BinoX HD

SMART HD BINOCULAR

OPERATOR'S MANUAL

FOR WEB USER MANUAL VISIT:
HTTP://MANUAL.ATNCORP.COM/BINOX

**AMERICAN
TECHNOLOGIES
NETWORK CORP.**

TABLE OF CONTENTS

C A U T I O N !

THIS PRODUCT CONTAINS NATURAL RUBBER LATEX WHICH MAY CAUSE ALLERGIC REACTIONS

SECTION I

PREPARING THE DEVICE

1.01. UNPACKING

The following steps must be accomplished prior to each mission where the device is used:
1. Open packaging box, remove BinoX HD and check the contents
2. Make sure that nothing is missing
3. Inspect the device for damage to optical surfaces, body, eyecups, operation buttons, etc.
4. Ensure that all optical surfaces are clean and ready for use.

NOTE
You must have a microSD card inserted in the device, in order to be able to update to the latest firmware.

1.02. INSTALLATION OF BATTERIES

The BinoX HD will operate on three CR123 type batteries.

NOTE
We highly recommend using lithium CR123 batteries. They will provide much longer battery life.

Install batteries as follows:
1. Remove the Battery Cover following the arrow direction
2. Insert batteries as shown.
3. Close the Battery Cover.

NOTE
Make sure that the device is turned off before changing sources of energy (batteries or USB in power supply mode).

1.03. MICROSD, USB AND HDMI PORTS

The device is equipped with microSD, Micro USB and Micro HDMI ports. You can find them under the rubber cover near the battery block (we marked the cover with appropriate icons). To open the cover you should gently lift the rubber cover and move it out of the way.

NOTE
Make sure that the device is turned off before inserting the microSD card into the slot.

1. A new card should be formatted before usage.
2. Insert microSD card as shown.
3. To lock the card in the slot push it in with a thin object (a small coin, paper clip, toothpick, etc.).
4. Return the cover to its original position.

NOTE
There is only one correct direction to insert the microSD Card.
Do not force the card into the slot as it may damage both the device and the card itself.
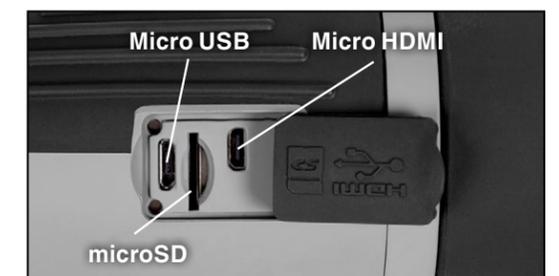
To remove the microSD Card from the slot, push it in using the same thin object. When it pops up a few millimeters, it can be pulled with your fingers or tweezers.

NOTE

If you are going to record video we recommend using a Class 10 microSD card (10 MB/sec) or faster and have capacity from 4 to 64 GB.

1.04. FIRMWARE UPDATE

Before operating your device please update the firmware to the latest version.

To receive a notification of new firmware updates, please register your device on our website (you'll receive an email letting you know when new firmware becomes available).

To update the new firmware you will need a microSD Card and batteries that are fully charged.

NOTE

In the event of a power failure during an update the device may crash corrupting its system files and will need to be sent back to the ATN factory for service. It is important not to use additional sources of power during firmware update!

Update the new firmware as follows:

1. Download the ***.bin file from https://www.atncorp.com/firmware (You may need to create an account, if you didn't create it earlier) and copy to your microSD Card — root directory.
2. Insert the card into the device.
3. Turn ON the device.
4. In the "Firmware Update" dialog box select "Yes" to start the update.
5. When the update counter reaches "100%" the device will automatically restart.
6. Once the device is powered up it will enter self configuration mode.
7. After completing it will automatically restart and will be ready for use.
8. Motion Sensing platform will be configured when first turned on.
9. Once the Firmware update completes, please do a factory reset before using the product.
10. Please remember to delete the Firmware File off of the microSD card after all steps are completed.

NOTE

If the device does not restart within 30 seconds, remove and re-insert the batteries and power-up the device.

NOTE

Once the device has been updated you will need to either format the card or delete the update file manually. In the event you do not, the system will ask you if you wish to update the device every time you turn it on.

1.05. ON / OFF

To TURN ON the device press and hold the POWER button until you see the ATN splash screen.

To TURN OFF the device press and hold the POWER button, until the dialog box "Shut down the device?" appears. Choose "Yes" to turn off.

1.06. USING KEYPAD

The KEYPAD is programmed to be used in two different ways:

- Short and Quick Taps — used for most functions and to get around the menu;
- Press and Hold — designed to be used in the following situations — ON/OFF, ZOOM, SHORTCUT MENU.

NOTE

Using LEFT or RIGHT buttons in the menu, lets you quickly Exit Shortcuts from any position.

1.07. FOCUSING

DIOPTER ADJUSTMENT

By rotating the Diopter Adjustment Ring you will achieve optimal sharpness for your vision. Look through the eyepiece while focusing on the interface on the screen.

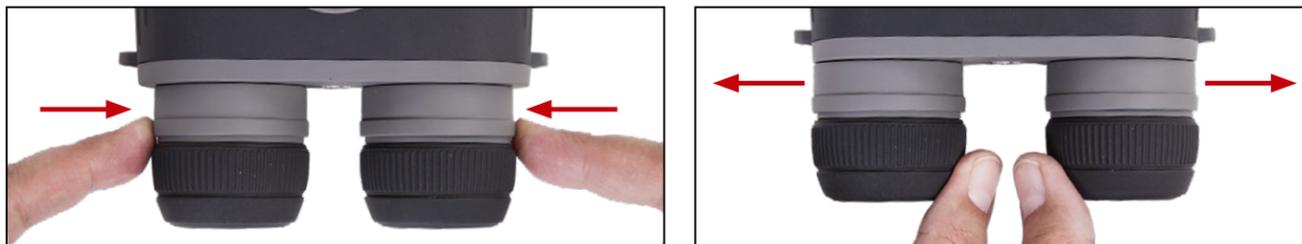Do not take the rubber cap off the objective lens.

NOTE

You should not need to re-adjust the Diopter Adjustment unless another user with different vision than yourself will be using the device.

INTERPUPILLARY ADJUSTMENT

Depending on the distance between your eyes, you may adjust the individual eyepieces by moving each one horizontally.

1.08. FOCUS IR (LEFT LENS)

In Night Mode your IR Illuminator is critical to providing you extended range and "Total Darkness Capability" by projecting a beam of IR light that is only seen by a night vision device. The IR Illuminator will automatically turn ON when Night Mode is activated (although it may be turned off in the settings if you so choose).

1. The IR Illuminator beam may be focused by turning the left objective lens. This allows you to tighten the beam for longer range or widen the beam for maximum field of view.

2. There are a number of settings effecting the function of your IR in the Settings Menu.

1.09. MOUNTING ON A TRIPOD

The BinoX HD is tripod mountable and can be mounted on tripods with a 1/4" thread mount.

1.10. COMPASS CALIBRATION

When the compass needs to be calibrated the word "CAL" appears instead of the Compass Scale. To calibrate you should rotate the device on three axis as illustrated.

NOTE

After calibrating the device please remember that the compass will work best when holding the BinoX parallel to the ground.

Other possible Errors:

*   ERR — an error was detected (you may need to restart the device or recalibrate the compass);
*   SMF — your device is under Strong Magnetic Field (please, move away from the Magnetic Field);
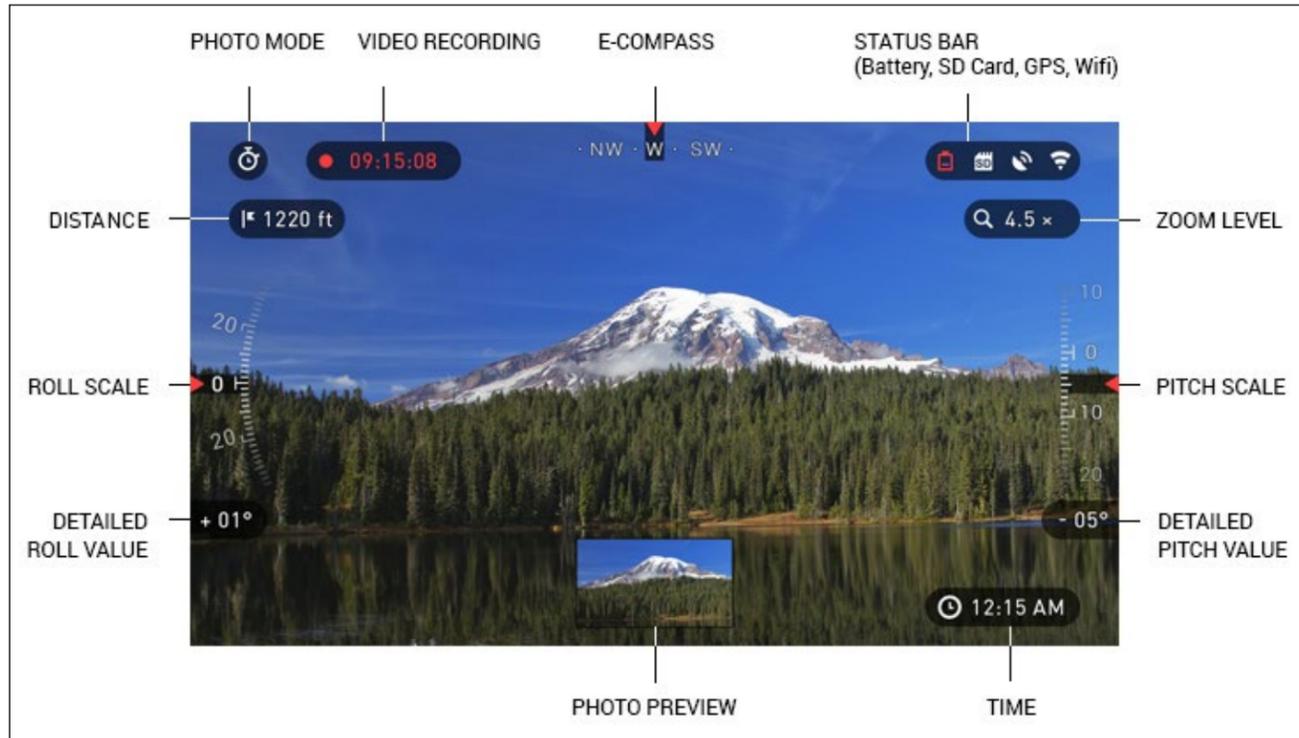*   UPD — your firmware needs to be updated.

SECTION II

INTERFACE

2.01. HOMESCREEN

First screen you'll see after switching on the device is Homescreen. It consists of Scales, Status Bar icons and different Informational Widgets.

SCALES

E-Compass Scale shows yaw angle based on e-Magnetometer data.

Roll Scale shows binocular cant based on internal 3D Gyroscope.

Pitch Scale shows binocular inclination based on internal 3D Gyroscope.

STATUS BAR

Its job is to display information about the current state of the system.

Currently inactive icons become invisible, so you will only see the important information on the Homescreen Interface:

- Battery — appears when energy level is low
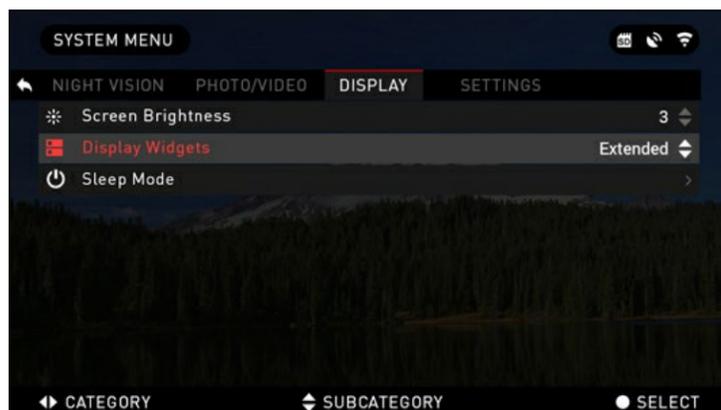
- SD Card — shows the presence or absence (red icon) of memory card
- GPS and WiFi — show when the function is enabled.

WIDGETS

They are interface elements which provide quick access to useful information. There are several types of widgets:

- icons without value — are used for mode displaying (Photo and Video Modes)
- only numerical value (Detailed Roll and Pitch Values)
- icons with a numerical value which provide detailed numerical readings
- Photo Preview (appears in the bottom of the homescreen, after the photo is taken).

Display widgets can be disabled from the System Menu.

To get to the System Menu you should click on the CENTER button ⊙ from Homescreen and access the Shortcut Carousel.

Then select the wrench icon with RIGHT or LEFT buttons ⊙ and push CENTER button ⊙ to enter the menu.

Select Display tab with RIGHT button ⊙ and choose subcategory Display Widgets with DOWN button ⊙.

2.02. MAIN OPERATIONS

ZOOM LEVEL

By pressing and holding the UP or DOWN button ⊙ on the keypad you will be able to Zoom IN and OUT.

Current Zoom Level is displayed in the Zoom widget on the Homescreen.

TAKING PHOTOS

Press the LEFT button ⊙ to TAKE A PHOTO.

Depending on the selected mode, you will make one or several photos. You can choose from various photo modes in the System Menu.

VIDEO RECORDING

By pressing the RIGHT button ⊙ you will be able to RECORD VIDEO.

NOTE

Your recording will automatically stop when the memory card is full or the battery is out of power.

SHORTCUT CAROUSEL

The CENTER button ⊙ opens the menu and closes it down when pressed again.

2.03. SHORTCUT CAROUSEL

The Carousel is your access to a number of Shortcuts that allows you quick access to additional features. Just click on the CENTER button ⊙ from Homescreen to access the Carousel.

Buttons highlighted in Red are the only ones that activate a particular shortcut.

Movement between the items is carried out using the LEFT & RIGHT buttons ⊙, except the group of ON/OFF switches (WiFi, GPS, Bluetooth).

You should use the UP & DOWN buttons ⊙ to switch modes.

To turn ON or OFF a particular switch you should click the CENTER button ⊙ while having the switch selected. Example — WiFi.
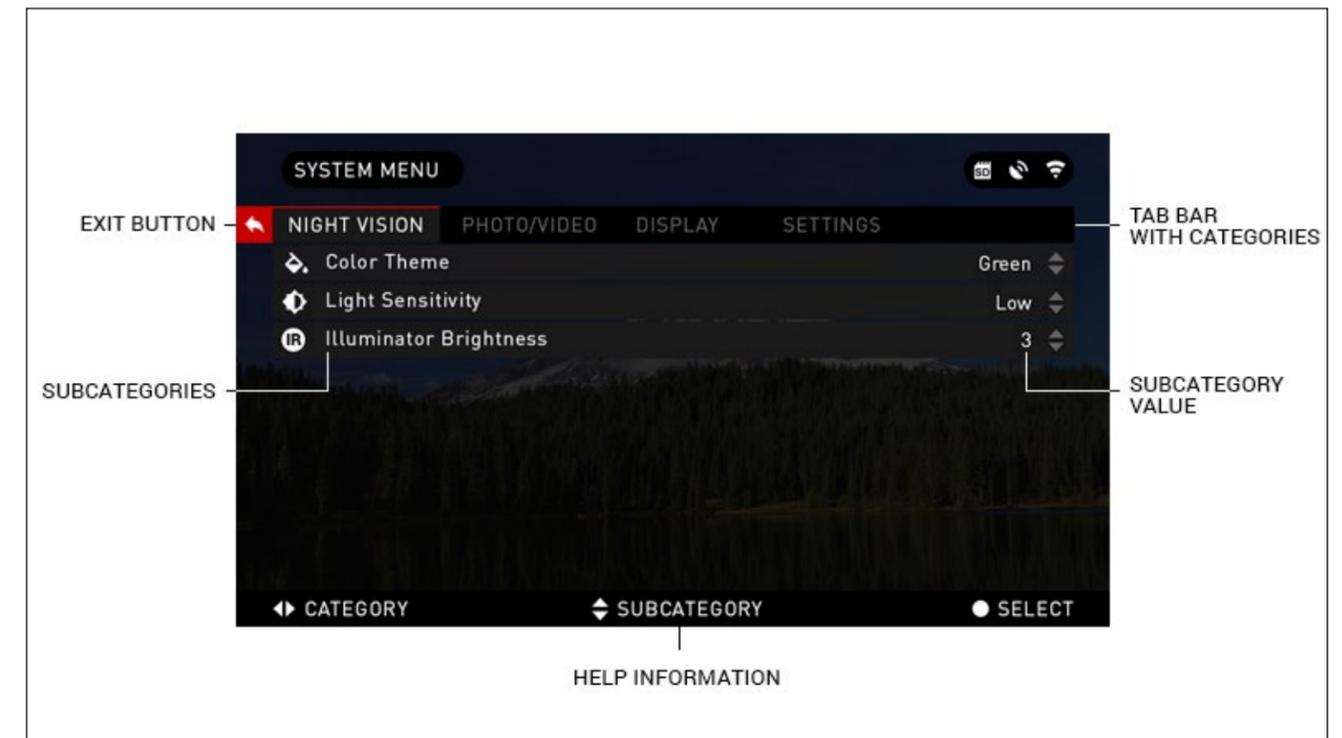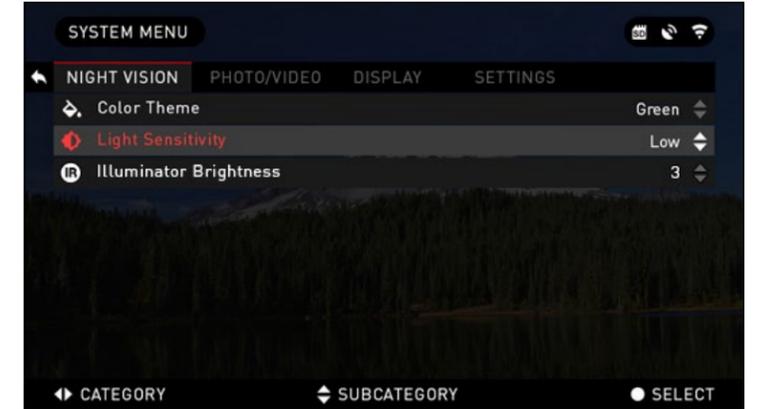
EXIT
Exit Carousel.

NIGHT MODE
Switch between Day and Night Mode.
Options such as color palette and other settings for Night Mode can be changed in the System Menu.

RANGEFINDER
Activates Smart Rangefinder feature.

GALLERY
Gives you access to the library of Images and Videos that are stored on your unit's SD Card.

WiFi module.

GPS module.

SYSTEM MENU
Allows for access to various system options and adjustments.

2.04. USING SYSTEM MENU

To enter the System Menu you should open Shortcut Carousel with CENTER button ⊙ and select the wrench icon with RIGHT or LEFT buttons ⊙.

Then push CENTER button ⊙ to enter the menu.

The System Menu consists of a Tab Bar at the top of the screen, list of subcategories in the center and Help Information at the bottom.

On the left side of the Tab Bar you will find the Exit (with arrow icon). Pressing it with CENTER button ⊙ will bring you back to the Homescreen.

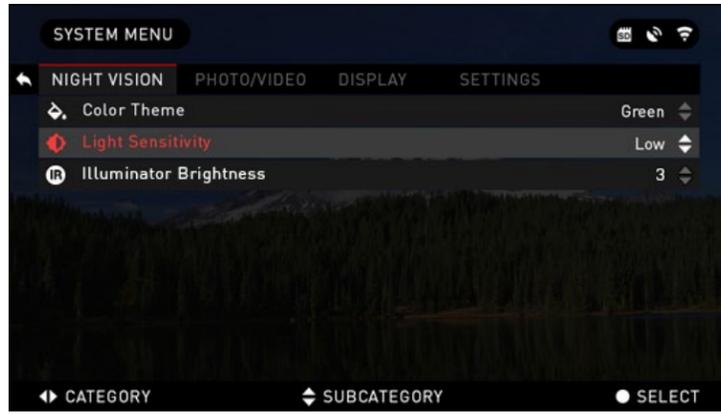Movement between the tabs is carried out using the LEFT and RIGHT buttons ⊙.

Each tab includes subcategories. To select a particular subcategory you should use the UP and DOWN buttons ⊙ and press CENTER button ⊙.
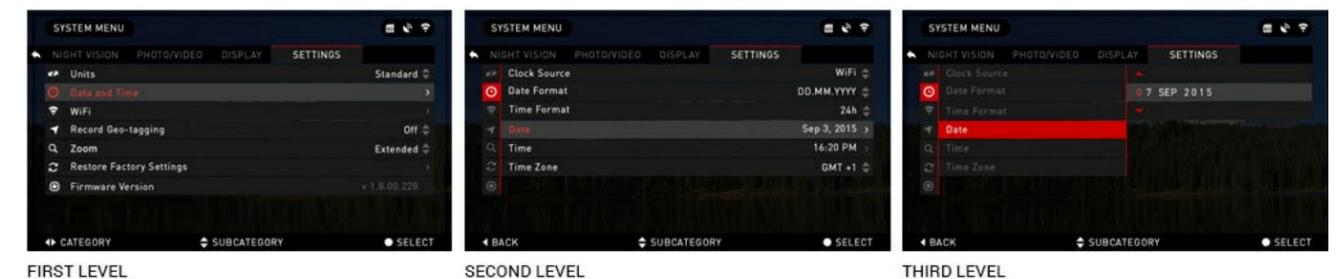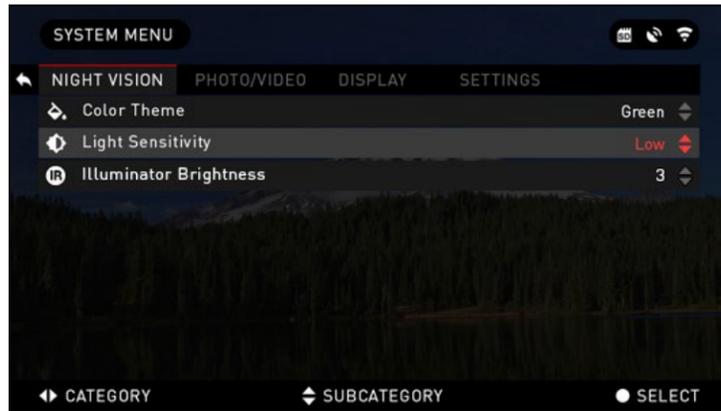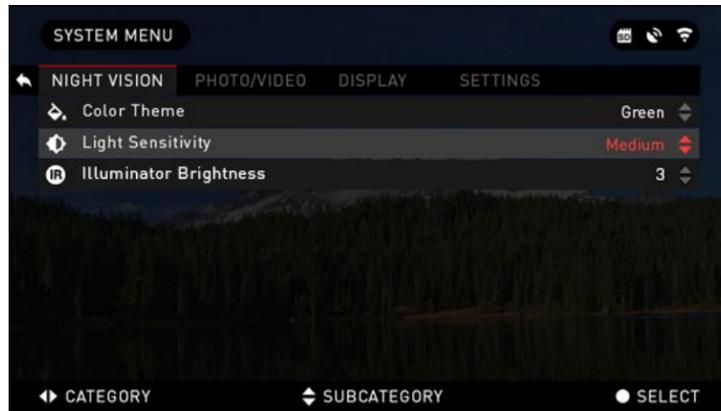

FIRST LEVEL   SECOND LEVEL   THIRD LEVEL

To change a particular value you should follow the next few steps. Select the sub-category you need with the UP or DOWN buttons ⊙.

Press the Center button ⊙ to select a particular value (once selected it will turn red).

Change the value with the UP and DOWN buttons ⊙.

To select a new value press CENTER button ⊙ to confirm the change.

To switch between Day and Night Mode you should choose NIGHT MODE in Shortcuts.

Shortcuts allows you quick access to the Carousel that contains quick access to your units features. Just click on the CENTER button to access the Carousel.

Buttons highlighted in Red are the only ones that activate a particular shortcut.

Movement between the items is carried out using the LEFT & RIGHT buttons.

NOTE

Remember that turning on Night Mode during daylight will not harm your device, however you may not be able to see anything due to the image being too bright.

You can choose preferred Color Theme or adjust the Light Sensitivity in the System Menu (Night Vision section).

To enter the System Menu you should open Shortcut Carousel with CENTER button and select the wrench icon with RIGHT or LEFT buttons.

Then push CENTER button to enter the menu.

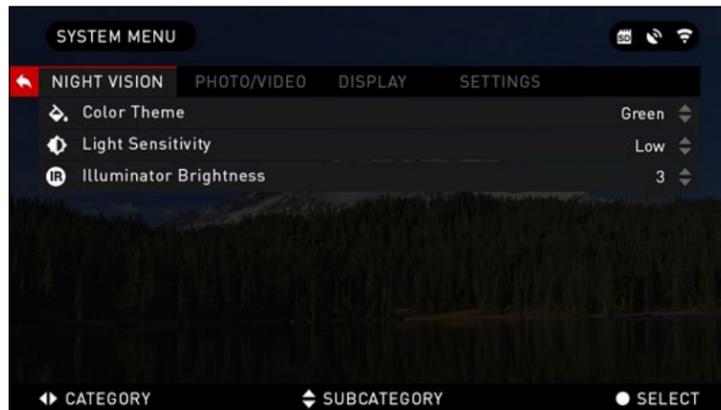Select Night Vision in the Menu Tab. Movement between the tabs is carried out using the LEFT and RIGHT buttons.

To switch between Green and Black&White modes follow the next few steps. Select Color Theme subcategory in Night Vision Tab by pressing UP and DOWN buttons.

Then Press the CENTER button to select a particular value (once selected it will turn red). And choose Green or Black&White mode, confirm it by pressing CENTER button.

Night Vision category will be available from the Shortcut Menu.

NOTE

Light Sensitivity does not change when changing color modes.

If you press the LEFT button while staying on the Homescreen to TAKE A PHOTO.

You must have a microSD card inserted in the device for these features to work. All files will be stored on the microSD card.

Depending on the selected mode you will make one or several photos. You can choose from various photo modes in the System Menu.

To enter the System Menu you should open Shortcut Carousel with CENTER button and select the wrench icon with RIGHT or LEFT buttons.

Then push CENTER button to enter the menu.

There are three photo modes to choose from. Switching between modes is done in the System Menu in the Photo/Video tab, subcategory Photo Mode.

Use UP or DOWN buttons to switch between modes. Press the Center button to select a particular value (once selected it will turn red).
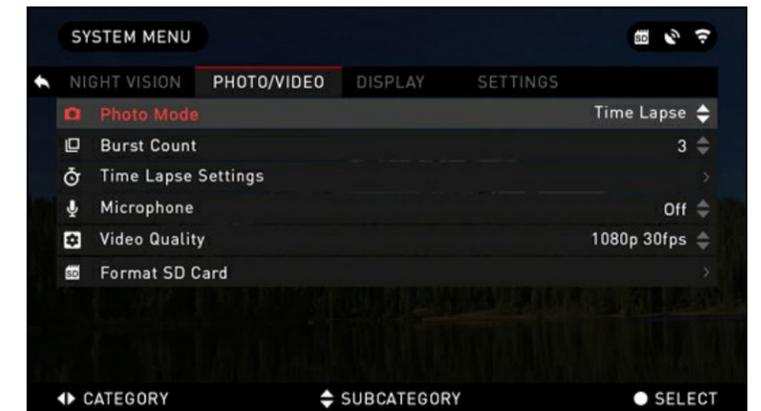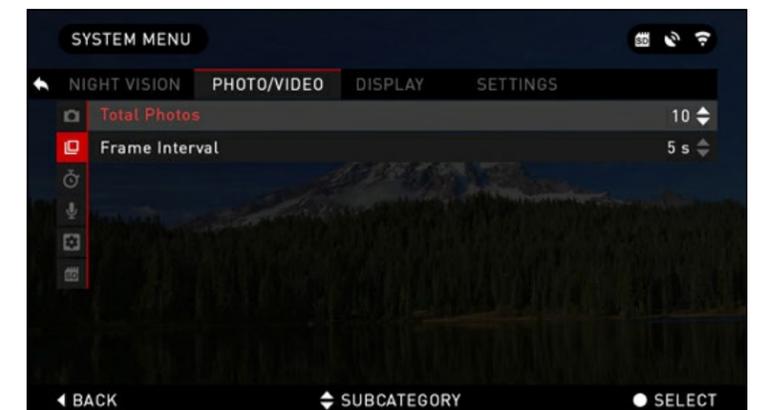
NORMAL

This default mode allows you to take one photo at a time.

TIME LAPSE

Time Lapse is where the device takes a sequence of images of a subject with an interval of time between each image.
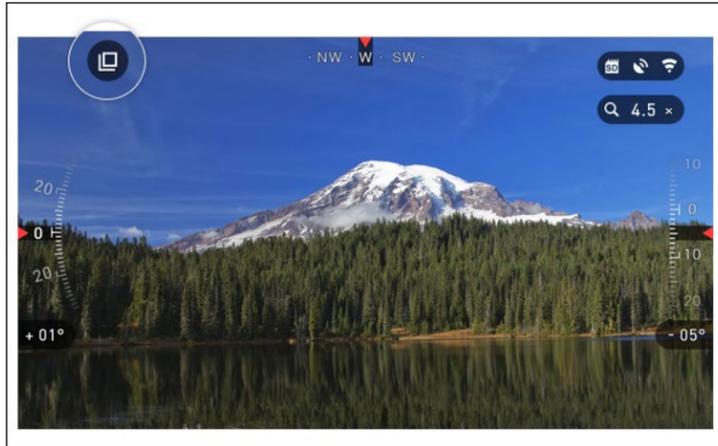
The interval and the number of photos taken can be changed in the System Menu.

To make changes choose Photo/Video Tab in System Menu, then use UP or DOWN buttons to select Time Lapse Settings.

Press the CENTER button to enter the mode settings. While you are in this mode, the Time Lapse widget appears.
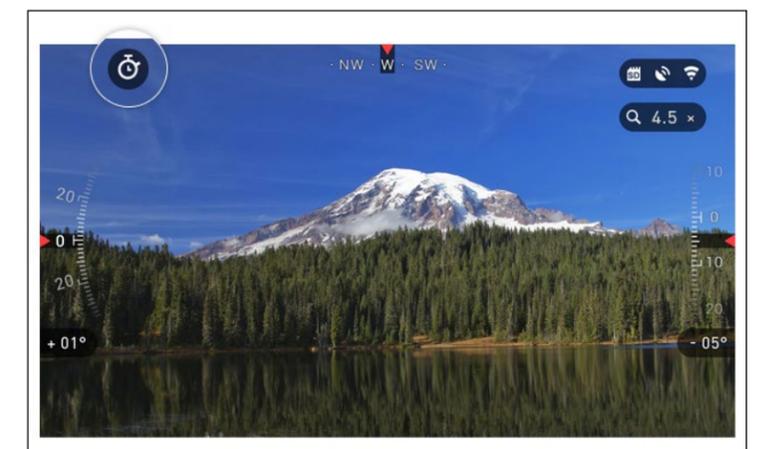
BURST

Burst mode captures a series of photos.

You can select the best image of the group or arrange them in a sequence to study the transitions in detail.

The number of the photos taken can be changed in the System Menu. While you are in this mode, the Burst widget appears.


Regardless of which mode you are using the preview appears after a photograph is taken on the bottom of the screen for several seconds.

If you press the RIGHT button to Start Video recording. Press RIGHT button again to stop Video recording.

3.03. RANGEFINDER

Using the Smart Range Finder you will quickly be able to estimate the distance to your target as long as you have reasonable knowledge of the size of your target.
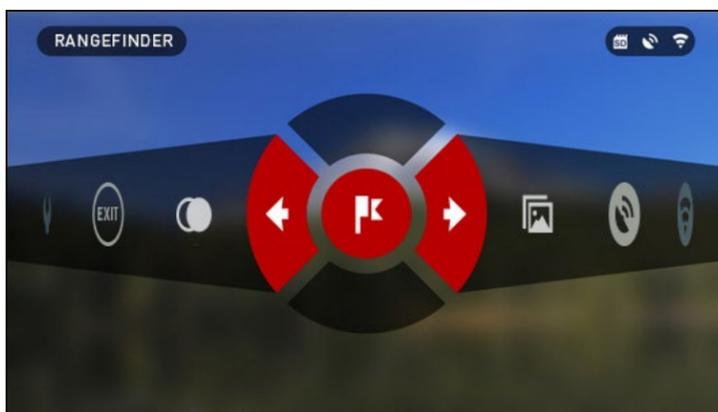

RANGEFINDER

To use select the Flag Icon from the Shortcut Carousel.

Pressing the CENTER button will take you to the Main Screen of the Rangefinder feature.

To measure the distance, follow the next steps:

1. Put the arrow-mark on the top of the target and press the CENTER button, wait for the binocular to take the readings (it will take a number of readings so try to keep your binocular steady);
2. Put the arrow-mark under the target and press the CENTER button;
3. If satisfied with the value press the LEFT button to go back to the Homescreen or repeat steps 1 and 2 if necessary.
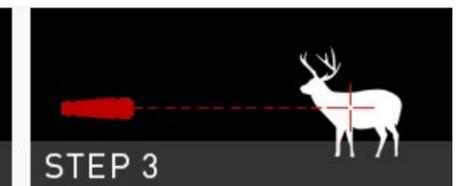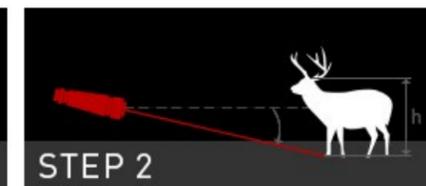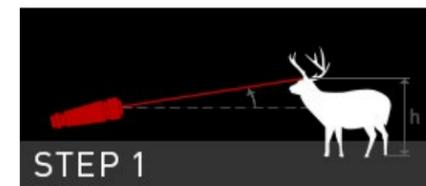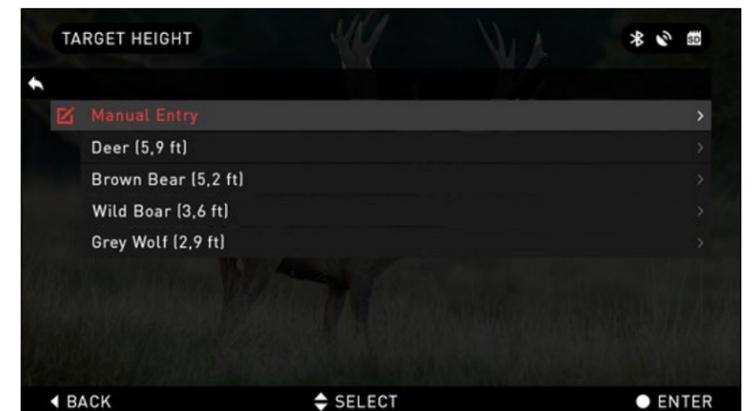

NOTE

During the measurement process, you can zoom in and out using standard buttons (UP and DOWN).

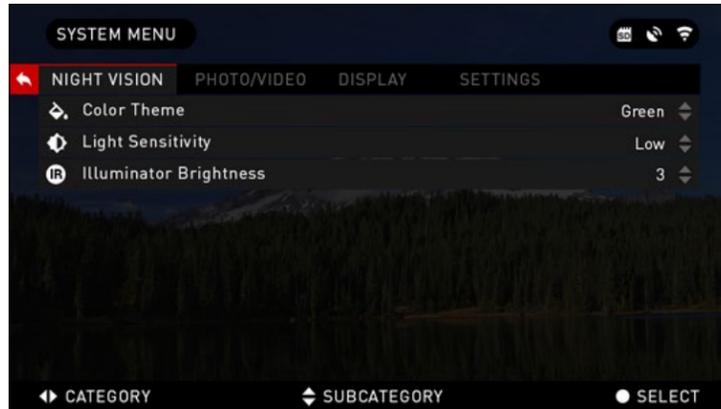If the Target Height is incorrect you can change it:

- press the RIGHT button to enter the Menu;
- choose one of the presets or input the height manually;
- accept the height with CENTER button and go back to the Main Screen.

SECTION IV

SYSTEM MENU

4.01. NIGHT VISION

COLOR THEME — the color of Night Mode (Green or Black & White). There is NO difference in light gain from Green to B&W.

LIGHT SENSITIVITY — can be set to Low, Medium or High. At high your frame rate will be 7.5 per second. You will experience more light gain but at the expense of a lower frame rate. We recommend Medium setting for most uses.

4.02. PHOTO/VIDEO
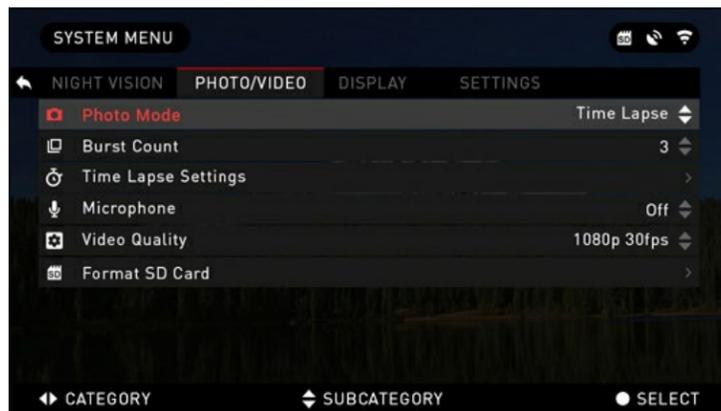
PHOTO MODE — includes Single (capture a single photo), Time Lapse (series of photos at timed intervals) and Burst (up to 10 photos in one second) modes.

BURST COUNT — amount of photos in one second (2 – 10).

TIME LAPSE SETTINGS

• Total Photos — amount of photos in series (2 – 10).

• Frame Interval — length of the interval (2 – 15 sec).

MICROPHONE — sound recording (ON/OFF).

VIDEO QUALITY — can be 1080P at 30fps or 720P at 60fps.

FORMAT SD CARD — after you choose this subcategory you'll see a pop-up window asking you about formatting.

NOTE

Remember when formating your microSD card you will loose all information on it, including photos and videos.

4.03. DISPLAY

SCREEN BRIGHTNESS — 1-5 with 1 being the dimmest and 5 the brightest. It is recommended that you use the brightest setting during the day for optimal performance.

DISPLAY WIDGETS — allows you to disable several widgets (Minimal/Extended)

SLEEP MODE

Sleep mode is activated when your device is not in use for a set period of time (example: 1 – 60min). During sleep mode the display and some of the sensors will be inactive. To get out of Sleep mode and get back to normal operations just physically move the device or press any of the buttons.

• Mode — allows you to switch the mode (ON/OFF)

• Hibernation Time — can be 1 – 60 min
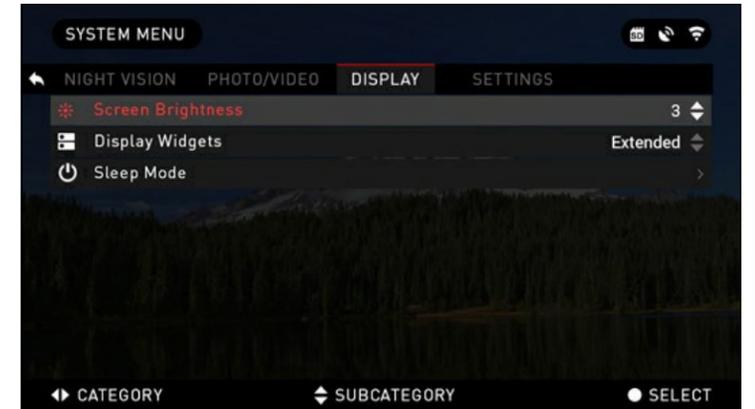
4.04. SETTINGS

UNITS — can be Metric or Standard system.

DATE AND TIME

• Clock Source — allows you to choose different types of sources to improve the accuracy (Manual, WiFi or GPS).

• Date Format — can be YYYY-MM-DD, MM-DD-YYYY, DD-MM-YYYY.

• Time Format — form of stating the time (24-hour or 12-hour).

• Date — enter the date.

• Time — enter the time.

• Time Zone — allows you to choose a geographical region with standard time.

WIFI — values are not changeable.

• SSID

• Password

• MAC Adress

RECORD GEO-TAGGING — adding geographical identification to your videos (ON/OFF).

ZOOM — allows you to choose different types of zoom (Standard, Extended).

However, we would like to caution you when using Extended Zoom, you will begin to see considerable pixelation at such a zoom.

RESTORE FACTORY SETTINGS — allows to reset all the settings to default.
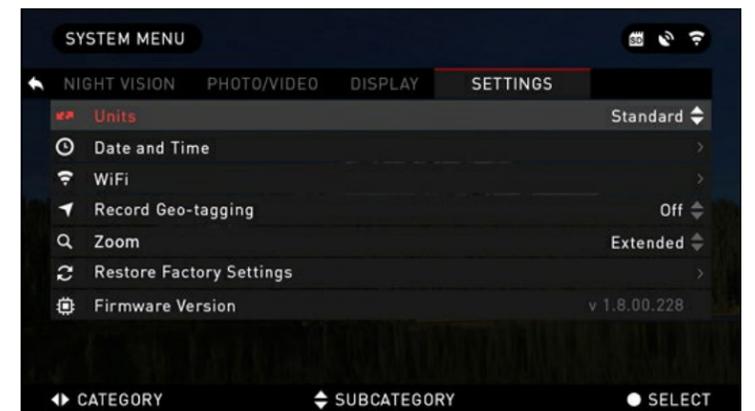
FIRMWARE VERSION — allows you to see the firmware version currently running on your device. We recommend that you register your product on our Update Center (www.atncorp.com/firmware) in order to make sure that you are getting emails when new firmware versions become available. We are constantly working on new features, functions, and improvements that we provide to you free of charge via firmware upgrades.

SERVICING

5.01. WARNINGS AND CAUTIONS

- Always remember to turn off the device when it is not in use. If you do not plan on using it for a period of more than 10 days, you should remove the batteries.
- Do not disassemble, drop, open, crush, bend, deform, puncture, shred, microwave, incinerate, paint or insert foreign objects: it will void your warranty.
- Keep Lens Cap on when not in use.
- Avoid contact with dust, steam, and gas.
- This product contains natural rubber latex which may cause allergic reactions.
- The device is a precision electro-optical instrument and must be handled carefully.
- Do not scratch the external lens surfaces or touch them with your fingers.

CAUTION

Failure to follow these safety instructions could result in damage to the device.

SECTION VI

MOBILE APPLICATIONS

6.01. MOBILE APPLICATIONS

By utilizing the ATN Obsidian app, you can control your device and view live streaming. Connect a phone or tablet and view everything simultaneously.

Want to see what you've recorded so far? No problem, once connected to the app via WiFi, open up the Gallery and playback your latest adventures. All your photos and videos are right at your fingertips.

iOS Application

Android Application

For customer service and technical support, please contact

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e-mail: service@atncorp.com

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