

ATL Series Infrared Imaging Observation Scope

User Manual(V1.0)

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1.Product Overview

The ATL series is a multi-functional infrared imaging observation scope that integrates search, observation, and target localization. Equipped with a high-sensitivity uncooled vanadium oxide detector, it can still produce clear thermal images at night and in adverse weather conditions. The device supports crosshair calibration and multiple parameter storage sets. The entire unit features a lightweight and compact design, is compatible with various interface brackets, and also includes photo taking, video recording, and Wi-Fi connectivity. It can be widely used in outdoor exploration, wilderness search and rescue, security patrol, and nature observation.



Fig 1-1 ATL Infrared Imaging Observation Scope

2. Performance Parameters

Table 1 Performance Parameters of the ATL Series Infrared Imaging Observation Scope.

Product Model		BH-ATL01-225	BH-ATL01-335	BH-ATL01-650
Optical Parameters	Resolution	256x192	384x288	640x512
	Pixel Pitch	12μm		
	Frame Rate	50HZ		
	Objective Lens	25mmF1.0	35mmF1.0	50mmF1.0
	Field of View	7°x 5.3°	7.5°x 5.6°	8.7°x 7°
	Detection Range (Human)	600m	850m	1200m
	Detection Range (Vehicle)	800m	1100m	1600m
	Digital Zoom	1x, 2x, 4x, 8x		
Focus Mode		Manual Handwheel Focus		
Display Features	Display Resolution	1024x768		
	Diopter Adjustment	-5SD~+5SD		
	Image Adjustment	Contrast / Brightness Adjustment		
	Image Modes	White Hot (W) / Green Hot (G) / Black Hot (B) / Red Hot(R) /Fused(F)		
Interfaces	External Power	USB Type-C, 5V		
	WIFI	2.4GHZ 802.11b/g		
Battery Life		≥6h, 1× 18500 Rechargeable Battery		

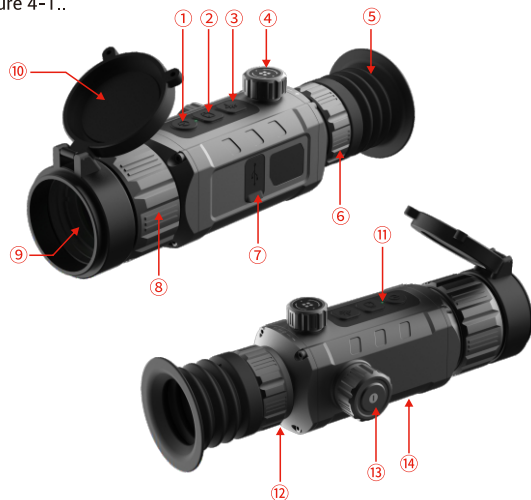
Physical Interface		Picatinny Rail
Appearance	Weight	≤550g
	Dimensions (with Eyecup)	≤220*74*71mm
Environmental Parameters	Shock Resistance	1000g, 3ms
	Operating Temperature	-20°C~+50°C
	Storage Temperature	-40°C~+70°C
	IP Rate	IP66

3. System Functions

- ▶ Image Calibration and Shutter Correction.
- ▶ Image Modes: White Hot (W) / Green Hot (G) / Black Hot (B) / Red Hot (R) / Fused (F).
- ▶ Image Digital Zoom: 1x, 2x, 4x, 8x.
- ▶ Electronic Compass.
- ▶ Picture-in-Picture Function.
- ▶ Photo Capture and Video Recording.
- ▶ Multi-language Support.
- ▶ Real-time Clock.
- ▶ WiFi Control.
- ▶ Type-C interface for Power Supply and Data Transmission.
- ▶ Reticle Zeroing Calibration.

4.Product components

The structural components of the complete ATL unit are shown in Figure 4-1..



① Power button	② Photo button	③ Picture-in-Picture button	④ Rotary knob
⑤ Eyecup	⑥ Eyepiece (handwheel)	⑦ Type-C interface	⑧ Focusing handwheel
⑨ Objective lens	⑩ Lens cap	⑪ Status indicator light	⑫ Microphone
⑬ Battery cover	⑭ Base interface		

Fig4-1 Main components of the ATL product

5.Operation Functions

The key operation functions are shown in Table 2.

NO.	Dial/Button	Function
1	Power Button	Long press: Press and hold for 3 seconds to power on; when powered on, press and hold for 3 seconds to power off. Short press: In the main interface, performs shutter calibration; in the menu, returns to the main interface.
2	Photo Button	Short press to take photos. Long press to start/stop video recording.
3	Picture in Picture Button	On the main interface, short press to "Turn Picture-in-Picture Function On/Off", and long press to "Select Zero Calibration Data".
4	Knob Button Press	In the main interface, short press to enter the menu. In the menu, short press to confirm selection, long press to return to the previous menu. During reticle zeroing adjustment, short press to freeze the screen.
5	Knob Turn Left	Switch operation modes in the observation interface; move up when entering the menu.
6	Knob Turn Right	Switch digital zoom in the observation interface; move down when entering the menu.

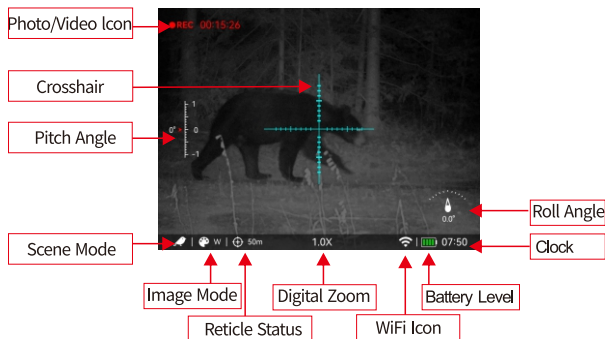


Fig 5-1 Main interface display description

Note: The "Scene Mode" corresponds to the "Image Detail Enhancement Level 1 to 5" option in the menu.

5.1 Quick Operations

- ▶ In the off state, press and hold the power button (1) for 3 seconds to power on;
- ▶ In the power-on state, press and hold the power button (1) for 3 seconds to power off;
- ▶ In the power-on state, briefly press the power button (1) to perform shutter calibration;
- ▶ Briefly press the shutter button (2) to take a picture;
- ▶ Press and hold the shutter button (2) to turn video recording on/off;
- ▶ Briefly press the picture-in-picture button (3) to turn picture-in-picture on/off;
- ▶ Press and hold the picture-in-picture button (3) to select zero calibration data;
- ▶ Rotate left Press the knob (4) to cycle through the image modes (White Hot (W) / Green Hot (G) / Black Hot (B) / Red Hot(R) /Fused(F);

- ▶ Turn the knob (4) to the right to cycle through the digital magnification (1x, 2x, 4x, 8x);
- ▶ Press the knob (4) briefly to enter the menu interface;
- ▶ Rotate the eyepiece handwheel (6) to view the clear image of the icon on the display screen;
- ▶ Rotate the focus knob (8) to adjust the focal length at different distances to make the image clear.

Note: When capturing photos or videos at 1x, 2x, 4x, or 8x zoom, the system saves all images at the 1x zoom level.

5.2 Menu

▶ Picture-in-Picture (PiP)

After selecting "Picture-in-Picture", short press the Knob Button to open the On/Off option. Rotate the rotary knob to select the desired option, then short press the knob button to save the setting and return to the main menu.

▶ OLED Brightness

Select "OLED Brightness" with the cursor, and press the rotary knob to display a submenu with 10 levels of brightness. Selecting any of these levels will change the screen brightness accordingly.

▶ Image Brightness

Select "Image Brightness" with the cursor, and press the rotary knob to display a submenu with 10 settings. Selecting any setting will change the image brightness accordingly.

▶ Contrast Ratio

Select "Contrast Ratio" with the cursor, and press the rotary knob to display a submenu with 10 settings. Selecting any setting will change the image contrast accordingly.

►Image Detail Boost

Select "Image Detail Boost" and short press the Rotary knob to access the submenu. There are 5 adjustable levels available. The higher the level, the more pronounced the image details. Corresponding icons on the main interface: 1 House, 2 Car, 3 Rain/Fog, 4 Bird, 5 Tree.

►Reticle Adjustment

After entering the calibration interface, align the center of the reticle with the aimed target point.Short press the Knob Button to freeze the image.Short press the Photo Button to move the cursor to the X and Y axis adjustment fields. Rotate the rotary knob to adjust the reticle position until it coincides with the point of impact.Then short press the Photo Button again to move the cursor to the distance setting field, and set the current zeroing distance.Short press the Photo Button to move to the unit setting field and select meters/ yards.After completing all settings, move the cursor to "Confirm" and short press the Rotary Knob Button to save and exit.The set distance will be used as the zero profile name and saved in the zero storage menu.If the cursor is not on the "Confirm" option, long press the Rotary Button to exit the calibration interface without saving the settings.

►Reticle Profiles

This function is used to select saved reticle zeroing calibration profiles.Up to 10 groups of zeroing data can be stored. Select the corresponding zero profile for the desired distance. After returning to the main interface, the reticle position represents the actual point of impact for that distance.

►Gyro

Press the rotary knob to enter the submenu. Rotate the knob to select On or Off. Short-press the knob to confirm your selection.Ranging unit selection.

►Reticle Type

Supports 10 reticle types, or select Off to disable the reticle.

►Reticle Color

Available options: Black, White, Gray, Red, Green.

►WiFi

Short press the Rotary Knob Button to open the On/Off option.Select On and short press the rotary knob button to confirm. The WiFi information will be displayed, including: WiFi name (SSID) WiFi password. The device will then automatically return to the main interface. A WiFi icon will appear in the lower-right corner, indicating WiFi is enabled. Open the mobile app and connect to the device by selecting the corresponding WiFi name and entering the password (default: 12345678). Short press the rotary knob button again to display "Please turn off WiFi!", where WiFi can be disabled.

►Image Adjustment

After selecting "Image Adjustment", short press the rotary knob button. A prompt will appear: "Please cover the lens and short press MENU to calibrate!"Short press the rotary knob button again to start calibration. A message "Calibration in progress" will appear. The calibration process takes approximately 30 seconds. After completion, "Calibration successful" will be displayed.Note: During calibration, do not open or touch the lens cover, as this may affect the calibration result.

►Date / Time

After selecting "Date / Time", short press the rotary knob button to enter the time setting interface. Short press the rotary knob button to switch between the following fields: Year–Month–Day–Hour–Minute–Second–Time Format Rotate the rotary knob left or right to adjust the values. After setting all parameters, move the cursor to the time format option (YY/MM/DD) and short press the rotary knob button to confirm. The time settings will be saved automatically.In the time setting interface, long press the rotary knob button or short press the power button to exit without saving.

►Language

After selecting "Language", short press the rotary knob button to enter the language selection interface. Rotate the rotary knob to select the desired

language, then short press the rotary button to save and exit.

►Format

After selecting "Format", short press the rotary knob button to display Cancel / Confirm options. Rotate the rotary knob to select Confirm, then short press the rotary knob button. A "Please wait" prompt will appear while the system clears stored data (such as photos and videos) from the memory card. After completion, the device will automatically return to the main menu.

►Default Setting

After selecting "Default Settings", short press the rotary button to display Cancel / Confirm options. Select Confirm and short press the rotary knob button to restore the device to factory default settings.

►Version

After selecting "Version", short press the rotary button to display the device software version information. Short press the rotary knob button again to return to the main menu.

6.Preventive Maintenance

6.1 Battery Replacement

- Before replacing the battery, it is recommended to power off the product.
- The battery level icon is displayed at the lower-right corner of the interface and is divided into 4 levels.
- When the battery icon turns red, it indicates that the battery level is below 25%. Please replace the battery or connect to an external power source promptly.
- Rotate the battery compartment cover counterclockwise to open it. Replace the battery, paying attention to the positive/negative polarity markings on the device body, and install the battery correctly.

Note:

This product is supplied with a dedicated charger. Do not use incompatible chargers to charge the battery. Pay attention to the correct polarity during charging.

The device supports built-in charging. Please power off the device before charging.

When using an external Type-C power supply, the power specifications must be 5V / $\geq 2A$. Do not use the power supply if it does not meet these requirements.

When charging while the device is powered on, the charging current is relatively low and the charging time will be longer. Charging while powered on is not recommended.

6.2 Product Cleaning and Maintenance

- Do not use cleaning products that may corrode the device body or scratch optical glass components.
- The device body can be wiped gently with a soft cloth lightly moistened with alcohol.

►For optical glass components, such as eyepiece and objective lenses, first blow off dust, then gently wipe using a charcoal pencil or a degreased cotton swab lightly moistened with non-methylated alcohol.

7.General Troubleshooting

If any abnormality cannot be resolved, please contact our company or the distributor as soon as possible. Unauthorized disassembly is strictly prohibited.

Table 3, general troubleshooting

Fault	Causes	Solution
Blurred Image	Objective lens focus does not match	Readjust the objective focus until the image becomes clear.
	Image adjustment not performed for a long time	Perform image correction
Blurred Vision	Diopter does not match	Adjust the eyepiece handwheel until the image is clear
Failure to Turn On	Battery installed incorrectly or battery power is low	Check battery installation or battery power.
	External power supply voltage is insufficient	Check the external power supply voltage

8.Safety Regulations

- Only use certified batteries. Do not discard used batteries casually or throw them into fire.
- Only use certified chargers to prevent damage to the product.
- Do not look directly at the sun or ultra-high-energy laser sources.
- Do not operate the product in environments with temperatures exceeding 60°C.
- Do not throw the product into fire.

9.Storage and Transportation

The instrument should be stored in an environment with a temperature range of -20°C to +55°C. The relative humidity must not exceed 85%. It is important to ensure that the storage conditions are good, with no harmful gases or impurities in the air that could potentially corrode the instrument. Avoid severe vibration and shock during transportation, and use the manufacturer's original packaging to ensure that the equipment is securely fixed in the package.

10.After-sales service

- 1.The main unit of the product is covered by a free warranty for twelve (12) months from the date of purchase.
- 2.Accessories are covered by a free warranty for three (3) months from the date of purchase.
- 3.Products repaired within the warranty period will continue to be covered by the remaining warranty duration.
- 4.Customers are responsible for the shipping and handling costs incurred when sending the product for repair. Our company will bear the costs associated with repairing the product and shipping it back to the user.
- 5.For products outside the warranty period, our company will charge a reasonable repair fee based on applicable standards.
- 6.Damage resulting from human factors or improper use is not covered under the warranty.
- 7.Unauthorized disassembly of the product without our company's permission is not covered under the warranty.

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