X3000

User Manual

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Safety & Precautions

Safety Conformances

CE NOTICE

The Video scope System is in conformance with the following standards:
2014/30/EU Electromagnetic Compatibility Directive.

RoHS NOTICE

The Video scope System is in conformance with the requirements of the European law on the Restriction of Hazardous Substances (RoHS) directive. This means that our product is both lead-free and without the hazardous substances either in the manufacturing process or in the final product.

FCC NOTICE

FEDERAL COMMUNICATIONS COMMISSION INTERFERENCE STATEMENT
This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/ TV technician for help.

CAUTION:

Any changes or modifications not expressly approved by the grantee of this device could void the user's authority to operate the equipment.

RF Exposure Information (SAR)

USER MUST PAY ATTENTION TO THE INFORMATION PROVIDED HERE TO ENSURE SAFETY.
We suggest you read the following statements carefully before using the system.
If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.
This device meets the government's requirements for exposure to radio waves. This device is designed and manufactured not to exceed the emission limits for exposure to radio frequency (RF) energy set by the Federal Communications Commission of the U.S. Government.

The exposure standard employs a unit of measurement known as the Specific Absorption Rate, or SAR. The SAR limit set by the FCC is 1.6 W/kg. Tests for SAR are conducted using standard operating positions accepted by the FCC with the EUT transmitting at the specified power level in different channels.

The FCC has granted an Equipment Authorization for this device with all reported SAR levels evaluated as in compliance with the FCC RF exposure guidelines. SAR information on this device is on file with the FCC and can be found under the Display Grant section of HYPERLINK "http://www.fcc.gov" www.fcc.gov after searching on FCC ID: 2AA5FX3000

SAFETY GUIDE

USER MUST PAY ATTENTION TO THE INFORMATION PROVIDED HERE TO ENSURE SAFETY.
We suggest you read the following statements carefully before using the system.
If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.
If this product is used without observing the information given under this symbol, it might cause injuries or loss of life.
If this product is used without observing the information given under this symbol, it might cause damage to this product.

WARNING HAZARDOUS ENVIRONMENTS

Do not use this system in explosive environments such as gasoline or alcohol storage tanks.

WARNING FLAMMABLE GASES

Do not use this system near flammable gases.

CAUTION INDUSTRIAL USAGE ONLY

CAUTION INTENSIVE LIGHT MAY CAUSE EYE INJURY

Avoid looking at the probe head while LED is on.

CAUTION CERTAIN SUBSTANCES MAY DAMAGE THE PROBE

Please refer to the list of chemical resistances below. Contact the store of purchase for further information on other chemicals or unsure chemical solutions.

Chemical Resistance: Water / Brake fluid / Gasoline / Diesel fuel / Transmission fluid

WARNING - Thermal Pad High Temperature

- This product equipped with two heat sinks behind the monitor unit and the handle grip which dissipate heat among 40°C~50°C under normal operation.
- When the probe's illumination keep output at maximum level over 20 minutes, the temperature may raise at 63°C.

CAUTION - Changing Probes / Base Unit

- MUST follow the "1.4 Basic Installation" instructions in the manual and use proper tools to complete the concerned operations.

CAUTION - Battery

- MUST use the original accessory charging units. Do not try using any other electronic charger or recharging method for the batteries.

CAUTION - Media Files Compatibility

- The media files captured and saved by the X3000 system, including photos and videos, are not compatible with any other Mitcorp product.
- The X3000 system cannot read media files from any other Mitcorp product.

Part I Product Set-ups

1.1 Scope of Delivery

1 Trolly Case

2 Rigid Sleeve Set

3 Swappable Battery

4 Base unit

5 Probe unit

6 Calibration Block

For re-calibration of the 3D measurment probe (storaged under the probe unit)

7 Neck Strap

8 HDMI cable

9 Type-C cable

10 USB Type-C Power Adapter

11 Probe clamp plug

This plug is aim for fixing the probe operation when insert hole diameter from 20~25 mm.

12 Trolly Case

13 Cleaning set

14 SD Card

Optional

15 Centering Device

Three sizes of centering device included.

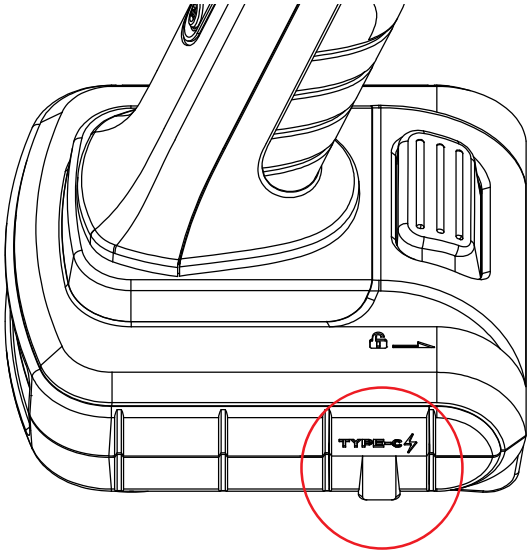
X3000 videoscope dimensions

1.2 X3000 Overview

- Physical parts:

No.	Item	No.	Item
1	Function Buttons	9	Probe Stand
2	Trigger Button	10	I/O Ports
3	Articulation Joystick	11	Power Button
4	Articulation Lock Switch	12	Ergonomic Handgrip
5	Battery (Detachable)	13	Tube Strain Relief
6	Base Unit	14	1/4" Tripod Screw Hole
7	Base Unit Connector	15	Microphone
8	Shoulder Strap Handle	16	Heat sink

1.3 Battery Charging



1. The charging operation is only allowed via the battery's charging USB type-C port.
2. Recommend to use the original equipped adaptor to charge the battery. Any other adaptor could cause unexpected damage.
3. The battery pack is conform to the PD protocol (USB Power Delivery) which allows user to charge via PD-45W(15V-3A) compatible sources, including power banks as for USB cables.
4. When charge under system power on, the power consumption under hard use (such as frequently 3D computing or long time high output of the illumination) may cause low charging efficiency and high electrical heat.
5. Please charge the battery before using for the first time.
6. Green light: Full; Red light: recharging.

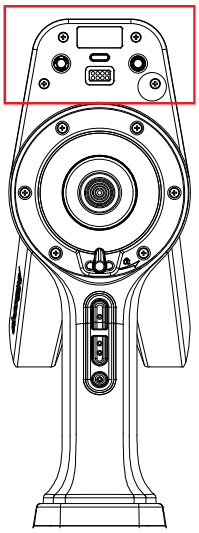
General specification

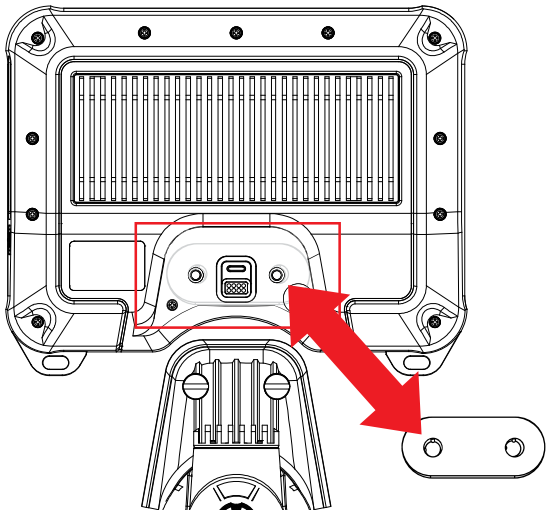
- Nominal Voltage: 7.26V
- Capacity: 8680mAh
- Maximum discharge current: 5.00A
- Maximum charge current: 2.00A
- Operation temperature: 5-45°C (Charge status)
- Operation temperature: -15-55°C (Discharge status)
- Storage temperature: -20-60°C (less than 1month)
- Storage temperature: -20-45°C (less than 3month)
- Storage temperature: -20-23°C (less than 12 month)

1.4 Basic Installation/Handling & Care

1.4.1 Base Unit & Probe Unit Installation

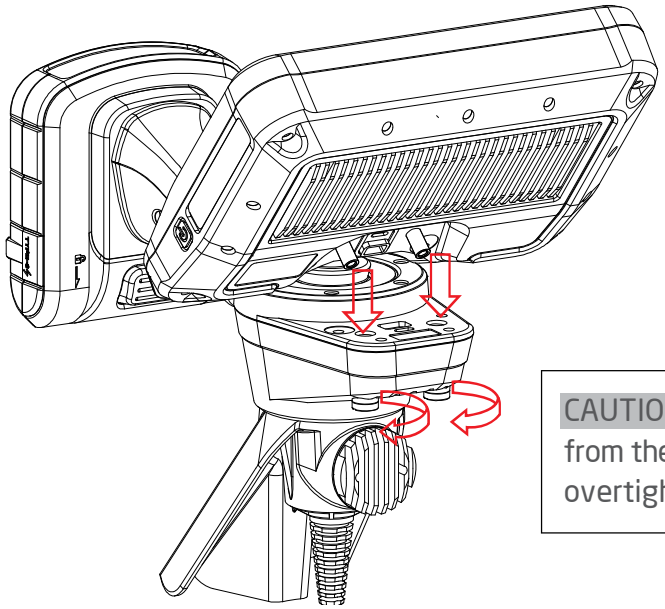
1. Remove the protection cover and check the alignment holes, USB-C and pogo-pins connectors are clean.





* When you finish using the device, it is recommended to put the protective cover back on.

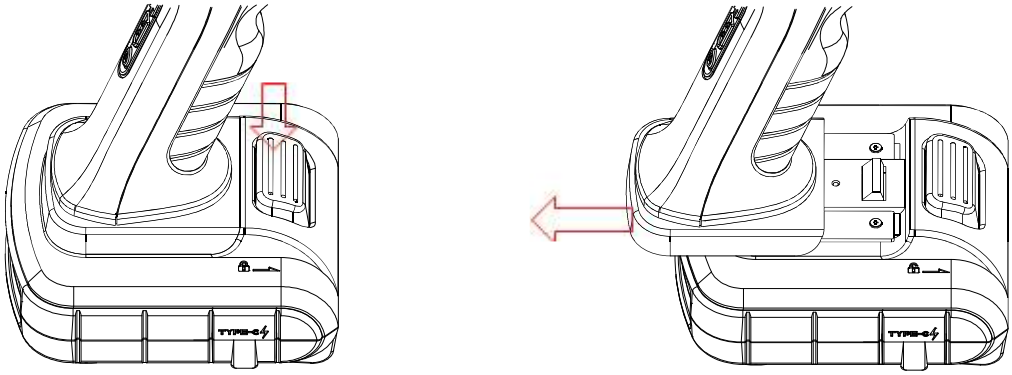
2. Place the base unit on the probe as below picture.
   Fasten the hand screw when the parts are properly aligned. Normally it do not need any tools to operate it.



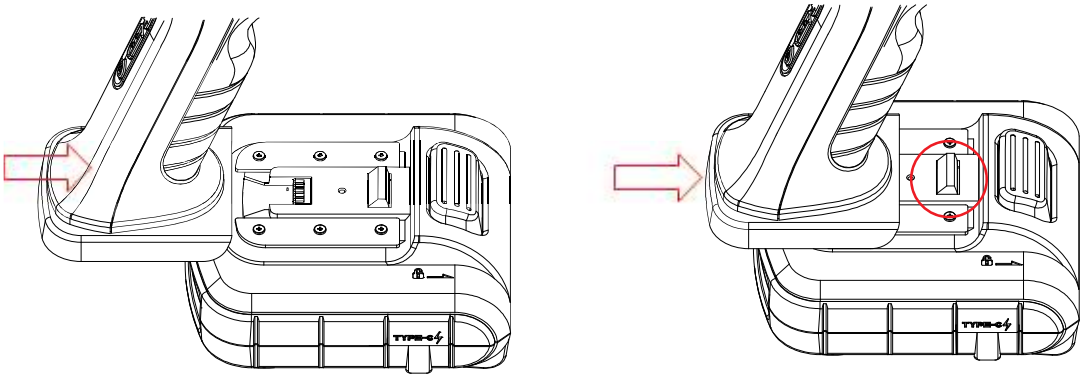
CAUTION - 'DO NOT' remove the screw from the probe stand. Be careful to not overtighten the screw.

1.4.2 Battery Unit Installation

1. To remove the battery, push and hold the lock button, then pull the battery smoothly.



2. To install the battery, reverse the operation direction, properly align the orbit and slide the battery in till the lock latch 'click'.

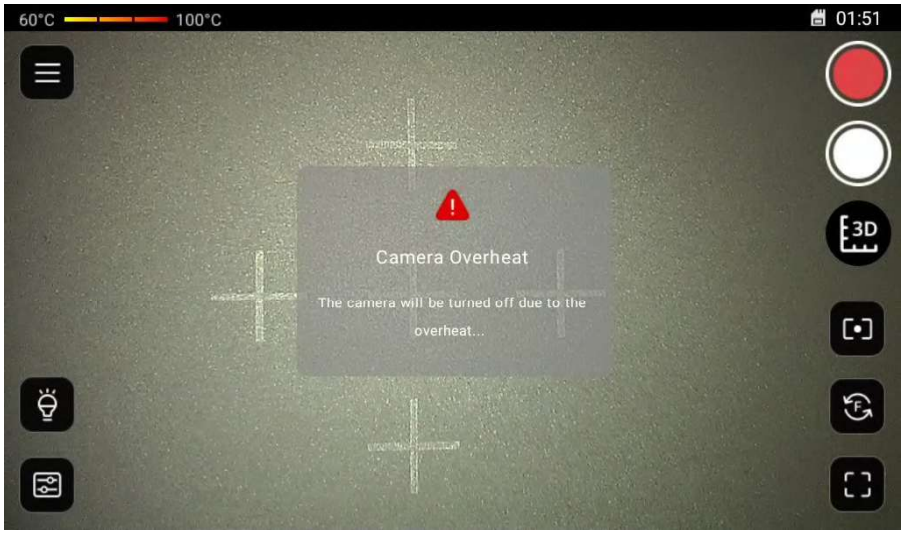


1.4.3 Camera tip optical

The tip end contains two pairs of Micro projector/Camera lens/LED light on the front view (0°) and the side view (90°) directions.

WARNING:

- The camera tip is designed to against 100°C.
- When the camera's temperature is over 60°C, the monitor will pop-up a high temperature bar for caution(as the illustration below).
- When the temperature is over 105°C (red section bar), the monitor will pop-up a overheat warning for caution (as the illustration below), strong recommend to withdraw the camera probe to get camera from damage.
- When the temperature is over 110°C, the system will turning off in a few seconds.
- For the design structure of side LED light, when the brightness output is over 50%, the thermal effect will lead the high temperature warning shows on quicker.



1.4.4 Handling & Care

CAUTION:

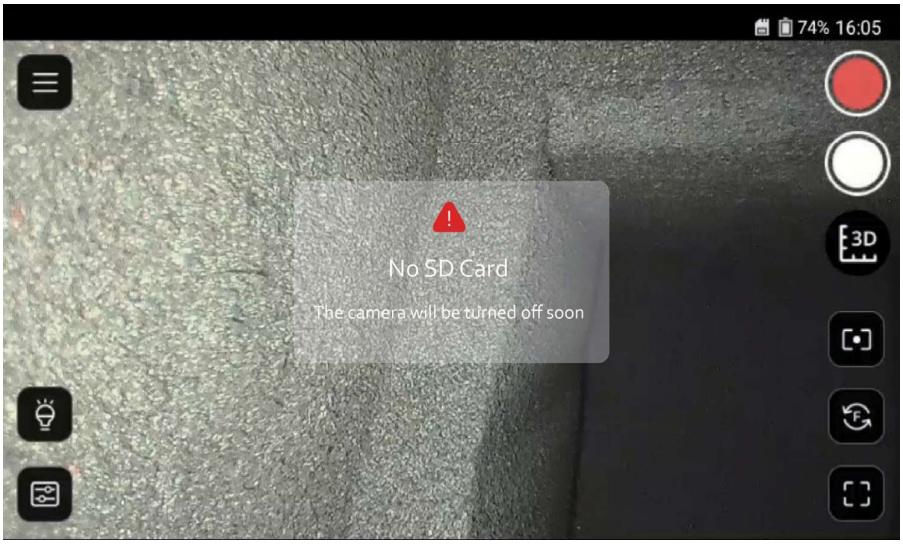
1. Always store the insertion probes, the base unit and the batteries properly.
2. Do not roll the probes up too tightly (aim for a diameter of at least 30 cm).
3. Check the outlook of all optical parts no broken and confirm there are no aliens cover them.
4. Use neutral detergent to clean the optical part if necessary.

1.5 I/O Ports Connection

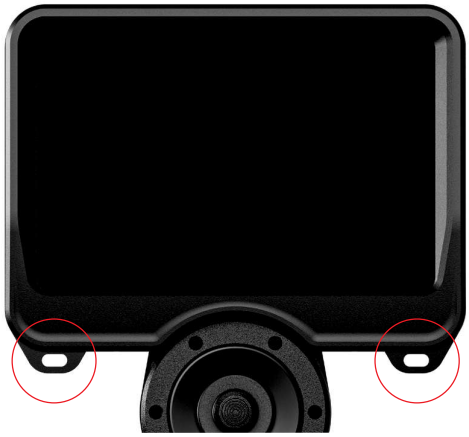
	Reset	Stab with a blunt pin when the system accidentally crashes.
	Micro SD	Push-push type micro SD card slot. Install the SD card by connecting the finger side up. When covering the outside robber cover, please avoid hard push to this position. Just push stoppers around the cover.
	USB Type-C	→ Use the accessory or compatible USB cable. Caution: This USB port is only for data transmission. 'DO NOT' input any power via this port.
	HDMI Type-D	→ Use the accessory or compatible HDMI cable. → The system can output the live view and saved images when connecting to monitors / TVs.

1.5.1 SD card installation

Please properly install the SD card before boot-up the system. The system DO NOT support SD card hot-swap operation.
The system will auto power off in a few seconds when it detect there is no SD card.
Every time change to a new (or another) card, do the format operation again is recommended.



1.6 Shoulder Strap Hanging Ring



Take the shoulder trap out from the accessory box.
Hook on the two hanging rings on the monitor.
Adjust the proper length to fit your usage purpose.

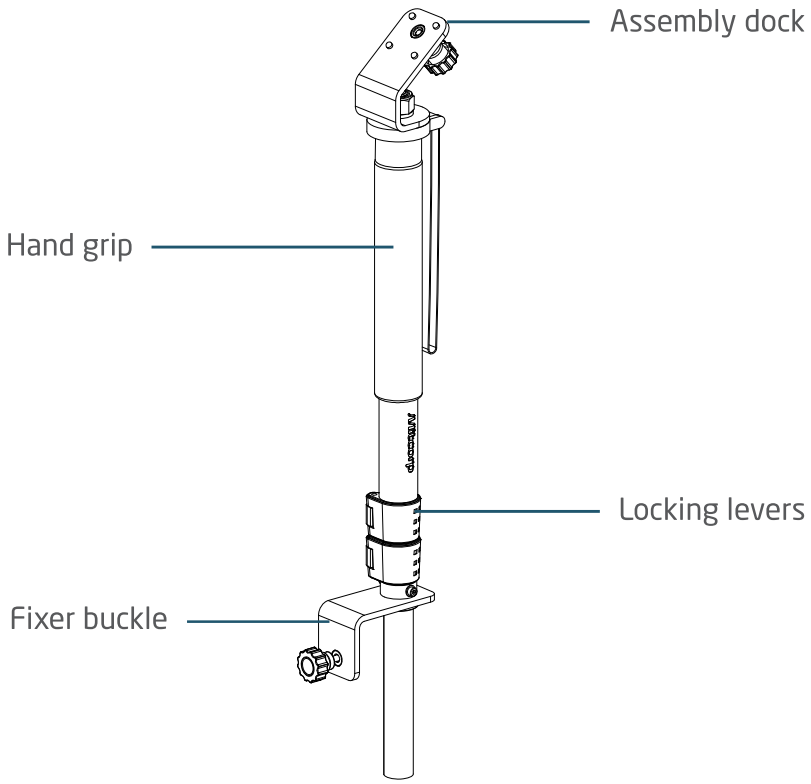
1.7 Use the Probe Stand with a tripod

The stand equipped with a standard 1/4" screw hole which compatible with most tripod head. Recommend choosing high load capacity type to implement the operation.

ps. The tripod is NOT included in accessory.
Just for illustration.

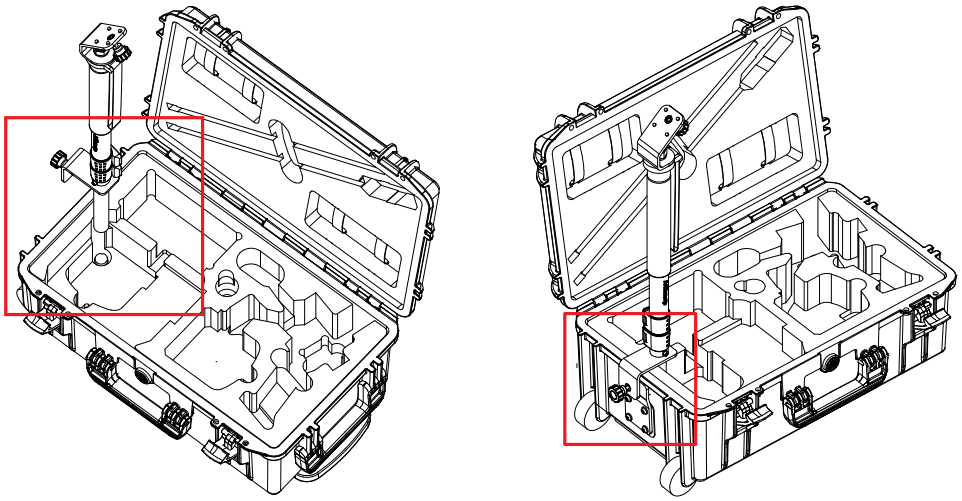
1.7.1 Use the Probe Stand with a mono-pod

- Monopod

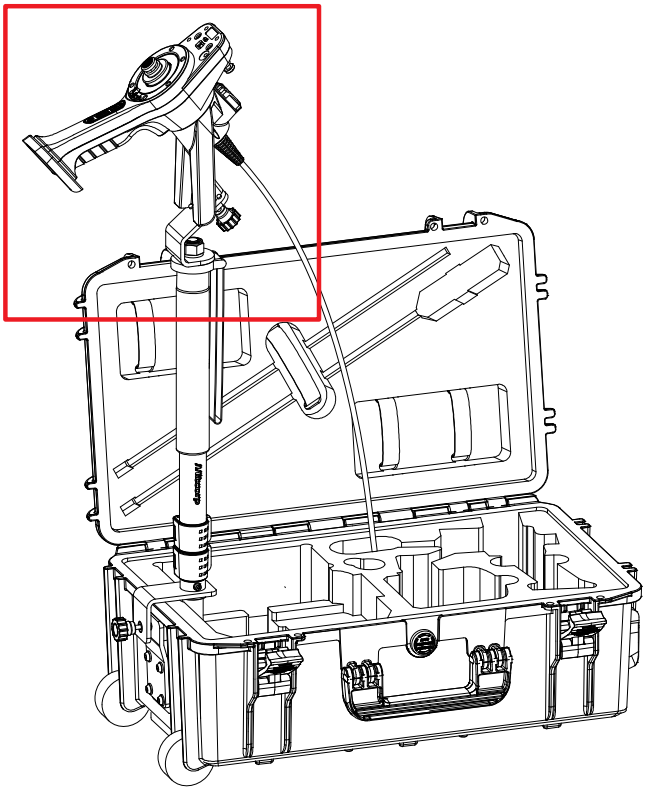


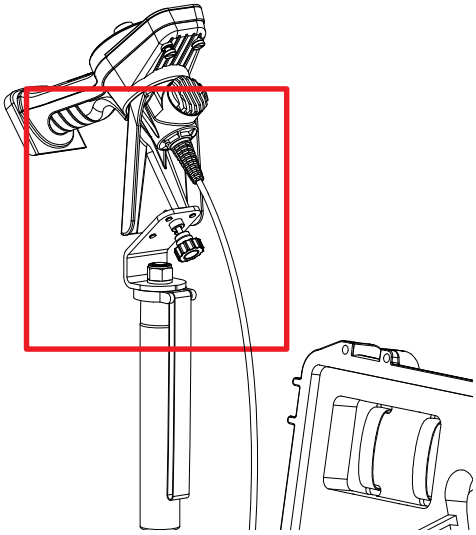
- Monopod

1. Take out the monitor unit and find the assembly hole on the bottom of the EVA. Take out the mono stand from the carry bag.
2. Insert the pole into the assembly hole and make sure the fixer buckle is properly aligned to the trolley case's wall side. Then fasten the hand screw until the pole the well fixed.

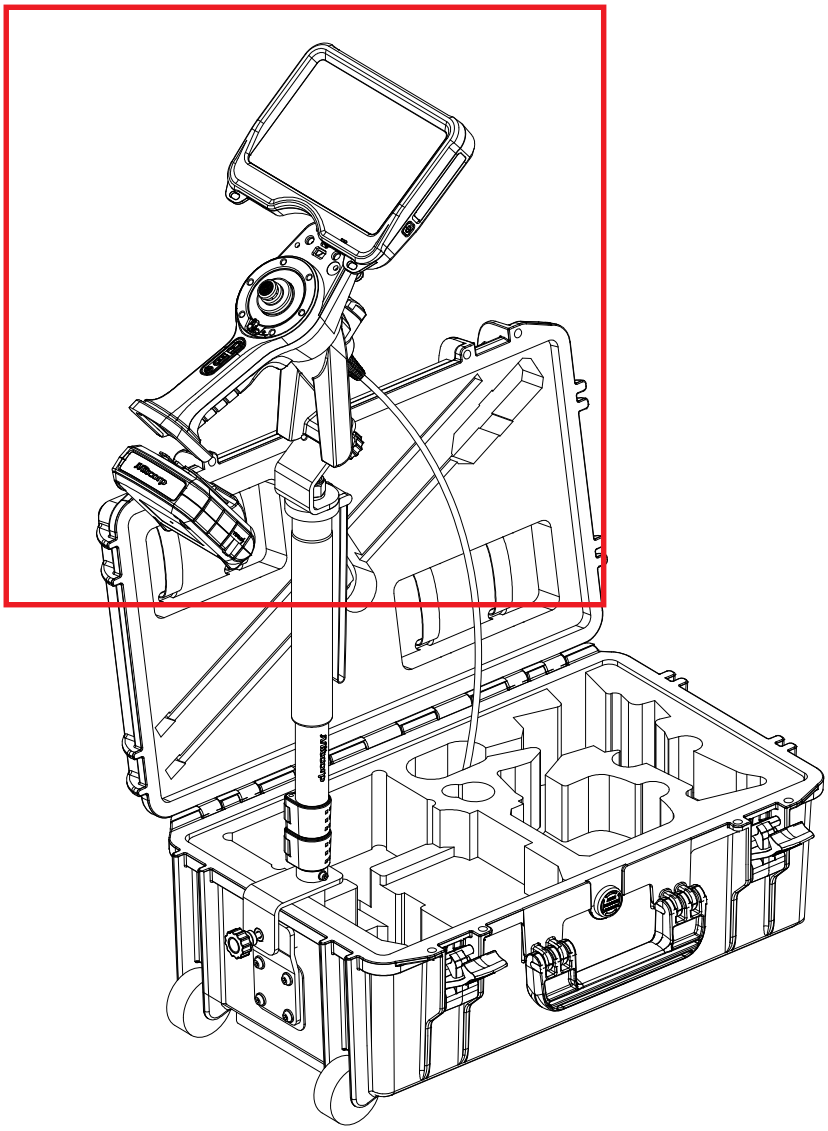


3. Take out the probe joystick unit. Carefully align the tripod screw hole onto the assembly dock of the mono stand. Note that there are positioning pins on the side and middle of the dock that helps to ensure the stability and ease of alignment of the parts. Fasten the hand screw of the stand onto the tripod screw hole after the parts are all confidentially assembled.

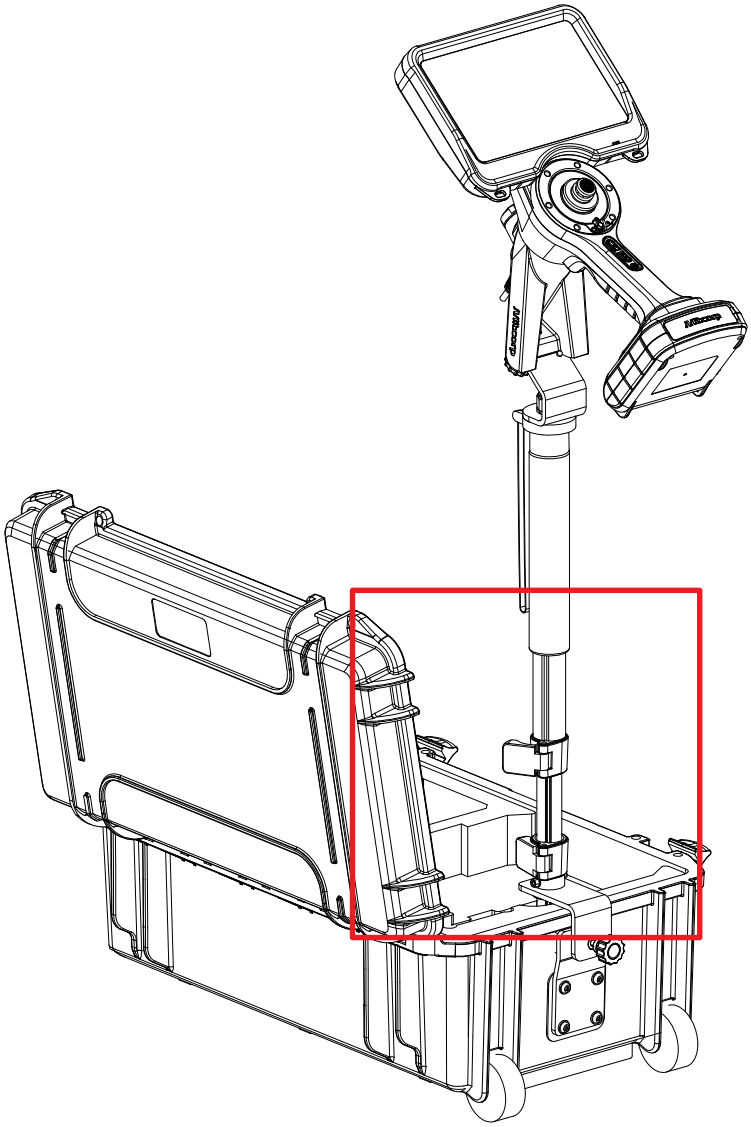




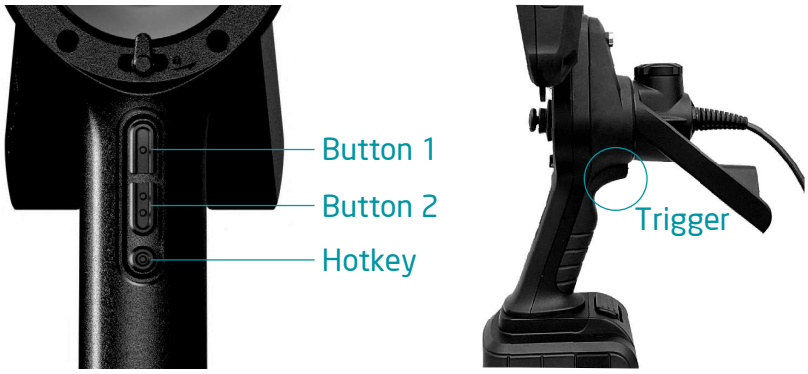
4. Finally, install the monitor unit and battery unit by order.
   This step should be operated smoothly by holding the balance with the trolley case.



5. The monopod provide 3 sections pole for height adjustment between 80 cm to 130 cm.
   Unlock the lever and pull up the hand grip to the required height, hold and lock on the lever to fix the device.
   This step should be operated smoothly by holding the balance with the trolley case.



1.8 Function Buttons/Multi-function Control



1.8.1 Function Buttons 1&2

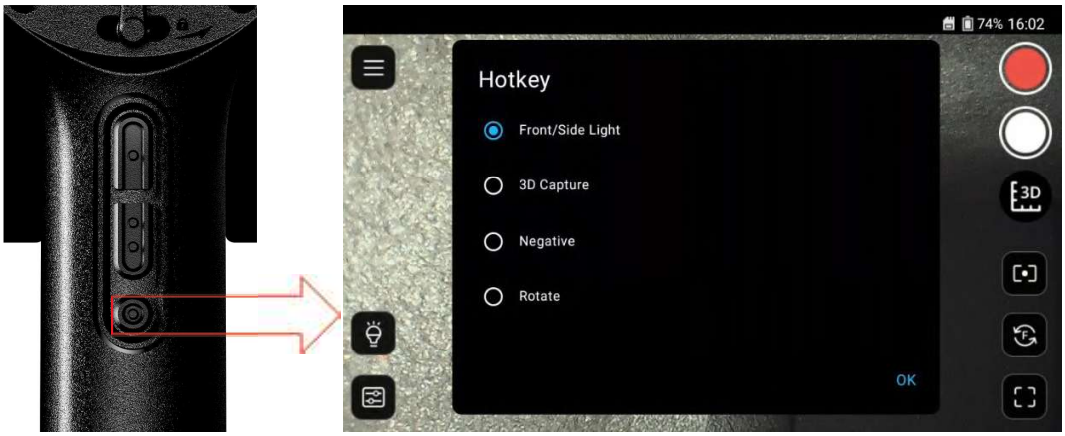
Multi-function under different status:

Button	Live view status	Browser / Function list status
	Light level up	Option switch 'Up'
	Light level down	Option switch 'Down'

1.8.2 Custom Hotkey

Multi-function under different status:

Button	Live view status	Browser / Function list status
	Hotkey: 4 options available ->refers to [1.8.1]	Execute the function (Under 'Save Photo', press to 'Cancel')



- Front/Side Light: quick switch between front light and side light.
- 3D Capture: act the button as 3D button .
- Negative: act as the Negative function [refers to 2.4.5]
- Rotate: act as the image Rotation function [refers to 2.4.7]

1.8.3 Trigger button / Snapshot & Recording video

Multi-function under different status:

Button	Live view status	Browser / Function list status
Trigger	*Short press->Snap shot *Long press->Recording video *Short press under 3D focus->3D capture	Confirm / 'OK' (Under 'Save Photo', press to 'Save')

Snapshot

Tap the [white circle icon ◯] on screen or Short press the [Trigger] button.
The screen pop-up save confirm window with a real-time screenshot. To confirm save image, press the 'trigger' button. To cancel, press the hotkey button, then go back to live view.

Recording Video

Tap the [red circle icon ⬤] on screen or long press the [Trigger] button to start/stop recording the video. During recording, short press the [Trigger] button can take and save the real-time screenshot photo.

1.9 Articulation Joystick/Articulation Lock Switch

The articulation joystick allows for easy maneuvering the probes.

1. Moving the joystick handle into the desired direction will prompt the probe to articulate.
   The articulation lock switch can be found below the joystick.
2. Flip the switch to the right to enable the lock.
3. A clicking sound will indicate successful articulation lock.
4. The probe will be locked in place after releasing the joystick.

CAUTION: Release the articulation lock by flipping the switch to the left before removing the probe from an object to avoid damage.

Part II On Screen Display (OSD) functions

2.1 Live View screen UI

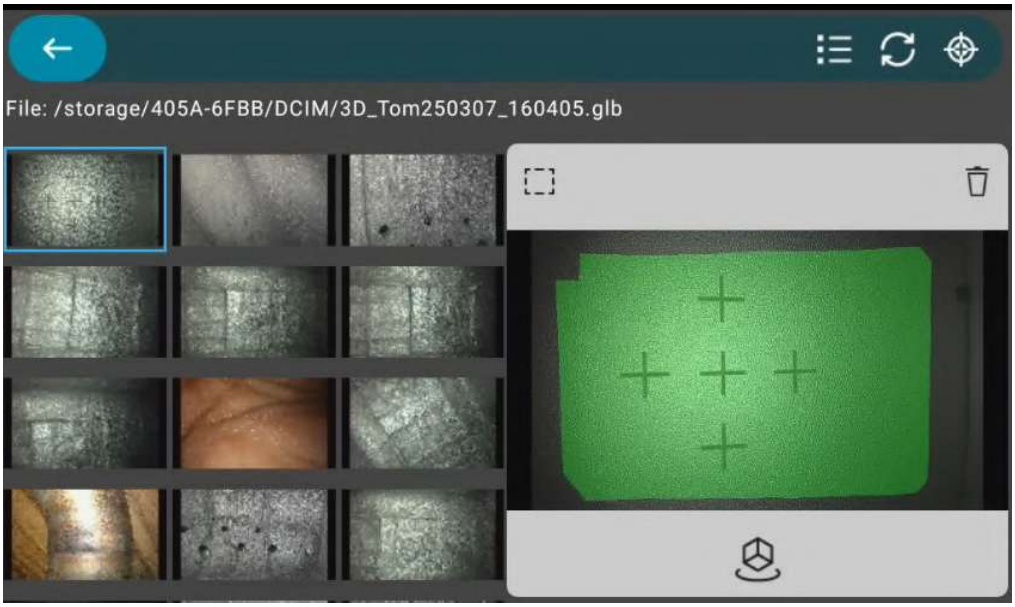
- Fixed header information: SD card status/Battery status/Time.
- Function buttons of the two sides are introduced in section.
- The system provide 3 levels(1.5x/2x/3x) of digital zoom by two finger pinch gesture.

2.2 Function list

2.2.1 3D measurement

Enter to preview the saved image files by 3D capture.
You can change file list layout type and refresh the preview window by the up-right buttons.

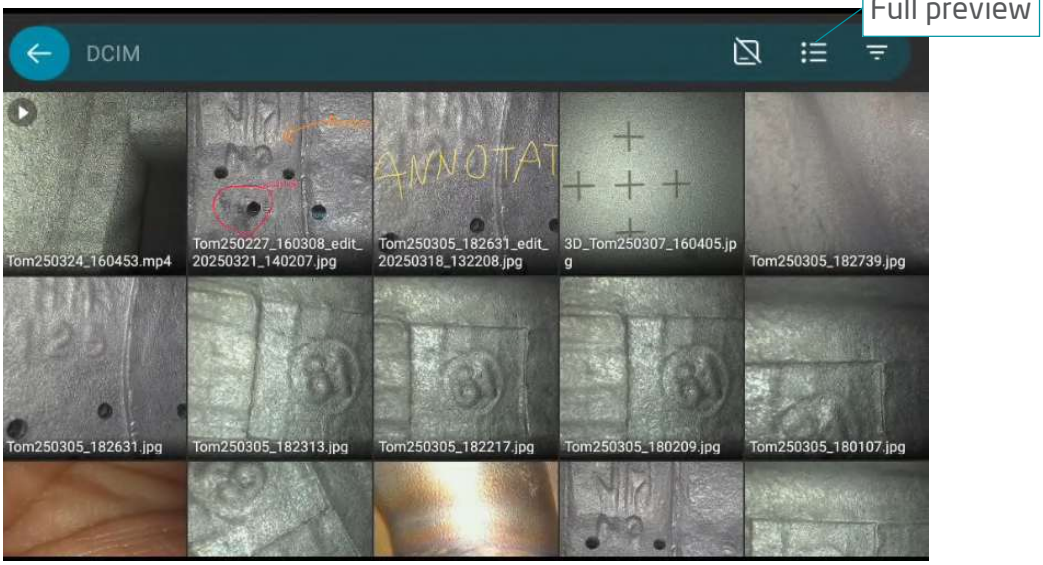
The up-right button provides a calibration process.
It's recommended to do the calibration every time before measurement job. For the detail please refer to the [APPENDIX] .

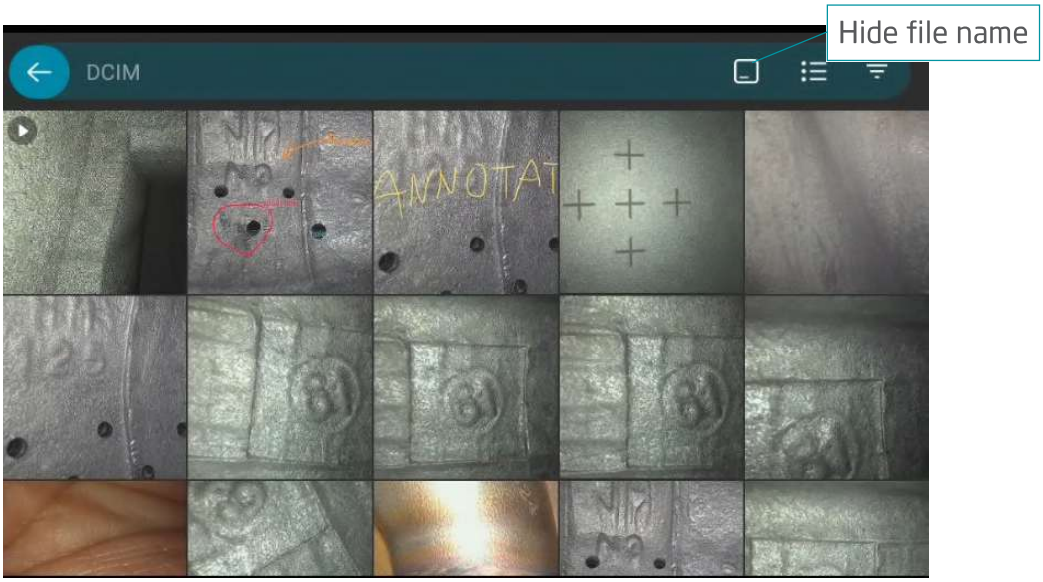


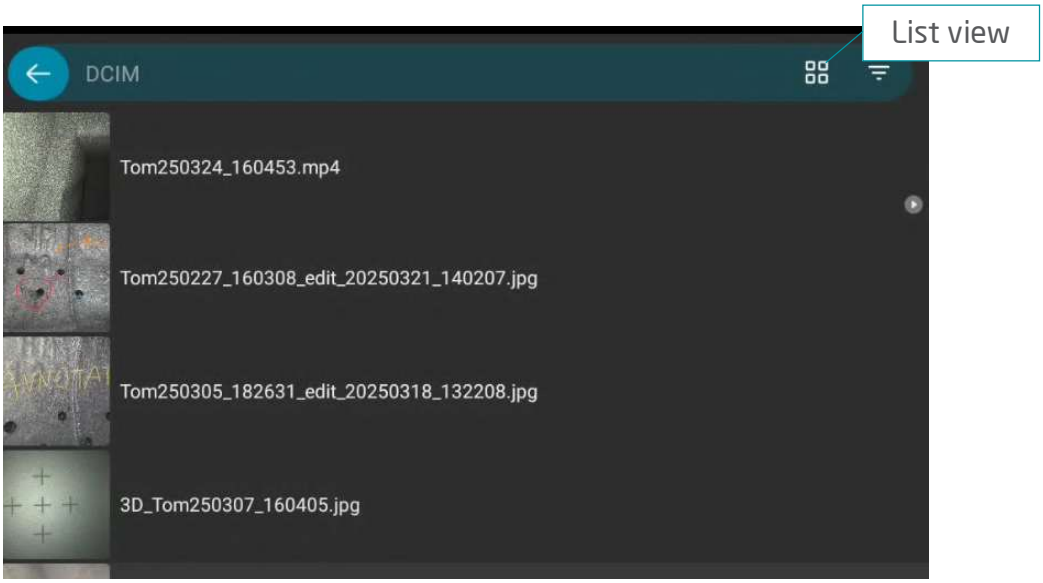
The right window shows the "green mask" that indicates the area which was successfully re-constructed. Tap the icon can enter the measurement interface. Detail functions please refer to [PART III] .

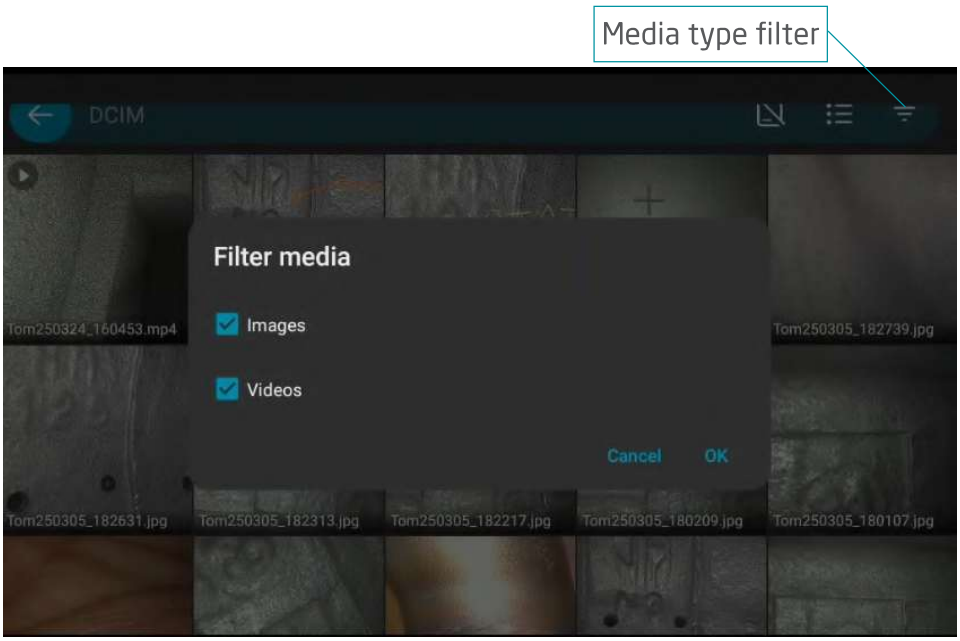
2.2.2 Gallery

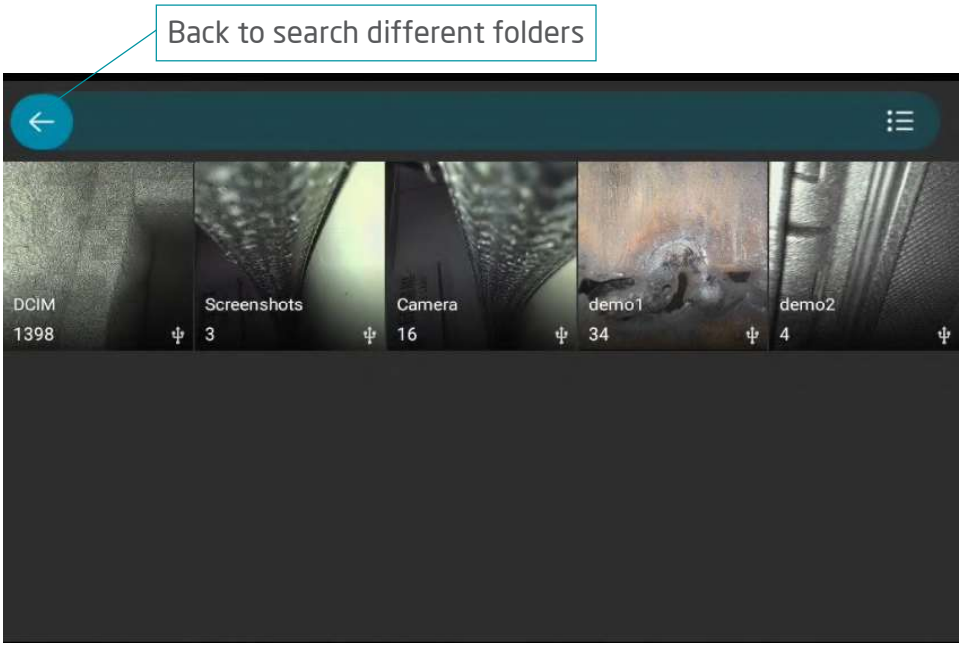
It will display the chosen folder content when enter the gallery.







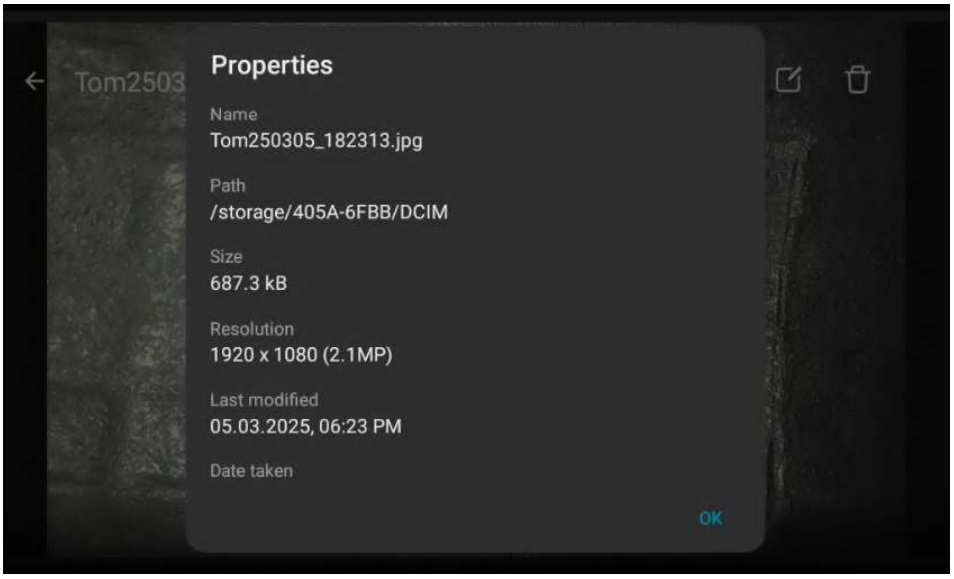

Media type filter
DCIM
Filter media
Images
Videos
Cancel
OK
Tom250324_160453.mp4
Tom250305_182739.jpg
Tom250305_182631.jpg
Tom250305_182313.jpg
Tom250305_182217.jpg
Tom250305_180209.jpg
Tom250305_180107.jpg


Back to search different folders
DCIM
1398
Screenshots
3
Camera
16
demo1
34
demo2
4

SINGLE PHOTO VIEW:

Image tools functions:
Annotation / File information / Rotation / Rename file / Delete

→ File information :

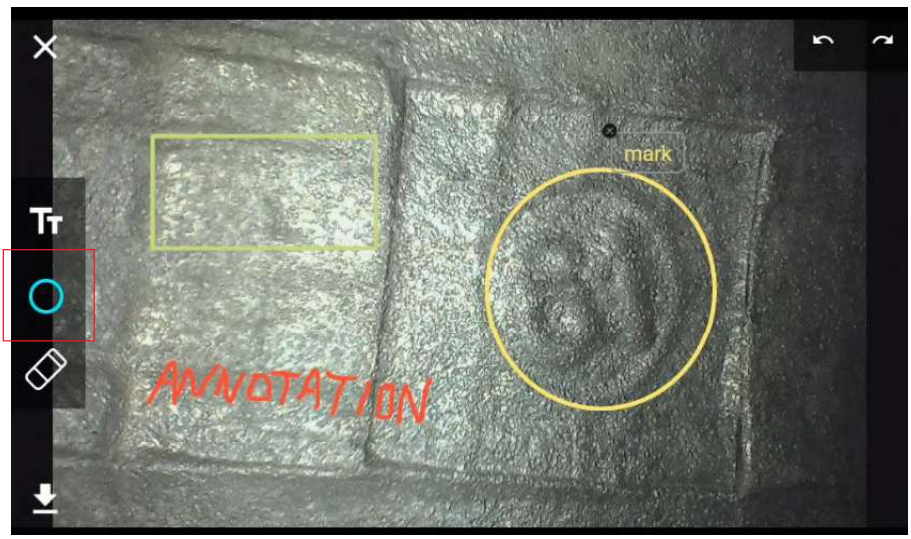


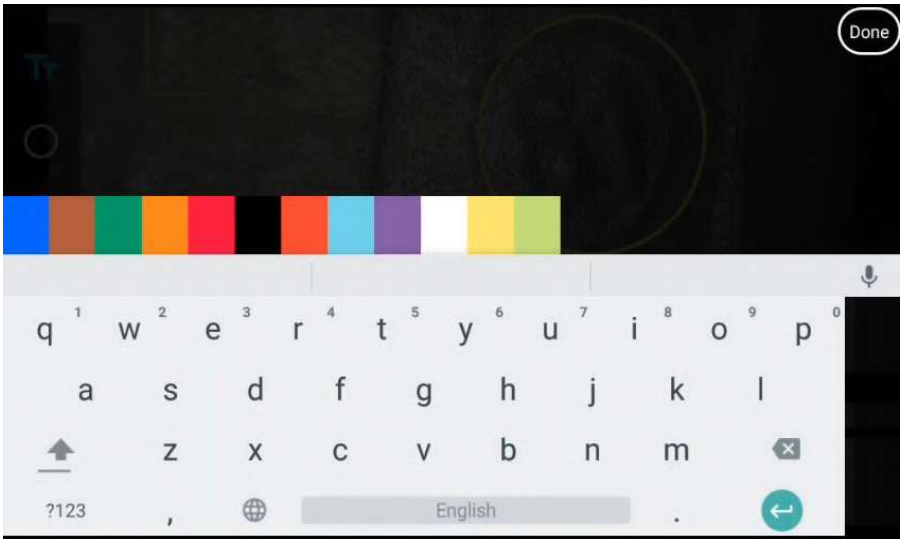
→ ANNOTATION :

Pen types: Brush /Line / Oval / Rectangle

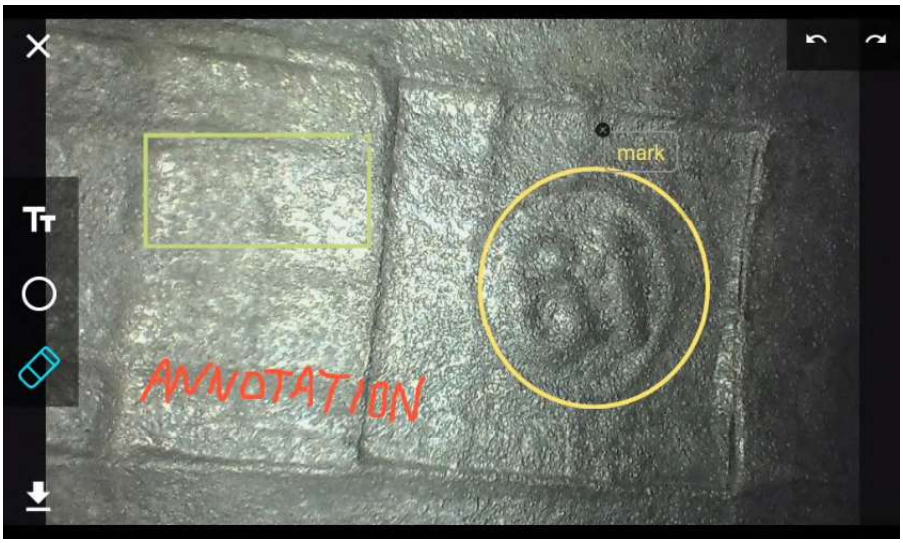
Change the pen type and properties drag from bottom-up the screen

Add text box: tap and drag the text box at the needed position





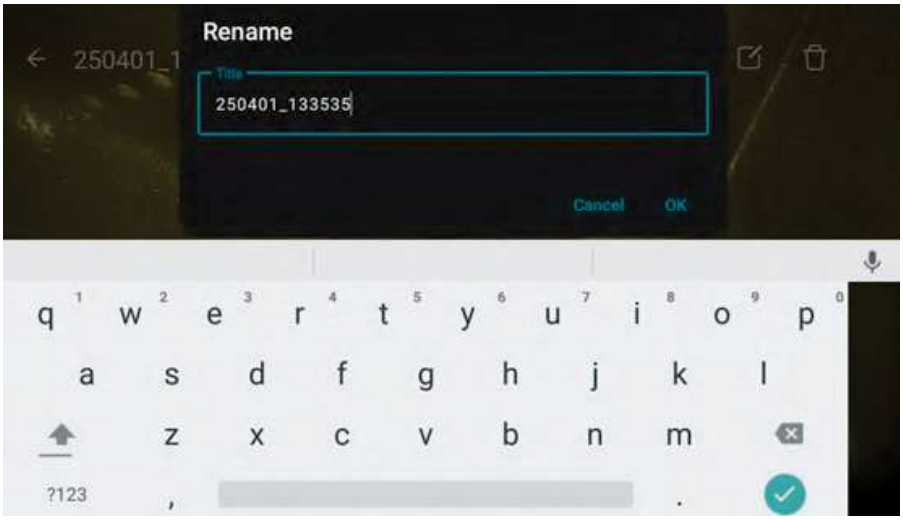
Use the Eraser or Next / Last arrows edit tools to revise the content



Save the image before exit. It will be saved as a new file automatically

→ **Rotation:** Provide 3 ways image rotation function.

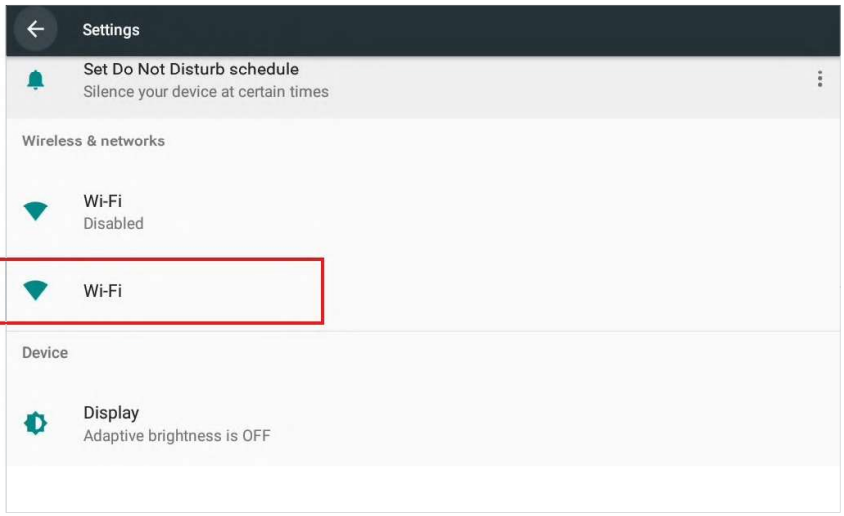
→ **Rename file:** Rename the saved file.



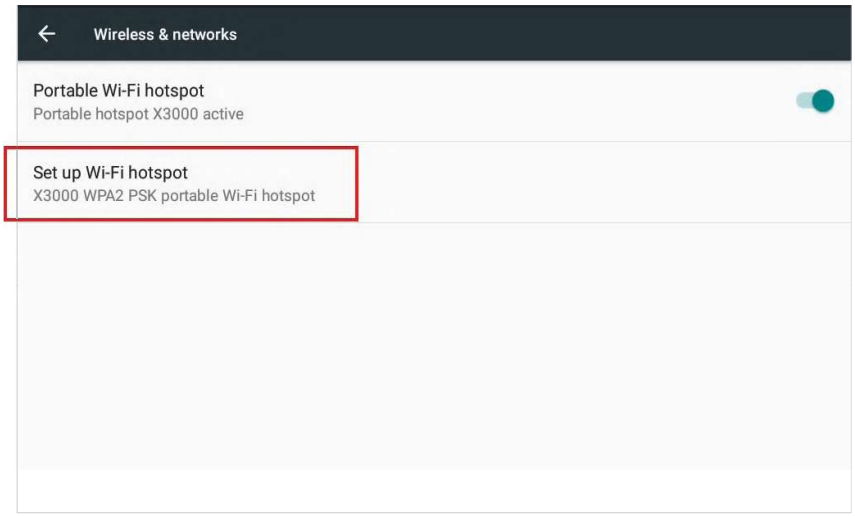
→ **Delete file:** Delete the saved file.

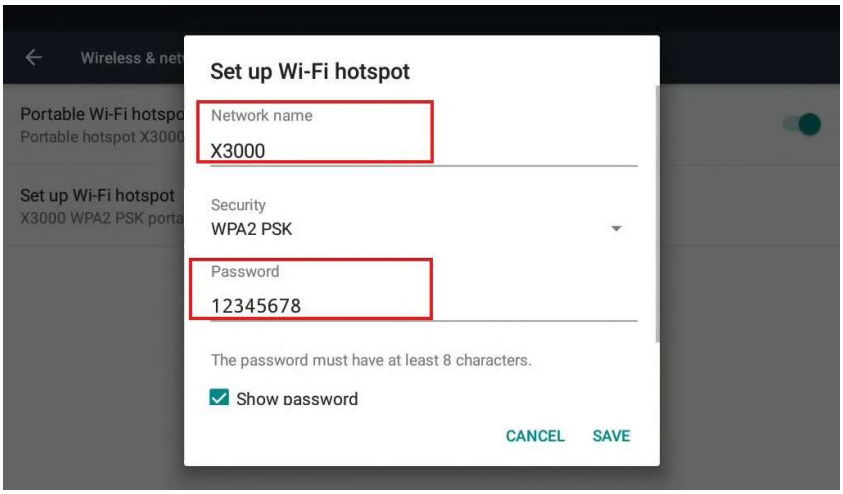
2.2.3 Settings

Wi-Fi connection: The system support Wi-Fi hotspot mode for connection to mobile utility APP-"X3000app". (ps. There is no Internet connection in the first "Wi-Fi" button which can be ignored.)

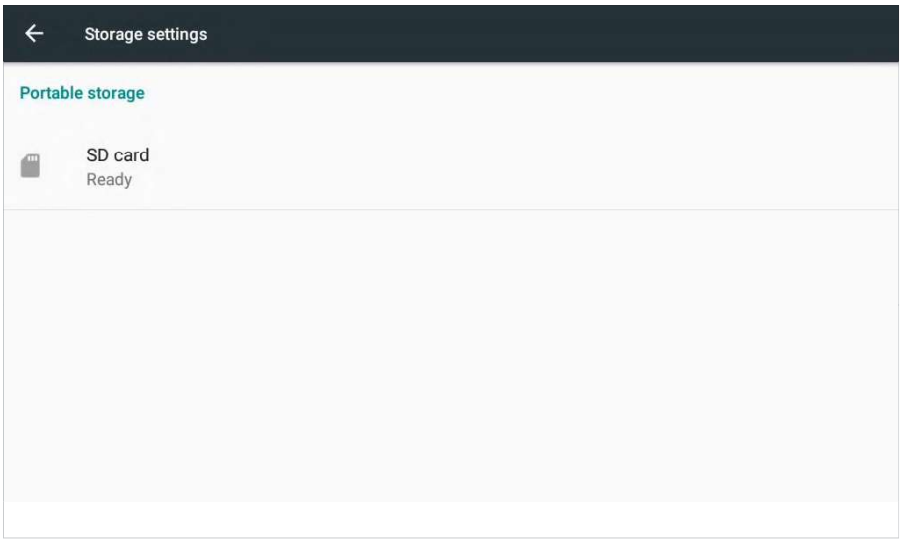


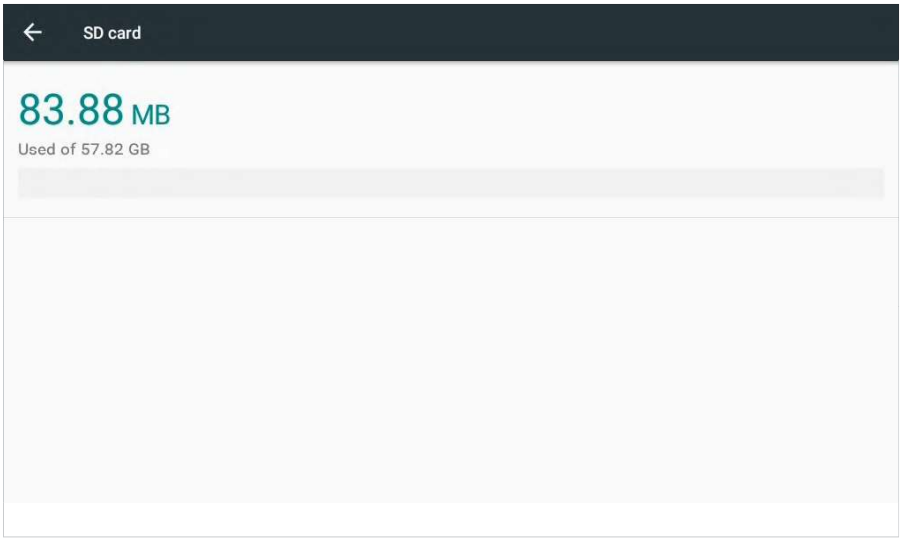
Enter the Wi-Fi hotspot settings and revise the device 'network name' and 'password' upon your preference. Then active the 'portable Wi-Fi hotspot'.

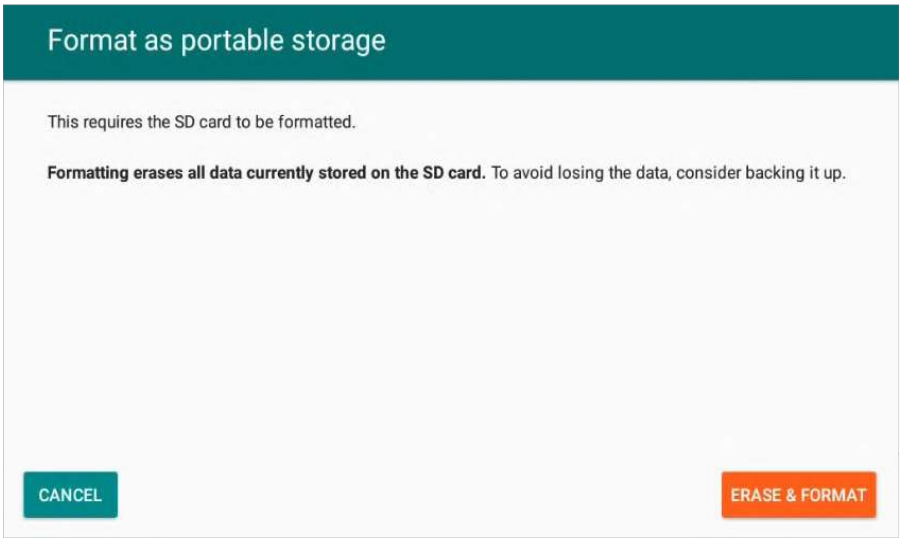




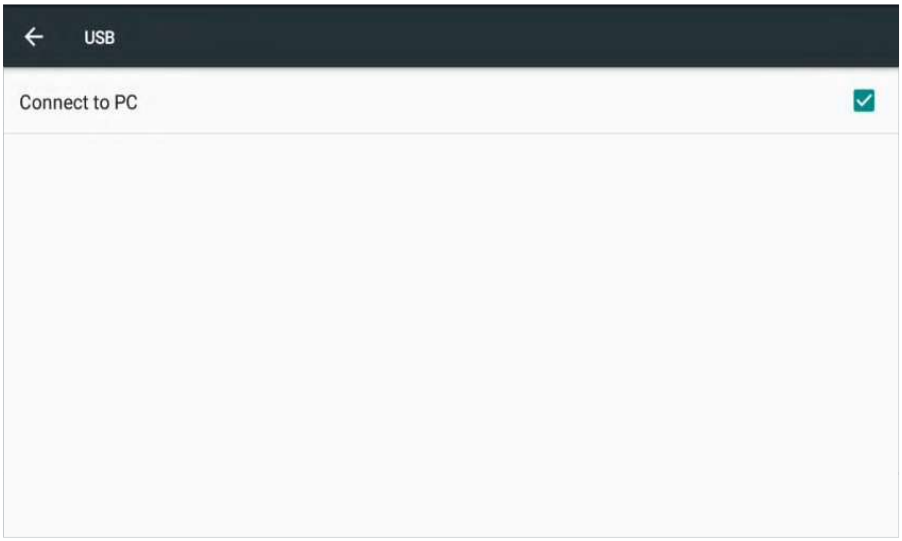
→ **Storage:** **The system support up to 128 GB micro SD card. Recommend to do the format process as follow every time change a new memory card.**





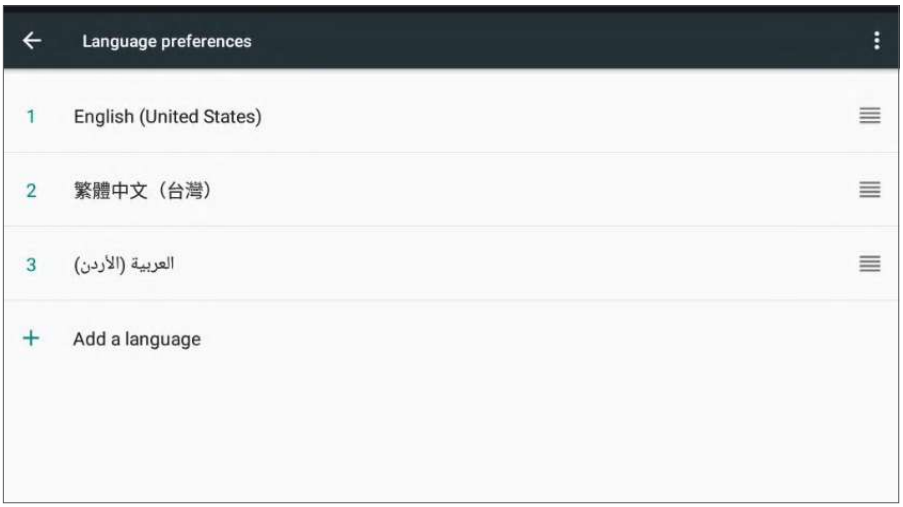


→ USB: Use the USB cable to connect to PCs for transfer image data. The system will be recognized the device as 'X3000'.



→ Language: To change the input and interface language, follow the steps below:

Step 1: Enter the [Language & input] of the second page of the menu. Then tap the Languages.



Step 2: Tap [Add a language].

Step 3: Slide down the list to find the language required.

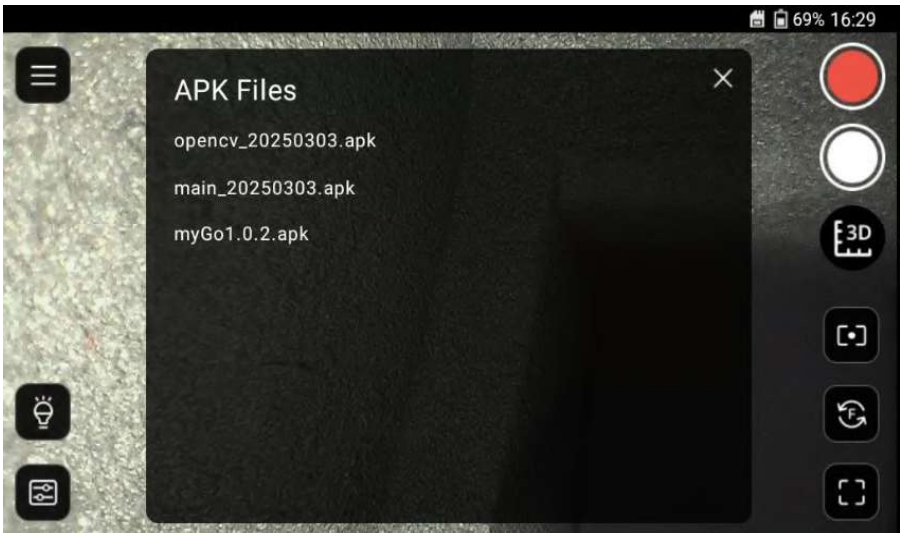
Step 4: Set up the language preference and pick it up by the check box.

Date & Time: tuning the date,time,and formats.

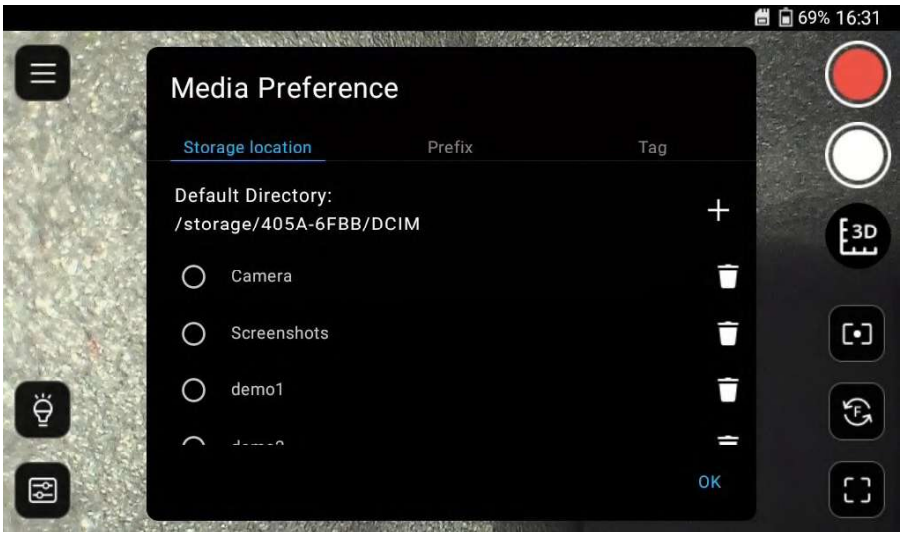
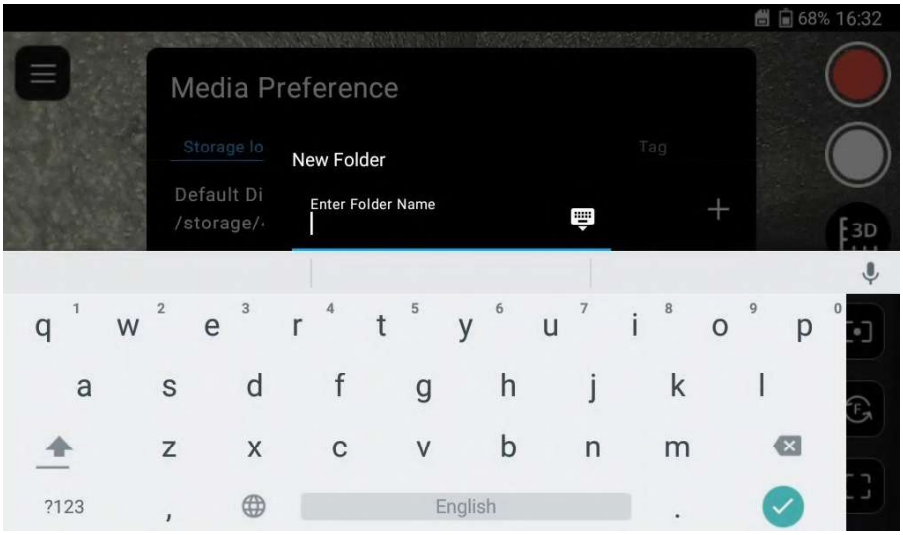
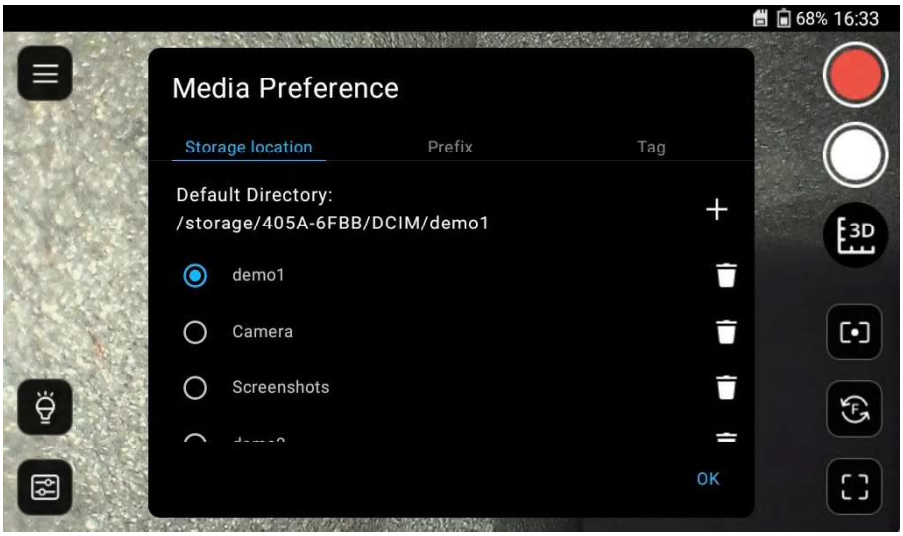
2.2.4 Info.

[APK Upgrade]: When new version is released, save the [.apk] file in SD card root directory then press [Upgrade] and select the file to install. When the upgrade is completed, press the reset button(right side of the monitor) at first, then restart the system to enable the new software.

[Probe re-sync]: When new probe attached to base unit, the internal data will loaded automatically. But if the focus white circle misalignment or 3D reconstruction not successful, you can press [Re-Sync] to reload the data from probe again.



2.2.5 Media Preference

The system provides 3 media preference settings to meet different kind of file management needs.

- **Storage location:** Add and name new folder for file saving