



# ECHO<sup>®</sup>

ECHO3<sup>™</sup> THERMAL REFLEX SIGHT

OWNERS MANUAL

**SIG SAUER<sup>®</sup>**

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Please visit [sigsauer.com](http://sigsauer.com) for Owners Manual downloads.

## INTRODUCTION

Congratulations on the purchase of your ECHO3™ Thermal Reflex Sight. The ECHO3 is a direct view thermal weapon sight based on the newest generation of thermal imaging sensors. The thermal sight provides for day or night time predator and hog hunting, while functioning similarly to a conventional reflex sight using both eyes open for target acquisition. The sight is also perfect for home defense and law enforcement use.

The ECHO3 is covered by the SIG SAUER Electro-Optics Infinite Guarantee and 5 year Electronics Warranty.

**CONTENTS:**

- ECHO3™ Thermal Reflex Sight
- (2) CR123 Primary Lithium Batteries
- Scope Coat, Protective Cover
- Throw Lever (1-6x model only)
- BDX Ballistic Group Card

**KEY FEATURES:**

- Compact Thermal Reflex Style Sight
- Uncooled 320x240 12 $\mu$ m VOx LWIR microbolometer array operating at 30Hz
- BDX enabled WiFi/Bluetooth, allowing Active and Fixed reticles
- Aspheric Lens (5.8-10 ° FOV) with up to 6X or 12X digital magnification depending on which model you purchased
- Circular AMOLED display (454x454) with 8 color palettes
- Greater than 6 hours of run time with heavy use
- Designed and assembled in the USA to withstand IPX-4 conditions

## PRODUCT IDENTIFICATION:

Focus Ring Throw Lever

Focus Ring

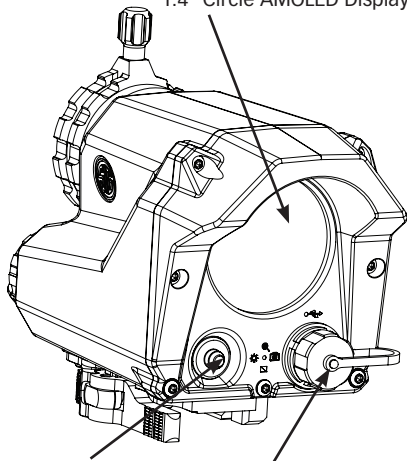
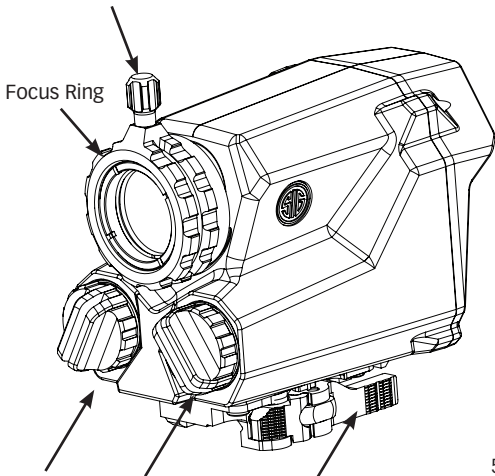
CR123 Battery Caps

Quick Release Mount

1.4" Circle AMOLED Display

5 Function Joystick

Mini USB Connector w/ Cover  
(Tethered cover shown)



 **WARNING**

Before working on your ECHO3™ sight always ensure that the firearm is unloaded with the safety on.

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**OPERATION**

When the ECHO3 is powered on, it will start in the last known configuration. If a connected BDX device (KILO rangefinder or mobile application) is not found it will set the default reticle to its last known zero location.

**Commonly used features:**

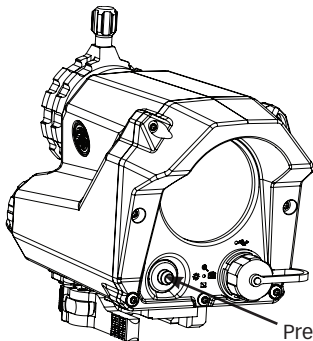
- Power On/Off
- Menu Options
- Menu Shortcuts
- Focus Adjustment
- Battery Exchange

## Turning Sight On and Off

The directional switch (joystick) is located on the back of the sight beneath the viewing screen. Press and hold joystick center select button down for >2 seconds. The black screen comes on, stays on and logo appears. The user can release the button any time after the screen turns on and the ECHO3™ will stay on.

Once the sight is on you can access the menu by pressing in on the center select button for >1 second.

**IMPORTANT:** Make sure to hold the power button down for more than 2 seconds to ensure that the unit stays powered on. If the button is pressed for less than 2 seconds, the display will momentarily turn on, but the unit will not power on completely. This is a safety feature to reduce the chance of the system turning on in your bag.



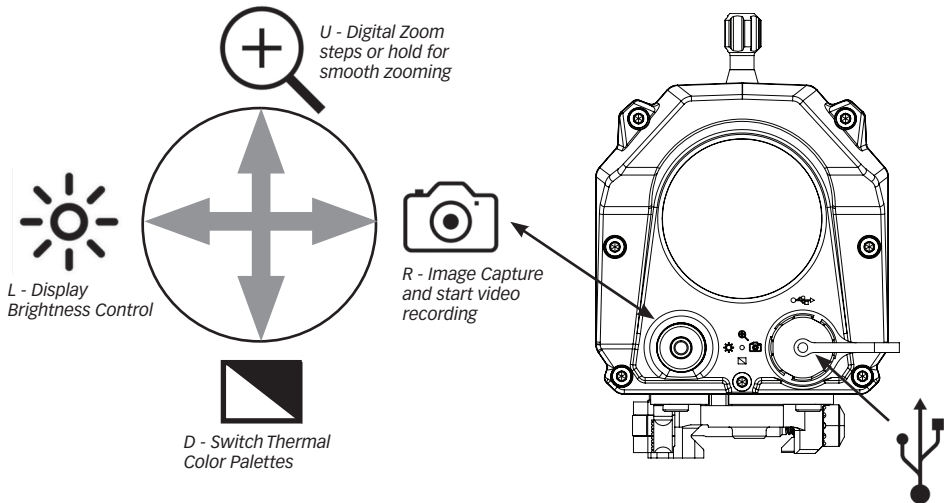
Press 2+ Seconds for On/Off





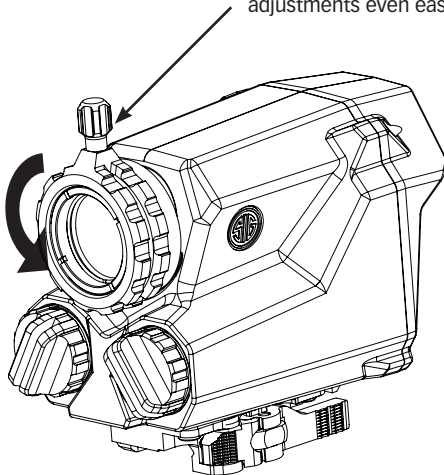
## MENU SHORTCUTS - QUICK KEYS

The user can access the most common features without entering the MENU system by using quick keys.



## Focus Adjustment

An additional throw lever can be screwed (#6-32) into the focus ring to make the focus adjustments even easier (1-6x model only).

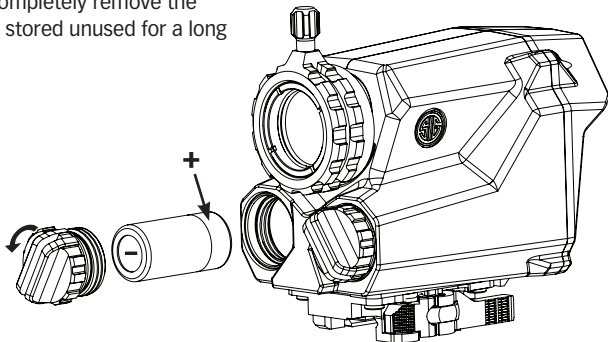


## Installing the Battery

There are two (2) CR123 battery compartments located on the front of the sight below the objective lens. Remove either battery cap by rotating the cap in the counter-clockwise (CCW) direction. Insert the CR123 battery positive (+) facing inward. The negative (-) contact should be facing outward. Reinstall the battery cap by rotating the cap in the clockwise (CW) direction until finger tight. Repeat for the other battery.

**Note** – Failure to properly tighten the battery cap could lead to intermittent function or allow moisture into the battery compartment.

**IMPORTANT** – It is recommended to completely remove the batteries from the ECHO3™ if it will be stored unused for a long period of time.



**MENU OPTIONS**

RETICLE - Select displayed reticle

DISPLAY - Select what is displayed on screen

ZERO - Zero thermal sight (Boresight)

CAPTURE - Image & Video capture settings (+Recoil Activated)

REVIEW - Image/Video review process

PALETTE - Cycle between color palette options

BDX - WiFi/BT settings

MOTAC - Configure Motac

LEVELPLEX - Configure Levelplex

EXIT - Exit menu process

INFO - About the device, SN, Code, etc.

OFF - Turn off the device

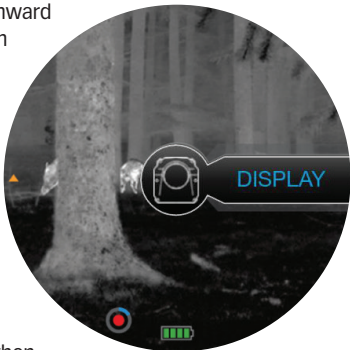
## RETICLE

- Press inward on the joystick and hold for 2 seconds to enter the menu
- Press up or down on the joystick to navigate to the RETICLE selection option
- When the RETICLE option is on the screen, press in on the joystick to enter the RETICLE menu
- Press up or down on the joystick to cycle through the reticle options
- When the desired option is showing, press in on the joystick to select it.
- Press left on the joystick to exit the menu
- If no reticle is selected and saved, the menu screen times out after 5 seconds returning to the previously used reticle
- You may also choose an Active BDX reticle for use with a rangefinder or a DBR reticle for a custom holdover reticle for your ballistics if using the APP. You may also choose a ballistic reticle from any of the 8 ballistic groups. See the BDX Ballistic Group Card for more details.



## DISPLAY

- Press inward on the joystick and hold for 2 seconds to enter the menu
- Press up or down on the joystick to navigate to the DISPLAY selection option
- When the DISPLAY option is on the screen, press in on the joystick to enter the DISPLAY menu
- Press up or down to toggle through the DISPLAY options. Press inward on the joystick to make your selection. MOA displays holdovers in MOA. MILS displays holdovers in MILS. Yards displays distances in yards. Meters displays distances in meters. Pressing inward on the joystick on Battery or Memory will toggle whether the battery indicator or memory usage is shown at the bottom of the screen.
- NOTE: The units selected in the ECHO® must match the units selected in your BDX rangefinder.
- Press left to return to the menu.
- Press left again to exit the menu.



NOTE: The ECHO3™ will perform an auto temperature calibration when necessary. The screen will freeze for roughly half a second during the calibration. A yellow dot will appear at the 2 o'clock position on the screen 1 second before the calibration occurs.

## ZERO

- To sight in the thermal sight you must first mount the sight to your weapon. See the Mounting The Sight section below. Once mounted, proceed with the following.
- Since the ECHO3™ is a thermal sight, sighting in will be a little different from what you are accustomed to. You will need a target that has a different temperature from the surroundings. Depending on the ambient temperature you may use hand warmer packs, ice cubes or black/white targets in the sun.
- Fix your weapon in a steady, repeatable position and aim at the target with the reticle.
- Fire a round at the target and note the point of impact.
- Place your weapon in the same position it was in when you fired the shot before the recoil.
- Using the joystick, navigate to the ZERO option and press center select.



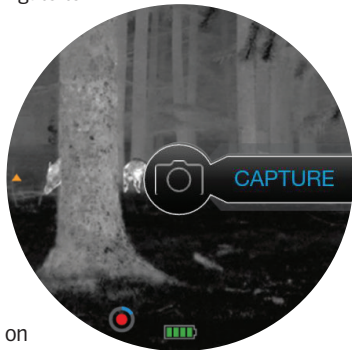
*TIP: Small hand warmers make great targets for zeroing your thermal sight on your rifle*

- Using joystick, move the reticle (POA) to the bullet impact (POI).
- Counters are present at the 12 and 3 o'clock positions on the screen to display accumulated X / Y movement in MOA. Once adjustment is made the user presses CENTER SELECT to save new POA. All text disappears and the image is live.
- The new zero position has been saved and the menu is exited.



## CAPTURE

- You can capture an image from the targeting view at any time by pressing to the right on the joystick.
- To change to image/video capture settings, use the joystick to navigate to the CAPTURE menu option and press inward on the joystick.
- Press up or down on the joystick to cycle through the capture options which are IMAGE, VIDEO, and RECOIL
- Selecting the IMAGE option allows you to cycle through 1 image, 3 images, 5 images by pressing up or down on the joystick. Press inward on the joystick to make your selection. Press left twice to exit the menu.
- From the live screen, pressing right on the joystick will take 1,3 or 5 images, whichever was selected.
- Selecting the VIDEO option allows you to cycle through 30 seconds, 1 minute, 5 minutes, UNTIL FULL options. Press inward on the joystick to make your selection. Press left twice to exit the menu.
- From the live screen pressing right on the joystick will record video for the amount of time selected or until the memory is full if UNTIL FULL was selected.
- Pressing right on the joystick while recording will stop the recording.



- Selecting the RECOIL activates video recording upon recoil. Press inward on the joystick to make your selection. Press left twice to exit the menu.
- Press right on the joystick to activate recoil sensing mode. The ECHO® will look for recoil for two minutes before timing out.
- Upon sensing recoil, 10 seconds of video will be recorded. An additional 3 seconds of video prior to the recoil will also be saved.

## REVIEW

- To review saved images, videos, and recoil activated videos, navigate to the REVIEW option using the joystick and press inward.
- Toggle the joystick up or down to cycle through, IMAGES, VIDEOS, and RECOILS.
- Press inward on the joystick to enter the desired menu.
- Toggling the joystick to the right will give you the option to delete the currently viewed image or video.
- To delete, press inward on the joystick while the “Delete this Video?” option is showing in the middle of the screen.
- Press inward on the joystick to play the video currently viewed on the screen.
- Toggle the joystick to the left to return to the previous menu.
- To delete all images or videos stored on the ECHO3™ at once, refer to the INFO menu option.
- All images and videos may also be reviewed in the app by selecting the desired choice at the bottom of the sights page.
- You may also choose to Stream video from the ECHO® to your smartphone by selecting Stream from the bottom of the sights page in the app.



## PALETTE

- Navigate to the Palette option in the menu and press inward on the joystick to enter the palette menu.
- Press up or down on the joystick to cycle through the color palette options. Each color palette with its reticle color is listed below.

Color palette	Reticle color
Tyrian	White
Iron	White
Fire	White
White Hot	Red
Black Hot	Red
Red Scale	White
Red Hot	White
Edge	Red



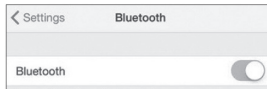
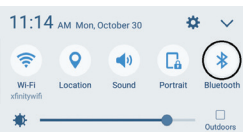
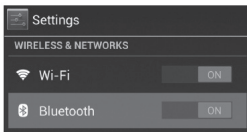
- Press inward on the joystick to select your color palette.
- Press left on the joystick to exit the menu.

## DIGITAL BALLISTICS XCHANGE – DOWNLOADING AND CONFIGURING THE FREE BDx APP

In this section you will download the BDx App, pair the App with your ECHO® and create a custom bullet profile.

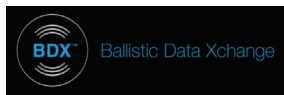
### 1. Turn Bluetooth on

Check in Settings on your Android or iOS device to make sure that Bluetooth is on. If Bluetooth is off, switch it on.



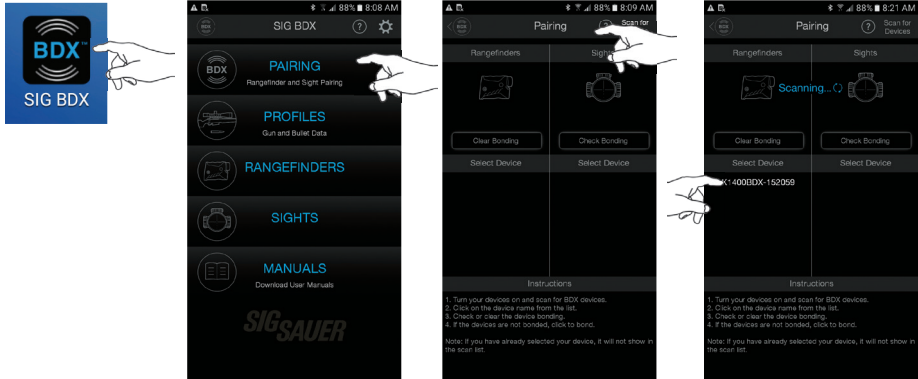
## 2. Download the BDX App from the App Store / Google Play Store

Go to the App Store or the Google Play store and download the SIG SAUER BDX App. Search for the word SIG SAUER or BDX.

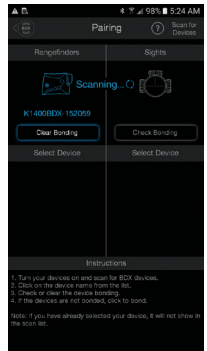
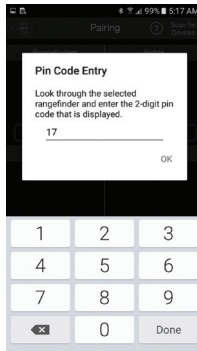
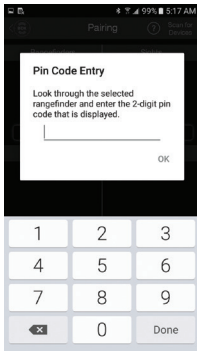
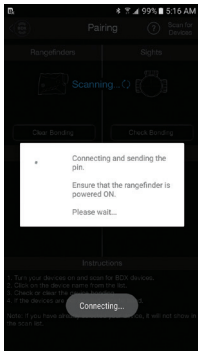


### 3. Launch the free SIG SAUER BDX App and Pair with your ECHO®

On your smartphone, open the BDX App, click on PAIRING, turn on your ECHO, navigate to the BDX menu and select CONNECT. Press "Scan for Devices" on the App. Your ECHO should be listed below the Sights icon and "Select Device". Your sight ID should be listed in white letters. (continued on next page)



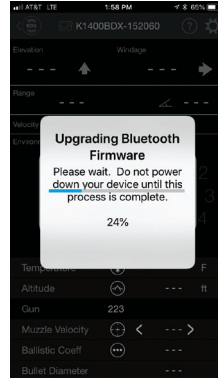
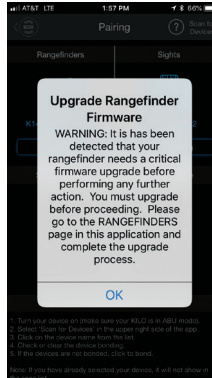
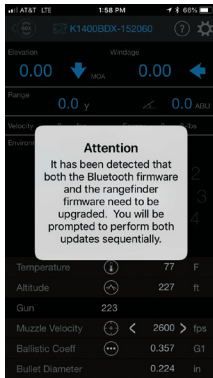
You will be prompted for a PIN number that will flash on the screen of the ECHO®. Type this PIN number into the open dialog box within the App. The PIN on your ECHO and the PIN entered on your smartphone must match. Press OK to complete the pairing operation. You will now see your ECHO ID in the blue listed below the Sight icon. You can now exit this screen. If you enter the incorrect PIN number, you can restart this process over again. If you encounter any problems during this process close your App and restart the process.





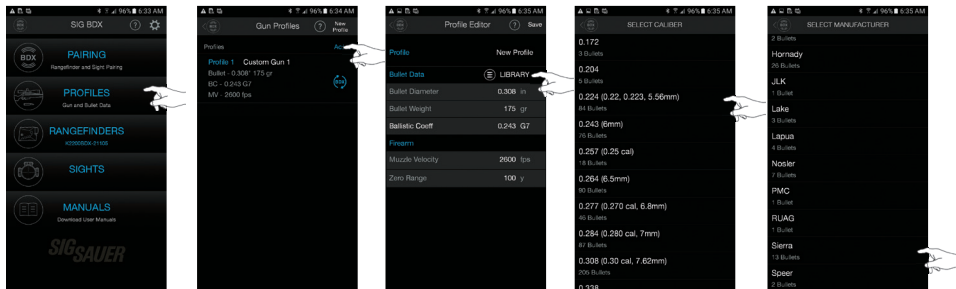
### 3a. Updating your ECHO<sup>®</sup> to the latest software during Pairing

You may be prompted to update the software on your ECHO. These software updates are mandatory and allow Sig Sauer to ensure that your BDX App and ECHO perform optimally. Most updates take less than 1 minute. Ensure that your ECHO is turned on and that your smartphone has at least 25% battery life remaining before installing any software updates. For best operation be sure to keep your smartphone awake during the entire installation process.

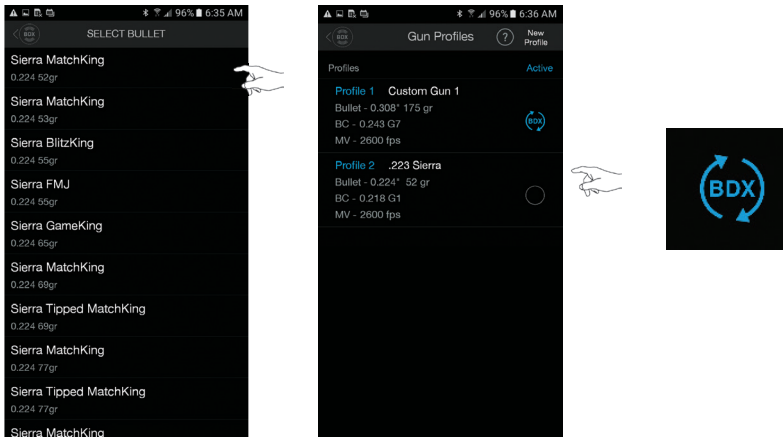


## 4. Configure up to 25 custom bullet profiles

The BDX App allows you to create and modify up to 25 profiles. From the home screen of the App touch **PROFILES**. Only one profile can be active at any time and is denoted by the BDX Icon in blue to the right of the screen. The BDX App comes with one default 0.308 profile. You can edit this profile by touching "Profile 1" or create a new one by touching the "New Profile" in the upper right corner of the App. Next, touch **LIBRARY** then select a caliber and bullet manufacturer. On the Gun Profiles page you can rename the profile by touching on the "Custom Gun 1" and typing in a new name.



After selecting a bullet manufacturer, select the actual bullet you intend to use. Once selected you will return to the Gun Profile page where you will need to click on the sync icon to the right to activate this profile. In this example the new profile is called “.223 Sierra” – be sure to activate this profile.



## CONFIGURING YOUR ECHO<sup>®</sup>

Once you have paired your ECHO with your app you can enter the Sights page and configure your ECHO. In the upper right hand corner of the sights page is the setting icon. ECHO settings Options (Defaults in BOLD)

### LevelPlex<sup>®</sup>

Off, 0.5, 1.0 2.0, **3.0**

This adjusts the sensitivity of your LevelPlex indicators.

### MOTAC<sup>™</sup> Timeout

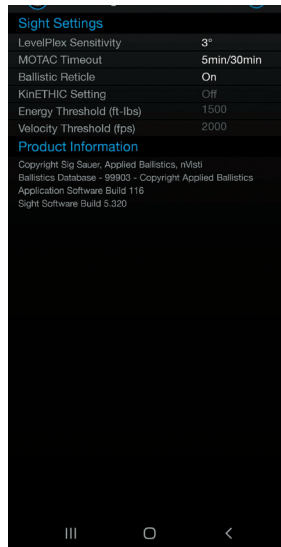
Off, 1 Min, 2 Min, **5 Min**, 10 Min

MOTAC will turn your sight off if your sight is motionless for this amount of time. MOTAC is very sensitive so your sight must be absolutely still in order to trigger MOTAC.

### Ballistic Reticle Mode

**Off**, On

This will toggle your ballistic reticle with multiple holdover dots on or off. You will need to configure your ballistic reticle from the sights page.



## KinETHIC Setting

**Off**, Energy, Velocity

KinETHIC will indicate if your terminal ballistics are below the threshold that you have chosen. If you select energy as your threshold and your bullet is below that threshold for the distance that has been ranged your ECHO® hold over point will flash twice and then stay solid for 2 seconds.

**Note:** If your ballistic hold over dot is flashing quickly at the bottom of your reticle that means that your true hold over is out of the field of view of your reticle. Reduce the magnification level of the riflescope. As your true ballistic hold over dot comes into your field of view it will light up solid. Using ABU your BDX system will only provide ballistic solutions for 800 yards and in. In ABE/ABX mode you are able to connect your BDX system to external ballistic calculators that provide solutions further than 800 yards.

## Quickbond™

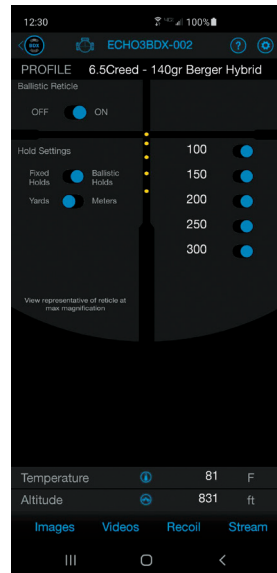
To pair the ECHO with a BDX capable rangefinder without the app use the Quickbond option. Navigate to the BDX menu on the ECHO and select QUICKBOND. Then press and hold both the MODE and RANGE buttons on your rangefinder. The rangefinder will display “bond” then “good” once the pairing is complete.

## BDX-R1 Digital Ballistic Reticle

If you are not using a Sig Sauer BDX rangefinder you can choose to set up your sight with a custom Digital Ballistic Reticle (DBR). You can input your known ballistic holds or use a custom reticle made for you via the BDX app.

To turn on your DBR toggle the DBR ON/OFF button on the sights page. or select it in the reticle menu or the ECHO®. You have the option of using fixed holds or ballistic holds. If you choose fixed holds you can enter in your desired hold overs in either MILS or MOA. You have the ability to illuminate up to 4 hold over dots. If you choose ballistic holds you can choose up to 4 different distances to illuminate. These distances can be in either meters or yards. The default is 100 yard increments. To change these increments tap on the yardage you would like to change and enter your new value. You are able to toggle each hold over on and off. The ballistics for these hold overs correspond to the gun profile that you have chosen as active.

It is highly recommended that you verify your hold overs for the furthest distance that you plan to shoot. If you are not using a Sig Sauer BDX rangefinder you can choose to set up your riflescope with a custom Digital Ballistic Reticle (DBR). You can input your known ballistic holds or use a custom reticle made for you via the BDX app.



## MOTAC™

- Navigate to the MOTAC option in the menu and press inward on the joystick to enter the MOTAC menu.
- Press up or down on the joystick to cycle through the MOTAC options. The options are:
  - 5 Min Disp/30 Min
  - 10 Min Disp/60 Min
  - 60 Min Disp/60 Min
  - OFF
- 5 Min Disp/30 Min turns off the display after 5 minutes of the sight sensing no motion and turns off the entire unit after 30 minutes of no motion.
- The other options work the same way for the times stated.
- If the sight senses motion while the display is off, but the unit is still on, the display will turn on.
- Motion will not turn the sight back on if lack of motion has turned off the entire unit.
- OFF turns MOTAC off such that the unit will not shut itself off.
- Press inward on the joystick to make your selection.
- Press left on the joystick to exit the menu.



## LEVELPLEX®

- Navigate to the LEVELPLEX option in the menu and press inward on the joystick to enter the LEVELPLEX menu.
- Press up or down on the joystick to cycle through the LEVELPLEX options. The options are:  
OFF, 0.5 degrees, 1 degree, 2 degrees, 3 degrees
- OFF turns LEVELPLEX off
- The other options determine the sensitivity of the sights cant detection and correction. If the sight is canted left or right a corresponding triangle will illuminate at the 3 or 9 o'clock position on the screen pointing in the direction you should tilt the sight to level the sight.
- Press inward on the joystick for your desired setting -Press left on the joystick to exit the menu.





## EXIT

- To exit the menu without making any changes, navigate to the EXIT option using the joystick and press inward.



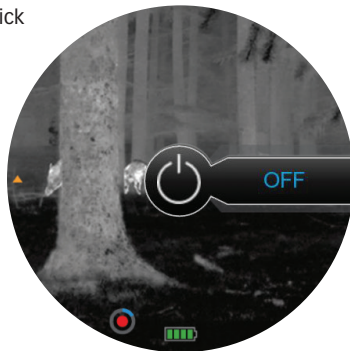
## INFO

- Navigate to the INFO option and press inward on the joystick.
- This menu contains the following options:
  - **Factory Reset**  
Restore the system to factory defaults
  - **About**  
View the installed software and firmware versions
  - **Erase Images**  
Erase all stored images
  - **Erase Videos**  
Erase all stored videos not recoil activated
  - **Erase Recoils**  
Erase all recoil activated videos
- Toggle the joystick to the left to return to the previous menu.



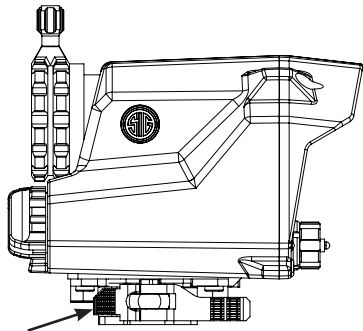
## OFF

- To turn the sight OFF, navigate to the OFF option using the joystick and press inward or simply hold inward on the joystick for >2 seconds.



## MOUNTING THE SIGHT

- The low profile quick release mount that comes with your ECHO3™ is designed for direct, low profile mounting of the thermal sight to any firearm with a MIL-STD 1913 Picatinny or Weaver style rail. Press inward on the forward lever and pull outward on the rearward lever. This opens the keeper and allows mounting on the rail. Once the sight is on the rail, press the sight forward and close the rearward lever. Adjust the adjustment screw on the opposite side of the quick release lever such that the sight can be installed and removed without adjustment. If the screw is over tightened you will not be able to operate the quick release lever.
- It may be desirable to mount the sight a little farther forward on your rifle than a traditional sight since the ECHO3 has a viewing screen.



## MAINTENANCE

- Cleaning – Keep your lenses clear by using a soft cloth or lens pen. The best way to maintain image quality is by keeping your lens surfaces clear of dirt and dust that can cause scratches.
- If the cable connector gets clogged with dirt or debris, use forced air to blow out the dirt. DO NOT FLUSH WITH WATER.

## TROUBLESHOOTING

Point of Impact (POI) changes between groups:

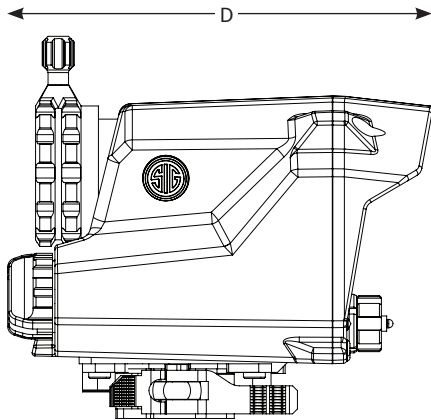
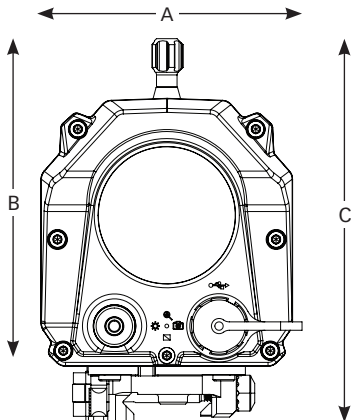
- Check that the mount is affixed tightly to the rail of your firearm.
- Check and clean your firearm.
- Check for variations in ammunition.

Intermittent function during live fire:

- Retighten the battery cap.
- Replace the battery or remove the battery and clean the circuit board contacts and battery surfaces with alcohol.

**ECHO3™ SPECIFICATIONS**

<b>Magnification</b>	1-6X	2-12X
<b>LCD Screen Resolution</b>	454 x 454 pixels	454 x 454 pixels
<b>Pixel Pitch</b>	12 micron	12 micron
<b>Digital Elevation Adjustment Range</b>	122 MOA	122 MOA
<b>Digital Windage Adjustment Range</b>	122 MOA	122 MOA
<b>Field of View</b>	10 Degrees	5.8 Degrees
<b>Frame Rate</b>	30 Hz	30 Hz
<b>Runtime</b>	> 6 Hrs	> 6 Hrs
<b>Weight (with 2 CR123 batteries)</b>	14.5 oz / 411 g	16.6 oz / 471 g
<b>Color</b>	8 Color Palettes	8 Color Palettes
<b>VOx Microbolometer Array</b>	320 x 240	320 x 240
<b>Close Focus Distance</b>	3 Ft	3 Ft
<b>Spectral Response</b>	7 – 14 $\mu\text{m}$	7 – 14 $\mu\text{m}$
<b>Communications</b>	WiFi / Bluetooth	WiFi / Bluetooth
<b>Storage</b>	14GB	14GB



	1-6X	2-12X
<b>A – Total Width</b>	2.6 in / 66mm	2.6 in / 66mm
<b>B – Height Above Rail</b>	3.1 in / 79mm	3.1 in / 79mm
<b>C – Overall Height</b>	3.4 in / 87mm	3.6 in / 92mm
<b>D – Overall Length</b>	4.4 in / 112mm	4.7 in / 120mm



## **SIG SAUER Electro-Optics Infinite Guarantee™**

SIG SAUER has manufactured the most rugged, dependable high-performance firearms for over two centuries. Our heritage of design, engineering and precision-manufactured quality predates the existence of any other optics company worldwide. We understand the importance of quality in the line of fire, at the shooting range or on your next hunt. SIG SAUER Electro-Optics had to earn the right to wear that badge and the Infinite Guarantee has your back, forever. Period.

We will repair or replace your SIG SAUER product in the event it becomes damaged or defective, at no charge to you. If we cannot repair your product, we will replace it with a product in perfect working order of equal or better physical condition. It doesn't matter how it happened, whose fault it was, or where you purchased it.

### **SIG SAUER Infinite Guarantee™**

- Unlimited Lifetime Guarantee
- Fully Transferable
- No Warranty Card Required
- No Receipt Required
- No Time Limit Applies
- No Charge

If you ever have a problem, no matter the cause, we promise to take care of you when it counts. Please note that our Infinite Guarantee does not provide coverage for intentional damage, misuse, cosmetic damage that does not affect the performance of the optic, loss, theft or unauthorized repair or modification. Excludes electronic components.





### **SIG SAUER Electronic & Tritium Component Limited 5-Year Warranty**

For components not included under the SIG SAUER® Infinite Guarantee™, this warranty covers any defects in materials and workmanship in the electronic and Tritium components of illuminated riflescopes/sights, pistol sights, electronic sights, flashlights, lasers, binoculars, spotting scopes, and rangefinders. This warranty lasts for five years from the date of manufacture. If, during that five-year period, these products are found to have electronic or Tritium component defects in materials or workmanship, SIG SAUER will repair your product, at no charge to you. If we cannot repair your product, we will replace it with a product in perfect working order of equal or better physical condition.

 **WARNING: CANCER AND REPRODUCTIVE HARM**  
[www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)



**NOTES:**

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**SIGSAUER<sup>®</sup>**

**FOR PRODUCT SERVICE ON THIS MODEL, PLEASE CALL 603-610-3000**

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