

Search Smartphone Thermal Imaging Camera

User Manual

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Date: 2019-12-21

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Scope of Application

This manual describes how to operate the Search Smartphone Thermal Imaging Camera produced by InfiRay Technologies.

The Camera must work with Android software designed for it.



Preparation:

1. An OTG-capable Android phone installed with the Search software.
2. A Search Smartphone Thermal Imaging Camera.

1. Product Overview

1.1 Application Scenarios

To use the Search Smartphone Thermal Imaging Camera, you must download and install the Search Smartphone Thermal Imaging Camera Android software so as to access the thermal observation and temperature measurement functions.

1.2 Main Functions

This apparatus provides the following functions:

- (1) Thermal image observation through the thermal camera
- (2) Thermal temperature measurement and analysis
- (3) Photographing, video recording, and reticle
- (4) Motion control and parameter setting

2. Installation

2.1 Software Installation

In App store/Google Play, search for **Search** and click the apk package that is returned to download and install the software.

3. Product Operation

3.1 Software Connection

Insert the thermal camera into the USB port of the phone. The phone recognizes the device automatically and prompts a message, as shown in Figure 1.1. Touch **OK**. The software will start the thermal imaging camera and the phone displays thermal

observation screen.

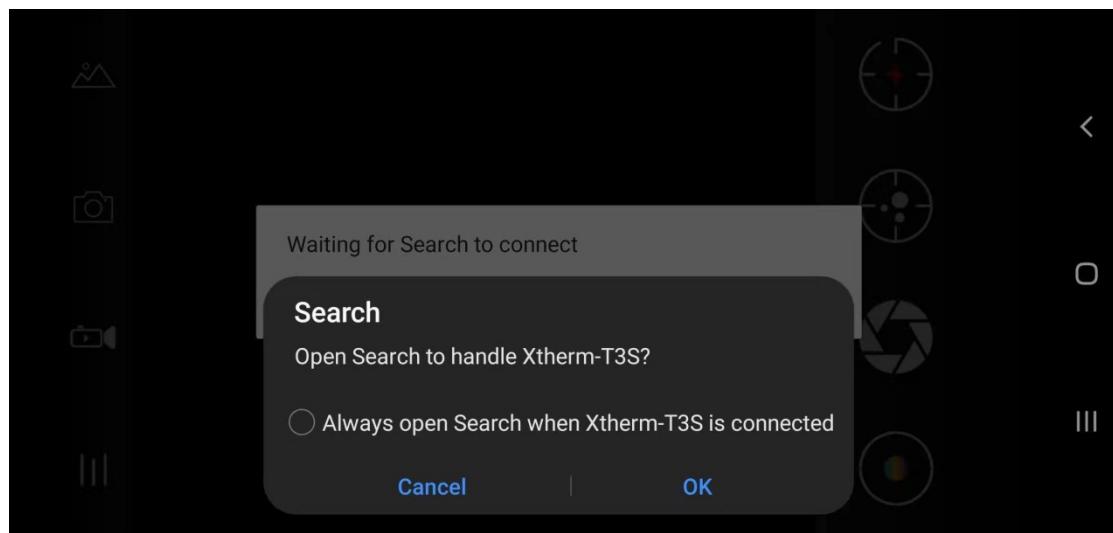
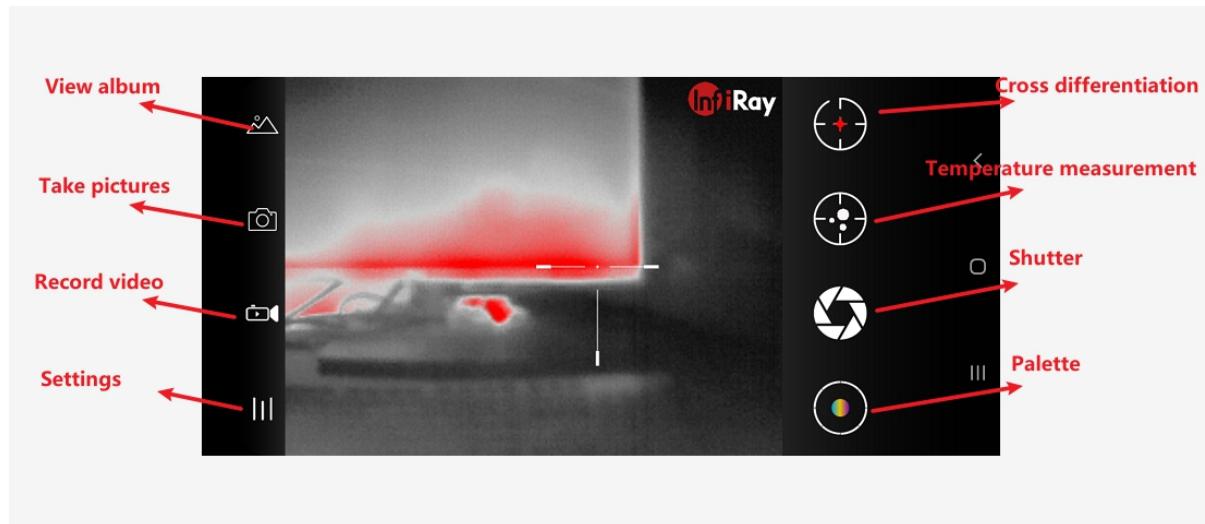


Figure 1.1 Prompt

3.2 Software Control and Operations

This software provides eight common functions, namely, images, camera, video, settings, reticle, temperature measurement, shutter, and palette, as shown in Figure 2.1.



2.1. Common functions

3.2.1 Images, Photograph, and Video Recording

1. Images: Touch to view photos and videos stored in the phone.
2. Camera: Save the current image and the image is stored under **Internal**

storage/DCIM/Xtherm.

3. Video: Touch to start video recording and touch again to stop recording. The recording is stored under **Internal storage/DCIM/Xtherm**.

3.2.2 Reticle

Touch the reticle button to show the reticle control on the thermal image. Touch the button again to hide the reticle control. Reticle is enabled by default and does not change along with the zoom-in and zoom-out of the image. Double-click the reticle button to fix its position. Touch it once to hide it and touch it again to unlock it from the previous position. Then you can move it around the screen, as shown in Figure 2.2.1.

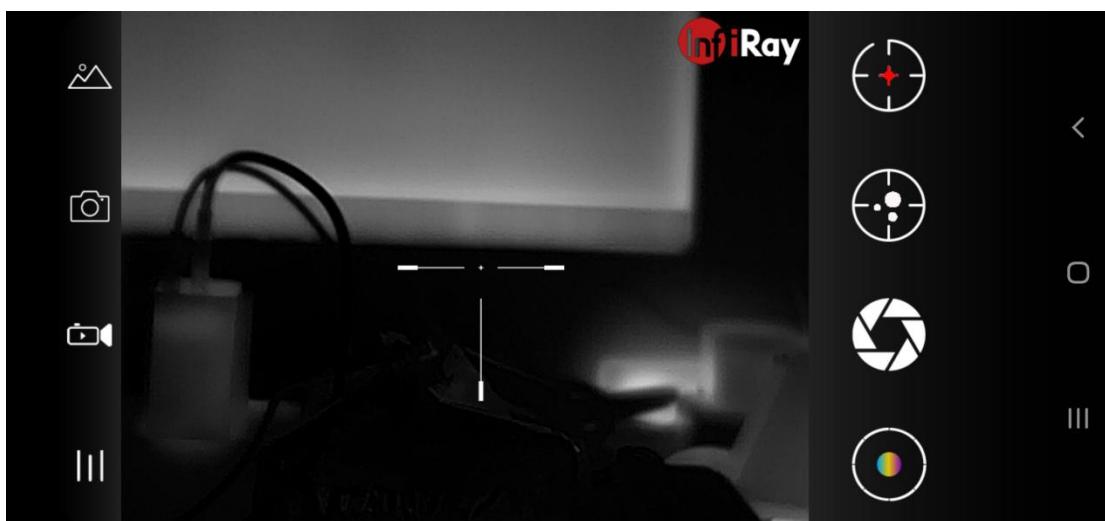


Figure 2.2.1 Reticle display

3.2.3 Temperature Measurement

Touch the temperature measurement button. Three temperature points will be displayed on the thermal image, highest temperature point (red), lowest temperature point (blue), and central temperature point (yellow), as shown in Figure 2.2.2.

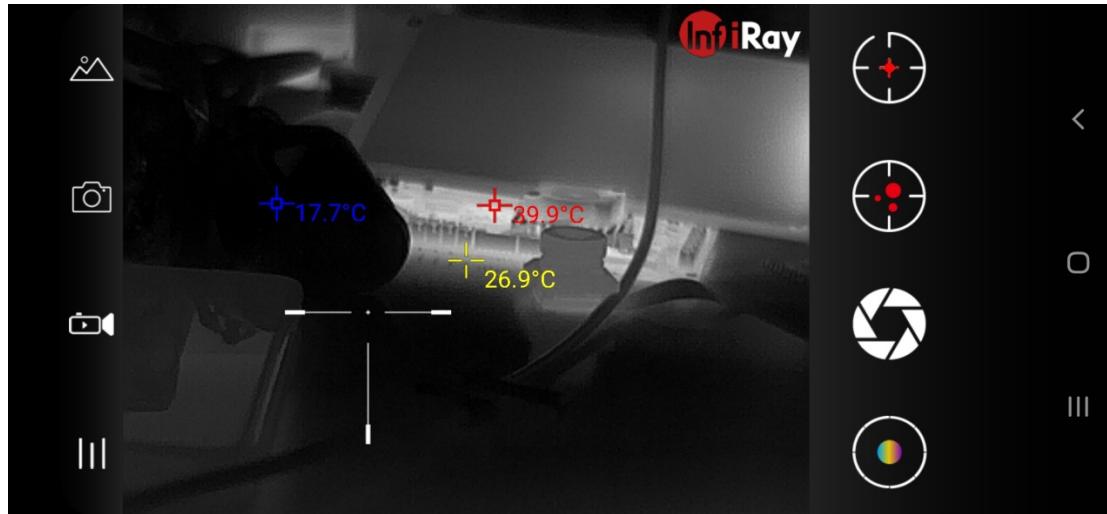


Figure 2.2.2 Temperature display

3.2.4 Shutter

Touch the shutter button to start shutter calibration, as shown in Figure 2.2.3.

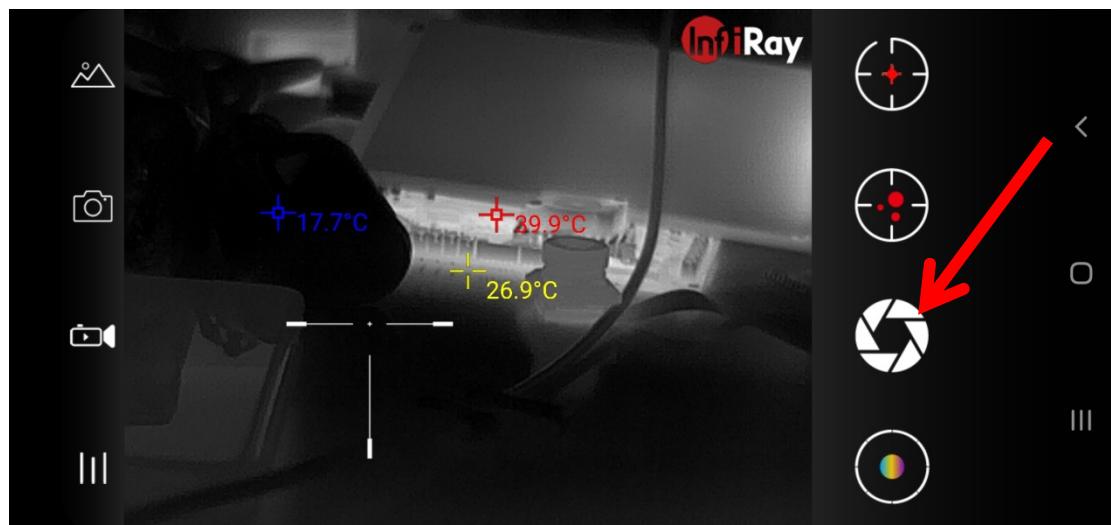


Figure 2.2.3 Shutter button

3.2.5 Palette Switch

Touch the palette button to switch among the five palettes. This function facilitates thermal observation, as shown in Figure 2.2.4.

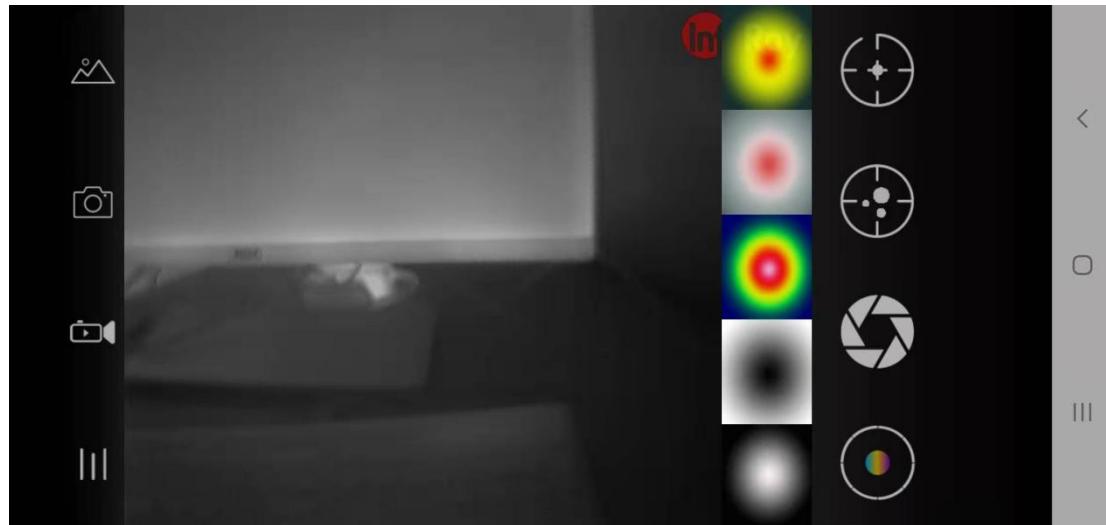
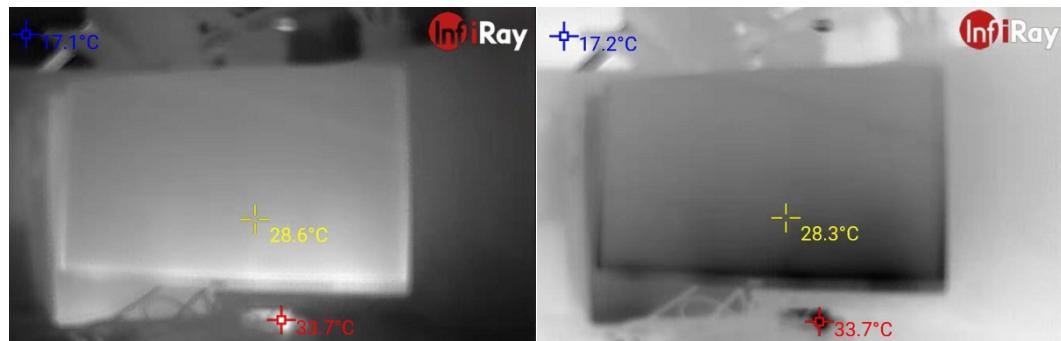


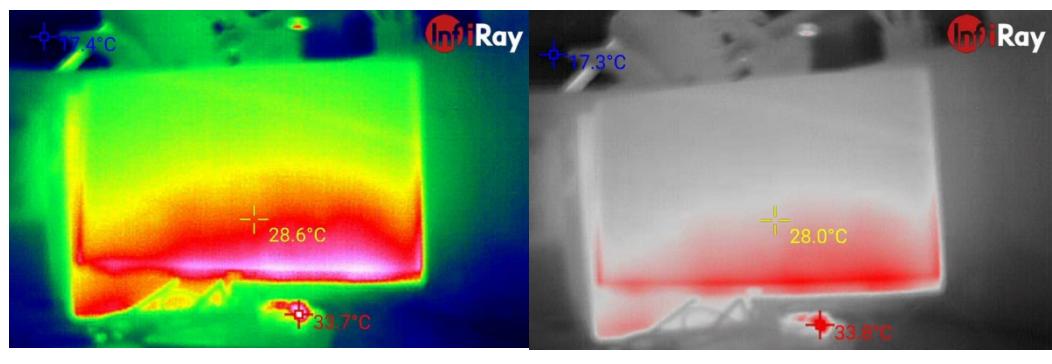
Figure 2.2.4 Palette mode

The color of the image varies in different palette modes, as shown in Figure 2.2.5.

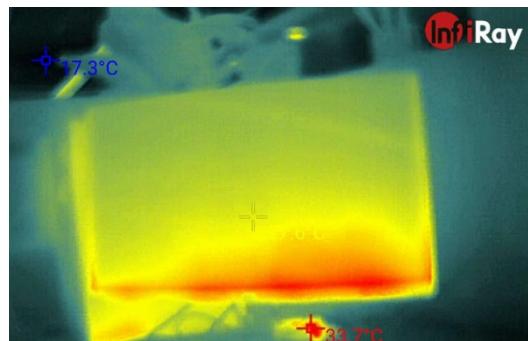
Figure 2.2.5 Effects of the five palettes



(a) White-hot (b) Black-hot



(c) Rainbow (d) Red



(e) Dark green-red

3.2.6 Settings

Touch the settings button. A dialog box is displayed, as shown in the right of Figure 2.1, showing temperature unit, temperature correction, distance correction, logo watermark, system camera, and language settings, as shown in Figure 2.2.6.

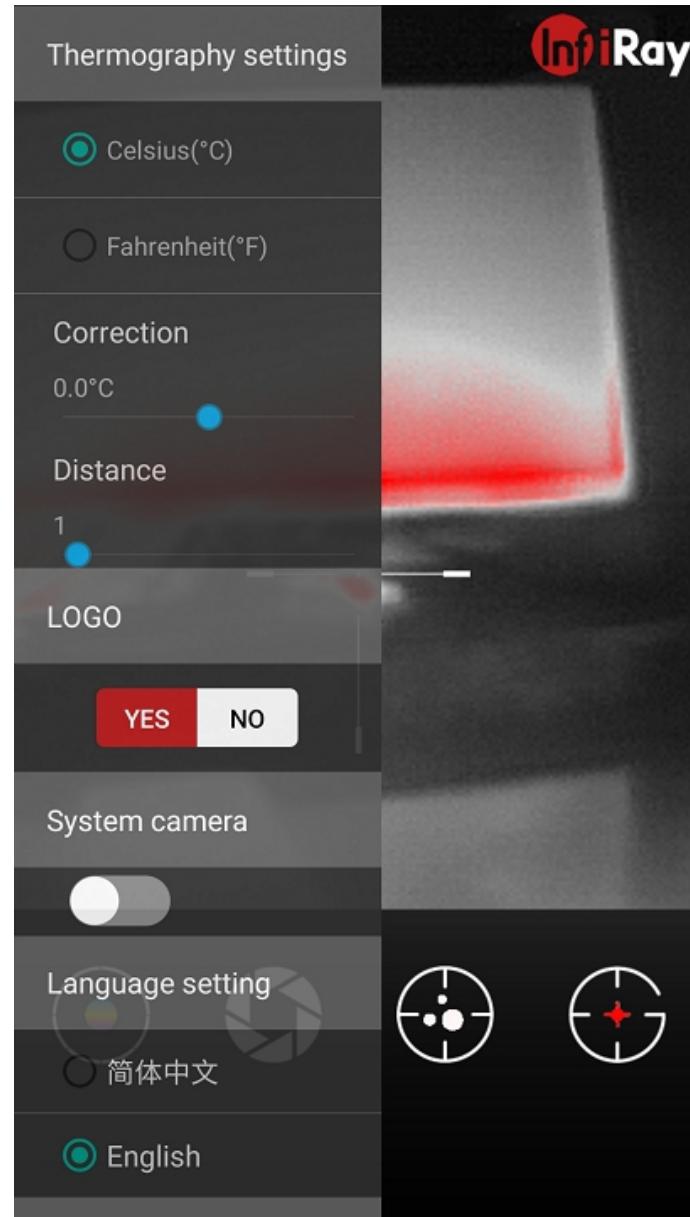


Figure 2.2.6 Settings

1. Temperature Unit Setting: Touch the centigrade or fahrenheit temperature to switch, as shown in Figure 2.2.7.



Figure 2.2.7 Fahrenheit temperature

2. Temperature Correction: Slide leftward or rightward to increase or decrease the temperature in the range of -3 to $+3^{\circ}\text{C}$.
3. Distance Correction: Slide leftward or rightward to set the distance for accurate temperature measurement. The correction range is 0 to 20 m.
4. Logo Watermark: Touch Yes to add logo watermark on the thermal interface and No to cancel displaying the logo watermark.
5. System Camera: When this option is enabled, the screen of the phone camera will be displayed in the upper left corner of the thermal image. Press and hold the system phone to move it where you want, as shown in Figure 2.2.8.

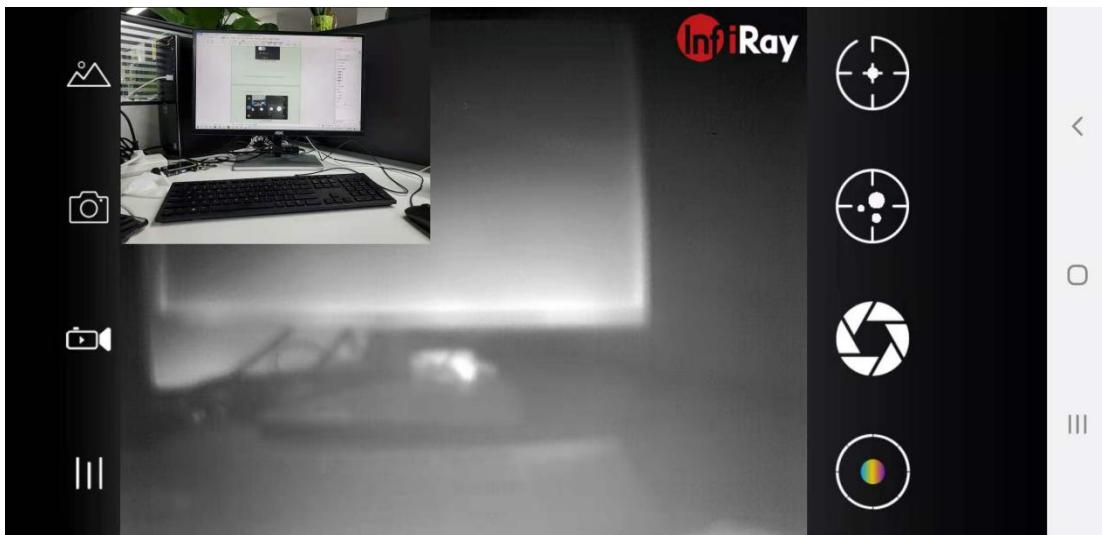


Figure 2.2.8 System camera

6. Language setting: Select Simplified Chinese or English to switch between Chinese and English interfaces, as shown in Figure 2.2.9.

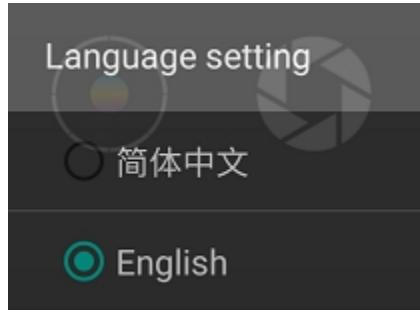


Figure 2.2.9 Language setting

3.2.7 Screen Zooming and Full Screen Display

You can maximize or minimize the thermal image by zooming the image with two fingers at the same time with up to 8 times of zooming ratio. Double-click the screen to fully display it, and double-click it again to cancel the full screen display. Figure 3.1 shows the full screen display.

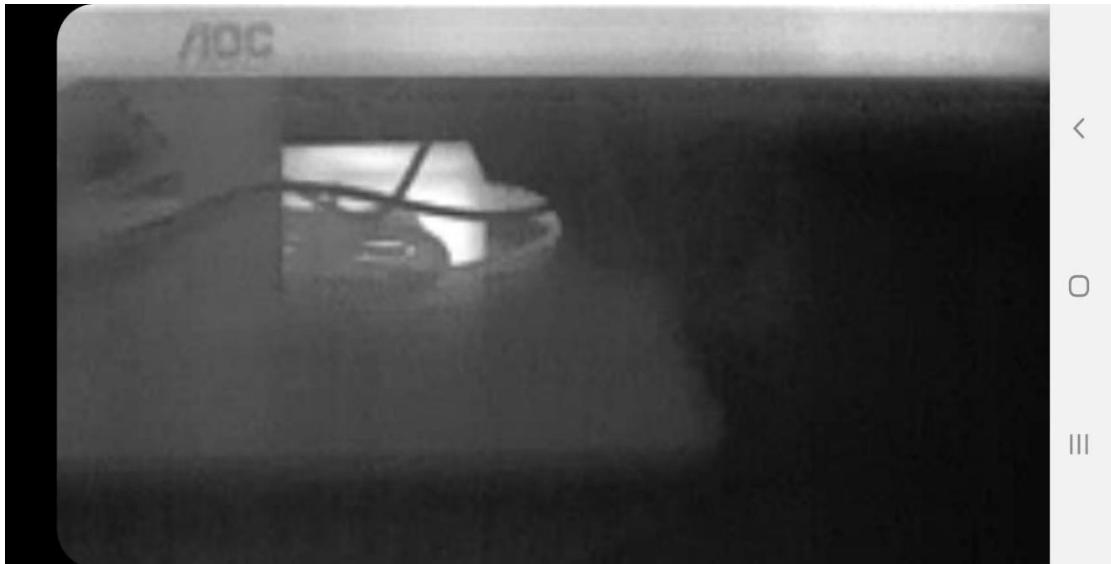


Figure 2.2.9 Screen zooming and full screen display

3.2.8 Precautions

To protect you and others from injury or to protect your device from damage, please read the following information before using this device:

1. Do not expose the device to high-intensity sources such as the sun.
2. Do not touch the detector window or lens or collide with them by using any objects.

3. Do not touch the device or USB port with wet hands.
4. Do not bend or damage the cables.
5. Do not scrub your device with diluent.
6. Do not connect the attached cables in a wrong way to avoid damaging the device.
7. Take measures to prevent static electricity.
8. Do not dismantle the device. If there is any fault, please contact us to have it repaired by professionals.

4. Product Service Regulations and Standards

4.1 Service Commitment

InfiRay Technologies Co., Ltd. is committed to providing quality training, maintenance, and technical support for customers. We expect a long-standing relationship with customers by virtue of continuously upgraded systems as well as effective support, re-training, and consulting services according to customers' needs. In doing this, we help maximize the economic benefits.

4.2 Pre-sale Service

- We perform in-depth analysis and research into an enterprise's organization and specific requirements.
- We also carry out system function selection and reasonable function integration in combination with the enterprise characteristics, management requirements, and corporate mentality.

4.3 On-purchase Service

- We will send technical personnel to provide operation training for customers

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- We provide secondary development service as required.

4.4. After-sale Service

- Service telephone (on working days): + 86-535-3410600
 - Technical support accessible by fax and e-mail for 7×24 hours
- Fax: +86-535-3410604
- E-mail: sales@infiray.com
- Web: <https://www.infirayoutdoor.com/>