MAZTECH INDUSTRIES

X4 LASER RANGEFINDER

X4-LRF™

WITH APPLIED A BALLISTICS

15M

USER MANUAL

TABLE OF CONTENTS

CONGRATULATIONS ON YOUR PURCHASE!

The X4-LRF™ is a high-performance ranging laser with co-aligned visible and infrared aiming lasers as well as an integrated Applied Ballistics® calculator with on-board environmental and motion sensors, giving you a complete ranging and ballistics solution all in one compact, rugged package.

The X4-LRF™ is capable of being integrated with a X4-FCS™ Fire Control System, sold separately, to allow for instant target distance ranging and ballistics solution. Visit www.MaztechIndustries.com for more information.

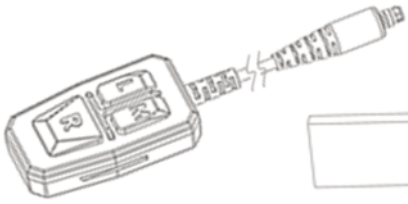
For instructional videos, it is recommended you visit our website at www.MaztechIndustries.com. You can also get there by scanning this QR code with your smartphone or tablet:

Package Contents

The following are included with the X4-LRF™:

CR123 Rechargable Battery

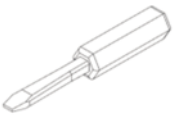
USB-C Cable



X4 Low-Profile Remote

Adhesive-Backed Hook and Loop

5/64 Allen Key



Mini Flathead Screwdriver

Cloth Drawstring Bag

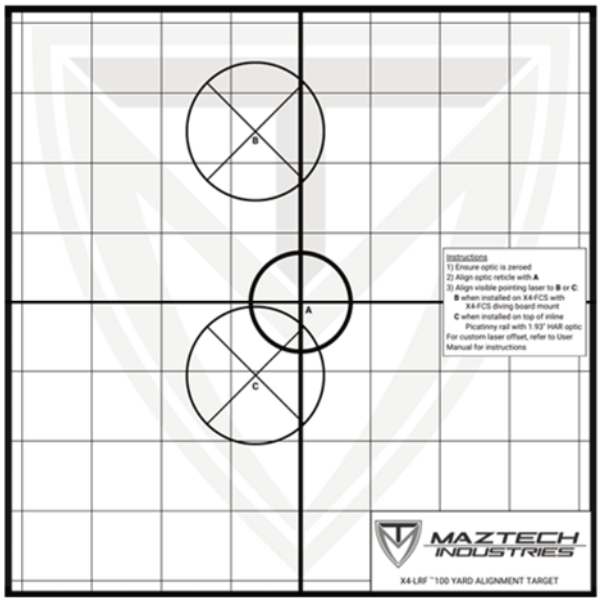
Stickers

Lens Cleaning Cloth

Patch

Quick Start Guide

This Manual

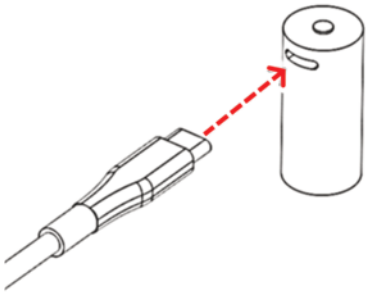


X4-LRF™ Alignment Target

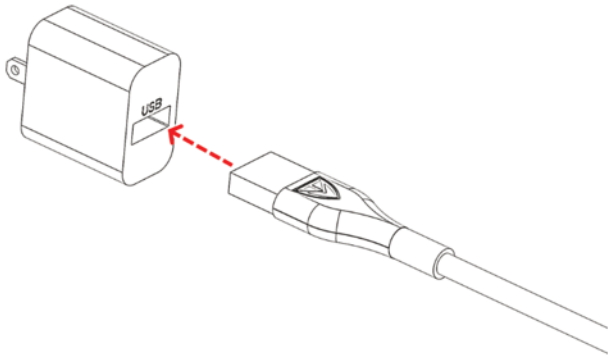
Charge Your Battery

It is recommended to charge the Maztech CR123 battery before first use by utilizing the provided USB-C cable:

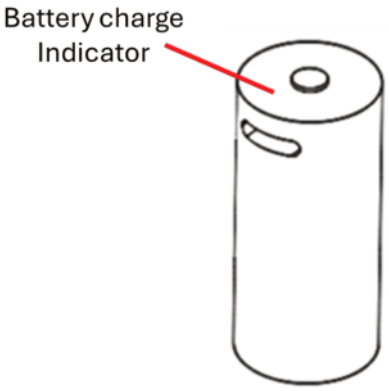
1. Plug the USB-C cable into the battery charging port:



2. Plug the other end into a PC or any standard USB wall-charger (not provided):



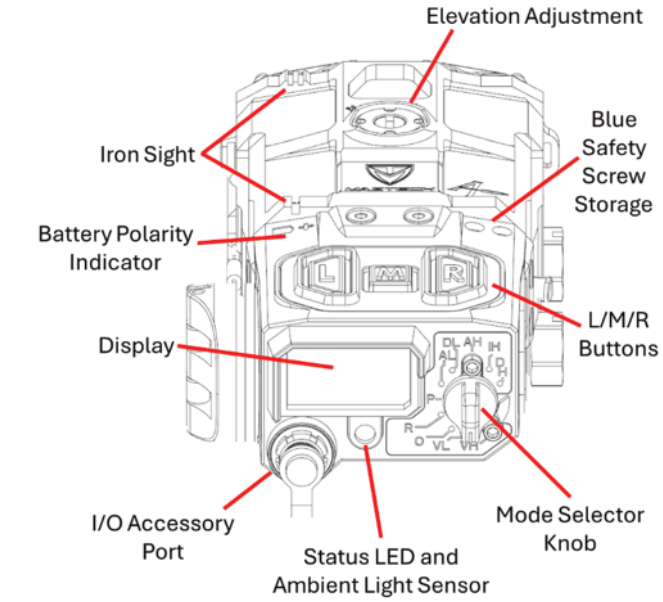
3. When properly charging, the top of the battery near the charging port will glow red. It will become solid green when charging is complete.

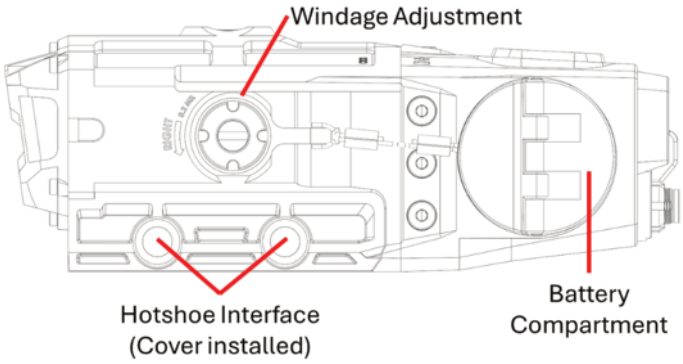


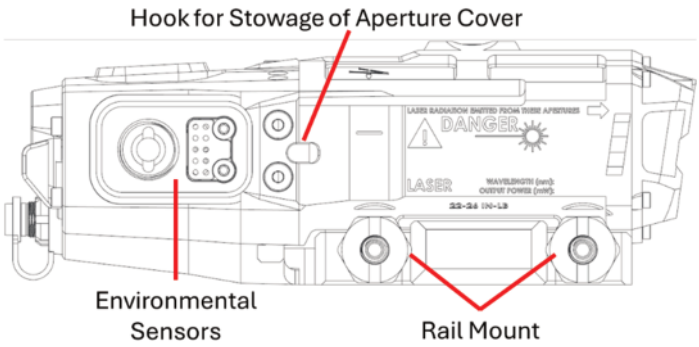
Tip: If you don't see the top of the battery glowing, cover it with your hand or dim the lights in the room.

Note: The supplied battery is provided for user training purposes only. For longer battery life, use a Lithium CR123A battery.

GETTING TO KNOW YOUR X4-LRF™

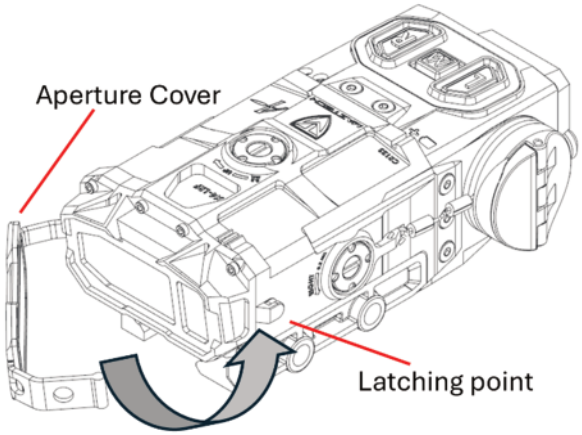






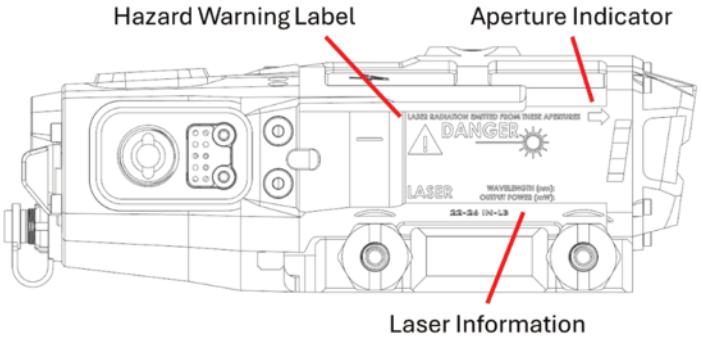
Important Laser Safety

Warning: The X4-LRF™ contains multiple Class 3B lasers, which emit radiation in both visible and invisible spectrums from the exit aperture. The lasers can be hazardous if not handled properly.



For best eye safety practices, it is recommended that the X4-LRF™ aperture cover remain closed and latched until the product is ready to use.

Laser warning information is also printed directly on the side of the X4-LRF™:

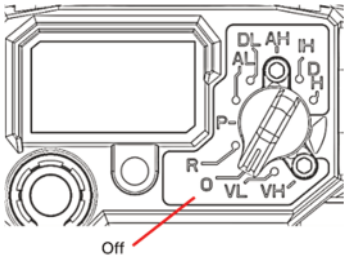


Important: Visible and infrared laser light can be hazardous if not used properly. Direct exposure to the eyes may result in permanent damage, including blindness. Laser light reflected or refracted from surfaces can also pose similar risks.

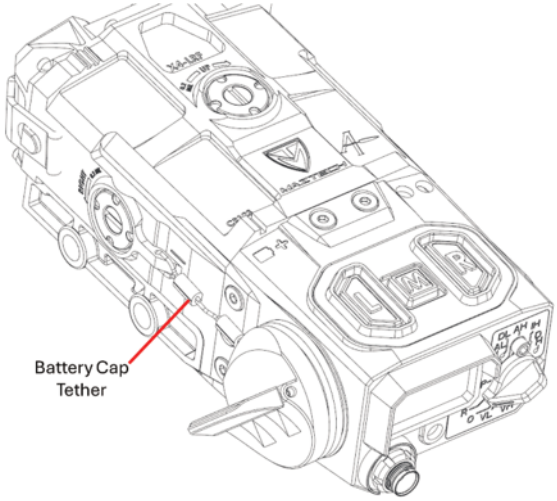
Please review ALL laser warnings and safety measures in the Laser Safety Appendix prior to using the X4-LRF™.

Installing Battery

1. Turn the mode knob to the (O)ff position:

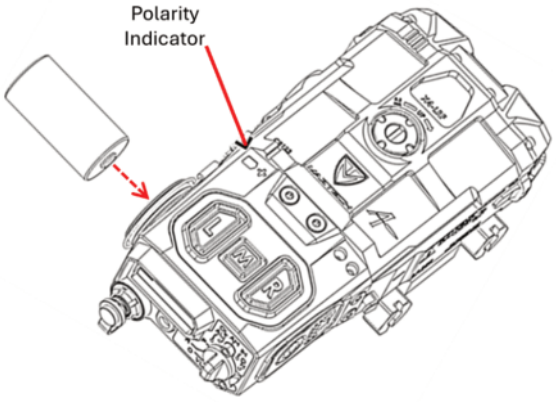


2. Unscrew the battery cap by hand:



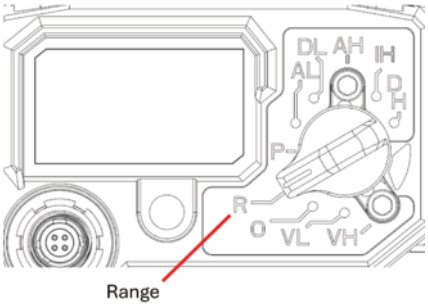
   - **Tip**: Hold the tether while unscrewing the battery cap in order to prevent the tether from interfering with removal of the cap

3. Insert CR123 battery with +/- polarity as shown on the X4-LRF™ housing:

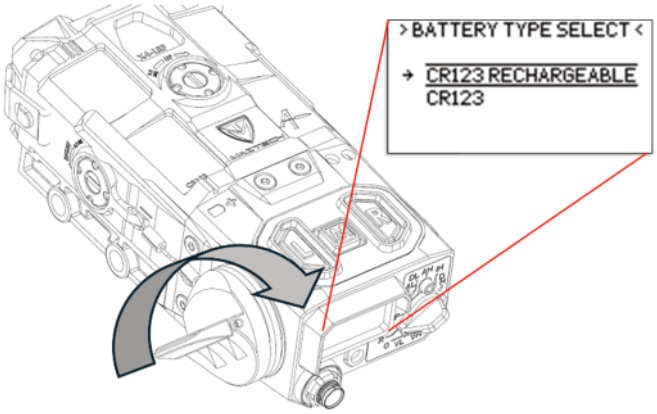


   - **Tip**: The supplied battery is provided for user training purposes only. For longer battery life, use a Lithium CR123A battery.

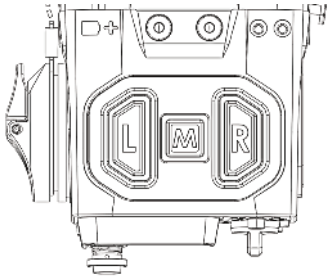
4. Hand tighten the battery cap, then turn the mode knob to the (R)ange position:



5. Look on the X4-LRF™ display. Confirm CR123 Rechargeable is shown as the battery type:



6. Use the L and R buttons to change the battery-type selection (if necessary):



7. Press the (M) button to confirm battery-type selection.

Note on Alternate Batteries:

- If using a different rechargeable battery, only use a protected cell CR123. Note this might result in inaccurate battery indicator readings.

  OR

- A non-rechargeable CR123A battery can also be utilized.

For additional Battery Safety Information, see the Battery Safety section at the end of this manual.

X4-LRF™ Modes, Buttons and Display: Summary

WARNING: If you have not already done so, please review ALL laser warnings and safety measures in the Laser Safety Appendix.

Mode Selector Knob

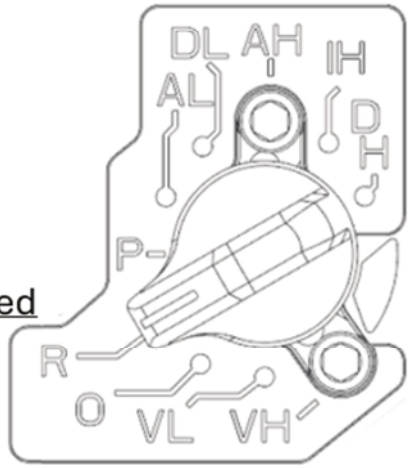
Aim Low (AL)
IR Pointer READY
Rangefinder READY

Dual Low (DL)
IR Pointer READY
Rangefinder READY
X4 Illuminator READY
(sold separately)

Aim High (AH)*
IR Pointer READY
Rangefinder READY

(P)rogram**
Identical to (R)ange

Illuminator High (IH)*
Rangefinder READY
X4 Illuminator READY
(sold separately)



(R)ange
Vis/IR Pointers disabled
Rangefinder READY

Dual High (DH)*
IR Pointer READY
Rangefinder READY
X4 Illuminator READY
(sold separately)

(O)ff
Turn OFF
your X4-LRF

Vis Low (VL)
Visible Pointer READY
Rangefinder READY

Vis High (VH)*
Visible Pointer READY
Rangefinder READY

**Requires removal of blue safety screws. Please review the Laser Safety Appendix before utilizing these higher-power modes.*

***(P)rogram mode is for future software and hardware expansions. Once the new features are available, the online manual will be updated with instructions.*

Buttons

(**L**)ase:
Visible and/or IR Pointers ON
(based on mode knob)

Pointer(s) are only ON when button is depressed
OR
Double-click to keep ON
(for 5 minutes)

(**R**)ange:
Single-click to
Perform Range Measurement

Double-click to activate
continuous ranging
(for 5 minutes)

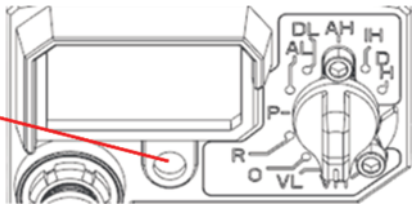
(**M**)enu:
Single-click to cycle between screens on the display

Long-click to display menu

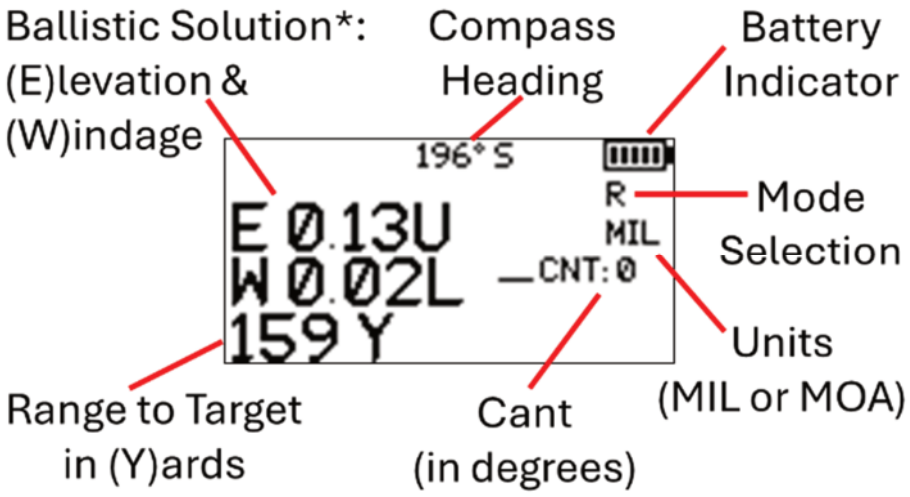
Once menu is active:
- Use L/R buttons to navigate
- Use M button to select
  Double-click to go BACK
  Long-click to EXIT

LED Status Indicator

Red: Visible Laser ON
Green: IR Laser ON
Blue: Ranging Laser ON



Ballistic Solution Display

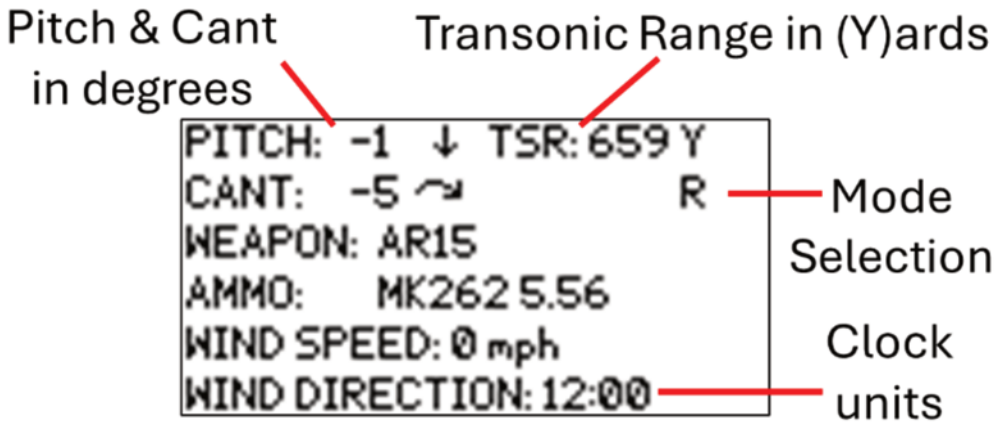


**A new ballistic solution is calculated:*

(1) *After a new Range-to-Target is determined*

(2) *Every 10 seconds (based on new environmental sensor readings)*

Ballistic Setting Information Display



From the ballistic solution display, Click the (**M)** button to display the ballistic settings information page. To change the wind speed and wind direction setting, double click the (**M)** button to display the edit arrow between the WIND SPEED and WIND DIRECTION setting. Use the **(L)/(R)** buttons to change the desired setting. Click the (**M)** button to go back to the Ballistics Solution display.

Power Savings

The display will sleep after 5 minutes* of inactivity. Click the **(M)** or **(R)** button to wake it up.

- **Important**: While the display is asleep, the L and R buttons will still activate the lasers.

The X4-LRF™ will turn off after 6 hours* of inactivity.

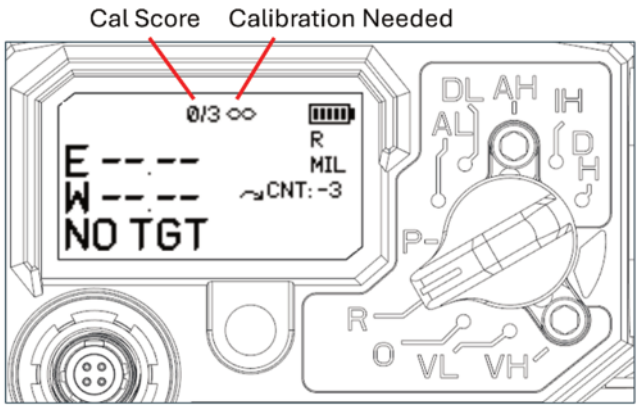
- Shake-to-wake: When motion is detected, the X4-LRF™ will power-up and turn on the display*.

** See power Settings on page 67 to adjust these settings*

X4-LRF™ Compass Calibration

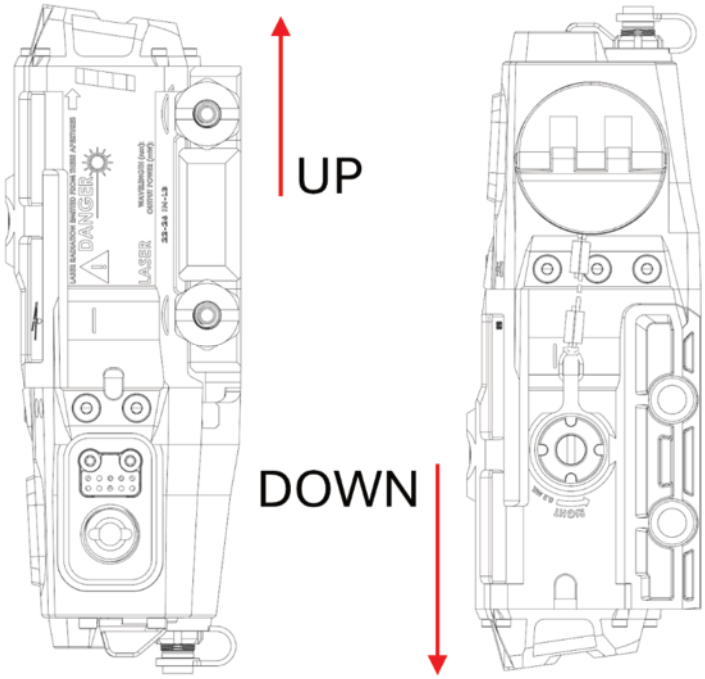
After the battery is installed, a simple calibration routine needs to be performed in order for the X4-LRF™ to display an accurate compass heading.

1. On the X4-LRF™ display, you should see the following two indicators:

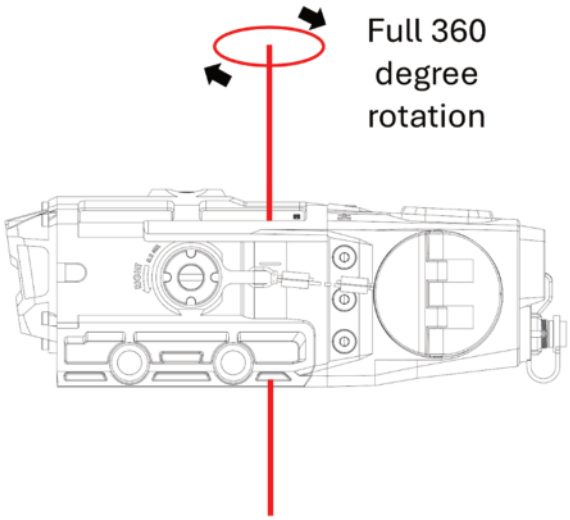


   - **Tip**: If a compass heading is already shown on the display, then compass calibration is not needed.

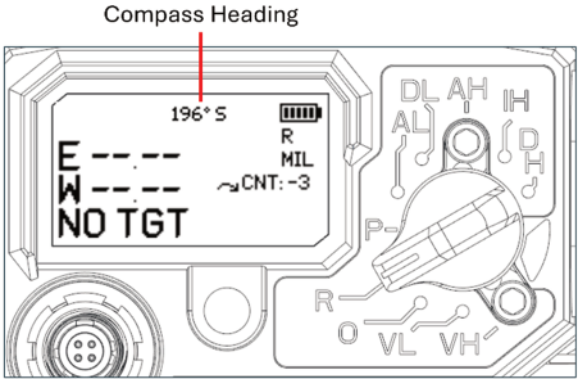
2. Point the X4-LRF™ up then down, holding it in each position for approximately 2 seconds.



3. While holding the X4-LRF™ horizontal to the ground, spin it around a full 360 degrees.
   - **Tip**: For an online video demonstrating compass calibration, go to http://www.MaztechIndustries.com



4. After a successful calibration, you will see a proper compass heading in the X4-LRF™ display:



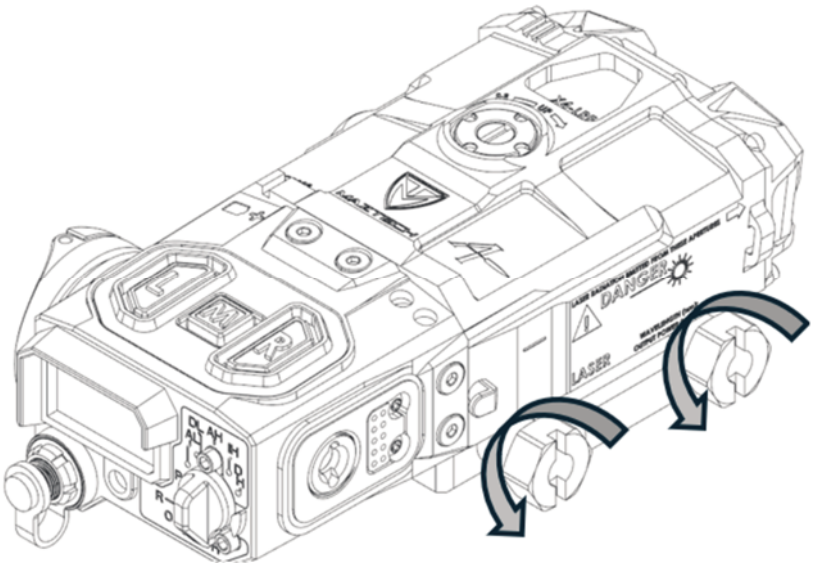
   - **Tip**: If the compass fails to calibrate, repeat the compass calibration process or remove and replace the battery cap, then repeat the compass calibration process.

5. The X4-LRF™ compass will continuously auto-calibrate as you change locations. The only time the compass calibration will need to be re-performed is after the battery is changed.
   - **Hint**: After installation of the X4-LRF™ on a weapon, field-strip your firearm in order to safely and easily perform a compass calibration without having to remove the X4-LRF™ from your weapon.

Installing X4-LRF™ on Picatinny Rail

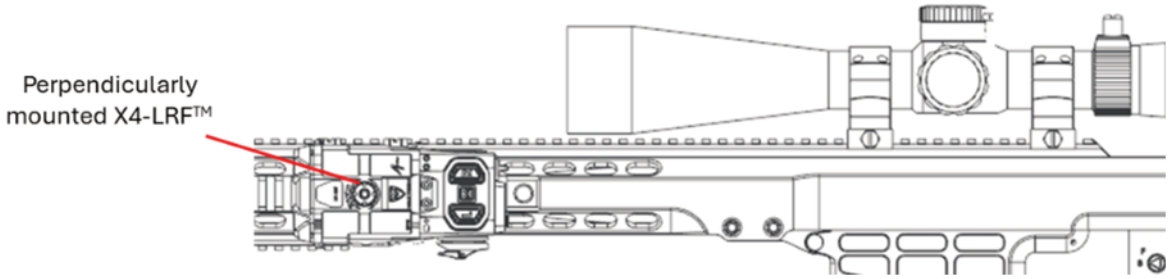
Tip: Perform compass calibration (previous section) before installing the X4-LRF™ on your Picatinny Rail.

1. Loosen both rail bolts on your X4-LRF™:

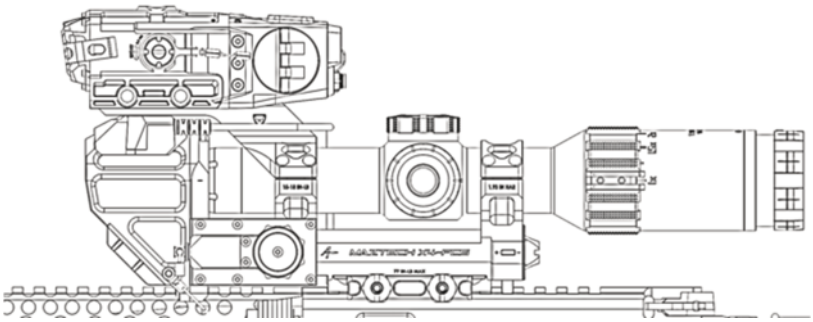


2. The X4-LRF™ can be utilized in multiple configurations. Use these pictorials to determine your preferred configuration:

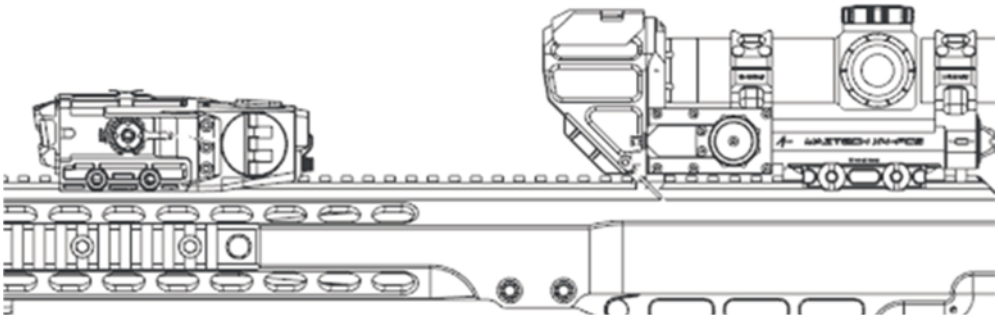
Configuration A: X4-LRF™ mounted perpendicular to your scope.



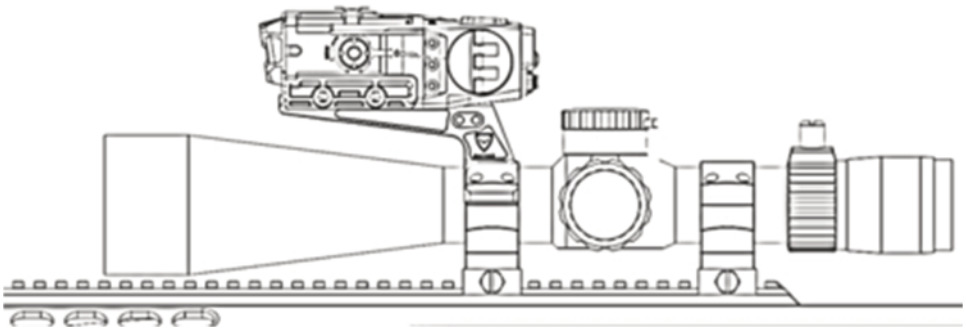
Configuration B: X4-LRF™ above the X4-FCS™ using the X4 Diving Board Mount.



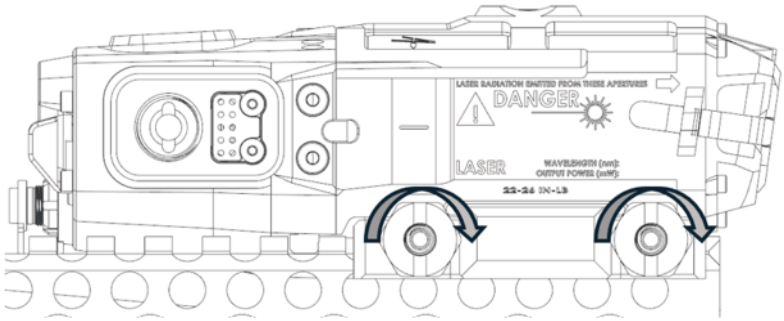
Configuration C: X4-LRF™ on rail in front of X4-FCS™ (for ≥1.93" Height Above Rail scope)



Configuration D: X4-LRF™ above your scope



3. Place the X4-LRF™ onto the picatinny rail:



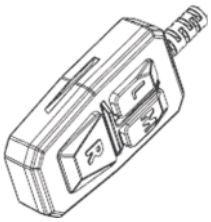
4. Tighten both rail bolts using a 1/2-inch wrench.
   - **Important**: Do not torque more than 60 in-lb.

   If you do not have a torque wrench, turn to 1/4 turn past hand-tight.

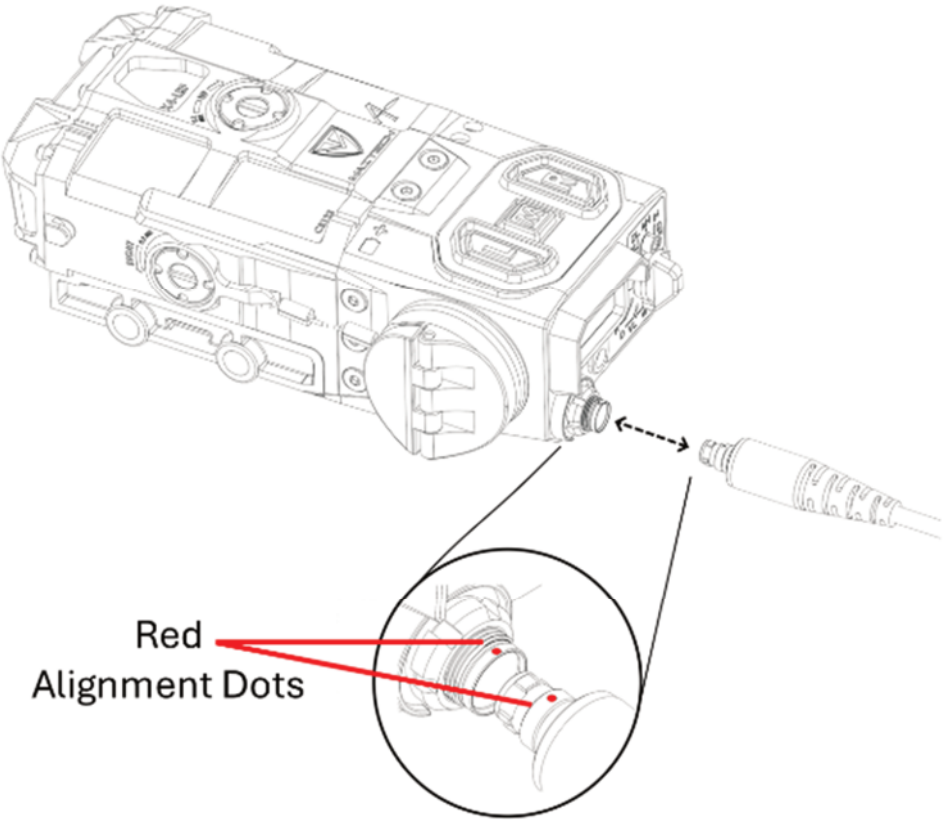
5. Configure the display orientation on the X4-LRF™ to match the desired mounting orientation. See section *Menu System and Features >> System Display Setting >> Adjust Display Orientation* on page54.

Installing X4 Low Profile Wired Remote

1. Before installing your X4 Low Profile Remote, first determine its mounting location in your configuration.

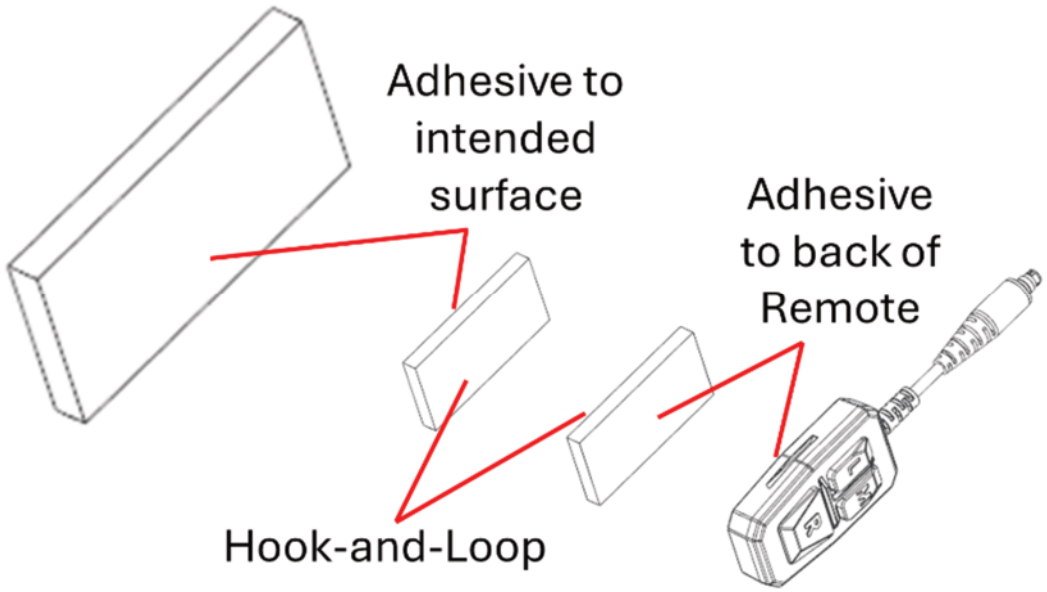


2. Next, plug it into the X4-LRF™ and ensure the cable is long enough to reach the mounting location.



3. Using an alcohol wipe (provided), clean the back of the X4 Low-Profile Remote and its intended mounting surface on your configuration.

4. Then remove the adhesive backing and firmly adhere each hook-and-loop onto your X4 Low-Profile Remote and its intended mounting surface:



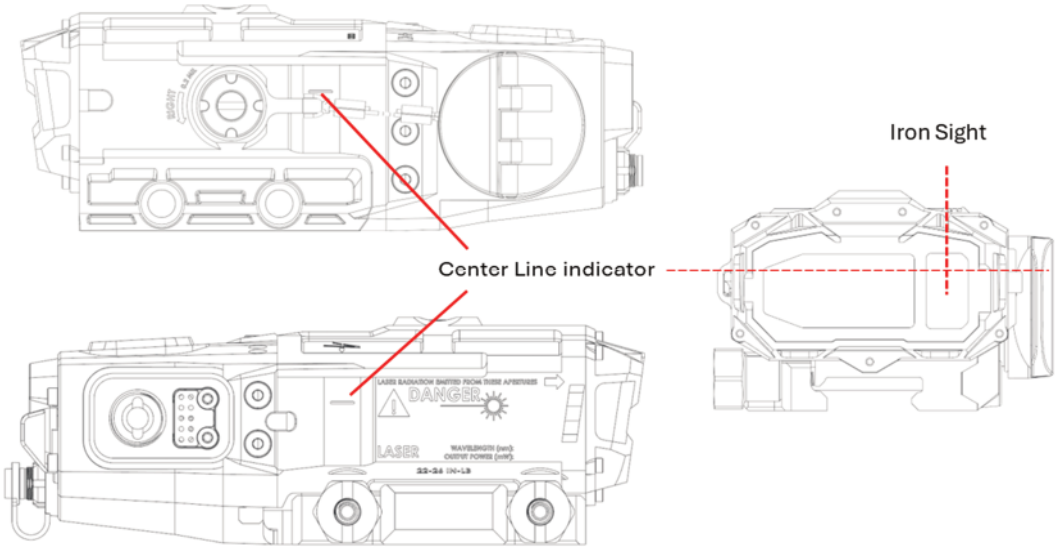
Tip: For best adhesion, let the adhesive cure for 48 hours at room temperature.

Aligning the X4-LRF™ with Your Scope

Before starting the alignment process, verify the X4-LRF™ and your scope are securely rail-mounted. Then refer to section *Installing X4-LRF™ on Picatinny Rail* on page 16 to determine if you are utilizing scope configuration A, B, C or D:

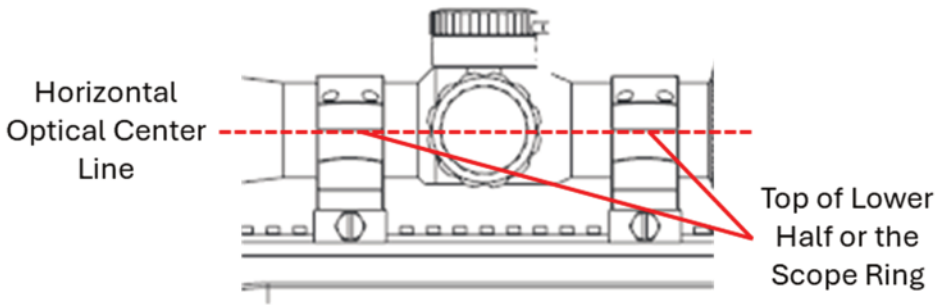
Measuring offset

1. Measure the offset from the optical center of the scope/X4-FCS™ to the red laser pointer of the X4-LRF™. The red laser pointer is located where the center line indicator intersects with the iron sight. The X4-LRF™ visible pointer has a horizontal offset from center of 0.65" (16.5mm).

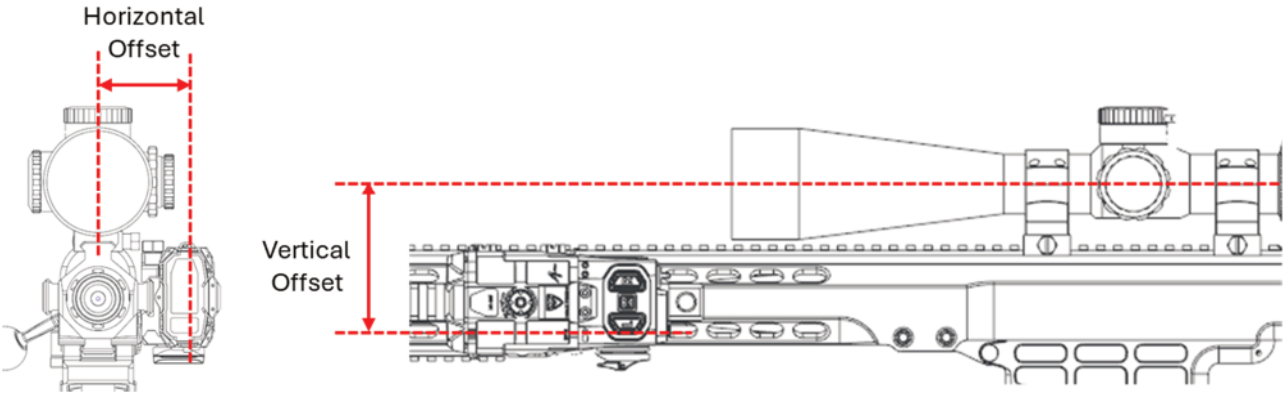


2. Use a ruler or caliper to measure the horizontal and vertical offset using the centerline indicator etched on the X4-LRF™ and the iron sight. See illustration based on your configuration below. **Note:** The horizonal offset images are illustrated from the front of the X4-LRF™ for clarity and should be measured with coordinates from the rear of the X4-LRF™. Configuration B and C already have measurements on the illustration.

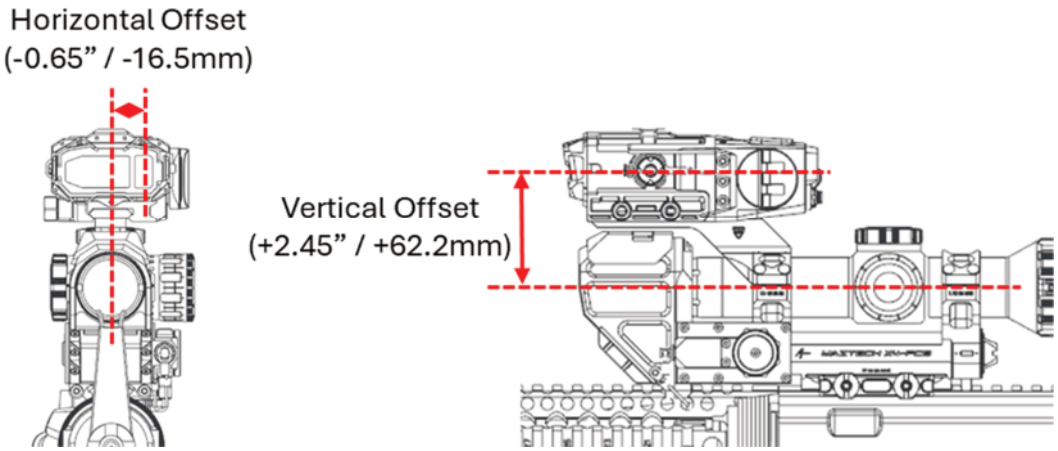
➢ **Tip**: The horizontal optical centerline is typically equivalent to the top of the lower half of the scope ring.



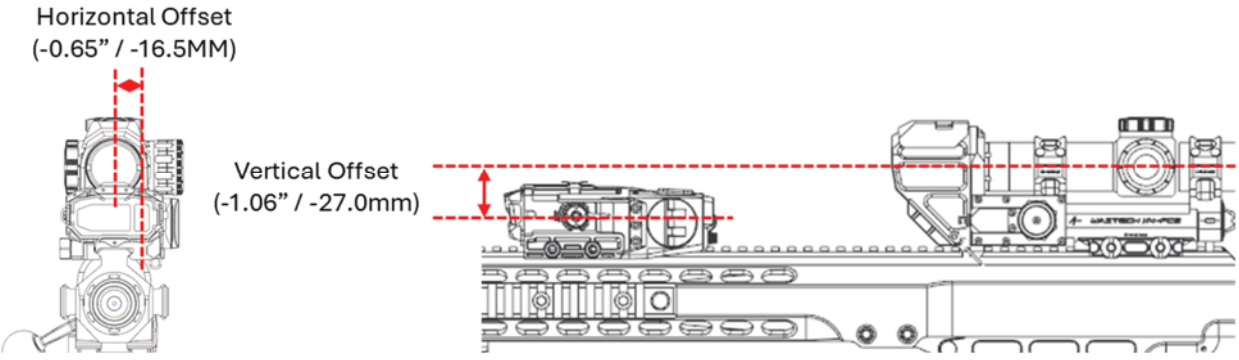
Configuration A: X4-LRF™ mounted perpendicular to your scope.



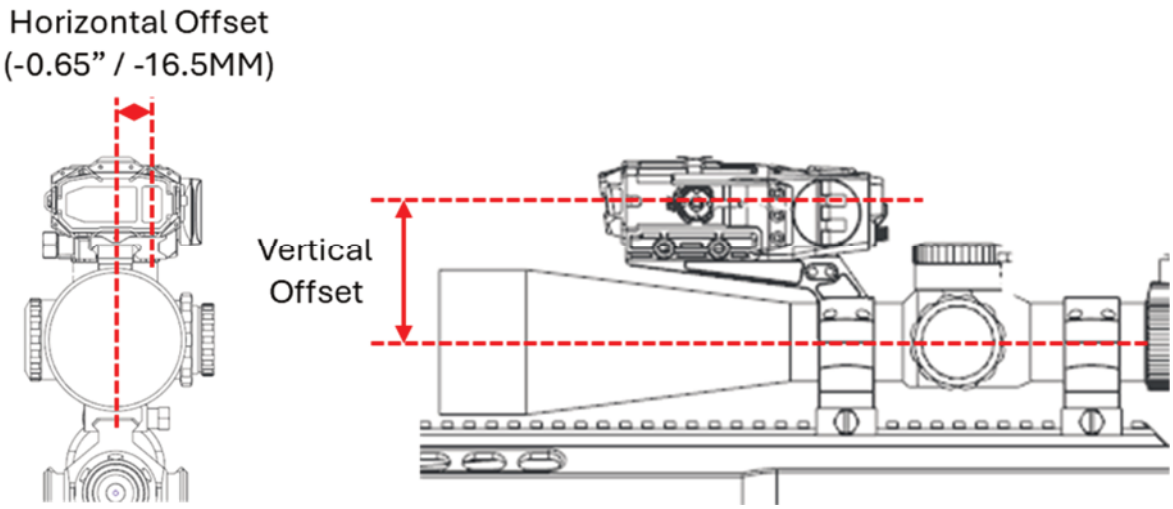
Configuration B: X4-LRF™ above the X4-FCS™ using the X4 Diving Board Mount.



Configuration C: X4-LRF™ on rail in front of X4-FCS™ (for ≥1.93” Height Above Rail scope)

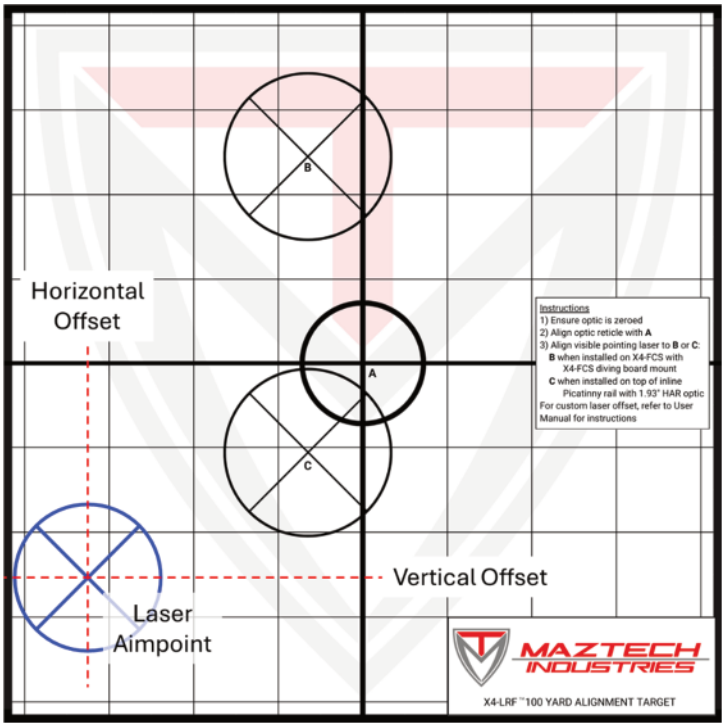


Configuration D: X4-LRF™ above your scope

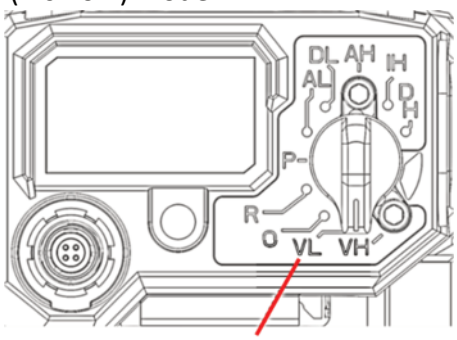


Mark Maztech X4-LRF™ Alignment Card

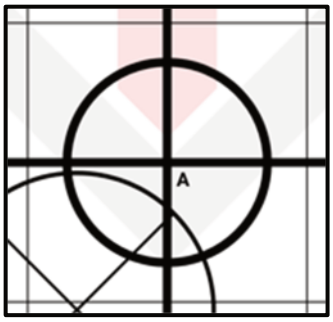
3. Use a marker to create **Laser Aimpoint** on the Maztech X4-LRF™ Alignment Card using the vertical and horizontal offsets from steps 1 and 2. **Note**: The horizontal offset is measured from the rear of the X4-LRF™. Configuration B and C already have pre-printed markers for your convenience.



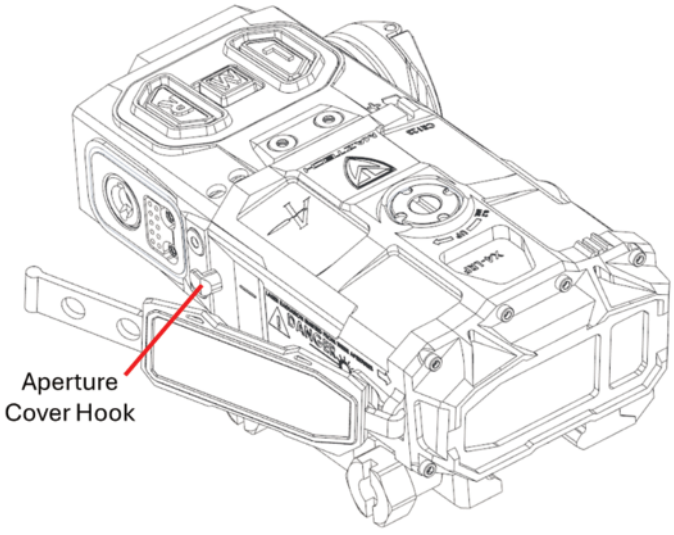
4. If not performed already: Zero your scope/X4-FCS™ per manufacturer's instructions (100-yard OR 100-meter ranging distance recommended).
5. Place the Maztech Laser Alignment Card downrange (100 yards or 100 meters). **Note**: The alignment card has adhesive backing or use tape to hold it in place.
6. On your X4-LRF™, select VL (Vis-Low) mode:



7. Align the reticle on your scope/X4-FCS™ to aimpoint A on the alignment target:

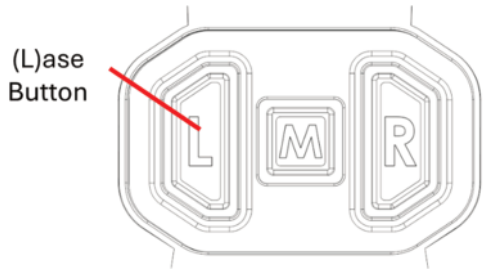


8. Move the X4-LRF™ aperture cover into the open (stowed) position:

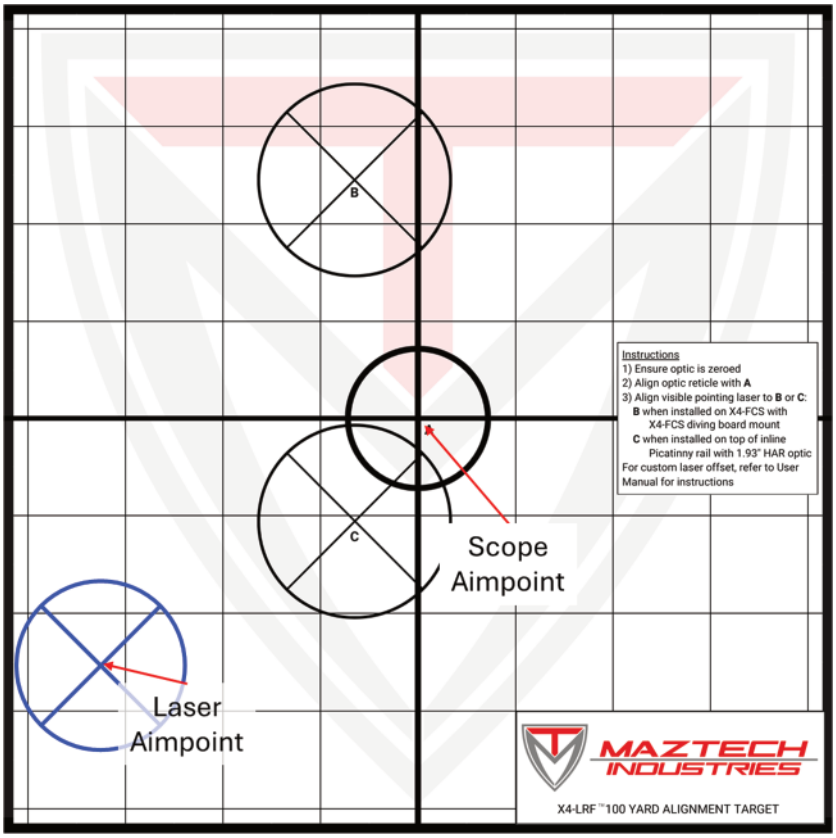


Warning: The next step will activate the Visible Laser. If you have not already done so, please review ALL laser warnings and safety measures in the Laser Safety Appendix.

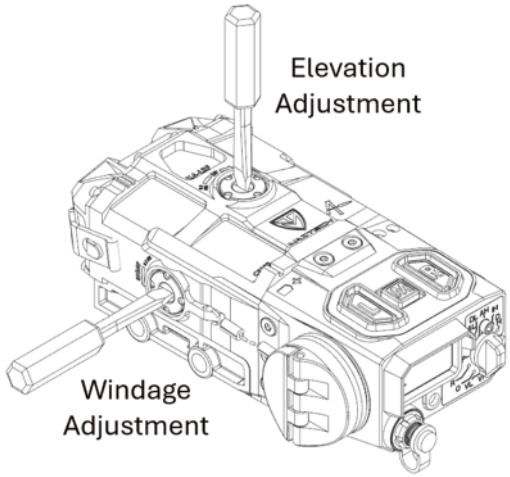
9. Double-click the **(L)** button on your X4-LRF™ to turn on the visible pointer for 5 minutes:



10. While keeping your optic's reticle centered on aimpoint A, steer the X4-LRF™ laser beam to the Laser Aimpoint marked on page 23.



11. Use the small screwdriver provided to adjust laser windage and elevation:



12. If Weapon Mounted: Aim away from the Laser Alignment Card and discharge 2 or 3 rounds from your weapon.
    - Then repeat steps 10 and 11 to verify the two aimpoints are still aligned.

13. Turn OFF the X4-LRF™ visible laser by single-clicking the L button.

Congratulations! The X4-LRF™ is now co-aligned with your optic, and the system is ready for operation.

- **Hint**: While still at the range, set up your ballistic profile using the the Maztech Companion App (see next section) OR using the X4-LRF Menu System (see page 37). This will allow the X4-LRF™ to capture environmental data for the WEAPON ZERO parameters in your weapon's ballistic settings.

Installing the Maztech Companion App

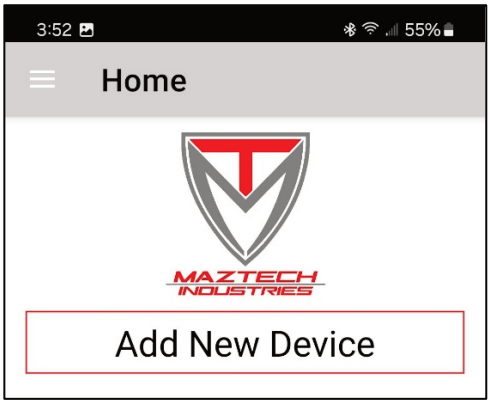
Maztech recommends connecting your X4-LRF™ to your smartphone via Bluetooth® Wireless Technology for the most efficient setup of your ballistic profiles.

- **Note**: If you do not want to connect your X4-LRF™ your smartphone, see section *Ballistic Setup* on page 37 to setup a ballistic profile without a wireless connection.

1. Use your smartphone to connect to the App Store or Google Play:

2. Search for **Maztech** or **Maztech Companion** and install the app on your phone:

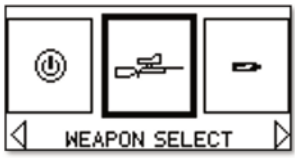
3. Launch the Maztech Companion App and you should see a screen that looks like this:



Note: Before attempting to initiate a wireless connection to the X4-LRF™, verify you have Bluetooth® enabled on your smartphone.

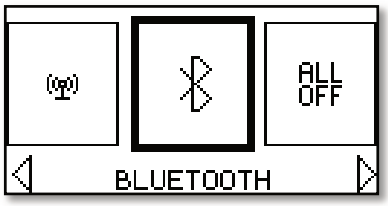
CONNECTING X4-LRF™ TO MAZTECH COMPANION APP

1. Click and hold (for 1 second) the **(M)**enu button. This will display the X4-LRF™ menu:

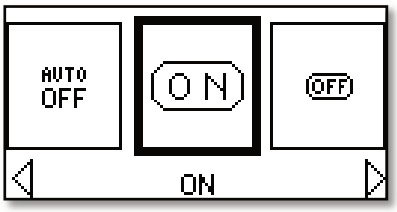


2. Then use the **(L)/(R)** buttons to navigate to the RADIO SETTINGS menu:

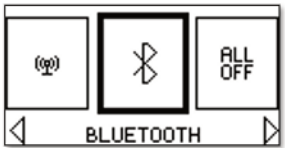
3. Click the **(M)**enu button to select RADIO SETTINGS.
4. Navigate to BLUETOOTH®. Then click the **(M)**enu button to select:



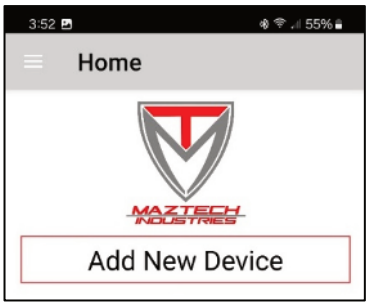
5. Navigate to ON and click **(M)**enu to turn on Bluetooth® Wireless Technology:



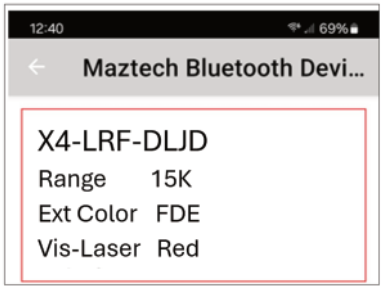
6. Select BLUETOOTH® again, then navigate and select PAIR SMARTPHONE:



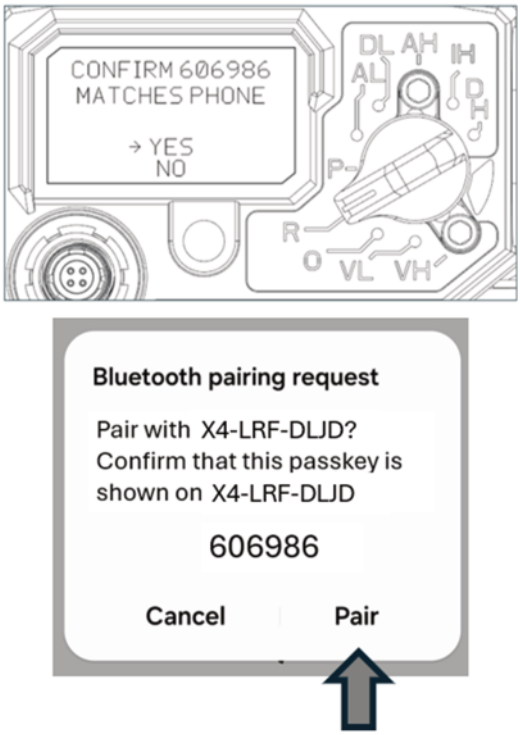
7. On the Maztech Companion App, touch the *Add New Device* button:



8. Your X4-LRF™ will show up as an available device. Touch the box with the red outline:

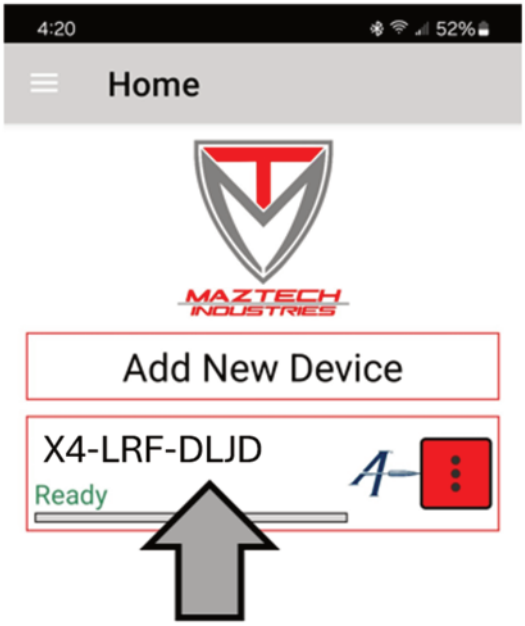


9. After pairing starts, for security reasons you will need to respond to confirmations on both devices:



Touch *Pair* on your phone and click the X4-LRF™ **(M)**enu button to confirm pairing operation

10. When pairing is complete, the X4-LRF™ will show up as a device in the Maztech Companion App:



Touch here to connect to the X4-LRF™ via Bluetooth® Wireless Technology.

Note: It will take approximately 10 seconds to create an encrypted connection:

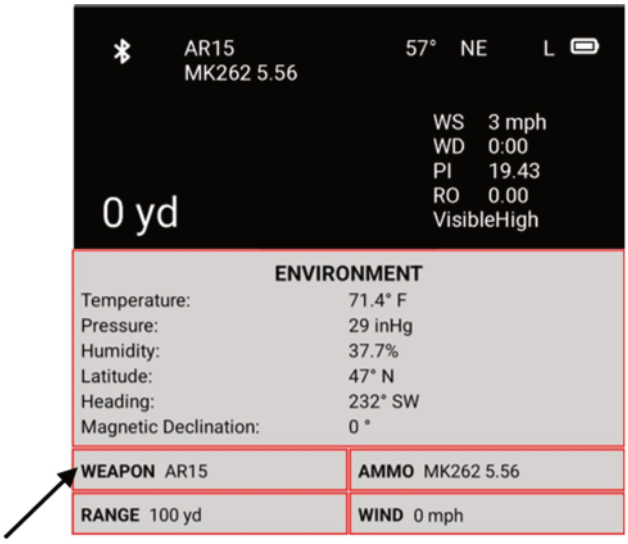
Setting Up Ballistic Profiles (with Smartphone)

You can now use your Maztech Companion App to setup ballistic profiles on your X4-LRF™.

- **Note**: If you do not want to connect your X4-LRF™ to your smartphone, see section *Ballistics Setup* in page 37 for instructions on setting up ballistics profiles without a wireless connection.

Select Weapon Profile:

1. Select the *WEAPON* button to open the weapons profile list.



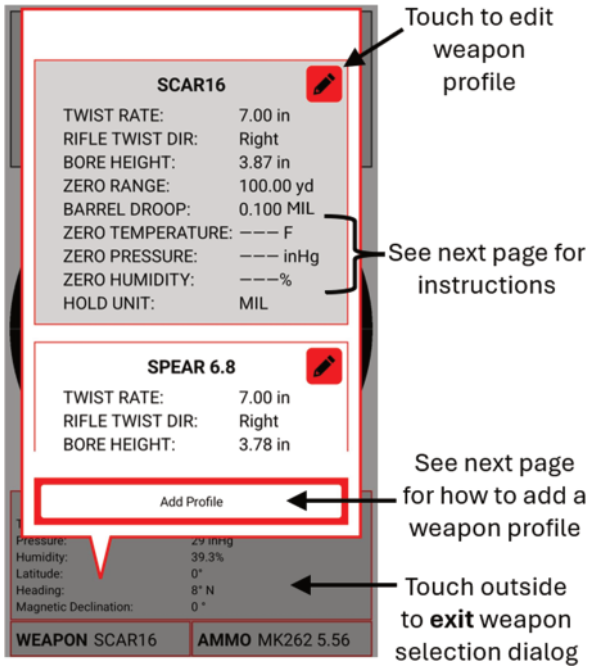
Touch here to select your weapon

- **Hint**: Anything in the app with a red box around it is something you can touch to adjust

2. Scroll through and select one of the pre-configured weapon profiles already available.
3. Select the desired weapon profile and verify the profile is shown in the weapons button.

Add Weapon Profile:

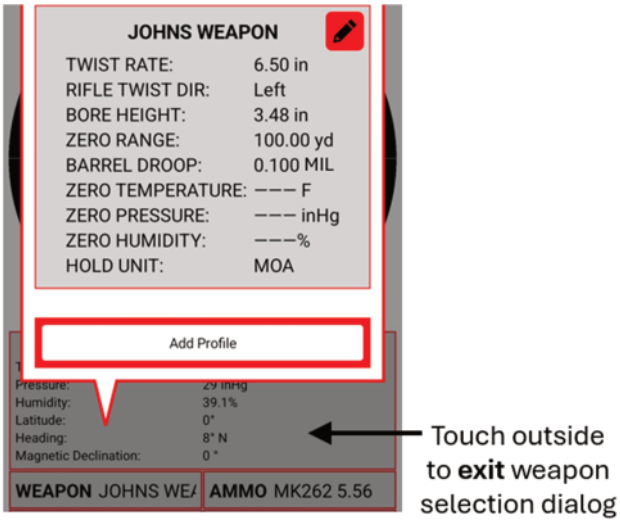
1. From the Weapons Profile list, select the *Add Profile* button.



2. Input the P*rofile Name*, *RIFLE TWIST RATE and RIFLE TWIST DIRECTION* from the weapon manufacturer.

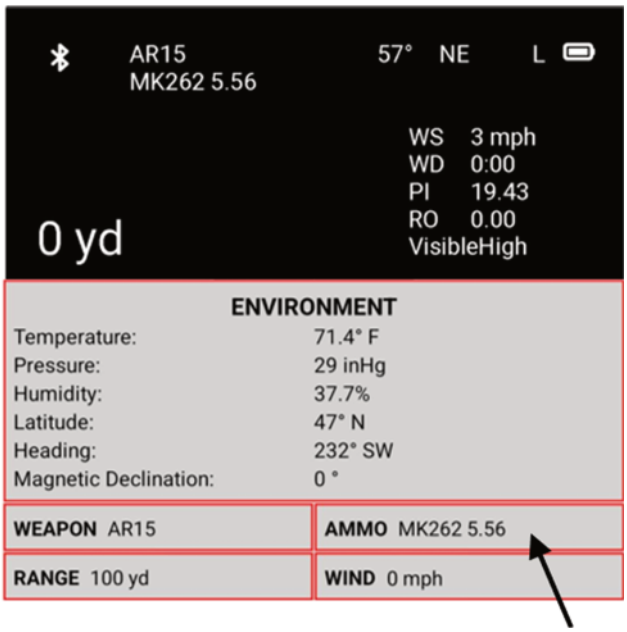
3. Input the *BORE HEIGHT*, measured from the weapon bore to the LPVO barrel center. See section *Aligning the X4-LRF™ With Your Scope* on page 21.
4. *ZERO RANGE, ZERO TEMPERATURE, ZERO PRESSURE and ZERO HUMIDITY* will be adjusted during a weapon zeroing event.
5. When complete, select the *Okay* button to create a new profile.

Example of a successful **new** weapon profile:



Select Ammo Profile:

1. Select the *AMMO* button to open the weapons profile list.

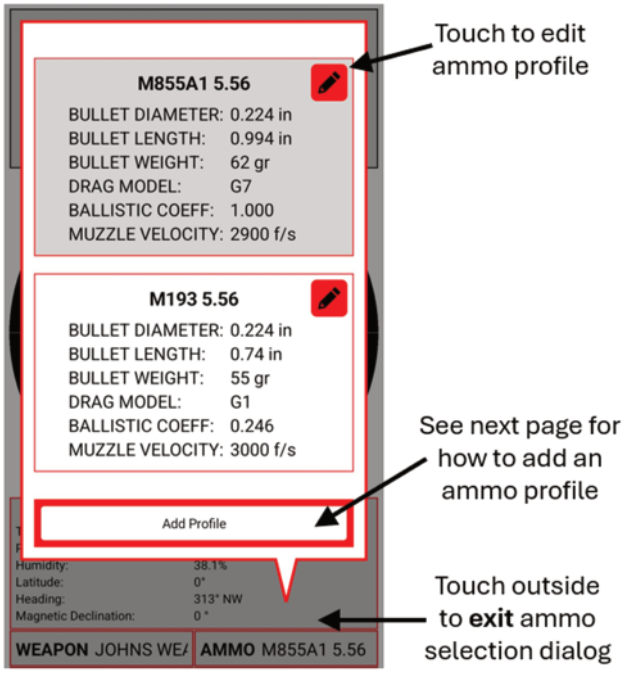


Touch here to select your ammunition

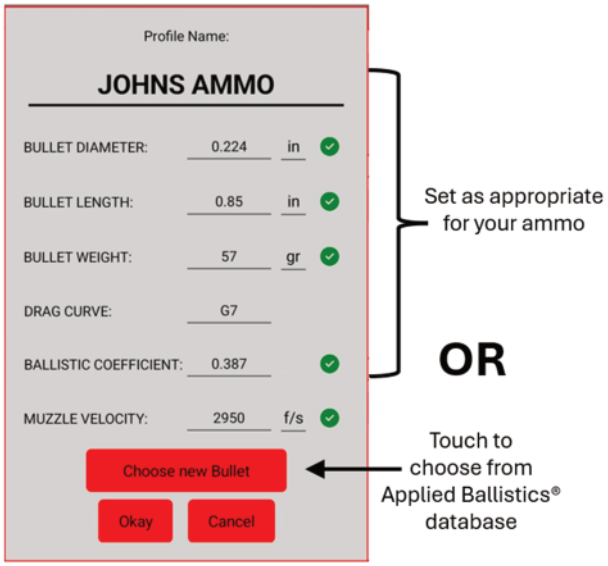
2. Scroll through and select one of the pre-configured ammunition profiles already available.
3. Select the desired weapon profile and verify the profile is shown in the *AMMO* button.

Add Ammunition Profile:

1. From the ammunition profile list, select the Add Profile button.

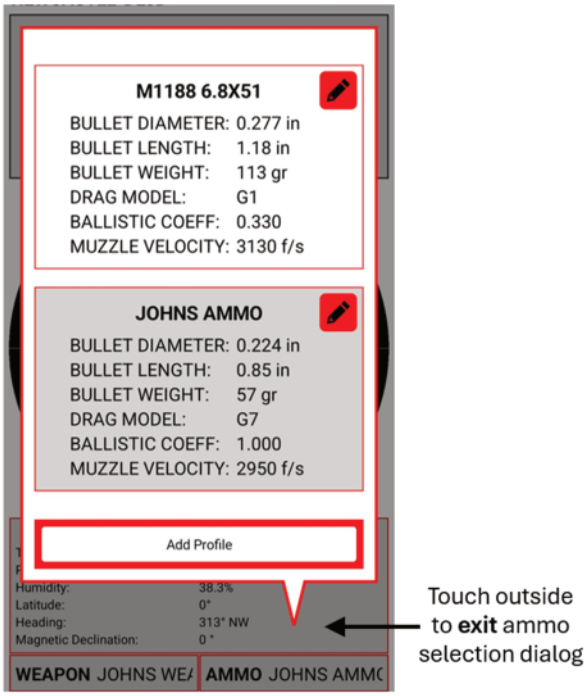


2. Try finding your ammunition in the Applied Ballistics® database before manually entering any information by pressing the *Choose New Bullet* button.



3. If your ammunition is not in the Applied Ballistics® database, input your ammunition information. Input the *Profile Name, BULLET MANUFACTURER, BULLET LENGTH, BULLET WEIGHT, DRAG CURVE, BALLISTIC COEFFICIENT* from the ammunition manufacturer.
4. For best results, use a chronograph to measure your *muzzle velocity*. Otherwise, use your ammunition manufacturer's information or online references.
5. When complete, select the *Okay* button to create a new profile.

Example of a successful new ammunition profile:



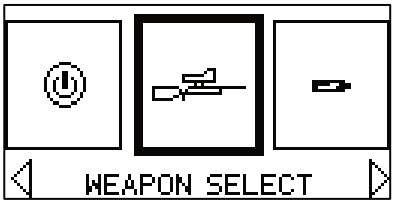
SETTING UP BALLISTIC PROFILES (WITHOUT SMARTPHONE)

Weapon Profile Setting

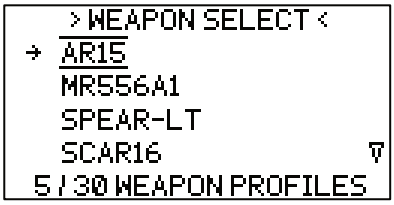
The X4-LRF™ has the capability of selecting and customizing up to 30 different weapons profiles.

Select Weapon Profile:

1. Click and hold (for 1 second) the **(M)**enu button. This will display the X4-LRF™ menu.
2. Use the **(L)/ (R)** buttons to navigate to the *WEAPON SELECT* menu then click the **(M)**enu button to select.



3. Use the **(L)/ (R)** buttons to navigate to the desired weapons profile, then click the **(M)**enu button to select.



Configure Weapon Profile:

1. Click and hold (for 1 second) the **(M)**enu button. This will display the X4-LRF™ menu.
2. Use the **(L)/ (R)** buttons to navigate to the *WEAPON SELECT* menu then click the **(M)**enu button to select.
3. Use the **(L)/ (R)** buttons to navigate to the desired weapons profile, then click and hold (for 1 second) the **(M)**enu button.
4. Use the **(L)/ (R)** buttons to navigate to the desired weapons parameter to edit, then click the **(M)**enu button to edit.

5. To use current environmental conditions as the Zero Environment, use the **(L)/ (R)** buttons to navigate to *CAPTURE ENVIROS* , then click the **(M)**enu button. The *ZERO TEMP, ZERO PRESSURE, ZERO HUMIDITY* will update with the current environmental measurements.
6. Click and hold (for 1 second) the **(M)**enu button to save current weapon parameters.
7. Click the **(M)**enu button to confirm the saving of the profile.
8. Click and hold (for 1 second) the **(M)**enu button to save current weapon profile.
9. Click the **(M)**enu button to confirm the saving of the profile.

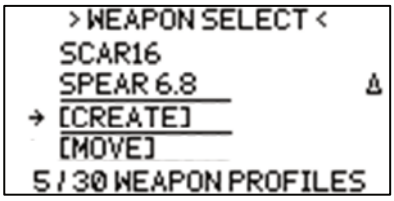
Copy Weapon Profile:

1. Click and hold (for 1 second) the **(M)**enu button. This will display the X4-LRF™ menu.
2. Use the **(L)/ (R)** buttons to navigate to the *WEAPON SELECT* menu then click the **(M)**enu button to select.
3. Use the **(L)/ (R)** buttons to navigate to the desired weapons profile to copy, then click and hold (for 1 second) the **(M)**enu button.
4. Use the **(L)/ (R)** buttons to navigate to *[COPY],* then click the **(M)**enu button.

5. Navigate to the profile name, then click the **(M)**enu button to edit weapon profile name. Edit the name to a unique profile name.
6. Configure the weapon profile.
7. Click and hold (for 1 second) the **(M)**enu button to save current weapon parameters.
8. Click the **(M)**enu button to confirm the saving of the profile.

Create New Weapon Profile:

1. Click and hold (for 1 second) the **(M)**enu button. This will display the X4-LRF™ menu.
2. Use the **(L)/ (R)** buttons to navigate to the *WEAPON SELECT* menu then click the **(M)**enu button to select.
3. Use the **(L)/ (R)** buttons to navigate to the *[CREATE PROFILE],* then click and hold (for 1 second) the **(M)**enu button to create a new weapon profile.



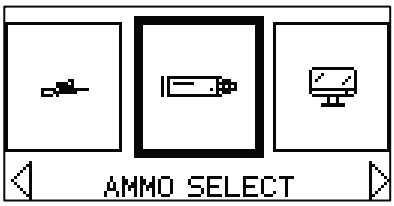
4. Configure the weapon profile.
5. Click and hold (for 1 second) the **(M)**enu button to save current weapon profile.
6. Click the **(M)**enu button to confirm the saving of the profile.

Ammo Profile Setting

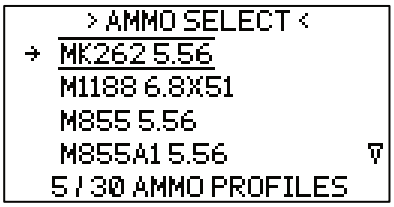
The X4-LRF™ has the capability of selecting and customizing up to 30 different ammo profiles.

Select Ammo Profile:

1. Click and hold (for 1 second) the **(M)**enu button. This will display the X4-LRF™ menu.
2. Use the **(L)/ (R)** buttons to navigate to the *AMMO SELECT* menu then click the **(M)**enu button to select.

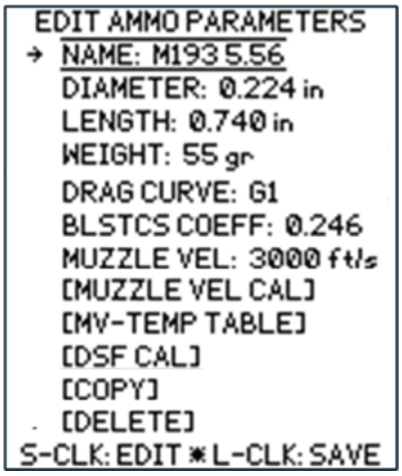


3. Use the **(L)/ (R)** buttons to navigate to the desired ammo profile, then click the **(M)**enu button to select.



Configure Ammo Profile:

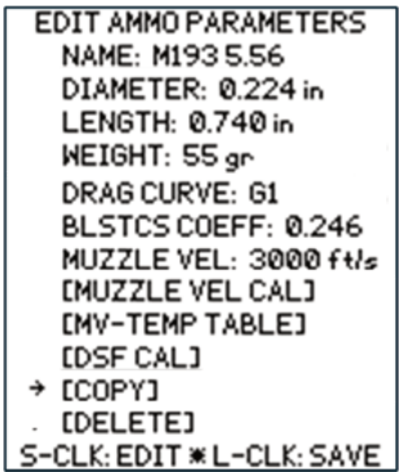
1. Click and hold (for 1 second) the **(M)**enu button. This will display the X4-LRF™ menu.
2. Use the **(L)/ (R)** buttons to navigate to the *AMMO SELECT* menu then click the **(M)**enu button to select.
3. Use the **(L)/ (R)** buttons to navigate to the desired ammo profile, then click and hold (for 1 second) the **(M)**enu button.
4. Use the **(L)/ (R)** buttons to navigate to the desired ammo parameter to edit, then click the **(M)**enu button to edit.



5. Click and hold (for 1 second) the **(M)**enu button to save current ammo parameter.
6. Click the **(M)**enu button to confirm the saving of the profile.
7. Click and hold (for 1 second) the **(M)**enu button to save current ammo profile.
8. Click the **(M)**enu button to confirm the saving of the profile.

Copy Ammo Profile:

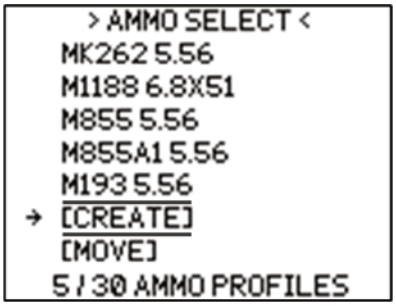
1. Click and hold (for 1 second) the **(M)**enu button. This will display the X4-LRF™ menu.
2. Use the **(L)/ (R)** buttons to navigate to the *AMMO SELECT* menu then click the **(M)**enu button to select.
3. Use the **(L)/ (R)** buttons to navigate to the desired ammo profile to copy, then click and hold (for 1 second) the **(M)**enu button.
4. Use the **(L)/ (R)** buttons to navigate to the [*COPY*], then click and hold (for 1 second) the **(M)**enu button to create a new ammo profile.



5. Navigate to the profile name, then click the **(M)**enu button to edit ammo profile name. Edit the name to a unique profile name.
6. Configure the ammo profile.
7. Click and hold (for 1 second) the **(M)**enu button to save current ammo parameters.
8. Click the **(M)**enu button to confirm the saving of the profile.

Create New Ammo Profile:

1. Click and hold (for 1 second) the **(M)**enu button. This will display the X4-LRF™ menu.
2. Use the **(L)/ (R)** buttons to navigate to the *AMMO SELECT* menu then click the **(M)**enu button to select.
3. Use the **(L)/ (R)** buttons to navigate to the [*CREATE PROFILE]*, then click and hold (for 1 second) the **(M)**enu button to create a new ammo profile.



1. Configure the ammo profile.
2. Click and hold (for 1 second) the **(M)**enu button to save current ammo profile.
3. Click the **(M)**enu button to confirm the saving of the profile.

ADVANCED BALLISTIC SETTINGS

Wind Speed and Muzzle Velocity

- **Tip**: To increase the ballistics calculator accuracy, you can adjust the current latitude, magnetic declination and environmental reading settings. See section Menu System and Features >> System Setting on page 60.

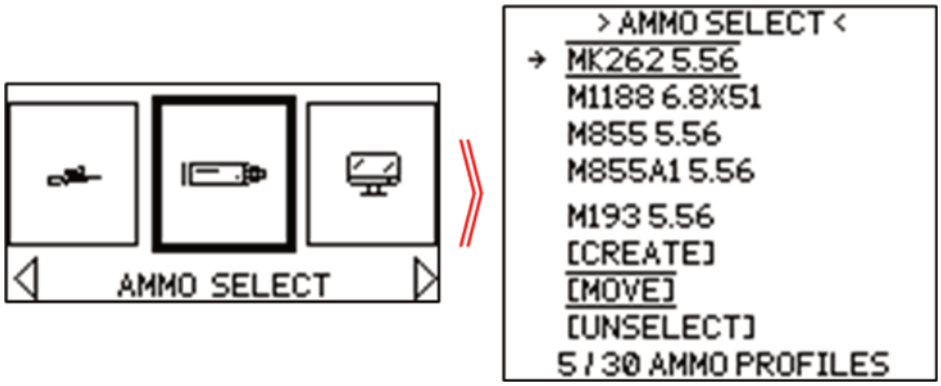
How to Adjust for Windspeed and Direction

1. From the *Ballistic Solution Display* press the **(M)**enu button to switch to the Ballistics Setting Information display.
2. Double-click the **(M)**enu button to bring up the adjustment arrow and to cycle the arrow position between *WIND SPEED* and *WIND DIRECTION*.
3. Use the **(L)/ (R)** buttons to change the selected parameter, *WIND SPEED* or *WIND DIRECTION.*
4. Press the **(M)**enu button to commit the changes and update the ballistics solution.
5. Press the **(M)**enu button again to switch back to the *BALLISTICS SOLUTION DISPLAY*.

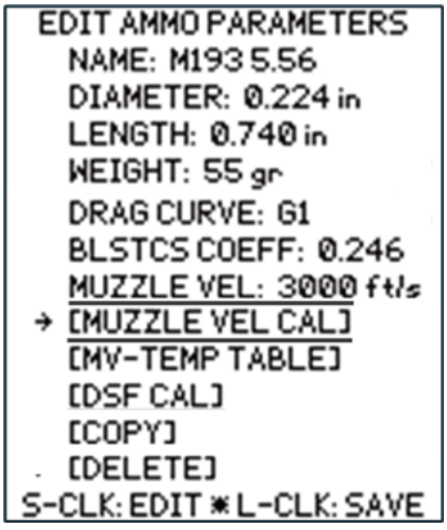
Muzzle Velocity Calculator

To get an accurate ballistics calculation, an accurate muzzle velocity is needed. It is recommended to use a chronograph to measure the muzzle velocity, but alternatively, you may use the X4-LRF™ internal muzzle velocity calculator to compare predicted drop with actual bullet drops.

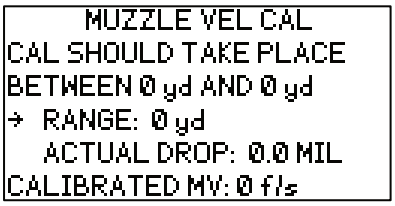
1. After selecting the weapon profile, ammo profile and adjusting for windage, navigate to the MUZZLE VEL CAL page.
2. Click and hold (for 1 second) the **(M)**enu button. This will display the X4-LRF™ menu.
3. Use the (**L)/ (R)** buttons to navigate to the *AMMO SELECT* menu then click the **(M)**enu button to select.
4. Use the **(L)/ (R)** buttons to navigate to the desired ammo profile, then click and hold (for 1 second) the **(M)**enu button.



5. Use the **(L)/ (R)** buttons to navigate to *[MUZZLE VEL CAL],* then click the **(M)**enu button to select.



6. In the *MUZZLE VEL CAL* screen, the optimum recommended target range is displayed. Set up a target between the indicated Muzzle Velocity Cal range.



7. With the X4-LRF™, range the target to update the environmental measurement and target range.
8. With the reticle pointed at the center of the target (with no ballistics calculator correction), fire a group at the target.
9. Accurately measure the vertical drop from the point of aim to the center of the fired grouping.
10. Navigate back to the *MUZZEL VEL CAL* screen and input the range and actual bullet drop. The calibrated muzzle velocity will be updated on the screen. Use this calculator to adjust the *Ammo Muzzle Velocity* and *[MV Temp Table]* settings. See page 41.
11. Click and hold (for 1 second) the **(M)**enu button to save the Muzzle velocity to the ammo profile. Click the **(M)**enu button to confirm the changes. If using the muzzle velocity calculator for setting the *[MV Temp Table],* discard the changes and the ammo muzzle velocity will not update.
12. Click and hold (for 1 second) the **(M)**enu button to save the ammo profile. Click the **(M)**enu button to confirm the changes.
13. Click the **(M)**enu button to select the profile.
14. After adjusting the muzzle velocity, use the X4-LRF™ to take another ballistics solution at a different known range. Fire at the target with the ballistics calculation and verify the accuracy of the calculation with the new settings. You may need to refine the muzzle velocity adjustment at a different range distance, especially if you observe inconsistencies across varying distances.

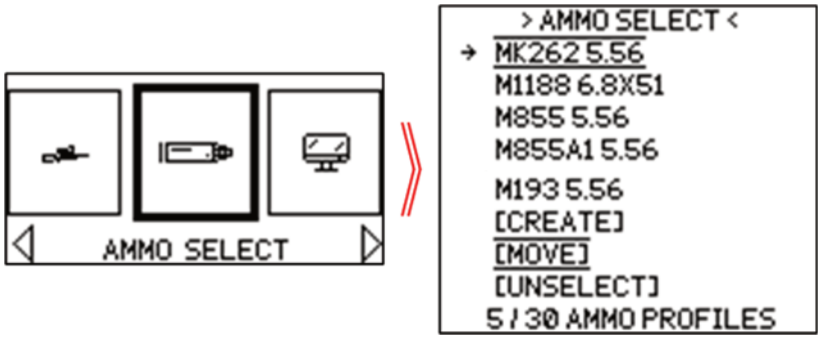
MV Temp tables

Calibrating the Muzzle Velocity Temp may be a crucial step in achieving accurate long-range ballistics compensation calculations across varying temperatures. Propellant in ammunition are sensitive to temperature. Increase in cartridge temperature allows for the propellant to burn more efficiently, while colder propellant temperature decreases the burn rate. This change in efficiency can vary the muzzle velocity across temperatures.

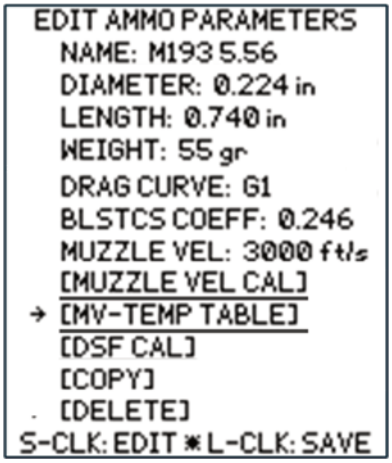
For each temperature test point, acclimate the temperature of the ammunition for at least 2 hours to make sure the internal temperature is stable. It is recommended to calibrate the temperature table with at least three different temperature points.

- Cold temperature: You can place the ammunition in a refrigerator/freezer or a cooler with ice. Make sure the ammunition is not directly touching the ice or liquid in the cooler.
- Moderate temperature: This can be the ambient temperature in the shade.
- Hot temperature: This can be done by placing your ammunition in a safe location, in the sun. It is not recommended to place the ammunition in direct sunlight, in a confined space such as in a car, as it can be extremely dangerous.

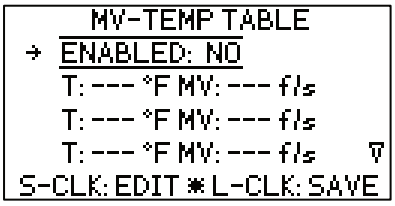
1. Click and hold (for 1 second) the **(M)**enu button. This will display the X4-LRF™ menu.
2. Use the (**L)/ (R)** buttons to navigate to the *AMMO SELECT* menu then click the **(M)**enu button to select.
3. Use the **(L)/ (R)** buttons to navigate to the desired ammo profile, then click and hold (for 1 second) the **(M)**enu button.



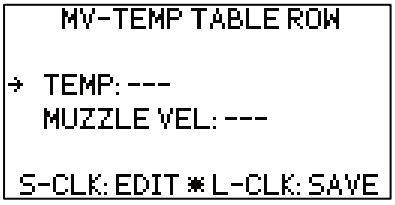
4. Use the **(L)/ (R)** buttons to navigate to *[MV-TEMP TABLE],* then click the **(M)**enu button to select.



5. To enable the MV-Temp Table calibration, use the **(L)/ (R)** buttons to navigate to the *ENABLED* option, then click the **(M)**enu button to select. Click the **(M)**enu button again to turn the correction *ON*.



6. Use the **(L)/ (R)** buttons to navigate to a desired MV-Temp table row, then click the **(M)**enu button to select.
7. Use the **(L)/ (R)** buttons to navigate to a desired setting, then click the **(M)**enu button to update the setting.



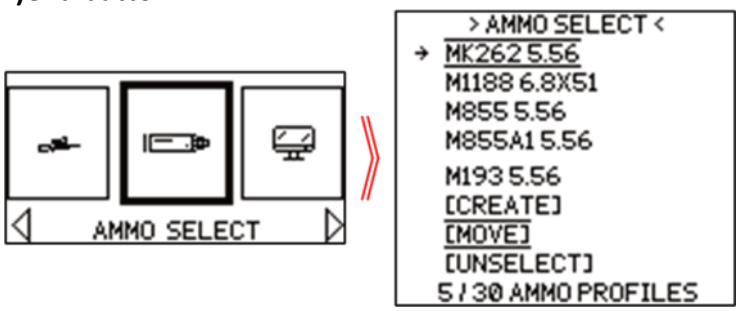
8. Use the **(L)/ (R)** buttons to change the value and the **(M)** button to change the setting parameter. Click and hold (for 1 second) the **(M)**enu button to save the parameter setting. Click the **(M)**enu button to confirm the changes.
9. Click and hold (for 1 second) the **(M)**enu button to save the MV-Temp table row. Click the **(M)**enu button to confirm the changes.

10. Click and hold (for 1 second) the **(M)**enu button to save the MV-Temp table. Click the **(M)**enu button to confirm the changes.
11. Click and hold (for 1 second) the **(M)**enu button to save the ammo profile. Click the **(M)**enu button to confirm the changes.
12. Click the **(M)**enu button to select the profile.

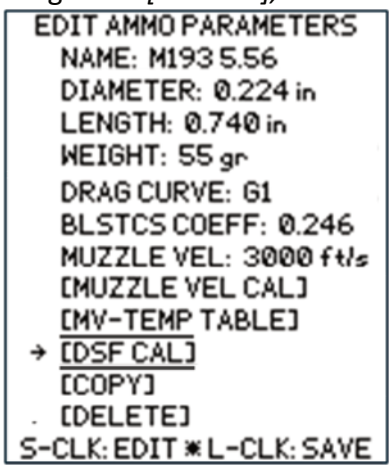
Drop Scale Factor Correction

For long ranges shooting, where the bullet slows down significantly, the Drop Scale Factor (DSF) is used to adjust the predicted bullet drop with the actual observed bullet drop. The DSF scales the ballistics model to better match your specific ammunition and firearm.

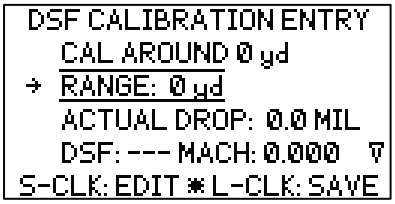
1. Click and hold (for 1 second) the **(M)**enu button. This will display the X4-LRF™ menu.
2. Use the (**L)/ (R)** buttons to navigate to the *AMMO SELECT* menu then click the **(M)**enu button to select.
3. Use the **(L)/ (R)** buttons to navigate to the desired ammo profile, then click and hold (for 1 second) the **(M)**enu button.



4. Use the **(L)/ (R)** buttons to navigate to *[DSF CAL],* then click the **(M)**enu button to select.



5. In the *DSF CAL* screen, the optimum recommended target range is displayed. Set up a target around the indicated DSF Calibration range.



6. With the X4-LRF™, range the target to update the environmental measurement and target range.
7. With the reticle pointed at the center of the target (with no ballistics calculator correction), fire a group at the target.
8. Measure the vertical bullet drop from the center of the target to the fired grouping.
9. Navigate back to the *DSF CAL* screen and input the range and actual bullet drop. The calibrated ammo speed will be updated on the screen.
10. Click and hold (for 1 second) the **(M)**enu button to save the DSF calibration Entry to the DSF profile. Click the **(M)**enu button to confirm the changes.
11. Click and hold (for 1 second) the **(M)**enu button to save the DSF Calibration Profile. Click the **(M)**enu button to confirm the changes.
12. Click and hold (for 1 second) the **(M)**enu button to save the ammo profile. Click the **(M)**enu button to confirm the changes.
13. Click the **(M)**enu button to select the profile.

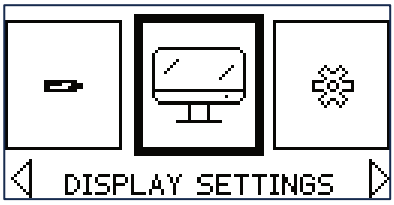
X4-LRF MENU SYSTEM AND FEATURES

System Display Settings

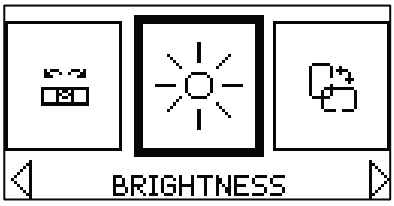
The X4-LRF™ has the capability of adjusting how the information is displayed, such as system units display orientation, etc. The display settings are also where the system brightness and display timeout are set.

Adjust Display Brightness:

1. Click and hold (for 1 second) the **(M)**enu button. This will display the X4-LRF™ menu.
2. Use the **(L)/ (R)** buttons to navigate to the *DISPLAY SETTINGS* menu then click the **(M)**enu button to select.



3. Use the (**L)/ (R)** buttons to navigate to *BRIGHTNESS*, then click the **(M)**enu button to select.

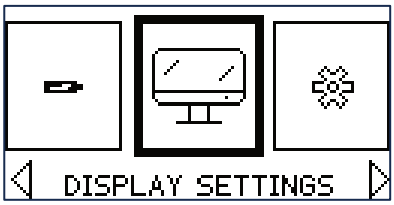


4. Use the **(L)/ (R)** buttons to navigate to the desired brightness setting, then click the **(M)**enu button to select.

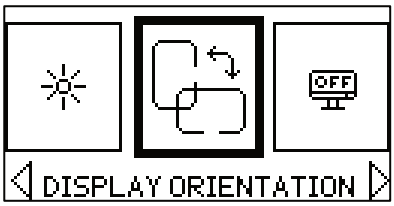
Adjust Display Orientation

The X4-LRF™ is capable of adjusting the display screen orientation to accommodate the system being mounted in various position.

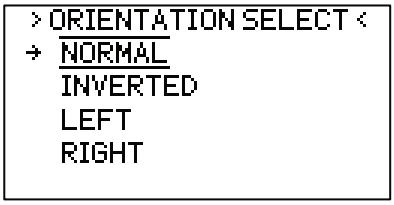
1. Click and hold (for 1 second) the **(M)**enu button. This will display the X4-LRF™ menu.
2. Use the **(L)/ (R)** buttons to navigate to the *DISPLAY SETTINGS* menu then click the **(M)**enu button to select.



3. Use the **(L)/ (R)** buttons to navigate to *DISPLAY ORIENTATION*, then click the **(M)**enu button to select.

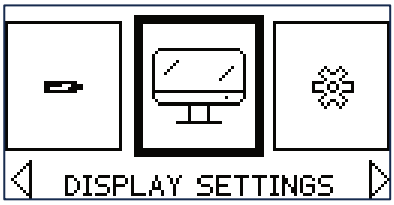


4. Use the **(L)/ (R)** buttons to navigate to the desired display orientation setting, then click the **(M)**enu button to select. The selected orientation will be the position of the installed X4-LRF™ on a weapon system.

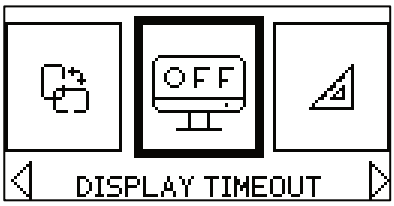


Adjust Display Timeout

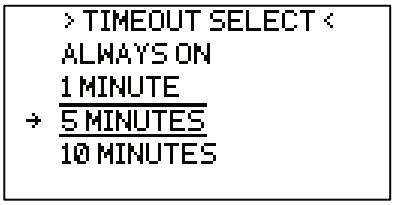
1. Click and hold (for 1 second) the **(M)**enu button. This will display the X4-LRF™ menu.
2. Use the **(L)/ (R)** buttons to navigate to the *DISPLAY SETTINGS* menu then click the **(M)**enu button to select.



3. Use the **(L)/ (R)** buttons to navigate to *DISPLAY TIMEOUT*, then click the **(M)**enu button to select.

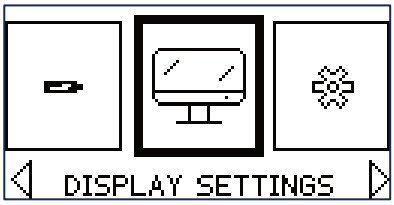


4. Use the **(L)/ (R)** buttons to navigate to the desired display timeout setting, then click the **(M)**enu button to select.

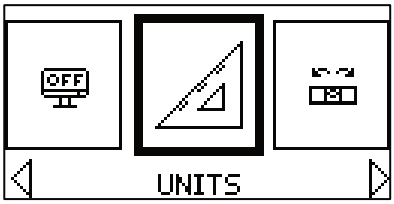


Units Selection

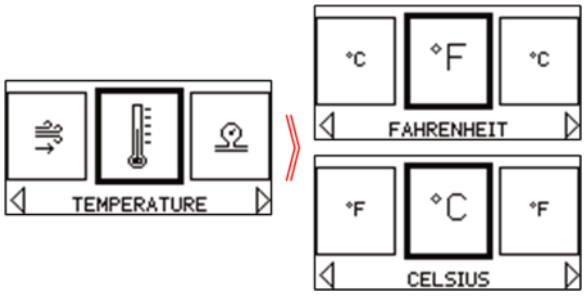
1. Click and hold (for 1 second) the **(M)**enu button. This will display the X4-LRF™ menu.
2. Use the **(L)/ (R)** buttons to navigate to the *DISPLAY SETTINGS* menu then click the **(M)**enu button to select.



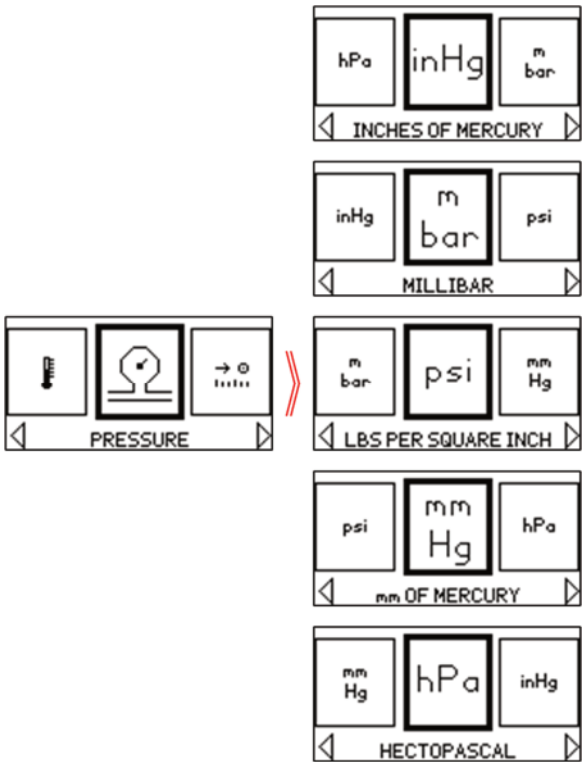
1. Use the **(L)/ (R)** buttons to navigate to the *UNITS* menu then click the **(M)**enu button to select.



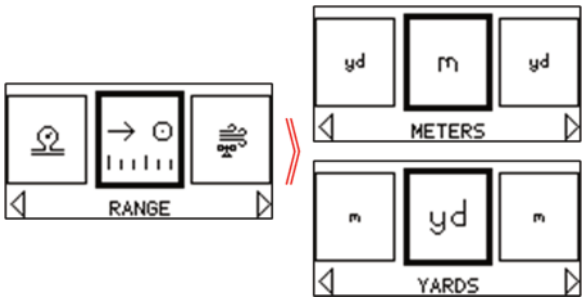
3. To adjust the temperature units, use the **(L)/ (R)** buttons to navigate to the *TEMPERATURE* menu and then click the **(M)**enu button to select. Use the **(L)/ (R)** buttons to navigate between *°F or °C* and then click the **(M)**enu button to select.



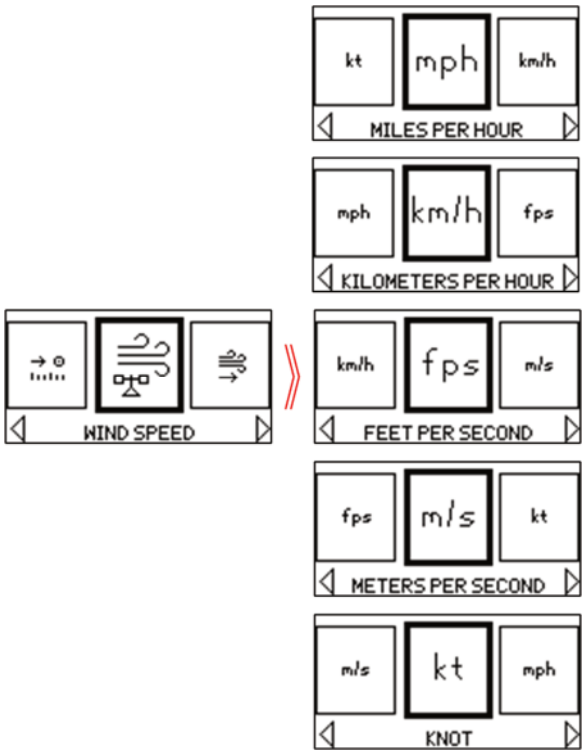
4. To adjust the pressure units, use the **(L)/ (R)** buttons to navigate to the *PRESSURE* menu and then click the **(M)**enu button to select. Use the **(L)/ (R)** buttons to navigate between Inches of *Mercury, Millibar, Pound Per Square Inch, Millimeters of Mercury or HectoPascal* and then click the **(M)**enu button to select.



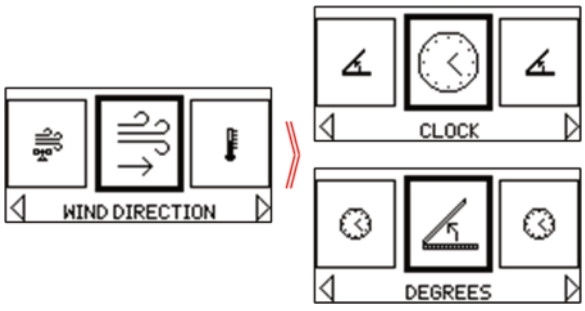
5. To adjust the range units, use the **(L)/ (R)** buttons to navigate to the *RANGE* menu and then click the **(M)**enu button to select. Use the **(L)/ (R)** buttons to navigate between *Yards or Meters* and then click the **(M)**enu button to select.



6. To adjust the wind speed units, use the **(L)/ (R)** buttons to navigate to the *WIND SPEED* menu and then click the **(M)**enu button to select. Use the **(L)/ (R)** buttons to navigate between *Yards or Meters* and then click the **(M)**enu button to select.

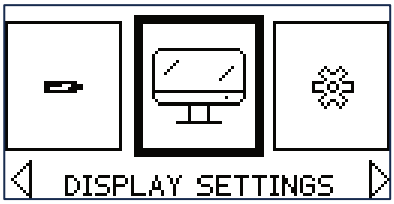


7. To adjust the wind direction units, use the **(L)/ (R)** buttons to navigate to *the WIND DIRECTION* menu and then click the **(M)**enu button to select. Use the **(L)/ (R)** buttons to navigate between *clock or degrees* and then click the **(M)**enu button to select.

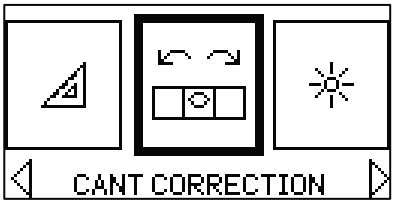


CANT Correction

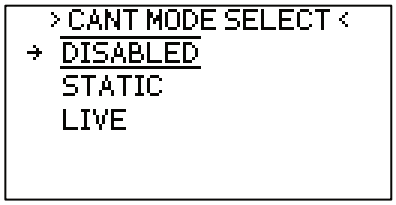
1. Click and hold (for 1 second) the **(M)**enu button. This will display the X4-LRF™ menu.
2. Use the **(L)/ (R)** buttons to navigate to the *DISPLAY SETTING* menu then click the **(M)**enu button to select.



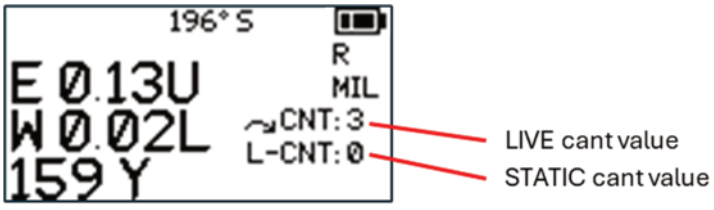
3. Use the **(L)/ (R)** buttons to navigate to the *CANT CORRECTION* menu then click the **(M)**enu button to select.



4. Use the **(L)/ (R)** buttons to navigate to the desired CANT correction orientation setting, then click the **(M)**enu button to select.



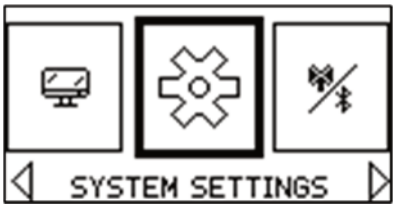
5. The *DISABLED* CANT option will display the current system CANT, but will not apply it to the ballistics correction, *STATIC* will display and use the CANT value during the last laser range measurement, but will also display the current CANT value, and *LIVE* will update the current CANT value and apply it to the ballistics solution.



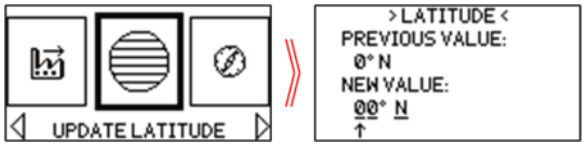
System Settings

The system settings menu allows for adjustment of environmental readings, latitude, and declination settings.

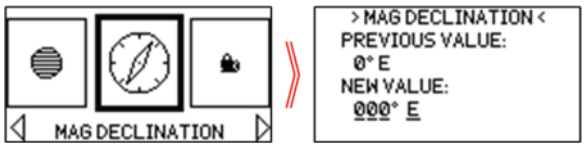
1. Click and hold (for 1 second) the **(M)**enu button. This will display the X4-LRF™ menu.
2. Use the **(L)**/ **(R)** buttons to navigate to the *SYSTEM SETTINGS* menu then click the **(M)**enu button to select.



3. To update the latitude setting to be used in the ballistics calculation, use the **(L)/ (R)** buttons to navigate to the *UPDATE LATITUDE* menu then click the **(M)**enu button to select. Use the **(L)/ (R)** buttons to adjust the latitude setting. Click and hold (for 1 second) the **(M)**enu button to save current setting. Click the **(M)**enu button to confirm.

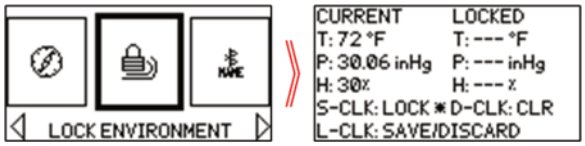


4. To update the magnetic declination setting to be used in the ballistics calculation, use the **(L)/ (R)** buttons to navigate to the *UPDATE LATITUDE* menu then click the **(M)**enu button to select. Use the (**L)/ (R)** buttons to adjust the magnetic declination setting. Click and hold (for 1 second) the **(M)**enu button to save current setting. Click the**(M)**enu button to confirm.

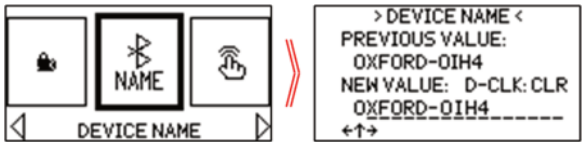


5. To lock/unlock the environmental reading, use the **(L)/ (R)** buttons to navigate to the *LOCK ENVIRONMENT* menu then click the **(M)**enu button to select. Click the **(M)**enu button to select. Double-click the **(M)**enu button to unlock the environmental settings.

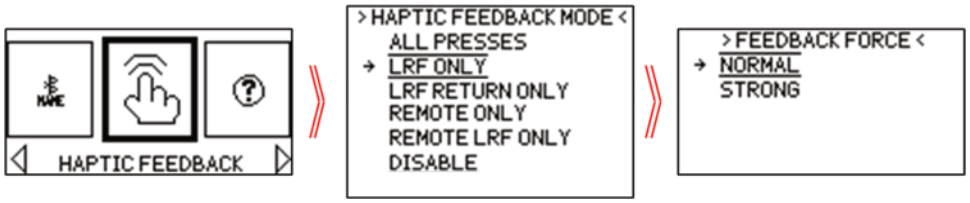
Click and hold (for 1 second) the **(M)**enu button to save the settings. Click the **(M)**enu button to confirm.



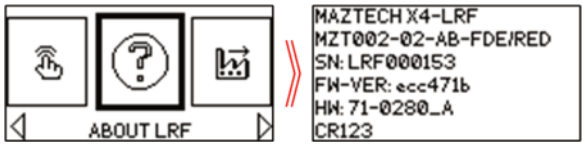
6. To update the device name, use the **(L)/ (R)** buttons to navigate to the *DEVICE NAME* menu then click the **(M)**enu button to select. Update the device name and then Click and hold (for 1 second) the **(M)**enu button to save. Click the **(M)**enu button to confirm the saving of the profile.



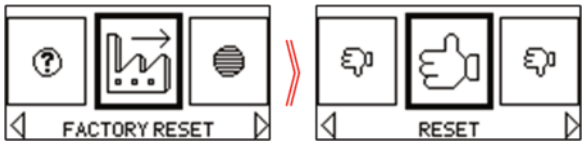
7. To update the haptic feedback settings, use the **(L)/ (R)** buttons to navigate to the *HAPTIC FEEDBACK* menu then click the **(M)**enu button to select. Select the desired haptic feedback option, *ALL PRESSES* = all LRF button presses, *LRF ONLY* = LRF Range measurement only, *LRF RETURN ONLY* = LRF Range return only, *REMOTE ONLY* = remote buttons only, *REMOTE LRF ONLY* = remote range measurement only, *DISABLE* = disable haptic feedback, and click on the **(M)**enu button to select. Use the **(L)/ (R)** buttons to navigate to the desired feedback force and click on the **(M)**enu button to select.
Note: For the *LRF ONLY* and *REMOTE LRF ONLY* settings, 2 haptic vibrations will occur, 1 for the initial range request and 1 when a valid range is received.



8. To view the system information, use the **(L)/ (R)** buttons to navigate to the *ABOUT LRF* menu then click the **(M)**enu button to select. Click and hold (for 1 second) the **(M)**enu button to get out of the *ABOUT* screen.



9. To reset the X4-LRF™, use the **(L)/ (R)** buttons to navigate to the *FACTORY RESET* menu then click the **(M)**enu button to select. Use the (**L)/ (R)** buttons to navigate to the *RESET* menu, then click the **(M)**enu button to reset the system.



Wireless Settings

The X4-LRF™ has the capability of communicating to other devices though Bluetooth and UWB (ultra-Wide band) for future features.

Ultra-Wideband Radio

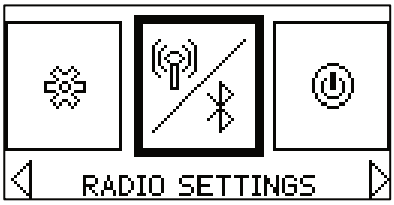
- **Note**: UWB Functionality coming soon.

1. Click and hold (for 1 second) the **(M)**enu button. This will display the X4-LRF™ menu.
2. Use the **(L)/ (R)** buttons to navigate to the *RADIO SETTING* menu then click the **(M)**enu button to select.

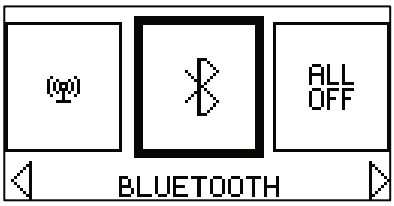
3. To turn all radios OFF, use the **(L)/ (R)** buttons to navigate to *UWB RADIO* menu then click the **(M)**enu button to select. Use the **(L)/ (R)** buttons to navigate to the *YES* menu, then click the **(M)**enu button to turn all radios OFF.

Bluetooth Radio

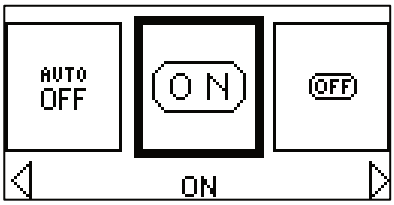
1. Click and hold (for 1 second) the **(M)**enu button. This will display the X4-LRF™ menu.
2. Use the **(L)/ (R)** buttons to navigate to the *RADIOS* menu then click the **(M)**enu button to select.



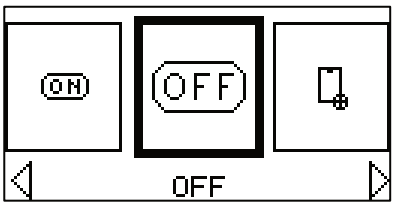
3. Rotate the knob to navigate to the *BLUETOOTH* menu, then click the **(M)**enu button to select.



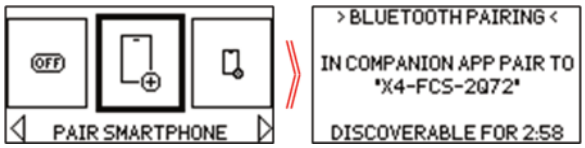
4. To turn ON the Bluetooth radio, use the **(L)/ (R)** buttons to navigate to the *ON* menu then click the **(M)**enu button to select.



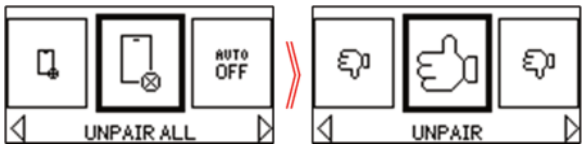
5. To turn OFF the Bluetooth radio, use the **(L)/ (R)** buttons to navigate to the *OFF* menu then click the **(M)**enu button to select.



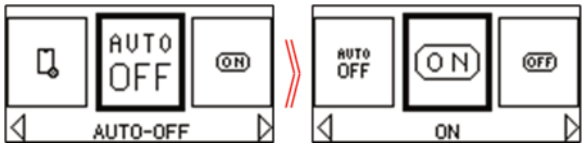
6. To pair a device to the X4-LRF™, use the **(L)/ (R)** buttons to navigate to the *PAIR SMARTPHONE* menu then click the **(M)**enu button to select. The X4-LRF™ will be discoverable to 3 minutes. Connect to the device using the Maztech Companion APP. See Connecting X4-LRF™ to Maztech Companion App section on page 28. When the device is connected to the X4-LRF™, click the **(M)**enu button to confirm.



7. To unpair all devices on the X4-LRF, use the **(L)/ (R)** buttons to navigate to *UNPAIR ALL* menu then click the **(M)**enu button to select. Use the **(L)/ (R)** buttons to navigate to *UNPAIR* and click the **(M)**enu button to confirm.



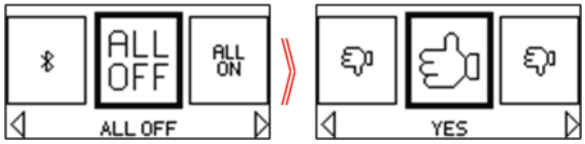
8. To enable/disable the Bluetooth auto off, use the **(L)/ (R)** buttons to navigate to *AUTO-OFF* menu then click the ***(*M)**enu button to select. Use the **(L)/ (R)** buttons to navigate to the desired setting, *ON* or *OFF*, and click the *(***M)**enu button to select.



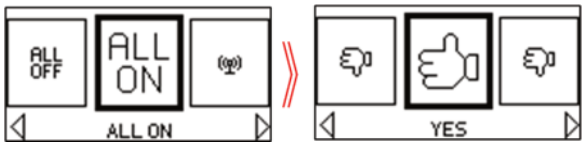
Radio Enable / Disable

4. Click and hold (for 1 second) the **(M)**enu button. This will display the X4-LRF™ menu.
5. Use the **(L)/ (R)** buttons to navigate to the *RADIO SETTING* menu then click the **(M)**enu button to select.

6. To turn all radios OFF, use the **(L)/ (R)** buttons to navigate to *ALL OFF* menu then click the **(M)**enu button to select. Use the **(L)/ (R)** buttons to navigate to the *YES* menu, then click the **(M)**enu button to turn all radios OFF.

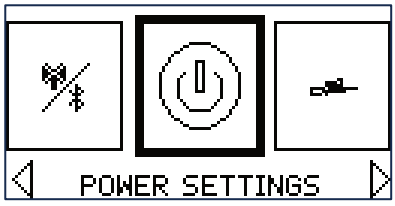


7. To turn all radios ON, use the **(L)/ (R)** buttons to navigate to *ALL ON* menu then click the **(M)**enu button to select. Use the **(L)/ (R)** buttons to navigate to the *YES* menu, then click the **(M)**enu button to turn all radios ON.

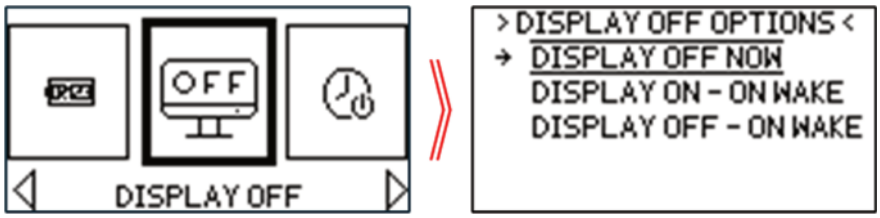


Power Settings

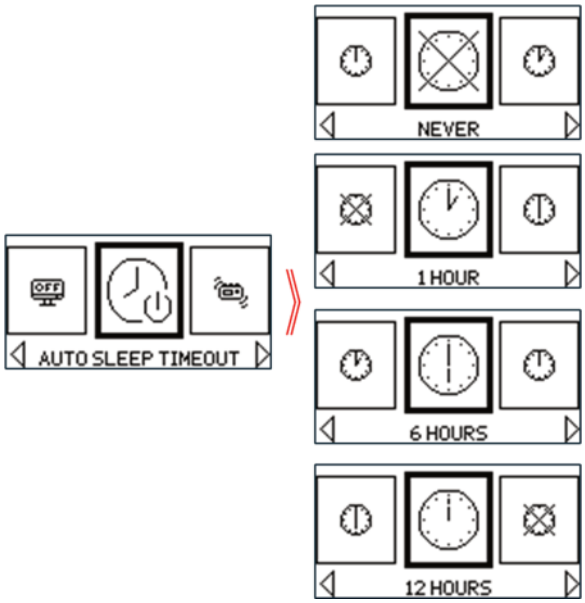
1. Click and hold (for 1 second) the **(M)**enu button. This will display the X4-LRF™ menu.
2. Use the **(L)**/ **(R)** buttons to navigate to the *POWER SETTINGS* menu then click the **(M)**enu button to select.



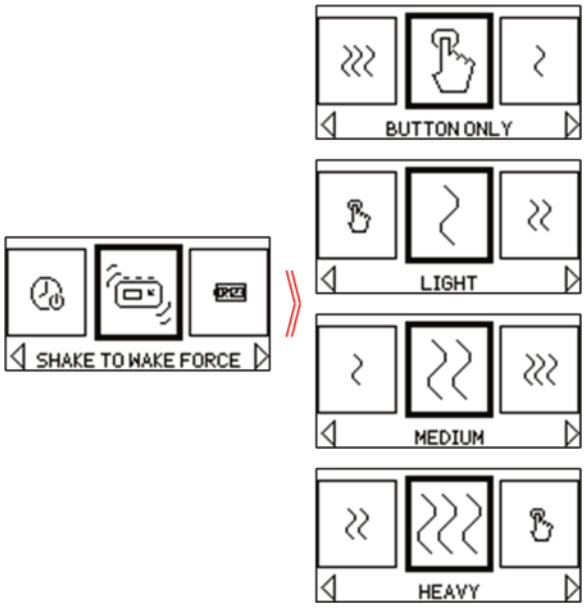
3. To set the Auto Sleep, On Wake display option, use the **(L)/ (R)** buttons to navigate to the *DISPLAY OFF* menu and then click the **(M)**enu button to select button to select. Use the **(L)/(R)** buttons to navigate to the desired setting, then click the **(M)**enu button to select. **Note**: Shake to Wake does not turn on the display when the X4-LRF™ is not asleep. Pressing a button will turn ON the display when the display is OFF, and the unit is not asleep.



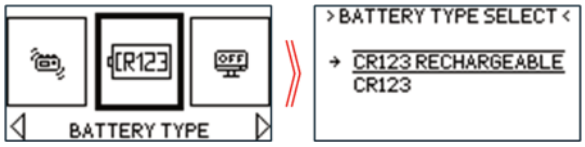
4. To set the auto sleep timeout use the **(L)/ (R)** buttons to navigate to the *AUTO SLEEP TIMEOUT* menu and then click the **(M)**enu button to select button to select. Use the **(L)/(R)** buttons to navigate to the desired setting, then click the **(M)**enu button to select.



5. To set the shake to wake force, use the **(L)/ (R)** buttons to navigate to the *SHAKE TO WAKE FORCE* menu then click the **(M)**enu button to select. Use the **(L)/ (R)** buttons to the desired shake force, then click the **(M)**enu button to select. The *BUTTON ONLY* selection will disable the shake to wake but will wake on a button press.



6. To set the battery type, use the **(L)/ (R)** buttons to navigate to the *BATTERY TYPE* menu then click the **(M)**enu button to select. Use the **(L)/ (R)** buttons to navigate to the installed battery type, then click the **(M)**enu button to select.



Maintenance and Care

- Always follow standard firearm safety handling practices.
- Refrain from applying any bake-on finishes to the X4-LRF™, as this may damage the lenses, sensors, or electronics.
- The X4-LRF™ does not contain user-serviceable internal components.
- Clean your X4-LRF™ lenses with a microfiber cloth (included) and refrain from using abrasive cleaners.
- Operate between -40°F and +140°F
  (-40°C and +60°C).

TROUBLESHOOTING

Problem: The X4-LRF™ is displaying NO TGT after clicking the (R)ange button.

Solution: Remove and stow the aperture cover.

- If this does not solve the problem:
  Be certain you are aiming at a target within the range of the X4-LRF™ (2km or 15km depending on your model).
- If this does not solve the problem:
  Turn off, then turn on the X4-LRF™.
- If this does not solve the problem:
  Install a new CR123 battery.

Problem: The X4-LRF™ is resetting during weapon fire.

Solution: Tighten the battery cap.

- If this does not solve the problem:
  Install a new CR123 battery.

For further support, go to www.MaztechIndustries.com.

Battery Safety

To help prevent unauthorized use:

- Remove the battery when the X4-LRF is not intended to be operated.

Batteries must be handled with care to ensure safe and reliable operation. To prevent potential hazards and maximize battery performance, please observe the following guidelines:

- Use only batteries specified in this manual. Incorrect battery types or sizes can lead to malfunction or damage.
- Store batteries in a cool, dry place, away from direct sunlight and extreme temperatures. Do not store batteries loose in pockets or bags where they might come into contact with metal objects.
- Follow the instructions in this manual for proper battery installation. Ensure that batteries are inserted with the correct polarity (+ / -) as indicated by the device markings.
- Dispose of batteries in accordance with local regulations. Do not dispose of batteries in fire as they may explode or leak hazardous materials.
- If a battery appears damaged, deformed, or leaks, do not use it. Safely remove the battery and replace it with a new one.
- Keep batteries out of reach of children and pets. Swallowing or mishandling batteries can result in serious injury.

Terms of Use, Warranty, License & Liability Waiver

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The X4-LRF™ does not contain user-serviceable internal components. Any modifications or repair attempts on the X4-LRF™ beyond those explicitly outlined in this manual or the online manual may nullify the warranty.

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FCC Compliance Notices

The X4-LRF™ complies with FCC radio frequency (RF) exposure limits for an uncontrolled environment. Users must follow the specific operating instructions included in this User Manual to ensure RF exposure compliance. With respect to the potential for human exposure to RF radiation, calculations prepared in accordance with FCC Bulletin OET-65 (Edition 97-01) indicate that the calculated safe distance for Maximum Permissible Exposure is 0.2 inches (5 mm).

The X4-LRF™ 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. **Changes or modifications to the X4-LRF™ not expressly outlined in this manual or in the online manual could void the user's authority to operate the equipment.** Operating the Ultra-wideband (UWB) radio onboard an aircraft, ship or satellite is prohibited.

The X4-LRF™ 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: (a) Reorient or relocate the receiving antenna, (b) increase the separation between the equipment and receiver, (c) connect the equipment into an outlet on a circuit different from that to which the receiver is connected, (d) consult the dealer or an experienced radio/TV technician for help.

FDA and OSHA Compliance Notices

OSHA

The X4-LRF™ complies with OSHA safety standards for laser products. To ensure safe operation, users must follow all guidelines provided in this manual, including wearing appropriate eye protection and avoiding direct or reflective laser exposure to the eyes and skin. Use of this product must align with OSHA's regulations to minimize risk in occupational settings.

FDA

This product is in conformity with performance standards for laser products under 21 CFR 1040, except with respect to those characteristics authorized by Variance Number FDA-2024-V-5311 effective December 20, 2024. This manual includes all required safety information and operational guidelines to ensure compliance. Modifications to the X4-LRF™ products are prohibited by federal regulations and may results in serious injury, as well as legal consequences.

Organizations that Procure X4-LRF™ for Employees

The purchasing organization is required to maintain a detailed property log that documents the type and quantity of each device owned, along with the responsible parties in control of these devices. Additionally, the purchasing organization must implement and maintain an active training program for employees on the safe use of the laser system.

Laser Safety Appendix

Warning: The X4-LRF-15M™ contains Class 3B lasers, which can be hazardous if not handled properly. Class 3B lasers in this product emit radiation in the visible and invisible spectrum from the exit aperture of the product which poses risks to the eyes both if viewed directly and from reflections. Proper usage and adherence to safety guidelines are essential to ensure safe operation and avoid potential harm to the user and others.

Radiation Hazards and Safe Use

- The X4-LRF-15M™ emits visible laser radiation at Class 3B levels which is hazardous to eyes if exposed directly. The risk of injury increases when viewed with optical aids.
- The Nominal Ocular Hazard Distance (NOHD) is the range within which exposure to the laser beam may cause eye injury. Avoid using the device in situations where there is a risk of direct eye exposure within this distance. The worst-case NOHD for the X4-LRF-15M™ is 320.6 meters.

Avoid Direct & Indirect Eye Exposure

- Do not look into the laser or point the laser at someone's eyes or at any surface that could reflect the laser into someone's eyes
- When operating the device, ensure the laser is directed only at intended targets.

Optical Aids

- Do not look at a laser through telescopes, binoculars, scopes, or other image intensifiers.
- Immediately terminate laser emissions if optical aids (e.g. monocular, binoculars, weapon mounted optics, telescopes, etc.) are in use near the laser termination or its beam path.
- The X4-LRF-15M infrared pointing laser can only be seen while using night vision equipment.

Avoid Reflective Surfaces

- Never aim the laser at people, or animals, or reflective surfaces that could redirect the beam. Unintentional exposure to the eyes could result in serious injury.
- Avoid using the near infrared (NIR) laser with reflective targets during alignment. Use only the visible low-power mode to prevent potential eyesight damage.

Avoid Pointing at Other People, Vehicles, or Aircraft

- Do not aim laser at other people as lasers may cause eye injury or skin irritation.
- Do not aim or shine laser on aircraft or vehicles at any distance.

Laser Visibility in Certain Conditions

- Visible and infrared laser beams are more easily seen in environments with smoke, fog, or rain. This can increase visibility to others. Avoid prolonged activation of lasers in these conditions.

Secure the Device When Not in Use

- Store the X4-LRF™ in a safe, secure location to prevent unauthorized use or accidental exposure.

Do Not Attempt to Open or Disassemble

- There are no user-serviceable parts inside the X4-LRF™. Under no circumstances should the X4-LRF™ be disassembled or attempted to be disassembled. The X4-LRF™ is permanently assembled and sealed, and any attempt to open or disassemble the unit can create safety issues and will void the warranty.

Device Malfunction

- If a laser remains on or cannot be turned off, do not attempt repairs. Remove the battery and contact cs@maztechindustries.com for further assistance.

In Case of Accidental Eye Exposure

- Immediately discontinue use and seek medical evaluation if necessary.

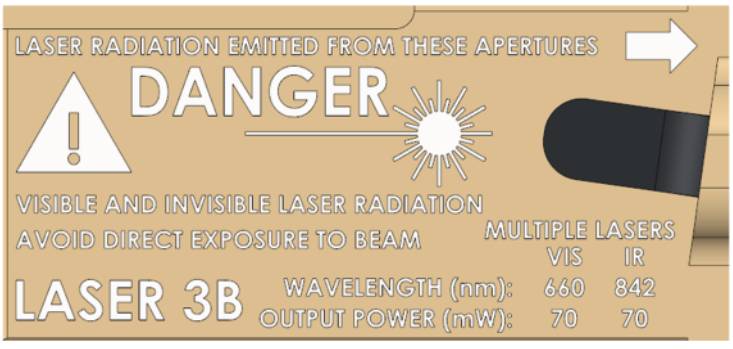
Secure Disposal

- In compliance with FDA guidelines, ensure the device is properly disposed of or returned to the manufacturer at the end of its life cycle.

Certification Label

Laser Emission Warning Label

- The LRF is equipped with an FDA-required warning indicating it contains Class 3B lasers as shown below.
- This warning is permanently engraved into the housing. Ensure that this warning remains legible, as it informs users of the potential hazard.
- The aperture notification depicts the exit aperture where the lasers exit the system. This serves as a reminder to not look into the laser source.



Use Protective Eyewear if Necessary

- Use laser safety glasses designed to filter the wavelength of these lasers when operating near others or in environments with potential exposure. The wavelength of operation and recommended Optical Density is provided in the NOHD table below.

Laser Radiation Output Parameters

Nominal laser specifications:

	Visible Pointer		Near IR Pointer		Ranging
	Low	High	Low	High	Laser
Wavelength	660 nm		842 nm		1534 nm
Max Output Power	4.9 mW	70 mW	0.7 mW	70 mW	Class 1
Classification	Class 3R	Class 3B	Class 1	Class 3B	
Divergence (1/e^2)	0.6 mrad				
Beam Diameter	4.5 mm				

Estimated worst-case Nominal Ocular Hazard Distance (NOHD):

	Visible Pointer		Near IR Pointer		Ranging
	Low	High	Low	High	Laser
Wavelength	660 nm		842 nm		1534 nm
Max Output Power	4.9 mW	70 mW	0.7 mW	70 mW	Class 1
Classification	Class 3R	Class 3B	Class 1	Class 3B	
Divergence (1/e^2)	0.3 mrad				
Beam Diameter	3.0 mm				
NOHD	72.4 m	278.6 m	28.8 m	320.6 m	
Optical Density**	0.7	2.0	0	2.0	

*** for Laser Safety Eyewear*

Export Control Notice

International Traffic in Arms Regulations (ITAR) Controlled

The X4-LRF™ is controlled for export by the International Traffic in Arms Regulations (ITAR). These controls take the form of export regulations and license requirements. As part of the express consideration provided for receipt of Maztech's goods, technical data and/or services, you, our customer, acknowledge that the export, re-export or other transfer, directly or indirectly, of the goods, technical data and/or services provided by Maztech in violation of U.S. law is prohibited. Customers acquiring ITAR goods, technical data and/or services from Maztech shall be responsible for obtaining any necessary U.S. or other government authorization required to ensure compliance with applicable export laws.

Additional Restrictions for the X4-LRF-15M™

Sale of this product is restricted to Federal, State or local government law enforcement agencies only, through a direct purchase order and shall not be sold to individual personnel of these agencies or organizations.

This product shall not be disposed of through excess or surplus property channels without being brought into full compliance with 21 CFR 1040.10 and 1040.11, or without advance authorization from the FDA.