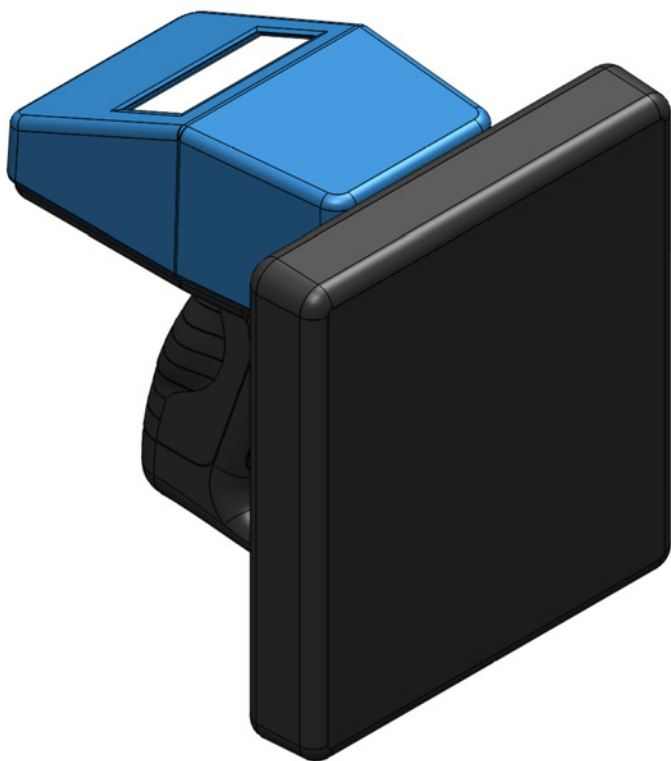




## RangeTRACKER USER MANUAL



## RangeTRACKER USER MANUAL

Welcome to the TAGSMYTH™ RangeTRACKER™. The RangeTRACKER can read RangeTAGs from more than 5 miles away giving you the ability to quickly and easily locate animals. Additionally, the RangeTRACKER can be used as a short-range scanner, with a range of 3 to 4 feet, to assist in animal handling and inventory.

The built-in Bluetooth capability of the RangeTRACKER allows users to connect to the RangeWATCH™ mobile app for tracking animal locations on a map (using RangeTAG GPS), to take inventory, and to efficiently record data for handling.



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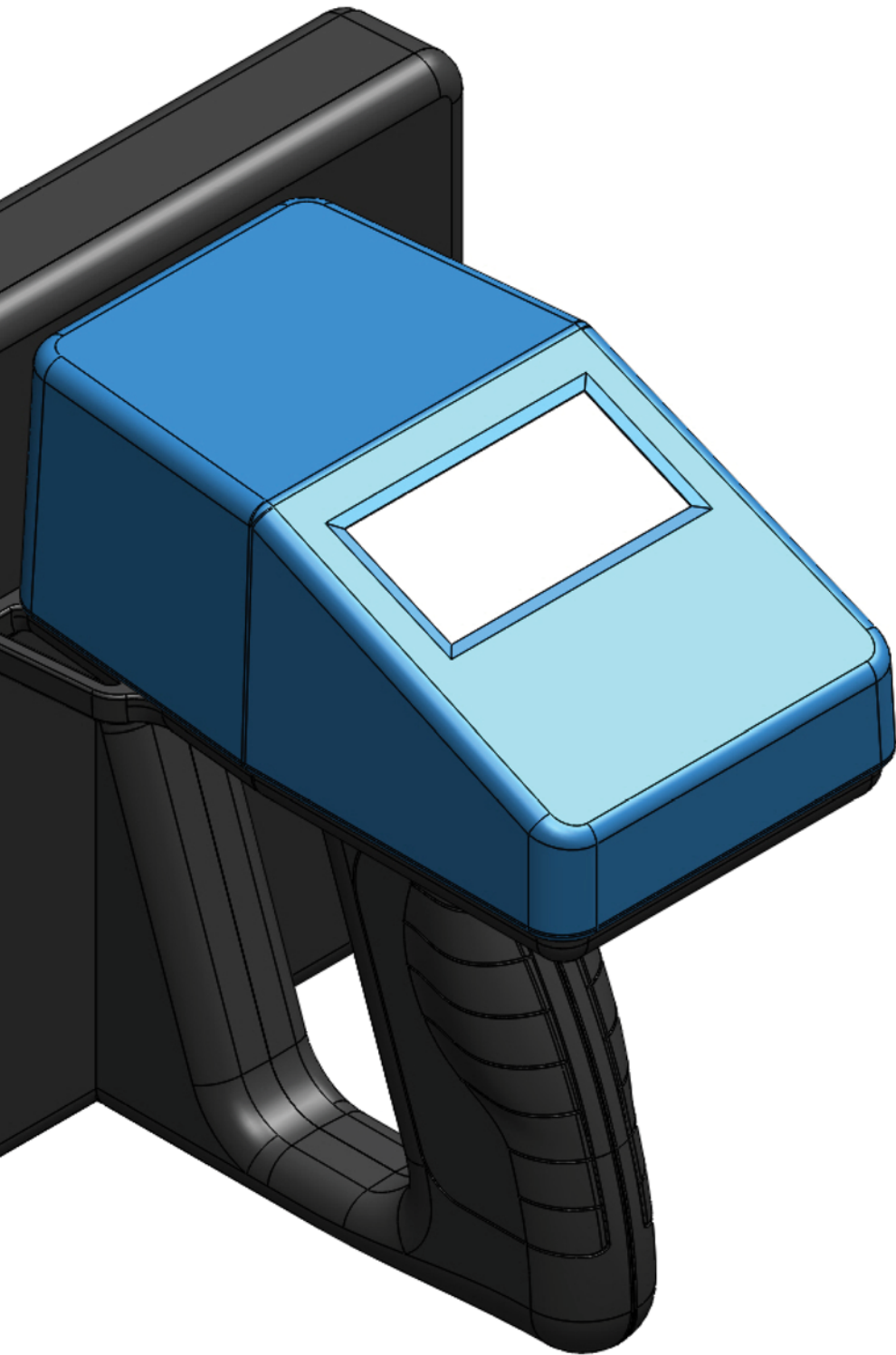
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## Introduction

### Features and Specifications

Works with all TAGSMYTH RangeTAGs and supports reading tags on nearly 1 million different channels, for improved data security and interference-free operation.

LONG RANGE PERFORMANCE	5 - 10 Miles (line of sight)
SCANNER MODE	3 -4 ft
BLUETOOTH RANGE	>10 ft
BATTERY LIFE	>12 Continuous Use
CHARGE CONNECTION	Standard USB
CHARGE TIME	3 -4 Hours
WEIGHT	2.2 lbs
SIZE	7" x 7" x 6 1/4"
ANTENNA 3dB BEAM-WIDTH	+/- 45 Degrees
ANTENNA GAIN	~5dBi

## 1.0 Use and Charging

### 1.1 Caring for your RangeTRACKER

The RangeTRACKER features a rugged, water-resistant enclosure to allow use in challenging environments and adverse weather. You can maximize the lifetime and effectiveness of your RangeTRACKER by observing the following recommendations:

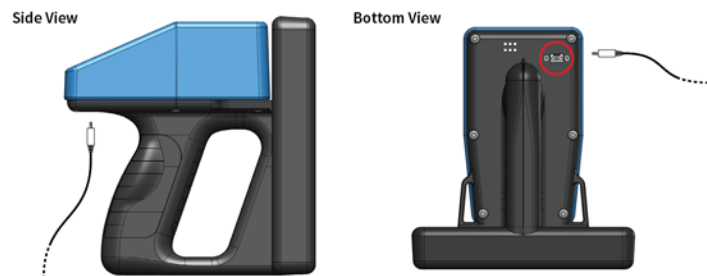
- Do not submerge or spray-wash your RangeTRACKER. Use a damp cloth to wash it when needed.
- Avoid dropping your RangeTRACKER.
- Do not use the RangeTRACKER to strike animals or objects.
- When USB isn't being used to charge the RangeTRACKER, keep the cover over the port. This will help prevent the plug from being damaged by dirt and other objects.
- If you are going to store the RangeTRACKER for extended periods, plug it into your computer and let the batteries charge before you put it away. This will extend the life of the RangeTRACKER's internal batteries. For best results, recharge the RangeTRACKER every 3 to 4 months, even when it isn't being used.

### 1.2 Charging and Battery Life

The RangeTRACKER uses internal lithium batteries that last for more than 12 hours of continuous use. The battery icon in the top-right corner of the screen shows the charge status of the RangeTRACKER's batteries.

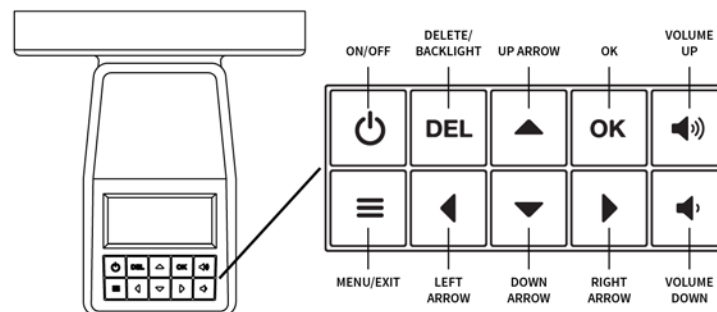
The RangeTRACKER will inform you if the batteries are getting low while you are using it. If the battery icon is flashing, be sure to charge the RangeTRACKER so that you can continue using it. If the batteries drop too low, the RangeTRACKER will automatically turn itself off and you'll need to charge it back up to turn it on.

To recharge the batteries, plug the RangeTRACKER into a computer or USB charger using the included USB cable. It may take a few hours to return to full charge.



When storing the RangeTRACKER for extended periods of time, it is recommended that the batteries are first restored to full charge before putting the device away. For best results, recharge the RangeTRACKER every 3 to 4 months, even when not in use.

### 1.3 Buttons and Controls



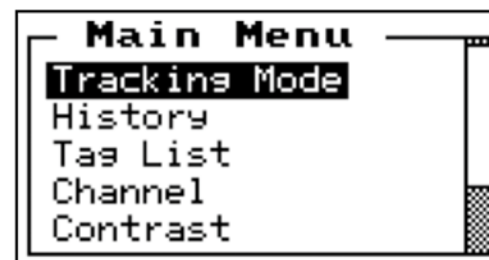
Physical Buttons are noted with ALL CAPS

Virtual Buttons are noted in "Quotations"

Dialog items are noted as Proper Nouns

### 1.4 Navigating the Main Menu

Change various settings on the RangeTRACKER using MENU. Press MENU from any mode to open the Main Menu as shown below.

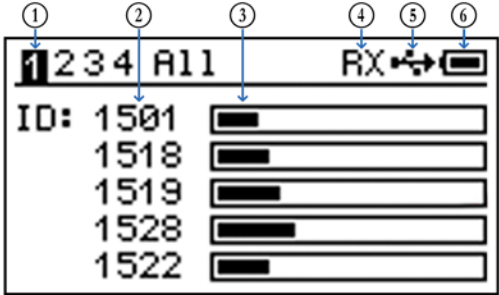


- Use UP ARROW and DOWN ARROW to select different menu options
- Press OK to select a menu option.
- At any time, you can press MENU again to exit the Main Menu or cancel a menu item selection.

## 2.0 Using the RangeTRACKER

### 2.1 Quick Start

The RangeTRACKER's graphic display shows received transmissions from tags and allows you to change settings. The RangeTRACKER can run in four different modes, depending on the use case—All, Find, History, and Scanner Modes. An example of what you might see when running in All Mode is shown below.



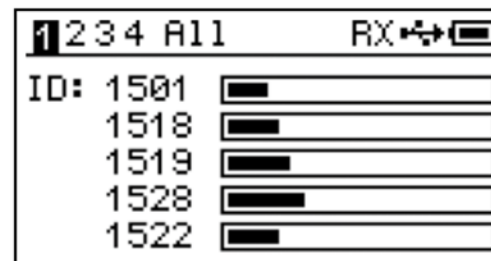
- Mode Indicator**  
The mode indicator shows which of the four operating modes the RangeTRACKER is running. You can use LEFT ARROW and RIGHT ARROW to switch modes.
- Tag IDs**  
This section displays the IDs of tags whose transmissions were received.
- Tag Signal Strength**  
These bars show the strength of received transmissions from tags. The higher the signal strength, the closer the tag. The signal strength is also higher when the RangeTRACKER is pointed toward the tag.
- Receive (RX) Indicator**  
The RX Indicator will flash briefly every time the RangeTRACKER receives a transmission from a tag.
- USB Indicator**  
The USB indicator is displayed when the RangeTRACKER is plugged into USB and charging.
- Battery Life Indicator**  
The battery icon shows the current charge status of the battery. When the battery gets low, the battery icon will start flashing.

The contents of the main display will change depending on what mode the RangeTRACKER is using. A more detailed description of each mode is given below.

*Note: Regardless of what mode the RangeTRACKER is in, it will only read tags that are in the selected channel. See 6.2 Changing the Channel.*

### 2.2 Mode 1: All Mode

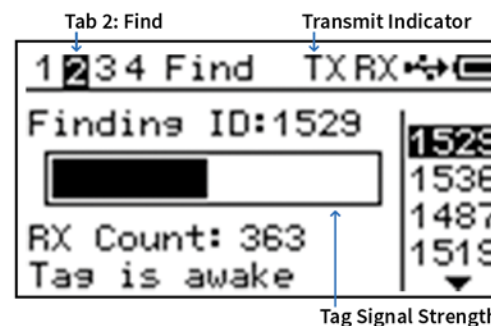
To switch to All Mode, use LEFT ARROW and RIGHT ARROW to highlight Tab: 1 All as shown below. In All Mode, the RangeTRACKER will report all tag transmissions that it receives in the selected channel. This can be helpful to see what tags are nearby (within about 5 miles of you). In All Mode, the most recent tag transmission shows up at the top of the list, with older transmissions pushed downward.



See 6.2 *Changing the Channel* for details about how to specify which channel the RangeTRACKER is using.

### 2.3 Mode 2: Find Mode

To switch to Find Mode, use LEFT ARROW and RIGHT ARROW to highlight Tab: 2 Find as shown below. In Find Mode, the RangeTRACKER will wake up a selected tag so that the tag transmits once every second. The RangeTRACKER can then be used to locate the tag by watching the tag's signal strength—the closer you are to the tag, the higher the signal strength will be. The signal strength also increases when the RangeTRACKER is pointed toward the tag. See 4.0 *Finding Animals* with the RangeTRACKER for more details about how to use Find Mode.



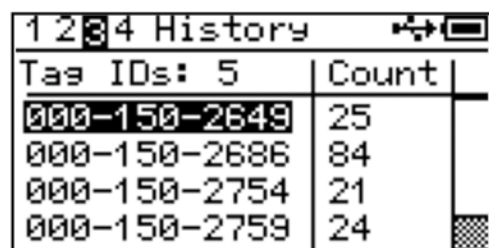
When in Find Mode, the RangeTRACKER can only wake up and find tags that are in its tag list. To change which ID in the tag list is being tracked by using UP ARROW and DOWN ARROW when in Find Mode. See 5.0 *Editing the Tag List* for more details about adding and removing tags from the list.

The TX Indicator, shown above, turns on when the RangeTRACKER is sending "awake" messages to the tag with the selected ID.



## 2.4 Mode 3: History Mode

To switch to History Mode, use LEFT ARROW and RIGHT ARROW to highlight Tab 3: History as shown below. In History Mode, the RangeTRACKER displays a list of all tag IDs it has received since the history was last cleared. It also displays the number of times each ID was received. Scroll up and down the list using UP ARROW and DOWN ARROW on the keypad.

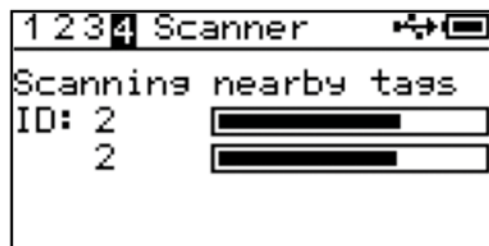


1 2 3 4 History	
Tag IDs: 5	Count
000-150-2649	25
000-150-2686	84
000-150-2754	21
000-150-2759	24

See *3.0 Taking Inventory* for more details about using History Mode.

## 2.5 Mode 4: Scanner Mode

To switch to Scanner Mode, use LEFT ARROW and RIGHT ARROW to highlight Tab 4: Scanner as shown below. Scanner Mode is used to turn the RangeTRACKER into a short-range scanner, much like a barcode reader. The RangeTRACKER will send a wake signal once every second, and only tags within a few feet of the RangeTRACKER will respond. Only TAGSMYTH tags that include short-range wake features can be read by the RangeTRACKER in Scanner Mode.



1 2 3 4 Scanner	
Scanning nearby tags	
ID: 2	<div></div>
2	<div></div>

See *4.2 Short Range Scanning for Animal Handling* for more details.

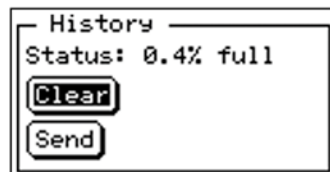
## 3.0 Taking Inventory

Using the History function of the RangeTRACKER provides the ability to take and monitor inventory. The RangeTRACKER maintains a list of all tags whose signals have been received, and how many times they were received since the history was last cleared.

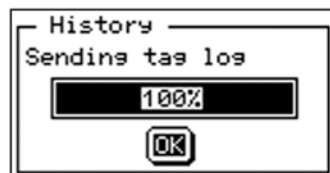
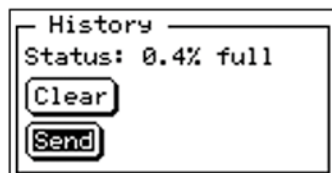
1 2 3 4 History	
Tag IDs: 5	Count
000-150-2649	25
000-150-2686	84
000-150-2754	21
000-150-2759	24

History Mode operates in the background and stores the history of received tag signals based on what the tracker is set up to receive. In other words, in All Mode or History Mode, it will store a history of signals received from all tags; in Find Mode only those tags that have been identified for finding will be recorded; in Scanner Mode only those tags that are scanned will be recorded in history.

To clear the history, press MENU and navigate to History. Press OK. In the History dialog that appears, highlight "Clear" and press OK. The History is now cleared. Exit the menu by pressing MENU twice.



If connected to the RangeWATCH mobile app over Bluetooth, the history (including IDs, and transmission dates and times) can be sent to your tablet or smart phone by highlighting "Send" and pressing OK. Exit the menu by pressing MENU twice.

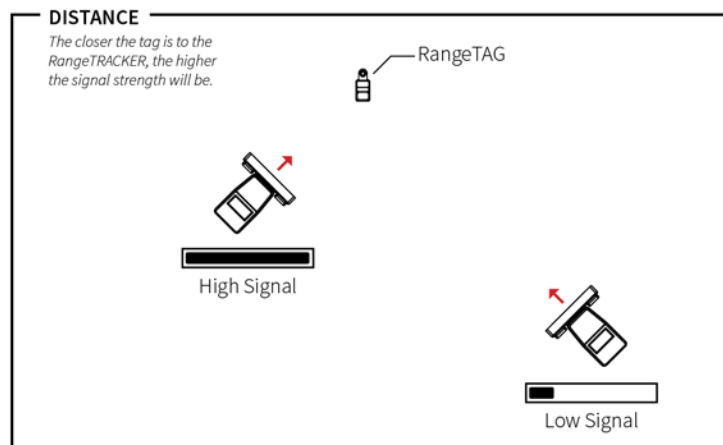
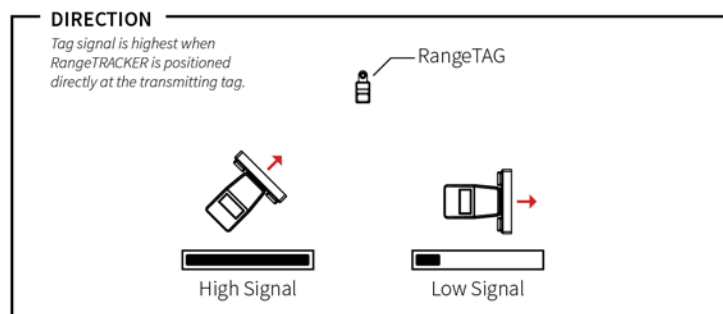


## 4.0 Finding Animals with the RangeTRACKER

The primary function of the RangeTRACKER is to find animals tagged with a RangeTAG. Most tags will transmit automatically once every minute and can be read by the RangeTRACKER from more than 5 miles away. In Find Mode, the RangeTRACKER will wake up an individual tag so that it will transmit once every second. Then use the received signal strength of the tag transmissions to find the tag.

When the RangeTRACKER receives a transmission from a tag, it will report both the ID of the tag and the received signal strength.

Signal strength is how RangeTRACKER presents direction and distance. The closer the tag is to the RangeTRACKER, the higher the signal strength will be. In addition, the RangeTRACKER has a directional antenna so that if you point it toward a tag, the signal strength will be higher.



In Find Mode, the RangeTRACKER will also play a sound that matches the signal strength. Higher signal strength causes a higher-pitched tone to be played.

Try using your RangeTRACKER to locate a few tags. You'll soon get a feel for how to use it to quickly and easily find your animals.

### 4.1 Suggestions for Finding Animals

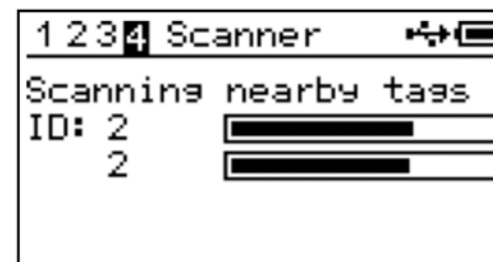
**TIP 1 : SPIN IN PLACE.** Standing in place and rotating completely may help ensure that you are looking for the animal in the direction of the highest signal strength. If you are far away from the animal, you may only get tag reads when you are pointing the RangeTRACKER in the direction of the animal.

**TIP 2 : MOVE AROUND.** A tag's signal can sometimes reflect off of, or become obscured by, buildings or terrain or the animal itself. Moving and changing your position and noting the direction of best signal strength at each location can help you avoid misleading reads.

**TIP 3 : SHIELD THE SIGNAL.** You can use your body as a shield to increase the certainty of a signal reading. If you think that you have found a likely direction of an animal's location, point the tracker in the opposite direction, then position yourself between the tracker and the expected direction of the animal. If the animal is in the expected direction, the signal strength should drop more dramatically with your body blocking it. If you are far away, the tracker may stop receiving the tag signal altogether.

### 4.2 Short-Range Scanning for Animal Handling

When the RangeTRACKER is placed in Scanner Mode, it will only receive transmissions from tags that it wakes up with its short-range scanning feature. This allows the RangeTRACKER to be used during animal handling to track which animal is being handled, what operations are being performed, etc. To enter Scanner Mode, use LEFT ARROW and RIGHT ARROW to select Tab 4: Scanner as shown below.



This mode is especially useful when the RangeTRACKER is paired with the RangeWATCH mobile app via Bluetooth. When the RangeTRACKER is in range of a mobile device (a tablet or a cell phone) running RangeWATCH mobile app, the app will automatically connect to the RangeTRACKER over Bluetooth. Tag reads in Scanner Mode are then used to track animal handling.

Please refer to the RangeWATCH user manual for more details.

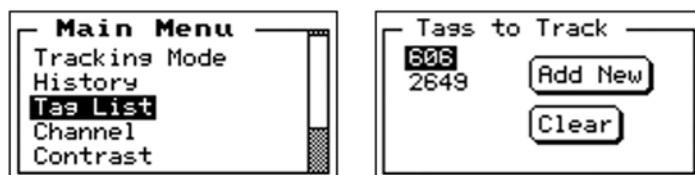


## 5.0 Editing the Tag List

When the RangeTRACKER is in Find Mode, it will attempt to wake up the selected tag so that it transmits once per second. The RangeTRACKER can only wake up a single tag at a time and find tags whose IDs are in the tag list. The tag list can be viewed and edited from within the Main Menu, or tags can be added to the list from within History Mode.

### 5.1 Manually Adding Tags to the List

To open the tag list, press MENU and use DOWN ARROW to highlight Tag List. Press OK. The Tags To Track dialog opens as shown below.



Once in the Tags To Track dialog, select or edit an existing tag.

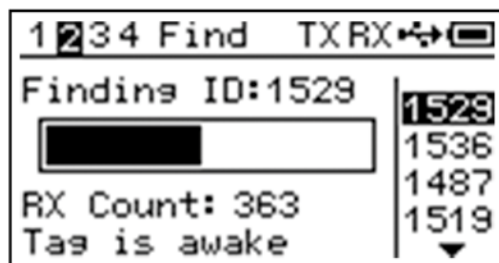
- Use UP ARROW and DOWN ARROW to select a tag
- Press OK on an existing tag ID to edit the ID
- Press DEL to delete an existing tag ID

To add a new tag, use LEFT ARROW to highlight "Add New" and press OK.

- Use LEFT ARROW and RIGHT ARROW to highlight different digits
- Use UP ARROW and DOWN ARROW keys to increase or decrease the highlighted digit
- Press MENU or OK to accept and exit

Highlight "Clear" and press OK to clear the list.

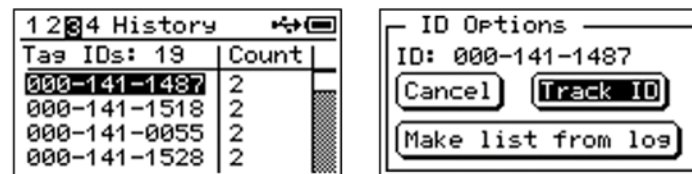
In Find Mode, the RangeTRACKER displays the ID of the tag being tracked.



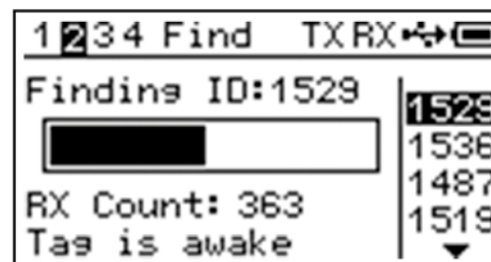
Change which ID in the list is being tracked by using UP ARROW and DOWN ARROW from the main windows, as shown above.

### 5.2 Adding Tags to the List from History Mode

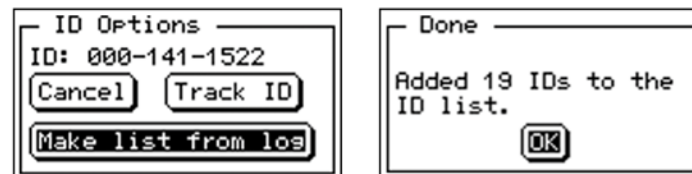
IDs can be added to the list from History Mode by highlighting the ID and pressing OK, then highlighting "Track ID" and pressing OK as shown below.



When you select Track ID, the specified ID will be added to the Tag List, and the RangeTRACKER will automatically transition to Find Mode to begin tracking the specified ID.



Every tag in the History can be added to the Tag List by selecting any ID in the History, and then highlighting "Make list from log" and pressing OK.



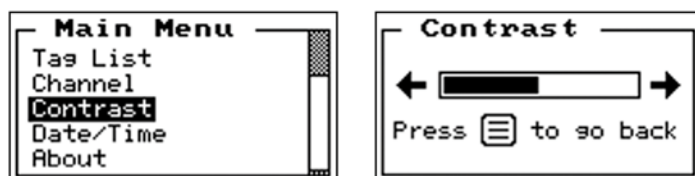
Every tag ID in the history is added to the list. Enter Find Mode and use UP ARROW and DOWN ARROW to find any tag ID in the history.

## 6.0 General Settings

### 6.1 Changing the Contrast

If the text on the RangeTRACKER's display is too dark or too light to read comfortably, the contrast can be adjusted from the Main Menu.

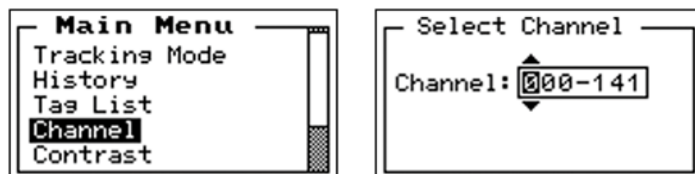
Press MENU and use DOWN ARROW to select the Contrast menu option. Press OK. The Contrast dialog opens as shown below. You can adjust the contrast using LEFT ARROW and RIGHT ARROW. Press MENU or OK to return to the Main Menu.



### 6.2 Changing the Channel

The RangeTRACKER will only receive transmissions from one channel at a time. Each channel is comprised of six digits (ex. 100-560), for a total of 999,999 possible channels. The high number of possible channels provides some degree of security, making it difficult for third-parties to listen in on transmissions from your tags.

Adjust the channel used by the RangeTRACKER from the Main Menu. Press MENU to open the menu and use DOWN ARROW to navigate to the Channel menu option. Press OK. The Select Channel dialog will open as shown below.



Once the Select Channel dialog is open:

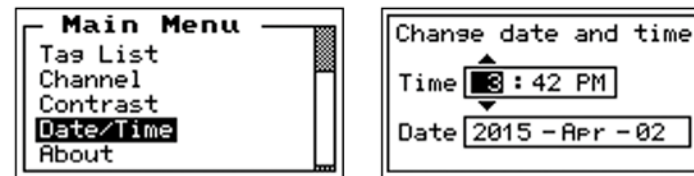
- Use LEFT ARROW and RIGHT ARROW to highlight different digits
- Use UP ARROW and DOWN ARROW to increase or decrease the highlighted digit
- Press MENU or OK to accept and exit

*Note: Changing the channel will clear the current history.*

### 6.3 Changing the Date and Time

The RangeTRACKER has an internal clock that records the time whenever it receives a transmission from a tag. That time is stored internally as part of the history, and if the RangeTRACKER is connected to the RangeWATCH mobile app via Bluetooth, the time is reported to the mobile app as well.

The time can be changed from the Main Menu. Press MENU and use DOWN ARROW to navigate to the Date/Time option in the menu. Press OK to open the Change date and time dialog as shown below.



In the Change date and time dialog:

- Use LEFT ARROW and RIGHT ARROW to highlight different date and time fields
- Use UP ARROW and DOWN ARROW to change the highlighted item
- Press MENU or OK to accept the change and exit

### 6.4 Turning the Backlight On and Off

When on the main screen, you can turn the backlight on and off by pressing DEL on the keypad. Save battery life by turning off the backlight when not needed.

## 7.0 Troubleshooting/FAQ

Please see below for answers to some common (and some less common) questions about using the RangeTRACKER. If your question is not found below, please feel free to contact TAGSMYTH directly for support.

### **My RangeTRACKER won't turn on**

If the battery on the RangeTRACKER drops too low, the RangeTRACKER will turn itself off and not allow it to turn back on until the battery is being recharged. Please plug in your RangeTRACKER using the included USB cable.

### **My RangeTRACKER won't turn off**

The RangeTRACKER can be turned off at any time by pressing ON/OFF. If the RangeTRACKER fails to respond immediately, force it to turn off by unplugging the USB cable (if connected) and pressing and holding ON/OFF for several seconds.

### **My RangeTRACKER doesn't read any tags**

The RangeTRACKER only reads tags at one channel at a time. If the selected channel is incorrect, the RangeTRACKER won't see transmissions from your tags. See *6.2 Changing the Channel* to learn more about setting the channel on the RangeTRACKER.

### **I want to use Find Mode, but I don't want the RangeTRACKER to beep every time**

Reduce or mute the volume in Find Mode by using VOLUME UP and VOLUME DOWN on the right-hand side of the keypad.

### **My RangeTRACKER doesn't wake tags in Scanner Mode**

Even in Scanner Mode, the RangeTRACKER only reads tags on the selected channel. Make sure that the channel setting is correct. Also make sure that the TAGSMYTH tags that you are using support short-range wakeup functionality, as not all tags support it.

## 8.0 Notices and Disclaimers

This document is provided as a reference only. Typical device specifications must be evaluated by the end-user. TAGSMYTH reserves the right to modify this document and the product it describes without notice.

The RangeTRACKER is not designed for use in weapons systems, aircraft, life-saving or life-sustaining systems, automobiles, or any other application where failure could result in injury, death, property damage, or environmental damage. In no event shall TAGSMYTH be liable for any direct, indirect, punitive, incidental, special consequential damages, to property, environment, or life, whatsoever arising out of or connected with the use or misuse of its products.

The RangeTRACKER contains Lithium batteries and must not be disposed of in fire. The RangeTRACKER should not be left unattended during charging.

### Warranty

The RangeTRACKER is warranted for one year from the date of shipment against defects in materials and workmanship when used as directed. Inappropriate use of the RangeTRACKER may void the warranty.

### FCC and Industry Canada Information

Model Name: RangeTRACKER

Model Number: TS1-RTKR101

FCC ID: 2ADS3-TS1RTKR101

IC#:12618A-TS1RTKR101

FCC | 47 CFR 15.505

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. Any changes or modifications not expressly approved by manufacturer could void the user's authority to operate the equipment.

**IMPORTANT! Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.**

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

*Reorient or relocate the receiving antenna.*

*Increase the separation between the equipment and receiver.*

*Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.*

*Consult the dealer or an experienced radio/ TV technician for help.*

### FCC Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. End users must follow the specific operating instructions for satisfying RF exposure compliance.

### INDUSTRY CANADA| ICES-003

#### This Class B digital apparatus complies with Canadian ICES-003

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

**IMPORTANT! Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.**

#### Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. End users must follow the specific operating instructions for satisfying RF exposure compliance.

#### Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes: (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

**IMPORTANT! Tous les changements ou modifications pas expressément approuvés par la partie responsable de la conformité ont pu vider l'autorité de l'utilisateur pour actionner cet équipement.**

Note Importante: (Pour l'utilisation de dispositifs mobiles)

#### Declaration d'exposition aux radiations:

Cet équipement est conforme aux limites d'exposition aux rayonnements IC établies pour un environnement non contrôlé. Les utilisateurs finals doivent respecter les instructions d'exploitation spécifiques pour être en conformité avec les exigences d'exposition aux RF.

customersupport@tagsmyth.com  
801.798.4660

