



**ENDE TEK**  
A U S T R A L I A

# SJY Telescopic CCTV camera Operation Manual



- Please read this manual carefully before using the product.
- Please keep it for future reference.

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# Fundamental Performance



The SJY Telescopic Pole Audio/Video Industrial Inspection Rescue Locator (as shown above) is a high-definition professional audio/video industrial search and rescue product. The product integrates high-definition image processing, voice duplex communication, and thermal imaging technology, which can control all functions and components through the dual operating systems of the main unit.

## Portable

According to the actual detection needs of customers, it can be co-mounted with detection modules such as a host, probe, sound-pickup module, telescopic pole, cable, and gooseneck tube, meeting various industrial working conditions. The modular system offers a mix of camera heads at different price points that operate with the host display monitor and telescopic pole to facilitate a large range of inspection tasks.

## Application

This product is used for Industrial Inspection and search and rescue operations such as earthquakes, tunnel collapses and high-rise building collapses. It has various functional probes that can detect the narrow spaces inside and communicate with trapped personnel, thereby helping to more quickly and effectively determine the location and condition of the survivors.

# Construction and Principle

## 1—Main Components (Subject to actual configuration and sample machine)

The instrument mainly consists of a high-definition display host(including a battery), a 41mm color rotating lens, a 35mm infrared thermal imaging intercom probe, a 35mm electric rotating audio/video waterproof intercom probe, a digital full-duplex voice communication module, a telescopic pole(rigid material, with a soft tube connected to the camera port), detection cables, headphones, spare batteries, a gooseneck tube, a charger, a packaging box and carrying equipment.



Host



20m connection cable



digital full-duplex voice communication module



41mm color rotating lens



35mm electric rotating audio/video waterproof intercom probe



35mm infrared imaging intercom probe

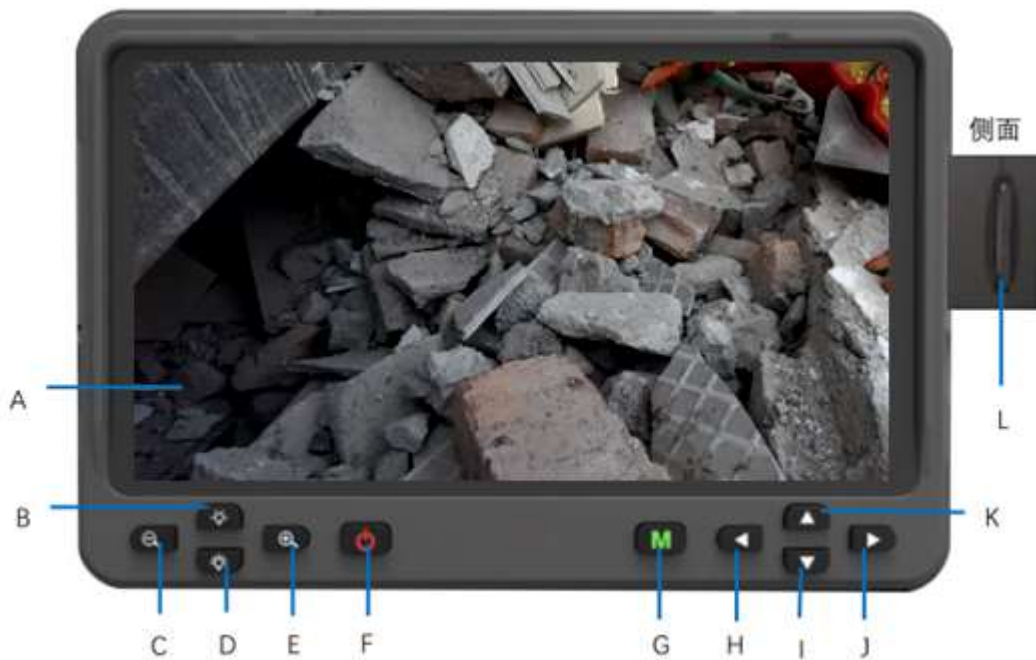


Telescopic pole



Gooseneck tube

## 2—Display Buttons



A: Display    B: LED Dimming Button    C: Zoom in button    D: LED Brightness Button

E: Zoom out button    F: Power On/Off (with return function)    G: Menu Button

H: Lens Left Rotation/ Left Button    I: Lens Downward Flip Button/ Down button

J: Lens Right Rotation Button/ Right button    K: Lens Upward Flip Button/ Up button

L: SD Card Slot

Zoom in/ out button: Adjust the lens to correct the focus for far or close inspection.

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

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

Power On/Off Button: Press and hold this button to turn on the device. A short press of this button or touch on the blank screen can exit menu state and it also has the function of returning to the previous menu level. Press and hold this button for 3-5 seconds to turn off the device.

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

Lens Upward Flip Button/ Up button: Press this button can flip the lens upward in image mode and move the cursor bar upward in menu mode.

Lens Downward Flip Button/ Down button: Press this button can flip the lens downward

in image mode and move the cursor bar downward in menu mode.

**Lens Left Rotation/ Left Button:** Press this button to rotate the lens counterclockwise in image mode and move the cursor bar to the left in menu mode.

**Lens Right Rotation Button/ Right button:** Press this button to rotate the lens clockwise in image mode and move the cursor bar to the right in menu mode, which can switch between the image parameter submenus and the system parameter submenus.

**SD Card Slot:** Insert an SD card (Format the SD card with more than 64G memory on the host before using it for the first time, otherwise it's prone to card errors.)

### 3—Display Port



**Headphone Jack:** Custom expansion function, through this port to listen to the sound collected by the detection probe.

**USB Port:** The bridge connecting the controller and the computer, through which the information in the controller can be output to an external computer.

**HDMI Port:** High-definition video output port. (The host screen would go black when an external display device is connected, while the touch screen function can be used as usual.)

**Charge Port:** This can charge the internal battery or directly power the device.

## 4—Digital Audio Module Description



### Speech input Camera connecting port Pin connecting port

The audio module is mounted between the telescopic pole and the camera lens.

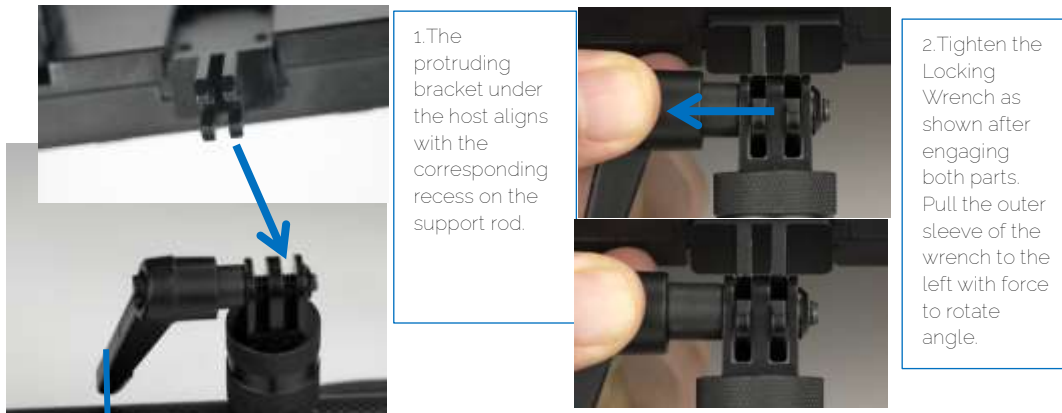
NOTICE: Install the audio module and turn on the device before using the audio function.

### Camera/ audio module connecting port Pin connecting port

Choose whether to install the gooseneck according to your requirements. When needed, the gooseneck tube is connected to the telescopic pole at one end and to the audio module at the other end or directly to the camera lens.



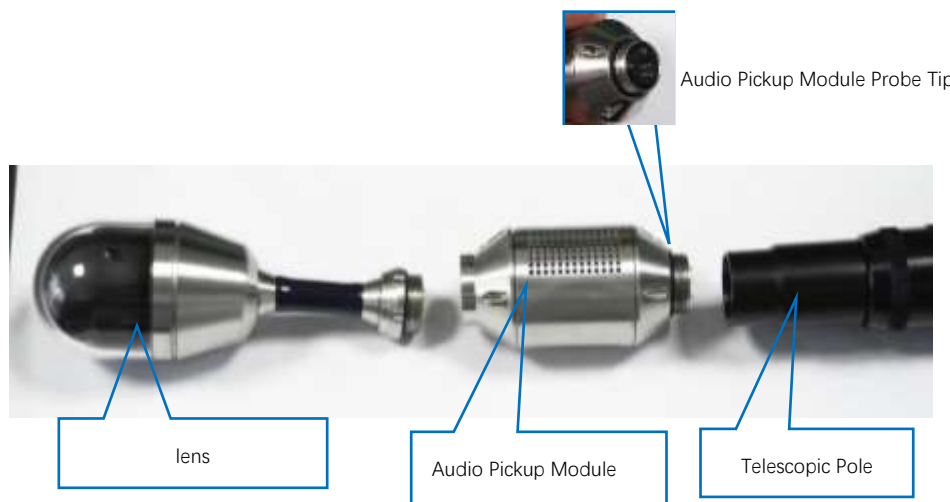
# Installation and debugging



Locking Wrench

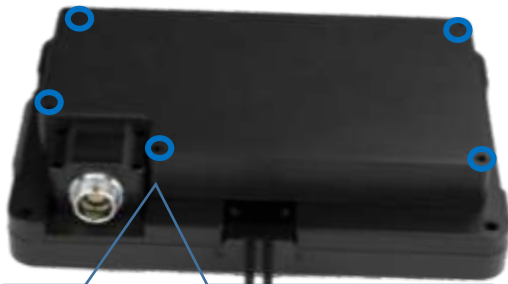


4. The connection sequence shown in the diagram is in the following order: probe(lens) + audio module + telescopic pole/detection cable. Note that the audio pickup module connects to the probe tip of the telescopic pole. The lens can be directly connected to the telescopic probe without equipping the audio pickup module.





## Battery Replacement



a. When replacing the battery, the five positions shown in the illustration on the back of the main unit, use a screwdriver to



b. Remove the battery along the back of the screen vertically.



c. Then unscrew the 8 small black screws on the back of the battery.



d. Open the battery compartment to replace the battery.



e. Once the batteries have been replaced, re-tighten the 8 screws, align the receptacle with the plug on the back of the display and merge them vertically downwards.



f. Retighten the five screws previously removed in their original positions. Tighten the screws diagonally, not completely, and wait until all five screws are in before tightening each screw as far as it will

## Operating Methods

1. According to working needs, install the corresponding lens before operating it.
2. Before using, ensure the mounted battery and SD card and turn on the host by pressing and holding the power button.
3. Observe.
  - a. Press the LED brightness adjustment button to turn on the LED light source.
  - b. According to working needs, protective frames and support wheels can be installed onto the observation lens before entering the working environment for a safer and more convenient observation effect.
  - c. Insert the lens into the interior to reach the observation position.
  - d. Control the rotation/flip/fluctuation of the lens and adjust the brightness to reach the best real-time image effect.
  - e. After adjusting the observation position, it's able to take photos/record and store the detection results through function buttons.
4. Safely exit and turn off the power supply after observation.
5. Store the instrument.

## Menu Operation

After turning on the device, it automatically enters the video displayed in full screen. The camera light brightness level is displayed in the lower right corner.




Click anywhere to bring up the on-screen touch button interface which would automatically hide without operation after 8 seconds.




**Negative:** click the icon  to enter the negative mode.



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



XY Cross Ruler display

When the menu is set to "Grid 2", click the icon  to turn on or turn off circular ruler. (The menu settings will be subsequently explained.)



Circular Ruler display





Split screen Switching:  (not available in certain specifications)

Image Magnification: Click the icon  to zoom in on the image, with a maximum real-time magnification of 8 times.






Take photo: Click  icon or the photo button take a photo, take a photo successfully, display the instructions for taking a photo, as figure.



Take video: click  icon or video button to take video with one key, when recording, the video indication flashes, and at the same time displays the duration of the video, touch the screen or press the icon or the video key again to exit the video state.









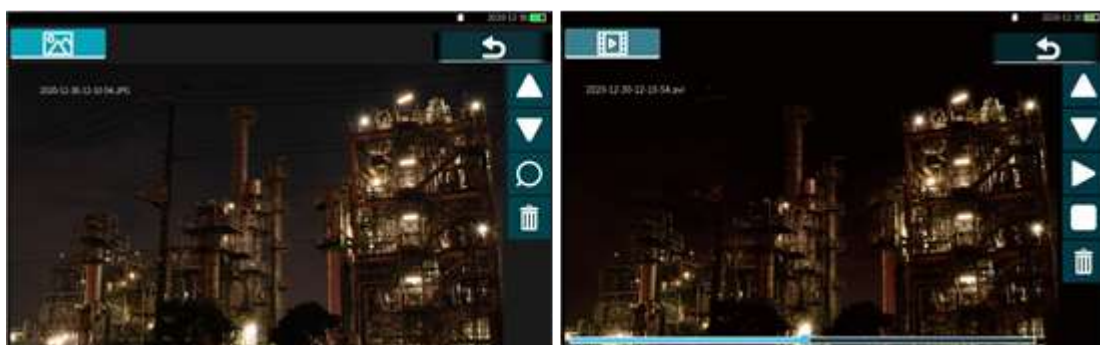
Playback: click  icon enter to the picture and video playback screen, click icon  or  can switch between the picture preview interface and video preview interface. Click up or down on the vertical blue scroll bar on the right side or press the up or down button to turn pages in the interface. Directly click on the pictures and videos or press the left or right button to jump left or right to select files.



Picture Files


Video Files

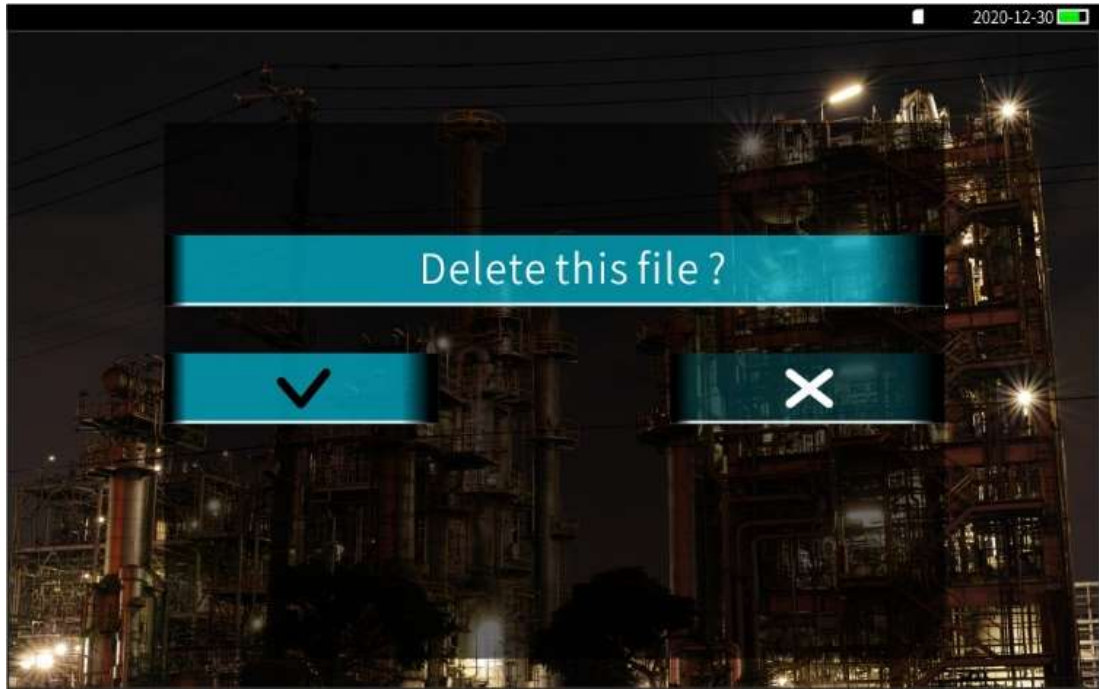
Double-click on the picture/video or press the confirm button for single file browsing, click on  or  icon or up and down buttons to switch between front and back files; click on the  icon can zoom in and zoom out of the picture; click on the video automatically enters the video play, click on  icon, The icon changes to , Video pause; Fast forward and rewind by clicking on the play progress bar below the video; click on  icon or short press the on and off button, video exit.



Picture preview interface

Video preview interface

When previewing image files and video files, click on  icon can enter the Delete interface to choose whether to delete the file or not.



Setting: click  icon or menu key to enter the menu interface.





## Video Settings

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

top of the screen to enter the video settings respectively.



/Screen settings



/Application settings




/System

settings



White balance: the camera image can accurately reflect the color condition of the subject, there are automatic, cloudy, incandescent light, daylight and other ways. Click the "White Balance" light bar to enter the sub-menu,

double-click the parameter you want to select or click the  icon to return to previous menu.



Contrast: Click the bar cursor shown in the picture or press the left or right button to adjust the contrast, users can choose according to their actual needs, the setting method is the same as above.



Display tone: Drag the icon cursor or press the left or right button to adjust the display tone, users can choose according to the actual needs, the setting method is the same as above.



Negative: click 'on' or 'off', open or close the negative state, users can choose according to the actual needs, the setting method is the same as above.



### Screen Settings

Brightness: Drag the icon cursor or press the left or right button to adjust the screen brightness, users can choose according to the actual needs, the setting method is the same as above.




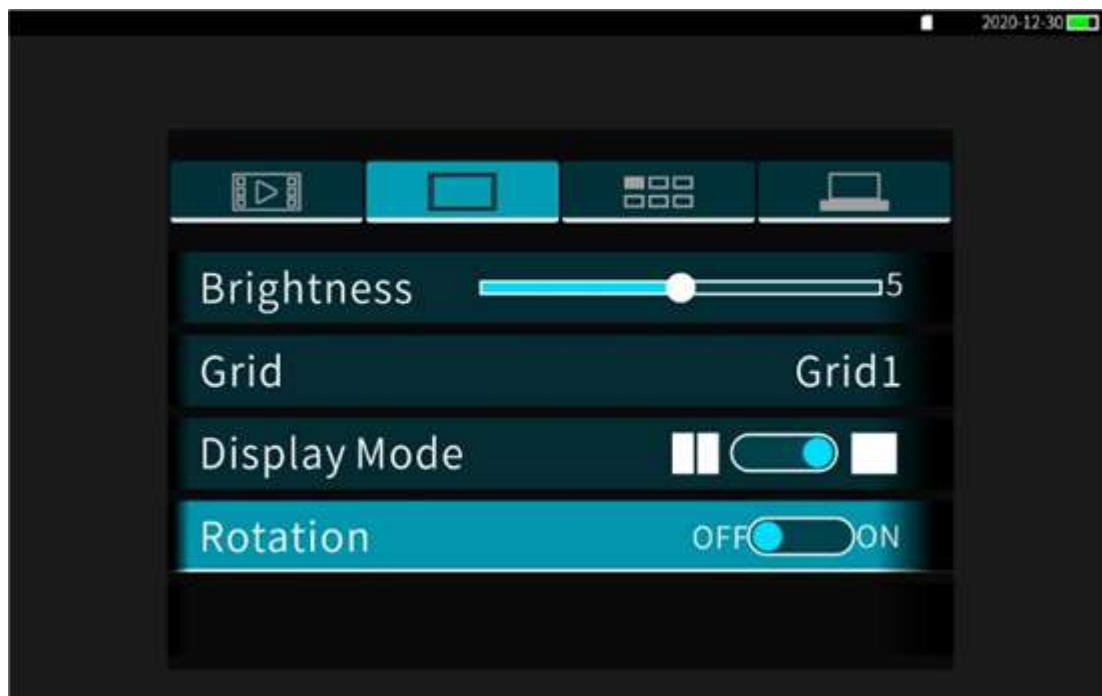
Grid: Click this cursor or confirm button to enter the sub-menu to choose to open or close the grid. Grid 1 is XY cross scale, scale 2 is circular scale, users can choose according to the actual needs, the setting method is the same as above.



Display Mode: Click the left or right side of the o-type icon in the picture to select the display mode, users can choose according to the actual needs, the setting method is the same as above.





Rotation: Click the -type icon in the picture left and right can be 0 ° and 180 ° rotation of the screen, users can choose according to the actual needs, the setting method is the same as above.



#### Application Setting

Date and time setting: Click the date setting cursor bar to enter the date and time sub-menu, you can adjust the year/month/day/hour/minute

selection, when the cursor selects the parameter, click the  or  icon or up and down keys can be used for parameter adjustment, click the return icon to complete the adjustment of date and time. users can choose according to the actual needs; the setting method is the same as above.



Language setting: This product supports Simplified Chinese, English and other multi-language options, users can choose according to the actual needs, the setting method is the same as above.



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



Icon display: After turning on the icon display status, the SD card logo, date, and battery level are displayed on the screen under the real-time image status. Users can choose according to their actual needs; the setting method is the same as above.

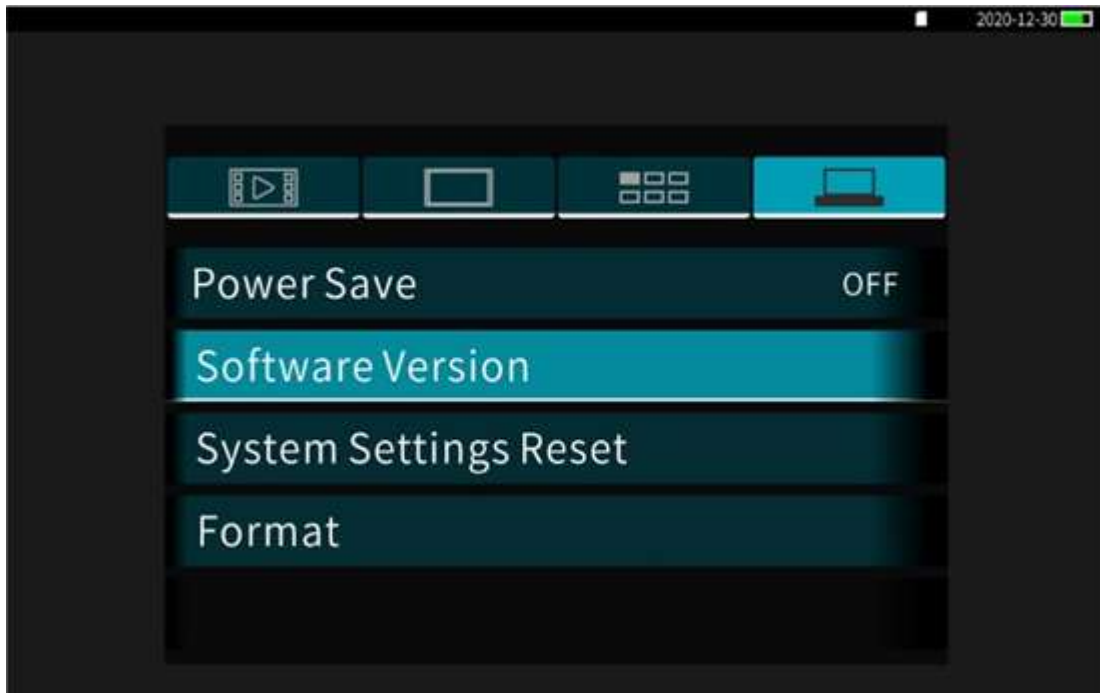


### System Settings

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



Software version: The software version is fixed and is used to display the software version status. The device can upgrade the software via SD.



System settings reset: Users can choose whether to restore the device to default settings as needed, the method is the same as above.



Format: Users can choose whether to format the memory card according to their needs, the method is the same as above.





## Product technical specifications

Host	LCD monitor	7-inch LCD
	Resolution	1920*1080
	Display frame rate	25 fps
	Brightness Control	Manual stepless adjustment
	Video output	Manual, NTSC/PAL output
	Video input	Automatic identification of NTSC/PAL S-terminal (analogue signal)
	Storage card	256G
	Power adapter	100-240~50/60HZ 12.6V/3A
	Image format	JPG 1920*1080
	Image magnification	3 levels
	Video format	AVI 1920*1080
	Language	Chinese/English/German etc. 16 languages
	Operating temperature	-10°C~50°C
	Standby time	Single battery ≥5h, dual battery ≥10h
Waterproof level	IP65	

41mm color rotating lens	Lens diameter	41mm
	Lens length	60mm
	Pixels	1080P
	Illumination	12 high brightness LED lights
	Housing material	Stainless steel
	Radial flip	180°
	Axial rotation	360°
	Manual focus	Yes
	Image sensor	CMOS 1/4
	Waterproof level	IP67
	Waterproof depth	1m

35mm electric rotating audio and video waterproof intercom probe	Lens diameter	35mm
	Lens length	107mm
	Pixels	1080P
	Illumination	8 high brightness LED white lights
	Housing material	Aluminum alloy
	Resolution	1920×1080
	Radial flip	220°
	Storage temperature	-25°C ~55°C
	Waterproof level	IP68

35mm infrared thermal imaging intercom probe	Lens diameter	35mm
	Lens length	124mm
	Pixels	256×192/384×288
	Housing material	Aluminum alloy
	Field of view	45°×45°
	Observation distance	55/90 米
	Frame rate	25HZ
	Wavelength range	8-14um
	Temperature measurement function	Maximum, minimum, center point temperature measurement
	Temperature measurement accuracy	±2°C, high temperature accuracy ±3°C

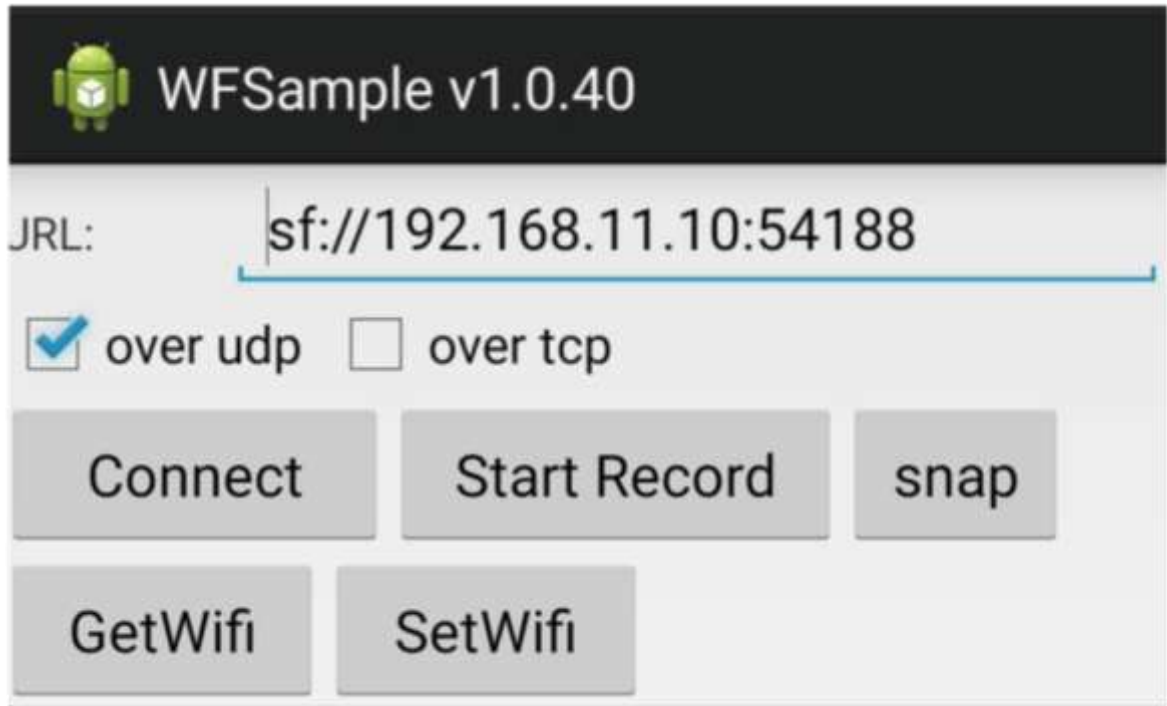
	Image mode	White hot, black hot, iron red, etc. 8 types
	Temperature measurement range	-20°C ~ +550°C
	Image detector type	Non-refrigerated vanadium oxide
	Operating temperature	-40°C ~ +80°C
	Radial flip	220°
	Axial rotation	360°
	Waterproof level	IP65

Telescopic pole	Material	Carbon fiber
	Expanded length	0.95~4meters

## WiFi connection installation steps (some devices do not have this function)

First install the corresponding APP (Android) 'WFSample\_v1.4.0\_0517.apk' on your mobile phone or tablet, and then turn on the WiFi switch button on the device.

1. The module works in AP mode by default for the first time, with the SSID format of "WiFi\_XXXXXX" and the password of "12345678".
2. After the mobile phone is connected to the module Wi-Fi, open the APP, fill in the URL 'sf://192.168.11.10:54188' when the module is in AP mode, and click 'Connect' to view the image directly.



3. Click the 'Set Wi-Fi' button, fill in the SSID and password of the router to be connected, the encryption type defaults to '4', fill in '0' for Wi-Fi mode, indicating that the module works in client mode, and fill in '1' for Wi-Fi mode, indicating that the module works in AP mode.



4. After clicking "Confirm", you need to manually restart the module and wait for the module to automatically connect to the router.
5. Connect the mobile phone WiFi to the router, open the APP, and after the module is connected to the router, the URL of the APP will be automatically updated to the IP obtained by the module, as shown in the red box. Click "Connect" to view the image.



Press and hold the module's reset button for more than 5 seconds and the module will return to AP mode.

## Daily maintenance and care methods

1. When using the system for the first time, please set the current date and time, because the storage files of videos and photos are named according to the current time of the device.
2. Please try the instrument before going to the inspection site to confirm whether the instrument can record data correctly to avoid duplication of work or invalid data. Note: The company and the dealer will not be liable for any losses caused by this.
3. If you choose a rotatable lens, if you shake it gently, there will be a slight shaking feeling inside the lens. This is normal.
4. Try to avoid strong impacts on the lens and display screen during daily use.
5. During the installation process, the communication data interface cannot be rotated after being inserted.

## Safety knowledge and relevant precautions

1. Please do not use at temperatures outside the range of **-25°C~55°C**.
2. Please do not use or place the device in a corrosive environment.
3. Please do not expose the device to rain. Except for waterproof lenses, do not place the lens in liquid for a long time.
4. Please do not place the device near objects with strong magnetic force.
5. Please do not use in an environment with excessive smoke and dust.
6. Please keep the equipment clean and do not scratch the screen.
7. Please do not attempt to disassemble this device by yourself. Repair work

is only performed by personnel authorized by the manufacturer.

8. When taking photos and videos, make sure the brightness of the LED light is appropriate, and the probe tip is stable and does not shake.

9. Before using the equipment, be sure to check whether the instrument is equipped with batteries and whether the batteries are charged.

10. During use, users should not look directly at the lens light to avoid eye burns.

11. After the inspection is completed, please turn off the power, protect the lens pins, and put on the lens protection cover to avoid damage to the pins.

12. When charging, be sure to use the charger provided by this device, with a voltage of 12 volts and a current not exceeding 2000MA.

## Common fault diagnosis and troubleshooting methods

Problem description	Possible causes	Solution
Unable to turn on the device	Low battery	Charge the battery or connect directly to an external power source
After the device is turned on, a blue screen/flashing screen appears	The lens is not installed properly	Reinstall the lens, making sure it is firmly seated.
Abnormal video display colors	Screen display parameter adjustment error	Adjust screen tone, contrast, and other parameters
Blurred image	The lens glass/protective cover is dirty	Turn off the device and wipe the lens
The device cannot be shut down normally	The device is subject to strong magnetic interference, causing system errors	Remove the battery and reinstall it

## Storage and preservation requirements

1. After using the device, do not soak or rinse the device. You can use a soft cloth to clean the lens and integrated instrument box, and then put it into the device packaging box; do not squeeze, collide or impact the lens and display screen to cause unnecessary damage; it is recommended to remove the battery when the device is not used for a long time to avoid battery damage.
2. During transportation, the machine should be protected from impact, severe vibration and moisture, and water droplets should be avoided from splashing on it.
3. Storage environment: Temperature **-25°C~55°C**; relative humidity not more than 85%; no corrosive gas, good ventilation. (Otherwise, it may cause battery leakage, overheating or explosion, resulting in fire, burns or other injuries.)
4. When the battery is not used for a long time, it is recommended to charge it once a month in case of emergency.

**EN DE TEK Australia Pty Ltd**  
**A:** Unit 8 / 2 Apollo Street, Warriewood NSW 2102, AUSTRALIA  
**P:** PO Box 140, Mona Vale NSW 1660  
**P:** +612 9979 8777 | **F** +612 9979 5050 |  
**E:** [sales@endetek.com.au](mailto:sales@endetek.com.au) | **W:** [www.endetek.com.au](http://www.endetek.com.au)