

TriSquare™



**Xtreme Radio Service™**

**Model TSX100  
Owner's Manual**

# TSX100

## Owner's Manual

### Front View Call Outs include:

1. Antenna
2. PTT Button
3. Accessory Headset Jack
4. Power On/Off Button
5. LCD Display
6. Menu Button
7. UP/Down Button
8. Select Button
9. Call Button
10. Right Button
11. Volume Up/Down Button
12. Microphone
13. Speaker



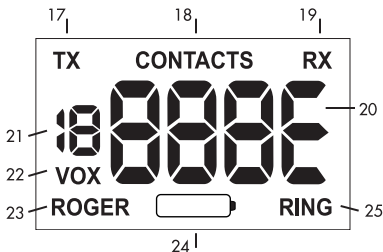
### Rear View Call Outs include:

14. Belt Clip
15. Battery Compartment Door
16. Charging Contacts



### Backlit LCD Display Call Outs Include:

17. TX Icon
18. Contacts Icon
19. RX Icon
20. Channel Number Digits
21. Contacts Number
22. VOX Icon
23. Roger Beep Icon
24. Battery Low Icon
25. Ringtone Icon



## Introduction

Welcome to **eXtreme Radio Service™ (eXRS™)**. TriSquare has revolutionized 2-way radio communications with **eXRS** radios. What is **eXRS**? It uses a stealth military technology redesigned by TriSquare for consumer use and operates using Frequency Hopping Spread Spectrum (FHSS) technology in the 900MHz ISM frequency band. **eXRS** radios provide private and secure communications without interference, and provide the longest range possible, compared to other UHF radios\*. With advanced digital technology, you get unmatched clarity and years of trouble-free service. **eXRS** radios do NOT require an FCC user license and can be used by people of all ages for any purpose.

\* The usable range of **eXRS** is equivalent or greater than other portable UHF (including FRS/GMRS) two-way radios. Usable range of UHF radios varies significantly with the conditions of use. For example with large or many obstructions between users, range could be less than a mile, and with clear (line-of-sight) between users, range could extend to more than one hundred miles.

## Getting Started

Thank you for purchasing the TriSquare TSX100 **eXRS** two-way radio. Your TriSquare **eXRS** radio is a unique two-way radio and a powerful communications tool that will give you years of trouble-free service if cared for properly. Read the owners manual carefully before operating the radio.

### • **Installing Batteries or Rechargeable Battery Pack**

To use your new TriSquare **eXRS** radios, you will need to install 3 'AA' alkaline batteries, or the optional TriSquare model TSX-BP NiMH rechargeable battery pack. To install batteries, first remove the belt clip or swivel the belt clip to the side. To open the battery compartment door, while holding the radio face down, use your thumbnail to lift upwards (towards the top of the radio) on the battery compartment tab, and continue to lift the battery compartment door up and remove. If you are using 3 "AA" batteries, insert the 3 "AA" batteries with the correct polarity as indicated by the battery

diagram on the inside of the battery compartment, matching the positive (+) and negative (-) terminals of the batteries to the battery diagram. If you are using the optional TriSquare NiMH rechargeable battery pack TSX-BP, insert the battery pack into the battery compartment with the label side up, and the up arrow pointing towards the top of the radio. Replace the battery compartment door by sliding the top tabs in first at an angle until it is all the way up, and then pressing down at the bottom until the battery compartment door locking tab clicks into place securing the door closed. Replace belt clip if desired.

## Initial Radio Setup

- To turn your radio on (after installing batteries per above), press and hold the **POWER On/Off** button for 2 seconds. The radio will go through an initialization cycle while the LCD segments all light, and the power on confirmation tone will sound. Once powered up, the radio will be in a stand-by mode, ready to transmit or receive a transmission on the default Channel (default Channel is 000, shown as 0 on the display), or ready for you to modify or change features via the **MENU** button.

- Your TriSquare TSX100 has many features and functions that make the TriSquare eXRS radio a powerful and useful communications tool, and easy to use.

Basic functions include:

- Transmit and Receive
- Volume Control
- Low Battery Alert
- Call Button
- Power On/Off
- Keypad Beep On/Off

- Your TriSquare TSX100 also has more advanced features and functions. To access these features, you can scroll through the following features by repeatedly pressing the **MENU** button:

- Channel Selection
- Contacts
- VOX (Voice Activated Transmission)
- Ring Tone
- Roger Beep
- Transmit Timeout Timer

## Basic Radio Functions

### • Transmit and Receive

The unit is normally in receive, or standby mode. To transmit, hold the radio approximately 2 to 3 inches in front of your face and press and hold the PTT button for the duration of your transmission. Speak clearly in a normal voice tone. The radio will transmit on the Channel currently shown on the display. Only radios set to the same Channel can receive the transmission. When the PTT button is released, the unit will return to stand-by or receive mode. The TX icon will be visible on the LCD during the transmission. The RX icon will be visible on the LCD when a valid signal is being received.



### • Volume Control

Press the Volume Up and Volume Down buttons to control the volume level from 1 to 15. The display will indicate the current volume level for 5 seconds. An audio chime will also indicate current volume level. All key beeps will be at the set volume level.



### • Low Battery Alert

The TSX100 has a low battery icon that will appear on the LCD when the battery level drops below the pre-defined threshold value. An audible beep will also sound every two minutes when the battery level is below this threshold. When the low battery



icon indicator is showing, the batteries should be replaced soon, or recharged if using the TriSquare TSX-BP.

- **Call**

Press the Call button to send a call alert to other users on the same Channel. The radio will transmit the call alert on the Channel that is currently showing on the display. A radio that receives the call alert will play a preselected ring tone. It is not necessary to send a call alert before transmitting your voice to another user.



- **Power On/Off**

To turn the eXRS radio on or off, you must press and hold the **POWER On/Off** button for 2 seconds. When turning the radio off, the power off confirmation tones will be heard. All settings are retained when the unit is powered off.

- **Keypad Beep On/Off**

When pressing buttons on the front keypad, a keypad beep sound will be heard indicating a button has been pressed. This feature can be turned On or Off (default is On). By using the Right (▶) button while on the main screen, press and hold for 3 seconds to turn this feature off, or back on.

## Other Radio Functions and Features

- **CHANNEL Selection**

TriSquare eXRS radios are set from the factory to a default Channel of "000", shown as 0 on the display. All eXRS radios will communicate with any other eXRS radio provided that they are set to the same Channel. It is suggested that you enter a new Channel unique to you. The TSX100 allows you to input any number between 0 and 999 for 1000 Channel options. You can change to a new Channel through the menu or by selecting it from the Contacts List.

## To change the Channel manually:

- o From the main Screen, press the **Menu** key once to enter the Channel Selection menu to change the current Channel.
  - The LCD shows the current 3-digit Channel (000 to 999) with the first (left most) digit blinking rapidly.
  - The **Up** and **Down** buttons change the value of the flashing digit.
  - The **Right** button moves to the next digit to the right, (wrapping to the first digit).
  - Press the **Select** button to accept the 3-digit number and return to the main screen **or** press the **Menu** button to advance to the Contacts Menu without changing the Channel.



## • Contacts

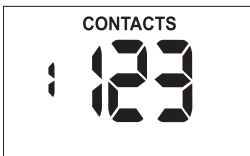
The Contacts List is where Channels may be stored so they can be recalled later without re-entering the Channel number. The TSX100 can store up to 10 entries of a possible 1000 different Channels. The stored information will be retained with the power off or the batteries removed.

- o Press the **Menu** button twice from the main screen to enter the Contacts menu.
  - On the LCD, the Contacts icon will flash and the display shows "SEL" for select. In the Contacts menu, you can either Select ("SEL") an existing Channel stored, or Add ("Add") a new Channel.
  - Pressing the **Up** and **Down** keys to scroll between "SEL" and "Add" in the Contacts menu.
- o Pressing the **Select** button while "SEL" is displayed allows you to select a Contacts entry that you have previously stored.
  - The small number on the left of the display indicates the stored memory location ('1' through '10'). The large numbers on the right side of the display will display the 3-digit Channel number stored for that contact number.
  - Pressing the **Up** and **Down** buttons will scroll through the list, displaying the entry number ('1' through '10') and the 3-digit Channel number saved for each contact.
  - If there is no 3-digit Channel number stored in a Contact



location, the display shows "nonE" in the Channel digits.

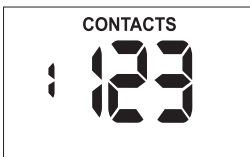
- Pressing the **Select** button while displaying one of the saved 3-digit Channels in memory will select that Channel and return to the main screen.
  - Press the **Menu** button to return to the main screen without selecting the new contact Channel.
  - If **Select** is pressed while an empty contact is highlighted, you will return to the main screen without selecting a new contact Channel.
- o Pressing the **Select** button while "Add" is displayed allows you to add a new Channel(s) to the Contact List.



- The small number on the left of the display indicates the memory location ('1' through '10'). The large numbers on the right side of the display will display the 3-digit Channel number stored for that contact number, or will show "nonE" if nothing is already stored in that memory location.



- Pressing the **Up** and **Down** buttons will scroll through the list, displaying the entry number ('1' through '10'). Once you scroll to the location you wish to add a Channel, press the **Select** button.
- Enter the Channel in the same manner as before, using the **UP**, **Down**, and **Right** (▶) buttons to enter the desired Channel.
- Pressing the **Select** button saves the entry and returns you to the main screen (does not change the current Channel).
- Pressing the **Menu** button returns you to the main screen without saving the new contact.
- You can Add a Channel to either an empty memory location, or in place of an existing stored Channel if desired.



### • VOX (Voice Activated Transmit)

The TSX100 may be set in VOX mode so that transmission can be activated by voice audio either through the internal



or an external microphone. The radio has 3 VOX sensitivity settings to adjust the voice volume needed for transmission activation.

- o Pressing the **Menu** button three times from the main screen takes you to the VOX menu.

- The LCD will flash the **VOX** icon. Default VOX setting is OFF.
- Press the **Up** and **Down** buttons to toggle between the 3 sensitivity levels (1, 2, or 3) and OFF. 3 is most sensitive (used when background noise is minimal), and 1 is least sensitive (used when background noise is present).

- Press the **Select** button while displaying a VOX level or OFF to choose that option and return to the main screen or press the **Menu** button to advance to the Ring Tone Menu.



- If you select one of the 3 sensitivity levels (1, 2, or 3), the VOX icon will remain lit on the display indicating the VOX mode is active. To transmit, hold the radio approximately 2"-3" inches in front of your face and speak towards the microphone in a clear and normal voice. When transmitting, the TX icon will light on the display.

**NOTE:** When in VOX mode, radio receivers may miss the beginning of a communication because it takes voice audio to activate the transmitter. Experienced radio users will draw out their first word or repeat it to allow the receiver to hear the entire communication. Use of the VOX mode takes some practice to get familiar with its operation.

### • Ring Tone

When another eXRS user on your same Channel presses their call button to alert you, your TSX100 will play a pre-selected ring tone. The TSX100 has 5 ring tone choices, or can be turned off.

- o Pressing the **Menu** button four times from the main screen takes you to the Ring tone menu.

- The LCD will flash the RING icon and display the number of the current ring tone, (default = 1), or display "OFF" if this feature is turned off.



- The **Up** and **Down** buttons will scroll through the five ring tones (1 through 5) and "off". As you scroll, you will hear each tone's sound.

- Pressing the **Select** button while displaying the selected ring tone will choose that ring tone and return to the main screen, or pressing **Select** while "off" is displayed will turn that feature off. Press the **Menu** button again instead of **Select** to advance to the Roger Beep Menu.

### • Roger Beep

When the Roger Beep function is active, each voice transmission to another eXRS unit will be ended on the receiving unit with a transmission-complete Roger Beep when the transmitting user releases the PTT button. It will be heard on the receiving unit. It is used in a similar fashion to "Over" as used to indicate to the receiving unit that the transmitting unit has completed the transmission. The TSX100 has a roger beep and the ability to turn the function on or off.

- Pressing the **Menu** button five times from the main screen takes you to the Roger Beep menu
  - The LCD will flash the ROGER icon and display "on" or "off" (default setting is on).
  - The **Up** and **Down** buttons will toggle between "on" and "off".
  - Pressing the **Select** button while displaying "on" or "off" will choose that option and return to the main screen or press the **Menu** button to advance to the Transmitter Timeout menu.



### • Transmitter Timeout

The radio may be set to limit the amount of time that it can continuously transmit. The choices are in 30 second intervals and are 30, 60, 90, 120 and OFF. The default setting is OFF. Transmitter timeout shall be indicated by a short double beep as the transmitter is turned off. If there is no signal reception after the timeout, you may transmit again after releasing the PTT button and pressing it again.

- Pressing the **Menu** button 6 times from the main screen takes you to the Transmitter Timeout menu.
  - The display will flash the "TX" icon and show the current timeout period in seconds or "OFF"



depending on current setting.

- The **Up** and **Down** buttons will scroll through the choices of 30 seconds, 60 seconds, 90 seconds, 120 seconds and "OFF". "OFF" means there would be no timeout.
- Press the **Select** button to accept the new setting and return to the main screen.

## eXRS Accessories

TriSquare offers a variety of accessories for eXRS radios.

These are:

- o Dual Desktop Charging Cradle (TSC1-DC)
- o AC/DC Wall Adaptor for TSC1-DC (TSC1-AC)
- o NiMH Rechargeable Battery Pack (TSX-BP)
- o VOX/PTT Headset with Boom Mic (TSX-HS1)

The TriSquare TSX10A accessory kit offers all of the following in a single package:

- o Dual Desktop Charging Cradle
- o AC/DC Wall Adaptor
- o NiMH Rechargeable Battery Pack
- o VOX/PTT Headset with Boom Mic

### **Dual Desktop Charger (TSC1-DC) and AC/DC Wall Adaptor (TSC1-AC) Operation:**

The TriSquare TSC1-DC Dual Desktop Charger has 2 charging wells, and can only charge the TriSquare TSX-BP NiMH rechargeable battery packs, either in the radio or out, or a combination of either of the two.

**(NOTE: To charge a TriSquare eXRS radio, it must have the TSX-BP rechargeable battery pack installed in it)**

To recharge either your eXRS radio or rechargeable battery pack, plug the AC/DC Wall adaptor into a 120V AC outlet, and plug the round DC connector into the back of the desktop charger. **NOTE: This power unit is intended to be correctly oriented in a vertical or floor mount position.** Insert either the radio facing forward, or the battery pack with the label facing backwards and the RED charging light will illuminate. If the charging light does not light, slightly jiggle the radio or battery pack to ensure a

good connection is being made and the light is on. If batteries are totally discharged, recharge for 15 hours to fully charge batteries. After charging, remove and use as needed. When not using your desktop charger, unplug and store in a dry location.

### **VOX/PTT Headset (TSX-HS1) Operation:**

The TriSquare TSX-HS1 PTT/VOX headset consists of 4 components, 1) the headset with boom mic assembly, 2) the PTT/VOX Control on the cord, 3) Lapel Clip, and 4) the connector. The headset can be used as a headset operating in a standard Push-To-Talk (PTT) method, or automatically transmitting using your voice to activate the transmitter (VOX).

- o **PTT Transmitting:** To use the headset in the PTT mode, first plug the connector into the headset jack on the side of your **eXRS** radio, and make sure the VOX/PTT switch on the cord is in the PTT position. (NOTE: The **eXRS** radio's VOX setting in the radio menu must be in the OFF setting). Place headset assembly ear hanger over your ear and position the earbud speaker to a comfortable fit which should position the boom microphone on the side of your cheek. (The headset can be worn on either ear by removing the ear hanger, sliding it forward and positioning it on the other side and sliding it back on) To transmit, simply press the large PTT button on the PTT/VOX Control on the cord and speak in a normal clear voice. When finished talking, release the PTT button to receive.
- o **VOX Transmitting:** To use the headset in the VOX mode, plug the connector into the headset jack on the side of your **eXRS** radio, and put the VOX/PTT switch on the cord into the VOX position. (NOTE: The **eXRS** radio's VOX setting in the radio menu must be turned on to one of the 3 VOX sensitivity settings as described earlier in the manual) Place the headset assembly ear hanger over your ear and position the earbud speaker to a comfortable fit which will position the boom mic on the side of your cheek. To transmit, simply speak in a clear normal voice. When finished talking, the radio will end the transmission and be ready to receive.

## General Product Care

Your TriSquare eXRS two-way radio will give you years of trouble-free service if cared for properly. Handle the radio with care and keep the radio away from excessive amounts of dust and moisture. When not using your radio or storing it, remove the batteries and store radios in a dry place. Avoid exposure to extreme temperatures.

## Troubleshooting Issues

- o Unit does not receive a signal
  - Verify that both units are on the same operating Channel.
  - Verify that batteries are new or fully charged, or that they are inserted correctly.
  - Reselect the current channel to re-sync the radios.
- o Unit has poor reception
  - Make sure receiving unit has a clear and unobstructed line of sight to the transmitting unit. To achieve this, getting to the highest possible point will help to maximize the receiving capability.

## Product Service

If you are having any problems, or have questions about the operation of your TriSquare eXRS two-way radio, please contact TriSquare first at [service@trisquare.us](mailto:service@trisquare.us). **DO NOT RETURN THIS PRODUCT TO THE STORE!**

### For products purchased in the USA:

If your product should require factory service, **please contact TriSquare first before sending your radio in.** This will ensure the fastest turn-around time for repair. Should you be asked to send your radio or accessory in, please adhere to the following to have the product serviced and returned.

1. For warranty service, include proof-of-purchase, such as a copy of your sales receipt. Do not send your original copy of your sales receipt, as it cannot be returned.
2. Send in the entire product.
3. Enclose a description of the problem you are having along with a typed or clearly printed name and address of where the product is to be returned.
4. Pack your radio securely to prevent damage in transit. If possible, use the original packing material.
5. Ship prepaid and insured by way of a traceable carrier to:  
TriSquare Electronics Corp., 1420 NW Vivion Rd, Suite 109,  
Kansas City, MO 64118.

Please allow approximately 2 to 3 weeks before contacting TriSquare for return status. If your radio or accessory is in warranty, upon receipt of your product, it will either be repaired or exchanged at the option of TriSquare Electronics. If the radio or accessory is out of warranty, a letter will automatically be sent informing you of the repair charge. If you have any questions, please contact TriSquare at [service@trisquare.us](mailto:service@trisquare.us) for assistance.

#### **For products purchased outside the USA:**

Please contact your local dealer for product service information.

## **Warranty**

### **Limited 1-Year Warranty For Products Purchased in the U.S.A.**

TriSquare™ Electronics Corporation warrants that its TriSquare **eXRS™** Radios and Accessories, and the component parts thereof, will be free of defects in workmanship and materials for a period of one (1) year from the date of first consumer purchase. This warranty may be enforced by the first consumer purchaser, provided that the product is utilized within the U.S.A. TriSquare will, without charge, repair or replace, at its option, defective **eXRS** radios, products or component parts upon delivery to the TriSquare Factory Service department, accompanied by proof of the date of first consumer purchase, such as a duplicated copy of a sales receipt. You must pay any initial shipping charges required to ship the product for warranty service, but the return charges will be at TriSquare's expense, if the product is repaired or replaced under warranty. This warranty gives you specific legal rights, and you may also have other rights which may vary from state to state.

**Exclusions: This limited warranty does not apply:** 1) To any product damaged by accident; 2) In the event of misuse or abuse of the product or as a result of unauthorized alterations or repairs; 3) If the serial number has been altered, defaced, or removed; 4) If the owner of the product resides outside the U.S.A. All implied warranties, including warranties of merchantability and fitness for a particular purpose are limited in duration to the length of this warranty. TriSquare shall not be liable for any incidental, consequential or other damages; including, without limitation, damages resulting from loss of use or cost of installation. Some states do not allow limitations on how long an implied warranty lasts and/or do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations may not apply to you. **For products purchased outside the U.S.A.,** please contact your local dealer for warranty information.

## **FCC Licensing Information**

Operation of the **eXRS™** radios does not require a license, and may be used by anyone for any purpose, business or personal. The **eXRS** series of two-way radios operates in the license-free 900 MHz ISM band and is subject to the Rules and Regulations of the Federal Communications Commission (FCC).

This product has been approved by the FCC for use in the USA and approved by IC for use in Canada. The FCC identifier can be found on the product label inside the battery compartment.

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: 1) This device does not cause harmful interference, and 2) this device must accept any interference received, including interference that may cause undesired operation.

Read this manual carefully and make sure you know how to properly operate the radio before use.

Changes or modifications not expressly approved by TriSquare may void the user's authority granted by the FCC to operate this radio and should not be made. To comply with FCC requirements, transmitter adjustments should be made only by or under the supervision of a person certified as technically qualified to perform transmitter maintenance and repairs. Replacement of any transmitter component (crystal, semiconductor, etc.) is not authorized by the FCC equipment authorization for this radio and could violate FCC rules.

Note: Use of this radio outside the country where it was intended to be distributed is subject to the government regulations and may be prohibited.

### **Safety Information for eXRS™ Radios**

Your wireless handheld portable transceiver contains a low power transmitter. When the PTT button is pushed, it sends out radio frequency (RF) signals. The device is authorized to operate at a duty factor not to exceed 50%. In August 1996, the Federal Communications Commissions (FCC) adopted RF exposure guidelines with safety levels for handheld wireless devices.

#### **Important:**

To maintain compliance with the FCC's RF guidelines, hold the transmitter at least 2 inches (5 centimeters) from your face and speak in a normal voice, with the antenna pointed up and away. If you wear the handset on your body while using the headset accessory, use only the TriSquare® supplied belt clip for this product and ensure that the antenna is at least 1 inch (2.5 centimeters) from your body while transmitting. If the distance between the antenna and the body is less than 1.0" (2.5 Cm), do not use this device in the body worn configuration. Use only the supplied antenna. Unauthorized antennas, modifications, or attachments will void any warranty, and could damage the transmitter and may violate FCC regulations.

#### **Normal Position:**

Hold the transmitter approximately 2" from your face and speak in a normal voice, with the antenna pointed up and away.

#### **Patent Pending**

TriSquare Model TSX100

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