

X-Spotter HD

DAY&NIGHT SMART HD SPOTTING SCOPE



OPERATOR'S MANUAL

X-SPOTTER OPERATOR'S GUIDE (REV. 3, JANUARY, 2017)

FOR WEB USER MANUAL VISIT:

[HTTP://MANUAL.ATNCORP.COM/X-SPOTTER-HD-MANUALS](http://manual.atncorp.com/x-spotter-hd-manuals)



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NETWORK CORP.**

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CAUTION!

THIS PRODUCT CONTAINS NATURAL RUBBER LATEX WHICH MAY CAUSE ALLERGIC REACTIONS

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SECTION I

PREPARING THE DEVICE

1.01. FEATURES



RECORD HD VIDEO



WiFi



SMOOTH ZOOM



E-COMPASS



GEOTAGGING



OBSIDIAN USER INTERFACE



SMART RANGE FINDER



BLUETOOTH



DAY/NIGHT MODE



3D GYROSCOPE

1.02. APPLICATION

The Smart X-Spotter is the first ever true HD digital, intelligent spotting scope. Utilizing the latest Obsidian II Core, the X-Spotter boasts an array of sensors, a powerful 1 GHz processor, and impressive wired (USB, SD card, HDMI) and wireless (WiFi, Bluetooth) connectivity.

A 200 mm crystal clear lens, means you can see objects at incredible distances. While recording to your memory card for sharing with friends or family later. True HD resolution provides you unparalleled performance. Built-in WiFi lets you stream to your tablet or phone giving you a viewfinder like never before. View your photos or videos remotely without ever touching the X-Spotter.

When you are ready to step up to a true technological marvel — take the X-Spotter for a ride.

1.03. SPECIFICATIONS

Item #	DGSSHD2080
Sensor	HD 1080p ATN L130 Sensor
Magnification	20 – 100×
Field of view at 1000 yds	107 ft
Angle of view	1°
Objective lens focal length	200 mm
Micro Display	HD Display
Core	ATN Obsidian II
System Resolution	160 lp/mm
Eye relief	65 mm
Waterproof rating / IP rating	Weather resistant
Video Record Resolution	1080p @ 30 fps
Microphone	Yes
Micro SD card	From 4 to 64 GB
Micro USB	Yes
Micro HDMI	Yes
WiFi (Streaming, Gallery, & Controls)	iOS & Android
Bluetooth	4.1
GPS (Geotagging, Elevation, etc.)	Yes
3D Gyroscope	Yes, GS7
3D Accelerometer	Yes
3D Magnetometer	Yes
Gyro Range Finder	Yes
Electronic Compass	Yes
Smooth Zoom	Yes
Battery life (Li-ion)	8 – 12 hr
Battery pack life (16,000 mAh)	22+ hr
Battery type	4 AA, 1.5 V (Lithium Recommended)
Dimensions	20.81"×3.34"×7.37" / 529×85×188 mm
Weight	4.5 lb / 2.06 kg
Warranty	2 years

* Specifications subject to change without notice.

1.04. UNPACKING

The following steps must be accomplished prior to each mission where the device is used:

1. Open packaging box, remove X-Spotter 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

If any accessories are missing or broken contact ATN's Customer Service.



1.05. INSTALLATION OF BATTERIES

The X-Spotter HD will operate on four AA-type batteries.

NOTE

We highly recommend using lithium AA batteries. They will provide much longer battery life. Use only 1.5 V batteries.

Install batteries as follows:

1. Remove the battery cap by unscrewing it counter clockwise;
2. Insert batteries as shown;
3. Return the battery cap into the housing (screw clockwise until finger tight).

Do not over tighten as it will be difficult to remove the next time you replace batteries



NOTE

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

1.06. MICROSD, USB AND HDMI PORTS

The device is equipped with microSD, Micro USB and Micro HDMI ports. You can find them under the cover near the battery block (we marked the cover with appropriate icons).

Pull off Cover covering the Micro Ports.

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 when inserting card in the slot, push it with a thin object (a small coin, paper clip, toothpick, etc.)
4. Return the cover to its original position.

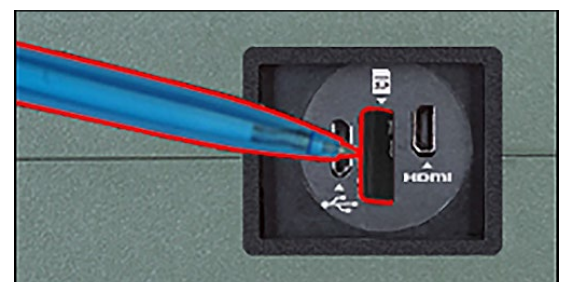
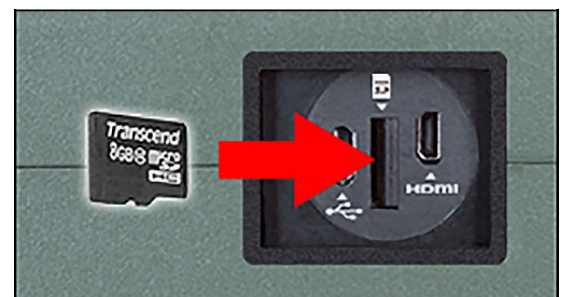
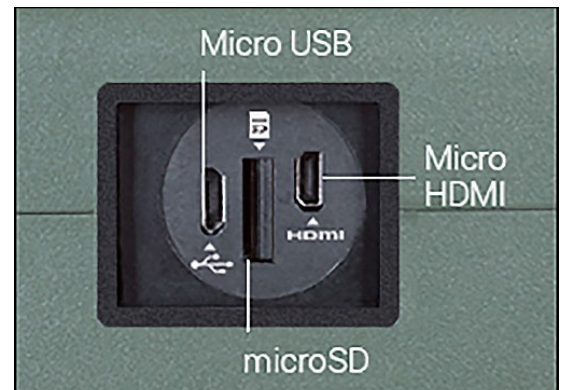
NOTE

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 scope 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.



1.07. FIRMWARE UPDATE

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

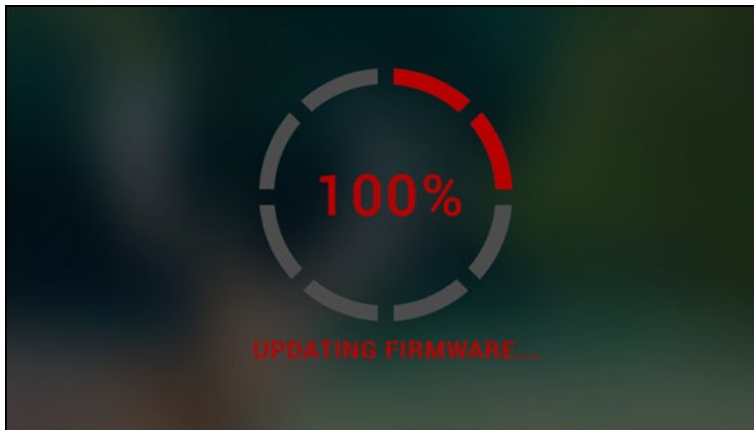
To receive a notification of new firmware updates, please register your device on our website (you'll receive an email letting you know when new firmware becomes available).

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.

1.08.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.

1.09. 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.



1.10. FOCUSING

ADJUST OBJECTIVE LENS/FOCUS

Turn the ring clockwise or counterclockwise to adjust your focus until the object you are viewing becomes clear.

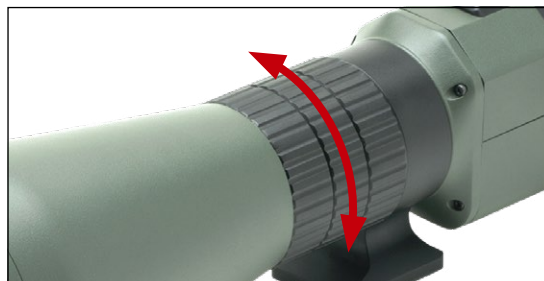
DIOPTRER ADJUSTMENT

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 scope.



1.11. TRIPOD MOUNTING

The X-Spotter HD is tripod mountable. You can mount your scope to a tripod with the 1/4" thread mount.



1.12. 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 X-Spotter HD parallel to the ground.

Other possible Errors:

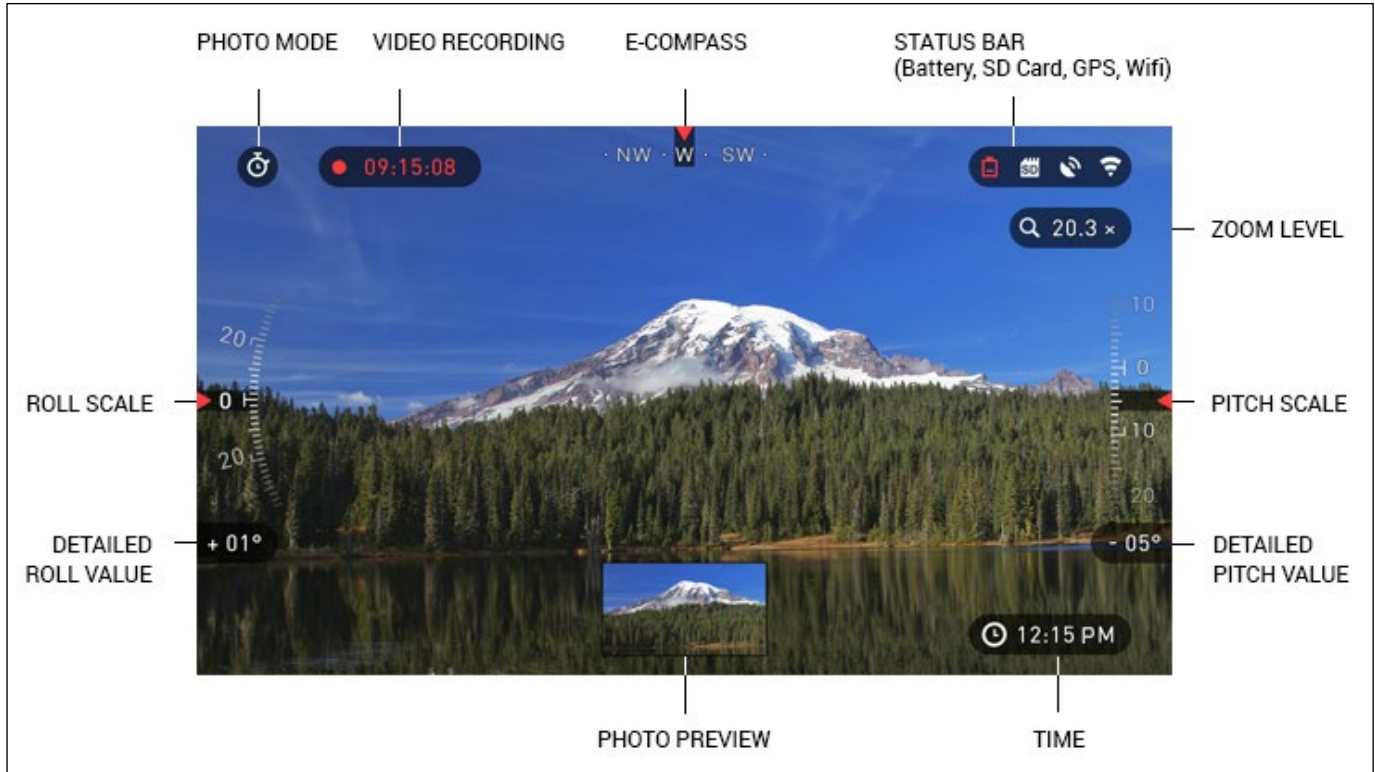
- **ERR** — an error was detected (you may need to restart the device or recalibrate the compass);
- **SMF** — your device is under Strong Magnetic Field (please, move away from the Magnetic Field);
- **UPD** — your firmware needs to be updated.

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 scope rifle cant based on internal 3D Gyroscope.

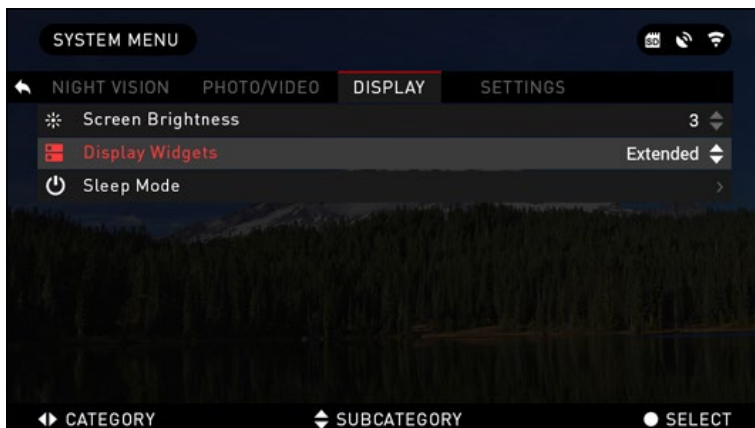
Pitch Scale scope rifle inclination based on internal 3D Gyroscope.

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.

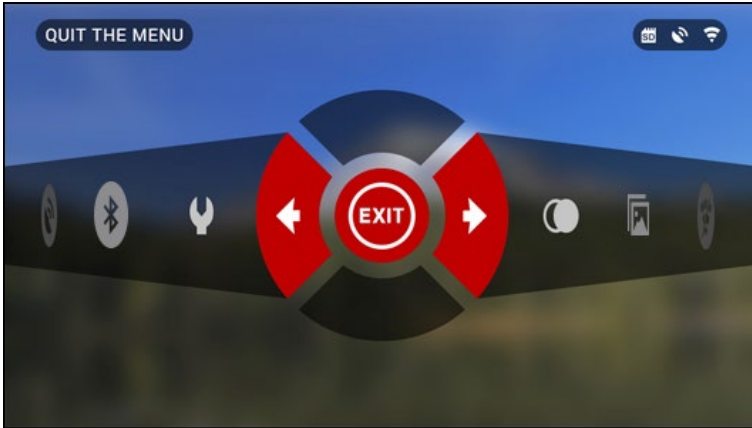
NOTE


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

→ MENU 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.



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



WiFi module.



GPS module.





BLUETOOTH module.



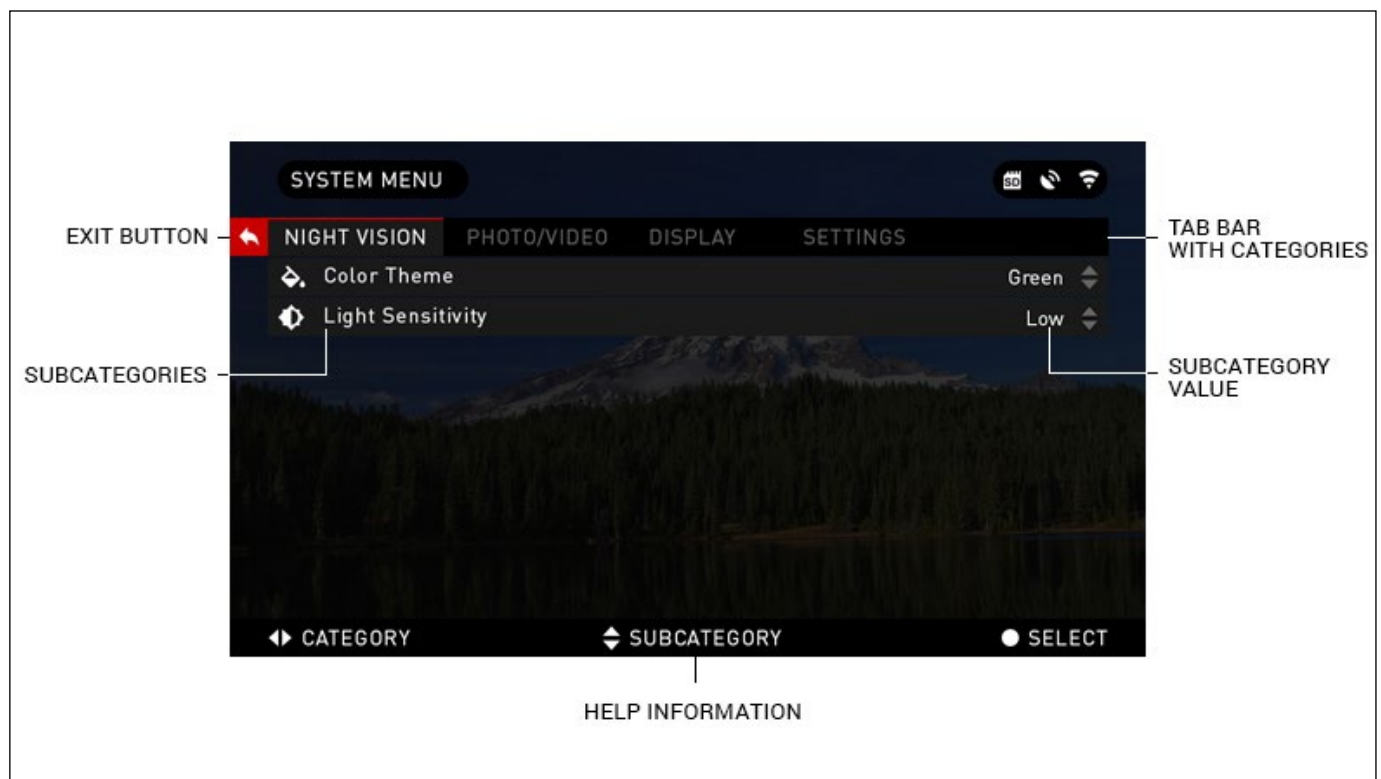
SYSTEM MENU
Allows for access to various system options and adjustments.


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.

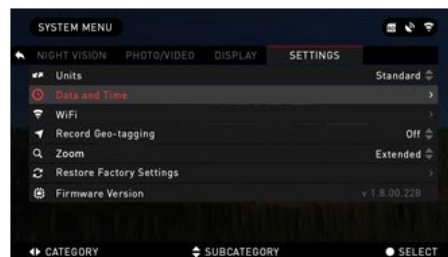
The System Menu consists of a Tab Bar at the top of the screen, list of subcategories in the center and Help Information at the bottom.



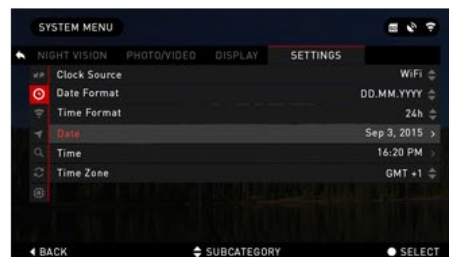
On the left side of the Tab Bar you will find the Exit (with arrow icon). Pressing it with CENTER button  will bring you back to the Homescreen.

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

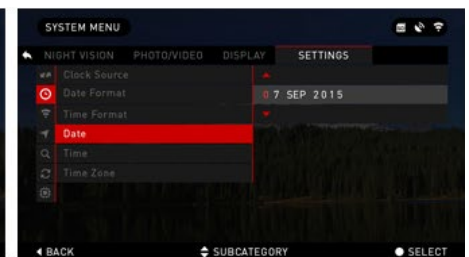
Each tab includes subcategories. To select a particular subcategory you should use the UP and DOWN buttons  and press CENTER button .



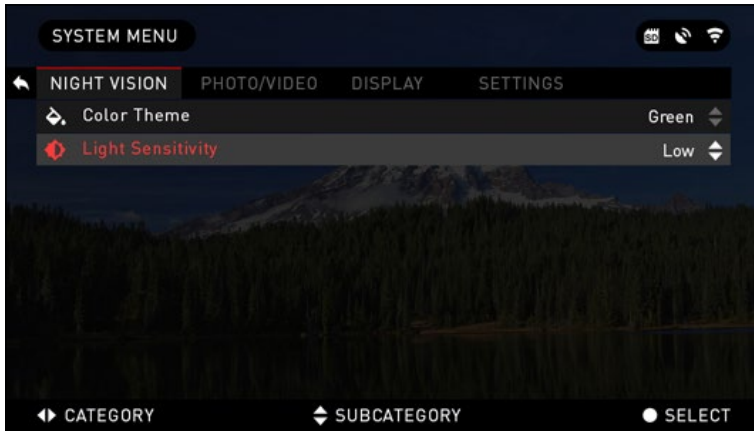
FIRST LEVEL




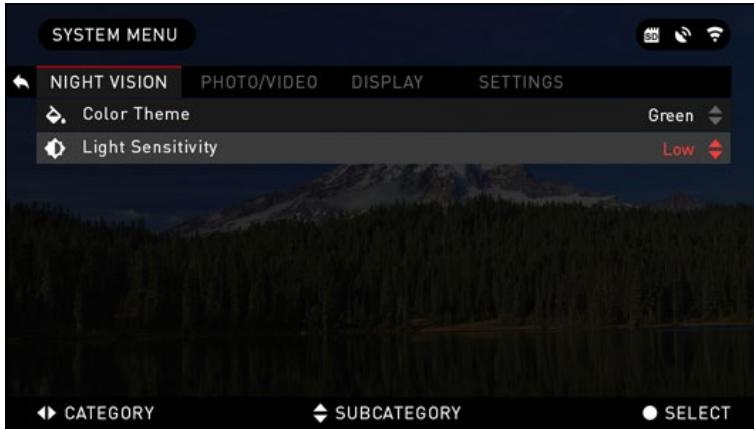
SECOND LEVEL




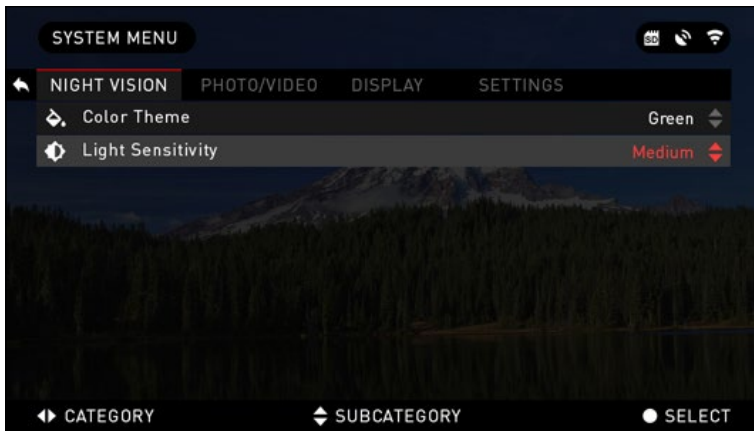
THIRD LEVEL





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.


SECTION III

FUNCTIONS


3.01. NIGHT VISION



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 scope's 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 .

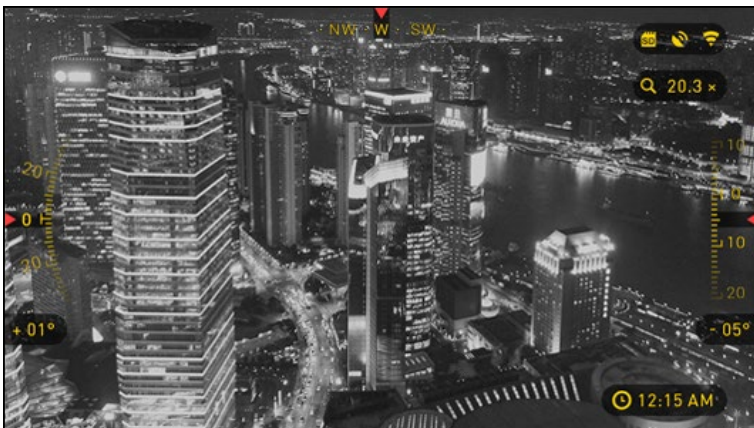
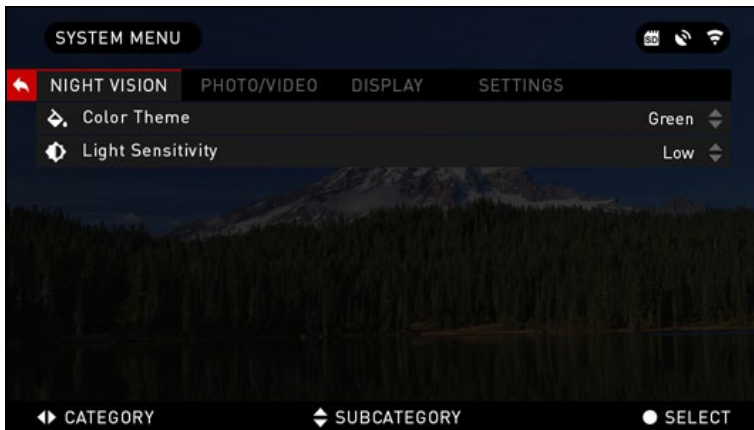
To switch between Green and Black&White modes follow the next few steps. Select Color Theme subcategory in Night Vision Tab by pressing UP and DOWN buttons .

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.



3.02. PHOTO AND VIDEO 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.

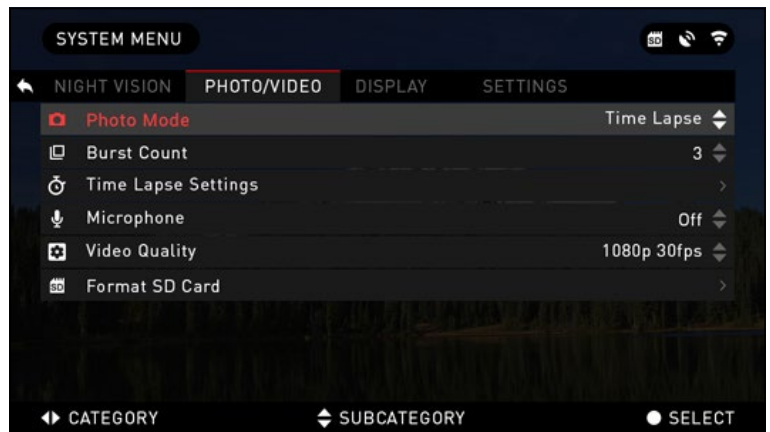
Depending on the the selected mode you will make one or several photos. You can choose from various photo modes in the System Menu.

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

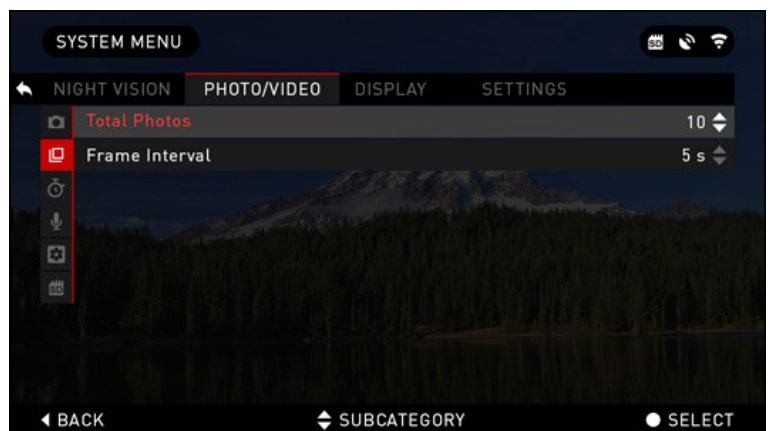
This default mode allows you to take one photo at a time.





TIME LAPSE

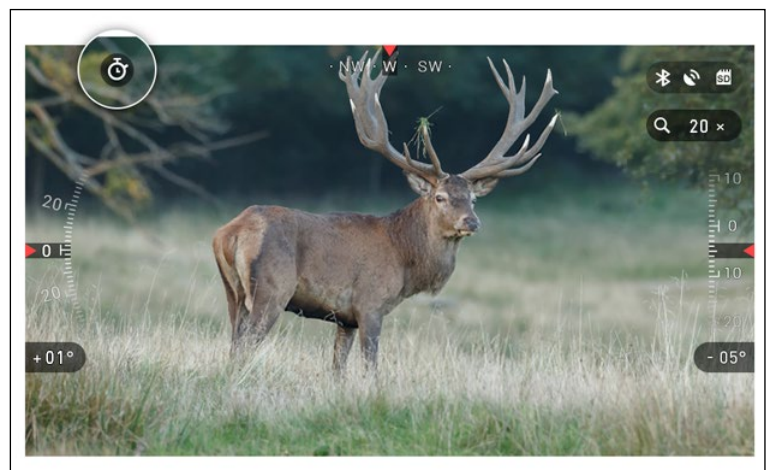
Time Lapse is where the device takes a sequence of images of a subject with an interval of time between each image.

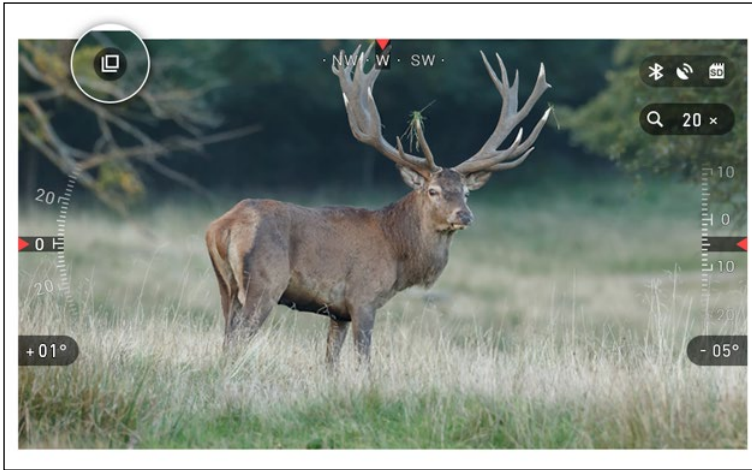
The interval and the number of photos taken can be changed in the System Menu.



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.



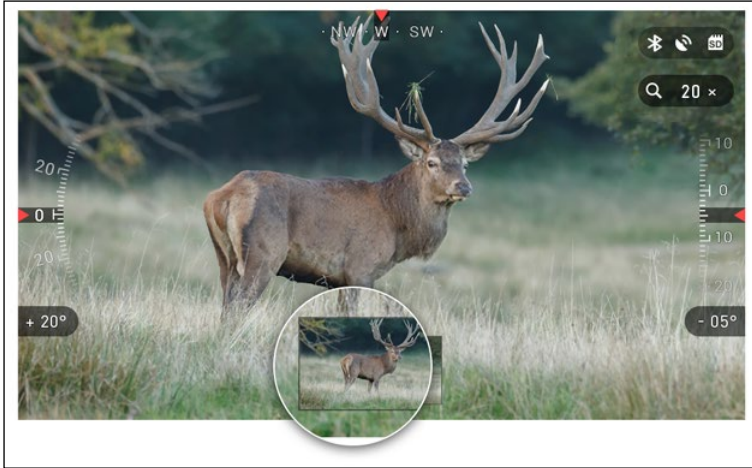


BURST



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.

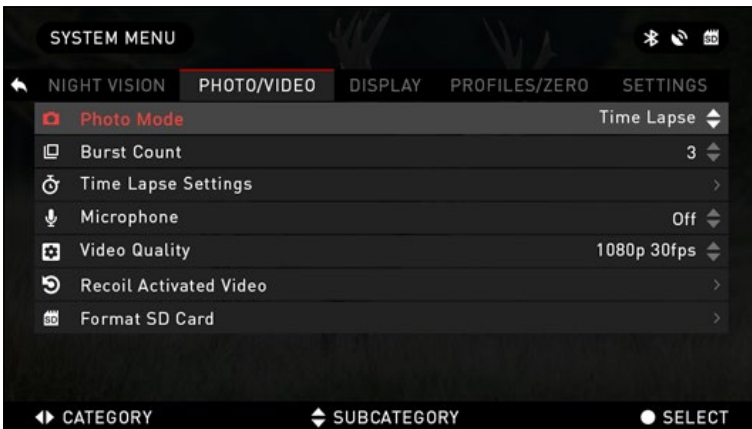


Regardless of which mode you are using the preview appears after a photograph is taken on the bottom of the screen for several seconds.



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


NOTE

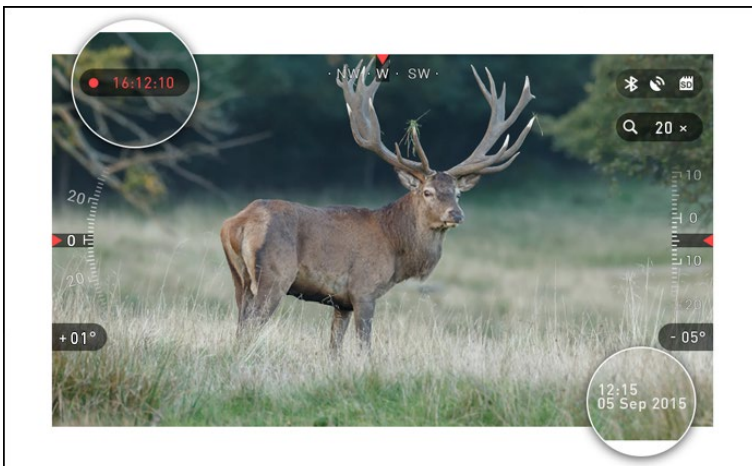
In extreme wind conditions we recommend turning the Microphone OFF.



You can turn on the microphone and switch the quality of the video in the System Settings (Photo/Video tab).

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.



You must have a microSD card inserted in the device for these features to work.

All files will be stored on the microSD card. Recorded videos can be found in the Gallery of the device.


While recording the Counter widget and Time Stamp appear.

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.

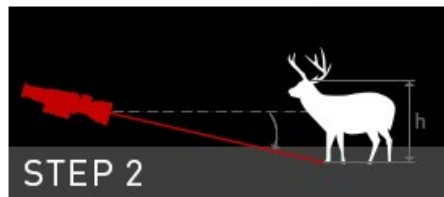
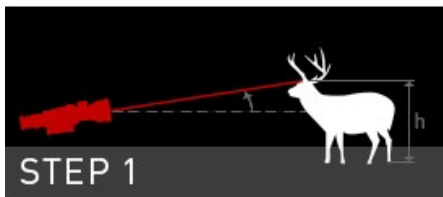
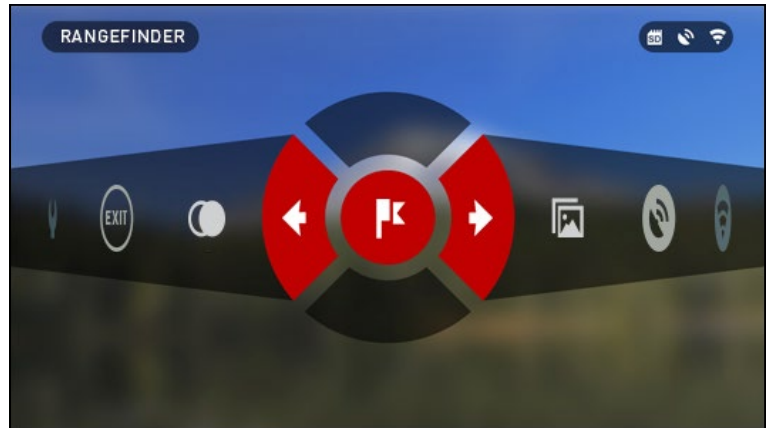
RANGEFINDER

To use select the Flag Icon from the Shortcut Carousel.

Pressing the CENTER button  will take you to the Main Screen of the Range-finder 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 scope to take the readings (it will take a number of readings so try to keep your scope 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.

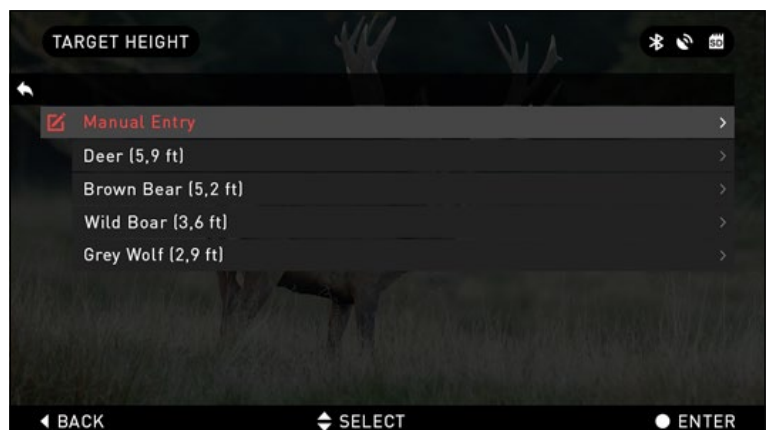


NOTE

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:

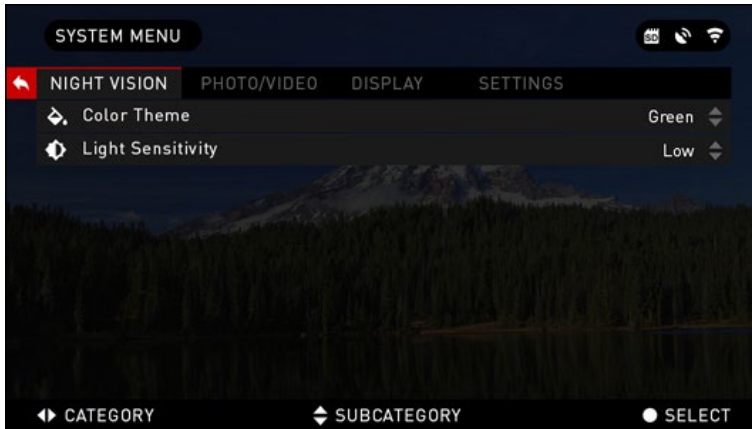
- press the RIGHT button  to enter the Menu;
- choose one of the presets or input the height manually;
- accept the height with CENTER button  and go back to the Main Screen.



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

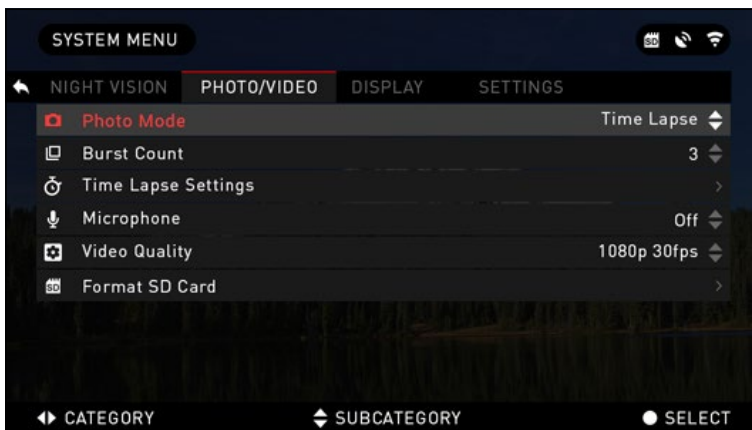


PHOTO MODE — includes Single (capture a single photo), Time Lapse (series of photos at timed intervals) and Burst (up to 10 photos in one second) modes.

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

4.03. DISPLAY

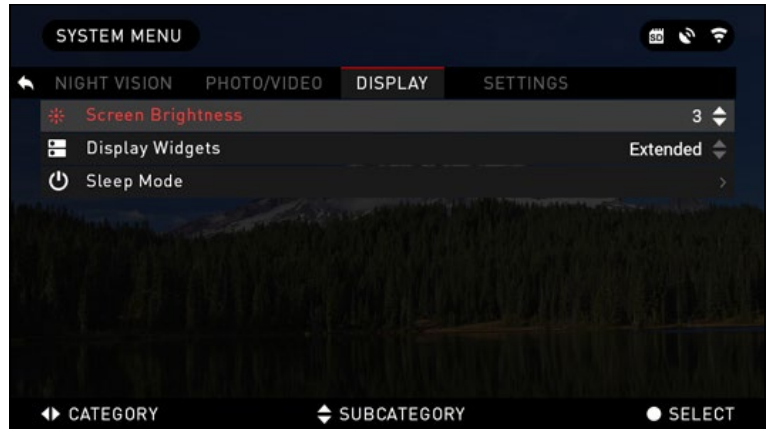
SCREEN BRIGHTNESS — 1-5 with 1 being the dimmest and 5 the brightest. It is recommended that you use the brightest setting during the day for optimal performance.

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

SLEEP MODE

Sleep mode is activated when your scope 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.

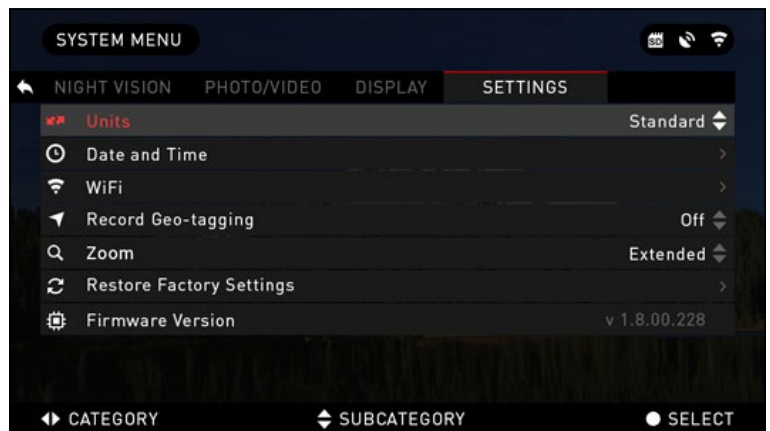


4.04. SETTINGS

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 scope. 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.

SECTION V

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 scope 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](#)



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