

PTZ-60

Operation Manual

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Fundamental Performance



PTZ60 (as shown in the above picture) is an internal video inspection device suitable for container-like device with small entrance and large interior space such as reactor, boiler, vessel, box, box girder bridge etc.. Equipped with big touch screen, high brightness, 1080 high-resolution and 5m telescopic pole, it can control any angle rotation, brightness adjustment, focusing, photo taking, recording, etc. through main units or remote control.

○ **Portability**

To meet various working situations, it can be equipped with modules such as main unit, telescopic pole, lens, auxiliary light, etc. according to actual detective needs. The modular of the battery/lens/main unit is also convenient for daily maintenance.

○ **Application**

Suitable for interior video inspection of container-like device with small entrance and big interior space such as reactor, boiler, vessel, box, box girder bridge, etc..

Construction and Principle

2.1 Main Components

High-resolution main unit display, telescopic pole, integrated lens module, battery, charger, safety case and remote control constitute the device.

2.2 Screen Instructions



- A-Display Screen B-LED Dimming Button C-Lens Telephoto Button
D-LED Brightening Button E-Lens Close Focus Button
F-Power On/Off Button G-Menu Button H-Lens Counterclockwise
Button I-Lens Flip Down Button J-Lens Clockwise Button
K-Lens Flip Up Button L-SD Card Slot

LED Brightening Button: Press and hold this button to brighten the lens.

LED Dimming Button: Press and hold this button to dim the lens.

Power On/Off Button: Press and hold this button to turn on the device. Tap this button or blank space of screen to exit the menu mode with back function to the previous menu level. Press and hold this button 3~5 seconds to turn off the device.

Menu Button: Press this button to bring up screen menu.

Lens Flip Up Button: Press this button to flip up the lens in the image mode, while move the cursor bar up in the menu mode.

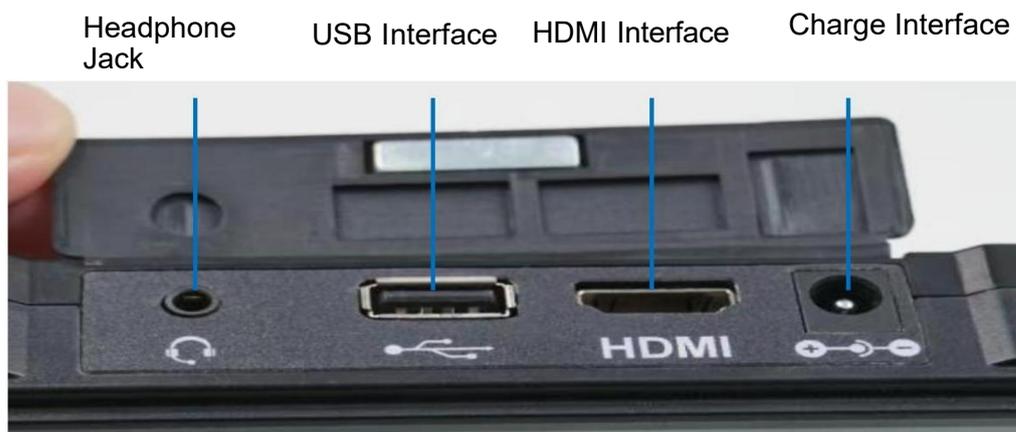
Lens Flip Down Button: Press this button to flip down the lens in the image mode, while move the cursor down in the menu mode.

Lens Counterclockwise Button: Press this button to achieve lens counterclockwise rotation in the image mode, while move the cursor bar to the left in the menu mode.

Lens Clockwise Button: Press this button to achieve lens clockwise rotation in the image mode, while move the cursor bar to the right in the menu mode. It can be used for the switch between the image parameter submenu and the system parameter

SD Card Slot: Insert the SD card. (Please format the 64G memory card on the main unit before the first use to prevent the card error.)

2.3 Display Interface



Jack: Customized extension feature, through which can monitor the voice collected by the detection probe.

USB Interface: Can be used to connect the controller and the computer, through which can output the information inside the controller to the outer computer.

Remote control function introduction



A-LCD

B-Joystick

C-Power on/ off button (After turning on the remote control unit, the keys on the main unit of PTZ60 are not available.)

D-Channel 1 (non-available)

E-Channel 2 (non-available)

F-Flip and rotate switching button for the lens

G-Focus and zoom switching button for the lens

H-Light switching button

I-Reset button

Channel 3 (button F): Press button F, and then to control the lens flip and rotation by joystick.

Channel 4(button G): Press button G, push the joystick back and forth to adjust the lens

zoom, push the joystick left and right to automatically switch the MF state to realize manually make the lens fine-tuning focus.

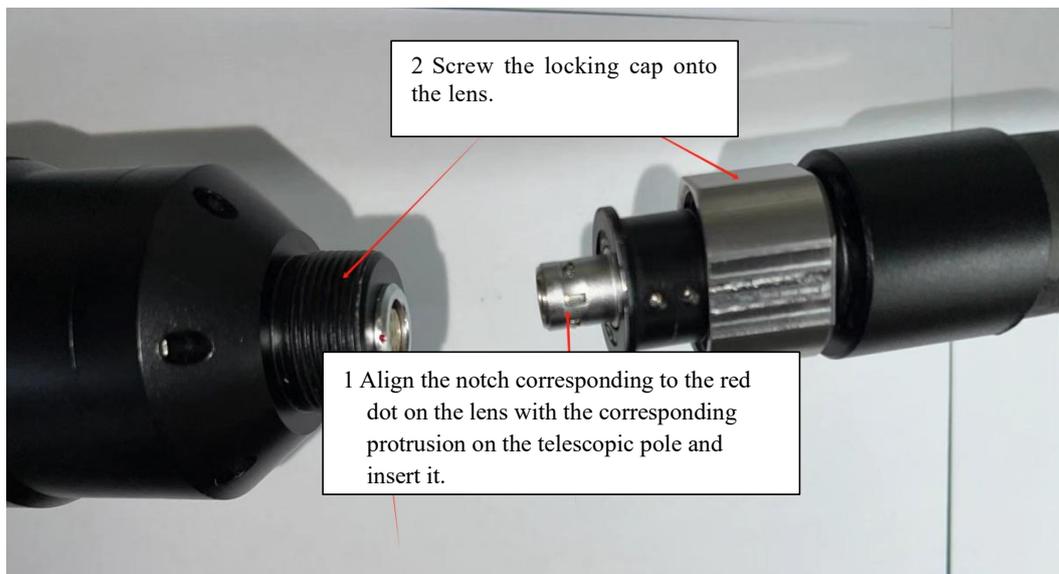
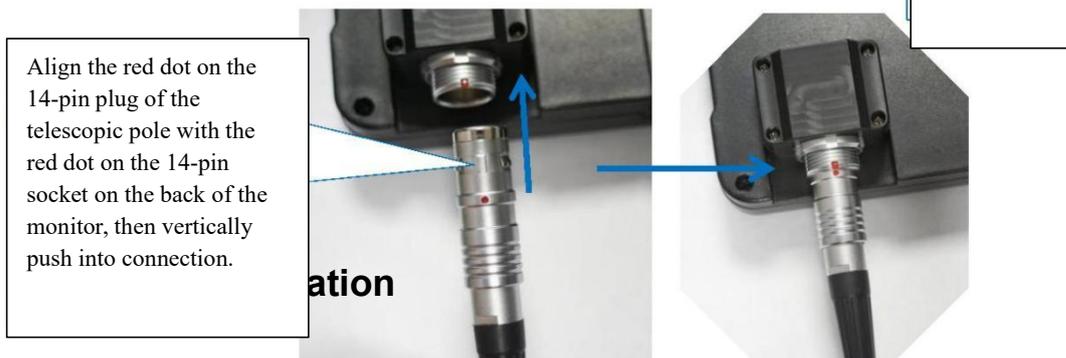
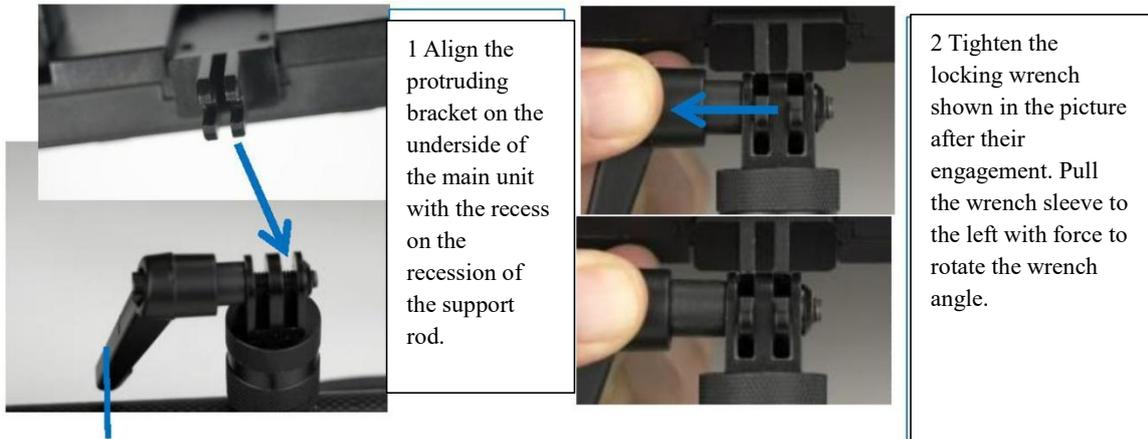
Channel 5 (button H): Press the light switch button and push the joystick back and forth to control the brightness of the LEDs to increase or decrease (1-10 levels).

Channel 6 (button I) : Press button I, the lens is directly reset vertically to the original state.

(Note: the numbers shown on the screen of the remote control, respectively, represent the local voltage display (upper) host voltage display (lower))

Installation and Debugging

3.1 Screen Installation



The installed lens



3.3 Battery Installation



Simply snap the battery into the socket in reverse, and lift the black section on top of the battery to take it out.

Operation

4.1 Inspection Operation

1 Install and tighten the lens before use. Turn on the button at the back of the battery, the device will be powered on, the lens will reset, and the LED on the lens will flash. (Kindly reminder: please turn off the boat button on the batter after finishing use the system, or the LED on the lens will flash even though the system was shut down.)

2 Confirm SD card was installed, press and hold the power button to turn on the main unit.

3 Observe the object.

a Adjust the brightness of the LED light according to the need after finding the observation point;

b Insert the lens to reach the observation position inside the object;

c Control the rotation/flip/focus of the lens and adjust the brightness of the lens to achieve the best effect of the real-time image;

d After observation position adjusted, take photos/record and store the inspection results by using the device's function buttons.

4 Safely exit the object and turn off the screen. At this time, the lens will reset and the LED on the lens will flash. Disconnect the power supply after completed reset. And to keep the whole system in the safety case for safekeeping.

4.2 Menu Operation

After the device is turned on, it automatically enters the video screen, and the screen is full screen. The lower right corner shows the brightness level of the camera light.



Click any point on the screen to bring up the touch screen button interface. After about 8 seconds of no operation, the button interface will automatically hide.



Negative: Click the icon  and the image will enter negative state;



Grid: When the menu is set to "Ruler 1", click the icon  to turn on or off the XY cross ruler for comparative measurement;



XY cross grid

When the menu is set to "Ruler 2", click the icon  to turn on or off the circular ruler; (Menu settings will be explained in detail in the menu introduction later.)



Ring grid

Split screen switching: **this function is not available on PTZ60.**

Image zoom: Click the icon  to zoom in on the image. The real-time image can be zoomed in up to 8 times.



Take a photo: Click the icon  to take a photo. Once the photo is taken successfully, the photo taking instructions will be displayed, as shown in the figure.



Recording: Click the icon  to start recording. During recording, the recording indicator flashes and the recording time is displayed. Touch the screen or press the icon again to exit the recording state.



Playback: Click the icon  to enter the picture and video playback interface.

Click  or  icon to switch between the picture preview interface and the video preview interface. Click the vertical blue scroll bar on the right side or the up and down buttons to turn pages in the interface. Click the picture and video directly or press the left and right buttons to jump left and right to select the file.



Image Files

Video Files

Double-click the image/video or press the OK button to browse a single file.

Click  or  icon or the up and down buttons to switch between previous

and next files. Click the icon  to zoom in or out pictures. Click the video to automatically start playing. Click the icon , which changes to , and the video will pause. Click the progress bar below the video to fast forward or rewind. Click the icon  or short-press the power button to exit the video.

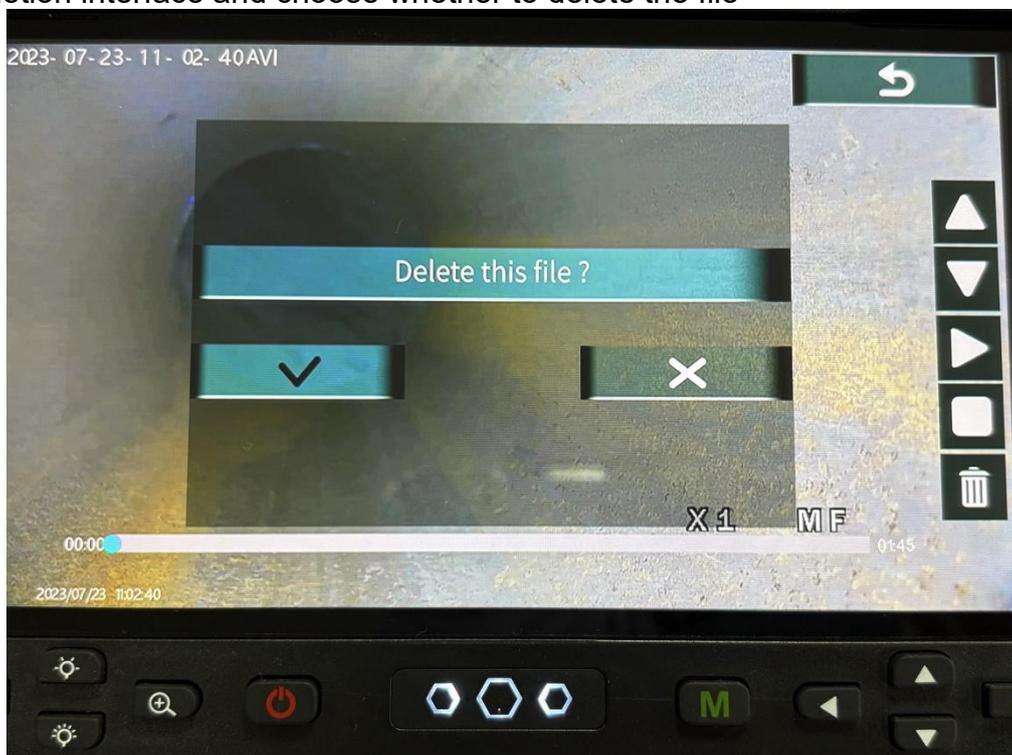


Image preview interface



Video preview interface

When previewing image files and video files, click the icon  to enter the deletion interface and choose whether to delete the file



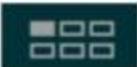
Settings: Click the icon  or menu button to enter the menu interface.



Video Settings

After entering the menu interface, click the corresponding icon at the top of

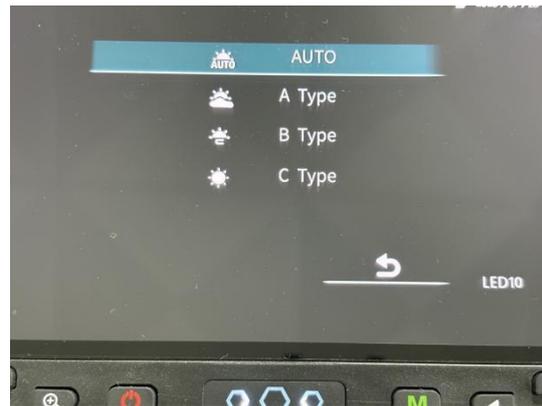
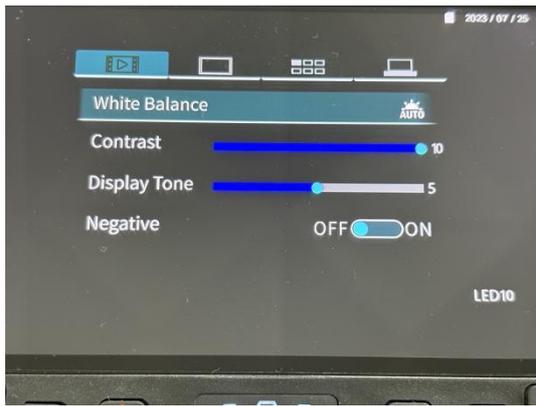
the screen to enter the video settings  /screen settings  /application

settings  /system settings respectively.

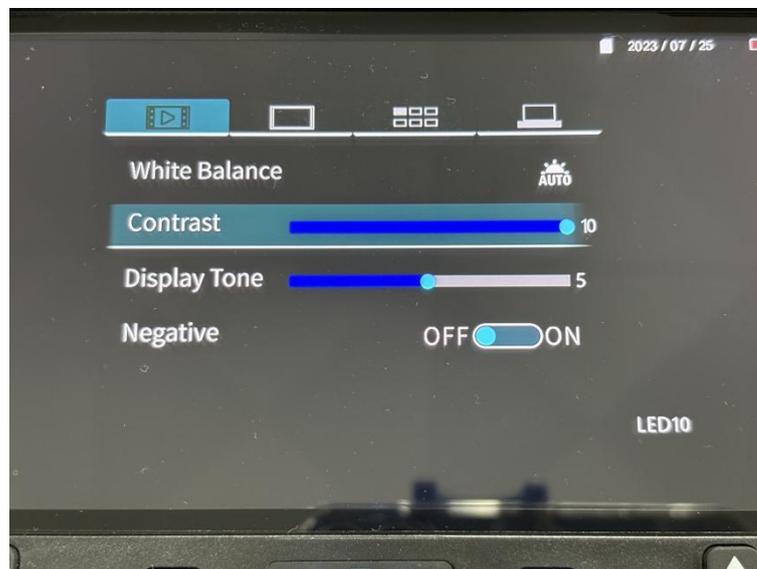
White balance: Make the camera image accurately reflect the color of the object, including automatic, cloudy, incandescent, daylight, etc. Double-click the "White Balance" light bar to enter the submenu, double-click the

parameter to be selected or click the icon  to return to the previous menu.

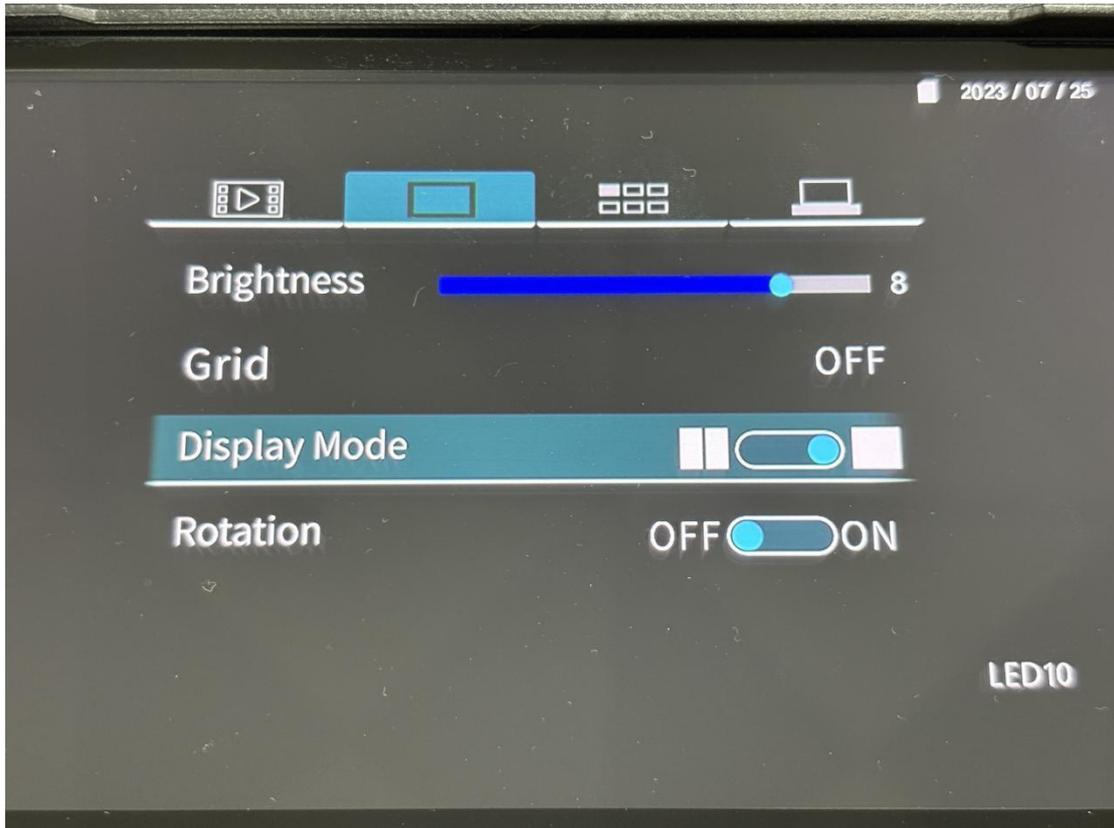
You can also press the Up/Down key to select the main menu, select the corresponding menu will automatically enter the sub-menu, and then press the Up/Down key to select the relevant function. For parameter selection, after selecting the required parameters, click the parameter again to enter the parameter setting. Short press the on/off button can exit.



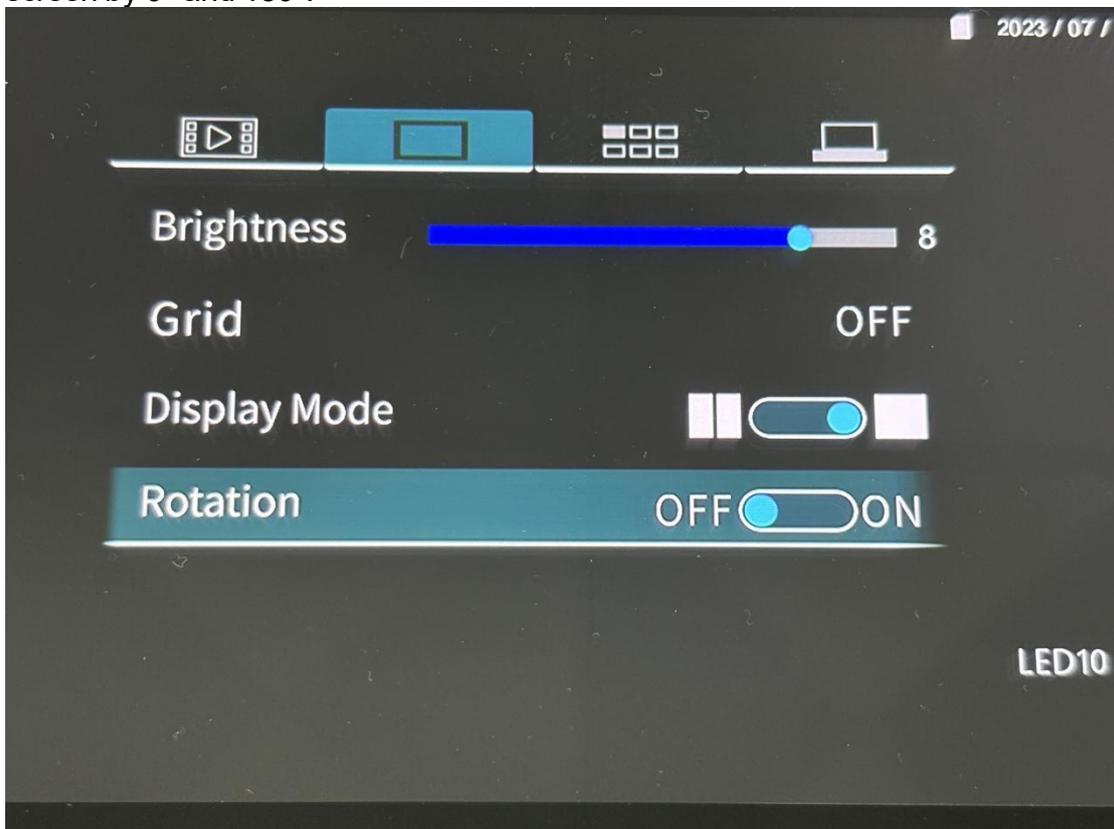
Contrast: Click the bar cursor or press the left or right button to adjust the contrast. Users can choose according to actual needs. The setting method is the same as above.



Display Mode: Click the left or right side of the  icon in the picture to select the display mode, users can choose the display mode according to the actual demand, the setting method is the same as above. (**this function is not available on PTZ60.**)

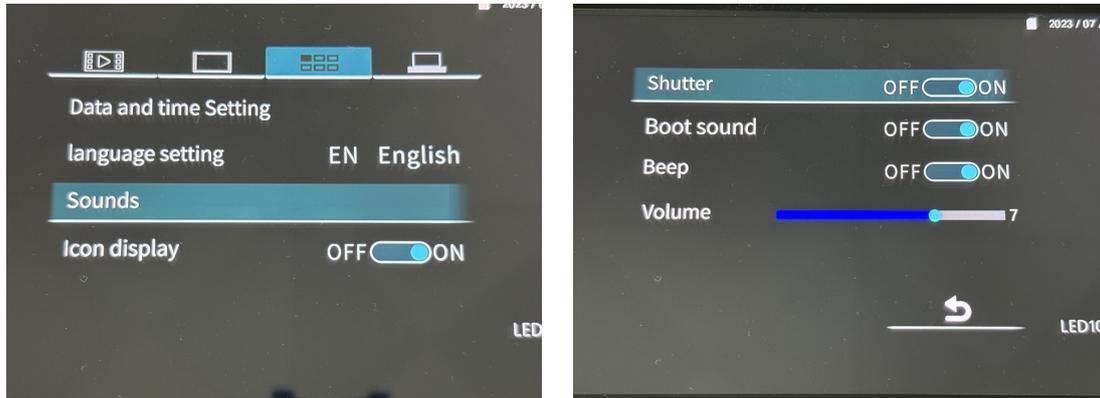


Screen Rotation: Click the left or right side of the  icon in the picture to rotate the screen by 0° and 180°.

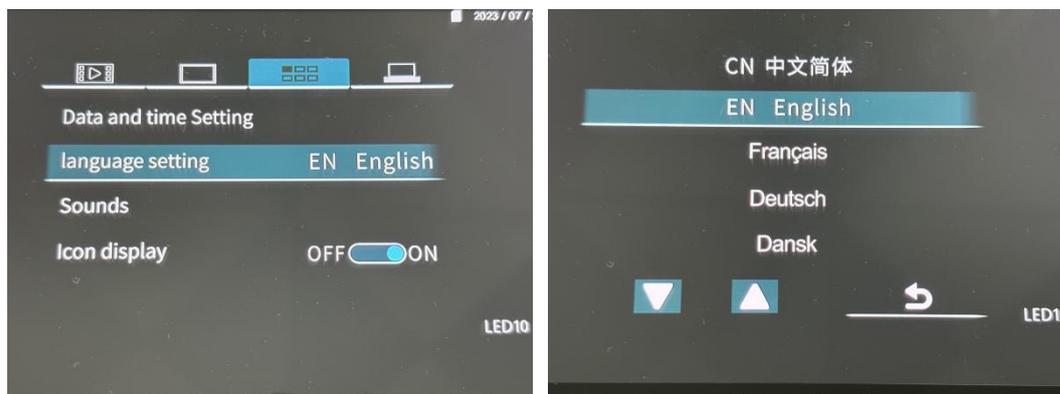


Application setting

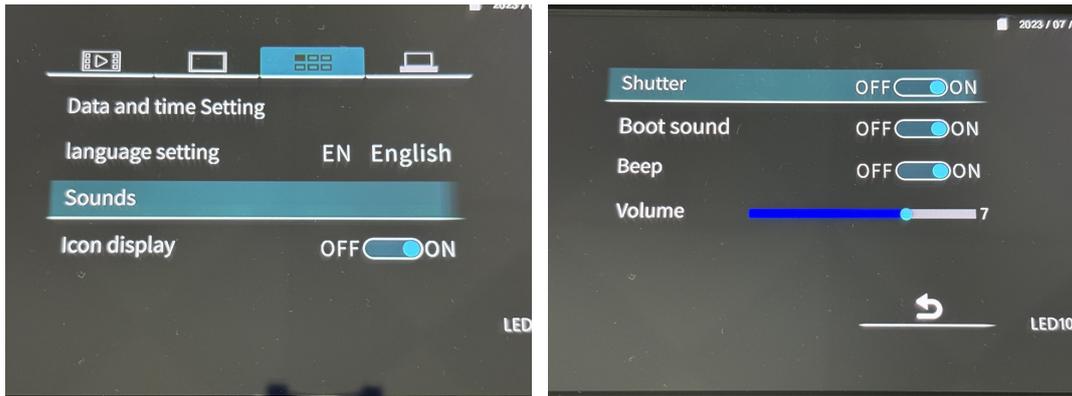
Date Setting: Click the date setting cursor to enter the date and time sub-menu, the year/month/day/hour/minute adjustment selection, when the cursor selects the parameter, click the  or  icon or up or down key to adjust the parameter, adjustment process will be automatically saved, tap the return button to complete the settings. Users can choose according to the actual needs, the setting method is the same as above.



Language Setting: This product supports Simplified Chinese, English and other multi-language selection, users can set it up in the same way as above.



Sound Setting: Users can choose whether to turn on or not according to actual needs, the method is the same as above.



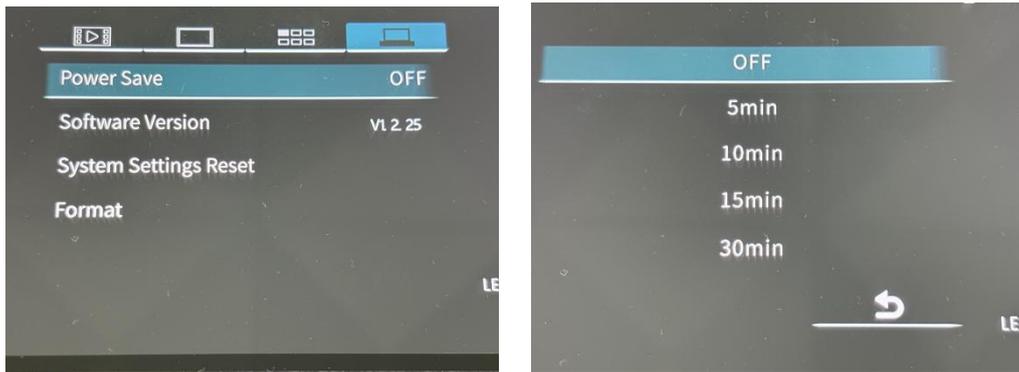
Icon display: When the icon display status is turned on, the SD card logo, date and battery level will be displayed on the screen under the live image status.

Users can choose according to the actual needs, the setting method is the same as above.

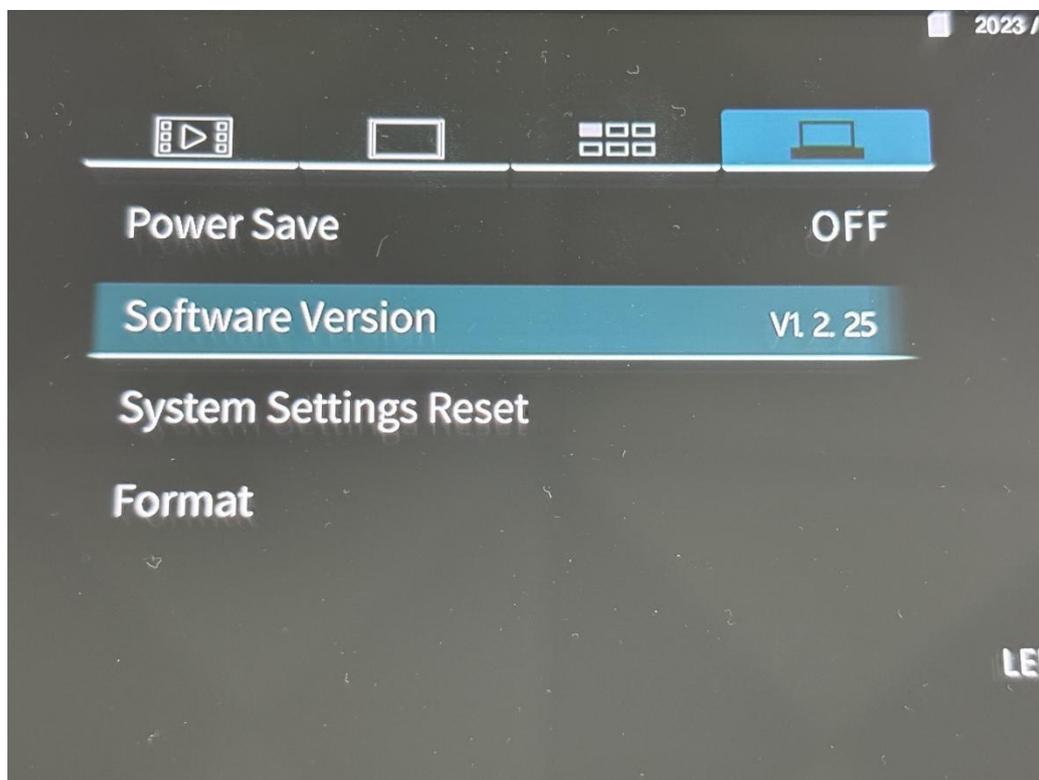


System setting

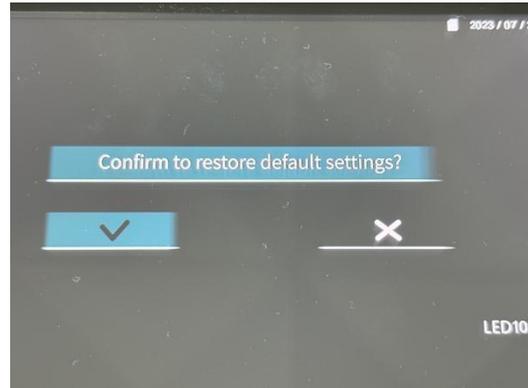
Automatic shutdown: Users can set the length of the automatic shutdown time according to the actual needs, when the equipment in the set time, without any operation, the equipment will automatically shut down.



Software Version: Software version is fixed and used to display the version status of the software. The device can be upgraded via SD



Setting Restore: Users can choose whether to restore the factory settings of the device or not according to their needs, in the same way as above. (This factory setting is not used unless necessary, and when selected, the system will automatically revert to the most original version.)



Format: Users can choose whether to format the memory card or not according to their needs, the method is the same as above.

Maintenance and Care Methods

1. When using the system for the first time, please set the current date and time. This is because the storage files for video and photographs are named after the current time of the device.
2. Please check the instrument before going to the testing site to confirm whether the instrument can record data correctly to avoid losses such as duplication of efforts or invalid data. Note: Neither the company nor the distributor will be liable for any loss caused by this.
3. Try to avoid strong impacts on the lens and monitor in daily use.
4. During installation, the communication data interface is not rotatable after insertion.

Safety Knowledge and Relevant Precautions

1. Do not use at temperatures outside the range of $-25^{\circ}\text{C}\sim 55^{\circ}\text{C}$.
2. Do not use or leave the equipment in a corrosive environment.
3. Do not expose the device to rain, and do not leave the lens in liquid for long time, except for waterproof lens.
4. Do not place the device near objects with strong magnetic.

5. Do not use in an environment with excessive smoke and dust.
6. Please keep the host clean and do not scratch the screen.
7. Do not attempt to dismantle the device by yourself. Repair work should only be carried out by factory authorised personnel.
8. When taking photos and videos, make sure that the LEDs are appropriately bright and that the probe end is stable and not shaking.
9. Please check that the instrument has batteries installed and that the batteries are charged before using the equipment.
10. During use, users should not look directly at the lens light to avoid burning their eyes.
11. Turn off the power when the test work is finished.
12. Always use the charger provided with the device when charging.

Storage Requirements

1. After using the equipment, do not soak and rinse the equipment, use a soft cloth to clean the lens and the integrated instrument case, and then put it into the equipment box; do not let the lens and the monitor be squeezed, collision or impact, resulting in unnecessary damage; the equipment is not used for a long time, it is recommended to take out the batteries, so as to avoid damage to the batteries.
2. Protect against shocks, severe vibrations and humidity during transport and avoid splashing water droplets on the machine.
3. Storage environment: Temperature $-25^{\circ}\text{C}\sim 55^{\circ}\text{C}$; Relative humidity not more than 85%; No corrosive gas, well ventilated. (Failure to do so may result in battery leakage, overheating or explosion, causing fire, burns or other injuries.)

When the battery is not used for a long period of time, it is recommended to charge it once a month in case of emergency.

3.