

Product Manual

CF Series



3D Vision and Measurement

⚠ Please read the manual before using the equipment.

Declaration

The manual is only used for this series of products.

Because the editing time is limited, we do not guarantee that there is no error in this manual. As this manual is used as product series manual, however, the configuration and function of different models may be different, about the specific specification and function, the technic requirements when you purchasing is the only reference. For the manual amendment, we have no responsibility and obligation to inform any company or individuals.

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Instruction Before Use

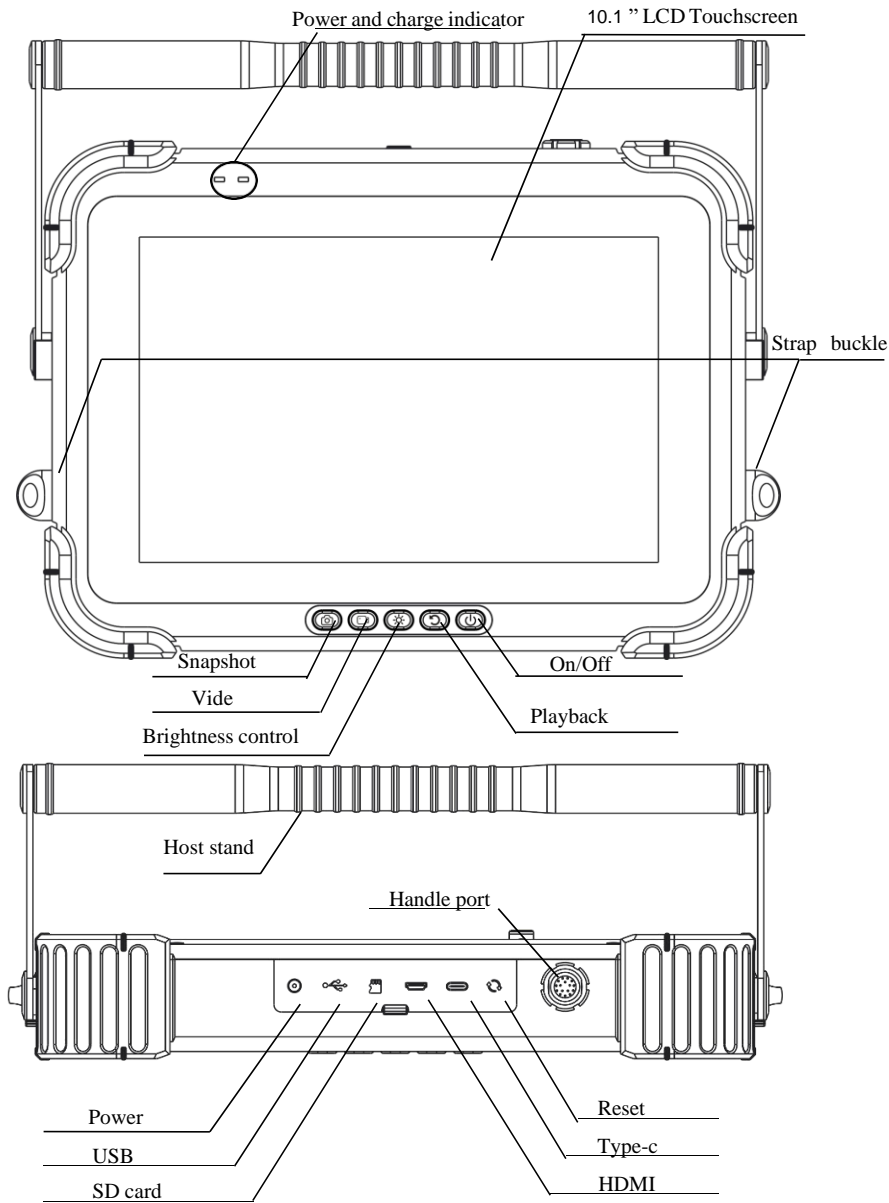
Main configuration:

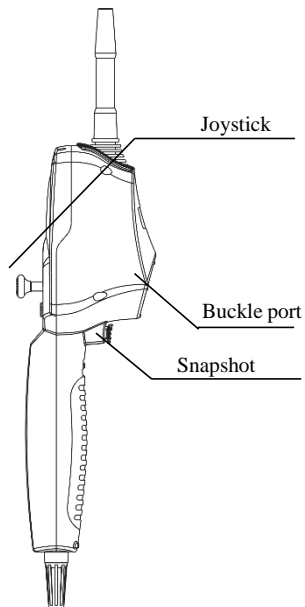
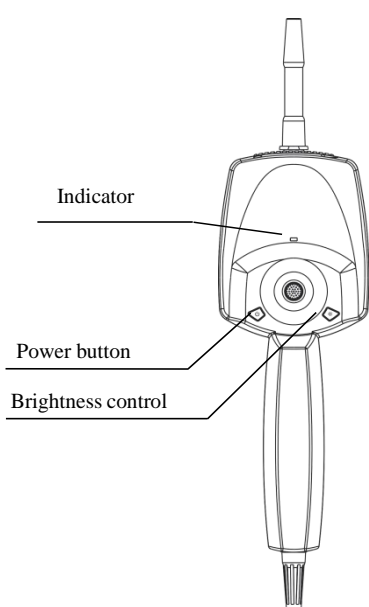
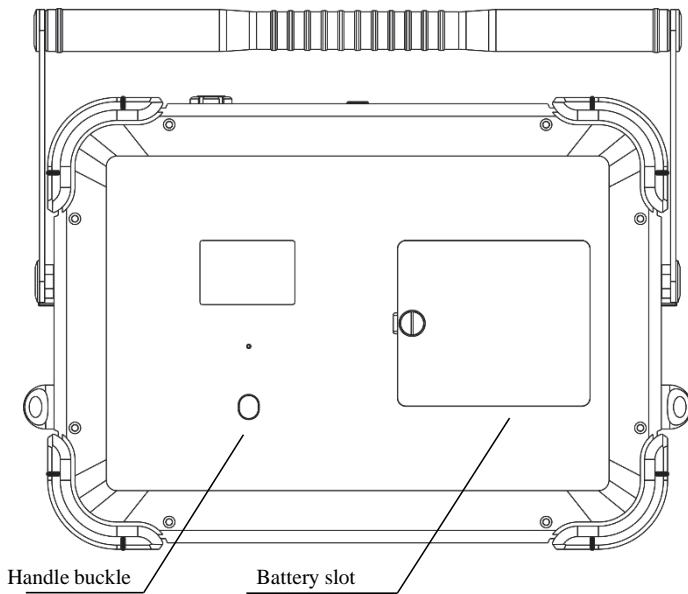


For the specific configuration, please refers to the packing list.

Name	Specs	Qty	Note
Case	360mm*336mm*100mm	1	
Host	300mm*220mm*59mm	1	
Handle	300mm*90mm*70mm	1	
SD Card	32G	1	
Battery	18650	4	
Card reader	USB3.0 port	1	
AC adaptor	12V4A	1	
Charger	5V2A	1	
Strap		1	Optional

Button and Port





Application

This product is only applied in the real-time detection and analysis for industrial equipment and automobile production and maintenance.

After-service

This product has not any spare parts which can be repair by users. Any disassemble, refit or maintenance is not allowed. If damage and losses caused by this, we do not assume any responsibility. The product maintenance is only afforded by the authorized dealers and distributors.

Safety in use



- Prohibit the use of this instrument to observe the body or the animal's body;
- Do not use the product to inspect equipment in action;
- Do not use or store the product on explosive, strong electromagnetic field or with combustible gas, otherwise it may cause fire or explosion;
- Do not use the product to check objects with current carrying, so as to avoid the occurrence of electric shock;
- Do not watch the LED light source at the end of the lens straightly, avoiding the effect of strong light on the visual acuity;
- Never excessive bending, stretching, twisting, rolling cable, otherwise it may cause cable disconnect, a fire or electric shock accident;
- If there is abnormal in the angle adjustment operation, stop the current operation, and turn off. Then contact the supplier;
- Keep the insert tube away from any liquid, except water, salty water or oil;
- When finish using, please clean the front section of the instrument in time, to prevent corrosion.

1. Brief Introduction

1.1 Parameters

Probe Diameter (mm)	Φ6/Φ3.9
Probe Material	Superwear-resisting alloy
Camera Pixels	1,000,000
DOF	10mm-100mm
FOV	120°
Viewing Direction	0° front view/90°side view
Illuminance	Max 100000Lx
Tube Material	tungsten-braided
Tube Length	2m/3m
Protecting Device of Durability	buffer protection device between the host and wear-resistant tube
Articulation	360° all way
Bending Angle	Max 220°
Display	10.1” IPS touchscreen
Display Resolution	1920*1200
Photo/Video Format	JPG/MP4
Photo Resolution	1280*720
Video Resolution	1280*720
Zoom function	Image 8X
Outer Case Material	anti-fall engineering alloy material
Memory	Built-in 16GB flash memory
Data Port	HDMI port、USB port、type-c port

Power Supply	DC12V、detachable lithium batteries
Working Time	2.5h
Battery Capacity	3.7V, 3000mAh*4
Power Consumption	15W
Power Charge	DC12V, Max current: 1A2.5A
Host Weight	2.65≤kg (battery included)
Handle Weight	0.55≤kg
Compatibility	The handle can be replaced; with a variety of functional accessories
Standard Accuracy	0.1mm
Minimum Accuracy	0.01mm
Accuracy Rating	≈95%
Store Temperature	-23°C~63°C
Relative Humidity	Max: 92%, non-condensing
Host Working Temperature	-15°C~50°C, when 0°C below, the display needs preheating.
Camera Working Temperature	-25 °C ~80 °C ,when 0°C below, please reduce probe articulation.

2. Operation Steps

2.1 Take out the instrument

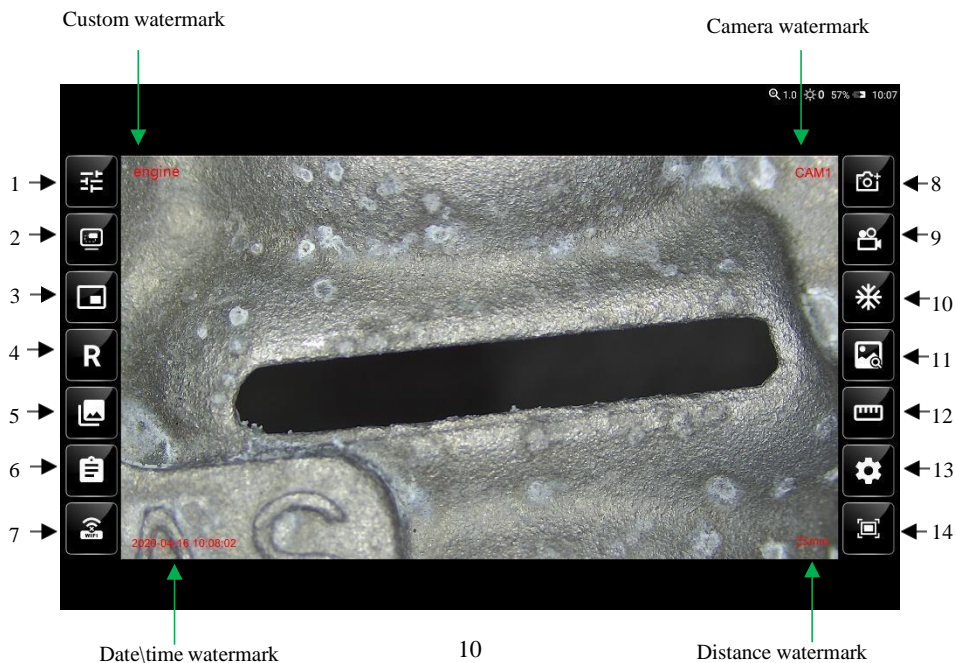
Open the instrument case, while taking out the instrument host, set aside and pay close attention to the probe; avoid colliding the probe and scratching probe lens.

2.2 Boot Preparation

Visually check whether the appearance of the videoscope is intact, connect the handle to the host, straighten the insertion tube, and adjust the direction of the probe to 0°.

2.3 Operation

It supports for 10 levels of brightness adjustment. Press the light control button to suitable brightness. Slowly insert the tube to the inspected object. The operation interface is as follows:



Below explains the functions of the floating window ICONS from top to bottom and from left to right.

1. Camera setting, Set image parameters, such as gamma and contrast, etc.
2. Picture-in-picture, switch small window display function.
3. Dual camera preview, switch dual camera display.
4. Image rotation. The preview image rotates 90° clockwise each time on the interface.
5. Photo/video preview, view photos or videos, and access to system files.
6. Test report, in PDF format, packs a report of the selected photos.
7. WIFI: Turn on and off WIFI wireless connection function.
8. Snapshot, Take pictures.
9. Video recording.
10. Image freezing. Freeze the image in the preview interface.
11. Call the image to complement the contrast image, and select the image that needs to be displayed with a small window.
12. Measurement, 3D measurement function, providing a variety of measurement methods.
13. Settings: To set an application, such as a time.
14. Full screen, switch full screen display.

Top right corner:

1. Image zoom level display, can adjust from 0 to 8 levels by touch the screen.
2. Brightness indicator, 0~5 levels can be displayed.
3. Power display.
4. Time display

2.4 Probe articulation control

According to the testing need, operate the joystick to control probe articulation, in order to observe. The bending motion of the front probe is controlled by rotating the joystick. During the operation, if the joystick suddenly meets larger resistance, or there is any abnormality, please immediately stop

using. After adjust the joystick to the middle position, please remove the inserttube carefully from the testing equipment.

2.5 After use

Before you remove the insert tube from the inspected object, please make sure the probe is reset to be straight. If the product is damaged due to improper operation, the user bears the loss. Turn off the power switch, put the instrument into the portable case carefully, and put the tube into the case well.

3. Function Operational Specification

3.1 Snapshot button

For pictures taken, see 3.11 for details.

3.2 Video Record button

For video recording, see 3.12 for details.

3.3 Brightness Control button

Short press, brightness cycle adjustment, 0~5 adjustable, displayed at the top of the preview interface.

3.4 Back button

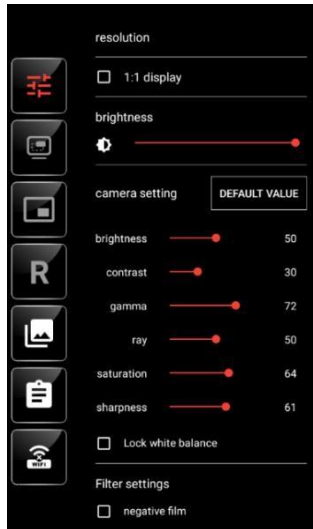
Short press to return to the previous states.

3.5 On/off button

Long press for switching on/off device; short press in the startup state, the screen will enter rest function.

3.6 Camera setting

Click ICON 1 “camera Settings” to set various parameters of the camera. You can view resolution, screen brightness, camera Settings, lock whitebalance, and negative effects.



3.7 Picture-in-picture

Click ICON 2 "Picture in a Picture". You can click the small window, the main screen image and small window image can be arbitrarily switched. You need to "call the picture" first, see 3.16. Only after selecting the image, you can use the function "Picture in a Picture" .



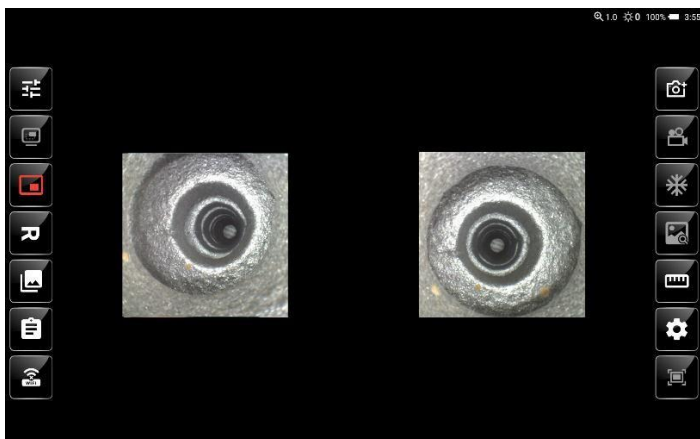
3.8 Dual camera preview

Click ICON 3 “dual camera preview” Dual cameras can be displayed on the same screen.



3.9 Image Rotation

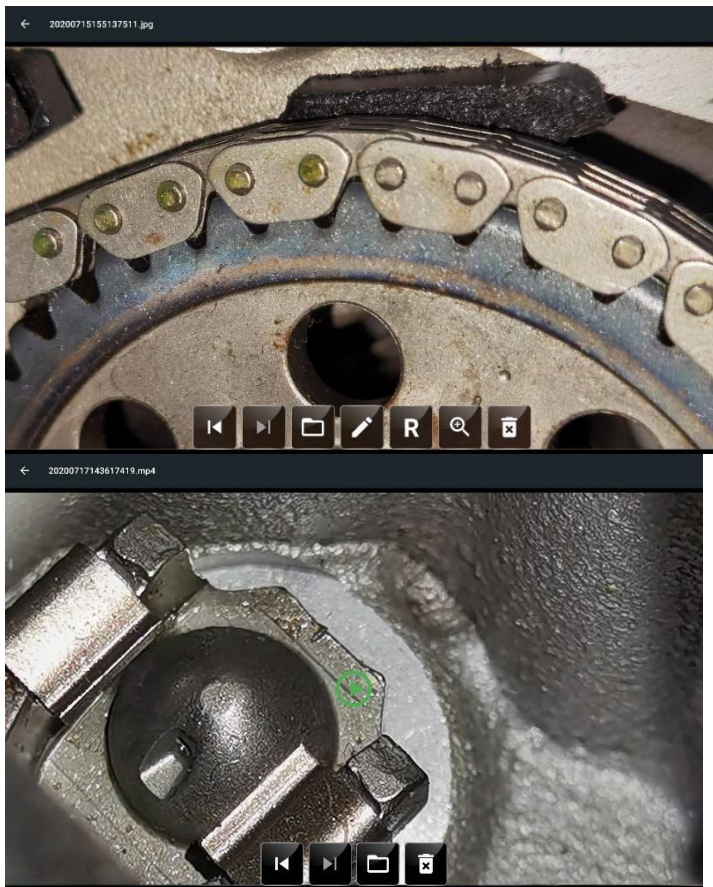
Click ICON 4 "Image Rotation". Rotate clockwise 90° each time, and with `mirror` image display function.



3.10 Photo/video preview

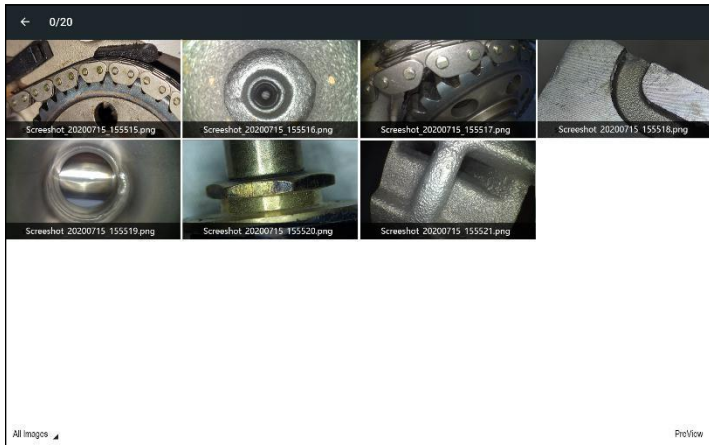
In the preview interface, click ICON 5 "Photo/Video Preview" to jump to the file preview. You can switch files left and right, enter the file management system, and delete files.

- ① Photos can be doodled, rotated and zoomed;
- ② Videos can be watched and paused;
- ③ Click the folder icon to enter the system file interface.

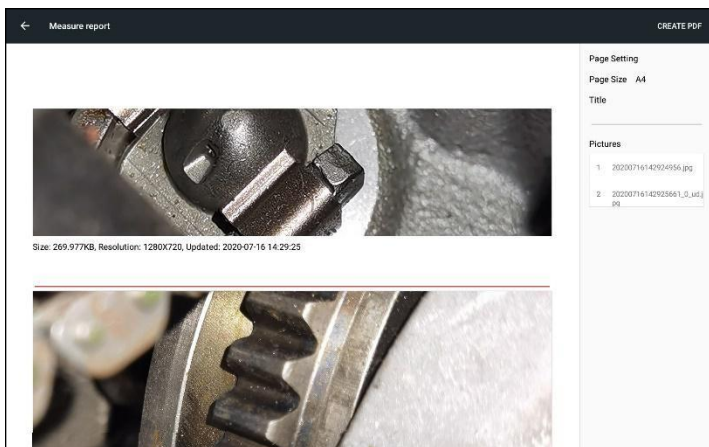


3.11 Test Report

Select the image to automatically generate the PDF report.



After clicking the image, a small check mark will appear in the upper right corner. Click the small check mark to complete the selection of the image and the following interface will appear.



You can doodle and edit each image, or you can put edit text under each image, and you can set the title of the file on the right. Once the Settings are complete, click on the top right corner to create the test report.

3.12 Snapshot

Short press ICON 8 "Snapshot" to save "date \ time watermark", "Distance watermark" and "Custom watermark", see 3.17;

The saved file is named in the form as follows:

20200215-114714847.JPG
YMD HMS

3.13 Video Record

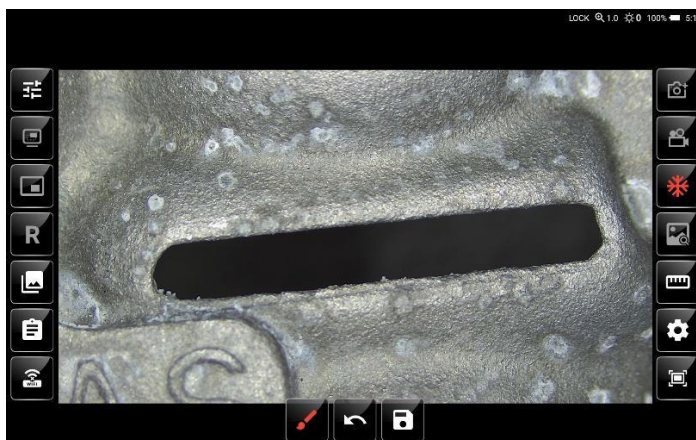
Short press ICON 9 "Video" to record video, and second short press to exit. During recording, you can also short press to take photos. You can save "date \ time watermark", "Camera watermark", "Distance watermark" and "Custom watermark", see 3.17.

The saved file is named in the form as follows:

20200215-114714532.MP4
YMD HMS

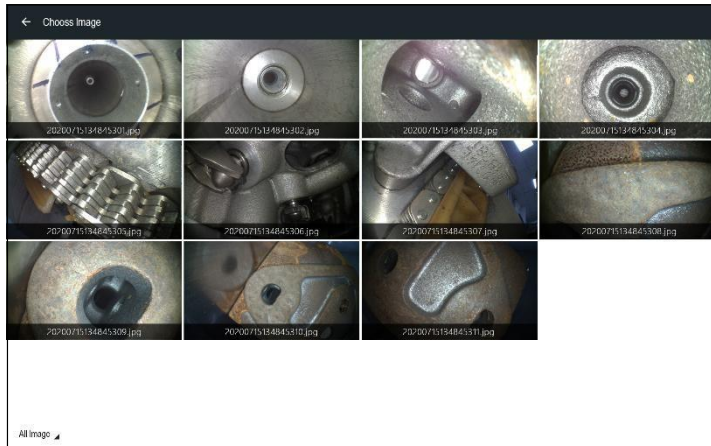
3.14 Image freezing

Click ICON 10 "Freeze", the image is frozen, and can be doodled and saved.



3.15 Image Call

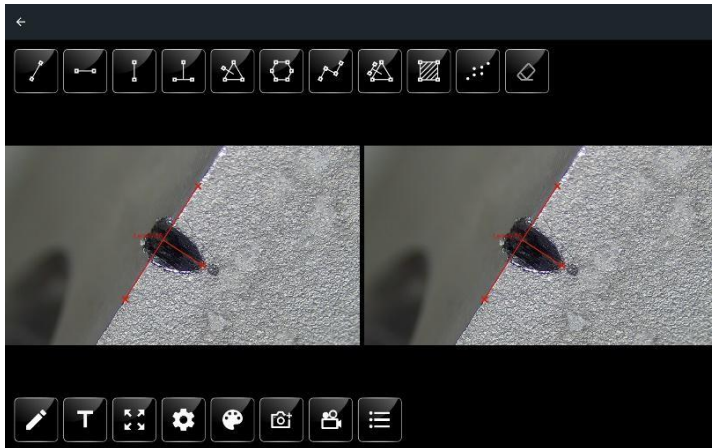
Click "Image call" to select the image to be displayed in "picture in Picture" mode, see 3.7



3.16 Measurement

The top of the screen is the measurement mode. From left to right are: any straight line distance, horizontal straight line distance, vertical straight line distance, point to straight line distance, point to surface distance, perimeter, multi-segment line length, line to surface distance, area, to be determined, eraser.

At the bottom of the screen are the measuring tools and Settings. From left to right are: doodle, add text, zoom, set constraint lines, draw settings, snapshot, video record, list.



Select the point in the left image first. Before selecting the point, you can use the image zooming function to facilitate the selection of points. After that, select the point in the right picture, and there will be constraint line. You can set it in "Constraint line Setting" to see whether the constraint line is turned on and whether the constraint line is effective.

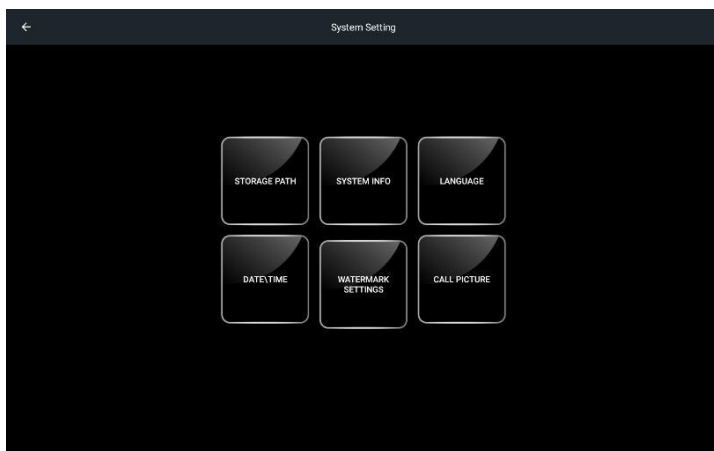
"Snapshot" and "video recording", in the measurement mode, are images taken on the screen, not data taken from the camera.

"Draw Settings", you can set the measured line segment and label.

"List", in the form of a list, shows the value after multiple measurements on the right side.

Note: Strong characteristics are needed to the selection point for measurement.

3.17 Settings



Storage path Settings, set the storage path for photos and videos. System information, view system version.

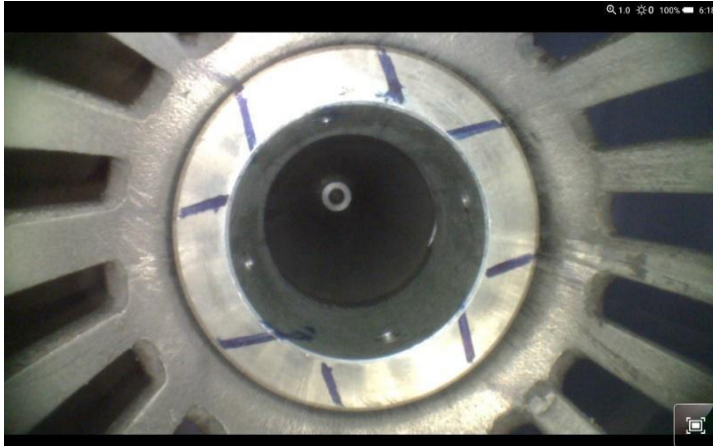
Language Settings, set system language, there are 8 languages optional.

Date/Time setting, set system date and time.

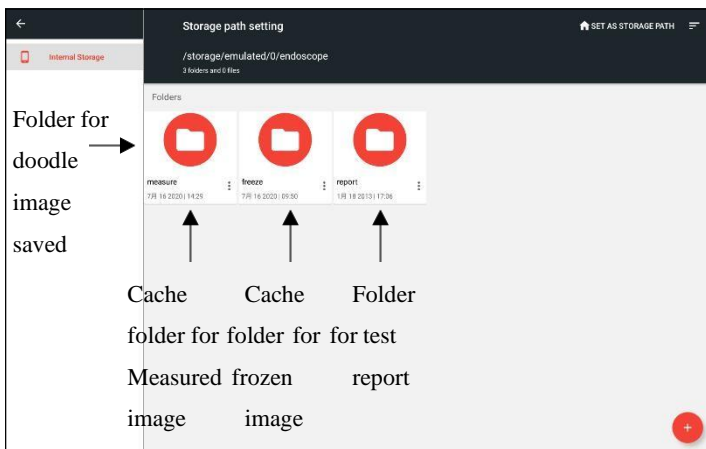
Watermark setting, set the watermark in the preview interface. Image call, set the image to be called in picture-in-picture.

3.18 Full Screen

Display the image in full screen, hiding the left and right Settings floats.



3.19 File storage path



4.Solution to Common Problems

Problem	Reason	Solution
Boot without reaction	dead battery	charging
Auto shutdown	battery power shortage	charge or change battery
Boot screen freezing	system boot failure or battery power shortage	remove the battery to re install or charge, or forced shutdown by triggered the restart button
The image cannot be recorded or found	the capacity of SD card is not enough	Remove unwanted files
Image stuck and fail to turn off	system stuck	forced shutdown by triggered the restart button

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