

VXA-700 Operating Manual

Important Notice!

FCC RF Exposure Compliance Requirements for Occupational Use Only:

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, 3 kHz to 300 GHz.
- ❑ ANSI/IEEE C95.3-1992, IEEE Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields - RF and Microwave.
- 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 (2.5 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.

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.

- Always use Vertex Standard authorized accessories.

NOTICE

There are no user-serviceable points inside this transceiver. All service jobs must be referred to your Authorized Service Center.

Introduction

The Vertex Standard VXA-700 is a compact, stylish, solid hand-held transceiver providing communication (transmit and receive) capability on the International Aircraft Communication Band (“COM” band: 118 ~ 136.975 MHz), and it additionally provides VOR and CDI navigation features on the “NAV” band (108 ~ 117.975 MHz).

The VXA-700 includes Temperature display with our exclusive Omni-Glow™ display back-light for minimal degradation of your night vision, NOAA weather band monitoring, 8-character Alpha/Numeric Display, 102 Memory Channels, and 100 “Book Memory” Channels. And the optional Barometric Pressure Unit (SU-1) provides readout of barometric pressure, altitude, and density altitude.

We recommend that you read this manual in its entirety, so as to understand the many features of the VXA-700 completely. Keep this manual handy, so you may use it for reference.

NOTE: The VXA-700’s VOR and CDI Navigation features are supplemental aids to navigation only, and are not intended to be a substitute for accurate (primary) VOR/CDI or landing service equipment. And also, the Barometric/Altitude features of the optional SU-1 are not designed to be a substitute for accurate, calibrated Barometer or Altimeter devices used for navigation critical to personal safety.

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.

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

Controls & Connectors (Top Panel)

1. Antenna Jack

This SMA jack accepts the supplied flexible antenna, or another antenna designed to provide 50 Ohm impedance on the Aircraft Communication Band.

2. MIC/SP Jack

You may connect the supplied CT-XX Headset Cable, optional MH-57A4B Speaker/Microphone, or optional CMP460A Waterproof Speaker/Microphone to this jack.

Never connect any Speaker/Microphone that is not recommended by the manufacturer. Because these jack connections are unique, using a Speaker/Microphone that is not specified by Vertex Standard may damage the VXA-700.

3. VOLUME Knob

This control adjusts the audio volume level. Clockwise rotation increases the volume level.

4. DIAL Selector Knob

This 20-position detented rotary switch tunes the operating frequency or selects the memory channels.

Controls & Connectors (Front Panel)

1. LCD (Liquid Crystal Display)

The display shows the selected operating conditions.

2. PWR Switch

Press and hold this switch for 3 seconds to toggle the transceiver's power on and off.

3. Keypad

Several keys have triple functions.

The primary functions are labeled on the key top (activated by simply pressing the key momentarily).

The secondary functions are labeled in yellow above the top edge of the key (activated by pressing the [F] key first, then the indicated key).

The third functions are labeled in **black** above the top edge of the key (activated by press and holding the indicated key for 2 seconds).

Key	Primary Function Press Key	Secondary Function Press [F] +	Third Function Press and hold for 3 sec.
[SEL(SET)]	Select the tuning methods among the VFO (Variable Frequency Oscillator), MR (Memory Recall), BMR (Pre-Programmed Memories), and WX (Weather Channel Memories).	Enter the "Set" (Menu) mode.	None
[USER(LOCK)]* ¹	Activates the Automatic Noise Limiter during AM reception.	Locks the Keypad.	Switches the frequency display between the "Large Character" and "Small Character" mode.
[F]	Activates the "Secondary" key mode.	None	None
[121.5(HM)]	Selects the Emergency Channel (121.5 MHz).	Switches operation to the "home" (favorite frequency) channel.	None
[MW(SPL.W)]	None	Split-Memory "Write" Command.	Memory "Write" Command.
[1(VOR)TN]	Frequency entry digit "1."	Activates DVOR mode.	Recall Menu Item "SQL Type" (for activating the CTCSS or DCS operation).
[2(TO)CD]	Frequency entry digit "2."	Selects "TO" VOR mode.	Recall Menu Item "TONE Set" (for selecting the CTCSS tone frequency).
[3(FRM)DT]	Frequency entry digit "3."	Selects "FROM" VOR mode.	Activates the DTMF Autodialer function.
[4(CDI)RV]	Frequency entry digit "4."	Activates Course Deviation Indicator mode.	Reverse the transmit and receive frequencies while working through a repeater.
[5(AP)]	Frequency entry digit "5."	None	Recall Menu Item "APO" (for setting of the Automatic Power-Off time).
[6(TAG)RP]	Frequency entry digit "6."	Select the display type (Frequency or Alpha-numeric Tag) during Memory operation.	Recall Menu Item "RPT Shift" (for selecting the direction of the uplink frequency shift ("Simp," "-RPT," or "+RPT") during repeater operation).
[7(SPL)ST]	Frequency entry digit "7."	Activates Split (Duplex) mode.	Recall Menu Item "Step" (for setting of the synthesizer steps).
[8(BP)]	Frequency entry digit "8."	None	Recall Menu Item "Beep" (for setting of the keypad beeper).
[9(SK)]	Frequency entry digit	None	Set the Memory Skip

	“9.”		(Omit) feature to the current memory channel.
[0(SQ)]	Frequency entry digit “0.”	None	Recall Menu Item “SQL” (for setting the squelch threshold level for the AM and FM-Narrow mode).
[BAND(MODE)]	Select the operation band among the AIR band, Amateur band, and FM BC band on the VFO.	Select the operating mode among the AM, FM, and Wide FM.	None
[SCAN(DW)MT]	Activates the Scanner.	Activates Dual Watch.	Activates the “Memory Tune” mode while in the Memory Recall mode.

*1: The Primary and Third function of the USER key may be customized by user via the Menu mode. See page ??.

4. **BUSY/TX Indicator Lamp**

This lamp glows green when a signal is being received and red when transmitting. You may customize the color setup via the Menu mode.

5. **Loudspeaker**

The internal speaker is located in this position.

6. **Microphone**

Speak across this opening in a normal voice level while pressing the PTT switch, to transmit.

7. **Battery Pack Latch**

Open this latch for battery removal.

Controls & Connectors (Left Side)

1. **PTT (Push To Talk) Switch**

Press this button to transmit when you are operating in the COM band or 2-m amateur band. Release this button to return to the “Receive” mode. See page ??.

2. **MONITOR Switch**

This button may be pressed to “Open” the squelch manually, allowing you to listen for very weak signals. Press and hold this button for 2 seconds to “Open” the

squelch continuously. Press this button again to resume normal (quiet) monitoring.
See page ??.

Controls & Connectors (Right Side)

1. EXT DC Jack

When an external 12-Volt DC power source is available, you may connect the (optional) E-DC-5B External DC Cable here. Do not connect any wire to this jack if that wire is connected directly to a 28-Volt DC source. Connecting the VXA-700 directly to a source which exceeds 15.0 Volts DC will result in damage to the unit.

Before You Begin

Precautions

- ❑ This apparatus is capable of two-way communication on channels used for critical aviation safety communications. Therefore, it is important that this radio be kept away from children or other unauthorized users at all times.
- ❑ When making DC connections via the (optional) E-DC-5B DC cable, be absolutely certain to observe the proper voltage level and polarity guidelines. Do not connect this radio directly to any 24 ~ 28 Volt DC source, nor to AC power of any kind. Connecting the VXA-700 directly to a source which exceeds 15.0 Volts DC will result in damage to the unit.
- ❑ Do not dispose of the LI-ion Battery Pack in a fire. Do not carry a LI-ion Battery Pack in your pocket, where keys or coins could short the terminals. This could create a serious fire/burn danger, and possibly cause damage to the LI-ion pack.
- ❑ **Although the VXA-700 is designed to be “submersible,” the enclosure is not “waterproof.” Do not allow the radio to become submersed in water, and do not expose it and/or its LI-ion Battery Pack to water spray under pressure.**

Hand Strap Installation

How to Install the Quick Draw Belt Clip

1. Connect the hanger to the rear of the VXA-700, with the notch pointing directly up, using the supplied screw (Figure 1). **Use *only the screw included with the clip to mount the clip to the back of the VXA-700!***
2. Clip the Quick-Draw Belt Clip onto your belt (Figure 2).

3. To install the VXA-700 into the Quick-Draw Belt Clip, align the hanger with the Quick-Draw Belt Clip, and slide the VXA-700 into its slot until a click is heard (Figure 3).
4. To remove the VXA-700 from the Quick-Draw Belt Clip, rotate the VXA-700 180 degrees, then slide the VXA-700 out from the Quick-Draw Belt Clip (Figure 4).

Installation of FNB-80LI Battery Pack

The FNB-80LI is a high-performance Lithium-Ion battery providing high capacity in a very compact package. Under normal use, the FNB-80LI may be used for approximately 300 charge cycles, after which operating time may be expected to decrease. If you have an old battery pack which is displaying capacity which has become diminished, you should replace the pack with a new one.

1. Install the FNB-80LI as shown in the illustration.
2. Close the Battery Pack Latch on the bottom of the radio.

Do not attempt to open any of the rechargeable LI-ion packs, as personal injury or damage to the LI-ion pack could occur if a cell or cells become accidentally short-circuited.

Battery Charging

If the battery has never been used, or its charge is depleted, it may be charged by connecting the NC-72B/C Battery Charger, as shown in the illustration, to the EXT DC jack. If only 12 ~ 16 Volt DC power is available, the optional E-DC-5B or E-DC-6 DC Adapter (with its cigarette lighter plug) may also be used for charging the battery, as shown in the illustration.

The “Now Charging . . .” will blink in the display while the battery is being charged. When charging is finished, the display will change to indicate “Complete” and the BUSY/TX indicator will blink blue.

Important Notes:

- The NC-72B/C is not designed to power the transceiver for operation (reception or transmission).
- Do not leave the charger connected to the transceiver for continuous periods in excess of 24 hours. Long term overcharging can degrade the LI-ion battery pack and significantly shorten its useful life.
- If using a charger other than the NC-72B/C, or if using a battery pack other than

the FNB-80LI, follow the appropriate instructions provided with the charger/battery. Contact your Dealer if you have any doubts about the appropriateness of the particular charger or battery pack you intend to use.

Installation of FBA-23 Alkaline Battery Case (Option)

The optional FBA-23 Battery Case allows receive monitoring using two “AA” size Alkaline batteries. Alkaline batteries can also be used for transmission in an emergency, but power output will only be ??? mW, and battery life will be shortened dramatically.

To Install Alkaline Batteries into the FBA-23

1. Slide the batteries into the FBA-23 as shown in the illustration, with the Negative [-] side of the batteries touching the spring connections inside the FBA-23.
2. Open the Battery Pack Latch on the bottom of the radio.
3. Install the FBA-23 as shown in the illustration, with the [+] side facing the bottom of the transceiver.
4. Close the Battery Pack Latch on the bottom of the radio.

The FBA-23 does not provide connections for charging, since Alkaline cells cannot be re-charged. Therefore, the NC-72B/C, E-DC-5B, or E-DC-6 may safely be connected to the EXT DC jack when the FBA-23 is installed.

Notes:

- The FBA-23 is designed for use only with AA-type Alkaline cells.
- If you do not use the VXA-700 for a long time, remove the Alkaline batteries from the FBA-23, as battery leakage could cause damage to the FBA-23 and/or the transceiver.

Battery Life Information

When the battery charge is almost depleted, a “Low Voltage” indicator will appear on the display. When this icon appears, it is recommended that you charge the battery soon.

Operating Band	Battery Life (Approx.)		Low Voltage Indicator
	FNB-80LI	FBA-23	
AIR Band ⁽¹⁾	?? hours	?? hours	FNB-80LI: : Fully battery power
144 MHz Band ⁽¹⁾	?? hours	?? hours	

: Enough battery power
 : Lower battery power
 : Poor battery power
 : Nearing depletion
 : Prepare to charge the battery

FM BC Band ⁽²⁾	?? hours	
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(1) TX 6 sec., RX 6 sec. and Squelched 48 sec.

(2) Continuous signal reception

The current battery voltage can be displayed manually on the LCD, by following the instructions on page ??.

Battery capacity may be reduced during extremely cold weather operation. Keeping the radio inside your parka may help preserve the full charge capacity.

AC Operation Using NC-72B/C (Receiving only)

The VXA-700 may be operated from your house current by use of the supplied NC-72B/C Battery Charger. The NC-72B/C should only be used for reception, because it is not capable of supplying sufficient current to support transmission.

To use the NC-72B/C, turn the transceiver off, then plug the miniature connector of the Battery Charger into the EXT DC jack on the side of the radio. Now plug the Battery Charger into the wall outlet. You may now turn on the transceiver.

Basic Operation

Preliminary Steps

- Install a charged battery pack onto the transceiver, as described previously.
- Screw the supplied antenna onto the Antenna jack. Never operate this transceiver without an antenna connected.
- If you have an optional Speaker/Microphone or headset, we recommend that it not be connected until you are familiar with the basic operation of the VXA-700.

Operation Quick Start

- To turn the radio on, press and hold in the PWR Switch for 3 seconds.
- The opening message will appear on the display, then frequency display will appear.
- Press the [BAND(MODE)] key repetitively, switch the operating band among ARI band, 2-m Amateur band, and FM BC band each time you press the [BAND(MODE)] key.
- Directly entering frequencies from the keypad is the easiest method if you know the

frequency on which you wish to operate. Just enter the five digits of the frequency to move to that frequency.

For example, to set 134.35 MHz,
press [1] → [3] → [4] → [3] → [5].

To set 118.275 MHz, you do not need to press the final “5” in the frequency:
[1] → [1] → [8] → [2] → [7].

Note: When the entering frequencies is out of the operating band, this feature is ignored (i.e.: VXA-700 does not entry the 2-m Ammeter band frequency into the AIR band.

- ❑ You may also turn the top panel’s DIAL selector knob to choose the desired operating frequency. The channel frequency will appear on the LCD.
- ❑ To change frequency in 1 MHz steps, press the [F] key momentarily, then rotate the DIAL selector knob to select the MHz digit desired. Press [F] key once more to resume normal channel step.
- ❑ Rotate the VOLUME knob to set the volume level. If no signal is present, press and hold the MONITOR button for 2 seconds; background noise will now be heard, and you may use this noise to set the VOLUME knob for the desired audio level. Press the MONITOR button momentarily to silence the noise and resume normal (quiet) monitoring.
- ❑ To turn the radio off, press and hold in the PWR Switch for 3 seconds.

Squelch Adjustment

- ❑ Press and hold the [0(SQ)] key for 3 second. This instantly recalls Menu Item “SQL: on the AM or Narrow FM mode” or “WSQL: on the WFM mode.”
- ❑ Press the [SEL(SET)] key to enable adjustment of this Menu Item.
- ❑ Rotate the DIAL selector knob to set the squelch threshold (0 - 8) so that the receiver is just silenced. A higher number indicates that a higher signal level is required in order to open the squelch.
- ❑ When you have made your setting, press the [SEL(SET)] key to save the new setting, then press the PTT key repetitively until the radio exit to normal operation.

Accessing the 121.5 MHz Emergency Frequency

The VXA-700 can quickly access the 121.500 MHz Emergency Frequency. This function can be activated even when the keypad lock function is in use.

- ❑ To access the Emergency Frequency, press the [121.5(HM)] key momentarily.

- ❑ To exit the Emergency Frequency, press the [SEL(SET)] key momentarily.

Tuning Methods

Throughout this manual, you will see references to several different frequency setting methods. Each will be particularly useful in a particular operating situation, and they are described below:

- VFO (Variable Frequency Oscillator)

The VFO is a “tuning dial” system which allows you to tune through the AIR band, 2-m Amateur band, and FM BC band using the DIAL selector, the Keypad, or the scanner. To select these bands, press the [BAND(MODE)] key momentarily.

- MR (Memory Recall)

- The MR (Memory Recall) mode of the VXA-700 provides the user with the ability to store and recall as many as 50 channels in the radio’s main memory bank. These memory channels may also be labeled by you with an alpha/numeric name of up to 8 characters in length, to aid in quick identification of the channel. See page ?? for details on creating alpha/numeric labels.

- BOOK (Pre-Programmed) Memories

The Book memories are pre-programmed, either at the factory or by your Dealer (depending on your country’s requirements), typically including the major AIR band station frequencies used in your area. The Book memories can be changed by the user. See page ?? for details.

- WX (Weather Channel) Memories (USA version only)

Ten Weather Channels are pre-programmed at the factory. The VXA-700 will automatically scan this special bank when it is selected by the user.

Transmission

- ❑ To transmit, 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.

Reception of Weather Channel Broadcasts (USA version only)

The VXA-700 can receive VHF Weather Channel broadcasts, which may assist your flight planning. The VXA-700 includes a ten-channel auto-search feature, which simplifies access to Weather Channels when you are in an unfamiliar location.

- ❑ To receive Weather Channels, press the [SEL(SET)] key (repeatedly, if necessary) to select the Weather Channel mode. In the Weather Channel mode, “WX” will appear

upper left corner of the display.

- ❑ The VXA-700 will now scan quickly through the ten standard Weather Channels, and will stop on the first active station found.
- ❑ If there are two or more weather channels audible in your area, you may select the alternate channel(s) by pressing the PTT switch. Pressing the PTT switch re-initiates the scanning process.
- ❑ If there are no Weather Channels in your area, the scanner will not stop. Press the MONITOR button to stop the scanner.
- ❑ You can also select Weather Channels manually by rotating the DIAL selector knob.
- ❑ To exit the Weather Channel mode, press the [SEL(SET)] key momentarily to return to the VFO mode.

Note: The Weather Channel mode memorizes the last Weather Channel you have used, and will retain this information until the radio is turned off.

Monitor Key

When listening to a very weak signal from an aircraft or ground station, you may observe the signal disappearing periodically as the incoming signal strength becomes too weak to override the squelch threshold setting.

To disable the squelch temporarily, press and hold the MONITOR key for 2 seconds on the left side of the radio, just below the PTT button. The squelch will remain open and you should have a better chance of hearing weak signals.

To return to normal operation, press the MONITOR key momentarily.

ANL (Automatic Noise Limiter) Feature

For reduction of impulse noise, such as that produced by an engine's ignition system, the ANL feature may prove helpful.

- ❑ To activate the ANL feature, press the [USER(LOCK)] key momentarily. The "ANL" icon will appear on the display, and you should observe a reduction in the ignition noise.
- ❑ To turn the ANL feature off, press the [USER(LOCK)] key again; the "ANL" icon will disappear from the display.

LOCK Function

The lock function prevents accidental changes to the frequency setting and the keypad controls.

- ❑ To activate the lock feature, press [F] → [USER(LOCK)].
- ❑ In the LOCK mode, the “KEY LOCK” icon will appear on the display.
- ❑ To turn the lock feature off, press [F] → [USER(LOCK)] again.
- ❑ You can still access the 121.500 MHz Emergency Frequency when the LOCK function is on.

Simply press the [121.5(HM)] key momentarily (this key never locks). Pressing this key also unlocks the radio.

Beep On/Off

The VXA-700's key/button beeper provides convenient audible feedback whenever a button is pressed. Each key and button has a different beep pitch, and each function has a unique beep combination.

When you are scanning, the beeper will be heard each time the scanner halts on a busy channel. This may be distracting in some environments; if you want to turn the beeper off (or back on again):

- ❑ Press and hold the [8(BP)] key for 3 seconds. This instantly recalls Menu Item “Beeper.”
- ❑ Press the [SEL(SET)] key to enable adjustment of this Menu Item.
- ❑ Rotate the DIAL selector knob to select the desired selection.
 - On: Sounds a keypad beeper corresponding to a musical note.
 - DTMF: Sounds a keypad beeper corresponding to a DTMF tone.
 - Off: Keypad beeper is “off”
- ❑ When you have made your selection, press the [SEL(SET)] key to save the new setting, then press the PTT key repetitively until the radio exit to normal operation.

Receive Battery Saver Setup

An important feature of the VXA-700 is its Receive Battery Saver, which “puts the radio to sleep” for a time interval, periodically “waking it up” to check for activity. If somebody is talking on the channel, the VXA-700 will remain in the “active” mode, then resume its “sleep” cycles. This feature significantly reduces quiescent battery drain, and you may change the amount of “sleep” time between activity checks using the Menu System:

- ❑ Press the [F] key, then press the [SEL(SET)] key to activate the Menu (“SET”) mode.
- ❑ Rotate the DIAL selector knob to select Menu Item “3. Receive,” then press the [SEL(SET)] key.
- ❑ Rotate the DIAL selector knob to select Sub Menu Item “5. RX Save,” then press the [SEL(SET)] key.
- ❑ Press the [SEL(SET)] key again to enable adjustment of this Menu Item.
- ❑ Rotate the DIAL selector knob to select the desired “duty cycle” (receive:sleep). The selections available are 1:1, 1:2, 1:3, 1:4, 1:5, and ABS* or oFF. The default value is 1:1.
- ❑ When you have made your selection, press the [SEL(SET)] key to save the new setting, then press the PTT key repetitively until the radio exit to normal operation.

*ABS: Automatic Battery Saver, based on activity on the receiver.

The setting of 1:5 will promote the greatest conservation of battery capacity, but the receiver’s response time to incoming calls will be slowed somewhat.

Note: This feature does not operate during Scan or Dual Watch.

Memory Operation

The VXA-700 provides 102 user-programmable Main memories, labeled “MR001” through “MR100”, “MRLch,” and “MRUch,” and up to 90 pre-programmed memories, designated “Book” Memories, labeled “BMR001” through “BMR090.”

The Main memories and “Book” Memories can be assigned alpha-numeric names of up to eight characters.

Memory System Operation

The VXA-700’s Main Memory system allows the user to store, label, and recall channel frequencies which you may want to use frequently. You may store VFO frequencies, “Book” Memory frequencies, and/or Weather Channel frequencies (USA version only) into the Main Memory system.

Memory Storage

- ❑ Select the desired frequency in the VFO mode, or recall the “Book” Memory channel or Weather channel to be stored in the Main Memory.
- ❑ Press and hold the [MW(SPL.W)] key for 3 seconds. The display will indicate “MR” and a channel number will blink on the LCD.
- ❑ Within five seconds of pressing the [MW(SPL.W)] key, rotate the DIAL selector knob to select the desired memory channel number for storage.

In order to prevent writing over memory channels, a “open door” icon will appear at the right of the channel number to indicate a vacant memory channel.

- ❑ Now press and hold the [MW(SPL.W)] key for 3 seconds; you will now see the blinked “A” character on the LCD. To attach an alpha/numeric name (label) to the memory, proceed to the next step; otherwise press and hold the [MW(SPL.W)] key for 3 seconds to save the entry and exit.
- ❑ To label a memory with an alpha/numeric name, the next step is to use the DIAL selector knob to select any of the 125 available characters (including letters, numbers, and special symbols). When the desired first character appears, press the [SEL(SET)] key momentarily to move on to the next character.
- ❑ Select succeeding characters in the same manner, pressing the [SEL(SET)] key momentarily after each selection.
- ❑ After entering the entire name (eight characters maximum), press the [MW(SPL.W)] key for 3 seconds to save all data for the channel and exit.

Note: If you have stored a Weather Channel or “Book” Memory Channel, utilize the alphanumeric memory, and other labels may not be stored.

Recalling the Memories

- ❑ Press the [SEL(SET)] key, repeatedly if necessary, until “MR” (Memory Recall) appears on the display. In the MR mode, you will see the previously selected channel number appearing at the bottom of the “MR” icon on the LCD.
- ❑ Rotate the DIAL selector knob to select the desired memory channel.
- ❑ You may change the title structure of the Memory display type between “Frequency Indication” and “Frequency Indication plus Alpha-numeric Label” by press [F] → [6(TAG)RP] key.
- ❑ To exit the Memory mode, press the DIAL selector knob momentarily to return to the VFO mode.

Note: In either the Memory mode or the “Book” Memory mode, you can change memory

channels in 10 channel steps: press the [F] key momentarily, then rotate the DIAL selector knob. The “F” icon will show at the right edge of the display when the 10 channel step tuning mode is active. Press the [F] key once more to resume normal channel selection in 1 channel steps.

Scanning Operation

Basic Scan

The VXA-700 allows you to scan automatically in the VFO*¹, Main Memory, “Book” Memory, or Weather Channel*² modes. It pauses on signals encountered, so you can talk to the station(s) on that frequency, if you like.

*1: In the VFO mode, the automatic scanner is only available in the current operating band (AIR band, 2-m Amateur band, or FM BC band). Furthermore, on the AIR band, the automatic scanner is only available in the COM band (118.000 - 136.975 MHz); when the scanner reaches the uppermost frequency in the COM band, it will revert to the bottom end of the COM band and repeat the scanning process until you cancel the scanning process.

*2: USA version only.

If you wish to scan in the NAV band (108.000 - 117.975 MHz), you can do so manually, as described below.

Scanning operation is basically the same in each of the above modes.

- Press the [SCAN(DW)MT] key momentarily to start the automatic scanner upward (toward a higher frequency or a higher channel number).
- When the scanner encounters a signal, scanning pauses and the radio remains on that channel until one second after the signal disappears, after which scanning will resume.
- While the scanner remains paused on a frequency, the decimal point of the frequency display blinks. The display will be illuminated unless the Scan Lamp Feature is turned off.
- To change the scan direction, turn the DIAL selector knob one click in the opposite direction.
- To stop the automatic scanner, press the PTT switch or the [SCAN(DW)MT] key momentarily.

The VXA-700's automatic scanner is not operational in the NAV band (108.000 - 117.975 MHz), because the NAV stations (ILS, etc.) transmit constantly (thereby causing the scanner to stop repeatedly). However, you can scan manually in the NAV band, per the following procedure:

- ❑ Press and hold the [SCAN(DW)MT] key to start the manual scanner. Scanning will continue as long as the key is depressed.
- ❑ Release the [SCAN(DW)MT] key to stop the manual scanner immediately.

Note: When scanning upward in frequency, when the frequency reaches the COM Band (118.000 - 136.975 MHz) via manual scanning, The VXA-700 will switch to the automatic scanner mode.

Channel-Skip Scanning

Continuous-carrier stations like ATIS (Automatic Terminal Information Service) or Weather Broadcast stations inhibit scanner operation. Since these stations are always active, the scanner will be halted repeatedly on their channels. Such channels can be set to be "Skipped" during Memory scanning (MR, Book or WX modes), if you like, so as not to interfere with automatic channel scanning:

- ❑ Recall the Memory Channel to be skipped during scanning.
- ❑ Press and hold the [9(SK)] key for 3 seconds. The "◀" icon will appear at the right of the frequency display, indicating that the channel is to be ignored during scanning.
- ❑ You can also designate a channel to be skipped while scanning. When the receiver is halted on a channel that you wish to skip, press and hold the [SCAN(DW)MT] key for 2 seconds (the icon will appear next to the channel to be skipped).
- ❑ Later, to re-enable the memory channel for scanning, repeat the first two steps. The "◀" icon will disappear by the channel you have just re-enabled.

Note: A memory set to be "Skipped" is still accessible for manual memory selection using the DIAL selector knob.

Dual Watch Operation

The Dual Watch feature automatically checks for activity on a "Priority" channel* while you are operating on another channel. During Dual Watch operation, the current channel and the Priority channel will each be polled for a 500 ms interval, as the VXA-700 looks for activity on each channel.

- ❑ To start Dual Watch, press [F] → [SCAN(DW)MT].
- ❑ The "DW" icon will appear on the display.
- ❑ While receiving on the "current" channel (not the Priority channel), you may push

the PTT switch at any time to transmit on that channel.

- ❑ When a signal is received on the Priority channel, operation immediately shifts to the Priority channel, the “DW” icon will blink, and the display will become illuminated.
- ❑ While receiving on the priority channel, if you momentarily press the PTT switch, Dual Watch will be disabled. You may then transmit on the Priority Channel.
- ❑ To stop Dual Watch, press [F] → [SCAN(DW)MT].
- ❑ If you wish, you may use both the Dual Watch and Scan features simultaneously. To do this, start the Dual Watch first, then start the Scanner.

*The “Priority” channel is defined as the last-used Memory Channel (when using the VFO and “Book” memory modes) or Memory Channel “1” (when using the Main Memory mode).

Priority Dual Watch Operation

Similar to Dual Watch operation (described on previous page), Priority Dual Watch is an enhanced version which includes the following additional features:

- The receiving time interval (ratio) between the current channel and the Priority channel may be customized via the Menu Item “PRI Time.” See page ?? for details.
- Irrespective of which channel is currently being received, when the PTT button is pushed transmission will always occur on the Priority channel.

Before initiating Priority Dual Watch, Menu Item “DW/PRI” must be set to the “PRI” mode (instead of “DW”). See page ?? for details.

- ❑ To start Priority Dual Watch, press [F] → [SCAN(DW)MT]. The “DW” icon will appear on the display.
- ❑ While receiving on the “current” (non-Priority) channel, pressing the PTT button once causes the radio to switch to the Priority channel and cancels Dual Watch. Press the PTT button again to transmit on the Priority channel.

When a signal is received on the Priority channel, reception immediately shifts to the Priority channel, the “DW” icon will blink, and the display will become illuminated unless the Scan Lamp Feature is turned off.

- ❑ While receiving on the priority channel, if you momentarily press the PTT switch, Priority Dual Watch will be disabled. You may then transmit on the Priority Channel.
- ❑ To stop Priority Dual Watch, press [F] → [SCAN(DW)MT].

Spectrum Scope Monitor

Advanced Operation (Air Band)

VOR Navigation

To Select the VOR Mode

- When entering the NAV band (108.000 - 117.975 MHz), the VXA-700 selects the VOR mode automatically. The “Course Indicator” will appear on the display, and the “TO” or “FROM” indicator will appear at the right of the “Course Indicator” on the display.

Note: The “Course Indicator” indicates “--°” when either your aircraft is too far away from the VOR station or the frequency is not correctly set to that of the VOR station. Conversely, the “Course Indicator” will indicate “Loc” when a localizer signal is being received.

- The “TO” or “FROM” flag indicators indicate whether the VOR navigation information is based on a course leading to the VOR station or leading away from the VOR station.
- To change the flag from “TO” to “FROM” or vice versa, press the [F] → [3(FROM)DT] or [2(TO)CD] key, respectively.
- The small “Course Indicator” and “TO”/“FROM” flag indicators may be toggled to the larger character. To do this, press and hold in the [()] key for 2 seconds to toggle to the larger display area. Press the [()] key momentarily again to return to the smaller displays.

Flying to a VOR Station

The VXA-700 can indicate the deviation from the direct course to a VOR station.

- Select a VOR station on your aeronautical chart and turn the DIAL selector knob (or enter the frequency directly with the keypad) to the frequency of the VOR station.
- To indicate the deviation between your current flight path and the desired course, press [F] → [4(CDI)RV] to change to the CDI (Course Deviation Indicator) mode. The “Course Deviation Arrow” will appear on the display when your aircraft is off the direct course to the VOR station.

- ❑ When your aircraft is off course to the right, the Course Deviation Arrow display will show bars to the left side of the diamond (“|||◇”). When your aircraft is off course to the left, the Course Deviation Arrow display will show bars to the right side of the diamond (“◇|||”). Correct your course until no bars appear on either side of the CDI “diamond” (only (“◇”) will be visible when the heading is correct).
- ❑ To return to the DVOR mode, press [F] → [1(VOR)TN].

Entering a Desired Course

The VXA-700 can also be configured to indicate the deviation from the desired course, not only the deviation from the path to the VOR station.

- ❑ Set the frequency to the desired VOR station.
- ❑ To change the “**TO**” or “**FROM**” to “**TO**,” if it is not in that mode already.
- ❑ Press [F] → [4(CDI)RV] key to change to the CDI mode.
- ❑ Set the desired course to the VOR station using the DIAL selector knob or keypad (three digits input; e.g. 47°, press [0] → [4] → [7]).

Note 1: The (“|||◇”) or (“◇|||”) indication will appear on the display when your aircraft is off the desired course.

Note 2: When your heading is correct, the ABCS function may be more useful than the course input option.

- ❑ The Course Deviation Arrow points to the right when your aircraft is off course to the left, and it points to the left when your aircraft is off course to the right.

Note 1: To get back on course, fly right more than the number of degrees indicated by the Course Deviation Arrow.

Note 2: If the overflow indicator “◀” appears on the right side, select a heading plus 10 degrees to the desired course; if the overflow indicator “◀” appears on the left side, select a heading minus 10 degrees.

ABCS Mode

In the CDI mode, the Auto Bearing Center System (ABCS) adds or subtracts the number of degrees indicated by the CDI from the Omni Bearing Selector (OBS).

Position Cross-checking

- ❑ Select two VOR stations on your aeronautical chart.
- ❑ Set the frequency of one of the VOR stations in the VOR mode. The course indicator will show the course deviation from the VOR radial. Note the radial you currently are on.

- ❑ Now set the frequency of the other VOR station in the VOR mode. Note the radial from the station you are on.
- ❑ Extend the radials from each VOR station on the chart. Your aircraft is located at the point where the lines intersect.

Split Operation

The split operation feature allows you to transmit a call to a Flight Service Station using the COM band frequencies, while receiving a VOR station (in the NAV band). VOR stations equipped with this capability typically are shown, on navigation charts, with the voice calling frequency in parenthesis above the navigation frequency.

Programming a Transmit Frequency

- ❑ Press the DIAL selector knob, repeatedly if necessary, to select the VFO mode.
- ❑ Set a NAV band (108.000 - 117.975 MHz) frequency using the DIAL selector knob or keypad.
- ❑ Press [F] & [MW (SPL.W)]. The icon will blink, and the transmit frequency will appear on the display.
- ❑ Now set your radio transmit frequency, where the Flight Service Station will be listening for calls, using the DIAL selector knob or keypad.
- ❑ Press and hold in the [MW (SPL.W)] key for 2 seconds to save the transmit frequency and return to the NAV band frequency.

Note: You have now stored the separate transmit frequency, but you have not yet activated the split-frequency function; go on to the next section.

Operating in the Split Mode

r It is assumed that you have already set the desired VOR station frequencies (in the NAV band) per the above instructions.

r Press [F] & [7 (SPL)] to turn on the split function. The SPL icon will appear on the display.

r Press and hold in the PTT switch to transmit on the split transmit frequency.

r Release the PTT switch to return to the receive mode.

r To disable the split function, press [F] & [7 (SPL)] again.

Note: A split frequency can be programmed into each memory channel independently. Set a transmit frequency before programming the memory channel, if desired. The split function on/off setting can also be programmed into a memory channel.

Advanced Operation (Amateur Band)

Repeater Operation

Repeater stations, usually located on mountaintops or other high locations, provide a dramatic extension of the communication range for low-powered hand-held or mobile transceivers. The VXA-700 includes a number of features which make repeater operation simple and enjoyable.

Repeater Shifts

Your VXA-700 has been configured, at the factory, the repeater shift set to 600 kHz on the 2-m amateur band.

Depending on the part of the band in which you are operating, the repeater shift may be either downward (–) or upward (+), and one of these icons will appear at the bottom of the LCD when repeater shifts have been enabled.

Automatic Repeater Shift (ARS)

The VXA-700 provides a convenient Automatic Repeater Shift feature, which causes the appropriate repeater shift to be automatically applied whenever you tune into the designated repeater sub-bands in your country. These sub-bands are shown below.

If the ARS feature does not appear to be working, you may have accidentally disabled it. To re-enable ARS:

- Press the [F] key, then press the [SEL(SET)] key to activate the Menu (“SET”) mode.
- Rotate the DIAL selector knob to select Menu Item “4. Transmit,” then press the [SEL(SET)] key.
- Rotate the DIAL selector knob to select Sub Menu Item “3. ARS,” then press the [SEL(SET)] key.
- Press the [SEL(SET)] key again to enable adjustment of this Menu Item.
- Rotate the DIAL selector knob to select “ON” (to enable Automatic Repeater Shift).
- When you have made your selection, press the [SEL(SET)] key to save the new setting, then press the PTT key repetitively until the radio exit to normal operation.

Manual Repeater Shift Activation

If the ARS feature has been disabled, or if you need to set a repeater shift direction

other than that established by the ARS, you may set the direction of the repeater shift manually.

To do this:

- Press the [F] key, then press the [SEL(SET)] key to activate the Menu (“SET”) mode.
- Rotate the DIAL selector knob to select Menu Item “4. Transmit,” then press the [SEL(SET)] key.
- Rotate the DIAL selector knob to select Sub Menu Item “1. RPT Shift,” then press the [SEL(SET)] key.
- Press the [SEL(SET)] key again to enable adjustment of this Menu Item.
- Rotate the DIAL selector knob to select the desired shift among “-RPT,” “+RPT,” and “Simplex.”
- When you have made your selection, press the [SEL(SET)] key to save the new setting, then press the PTT key repetitively until the radio exit to normal operation.

Changing the Default Repeater Shifts

If you travel to a different region, you may need to change the default repeater shift so as to ensure compatibility with local operating requirements.

To do this, follow the procedure below:

- Press the [F] key, then press the [SEL(SET)] key to activate the Menu (“SET”) mode.
- Rotate the DIAL selector knob to select Menu Item “4. Transmit,” then press the [SEL(SET)] key.
- Rotate the DIAL selector knob to select Sub Menu Item “2. Shift Width,” then press the [SEL(SET)] key.
- Press the [SEL(SET)] key again to enable adjustment of this Menu Item.
- Rotate the DIAL selector knob to select the new repeater shift magnitude.
- When you have made your selection, press the [SEL(SET)] key to save the new setting, then press the PTT key repetitively until the radio exit to normal operation.

Note: If you just have one “odd” split that you need to program, don’t change the “default” repeated shifts using this Menu Item! Enter the transmit and receive frequencies separately, as shown on page ??.

Checking the Repeater Uplink (Input) Frequency

It often is helpful to be able to check the uplink (input) frequency of a repeater, to see if the calling station is within direct (“Simplex”) range.

To do this, just press the [HM/RV(EMG)] key. You’ll notice that the display has shifted to the repeater uplink frequency. Press the [HM/RV(EMG)] key again to cause operation to revert to normal monitoring of the repeater downlink (output) frequency.

RF Says: The configuration of this key may be set either to “RV” (for checking the input frequency of a repeater, or “HM” (for instant switching to the “Home” channel for the band you are operating on). To change the configuration of this key, use Menu Item “Misc. Setup #2 [HOM/REV]. See page ??.

CTCSS Operation

Many repeater systems require that a very-low-frequency audio tone be superimposed on your FM carrier in order to activate the repeater. This helps prevent false activation of the repeater by radar or spurious signals from other transmitters. This tone system, called “CTCSS” (Continuous Tone Coded Squelch System), is included in your VXA-700, and is very easy to activate.

The CTCSS setup involves two actions: setting the Tone Frequency and then setting of the Tone Mode. These actions are set up by using the [1(VOR)TN] and [2(TO)CD] keys, or Menu Items (SQL Type) and (TONE Set).

- Press and hold the [1(VOR)TN] key for 3 seconds. This instantly recalls Menu Item (SQL Type).
- Press the [SEL(SET)] key again to enable adjustment of this Menu Item.
- Rotate the DIAL selector knob so that “T” appears at the bottom right corner on the display; this activates the CTCSS Encoder, which allows repeater access.

Note: You may notice an additional “DCS” icon appearing while you rotate the DIAL selector knob in this step. We’ll discuss the Digital Code Squelch system shortly.

- Rotate the DIAL selector knob in above step will occasionally appear “TSQ.” When “TSQ” appears, this means that the Tone Squelch system is active, which mutes your VXA-700’s receiver until it receives a call from another radio sending out a matching CTCSS tone. This can help keep your radio quiet until a specific call is received, which may be helpful while operating in congested areas.
- When you have made your selection of the CTCSS tone mode, press the [SEL(SET)]

key momentarily, then rotate the DIAL selector knob one click clockwise to select Menu Item (TONE Set). This Menu selection allows setting of the CTCSS tone *frequency* to be used.

- ❑ Press the [SEL(SET)] key to enable the adjustment of the CTCSS frequency.
- ❑ Rotate the DIAL selector knob until the display indicates the Tone Frequency you need to be using (ask the repeater owner/operator if you don't know the tone frequency).
- ❑ When you have made your selection, press the [SEL(SET)] key to save the new setting, then press the PTT key repetitively until the radio exit to normal operation.

Note: Your repeater may or may not re-transmit a CTCSS tone - some systems just use CTCSS to control access to the repeater, but don't pass it along when transmitting. If the S-Meter deflects, but the VXA-700 is not passing audio, repeat steps "1" through "3" above, but rotate the DIAL selector knob so that "SQL" disappears - this will allow you to hear all traffic on the channel being received.

DCS Operation

Another form of tone access control is Digital Code Squelch, or DCS. It is a newer, more advanced tone system which generally provides more immunity from false paging than does CTCSS. The DCS Encoder/Decoder is built into your VXA-700, and operation is very similar to that just described for CTCSS. Your repeater system may be configured for DCS; if not, it is frequently quite useful in Simplex operation if your friend(s) use transceivers equipped with this advanced feature.

Note: Just as in CTCSS operation, DCS requires that you set the Tone Mode to DCS and that you select a tone code.

- ❑ Press and hold the [1(VOR)TN] key for 3 seconds. This instantly recalls Menu Item (SQL Type).
- ❑ Press the [SEL(SET)] key again to enable adjustment of this Menu Item.
- ❑ Rotate the DIAL selector knob until "DCS" appears on the display; this activates the DCS Encoder/Decoder.
- ❑ Press the [SEL(SET)] key momentarily, then rotate the DIAL selector knob two click clockwise to select Menu Item (DCS Set).
- ❑ Press the [SEL(SET)] key again to enable adjustment of this Menu Item.
- ❑ Rotate the DIAL selector knob until the desired DCS Code (a three-digit number). Ask the repeater owner/operator if you don't know DCS Code; if you are working simplex, just set up the DCS Code to be the same as that used by your friend(s).

- ❑ When you have made your selection, press the [SEL(SET)] key to save the new setting, then press the PTT key repetitively until the radio exit to normal operation.

R.F. Says: Remember that the DCS is an Encode/Decode system, so your receiver will remain muted until a matching DCS code is received on an incoming transmission. Switch the DCS off when you're just tuning around the band!

Miscellaneous Setting

Changing the Channel Step

The VXA-700's synthesizer provides the option of utilizing channel steps of 5/10/12.5/20/25/50/100 kHz per step, any number of which may be important to your operating requirements. The VXA-700 is set up at the factory with different default steps on each operating band which probably are satisfactory for most operation. However, if you need to change the channel step increments, the procedure to do so is very easy.

- ❑ Press and hold the [7(SPL)ST] key for 3 seconds. This instantly recalls Menu Item (Step).
- ❑ Press the [SEL(SET)] key again to enable adjustment of this Menu Item.
- ❑ Rotate the DIAL selector knob select the new channel step size.
- ❑ When you have made your selection, press the [SEL(SET)] key to save the new setting, then press the PTT key repetitively until the radio exit to normal operation.

Changing the Operating Mode

The VXA-700 provides for automatic mode changing when the radio is tuned to different operating frequencies. However, on the 2-m amateur band, should an unusual operating situation arise in which you need to change between the available operating modes (FM-Narrow and AM), by pressing the [F] → [BAND(MODE)] repeatedly.

Note: The Air band is fixed "AM" mode. Meanwhile, the FM BC band is fixed "Wide FM" mode.

Automatic Power-Off (APO) Feature

The APO feature helps conserve battery life by automatically turning the radio off after a user-defined period of time within which there has been no dial or key activity. The available selections for the time before power-off are 0.5/1/8 hours, as well as APO Off.

The default condition for the APO is OFF, and here is the procedure for activating it:

- ❑ Press the [F] key, then press the [SEL(SET)] key to activate the Menu (“SET”) mode.
- ❑ Rotate the DIAL selector knob to select Menu Item “6. Misc Setup,” then press the [SEL(SET)] key.
- ❑ Rotate the DIAL selector knob to select Sub Menu Item “1. APO,” then press the [SEL(SET)] key.
- ❑ Press the [SEL(SET)] key again to enable adjustment of this Menu Item.
- ❑ Rotate the DIAL selector knob to select the desired time period after which the radio will automatically shut down.
- ❑ When you have made your selection, press the [SEL(SET)] key to save the new setting, then press the PTT key repetitively until the radio exit to normal operation.

When the APO is activated, the “TIMER” icon will appear at the center bottom on the LCD. If there is no action by you within the time interval programmed, the microprocessor will shut down the radio automatically.

Just press and hold in the PWR switch for 3 seconds to turn the transceiver back on after an APO shutdown, as usual.

Transmitter Time-Out Timer (TOT)

The TOT feature provides a safety switch which limits transmission to a pre-programmed value. This will promote battery conservation by not allowing you to make excessively-long transmissions, and in the event of a stuck PTT switch (perhaps if the radio or a Speaker/Mic is wedged between pilot’s seats) it can prevent interference to other users as well as battery depletion. As configured at the factory the TOT feature is set to OFF, and here is the procedure for activating it:

- ❑ Press the [F] key, then press the [SEL(SET)] key to activate the Menu (“SET”) mode.
- ❑ Rotate the DIAL selector knob to select Menu Item “4. Transmit,” then press the [SEL(SET)] key.
- ❑ Rotate the DIAL selector knob to select Sub Menu Item “6. T.O.T,” then press the [SEL(SET)] key.
- ❑ Press the [SEL(SET)] key again to enable adjustment of this Menu Item.
- ❑ Rotate the DIAL selector knob to set the Time-Out Timer to the desired “Maximum

TX” time (1 minute, 3 minutes or 5 minutes).

- ❑ When you have made your selection, press the [SEL(SET)] key to save the new setting, then press the PTT key repetitively until the radio exit to normal operation.

Note: Since brief transmissions are the mark of a good operator, try setting up your radio’s TOT feature for a maximum transmission time of 1 minute. This will significantly improve battery life, too!

Programming the Key Assignment

Default VXA-700’s [USER(LOCK)] key function have been assigned to ANL feature (press key) and Large font feature (press and hold key) at the factory. These may be changed by the user, if you wish to utilize another function.

To program the function assigned to a key:

- ❑ Press the [F] key, then press the [SEL(SET)] key to activate the Menu (“SET”) mode.
- ❑ Rotate the DIAL selector knob to select Menu Item “5. Key Set,” then press the [SEL(SET)] key.
- ❑ Rotate the DIAL selector knob to select Sub Menu Item “4. USER 1” (for press key function) or “5 USER 2” (for press and hold key function), then press the [SEL(SET)] key.
- ❑ Press the [SEL(SET)] key again to enable adjustment of this Menu Item.
- ❑ Rotate the DIAL selector knob to select the function you wish to assign to the button you selected in the previous step. The available choices are:

ANL: Activate the Automatic Noise Limiter in the AM mode.

TX Power: Selects the FM transmit power output level on the 2-m Amateur band.

ARTS: Activates the ARTS feature on the 2-m Amateur band.

XFER: Reverses the transmit and receive frequencies during split-frequency operation.

SPEC Start: Activates the Spectrum Scope Monitor feature.

Large Font: Switches the frequency display between the “Large Character” and “Small Character” mode.

None

- ❑ When you have made your selection, press the [SEL(SET)] key to save the new setting, then press the PTT key repetitively until the radio exit to normal operation.

Display Customization

Display Contrast

The LCD's contrast may be adjusted using the Menu.

- Press the [F] key, then press the [SEL(SET)] key to activate the Menu ("SET") mode.
- Rotate the DIAL selector knob to select Menu Item "1. Display," then press the [SEL(SET)] key.
- Rotate the DIAL selector knob to select Sub Menu Item "4. Contrast," then press the [SEL(SET)] key.
- Press the [SEL(SET)] key again to enable adjustment of this Menu Item.
- Rotate the DIAL selector knob to adjust the contrast. As you make the adjustment, you will be able to see the effects of your changes.
- When you have made your selection, press the [SEL(SET)] key to save the new setting, then press the PTT key repetitively until the radio exit to normal operation.

Display Dimmer

The LCD illumination may be adjusted using the Menu, as well.

- Press the [F] key, then press the [SEL(SET)] key to activate the Menu ("SET") mode.
- Rotate the DIAL selector knob to select Menu Item "1. Display," then press the [SEL(SET)] key.
- Rotate the DIAL selector knob to select Sub Menu Item "5. Dimmer," then press the [SEL(SET)] key.
- Press the [SEL(SET)] key again to enable adjustment of this Menu Item.
- Rotate the DIAL selector knob to adjust the display illumination for a comfortable brightness level. As you make the adjustment, you will be able to see the effects of your changes.
- When you have made your selection, press the [SEL(SET)] key to save the new setting, then press the PTT key repetitively until the radio exit to normal operation.

TX/BUSY Indicator Customization

Default VXA-700's TX/BUSY illuminate color have been assigned at the factory. These may be changed by the user, if you wish to utilize another custom-designed color hue.

The Red, Green, and Blue elements of each color's composition may be adjusted individually.

- ❑ Press the [F] key, then press the [SEL(SET)] key to activate the Menu ("SET") mode.
- ❑ Rotate the DIAL selector knob to select Menu Item "1. Display," then press the [SEL(SET)] key.
- ❑ Rotate the DIAL selector knob to select Sub Menu Item "5. Dimmer," then press the [SEL(SET)] key.
- ❑ Press the [SEL(SET)] key again to enable adjustment of this Menu Item.
- ❑ Rotate the DIAL selector knob to adjust the display illumination for a comfortable brightness level. As you make the adjustment, you will be able to see the effects of your changes.
- ❑ When you have made your selection, press the [SEL(SET)] key to save the new setting, then press the PTT key repetitively until the radio exit to normal operation.

Field Programming Mode

The VXA-700's "Book" Memories also allow the user to store, label, and recall channel frequencies which you may want to use frequently while the VXA-700 is in the Field Programming mode.

- ❑ Press and hold the PTT switch and [MW(SPL.W)] key while turning the radio on, to activate the Field Programming Mode. "FD" appears at the upper left corner on the display.
- ❑ Select the desired frequency to be stored in the Book Memory.
- ❑ Press and hold the [MW(SPL.W)] key for 3 seconds. The display will indicate a "Book" memory channel number will blink on the LCD.
- ❑ Within five seconds of pressing the [MW(SPL.W)] key, rotate the DIAL selector knob to select the desired memory channel number for storage.

In order to prevent writing over memory channels, a "open door" icon will appear at the right of the channel number to indicate a vacant memory channel.

- ❑ Now press and hold the [MW(SPL.W)] key for 3 seconds; you will now see the blinked "A" character on the LCD. To attach an alpha/numeric name (label) to the memory, proceed to the next step; otherwise press and hold the [MW(SPL.W)] key

for 3 seconds to save the entry and exit.

- ❑ To label a memory with an alpha/numeric name, the next step is to use the DIAL selector knob to select any of the 125 available characters (including letters, numbers, and special symbols). When the desired first character appears, press the [SEL(SET)] key momentarily to move on to the next character.
- ❑ Select succeeding characters in the same manner, pressing the [SEL(SET)] key momentarily after each selection.
- ❑ After entering the entire name (eight characters maximum), press the [MW(SPL.W)] key for 3 seconds to save all data for the channel.
- ❑ Turn the radio off, then turn the radio back on again to begin normal operation.

Menu (“Set”) Mode

The Menu system allows certain aspects of your radio’s configuration to be customized for your personal operating convenience. We do not recommend that any of the default settings be changed, however, until you are thoroughly familiar with the operation of the VXA-700.

- ❑ Press the [F] key, then press the [SEL(SET)] key to activate the Menu (“SET”) mode.
- ❑ Rotate the DIAL selector knob to select the “Main” Menu, then press the [SEL(SET)] key.
- ❑ Rotate the DIAL selector knob to select the “Sub” Menu item you wish to view and/or modify, then press the [SEL(SET)] key.
- ❑ Once you have selected the desired Menu Item, press the [SEL(SET)] key once to view the current setting for the item.
- ❑ Rotate the DIAL selector knob to change the setting of the item (ON to OFF, etc.).
- ❑ Press the [SEL(SET)] key again to save your new setting.
- ❑ Press the PTT key repetitively until the radio exit to normal operation.

MENU Listing

A listing of the Menu items available via the SET mode may be found below.

1. Display

1. Scan Lamp

Function: Scan Lamp On/Off (while paused)

Available Values: On/Off

Default Setting: On

2. Backlight

Function: Display illumination Mode

Available Values: Key/Off/On

Default Setting: Key

Key: Illuminates the Display Lamp for 5 seconds when any front panel key is pressed.

Off: Disables the Display lamp.

On: Illuminates the Display lamp continuously.

3. Large Font

Function: Select the

Available Values: Off/On

Default Setting: Off

4. Contrast

Function: Setting of the display contrast.

Available Values: 00 - 15

Default Setting: 06

5. Dimmer

Function: Setting of the display brightness level.

Available Values: LV 1 - LV 4

Default Setting: LV 3

6. Meter Symbol

Function: Select the S- & TX PO meter symbol

Available Values: 1/2/3/4

Default Setting: 1

7. Display Mode

Function: Selects the display of the sensor units' information

Available Values: Off/Temp/Volt

Default Setting: Off

8. RX LED

Function: Edits the BUSY indicator color

Available Values: Individual adjustments of the Red, Green, and Blue color hue may be performed, on a numerical scale of 0 to 255. See page ?? for details.

Default Setting: Green

9. TX LED

Function: Edits the TX indicator color

Available Values: Individual adjustments of the Red, Green, and Blue color hue may be performed, on a numerical scale of 0 to 255. See page ?? for details.

Default Setting: Green

10. EMG LED

Function: Edits the Emergency lamp color

Available Values: Individual adjustments of the Red, Green, and Blue color hue may be performed, on a numerical scale of 0 to 255. See page ?? for details.

Default Setting: White

11. Alert LED

Function:

Available Values:

Default Setting:

12. TEMP LED

Function:

Available Values:

Default Setting:

2. Sound

1. Beeper

Function:

Available Values: On/DTMF/Off

Default Setting: On

2. Bell

Function: Enable/disable the Bell Ringer function

Available Values: On/Off

Default Setting: Off

3. Power On Beep

Function: Select the Power on beep

Available Values: Off/Mode 1/Mode 2/Mode 3

Default Setting: Mode 1

4. ARTS Beep

Function: Select the beep option during ARTS operation.

Available Values: On/Off

Default Setting: On

3. Receive

1. SQL

Function: Set the squelch threshold level for the AM and FM Narrow mode.

Available Values:

Default Setting:

2. WSQL

Function:

Available Values:

Default Setting:

3.Resume

Function:

Available Values:

Default Setting:

4. DW/PRI

Function:

Available Values:

Default Setting:

5. RX Save

Function:

Available Values:

Default Setting:

6. Step

Function:

Available Values:

Default Setting:

7. SQL Type

Function:

Available Values:

Default Setting:

8. TONE Set

Function:

Available Values:

Default Setting:

9. DCS Set

Function:

Available Values:

Default Setting:

10. PRI Time

Function:

Available Values:

Default Setting:

11. SPECT Width

Function:

Available Values:

Default Setting:

4. Transmit

1. RPT Shift

Function:

Available Values:

Default Setting:

2. ARS

Function:

Available Values:

Default Setting:

3. ARTS

Function:

Available Values:

Default Setting:

4. ARTS [tv]

Function:

Available Values:

Default Setting:

5. T.O.T

Function:

Available Values:

Default Setting:

6. TX Power

Function:

Available Values:

Default Setting:

5. Key Set

1. Lock Mode

Function:

Available Values:

Default Setting:

2. [MON]

Function:

Available Values:

Default Setting:

3. [121.5]

Function:

Available Values:

Default Setting:

4. USER 1

Function:

Available Values:

Default Setting:

5. USER 2

Function:

Available Values:

Default Setting:

6. Misc Setup

1. APO

Function:

Available Values:

Default Setting:

2. WX Alert

Function:

Available Values:

Default Setting:

3. TEMP Unit

Function:

Available Values:

Default Setting:

4. TEMP Check

Function:

Available Values:

Default Setting:

5. TEMP Set

Function:
 Available Values:
 Default Setting:

7. Option

1. Internal MIC

Function:
 Available Values:
 Default Setting:

2. TEMP

Function:
 Available Values:
 Default Setting:

3. Offset

Function:
 Available Values:
 Default Setting:

4. Clock Shift

Function:
 Available Values:
 Default Setting:

Specifications

General

Frequency Range:	TX	118.000 - 136.975 MHz (COM Band) 144.000 - 148.000MHz (Amateur Band)
	RX	88.000 - 108.000MHz (FM BC Band) 108.000 - 117.975 MHz (NAV Band) 118.000 - 136.975 MHz (COM Band) 144.000 - 148.000MHz (Amateur Band) Weather channel (WX-01 - WX-10)

Channel Spacing: 5/10/12.5/20/25/50/100 kHz
Emission Type: TX AM & FM
RX AM & FM
Supply Voltage: 4.5 - 15.0 VDC
Current Consumption:
Temperature Range: -10 °C to +60 °C
Case Size (WxHxD): 60 x 96 x 28.5 mm w/FNB-80LI
Weight (approx.): 260 grams with FNB-80LI, antenna

Receiver

Circuit Type: Double-conversion superheterodyne
IFs: 35.4 MHz & 450 kHz (AM / NFM)
45.65 MHz & 10.7MHz (WFM)
Sensitivity: 88-108MHz: < 2 μ V
(for 12 dB SINAD with 1 kHz, 22.5 KHz deviation)
108M-138MHz: < 1 μ V
(for 6 dB S/N with 1 kHz, 30 % modulation)
144-148MHz: < 0.32 μ V
(for 12 dB S/N with 1 kHz, 3.5 KHz deviation)
WX-01 - WX-10: < 0.4 μ V
(for 12 dB S/N with 1 kHz, 3.5 KHz deviation)
Selectivity: AM/NFM: < 8 kHz/-6 dB
WFM: < 200 kHz/-6 dB
Adjacent CH. Selectivity: AM/NFM: > 25 kHz/-60 dB
WFM: > 300 kHz/-20 dB
AF Output: 0.4W @ 8 ohm, 10 % THD

Transmitter

Power Output: 118M-138MHz: AM: 5.0 W (PEP),
1.5 W (Carrier Power) @ 7.4 V
144-148MHz: FM:5.0 W @ 7.4 V
AM:4.0 W (PEP), 1.3 W (Carrier Power) @ 7.4 V
Frequency Stability: Better than \pm 10 ppm (-10 °C to +60 °C)
Modulation System: AM: Low Level Modulation
FM: variable reactance
Maximum deviation: \pm 5 kHz

Spurious Emission: > 60 dB below carrier
Int. Microphone Type: Condenser
Ext. Mic. Impedance: 150 ohm

Specification are subject to change without notice.

Accessories & Options

Supplied Accessories

LI-ion Battery Pack (7.2V, 700mAh)	FNB-80LI
Battery Charger	NC-72
Helical Antenna	ATV-9
Headset Cable	CT-96
Operating Manual	
Warranty Card	

Available Options

MH-44B4B	Speaker Microphone
FBA-23	Alkaline Battery Case
CD-15	Desktop Rapid Charger
E-DC-5B	External Power Cable
CN-3	Antenna Adapter (SMA to BNC)

Availability of accessories may vary.

Some accessories are supplied as standard per local requirements, while others may be unavailable in some regions.

Consult your Vertex Standard Dealer for details regarding these and any newly-available options.

Connection of any non-Vertex Standard-approved accessory, should it cause damage, may void the Limited Warranty on this apparatus.

In Case of Difficulty

Most operational difficulties can be solved by your Vertex Avionics dealer. Please contact your dealer first for advice and assistance.

If the dealer is unable to assist you, you may contact us at Vertex Standard USA. We can be reached by telephone at (714) 827-7600 (ask the operator for Avionics Product

Support).

If your radio requires repair, it must be sent to Vertex Standard USA. Please note the following:

- A Return Authorization is NOT required for repairs, either in or out of warranty. There is no need to contact us before sending a radio for repair.
- Please enclose a note describing the problem(s) with the radio, your name and shipping address (no P.O. Box numbers), and a telephone number at which we can reach you during business hours.
- Please also enclose a copy of your purchase receipt to establish the warranty date. Radio mainframes are warranted for three years. Accessory items (batteries, antennas, chargers, etc.) are warranted for one year.
- Repair turnaround averages about 7 to 10 working days in our shop, excluding time in shipping. This time will vary, based on our current workload.
- We can provide repair estimates upon your request. There is no additional charge for the estimate if you authorize the repair. If you decline the repair after requesting an estimate, an estimate fee equal to our current schedule for 1/2 hour of labor will be charged.
- We return ship warranty repairs via UPS ORANGE (“3 Day Select”) service at our expense. Non-warranty repairs are returned via UPS BROWN (ground service) at your expense.
- The above information applies to repair procedures in the United States and Canada only. If you are in any other country, please contact your dealer for specific information and instructions.