

VPIP-THERMAL-XX22

Thermal Imaging Integrated Network Camera

User Manual



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Precautions

Precautions

Fully understand this document before using this device, and strictly observe rules in this document when using this device. If you install this device in public places, provide the tip "You have entered the area of electronic surveillance" in an eye-catching place. Failure to correctly use electrical products may cause fire and severe injuries. To prevent accidents, carefully read the following context:

Symbols

This document may contain the following symbols whose meanings are described accordingly.

Symbol	Description
	It alerts you to fatal dangers which, if not avoided, may cause deaths or severe injuries.
	It alerts you to moderate dangers which, if not avoided, may cause minor or moderate injuries.
	It alerts you to risks. Neglect of these risks may cause device damage, data loss, device performance deterioration, or unpredictable results.
©— [™] TIP	It provides a tip that may help you resolve problems or save time.
	It provides additional information.



To prevent electric shocks or other dangers, keep power plugs dry and clean.



• Strictly observe installation requirements when installing the device. The manufacturer shall not be held responsible for device damage caused by users' non-conformance to these requirements.

- Strictly conform to local electrical safety standards and use power adapters that are marked with the LPS standard when installing and using this device. Otherwise, this device may be damaged.
- Use accessories delivered with this device. The voltage must meet input voltage requirements for this device.
- If this device is installed in places with unsteady voltage, ground this device to discharge high energy such as electrical surges in order to prevent the power supply from burning out.
- When this device is in use, ensure that no water or any liquid flows into the device. If water or liquid unexpectedly flows into the device, immediately power off the device and disconnect all cables (such as power cables and network cables) from this device.
- Do not place the thermal imaging camera and unpackaged products at a radiation source with a high intensity regardless of whether the device is in the normal power-on state, for example, the sun, laser, and electric arc welder, and place the thermal imaging camera and unpackaged products against objects with a high heat source, for example, the sun. Otherwise, the accuracy of the thermal imaging camera will be affected. In addition, the detector in the thermal imaging camera may be permanently damaged.
- If this device is installed in places where thunder and lightning frequently occur, ground the device nearby to discharge high energy such as thunder strikes in order to prevent device damage.

- Unless otherwise specified in the user manual, do not use the thermal imaging camera in an environment with the temperature lower than -10°C (+14F) or higher than 50°C (+122F). Otherwise, the images displayed by the thermal imaging camera are abnormal and the device may be damaged if working beyond the temperature range for a long period.
- During the outdoor installation, prevent the morning or evening sunlight incidence to the lens of the thermal imaging camera. The sun shade must be installed and adjusted according to the angle of the sunlight illumination.
- Avoid heavy loads, intensive shakes, and soaking to prevent damages during transportation and storage. The warranty does not cover any device damage that is caused during secondary packaging and transportation after the original packaging is taken apart.
- This device is a static sensitivity device. Improper static may damage the thermal imaging camera. ESD protection measures and reliable grounding must be well prepared for device installation and uninstallation.
- Protect this device from fall-down and intensive strikes, keep the device away from magnetic field interference, and do not install the device in places with shaking surfaces or under shocks.

- Use a soft and dry cloth to clean the device body. In case that the dirt is hard to remove, use a dry cloth dipped in a small amount of mild detergent and gently wipe the device, and then dry it again. Pay special attention to the front window of the thermal imaging camera because this is precision optics. If the front window has water spots, use a clean and soft cloth moistened with water and wipe it. If the front window needs further cleaning, use a soft cloth dampened with isopropyl alcohol or detergent. Improper cleaning can cause damage to the device.
- The lens window of the thermal imaging camera is designed to be applicable to an outdoor environment. The window is coated with durable coating material, but may require frequent cleaning. When you found lens image degradation or excessive accumulation of pollutants, you should clear up the window in a timely manner. Exercise caution when you use this device in severe sandstorm (such as deserts) or corrosive environments (such as offshore). Improper use may cause surface coating off.
- Do not jam the ventilation opening. Follow the installation instructions provided in this document when installing the device.
- Keep the device away from heat sources such as radiators, electric heaters, or other heat equipment.
- Keep the device away from moist, dusty, extremely hot or cold places, or places with strong electric radiation.
- If the device is installed outdoors, take insect- and moisture-proof measures to avoid circuit board corrosion that can affect monitoring.
- Remove the power plug if the device is idle for a long time.
- Before unpacking, check whether the fragile sticker is damaged. If the fragile sticker is damaged, contact customer services or sales personnel. The manufacturer shall not be held responsible for any artificial damage of the fragile sticker.

Special Announcement

All complete products sold by the manufacturer are delivered along with nameplates, operation instructions, and accessories after strict inspection. The manufacturer shall not be held responsible for counterfeit products.

This manual may contain misprints, technology information that is not accurate enough, or product function and operation description that is slightly inconsistent with the actual product. The manufacturer will update this manual according to product function enhancement or changes and regularly update the software and hardware described in this manual. Update information will be added to new versions of this manual without prior notice.

This manual is only for reference and does not ensure that the information is totally consistent with the actual product. For consistency, see the actual product.

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1 Product Overview

1.1 Thermal Imaging Principles and Advantages

For any object, as long as its temperature is above the absolute zero $(-273.15^{\circ} \text{ C})$, although the object does not give out light, it can radiate infrared. The infrared is also known as thermal radiation. A temperature change occurs when the infrared radiated by objects at different temperatures is absorbed by the infrared thermal detector, and thereby generating an electrical effect. An electrical signal is amplified and processed to obtain a thermal image corresponding to the distribution of heat on the surface of the object, that is, infrared thermal imaging.

Applicable to any light environment

Traditional cameras rely on the natural or ambient light for imaging. However, the infrared thermal imaging camera can clearly image the object with the infrared heat radiation of the object without relying on any light. The infrared thermal camera is applicable to any light environment and is free from glare impact. It can clearly detect and find the target as well as identify the camouflaged and hidden target in both day and night. Therefore, it achieves real 24-hour surveillance.

• Monitoring the temperature field of the target heat distribution

The infrared thermal camera can display the temperature field of the object and change the surface temperature distribution of the object that cannot be directly seen by human eyes to the thermal image representing the surface temperature distribution of the object. By monitoring the temperature field, you can immediately identify the temperature abnormality, thereby preventing potential risks caused by the temperature, such as fire.

• Providing the cloud penetration capability

Atmosphere, dust, and clouds can absorb visible light and near infrared, but are clear to the thermal infrared for 3 to 5 microns (medium wave infrared region) and 8 to 14 micron (long wave infrared). Therefore, it is difficult for the conventional cameras to capture clear images under dense clouds, while the thermal imaging camera is able to effectively penetrate the atmosphere and clouds to capture clear images.

1.2 Device Structure

Figure 1-1 shows the rear panel of the thermal imaging integrated network camera. For details about the interfaces, see Table 1-1.



Figure 1-1 Appearance and interfaces of the thermal camera

1.3 Cable Connection

Figure 1-2 the multi-connector combination cable of the thermal imaging integrated network camera. For details about the multi-connector combination cable, see Table 1-2.

Figure 1-2 Multi-connector combination cable



Power & Network cable



Data control line

Table 1-1 Multi-connector combination cable

ID	Core of Cable	Functions
	Red	+DC12V
	Black	- DC12V
	Grey	RJ45

ID	Core of Cable	Functions
	Thin Blue	A(RS485)
	Yellow	B(RS485)
	Thin Grey	NC
	White	NC
	Black	NC
	Red	BNC output
	Blue	NC(Reserved for Audio)
	Grey	NC(Reserved for Audio)

1.4 Functions and Features

- Use uncooled infrared focal plane sensor
- Detect infrared long-wave 8 ~ 14um
- Pixels up to 420×315 pixels
- Heat sensitivity, up to 50mK
- Support 25/35/50 mm fixed lens (optional)
- Support pseudo-color switch: Black hot / White Heat / Rainbow / iron oxide red, Support DVE image enhancement, Support Noise / mirror function
- Support to set temperature measurement points or areas on the thermal image, display and detect temperature: Dot Temperature Measurement, Regional temperature detect, full-screen temperature, Support to set temperature alarm :over-temperature warning, over-temperature alarm, temperature trends alarm (Temperature Measurement Model)
- Supports H.264 BP / MP / HP / MJPEG four optional coding algorithms, and strong compatibility
- Real-time 3 streams output to meet local storage and network transmission of video
- Support NAS storage, Varied network protocols and good network adaptability, to adapt a variety of network environments, Vehicle power supply voltage input range: DC8V ~ 36V
- Support motion detection and alarm linkage, providing intelligent video surveillance applications, Built-in Web Server, easy to manage and configure, SDK available development kit, conducive to the secondary development, support ONVIF protocol
- Focal length and operating speed automatic matching, Auto-run memory, power-down loss prevention Industry unique, using precision mechanical transmission, stable and reliable
- Industry unique, upper/lower anti-collision device
- High-strength cast aluminum alloy shell, impact, corrosion, IP66, with wiper



Figure 2-1 shows the dimensions of the thermal imaging integrated network camera. Dimensions (unit: mm)





3.1 Preparations

You may need the tools and accessories shown in Table 3-1 during the installation (you need to prepare the tools by yourself, and the accessories are in the package of the camera).

Tools	Appearance
Phillips screwdriver (prepare by yourself)	
Claw hammer (prepare by yourself)	
Hammer drill (prepare by yourself)	
Spirit level (prepare by yourself)	
T15 ring spanner (delivered with the camera)	
Stainless hexagon socket head cap screw (delivered with the camera)	
Self-tapping screw (delivered with the camera)	
Inflatable colloidal particle (delivered with the camera)	

Table 3-1 Installation tools

3.2 Installation Mode

The thermal imaging integrated camera can be installed on the ceiling or the wall. You can select the appropriate installation according to your requirements. If the camera needs to be installed on the cement wall, you need to install the expansion screws (the mounting holes of the screws must be consistent with that of the support), and then install the support.

The wall where the support is mounted must be able to withstand at least three times of the total weight of the support and the camera.

3.3 Installation Procedure

Step 1 Remove the installation location labels delivered with the camera. Stick the installation location labels on the ceiling or the wall, as shown in Figure 3-1.

- If the installation uses the back leading mode, pouch a leading-out hole on the ceiling or the wall, as shown in the area highlighted in red in Figure 3-1. (This manual uses the back leading mode as an example.)
- If the installation uses the side leading mode, lead the multi-connector combination cable from the side notch on the bottom of the camera.

Figure 3-1 Installation position



Step 2 Find below 4 holes, and use the cap nut and screws in the components bag, fastening it in an horizontal place.



Step 3 Fix the installation base on the wall, as shown in Figure 3-2.

Figure 3-2 Fixing base



Step 4 Align If using on the Vehicle-Bone, please install the Shock absorber first in the bottom of PTZ before fixing the PTZ.



----End

4 Quick Configuration(Thermal module)

4.1 Login and Logout



You must use Internet Explorer 6 or a later version to access the web management system; otherwise, some functions may be unavailable.

Login system

Step 1 Open the Internet Explorer, enter the IP address of IP camera (default value: 192.168.0.120) in the address box, and press Enter.

The login page is displayed, as shown in Figure 4-1.

Figure 4-1 Login page

Language: English 🗸
User Name:
Password:
Cogin

Step 2 Input the User and password.

- The default name is **admin**. The default password is **admin**. Change the password when you log in the system for first time to ensure system security.
- You can change the system display language on the login page.

Step 3 Click Login.

The main page is displayed.

----End

logout

To logout of system, click Sign out in the upper right corner of the main page, the login page is display after you log out of the system.

4.2 Main page layout

On the main page, you can view real-time video, set parameter, Video parameter, Video control, PTZ control, PTZ Configure and log out of the system. Figure 4-2 is shown the main page layout. Table 4-1 lists the elements on the main page layout.



Live Video Los Video Device isto Steam Configuration Device Configuration Device Configuration Local Record Alarm Configuration Local Record Privacy Mashing Network Service Service Conter Privacy Mashing Privacy Mashing Privacy Mashing Device Conter Device Restart Dedualt Settings	2014-03-21 15:57:19 Fri Pisti Seed 8 30 Peterong into Tomer Pisti Seed 8 30 Peterong into Tomer Pisti Pisti Seed 8 30 Peterong into Tomer Pisti
	Stream stream1 • IFrame Internal Camera: 1 • 4
	Bit Rate Tipe: VIR - Ovalit: 7 Protocol: TCP -
	Bit Rate(htps)

N O.	Element	Description
1	Real-time video area	Real-time videos are displayed in this area, You can also set sensor parameters.
2	Menu area	You can choose a menu to set device parameters, including the device information, audio and video streams, alarm setting, and privacy mask function.
3	Video area	Video parameters, such as the I frame interval, bit rate type, bit rate, and quality, are display.

N O.	Element	Description
4	Video control area	 You can perform the following operation in this area: Switch between cameras. Start or stop playing Videos. Start or stop playing audio. Enable or disable the intercom function
5	PTZ control	You can control the camera direction, zoom in or out, and change the focal length and aperture for a dome camera or a camera connected to an external PTZ. NOTE Currently the automatic aperture adjustment function is not support.
6	PTZ configuration area	 you can perform the following operation in this area: Add, delete, and invoke the presents and tacks. Adjust the PTZ rotation speed. Enable or disable 3D position. Set the direction to due north. Set the PTZ timer. NOTE PTZ timer function as a time trigger. When it is activated, the PTZ rotates according to presents and tracks as scheduled. The PTZ timer use the time set in camera. Ensure the time is correct. This function is available only to a camera with PTZ or camera connected to external PTZ.

4.3 Browsing Video

User can browse the real-time video in the web management system.

Preparation

To ensure the real-time video can be play properly, you must perform the following operation when you log in to the web for the first time:

Step 1 Open the Internet Explorer. Choose Tools > Internet options > Security > Trusted sites > Sites.

In the display dialog box, click Add, as shown in Figure 4-3.

Figure 4-3 Adding the a trusted site

 Internet Options		2 🛛		
Connections Prog	rams	Advanced		
General Security	Privacy	Content		
Select a zone to view or change security	d sites	red	Irusted sites	×
Trusted sites This zone contains websites th trust not to damage your comp your files. You have websites in this zone	at you buter or	Sites	Vou can add and remove websites from this zone. All we this zone will use the zone's security settings. Add this website to the zone: https://192.168.0.120	osites in
Allowed levels for this zone: All			Websites:	
Low Minimal safeguards and Minimal safeguards and Most content is downlo All active content can r Appropriate for sites th	d warning prompts vaded and run with run nat you absolutely	are provided nout prompts trust	https://*.psbc.com	iove
Custo	m level	Default level	Require gerver verification (https:) for all sites in this zone	ise

Step 2 In the Internet Explorer, choose Tool > Internet Options > Security > Customer level, and set Download unsigned ActiveX control and initialize and script ActiveX controls not marked as safe for scripting under ActiveX controls and plug-ins to Enable, as shown in Figure 4-4.

Figure 4-4 Configuring ActiveX control and plug-ins

Internet Properties	Security Settings	? 🛛
General Security Privacy Content Connections Programs Advanced	Settings:	
Select a Web content zone to specify its security settings.	ActiveX controls and plug-ins Automatic prompting for ActiveX controls Disable Enable Binary and script behaviors Administrator approved Disable Enable Download signed ActiveX controls Disable Enable Dosable Enable Dosable Enable Desable Enable Desable	
Move the slider to set the security level for this zone	Convolution Controls Convolution Convolut	Reset
OK Cancel Apply		

Step 3 Download and install the player control as prompted.

The login page is display when the control is loaded.

4.3.2 Download the right control in the Internet Explorer

Preparation

- User uses the Internet Explorer browse video.
- Real-time video page pop-ups the message "clicks to play live video with ActiveX control to reduce latency" as shown in Figure 4-5.

Figure 4-5 Change the ActiveX

ZU14-	03-21	15:57:1	9 Fri		PTZ Conligure	et ·	
					Add	Delete	Analy
						Delete	C OPPO
					Tra	ck:	
					Add	Delete	Apply
1	1100				Spe	ed: 8	
1					🔲 3D Positi	oning	
		-	CHERRY .		PTZ Control	-	
1	~	11			(Zoom	•
					$\overline{}$	Focus	+
					\bigcirc	Iris	(+)
					Brush		On/Off IR
	251ps)			331 Kbps	Video Control		
eam1:H.264(D1*			I Frame Interval :	2	Camer	a: 1	-
eam1:H.264(D1* Stream :	stream1	-					
am 1:H.264(D 1* Stream : Bit Rate Type :	stream1 VBR	• •	Quality :	7			
eam1:H.264(D1* Stream :	stream1	-					

Click the message, jump to download ActiveX control interface, once downloading is complete, you can watch more fluent video screen.

Unable to display video picture, and need to download and install the control

Preparation

- User uses the IE Explorer browse video.
- Real-time video page pop-up the message "click to download the latest version of Flash Play live video" and "click to play video with ActiveX control to reduce latency" as shown in Figure 4-6.

Figure 4-6 Download control tips



Click the message "click to play live video with ActiveX control to reduce latency", jump download Adobe Flash Player Plugin control interface, once downloading is complete, you can watch video screen.

Click the message "click to download the latest version of Flash Play live video", jump to download ActiveX control interface, once downloading is complete, you can watch more fluent video screen.

4.3.3 In the Google, Firefox, or Safari browsers watch real-time video

Google, Firefox, and Safari browsers only support Adobe Flash Player Plugin to play video. When Adobe Flash Plugin control version is too low, browser will automatically clew you to download the latest control.

4.4 Setting Local Network Parameters

Description

Local network parameters include:

- IP protocol
- IP address
- Subnet mask

- Default gateway
- Dynamic Host Configuration Protocol (DHCP)
- Preferred Domain Name System (DNS) server
- Alternate DNS server

Procedure

Step 1 Choose **Device Configuration** > **Local Network**.

The Local Network page is displayed, as shown in Figure 4-7.

Figure 4-7 Local Network page

Local Network
P Protocol
IP Protocol: IPv4
P Address
Device obtains an IP Address automatically
O Device uses the following IP Address
IP Address: 192.168.8.66
Subnet Mask 255.255.255.0
Default Gateway: 192.168.8.1
DHCP IP
DHCP IP:
D DNS
Preferred DNS Server: 192.168.0.1
Alternate DNS Server: 192.168.0.2
OK Reset

Step 2 Set the parameters according to Table 4-2.

Table 4-2 Local network parameters

Parameter	Description	Setting
IP Protocol	IPv4 is the IP protocol that uses an address length of 32 bits.	[Setting method] Select a value from the drop-down list box. [Default value] IPv4

Parameter	Description	Setting	
Device obtain an IP address automatically	The device automatically obtains the IP address from the DHCP server.	[Setting method] Click the option button. NOTE To query the current IP address of the device, you must query it on the platform based on the device name.	
DHCP IP	IP address that the DHCP server assigned to the device.	N/A	
IP Address	Device IP address that can be set as required.	[Setting method] Enter a value manually. [Default value] 192.168.0.120	
Subnet Mask	Subnet mask of the network adapter.	[Setting method] Enter a value manually. [Default value] 255.255.255.0	
Default Gateway	This parameter must be set if the client accesses the device through a gateway.	[Setting method] Enter a value manually. [Default value] 192.168.0.1	
Preferred DNS Server	IP address of a DNS server.	[Setting method] Enter a value manually. [Default value] 192.168.0.1	
Alternate DNS Server	IP address of a domain server. If the preferred DNS server is faulty, the device uses the alternate DNS server to resolve domain names.	[Setting method] Enter a value manually. [Default value] 192.168.0.2	

Step 3 Click OK.

- If the message "Network Parameter Updated" is displayed, click OK. The system saves the settings. The message "Set network pram's success, Please login system again" is displayed. Use the new IP address to log in to the web management system.
- If the message "Invalid IP Address", "Invalid Subnet Mask", "Invalid default gateway", "Invalid primary DNS", or "Invalid space DNS" is displayed, set the parameters correctly.

- If you set only the **Subnet Mask**, **Default Gateway**, **Preferred DNS Server**, and **Alternate DNS Server** parameters, you do not need to log in to the system again.
- You can click **Reset** to set the parameters again if required.

----End



5.1 Sensor Configuration Interface

Operation Procedure

Step 1 On the Internet Explorer interface or the client software interface, select and right-click the surveillance image to the set, as shown in Figure 5-1.

Figure 5-1 Sensor configuration

Full screen Hide information
Sensor Configure
Zoom In
Zoom Out
Restore Panorama
open point measurement
open curves query
show binding picture

Step 2 Choose Sensor Configuration. The Sensor Configuration dialog box is displayed.

5.2 Setting Images

Figure 5-2 shows the image setting interface.

Figure 5-2 Image setting interface

Sensor Setting	23
Image Setting FFC Mode DNR Lens Control Adjust the screen	_
Polarity / LUT White Hot	
Dynamic DVE "0 4 DVE Mode 1 •	
FactorySetting Save Reset Can	cel

Table 5-1 lists the image setting parameters.

Table 5-1 Image setting parameters

Parameter	Description	Setting
Polarity/LUT	The temperatures of the temperature fields detected by the thermal imaging camera are separately mapped to values ranging from 0 to 255 by the algorithm. In the black/white display mode, this range is converted to the grayscale tones. For example, 0 indicates completely black, and 255 indicates completely white. The temperature field of the scene is converted to images by using the grayscale ranging from 0 to 255. Different polarity modes can be converted to different display images. The most common setting is white hot (a hotter object is displayed brighter than a colder object) or black hot (a hotter object is displayed darker than a colder object). The difference between two modes lies in that the temperatures corresponding to the darker one and the lighter one are reversed. Other modes include rainbow and ironbow.	[How to set] Select from the drop-down list box. [Default value] White hot
Dynamic DVE	The sharpness of normal thermo graphic images is lower than the visible light and it is difficult to use the normal thermo graphic images to identify the original images of the targets. The image enhancement and edge processing technology can be used to get better recognition and distinguishing effects. The dynamic DVE is classified into six levels, ranging from 0 to 6. You can set the DVE according to an actual requirement.	[How to set] Select by dragging the slider. [Default value] Level 1
Contrast	The contrast indicates a contrast between light and dark images. The higher the value, the greater the contrast, the darker the dark place, and the brighter the bright place; the smaller the value, the smaller the contrast, and the smaller the difference between bright and dark. The contrast classified into four levels, ranging from 1 to 4. You can set the contrast according to an actual requirement.	[How to set] Select by dragging the slider. [Default value] Level 4
Mirror	Providing the selection of image pixel locations.	[How to set]

Parameter	Description	Setting
	Off: the image is not flipped. Horizontal: the image is flipped left and right. Vertical: the image is flipped up and down. Horizontal + vertical: the image is rotated at 180 degree.	Select from the drop-down list box. [Default value] Off

5.3 FEC Mode

Figure 5-3 shows the FFC mode interface.

Figure 5-3 FFC mode interface

9	Sensor Setting				x
	Image Setting FFC Mode	DNR Lens Control	Adjust the screen		
	FFC Mode	Auto 🔻			
	FFC interval(min)	5 30	15 Flat	Field Correction	
	FactorySetting		Save	Reset	ncel

Table 5-2 lists the parameters on the FFC mode interface.

Table 5-2 Parameters on the FFC mode interface

Parameter	Description	Setting
FFC Mode	The internal of the thermal imaging camera may comprise the mechanical action correction mechanism that can periodically improve the image quality. This component is called flat field correction (FFC). When controlling the FFC, the FFC shields the sensor array, so that each portion of the sensor can collect uniform temperature fields (flat field). By means of FFC, the camera can update the correction coefficients to output more uniform images. Throughout the FFC process, the video image is frozen for two seconds and a static-frame image is displayed. After the FFC is complete, the image is automatically recovered. Repeated	[How to set] Select from the drop-down list box. [Default value] Automatic

Parameter	Description	Setting
	FFC operations can prevent the grainy and image degradation problems. The FFC is especially important when the temperature of the camera changes. For example, after the camera is powered on or the ambient temperature is changed, you should immediately perform the FFC.	
	Auto: In the Automatic FFC mode, the camera performs FFC whenever its temperature changes by a specified amount or at the end of a specified period of time (whichever comes first). When this mode is selected, the FFC interval (minutes) ranges from 5 to 30 minutes. The temperature change of the camera is based on the temperatures collected by the internal temperature probe. The temperature of the camera sharply changes when the camera is powered on. The FFC is relatively frequent, which is normal.	
	Manual : In the manual FFC mode, the camera does not automatically perform the FFC based on the temperature change or the specified period. You can press the Do FFC button to select the manual FFC mode. When you feel that the image is obviously degraded but the automatic FFC is not performed, you can use the manual FFC function to check whether the image quality can be improved.	
	External: In the external FFC mode, the internal mechanical action correction mechanism is disabled. The uniform source (black body) is placed in front of the camera. This feature is useful if there are lens or lens mount non uniformities that are not corrected by an internal FFC. The camera will not perform an FFC process on startup if the saved state of the camera is External mode FFC. Many customers have found that the palm of their hand or a table is an adequate uniform source to perform an External FCC.	
FFC interval (min)	In the automatic FFC mode, the FFC interval ranges from 5 to 30 minutes.	[How to set] Select by dragging the slider. [Default value] 5

Parameter	Description	Setting
Flat Field Correction	Manual : In the manual or external FFC mode, the camera does not automatically perform the FFC based on the temperature change or the specified period. You can press the Do FFC button.	-

5.4 DNR

Figure 5-4 shows the DNR interface.

Figure	5-4	DNR	interface
--------	-----	-----	-----------

s	Sensor Setting				×
	Image Setting FFC Mode DN	R Lens Control	Adjust the screen		
	3DNR Off	•	2DNR Off	•	
	FactorySetting		Save	Reset	Cancel

Table 5-3 lists the DNR parameters.

Table 5-3 Parameters on the DNR interfac
--

Parameter	Description	Setting
3DNR	Decrease the image noise.	[How to set] Select from the drop-down list box. [Default value] Off
2DNR	Decrease the image noise.	[How to set] Select from the drop-down list box. [Default value] On

5.5 Lens Control

Figure 5-5 shows the lens control interface.

9	Sensor Setting	x
ſ	Image Setting FFC Mode DNR Lens Control Adjust the screen	
	Focus + Focus -	
	FactorySetting Save Reset Cano	;el

The electrical focusing lens can be controlled and adjusted.

5.6 Temperature detection parameters

Configuration instructions

- a) Temperature unit default in Celsius degrees (°C), Fahrenheit (°F) Optional
- b) Ambient temperature is for outside environment, it is changeable for user, and inside cavity temperature is not editable.
- c) Recommended to use inside temperature for ambient temperature when environment temperature changes quiet often.
- d) Correction coefficient is used for correcting the temp difference with real temperature. Under normal circumstances does not recommend using this parameter
- e) Area temp display mode is an optional for user to choose the display position.

Figure 5-6 Temp detection configure

Parameter Configure	
Temperature l	Jnit Celsius
Ambient Temperat	ure: Inside 🔽
Inside Tmperat	ure:29
Correction R	atio:0
Area Temp Display Mo	ode: Low Left

5.7 Temp detection area configuration

Figure 5-7 Temp area selection



Figure 5-8 Temp area setting

Area Mode: General	Preset: Preset1
1999-12-04 16:53:34 Sat	
States in the second	And I wanted
Γ.	
	2
1	CONTRACTOR OF STREET, STRE
	And a second
THE OWNER OF THE REAL	
	4
3	*
	And the second
K 9/ 07	State of the second
[1] 27.9	
[2] 27.8 [3] 27.9	and the second second
[4] 34.1	States and a state of the
	And a second

Configuration instructions

- a) Default with general mode. Preset mode optional
- b) General mode is used in constant place. Preset mode is used for PTZ thermal.
- c) Configure the not more than five regions.
- d) Hold down the left mouse button to set the frame area, right-click the mouse in a regional context can be deleted region

5.8 Alarm Configuration

Procedure

- Step 1 Login Alarm configuration menu
- Step 2 Default is full screen, area one, two, three, four, five optional
- Step 3 Under normal circumstances, target emissivity is applied with 0.95. When need to monitor special material, change its value according to its emissivity.
 - Step 4 Must input the real distance when target is in a distance of within 15 meters. When distance is more than 15 meters, then keep this value as 15 meters.
- Step 5 Enable threshold alarm, set warning thresholds, alarm thresholds
- Step 6 Enable Trend alarm, set warning trend values, alarm trend values

Step 7 After the configuration is complete click the OK button

Configuration instructions

- a) In the area selection full-screen mode, change the emissivity and target distance, that is, change the target emissivity and distance in all regions
- b) Alarm threshold and trends alarm can enable at same time, but the system defaults to the threshold alarm priority above trend alarm.

Figure 5-9 Alarm configuration

	Area Selection: Full Image
Target C	pnfig
	Target Emission Rate: 0.95
	Target Distance(M): 15
Threshol	d Alarm
Enable	
	Warning Threshold: 90
	Alarm Threshold: 100
Trend Al	im
Enable	
	Warning Trend Value:
	Alarm Trend Value:



6.1 Configure the temperature detection parameters

6.1.1 Installation.

Find the installation file in the CD, and click setup to run the

installation. When installation succeed, there will be a icon NVMS in the desktop, click to open the login page.

Input the default user and password: admin/admin, and choose the language, then click login.

VEILUX.	Network Video Monitor System
User Name	admin
Password	· ••••
Language	English 👻
IP Protocol	[⊨] IP_¥4 →
IP:	192.168.0.81 👻
	Remember my password
	Sign in automatically
	Login / Cancel

6.2. Thermal temperature detection setting

Click the Device Manage to select: Video Device Management..

Live Video 🛛 💀 Playback 🛛 🛐	Backup 🤹 Alarm Manager	🥂 Device Manager 🛛 💭 System Mar	nager 🛛 🕲 About
4		Video Device Management NVR Management	

The menu of Thermal cameras will be displayed in the middle of the new page, picture shown below. When configure Thermal menu done, the NVMS will detect the temperature and display the temperature in the live window of Thermal image.

Thermal configure menu

There are 6 sub menus under Thermal Menu.

6.2.1 Temperature detection paratemeters

The first sub menu: Temperature detection parameters: Allow you to set the different detection modes and other basic detection parameters. Environment temperature is needed as a reference to the Thermal camera to have better correct temperature detection. Correction parameters allow you to correct the difference temperature compared with the real temp when needed. Also you can choose if to display the highest temperature on the screen. Allow to switch off Alarm snapshot or on.

Temperature detection parameters page



6.2.2 Detection Area

Detection Area: Allow customer to set up to 5 area, and detect the highest temperature in this area with symbol *, the highest temperature will be displayed close to the area box. Configuration page shown below:

Detection area page



On the live video, the temperature of selected area will be displayed as below.

Example:



6.2.3 Alarm configuration

Select full screen mode or a selected area to open the alarm. You may choose the target emissivity and distance.

Three type of Alarm is available:

Threshold Alarm: including 2 threshold, Warning and Alarm threshold. Warning threshold is used to warn you there is dangerous potentially, and need to get intention. Alarm means, when temperature reach to that value, there is some event, like fire or high temperature existed.

Trends alarm: Trends alarm happens in an interval time, 10 minutes. During this time, if Thermal detected a object's temp is reaching a set value, then it will alarm. It also can warn you or directly alarm, due to different needs and settings.

Diff Alarm: Diff Alarm=Highest temperature – Average temperature. Warning Diff value alarm and Diff alarm is available to use.

Alarm configuration page:



Real-time alarm interface



2.2.4 Mapping configuration

Used for the dual vision: Thermal+ Optical mode. To allow the temperature displayed on the normal optical window.

Configuration page:



Dual window Thermal PTZ:



Real-time alarm interface



2.2.5 Text/Picture Message Alarm(SMS/MMS)

This function is based on customer demand, specifically integrate thirdparty SMS / MMS alarm module can be realized: the target area exceeds the alarm threshold, send the target information includes geographic location to the user administrator.

SMS/MMS page

40 IP CAM 192.168.19.11			
- 47 IP CAM 192.168.19.12			
- 40 IP CAM 192.168.19.13	I The second sec		
- 47 IP CAM 192.168.19.15	Date and Time	Onen Text/Picture Message	Alarm
- 40 IP CAM 192.168.19.21	Camera		
- 4 IP CAM 192.168.19.98	- SD	© Text	Picture
- 40 IP CAM 192.168.19.205	Microphone		
- 4 IP CAM 192.168.19.225	- S Dome PTZ	Phone Num1	
- CAM 192.168.50.57	BNC Video Out	Phone Num2	
- 47 IP CAM 192.168.77.10	External Device	1947 - 194 7	
- Q IP CAM 192.168.77.40	Alarm Configuration	Phone Num3	
- 4 IP CAM 192.168.77.45	Local Record	Phone Num4	
- Q IP CAM 192.168.77.49	Privacy Masking	2201000000	
- CAM 192.168.77.58	CMS Configuration	Phone Num5	
- 4 IP CAM 192.168.77.80	a ibermal	Dhose Mum6	19
- CR IP CAM 192.168.77.97	Peterties Assa	PIONE NUTIO	
- CAM 192.168.77.107	Cetection Area	Phone Num7	
- QR IP CAM 192.168.77.121 =	- Alarm Conngur		
- CAM 192.168.77.130	Test Water Ma	Phone Numb	
- CR IP CAM 192.168.77.134	Text/Picture Me	Phone Nam9	
- C IP CAM 192.168.77.136	Network Service		
P CAM 192.168.77.137	Device Restart	Phone Num10	
- Q IP CAM 192.168.77.138	Device Log		
- Q IP CAM 192.168.77.139	Cence Log	e Per	
- CN IP CAM 192.168.77.149 *			S Refresh D C Apply

Third party device can be wireless modem or other same device, below fore reference.

Wireless SMS/MMS modem



2.2.6 Temperature curves Query

This function allows query the highest temperature curves of the full screen or a selected area.

Temperature curves query



When find the logs, double click to see the curve:

Example full screen high temperature:



7 Technical Specifications

Table 6-1 lists the specifications of the thermal imaging integrated camera. Table 7.1 Table is the second second

SN-TP	Г4230LM	Description	
	Sensor type	Uncooled IR focal plane sensor	
Thermal Performance	Effective pixel	420×315	
	Sense method	Micro bolometer	
	Pixel distance	25um	
	Response waveband	8~14um	
	NETD	50mK	
	Fixed lens	50 mm	
	Aperture F value	1	
	Focusing mode	Manual adjustment	
	FOV field of view	11.90×90 Black heat/white heat/rainbow/iron oxide red	
	P-color mode		
	DVE image enhancement	0 to 6	
	Mirror image	Horizontal/Vertical/Flip	
	Noise reduction	2D/3D	
	Image correction	Auto/manual/external correction	
	OSD display	Support	

Table 7-1 Technical specifications

	Output image resolution	D1/ CIF	
	Output frame rate	30fps	
	Sensor	1/2.8" SONY Exmor CMOS Sensor	
	Resolution/frame rate	1920(h)x1080(v) / 25fps	
	Minimum illumination	0.2Lux (F1.2, AGC ON, ICR ON)	
	SNR	>50dB	
	WDR range	70dB	
Visible	Day/Night	Removable ICR	
light camera features	22X Optical Lens	F= 4.7mm(F1.6) - 103 mm(F3.2)	
	FOV (field of view)	$58.16^{\circ} - 2.9^{\circ}$ (H) $34.31^{\circ} - 1.64^{\circ}$ (V)	
	White balance	ATW/PUSH	
	Electric shutter	Auto-priority shutter-priority aperture-priority	
	Special functions	De-Fog / Flip / WD	
	Focus mode	Auto/manual/trigger	
	Video Coding type	H.264BP/MP/HP/MJPEG	
	Audio compression format	G711、AMR、RAW_PCM (Optional)	
	Multi-stream	Support	
Encoding	Bit rate	CBR/VBR	
and	Bit rate range	50Kb \sim 8Mb	

network features	Network protocol	IPv4/v6、RTSP/RTP/RTCP、 TCP/UDP、HTTP、DHCP、 DNS、FTP、DDNS、 PPPOE、SMTP、SIP	
	Storage communication protocol	CIFS、 NFS	
	WEB management	In-built WEB service enabling remote IE viewing and configuration	
	Remote upgrade and maintenance	Support	
	Integration feature	Onvif/third party protocol	
	Max user login	Max simultaneous 10 user login	
Variable speed PTZ features	Rotation speed	Pan:0.1° \sim 80° /s, Tilt:0. 1° \sim 60° /s	
	Rotation angle	Pan:0° \sim 360° continuous, Tilt:+90° \sim -90°	
	Reset point accuracy	$\pm 0.1^{\circ}$	
	Reset point quantity	Up to 256	
	Protocol	Pelco-D	
	bit rate	2400/4800/9600/19200bps	
	Communication interface	RS485	
Electrical	Input voltage	Operating voltage DC9~36V	
specifications	Power consumption	≤50W	

Operation temperature	Temp:-20°C \sim +50°C	
Relative humidity	RH90% MAX(Non- condensing)	
Protection level	IP66	
Installation method	Wall/ceiling mounting	
Weight	10Kg	



	Hazardous Substance or Element					
Component	Plumbum (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent Chromium (Cr6+)	Polybrominated Biphenyls (PBB)	Polybrominated Diphenyl Ethers (PBDE)
Structural part	×	0	0	0	0	0
Board/circuit module	×	0	0	0	0	0
Cable connector	×	0	0	0	0	0
Accessories	×	0	0	0	0	0

o: indicates that the concentration of the hazardous substance in all homogeneous substances of the component is within the limit specified in SJ/T 11363-2006 **Requirements for Concentration Limits for Certain Hazardous Substances in Electronic Information Products**.

×: indicates that the concentration of the hazardous substance in at least one homogeneous substance of the component exceeds the limit specified in SJ/T 11363-2006 **Requirements for Concentration** Limits for Certain Hazardous Substances in Electronic Information Products.

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Veilux Inc

802 Greenview Dr. Suite 200, Grand Prairie TX. 75050 USA Toll Free: 1-800-510-6528 Direct: (+1) 214 635-4855 Fax: (+1) 214 988-2858 sales@veilux.net www.veilux.net

www.veilux.net