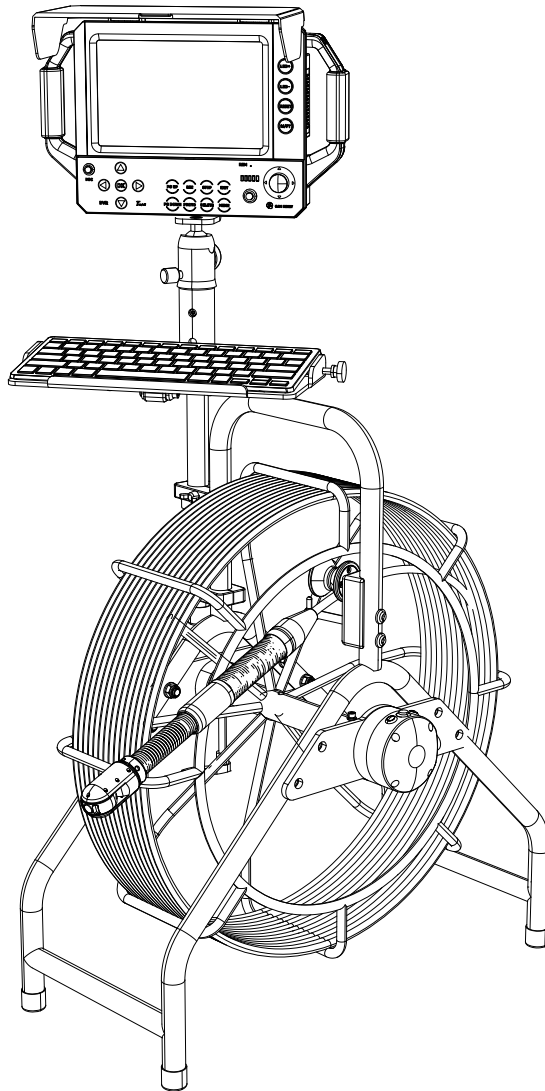


PIPE & WALL
VIDEO INSPECTION SYSTEMS
USER MANUAL
FOR
Model: 3388PH



► Read instructions carefully before operating this system.



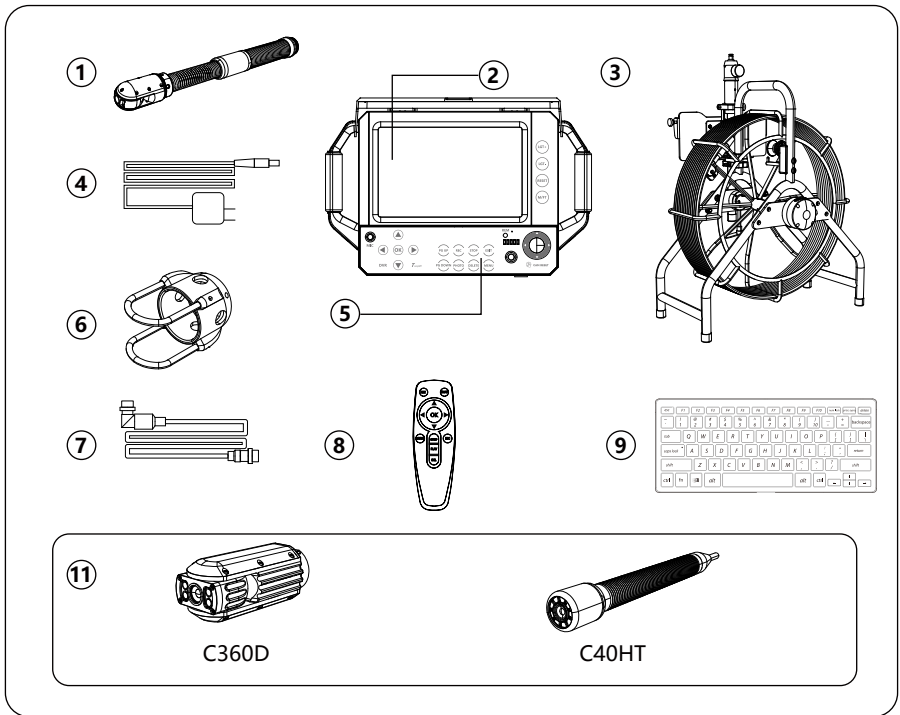
WARNING

1. Do not use the device in flammable and explosive environments.
2. Avoid using the device in extremely cold, hot or humid environments; Otherwise, the device may be damaged, and the damage caused by this behavior is not covered by the warranty.
3. Use it with care to prevent the device from falling from a height. Do not throw, beat or press the device.
4. Avoid using parts from other manufacturers, so as not to damage the device due to incompatibility.
5. If the user disassembles the device without permission, the damage caused by such behavior is not covered by the warranty.
6. Save the data before connecting the USB/TF card. The manufacturer/seller is not responsible for data loss for any reason.
7. Do not disconnect when recording or playing, keep the device in normal working state, otherwise it will damage the device.
8. Do not mix battery charging cables and power cables, otherwise the battery will be damaged or the system will not work properly.
9. The push cable of the system is made of fiberglass and has a certain toughness, but it cannot be bent significantly or forced too hard, otherwise it will be broken.
10. After use, the cable must be retracted into the cable rack and wiped clean.
11. Do not splash water onto the device.
12. Do not overcharge the lithium battery, otherwise it may cause damage.
13. Please only use our company's dedicated charger for charging.
14. There are restrictions on the use of the device. Observe whether the device is in a high-intensity magnetic field environment. For example, the magnetic field generated during the operation of an electric screwdriver can significantly affect the accuracy of the meter. Please keep the device away from high-intensity magnetic field environments for use or storage.

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Product Structure Diagram And Parts List



- (1) Camera: C32
- (2) 8-inch Highlight Display Screen
- (3) Cable Reel: 8mm 60m
- (4) Power Adapter
- (5) Controller
- (6) Camera Skid
- (7) 10-core High-definition Video Cable
- (8) Remote Control
- (9) Keyboard
- (10) Optional: Video transmission WIFI module (installed in the controller)
- (11) Camera: Compatible with C360D、C40HT

Specifications

Item	Descriptive
Adapter	AC: 110V~240V DC: 12.9V 3A
Lithium Battery	12V 8000MA/H
Length Of Cable	60M
Camera Light Source	2pcs Highlight White LEDS
Camera Angle Of View	360°
Angle Of Lens	Horizontal Angle 360°,Vertical Angle 180°
Lens Focus	10CM
Lens Thread	M12*P0.5
Lens Operating Temperature	-20°C ~ +55°C
Camera Resolution	Color,2 Million Pixels
Monitor Image	8 " TFT/LCD Color Display Screen
Monitor Picture Resolution	1280*800 pixel
Monitor Input Voltage	DC 5V
Storage Device	USB drive or TF card (supports up to 512GB) USB exFAT format
DVR Encoding Format	H.264
System Operating Temperature	-20°C~+55°C

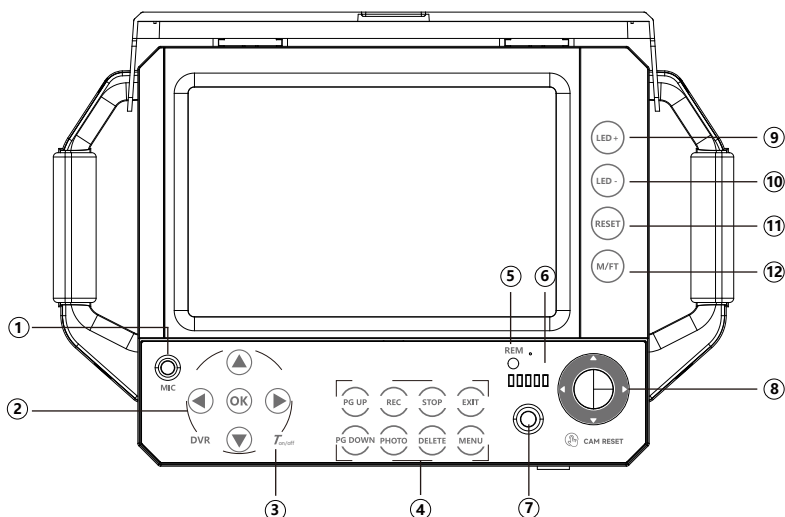
Application Area

- | | |
|-------------------------------|------------------|
| 1. WATER SUPPLY | 2. WASTE WATER |
| 3. ELECTRICAL AIR CONDITIONER | 4. CABLE DUCTING |
| 5. DUCTED VACCUM SYSTEMS | 6. PLUMBING |
| 7. BUILDINGS | |

WARNING:

NEVER USE THIS DEVICE IN AN ENVIRONMENT WITH EXPLOSIVE MATERIALS SUCH AS GAS, OIL, ETC

Understanding The Device



- ① MIC On/Off: Microphone (voice) button. When recording a voice during a video, press the button to start recording.
- ② DVR/CRAWLER Control Buttons
◀: Left ▶: Right ▲: UP ▼: Down OK: Confirm
(In real-time screen, ◀: Zoom Out Screen ▶: Enlarge the screen)
- ③ T On/Off: Display and hide the text on the display screen.
- ④ DVR Control Buttons
PG UP: Last page PG DOWN: Next page
(The PG UP and PG DOWN are only used as page flipping functions when using keyboard text input)
REC: Record video button
PHOTO: Quick Screenshot
STOP: Stop Video Playback
DELETE: Delete video or photo file
EXIT: Exit video playback or return to the previous menu
MENU: Function Menu Keys
- ⑤ REM: Remote control receiving window

⑥ Battery: Battery indicator

Discharge command status: When the battery is continuously discharging, the green indicator lights will turn off one by one. When the green light turns into a flashing red light, it means that the battery is low in power. Please charge the battery.

Charging indicator status: As the amount of battery charge increases, the green lights will be turned on one by one until the battery is fully charged.

⑦ Control Box Power Button

⑧ 360° Rotating Camera Control Button

Left Dial: Rotate the camera to the left

Right Dial: Rotate the camera to the right

Up Dial: Look up

Down Dial: Look down

Button: Reset the camera

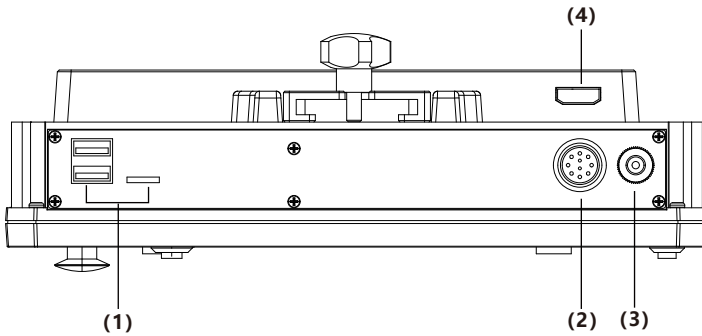
(The above functions are only used by 360° rotating cameras)

⑨ LED+: Brighten the camera lights

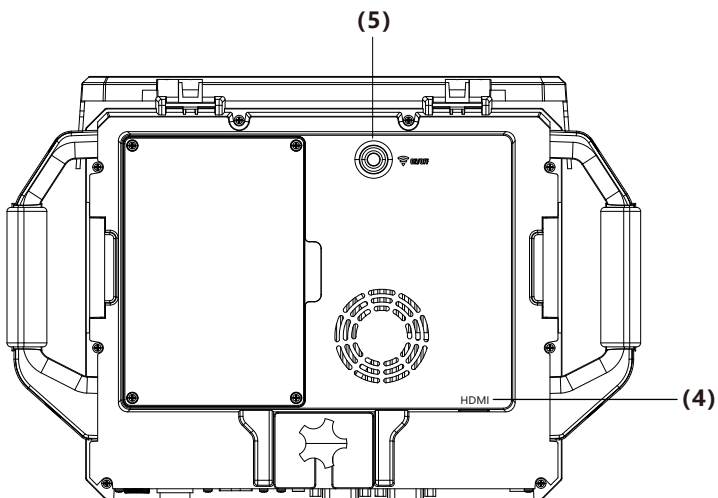
⑩ LED-: Dim the camera lights

⑪ RESET: Reset cable count length to 0

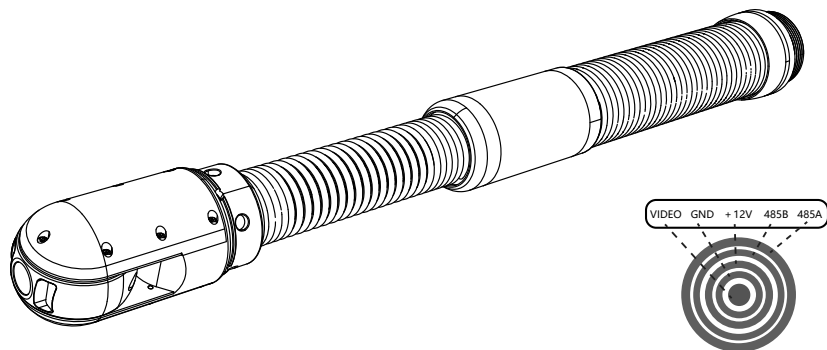
⑫ M/FT: Count unit (meters/feet) conversion button



- (1) USB and TF Port: When using USB flash drives and TF cards as storage devices, insert them into correct ports. U disk format to exFAT format, otherwise affect storage.
- (2) Video Cable Port
- (3) Power Port: DC 12.9V 3A (Do not mix battery charging cables and power cables, otherwise the battery will be damaged or the system will not work properly.)
- (4) HDMI: High Definition Multimedia Interface.
- (5) WIFI Module: Controller WIFI switch. Turn on the WiFi switch to connect the controller to WiFi, and the mobile phone can connect to the controller to view the content captured by the camera.If the mobile phone viewing function is not used, the WiFi function can be turned off to save electricity.



Camera (C32)



Camera body:

1. Length: 290MM
2. Outer diameter: 32MM
3. Material: Aluminum alloy shell
4. Rotation angle: Rotate 360 ° left and right, Flip up and down 180 degrees.

Work environment:

1. Temperature: -20 °C to +55 °C

Technical specifications:

1. Power input: DC 9~13V
2. Camera module:
 - 1) Image Sensor: Color CMOS
 - 2) Effective pixel array: 1920 (H) x1080 (V)
 - 3) Lens material: Sapphire
 - 4) Working current: 0.35A
(Maximum brightness and locked rotor)
 - 5) Signal to noise ratio: >45dB
 - 6) Video output: 1.0Vp-p/75R
 - 7) Video format: PAL/NTSC (optional)
 - 8) Chip pixel count: 2 million
 - 9) Image perspective: 90 °
3. dynamic balance:
 - 1) Electronic dynamic balancing function

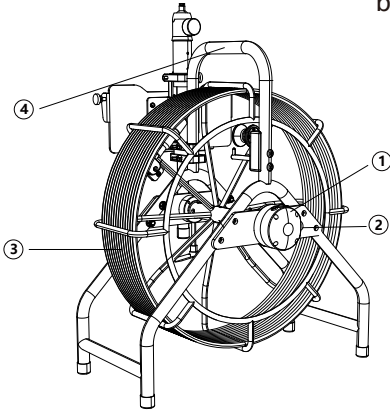
4. Emitter: Positioning of the camera (with built-in transmitter) (optional). If the camera model is set to T, it indicates that the camera has a built-in transmitter. The positioning range is about 4 meters deep in non-metallic pipe or 3 meters deep in cast iron pipe. All cameras can be equipped with emitter heads according to your needs.
5. Light source:
 - 1) LED quantity: 2PCS
 - 2) LED brightness: 1767Lx@15CM
6. Dustproof and waterproof rating: IP68

External interface

External interface CAM: pins 1 to 5 from inside out Connect to receive Video, GND, +12V, 485B, 485A

CABLE

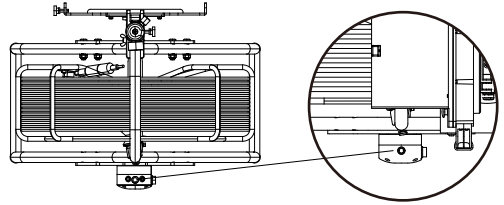
1. Meter Counter
2. Video cable Port
3. Cable (diameter: 8MM)
4. Handle



Multi Core Camera Switching

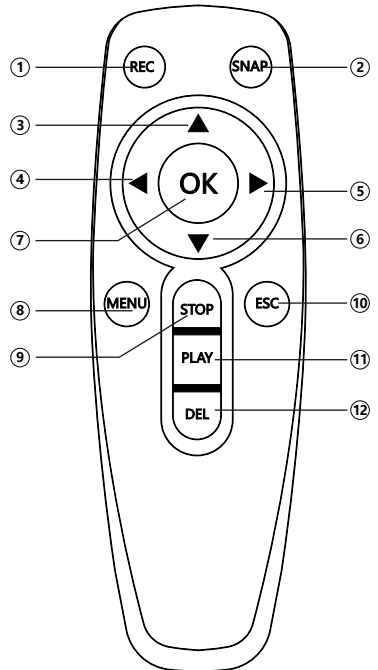
Switch button for C40mm series camera and pan tilt camera

- A. Use a pan tilt camera when in a raised state.
- B. When in a concave state, use a 40mm series camera.
- C. After switching, it is necessary to restart the control box to identify and use it again.



Remote Control

1. REC: Record button
2. SNAP: Take a picture button
3. ▲: Up button
(record key in real-time state)
4. ▼: Down button
(camera key in real-time state)
5. ◀: Left button (when playing back video)
6. ▶: Right button
(under playback video status)
7. OK: Confirm button
8. MENU: Menu button (enter menu setting)
9. STOP: Stop button
10. ESC: Return key
11. PLAY: Play button
12. DEL: Delete key



Equipment Connection And Installation

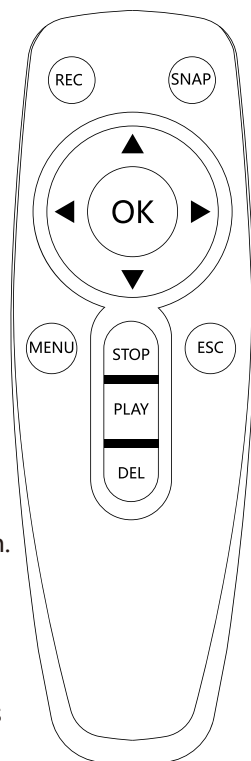
1. Important Note: When you connecting the camera to the monitor, you must firstly turn off the power to avoid the device being damaged.
2. Equipment Installation And Use Steps:
 - 1) Tighten the camera to the corresponding connector on the cable reel.
 - 2) Connect the video cable on the cable reel to the video interface of the controller.
 - 3) Press the power button to start the controller.
 - 4) Put the camera connected to the cable into the pipeline to be tested, and release the cable until the camera reaches the location to be tested.
 - 5) Detection (the brightness can be adjusted by the "LED +" and "LED-" buttons on the controller).
 - 6) Video recording (please refer to video recording operation).
 - 7) After completing the inspection, retract the camera and wipe it clean, then place it back in its original position.

System Menu Settings

Video Playback: Play previously recorded video	
Photo Playback: Show previously taken photos	
System Settings	
Language Settings	English, Chinese, French, Spanish, German Polish, Korean, Italian, Turkish, Russian
OSD Settings	Upper left center text, lower left center text
Save Setting	Disk status, remaining capacity, total capacity DISK1 and 2. Format Disk
Restore Factory Settings	Press the "Yes" button again to achieve a master reset(Restore factory settings)
About	Solid Compilation Date, Solid Version
Time Setting	24-hour system, date format, month, day, hour, minute, second
Image Settings: CVBS, HDMI resolution, brightness, chroma, contrast, noise reduction	
Video Settings: Video packaging duration, video frame rate, video image quality, video compression method Photographic quality, video mode, video coverage	

Video Recording Operation

1. Install No. 7 battery on the remote control.
2. Insert the USB disk/removable hard drive into the USB port, or insert the TF card into the corresponding slot. If the connection is successful, you can see a capacity prompt for the USB disk/TF card in the lower right corner of the screen.
4. Press the REC button on the remote control to enter the recording system; At this point, you can see a new file naming prompt on the screen.
5. If you need to record, you can press the MIC button on the controller to start recording.
6. If you need to take a photo, please press the SNAP button on the remote control, then edit the file name, select "Confirm", and the photo will be successfully taken.
7. Press the PLAY button on the remote control to quickly enter the file management interface, select the file to play, or delete the file.
8. If you need to manage your video content, you can press the MENU button on the remote control, go back to the menu page, and select the playback section to edit and manage the video content.



Attention:

1. If you have already inserted a USB disk/TF card before starting the device, the device may not recognize the USB disk/TF card. In this case, please unplug and reinsert.
2. The system needs to wait for 10-20 seconds each time it starts up.
3. Supports a maximum memory of 512GB for USB disk and TF cards.
4. The recorded video files will be found in the USB disk or TF card directory. You can use the display menu, press the REC button to start recording, and press the STOP button to stop recording. During the recording process, the screen will display the recording time and time limit.

Recording Time Limit

Sometimes you may forget to press the stop button after turning on the recording. This module will set a time limit of 30 minutes. If the recording time exceeds 30 minutes, the system will continue recording with a new file name. This section is available in 1/5/10/15/30/60 minutes and can be selected for debugging in the settings.

USB Disk or TF Card Recording

The device can record through USB disk or TF card, and the recorded video is stored in USB disk or TF card, and can be played on the screen.

USB disk and TF card format exFAT.

Video Recording Format

The default video recording resolution is 1920*1080. A 30-minute recording will take up storage of 800MB. The video recorded by the device is MP4 format.

Note: The video player of the device may not support some downloaded videos.

Sound Recording

Press the MIC button on the panel to record voice while recording; Press again to turn off sound recording.

Video Playing

You can press the MENU button on the screen to enter the Video mode.

The module can display recorded videos or other compatible videos stored into a USB disk or TF card. Incompatible video's types cannot be displayed.

Select Video File

Enter "VIDEO" mode, the set will display all of the available video files on the screen. You can use the ◀ or ▶ button to select desired video and press OK button to play. Use OK/STOP button to start or pause the playing.

Use ESC/STOP button to stop or go back to previous menu.

Fast Forwarding And Rewinding

You can use ◀ or ▶ button on the remote control to fast forwarding or rewinding (1X, 2X, 4X or 8X). Press the Ok button to pause the video playing, and press the OK button again to return to normal speed.

How To Use The Keyboard (Optional)

1. Keyboard Functions

- 1) The keyboard has a 0-9 numeric input.
- 2) Use the Caps key to switch between uppercase and lower case English.
- 3) Moving the cursor is controlled by the four arrow keys on the keyboard.



2. How to operate

- 1) After the device starts up normally, plug the receiver into the USB port of the controller.
- 2) Long press fn+RF for three seconds, and if you see three flashing lights, the connection is successful.
- 3) At this point, you can pre edit the text information and then record a video; Text information can also be edited during the video recording process.
- 4) The flashing cursor "_" is usually located in the upper left corner of the screen.

Appendix 1: Punctuation Symbols

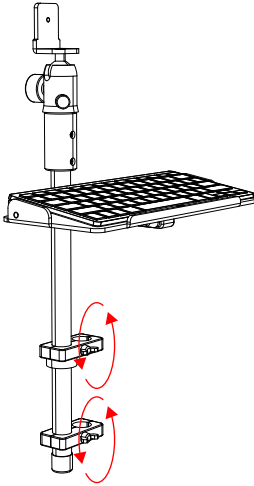
,	.	()	?
:	;	*	/	@
-	<	>		

Appendix 2: Function Keys

Caps lock	English Case Toggle Key
Four arrow keys	Up, Down, Left, And Right
Backspace、 Delete	Delete
Enter	Carriage Return
Space Key	Spacebar

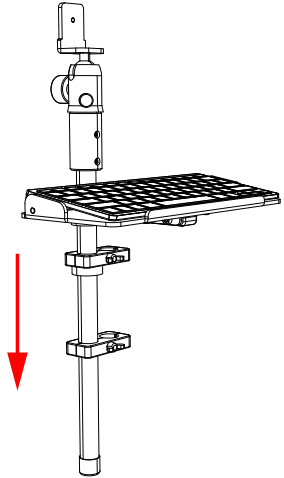
The use of keyboard stand

①



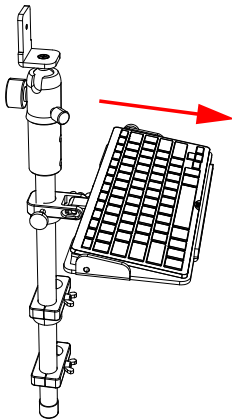
As shown in the figure, turn the elastic screw counterclockwise to loosen the buckle.

②



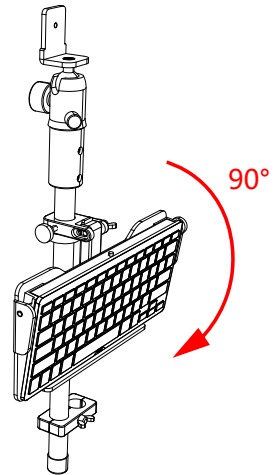
The buckle is released, and the height can be adjusted up and down freely.

③



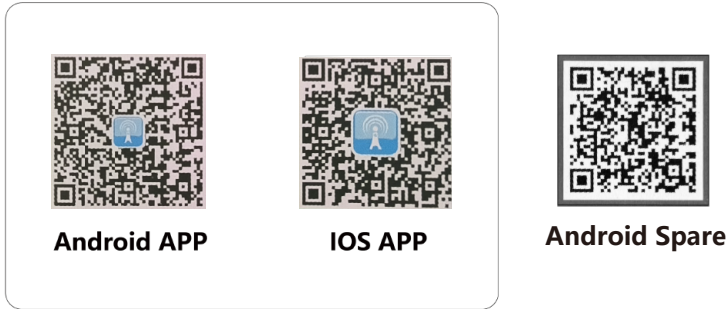
Pull the keyboard outward to unlock it.

④



The keyboard can be flipped down and folded.

Mobile Phone Viewing App Function (Optional)



(Figure 1)

Apple iOS Operating Process:

1. Turn on the power to the controller, press the "POWER" button, and start the controller.
2. Open the WIFI switch button on the back shell of the controller.
3. Scan the QR code (as shown in Figure 1) and download the app.
4. Open your phone, enter the "Settings" interface, select "Wireless Local Area Network", find the WiFi name "IPC-XXXXXXXXXX" (the WiFi name, module UID code, and device name are the same), and enter the WiFi password "9876543210".
5. Open the app and select "Local Login".

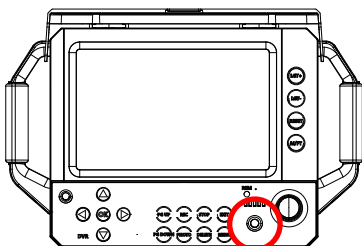
Note: The mobile phone is connected to the router with a 2.4G frequency WiFi, and currently does not support 5G frequency.
Please refer to Attachment 1 for detailed operation steps

Android Operating Process:

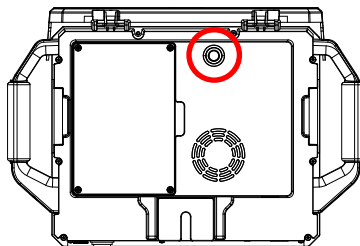
1. Turn on the power to the controller, press the "POWER" button, and start the controller.
2. Open the WIFI switch button on the back shell of the controller.
3. Scan the QR code (as shown in Figure 1) and download the app.
4. Open your phone, enter the "Settings" interface, select "Wireless Local Area Network", find the WiFi name "IPC-XXXXXXXXXX" (the WiFi name, module UID code, and device name are the same), and enter the WiFi password "9876543210".
5. Open the app and select "Local Login".

Note: The mobile phone is connected to the router with a 2.4G frequency WiFi, and currently does not support 5G frequency.

① Turn on the power

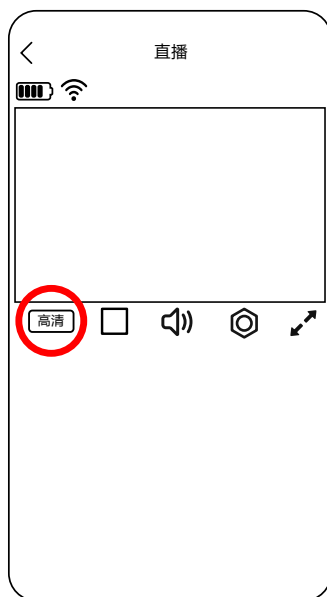
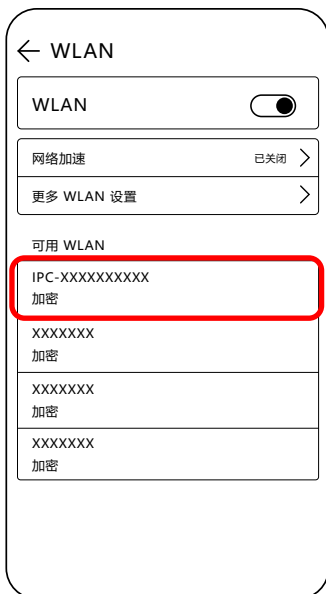


② Turn on the WIFI switch



③ Click on Settings to enter WIFI connection settings, Select device, enter password to connect successfully.

④ Switch live streaming image clarity to high-definition mode



Battery Precautions

1. Machine Charging Precautions:

- 1) Charge in flammable and explosive environments is strictly prohibited.
- 2) Avoid charging in extremely cold, hot, or humid environments.
- 3) Please use a dedicated charger, 12.9V 3A adapter. Do not mix battery charging cables and power cables, otherwise the battery will be damaged or the system will not work properly.
- 4) When fully charged, cut off the power supply. Do not overcharge to avoid damage to the controller and battery.
- 5) The controller allows to be used while charging under normal operating voltage.
- 6) The controller battery takes 8 hours to be fully charged, and can work for 5-6 hours on a full charge.

Simple Troubleshooting

Trouble	Reason / Solution
No Signal	1. Read this product manual again and connect again according to the instructions
	2. Recheck whether the camera is tightened
	3. Check whether there is any debris inside the copper thimble on the camera or the camera female connector on the wire rack, If yes, please clean it up.
	4. Check whether each connector is intact.
The camera light is dim or no light	Click the LED+/LED - button on the right side of the control box to increase the brightness of LED+and decrease the brightness of LED -
Unable To Record	1. Check if the USB disk format is in exFAT format on the computer. No, please format it in exFAT format
	2. Try replacing a USB disk or TF card of another brand and recording again.
	3. After closing the recording in sequence, follow the correct operating steps to restart.
Recording Abnormality	After closing the recording in sequence, follow the correct operating steps to restart
Image Flicker	The battery is too low, please charge it in a timely manner
Battery cannot be charged	Please check carefully against the instructions and contact aftersales customer service if unable to resolve the issue
The right side of the HDMI video output image is not full screen	The issue is that the refresh rate is incorrect, and the control box needs to match the refresh rate of the camera. When turned on, the control box will display the transmission frame rate of the camera. Based on this display, set the corresponding refresh rate in the MENU/IMAGE control box. This way, HDMI will be displayed in full screen.

Simple Troubleshooting

Trouble	Reason / Solution
Keyboard crashes and does not work	When inserting USB disk, TF cards, and Bluetooth keyboards, it is necessary to strictly follow the interface identification instructions.
Counter count invalid	There are restrictions on the use of the device. Observe whether the device is in a high-intensity magnetic field environment. For example, the magnetic field generated by the operation of an electric screwdriver can significantly affect the accuracy of the meter. Please keep the device away from the high-intensity magnetic field environment in a timely manner.
Unable to charge, short usage time after charging	Choose a suitable charger. The 12.9V charging port should use a 12.9V charger and cannot be used with a 13.5V charger, and vice versa. Different chargers have different voltages and currents. Please choose the standard adapter.
Controller panel operation button failure	The failure of control panel operation buttons has randomness, and the probability of failure varies from person to person. If the button fails, multiple attempts can be made.
When connecting to a phone via WiFi, the real-time image is not clear	After logging into the APP, in the real-time operation interface, the APP will default to standard definition mode, and parameter settings need to be manually adjusted to adaptive high-definition or high-definition mode.

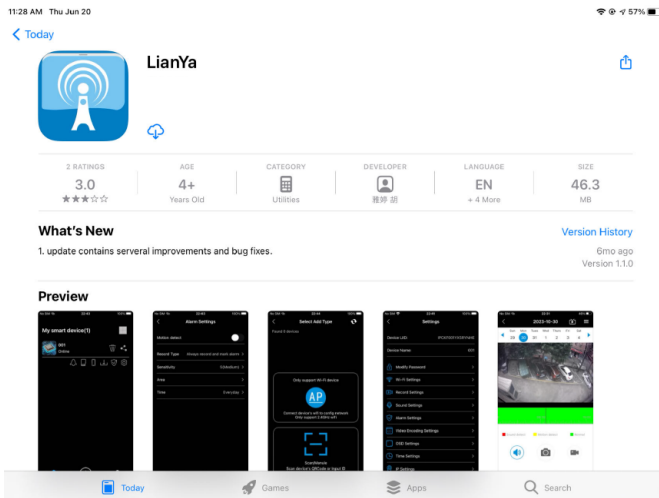
Attachment 1

iOS System User Guide

Quick Start For Wi-Fi System

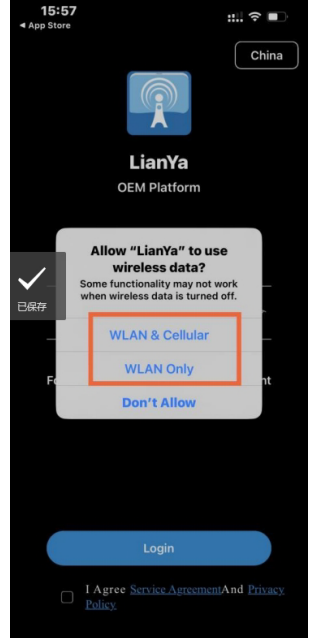
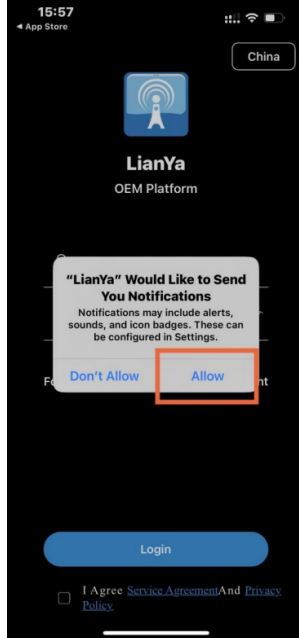
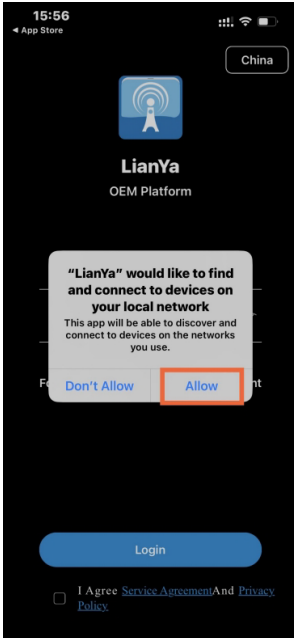
Install the App

Please use your camera or Code Scanner scan the following QR code, download and install it onto your iPhone/iPad.

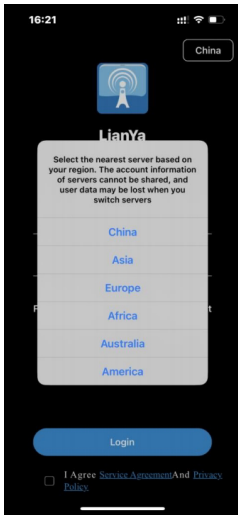


Login

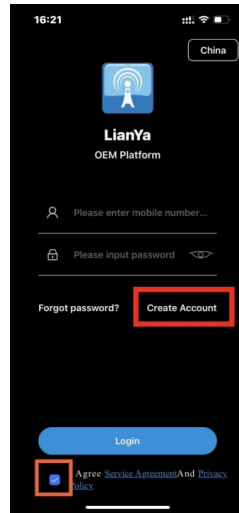
Step 1: Open the App. The following settings will pop up on your iPhone/iPad. The options are shown in the figure:



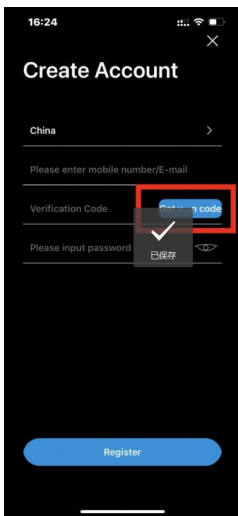
Step 2: Create Account. (To use it for the first time, you need to create an account, and you can log in directly from now on)



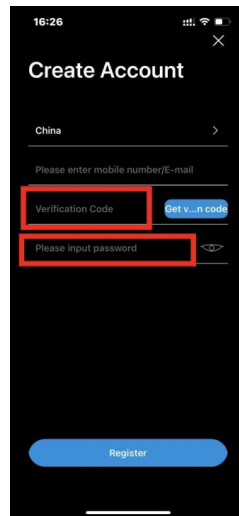
① Choose the region where you are.



② Tap Create Account.

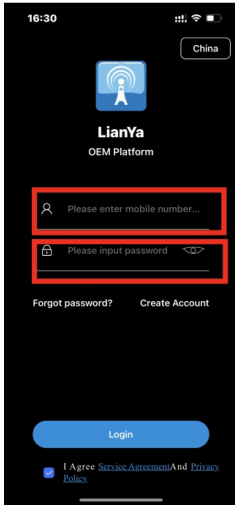


③ Input your mobile number/E-mail, and tap GET VERIFICATION CODE.



④ Input verification code and password. Tap Register.

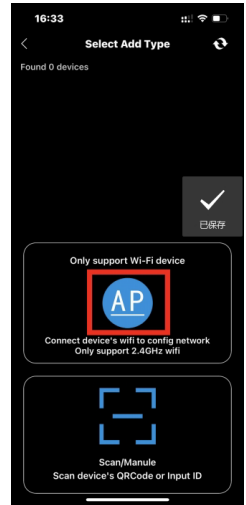
Add The Camera To App (Wi-Fi System)



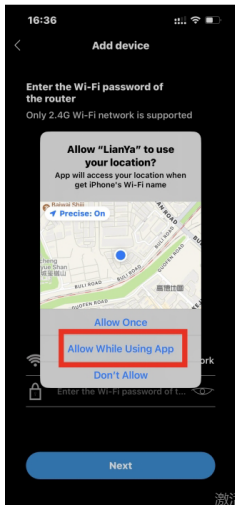
Login app and power on the camera.



Tap "+".



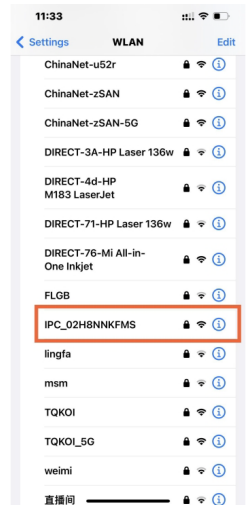
Tap "AP".



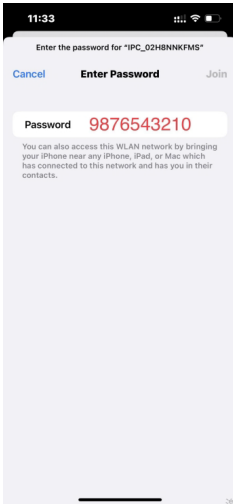
Tap "Allow While Using App".



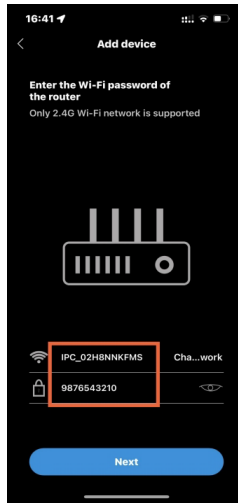
Tap "Change Network".



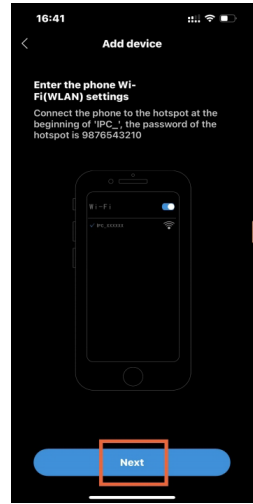
Find default the SSID of the camera. The SSID is IPC_XXXXXXXXX.



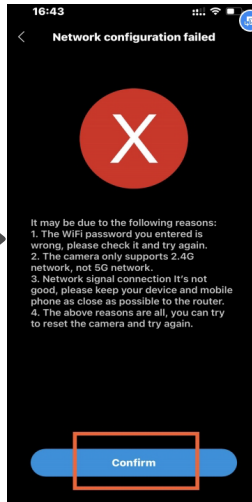
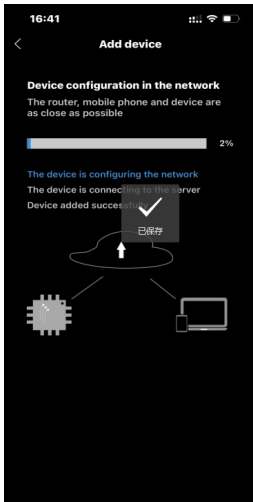
Enter the default Password 9876543210



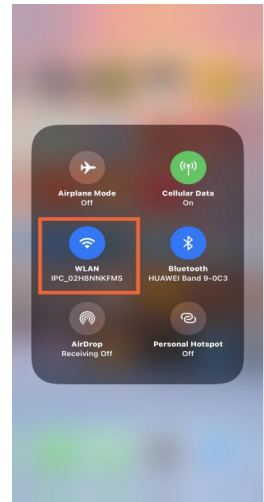
Enter the default Password 9876543210



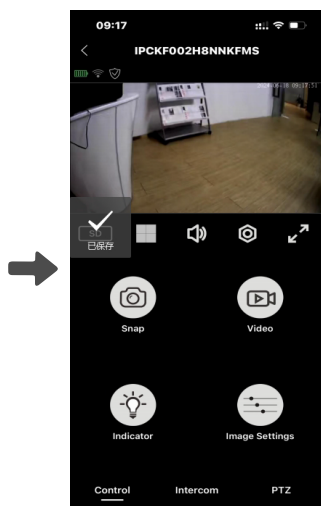
Enter the interface as shown in the figure.



Don't worry about this situation. Tap "Confirm".



Clear this App from the background of the iPhone/iPad. Reconnect WLAN and enter LianYa App.



TIPS:

1. One camera can bind to more than one Wi-Fi router.
2. If bound to one Wi-Fi router, the camera will memorize the Wi-Fi router. When come inside the area of the bound router, it will automatically connect.