ECHO®
ECH01™ 1-2x30mm THERMAL REFLEX SIGHT

OWNERS MANUAL
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This manual is available in the following languages: French, Spanish, German, Italian, Portuguese, Russian, Afrikaans, Swedish, and Norwegian. Please visit sigoptics.com for Owners Manual downloads.
INTRODUCTION

Congratulations on the purchase of your ECHO1™ Thermal Reflex Sight. The ECHO1 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 ECHO1 is covered by the SIG SAUER Electro-Optics Infinite Guarantee and SIG SAUER Electronic & Tritium Component Limited 5-Year Warranty.
CONTENTS:

• ECHO1™ 1-2x30mm Thermal Reflex Sight
• Top Mount Peep Sight
• ROMEO1™ Adapter Plate
• USB Cable
• Hex Installation tool
• (2) CR123 Primary Lithium Batteries
• Scope Coat
• Fischer Plug Cover
KEY FEATURES:

- Uncooled VOx Microbolometer Array
- 5 Default Reticles and the ability to design / upload new reticles
- Color matrix LCD display for day / night time direct view targeting
- White or Black hot menu selectable plus color palette
- Electronic zoom from 1X to 2X
- Top mount peep sight and ROMEO1 adapter plate for backup sights
- IPX-6 waterproof
- Designed and assembled in the USA
PRODUCT IDENTIFICATION:

A- Focus Ring
B- CR123 Battery Caps
C- Viewing Screen
D- Hex Cross-Bolt Mount
E- Four-Direction Directional Switch / Joystick with Center Select
F- Fischer Plug Cover (Remove to access plug)
G- Threaded mounting holes for backup sight or ROMEO1
Before working on your ECHO1 sight always ensure that the firearm is unloaded with the safety on.

OPERATION

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.
Turning Sight On and Off / Menu

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 > 1 second. Black screen comes on, stays on and logo appears. User can release button any time after screen turns on and the ECHO1 will stay on.

Once the sight is on you can access the menu by pressing down and releasing the center select on the joystick. The menu gives you the following options:

- RETICLE SELECT
- ZERO THERMAL SIGHT (BORESIGHT)
- MAGE CAPTURE SETTINGS
- IMAGE REVIEW
- ABOUT CAMERA
- EXIT
- TURN OFF ECHO1

Focusing the Sight

To focus the ECHO1 thermal sight, turn the focus ring counter clockwise or clockwise as necessary to bring the target image into focus.
RETICLE SELECT

- Using the joystick, navigate to the RETICLE SELECT option. This is the default selection.

- To access RETICLE SELECT, press and release the joystick (center select) to select this setting.

- Currently selected reticle is displayed to the RIGHT. You will now get a list of preloaded reticles from which to choose. Using joystick, scroll UP or DOWN button to navigate to the desired reticle and press center select. The screen flashes SAVED and returns to live view with new reticle. If no reticle is selected and saved, screen times out in 1 minute.

- You can change the color of the reticle by navigating to the desired reticle and pressing to the right on the joystick.

- You can exit the menu without changing reticles by pressing left on the joystick.

- Visit www.sigoptics.com to create custom reticles and upload them to your ECHO1.
ZERO THERMAL SIGHT (BORESIGHT)

• 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 ECHO1™ 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 THERMAL SIGHT option and press center select.
• Using joystick, move the reticle (POA) to the bullet impact (POI). Counters are present at the bottom of the screen to display accumulated X / Y movement in MOA.

• Counters are present at the bottom of 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.

• Press the center select on the joystick to save and exit BORESIGHT mode.
IMAGE CAPTURE SETTINGS

• You can capture an image from the targeting view at any time by pressing to the right on the joystick.

• To capture images using burst mode, navigate to the IMAGE CAPTURE SETTINGS option with the joystick and press center select.

• The image capture settings are 5, 15 and 30 second burst.

• Each burst mode captures an image once per second for the number of seconds selected.

• Navigate to the desired number of seconds and press the center select.

• This will bring you back to the targeting screen. To start the burst mode, press to the right on the joystick.

• You may also use the save and exit option in the burst mode menu to exit without setting a burst mode.
IMAGE REVIEW

- To review saved images, navigate to the IMAGE REVIEW option using the joystick and press center select.
- Toggle the joystick up or down to cycle through the saved images.
- Toggling the joystick to the right will give you the option to delete the currently viewed image.
- To delete the image press center select on the joystick while the “DEL?” option is showing at the bottom of the screen.
- Toggle the joystick to the left to return to the previous menu.

EXIT

- To exit the menu without making any changes, navigate to the EXIT option using the joystick and press center select.
ABOUT CAMERA

• To view the installed software and firmware versions, navigate to the ABOUT CAMERA option using the joystick and press center select.

• Toggle the joystick to the left to return to the previous menu.

TURN OFF ECHO1™

• To turn the sight OFF, navigate to the TURN OFF ECHO1 option using the joystick and press center select.
COUNTDOWN TIMER

The countdown timer shows the time remaining until the next auto calibration of the thermal sensor.
QUICK KEYS

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

U - Toggle between 1X and 2X Zoom

L - Display Brightness Control

R - Image Capture and start Burst Capture

D - Switch Thermal Color Modes
MOUNTING THE SIGHT

- The low profile Hex mount that comes with your ECHO1 is designed for direct, low profile mounting of the thermal sight to any firearm with a rail. Simply loosen the cross-slot Hex bolt by rotating CCW using the supplied tool. Install the sight on your rail and re-tighten in the CW direction to hand tight plus \( \frac{1}{4} \) turn or approximately 20 in-lbs.

- The ECHO1 was designed for use on most types of firearms that utilize the MIL-STD 1913 Picatinny Rail or Weaver style rails. It may be desirable to mount the sight a little farther forward on your rifle than a traditional sight since the ECHO1™ 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 Fischer plug 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.
<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Magnification</td>
<td>1x / 2x</td>
</tr>
<tr>
<td>LCD Screen Resolution</td>
<td>220 x 176 pixels</td>
</tr>
<tr>
<td>Digital Elevation Adjustment Range</td>
<td>100 MOA</td>
</tr>
<tr>
<td>Digital Windage Adjustment Range</td>
<td>100 MOA</td>
</tr>
<tr>
<td>Field of View</td>
<td>3.7 x 4.7 Degrees</td>
</tr>
<tr>
<td>Frame Rate</td>
<td>30 Hz*</td>
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<tr>
<td>Runtime</td>
<td>&gt; 8 Hrs</td>
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<tr>
<td>Weight (with 2 CR123 batteries)</td>
<td>14.7 oz / 417 g</td>
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<tr>
<td>Color / Contrast Settings</td>
<td>8</td>
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<tr>
<td>VOx Microbolometer Array</td>
<td>206 x 156</td>
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<tr>
<td>Close Focus Distance</td>
<td>1 m</td>
</tr>
<tr>
<td>Spectral Response</td>
<td>7 – 14 µm</td>
</tr>
</tbody>
</table>

*Note* – This product is ITAR controlled and can only be exported with a valid export license issued by the U. S. Department of State Office of Defense Trade Controls prescribed in the International Traffic in Arms Regulation (ITAR).
A – 4.3 in / 110mm
B – 2.6 in / 65mm
C – 2.7 in / 68mm
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.