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.