



GM Series Industrial Videoscope

Operation Manual



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- Please read this operation manual carefully before using the product.
 - Please keep it in a safe place for future reference.

Thanks for purchasing our G-Mini series videoscope, if it is your first time to use the videoscope, please read this operation manual carefully in order to better and safer to use this product.

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Product introduction



G-Mini series industrial videoscope (as shown above) is a new nondestructive testing instrument which integrates the technology of optics, electronic technique, precision machinery and photomicrography.

○Optics inspection

The controller is equipped with high brightness LCD display, an ultra-small camera and the video signal is processed and amplified to clearly display the detection results on the 4.3 inches LCD display. It has high definition, high reliability, high stability, excellent field detection capability.

○Precision machinery

The bending part is made up of machinery parts, manual operation, 360°all-way articulation, at the same time it has the function of self-locking, and easy to operate with one hand.

○Applications

This product is suitable for video inspection in small space, and can visually detect foreign objects, blockages and defects inside automotive engine(cylinder, piston, valve and other carbon deposit detection) hydraulic, pneumatic parts, steel pipes, castings and containers; it can also be used for anti-terrorism, search and other small entrance peep inspection.

○Product features

High pixels: High resolution camera provides better picture quality; High sensitivity CMOS sensor ensures the observation in low light conditions.

Camera: Adopt high brightness LED source, 720P high pixel CMOS.

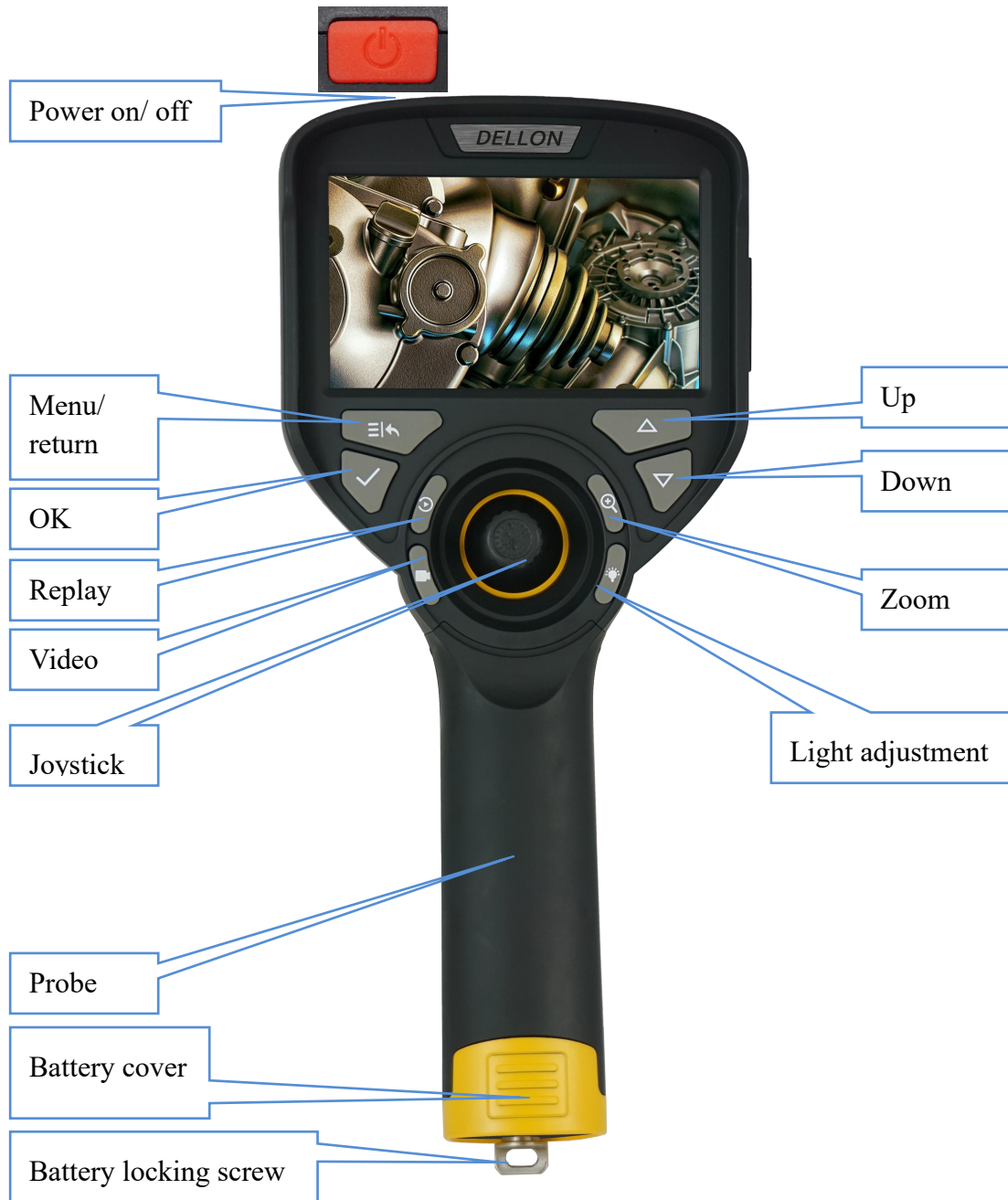
Storage display: With the function of storing data such as photography and video, equipped with 32GB SD card.

Replaceable Probe: Interchangeability design of controller and probe, the 3.9mm/ 6.2mm probe with different diameters and lengths can be quickly replaced to apply to more working conditions.

Touch screen key and function key: Touch screen and key dual operation control system, can quickly achieve recording, file access, parameter setting, etc.

Hardware introduction

Front of controller



Power on/off button: Click the button to power on, press and hold the button for 2 seconds to power off.

Menu/return button: Press menu/return button to switch between the real-time screen and the menu mode; In menu mode, press this key to return to the previous interface.

Ok button: When selecting menu options, press this button to confirm.

Replay button: Switch between real-time screen and file preview, exit the current state in picture view/ video playback state. Return to the preview list, and return to

the real-time screen state in the preview list state.

Video button: In the real-time picture state, press this button to start recording, and to press it again to stop recording.

Joystick: Control the bending part moving, achieving comprehensive inspection.

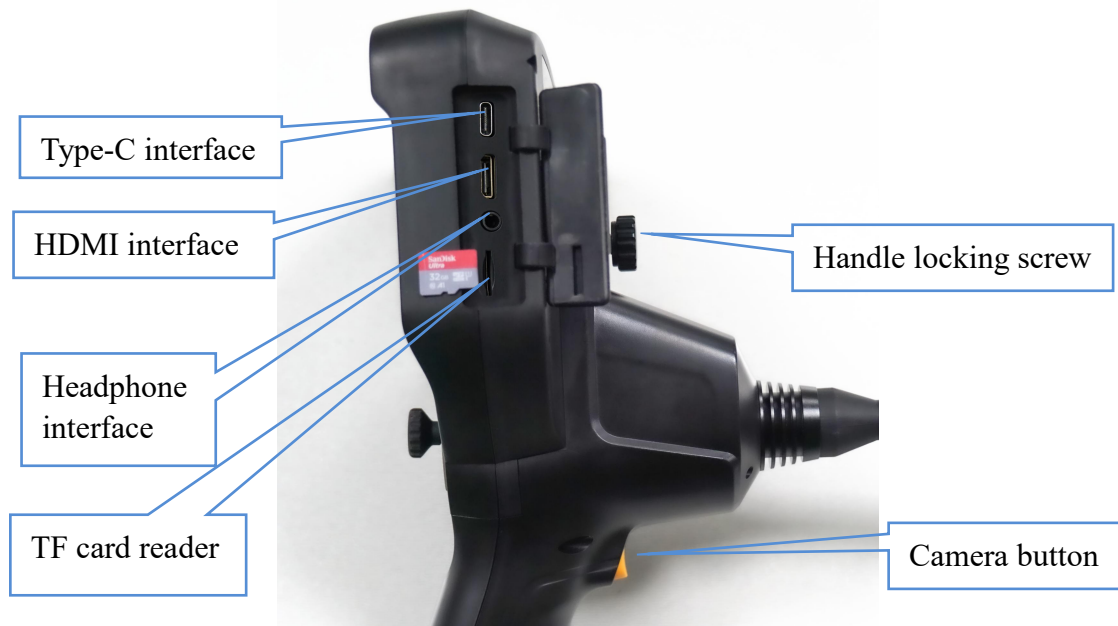
Up button: Press this key to move the cursor forward during menu setting.

Down button: Press this key to move the cursor backward during menu setting.

Zoom button: Image cycle zoom.

Light adjustment button: 5 levels of lens light gradually from dark to bright cycle adjustment.

Side of the controller



Type-C interface: This interface is a charging port, can also be a data communication port. This interface can connect to the computer, browse, access the video and picture files in the TF card.

HDMI interface: Through the HDMI interface, the image detected by videoscope camera can be displayed on the external monitor in real time.

Note: When the external monitor is connected, just connect the video output port and the external monitor with the video cable to display the real-time picture from the probe on the monitor. At this time, the screen of videoscope is black.

Headphone interface: This is the audio output interface.

TF card slot: This is the TF card installation interface for device storage expansion.

Camera button: In real-time mode, press this button to take picture and store it at the same time.

Insertion cable and lens



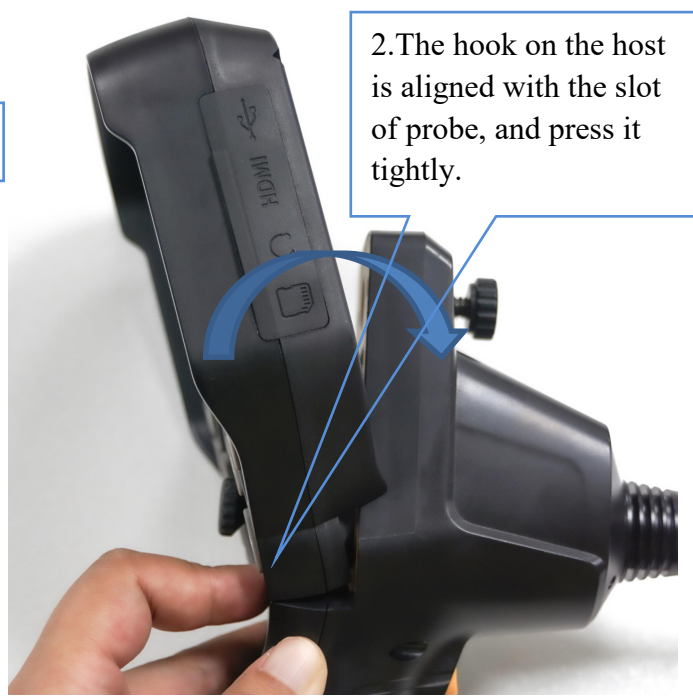
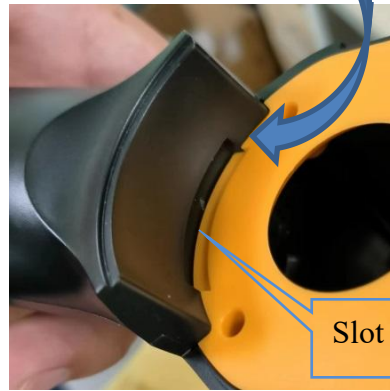
Insertion cable: IP67 waterproof.

Bending part: It is controlled by joystick, 4-way articulation.

Equipment assembly

1. Assemble the controller and probe

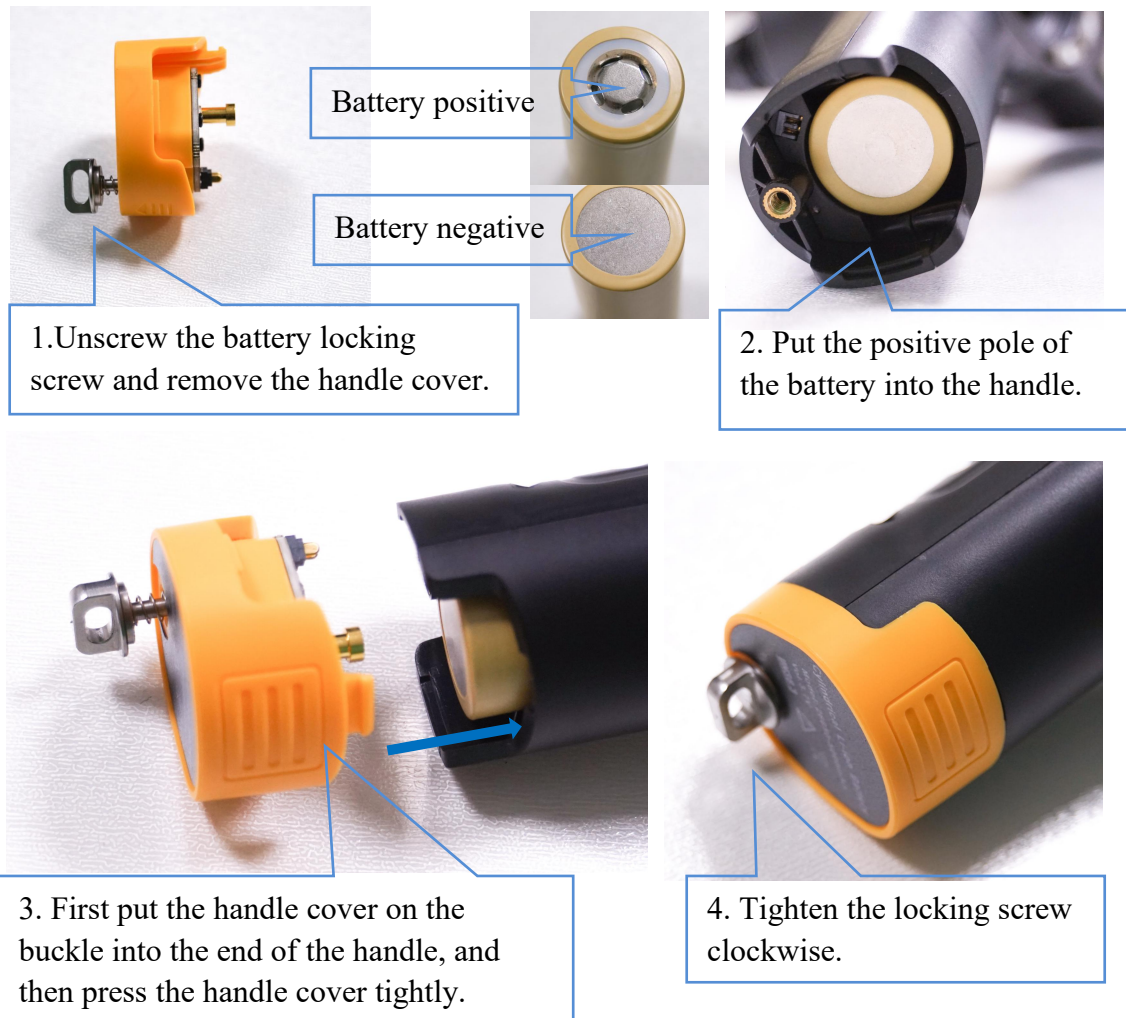




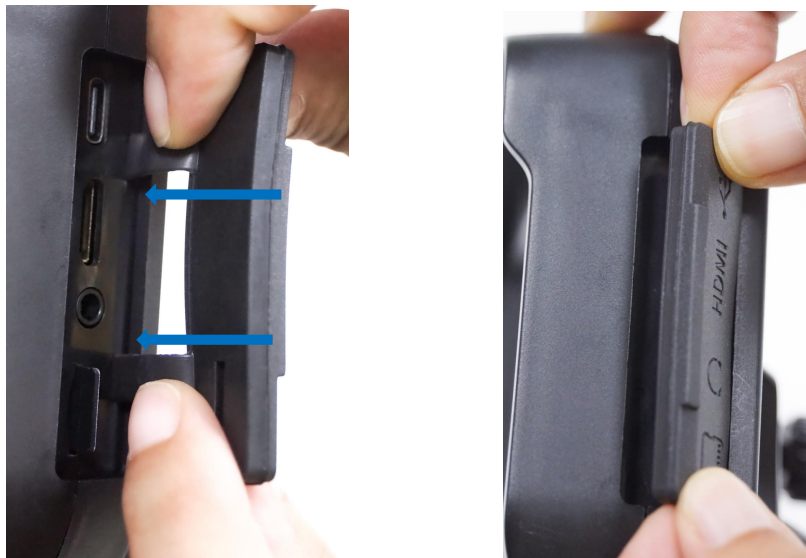
3. Shown as above, the controller and the probe is assembled in place.

4. Tighten the locking screw.

2. Battery installation



3. Interface side cover



When closing the side cover as shown in the figure, first push the two straps on the side cover into the strap holes, and then buckle the side cover.

Operation

1. When using, first confirm that the videoscope has installed the battery and TF card, and press the power on/off button to turn on the controller.
2. Observe objects.
 - a. Press the light adjustment button to turn on the LED light;
 - b. Insert the probe into the observation body to reach the observation position;
 - c. The articulation part is adjusted by controlling the joystick so that the probe reaches the target orientation;
 - d. Adjust the LED brightness and the zoom key to adjust the magnification to achieve the best results in the live view.

Note: When inserting the probe into the observation body, first make sure that the articulation part is adjusted to be straight to avoid probe damage.

3. After the observation position is aligned, the testing results can be recorded and stored through the function buttons.

Confirm that the controller is in image mode, press the camera key at this time to take pictures, the video key can record the video, and then press the video button to stop recording;



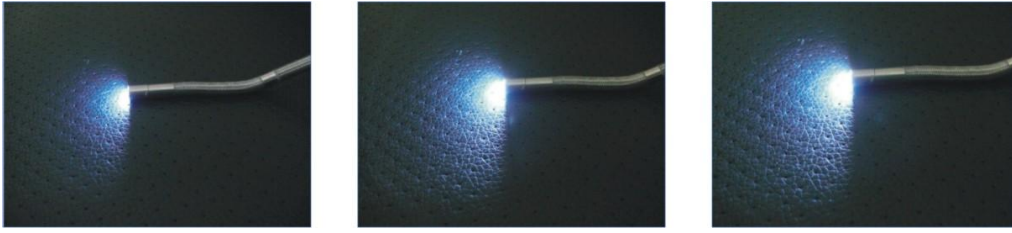
Photo mode

Video mode



Menu mode

4. Live image status:
 - a. Press the magnification key to cycle the image to 5x magnification;
 - b. Press the light adjustment button to adjust the light brightness to achieve the ideal display effect;



5. After the observation is completed, the articulation part is adjusted to straighten, and then safely exits the observation body and then shuts down.
6. Instrument storage: Cover the probe with a protective cap to avoid damage to the internal precision parts; Wipe off the obvious stains on the device with a wipe, remove the battery, and place it separately in the instrument case.
(Note: When storing the videoscope, make sure that the articulation part is straight before coiling the cable in the box.)

Software interface operation

In the real-time mode, tap the screen to bring up the main interface, the main interface is divided into the status bar, function menu and monitoring screen display area, and tap the blank area of the screen again to close the main interface:

(In addition to the touch screen mode, the screen operation can be controlled by menu/back button, confirmation button, playback button, video button, up button, down button, magnification button and other buttons.)



1. Status bar

The status bar is used to display the usage status of the device, such as: time, image magnification, temperature icon, image rotation status (R), LED light brightness level, WIFI status, TF card status, battery status.






Temperature icon--Used to indicate the temperature of the probe, the color of the picture changes sequentially as the temperature changes,   .


Image rotation state (R)--Used to indicate the image display state, when the image rotates,  indicating that the icon changes.

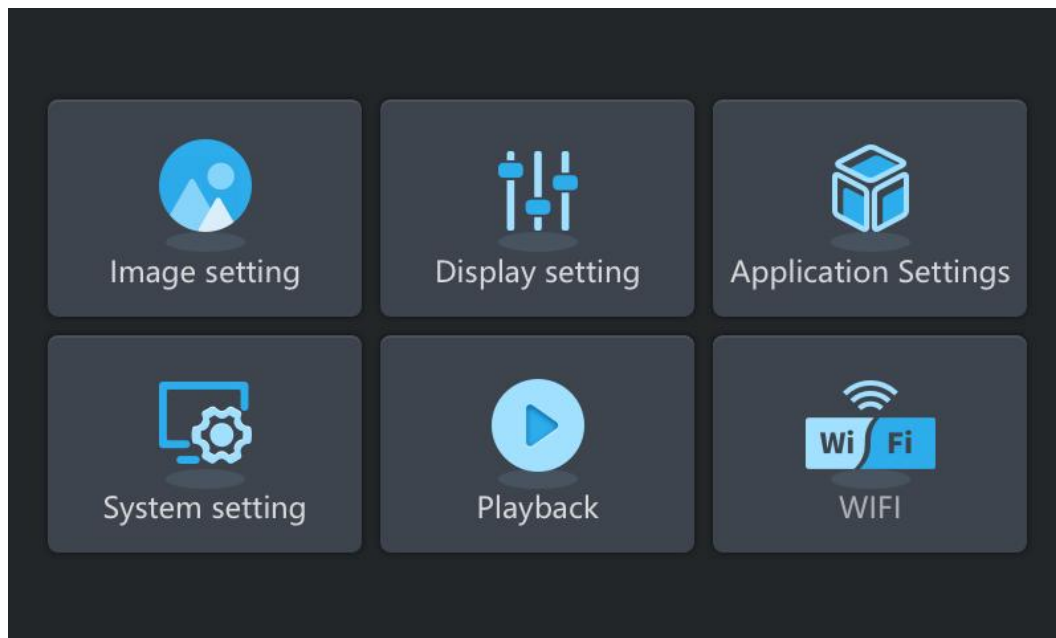
LED brightness level--Used to indicate the current working level of LED lights, a total of 5 levels of change,  icon also shows the corresponding number of levels.

Monitoring screen area for displaying real-time images of endoscope transmission.

2.Menu




Tap the menu icon , enter the menu setting interface, which contains 6 sub menus: image settings, display settings, application settings, system settings, playback, WIFI.












3.Playback

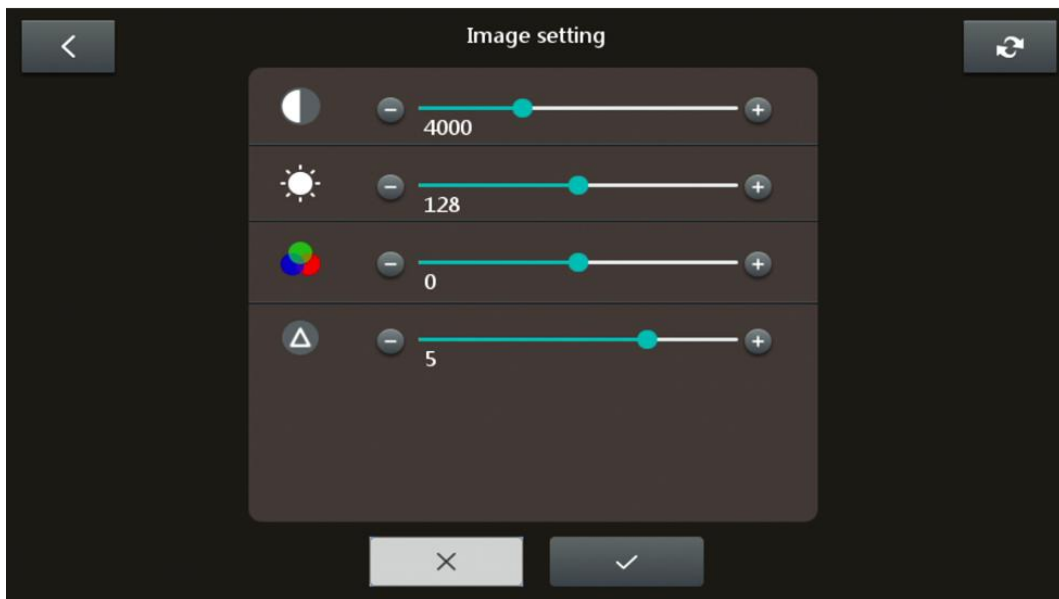


Click the icon on the main interface , the software will leave the current monitoring screen and enter the file management page, where you can view and manage the recorded audio and video.




4. Image settings

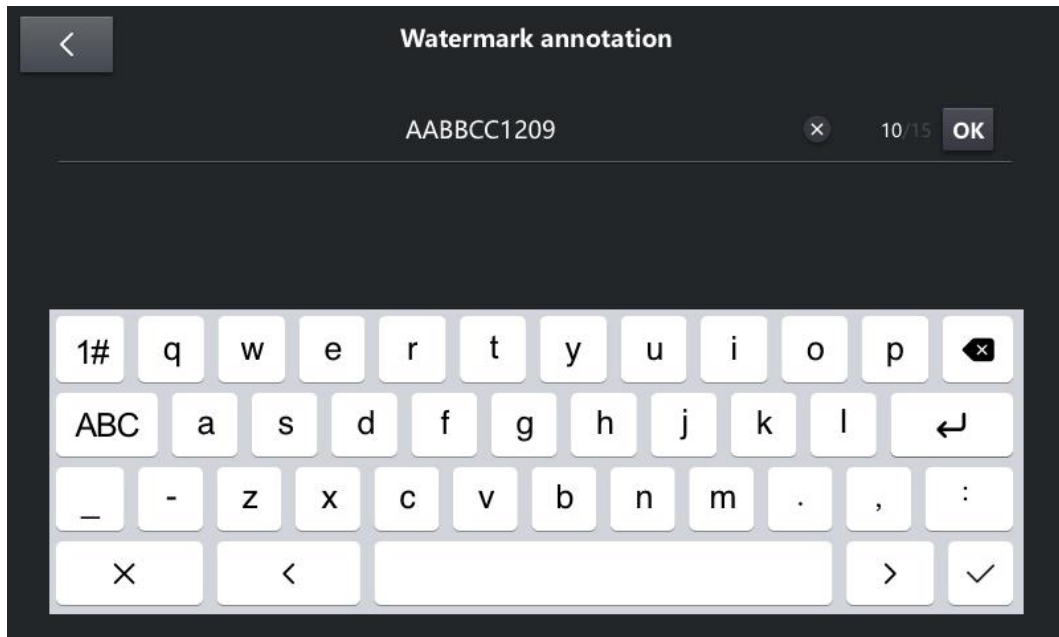
Click the Image settings icon , the main interface pops up the setting options of the image. On this page, you can set the image contrast one after the other , image brightness , image tone , image sharpness , click the confirmation button or  to save the settings. Click  to restore default parameters. Adjust by scrolling bar, and fine-tune the symbols   on both sides.



5. Watermark



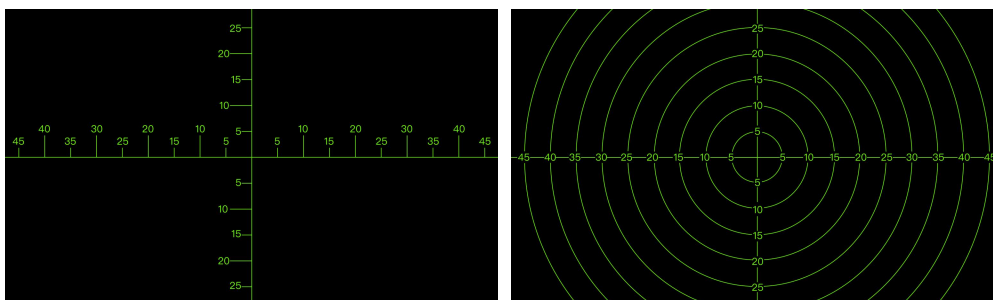
Click the watermark icon, the text input box appears on the interface, click the text input box, you can enter the specified text in the text input box. Then click on icon  to confirm.




6. Grid

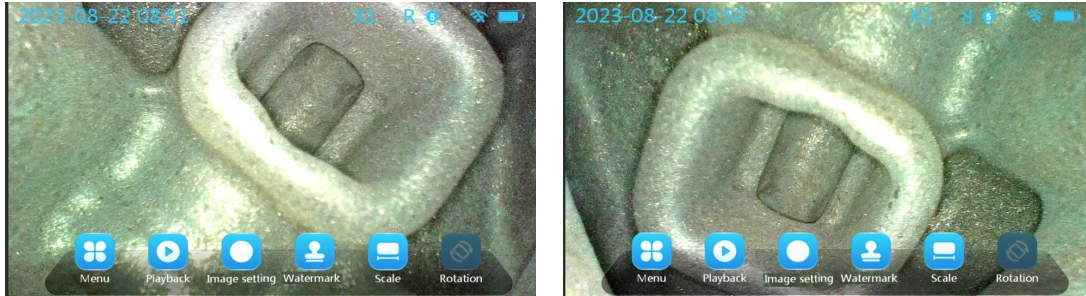


Click the grid icon, the main interface will appear in turn, cross ruler, ring ruler, no ruler, three states, the grid floats above the screen. After taking a photo, it can be superimposed on the image file.




7.Rotate

Click the rotation icon , image will rotate from 0° to 180°. The "R" icon in the status bar displays the rotation angle of the current monitoring screen.

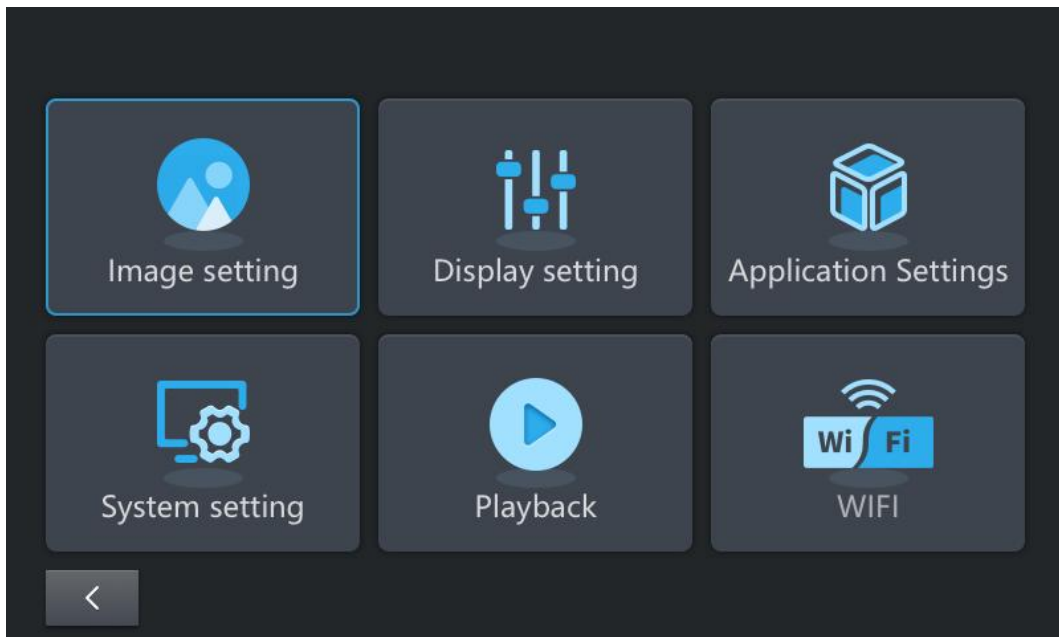


System settings

Press the menu button  on the screen to enter the menu setting interface, as below figure shows, there are 6 first-level menus: image setting, display setting, application setting, system setting, playback, WIFI.


Remarks: After selecting to enter, click or drag the corresponding icon and press the confirmation key to confirm.

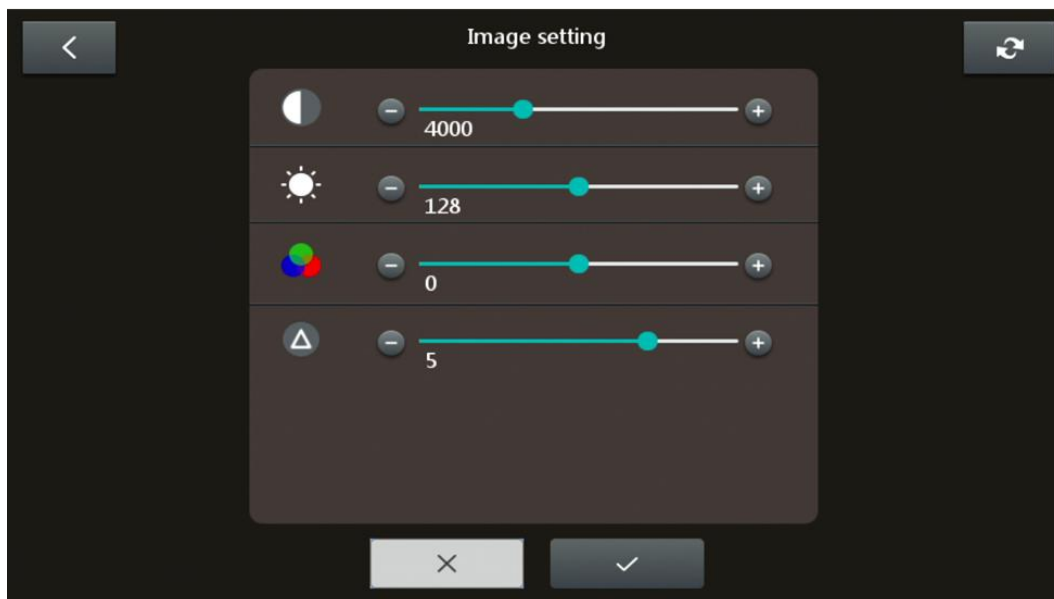
All the functions of the icons in the figure below are the same and synchronized with those of the icons with the same name in the main interface.





1.Image settings





After entering the image setting  interface, you can set parameters such as

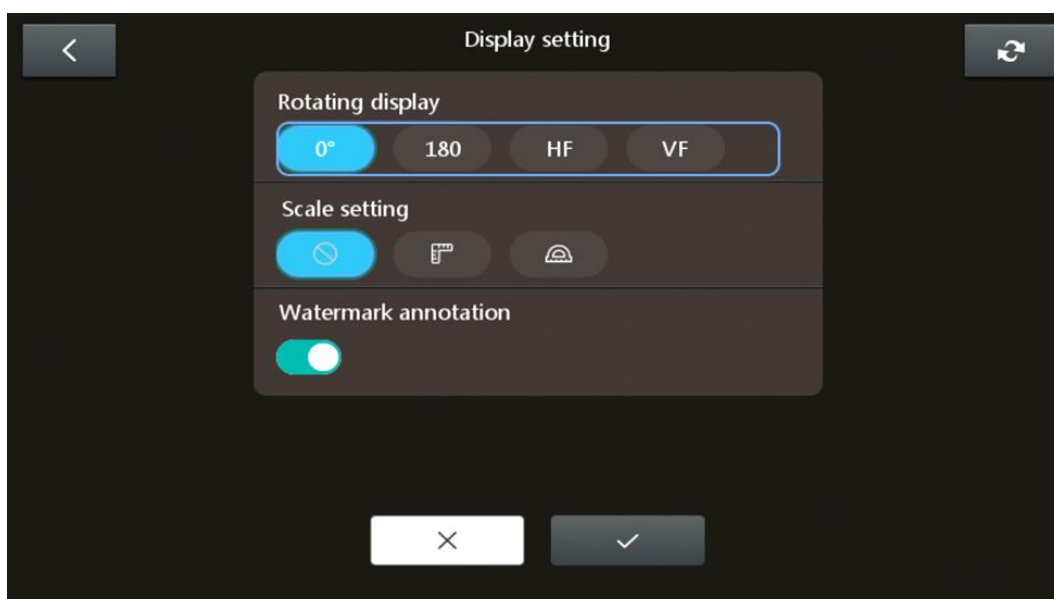
image contrast, image brightness, image tone, image sharpness. After adjusting the parameters, click  to save.



2. Display settings

After entering the display setting  interface. In this interface, you can set image rotation, display brightness, rulers, and watermark annotations. After adjusting the parameters, click  to save.

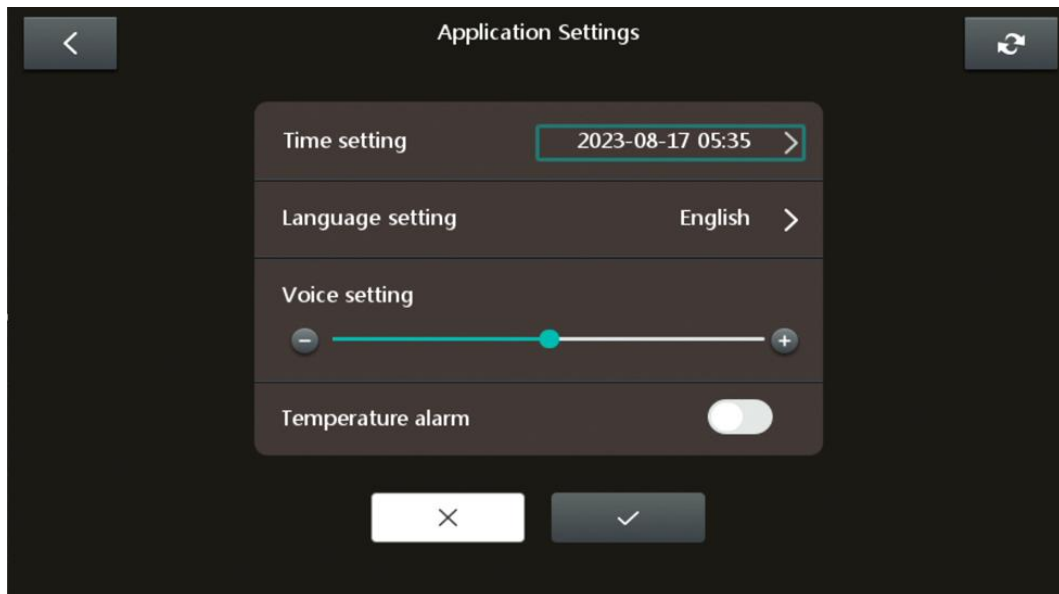
Rotation display, click  icon, screen rotates for 180°; click  image left and right mirroring; click , image up and down mirroring; click  the image comes to original position.



3.Application settings

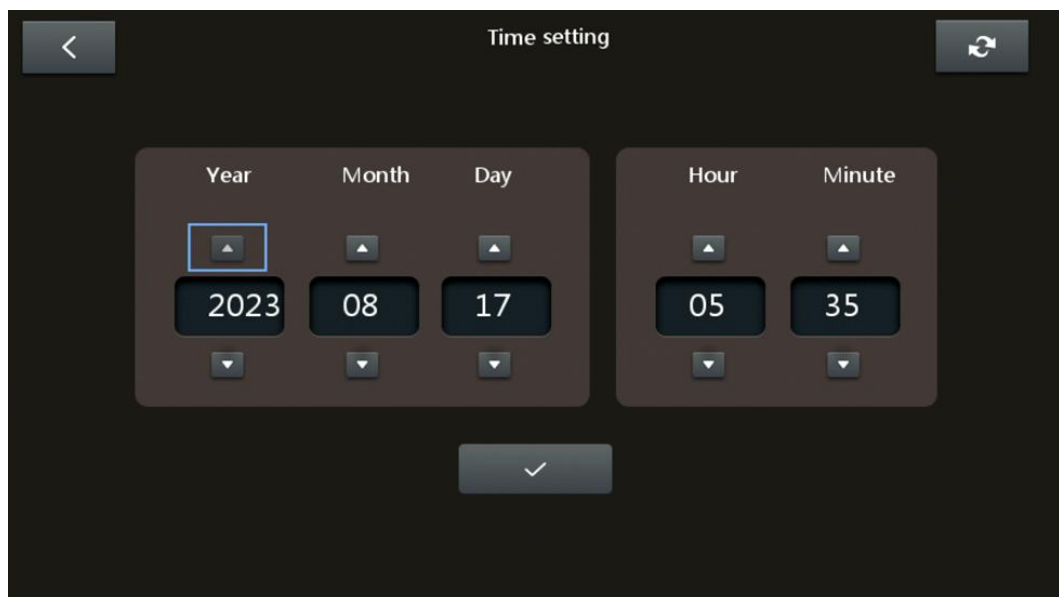


Enter the application setting interface, you can set time, language, sound, temperature alarm and other functions.



A: Time settings

Click to enter the time setting sub-menu to set the year/month/day/hour/minute.



B: Language settings

Click to enter the language setting menu, 10 languages can be selected and set.



C: Sound settings

Touch or drag the light bar to adjust the playing sound volume of the controller.

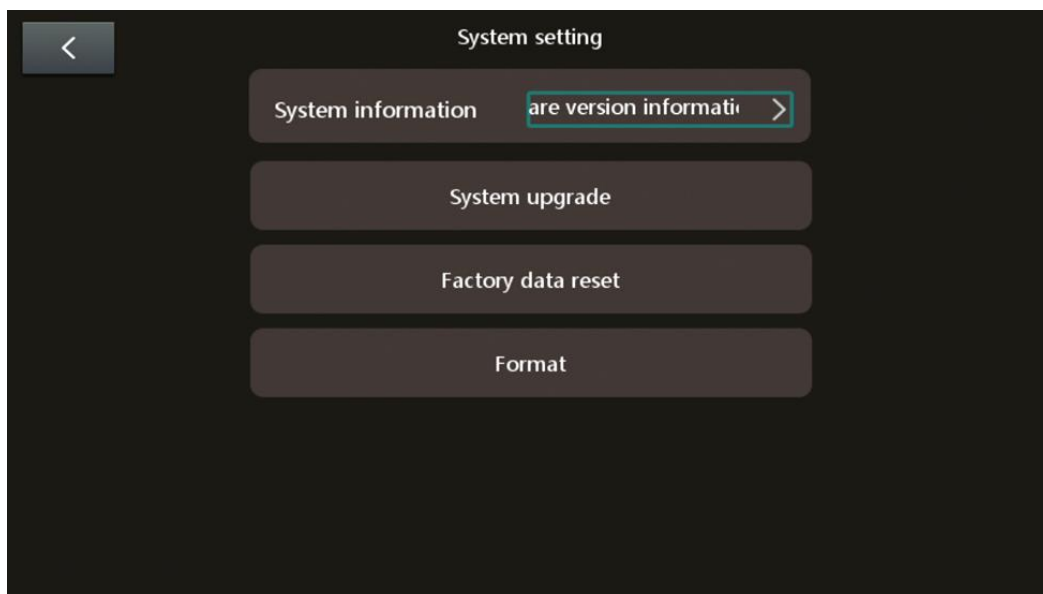
D: Temperature alarm

Touch the icon on the right side of the temperature alarm to turn on the temperature alarm function. When the temperature of the probe itself rises or the external temperature reaches a critical point, the device will alarm.

4. System settings



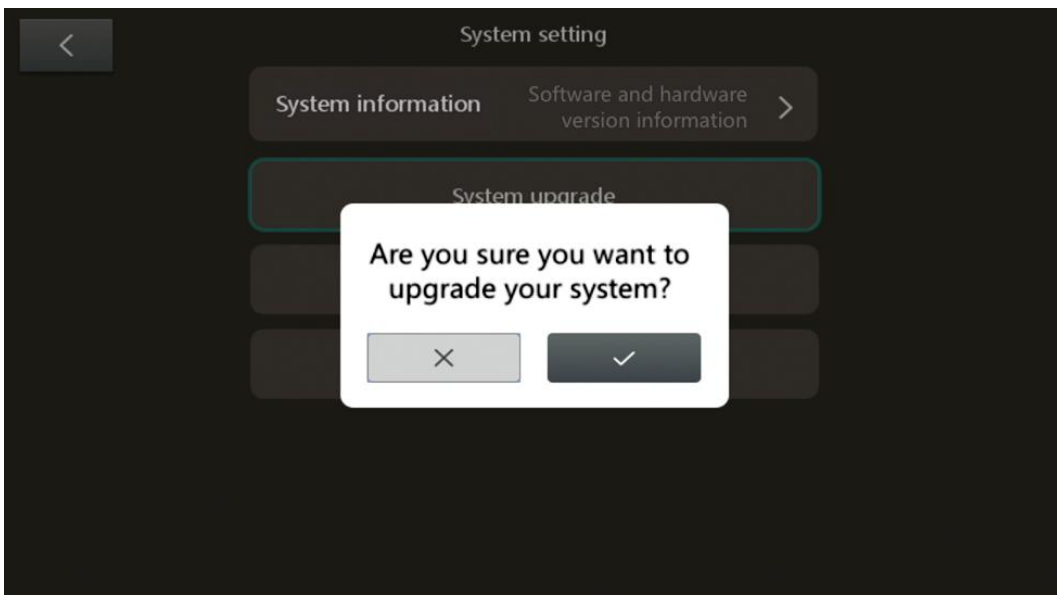
Enter the system setting interface:



A: System information: Click system information to view the software version information.



B: System upgrade: Install the new software in the TF card and insert it into the device, click the icon to pop up the corresponding warning box to choose whether to upgrade, and ensure that the device cannot be powered off during the upgrade process.



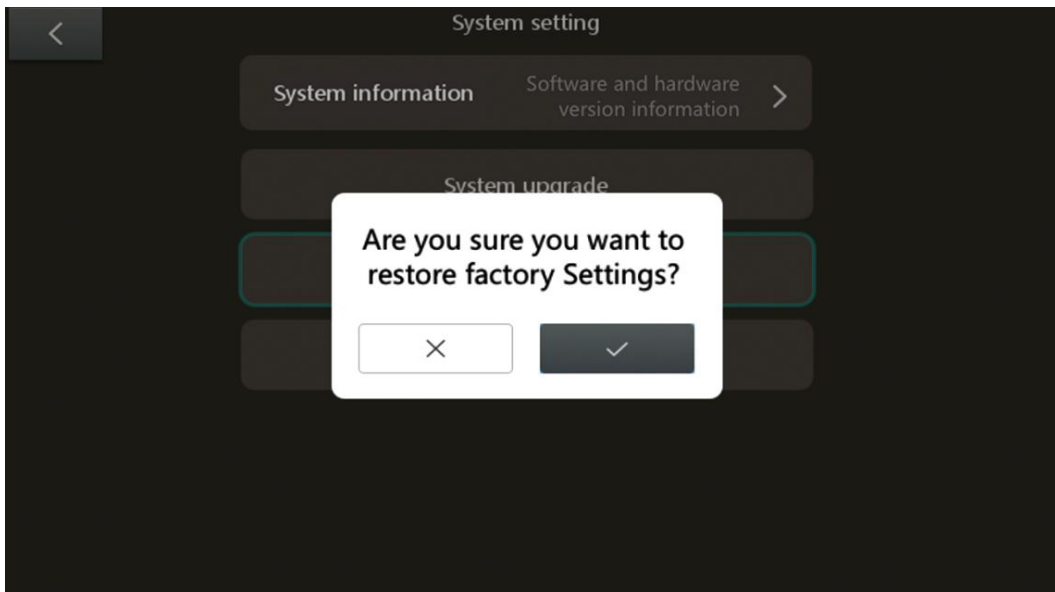
The system is being upgraded. Please do not power off



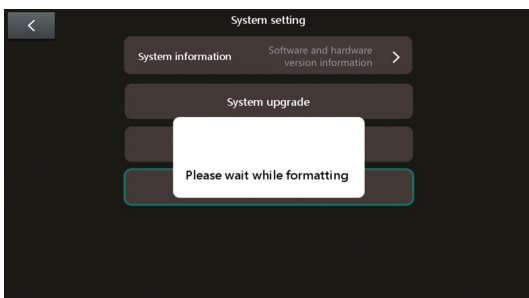
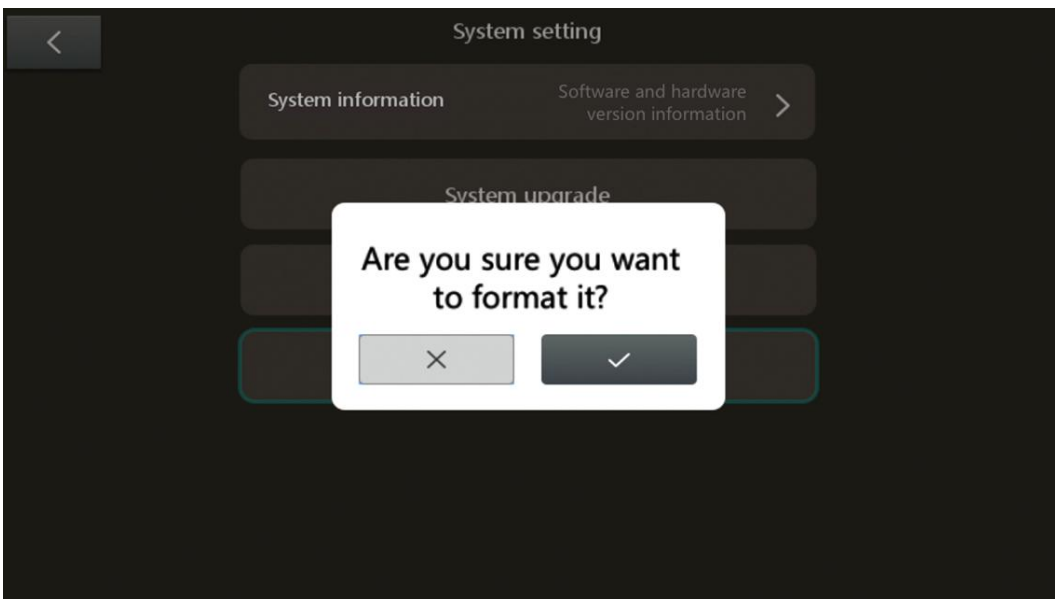
Upgrade OTA succeed Please remove SD




C: Restore factory settings: Click this icon to pop up a corresponding warning box to choose whether to restore factory settings.






D: Format: Click this icon to pop up a corresponding warning box to choose whether to format the memory card.




5. Playback

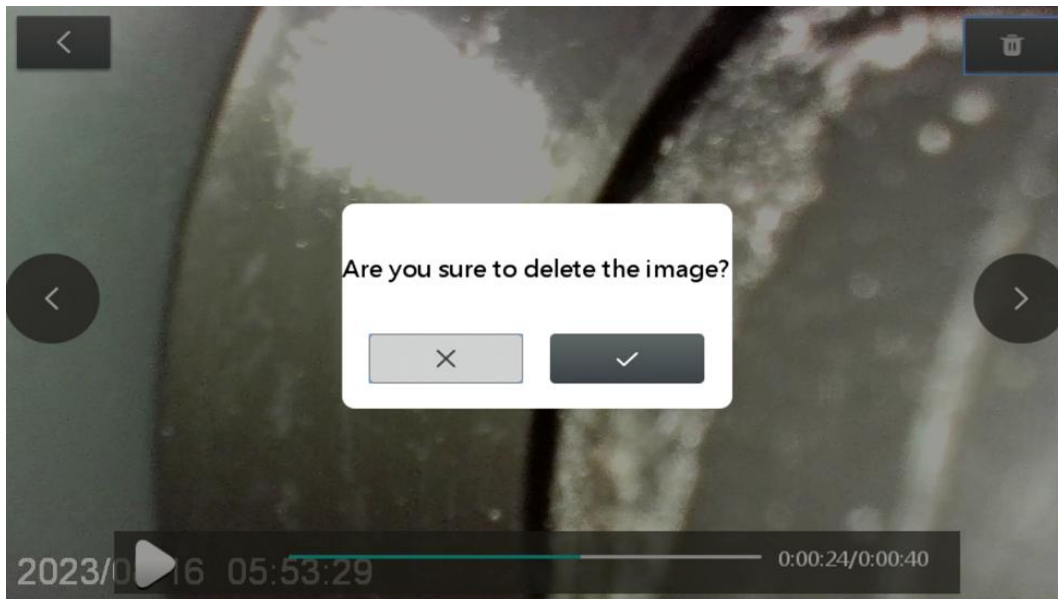
Click this icon  to enter the file playback interface.







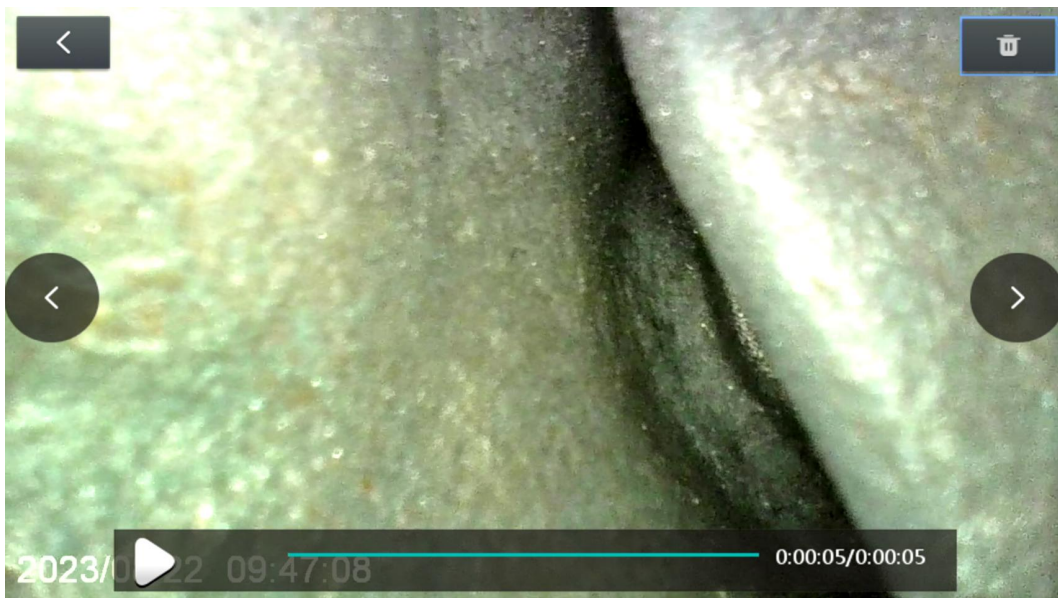
In the preview interface, click to select the file to be viewed, and then click the play button  to view a single file. As follows, the picture playback view, you can switch the upper and lower pictures through the symbols   on the left and right sides of the screen.




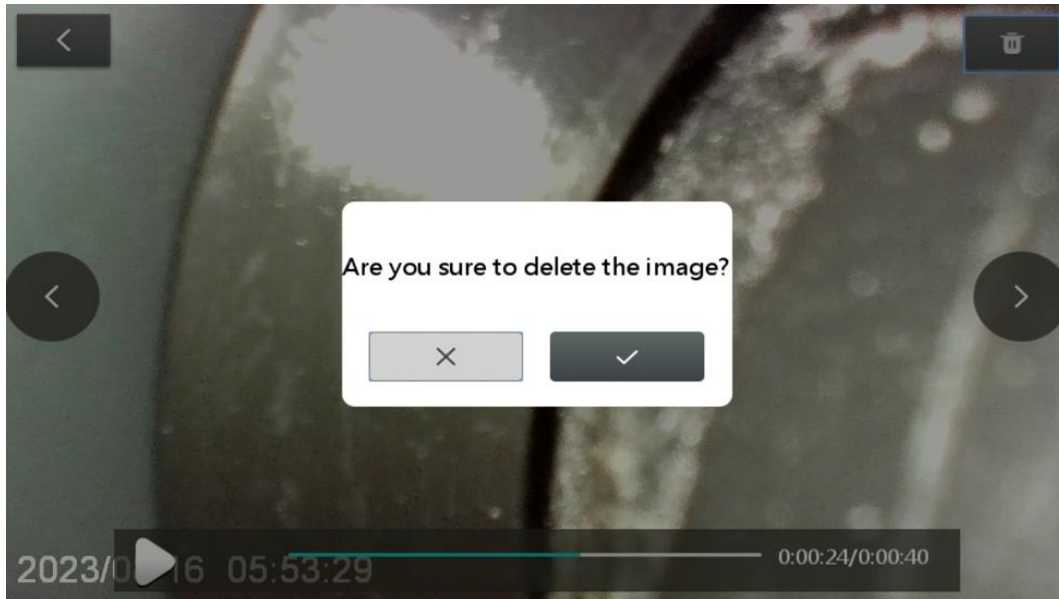
Click the delete symbol  in the upper right corner of the screen, and a deletion warning dialog box will pop up to choose whether to delete the file.






In the preview interface, click to select the file you want to view, and then click the play button . As follows, video playback view, you can switch the upper and lower video through the symbols   on the left and right sides of the screen. Click the icon  on the left of the progress bar to pause playing the video.



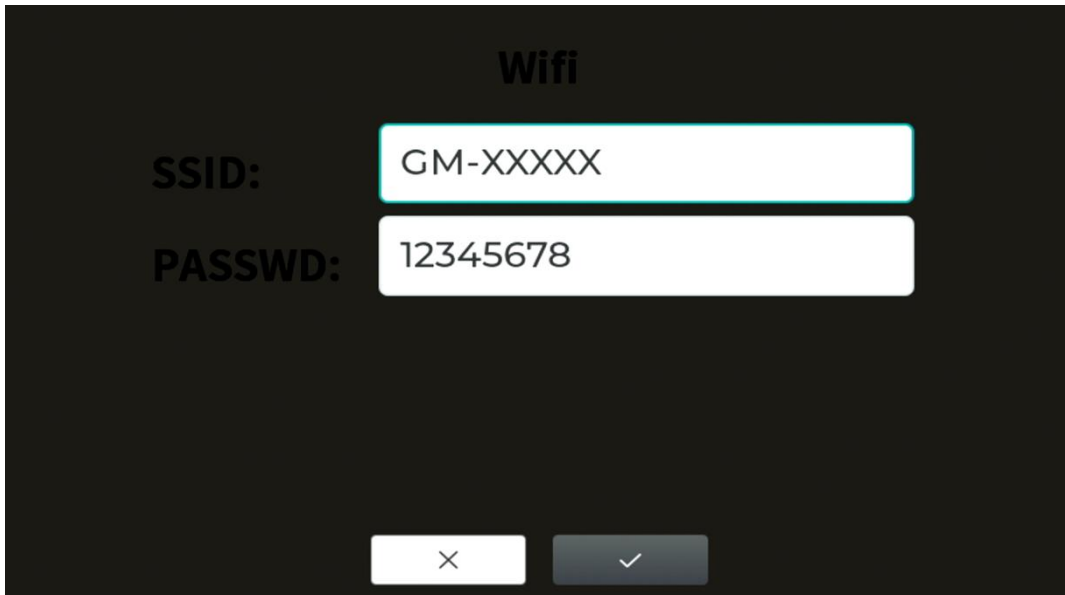
Click the delete symbol  in the upper right corner of the screen, and a deletion warning dialog box will pop up to choose whether to delete the file.



6. WIFI settings

Click the icon  to enter the WIFI setting interface, click the icon  in the lower right corner of QR code, turn on the WIFI, and use your Android device to scan the QR code that appears on the WIFI interface to download and install the corresponding APP. Click the icon  in the upper right corner to query and modify the WIFI name and password.





以下为图片内容，麻烦曹老师看看能 P 上吗

STEP1: Scan the code to download "Lp-connect" and install it

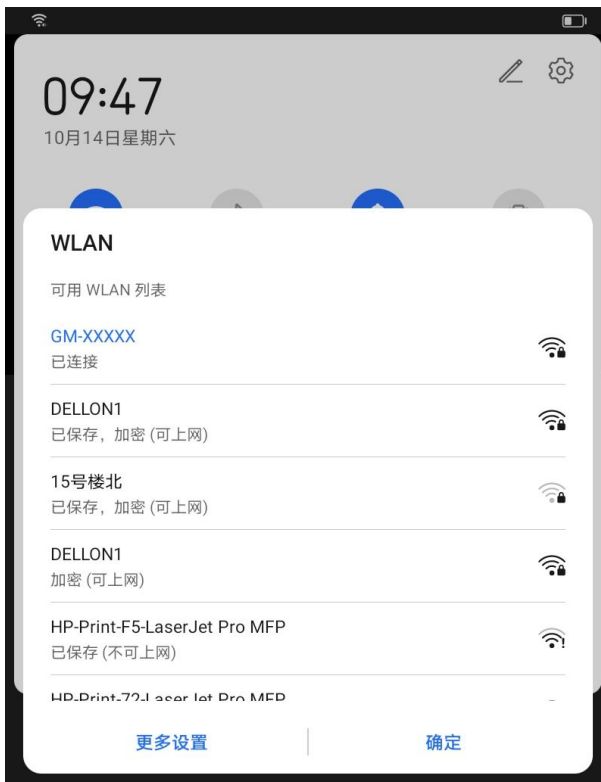
STEP2: Enter the phone "Settings" and turn on WIFI




STEP3: Find "GM-XXXX" from the WIFI list and connect

Find "GM-XXXX" from the WIFI list (as shown in the following picture) and connect it, the initial password for wifi is 12345678, and then click the



icon installed on the Android device to directly enter the device synchronization interface.



In the Android device synchronization interface, click on the icon  to take a photo, click  to record a video, and click  to query the files stored in the device.

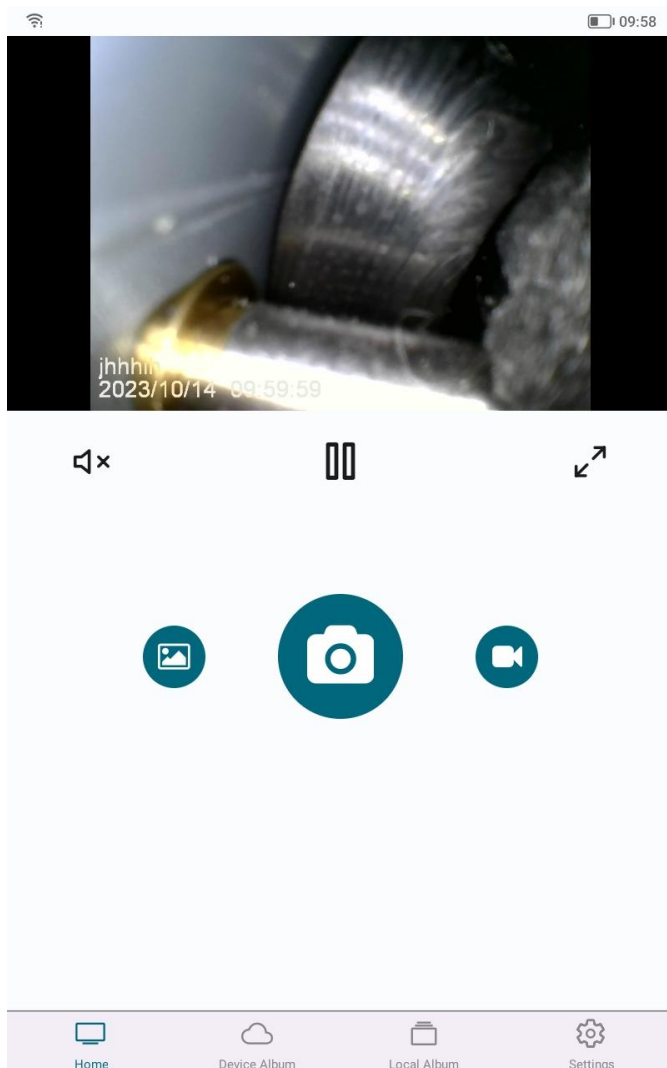



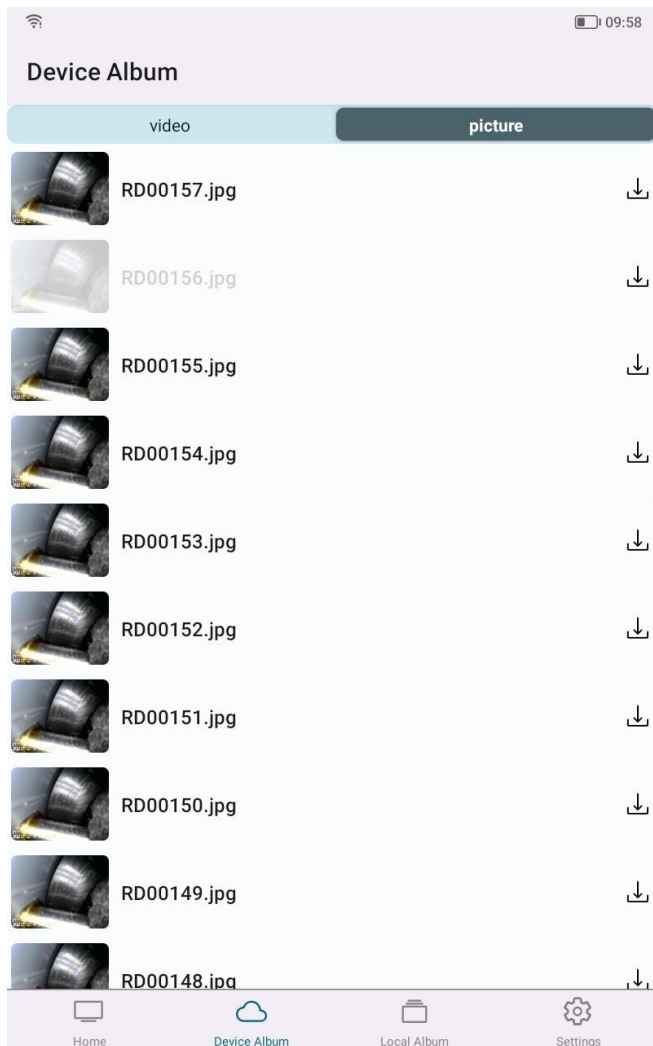



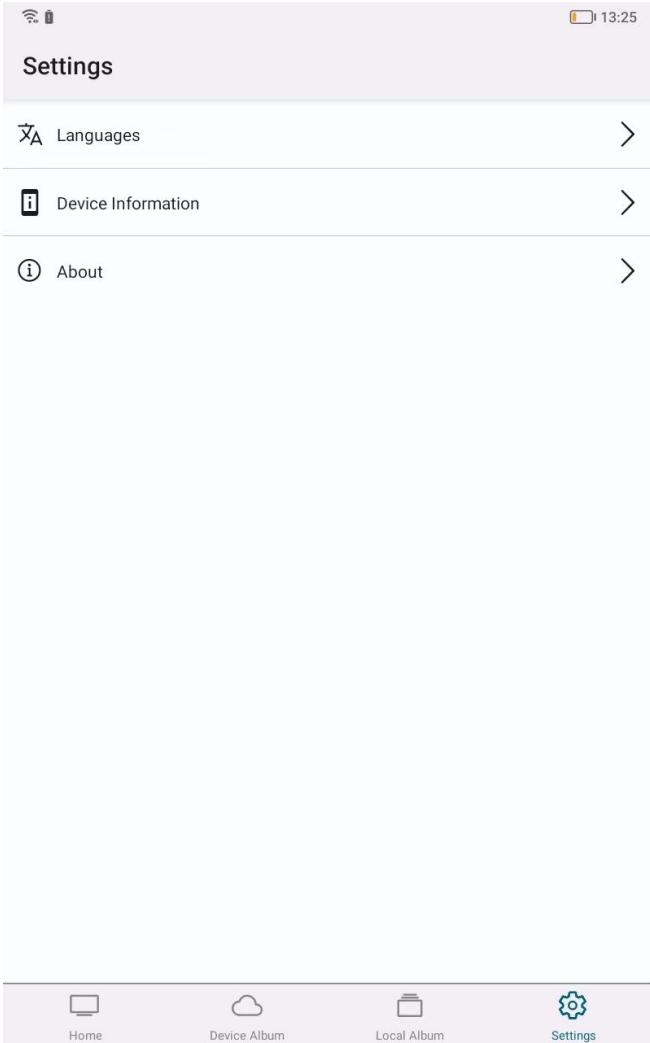


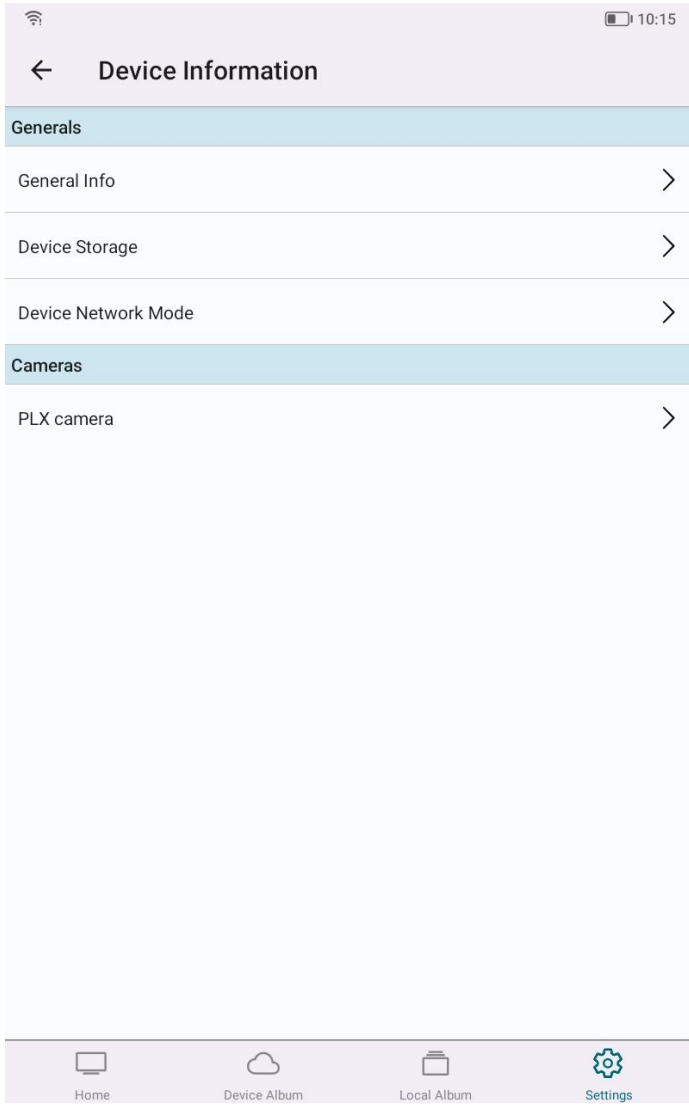
Photo and video files are automatically stored in the device's TF card. Click the icon  to enter the device album. Click the download icon  on the right side of the file. The file will be downloaded to the external Android device. Click  to view the downloaded file.

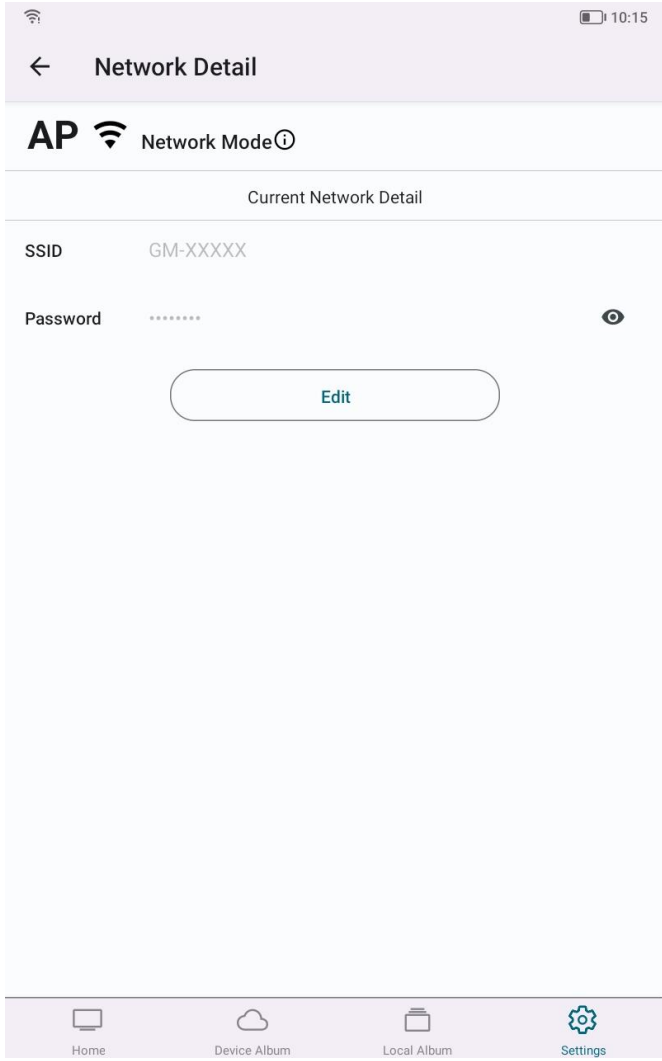


Click the icon  to enter the settings interface. Click  to set language ,

Click  and then find the device network mode to re-edit the WIFI connection name and password.







Main Accessories



Controller screen



Probe



Battery



Charger



Cable

Product parameters

Controller

Category	Specifications	G-Mini
Probe structure	Joystick control	Built-in damping
	Articulation control	Manual
	Battery replacement method	Battery interchangeable
	Structural features	Monitor/ probe interchangeable
Display module	Display screen	4.3 inches
	Display resolution	800*480
	Interface	TF/HDMI/ TYPE C (charge and read)
	TF card	32G TF card
	Solution	Infront Micro Q3S
	WIFI	No such function
	Temperature indication	High temperature indication
	Menu operation	Button + touch screen
Software operation	Software settings	Time/Multiple languages/Energy saving/Sound//Picture enlargement/SD Upgrade etc.
	Features	White balance/Contrast/Tone/Exposure/ Selection/Gain/Scale/Watermark/ WIFI same screen/Temperature overlay
Others	Charge	5V 2A
	Battery	26650 5000MAH
	Charging time	4 hours
	Working hours	4 hours
	Operating temperature	Controller -10°~50°
	Weight	0.75KG (including battery, 6mm 1.5M)

	Package	Waterproof tool box
	Waterproof	Controller, IP64/ Insertion cable, IP67
	Drop rating	1M

Probe Specifications

Probe diameter	3.9mm	3.9mm	6.2mm	6.2mm
Cable length	1.5M	3M	1.5M	3M
Image Sensor	CMOS1/9	CMOS1/9	CMOS 1/9	CMOS 1/9
Pixels	1,000,000	1,000,000	1,000,000	1,000,000
FNO	F4.7	F4.7	2.0	2.0
DOF	10mm~100mm	10mm~100mm	15mm-infinity	15mm-infinity
FOV	90°	90°	> 90°	> 90°
DOV	0°	0°	0°	0°
LED illumination	> 15000LUX	> 15000LUX	> 25000LUX	> 25000LUX
Bending direction	4-way	4-way	4-way	4-way

Simple troubleshooting

Fault	Causes
Articulation part not working properly	Check whether the insertion cable is entangled and knotted, and the articulation should be controlled after straightening the insertion cable.
Video without image	Check whether the power is connected, whether the power is insufficient, whether the probe is installed in place, or pull out the battery and reinstall it and then turn it on again.
Blurry images	Check whether there is any dust or dirt on the lens at the front of the probe. If there is any, turn off the power to clean the surface of the lens at the front of the probe, and then turn it on again to check the image.

Precautions

1. Before using the equipment, be sure to check whether the insertion cable is coiled. It is forbidden to operate the joystick control when the insertion cable is coiled, so as to avoid damage to the internal wire of the insertion cable.
2. When taking pictures and videos, ensure that the brightness of the camera light is appropriate, and at the same time ensure that the probe end is stable and does not shake.
3. After use, it is necessary to adjust the bending part to be straight, and then pull out the object to be tested. It is forbidden to pull hard.
4. After use, do not soak and rinse the product. Use a soft cloth to clean the probe and controller to avoid dirt corrosion and damage to product performance. Then put the equipment into the special equipment box and protect it properly, so as to prolong the service life of the product.
5. Do not subject the device to extrusion, collision or impact to avoid unnecessary damage; when the device is not in use for a long time, please be sure to take out the battery to avoid battery damage and corrosion of the instrument.
6. Do not use at temperatures outside the range of -10°C to 50°C.
7. Please do not use or place the product in a corrosive environment.
8. Please do not expose the product to the rain. Except for waterproof probes, do not leave the probes in liquid for a long time.
9. Please do not place the product near strong magnetic objects.
10. Please do not use in an environment with excessive smoke and dust.
11. Please do not scratch the screen, please keep the body clean.
12. Please do not try to disassemble the product by yourself. Repair work is limited to the staff authorized by the original factory.

After-sales service

1. Service commitment

1.1 The main part of the product is guaranteed for 1 years. The warranty period for repaired parts is 6 months, and the warranty period for parts that are only repaired and not replaced is 3 months. Man-made damage is not covered by the warranty, and only maintenance costs are charged for lifetime maintenance. For products that have been repaired, the effective warranty period shall be based on the longer period of the following two periods:

- a. The remaining warranty period of the product;
- b. Ninety days from the date of repair.

The transportation and handling costs of the products to and from the after-sales service department shall be borne by the purchaser.

1.2 The warranty period starts from the date of delivery. During the warranty period, if there is any problem with the quality of the product's parts and materials under normal use, or the failure is found to be true after inspection, our company will provide free maintenance services.

1.3 During the warranty period, the purchaser will not be charged for the parts and labor used in repairing or replacing the product. All replaced parts, circuit boards or equipment will belong to our company.

1.4 This service is only applicable to the initial purchaser of the product.

2. Out-of-warranty liability

Limited liability guarantee when your product breaks down in normal use, our company only promises the above-mentioned free warranty service. In the following situations, please choose our company's paid services. Our company's "service commitment" is limited to repairing the faulty hardware of the product.

2.1 After your product is repaired by our company's after-sales service department, you will continue to enjoy the promise of the original machine warranty period. If the maintenance parts exceed the free warranty period, please pay a certain maintenance service fee, our company will repair your product, and the standard of maintenance service fee is customized by our company's after-sales service department.

2.2 Our company is not responsible for abnormal use, improper storage, unauthorized modification of wiring, maintenance, misuse, abuse, accidents, modifications, incorrect installation, or force majeure (such as fire or earthquake) of the equipment, and has the right not to provide warranty services;

2.3 The purchaser did not inform the manufacturer of product defects and failures in time, and the date of repair application has exceeded the effective warranty period, which is also out of warranty.

3. Fault maintenance period

When the equipment needs to be repaired after inspection, we will complete the maintenance task within one month after receiving the equipment. In case of special circumstances, if the maintenance cannot be completed within the time limit, the customer service staff will call you in advance to negotiate the maintenance date. The aforementioned maintenance time does not include equipment round-trip time.

(Note: All the above terms, product functions and specifications may be modified at any time without prior notice)

