

# CK350-W

*User's manual*



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# 1 Read first

## 1.1 safety precautions

### 1.1.1 Warning

- 1、 Before the installation and using of infrared thermal imaging intelligent monitoring system CK350-W, please read the user manual carefully, and properly keep for future use.
  
- 2、 Should abide by the user manuals for all warnings; comply with all instructions.
  
- 3、 Use only the recommended power accessories, use of power sources not expressly recommended for this IR camera may lead to overheating, distortion of the IR camera, fire, electrical shock or other hazards.
  
- 4、 Do not attempt to disassemble or alter any part of the equipment that is not expressly described this guide
  
- 5、 Please use the provided type of power supply voltage , if the voltage of the installation location is not clear, contact us.
  
- 6、 Avoid fire or electric shock , do not let the PTZ overload .
  
- 7、 Stop operating immediately if it emits smoke or noxious fumes. Failure to do so may result in fire or electrical shock. Immediately turn the IR camera's power off, remove the IR camera battery or unplug the power cord from the power outlet. Confirm that smoke and fume emissions have ceased.
  
- 8、 Stop operating immediately if it is dropped or the casing is damaged. Failure to do so may result in fire or electrical shock. Immediately turn the IR camera's power off, remove the IR camera battery or unplug the power cord from the power outlet.

9、 when cleaning the thermal imager, first disconnect the power supply, wipe with a damp cloth. Do not use substances containing alcohol, benzene, thinners or other flammable substances to clean or maintain the IR camera

The use of these substances may lead to fire.

10、 Do not handle the power cord if your hands are wet Handling it with wet hands may lead to electrical shock. When unplugging the cord, ensure that you hold the solid portion of the plug. Pulling on the flexible portion of the cord may damage or expose the wire and insulation, creating the potential for fires and electrical shocks.

11、 Do not install the camera on unstable frame or wall, otherwise it will lead to human damage.

12、 In case of the following circumstances please immediately contact our company:

- a. Power supply line or control line breakage.
- b. Using the wrong types of power or voltage.
- c. Falling or casing damage
- d. abnormal performance of Products
- e. operation according to the user's manual still not work.

**Warning:** Do not trigger the laser pointer in human or animal eyes. Exposure to the laser produced by the laser pointer may damage eyesight.

### 1.1.2 Notice

1、 In the transport, storage and installation process, prevents the pressure, vibration and water immersion, otherwise it will cause equipment damage.

2、 If you want to change the installed thermal imager position, please make sure that the power is off before moving or reinstall the thermal imager.

3、 Please install equipment in good ventilation condition.

4、 If thermal imager is not working properly, please contact the supplier, do not in any way to remove or modify thermal imager. For unauthorized modification or repair the resulting problems, manufacturers do not assume responsibility.

5、Thermal imager installed outdoors, should take effective waterproof, damp proof, dust proof measures such as: Immersion, head of the waterproof connector must be tightened.

## 1.2 In order to avoid failure

Read on to learn about preventing malfunction of IR camera :

### Avoid Condensation Related Problems

Moving the IR camera rapidly between hot and cold temperatures may cause condensation (water droplets) on its external and internal surfaces. You can avoid this by placing the IR camera in the plastic case (bundle) and letting it adjust to temperature changes slowly before removing it from the case.

### If Condensation Forms Inside the IR Camera

Stop using the camera immediately if you detect condensation. Continue to use may damage the IR camera. Wait until moisture evaporates completely before resuming use.

### Long term storage

If intended for long-term use of thermal imager, please put the imager placed in a cool dry environment

## 1.3 Warranty and technical support

Warranty and other customer service method, please refer to the warranty card included.

## 2 Introductions

### Application

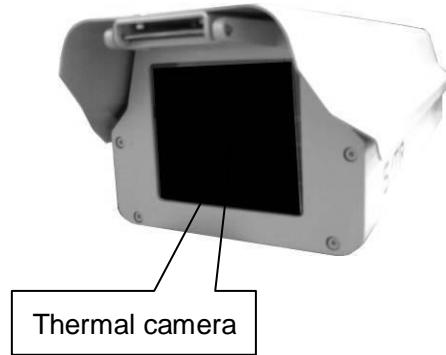
The intelligent monitoring system (CK350-W), which consists of all-weather IR monitoring cameras and corresponding network of computers. With advanced data compression and network transmission technology, common functions such as camera settings, over-temperature alarm, auto-video recording and much more can be adjusted remotely via a standard Ethernet network cable.

It can be configured as a stand-a-lone monitoring system or can also be incorporated into existing site systems which have an online monitoring system

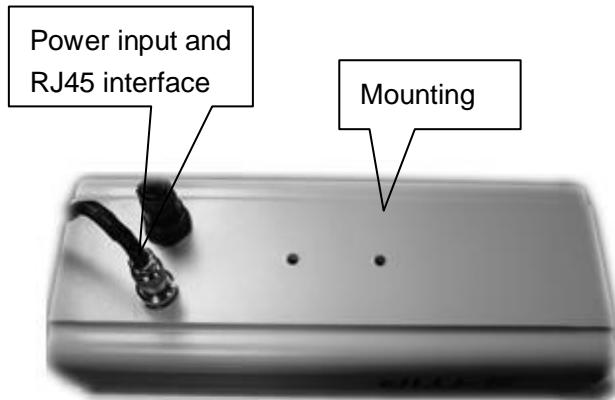
# Parts introduction

## Apearance and interface

Front View:



Bottom View:



# 4 Equipment installations

## Installation of monitoring systems

### 4.1 confirmations before installation

Based on the transportation safety considerations, thermal imager is mainly divided into infrared monitor and platform part two, divided into two boxes. Before installation please pay attention to the following matters.

#### 4.1.1 Parts confirmation

Open the packaging box, confirm the following parts, if lack, please contact the supplier.

Product	Accessories	Quantity	Remarks
Thermal imaging surveillance systems	User's manual	1	
	Allen wrench (3mm)	1	Use for fastening PTZ
	M6X12	2	Use for fastening Camera
	M8X25	4	Use for fastening PTZ on the pallets
	M8 Nut	4	
	CD ROM	1	Used to install the software
	Cable	1	

When opening the package, please note the original packaging materials.

※ Note: The non- original product packaging materials may lead to accidental damage in transit , resulting in additional costs .

#### 4.1.2 External protection device confirmation

The recommended installation order is: 220V power ---- regulator ---- SPD IN ---- SPD OUT ---- transformer ---- camera.

## 4.2 Installation personnel requirements

1. The user has been completely read the entire manual.
2. With the basic knowledge and skills of low-voltage wiring and low-voltage electronic circuit wiring .
3. Has the qualification certificates of the CCTV system installation and maintenance work. And has the qualification certificate of related work (such as aerial work, etc.)

※Note: In order to ensure the safety of the installation and operation, the personnel do not have the qualification requirements shall not disassemble the PTZ.

## 4.3 Verification of installation space and installation location

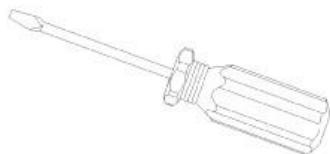
For security, the mechanical connection and connectors used to support the head must be able to withstand a sufficient load , the selected installation location must be a solid non - shedding phenomenon to ensure that the bracket on the wall rather than the surface coating material .

<b>Environment Temperature</b>	-35℃~+65℃		
<b>Environment Humidity</b>	<90%RH		
<b>Power</b>	AC24V 50Hz ≥90W		

Note: 1、the installation space : Make sure the installation site has enough space to accommodate the product and its installed components .

2、it is necessary to confirm that the product installation department should withstand at least two times the total weight of the monitoring system for safety reasons, it is recommended to bear the weight of 25kg or more.

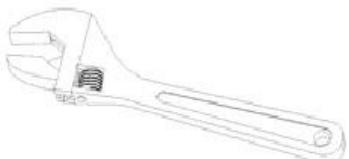
## 4.4 Installation Tools



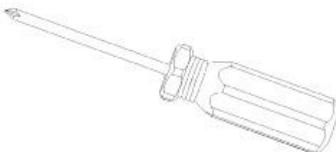
Flat-blade screwdriver



Hex Wrench (3mm)



Wrench (8" )



Phillips screwdriver (1/4)

## 4.5 Cable

Select the cable according to distance :

### 4.5.1. Network Cable

ANSI/EIA/TIA-568A/BandISO/D used to run 10M/100Mbps Ethernet over unshielded Category 5 or Category 5 twisted pair cable.

### 4.5.2. AC24V Power cord

Use the power cable enough to withstand the load, following data are available.

Distance m	Diameter mm	0.80	1.00	1.25	2.00
Power W					
30	28	45	72	183	
40	21	34	54	137	
50	17	27	43	110	
60	14	22	36	91	
70	12	19	31	78	
80	10	17	27	68	
90	9	15	24	61	
100	8	13	21	55	
110	7	12	19	49	
120	7	11	17	45	
130	6	10	16	42	
140	6	9	15	39	
150	5	9	14	36	
160	5	8	13	34	
170	4	7	12	32	
180	4	7	11	30	
190	4	7	11	28	
200	4	6	10	27	

Note: According to the power of the system and other accessories, it is recommended that users use at least 100W power AC24V power cord , wiring harness when installing select on table content to deepen part of the requirements for power cord advise clients to construction , please refer to the table .

#### 4.5.3 Video cable (for customized version)

75Ω impedance, total copper, 95% preparation of copper mesh shield coaxial cable. The following models with transmission distance data for reference:

75-3,about 220m, SYV75-3-220 75-5,about

300m, SYV75-5-300

75-7,about 450m, SYV75-7-450

#### 4.5.4 RS-485 Communication cable (for customized version )

Use shielded twist pair, must be effectively connected to GND, When using bare wire diameter 0.56mm shielded twisted pair , the following baud rate and transmission distance data for reference:

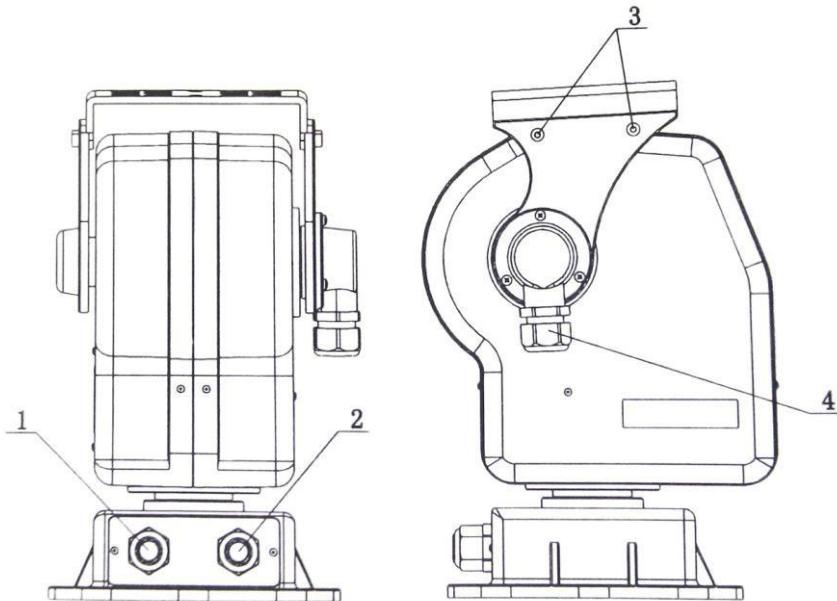
2,400, about 1,800m

4,800, about 1,200m

9,600, about 800m

## 4.6 start installation

### 4.6.1 PTZ installation instructions



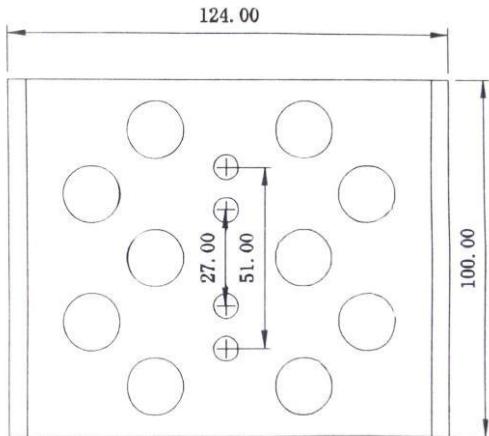
Note:

1. Cable outlet 1
2. Cable outlet 2
3. Screws (4X)
4. Cable outlet 3

### 4.6.2 Installation of infrared detector

1. Unscrew the 4X screws of the Pic3. And take out the base plate;

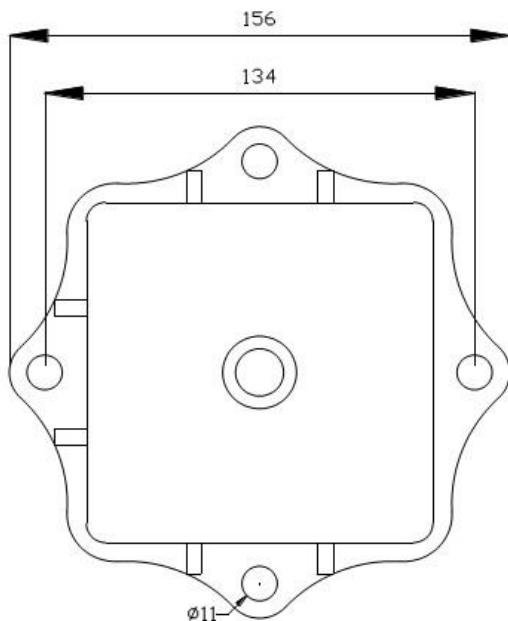
The size of base plate



Note : Unit mm

4.6.3 Variable-speed PTZ and fixed supports after installing the detector, use M8X45,  $\phi 8$  flat pad,  $\phi 8$  spring washers and M8 nut head to fix PTZ and bracket

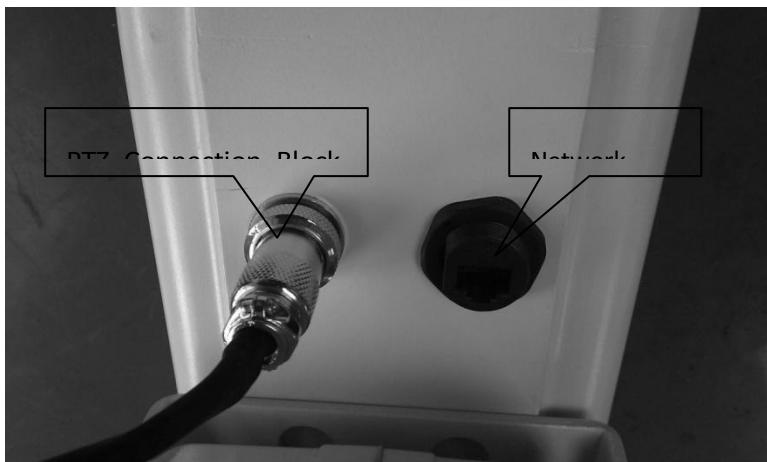
o



Note : Unit mm

#### 4.6.4 Connect wiring

1. System connection, connection ports as shown in figure



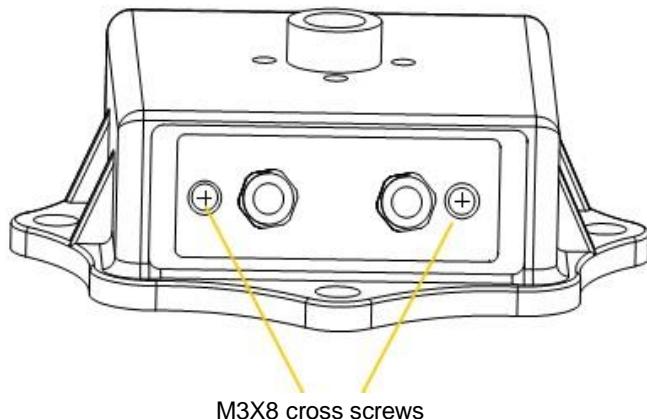
2. To protect the lightning, the pan-tilt should be connected to ground.

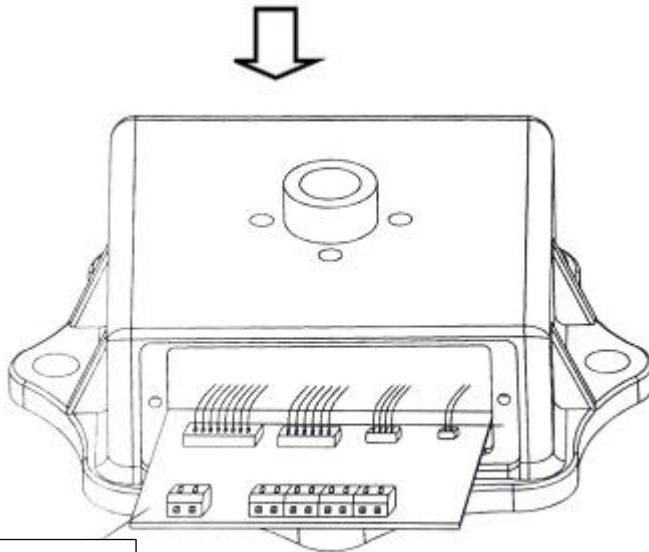
Please follow the next steps to connect pan-tilt to ground.

1. Unscrew the two M3X8 cross screws and take out the connected board.

※Note: A carefully remove the wiring board.

B Must operate in power-down mode.

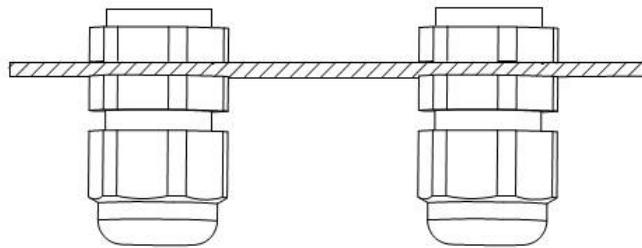




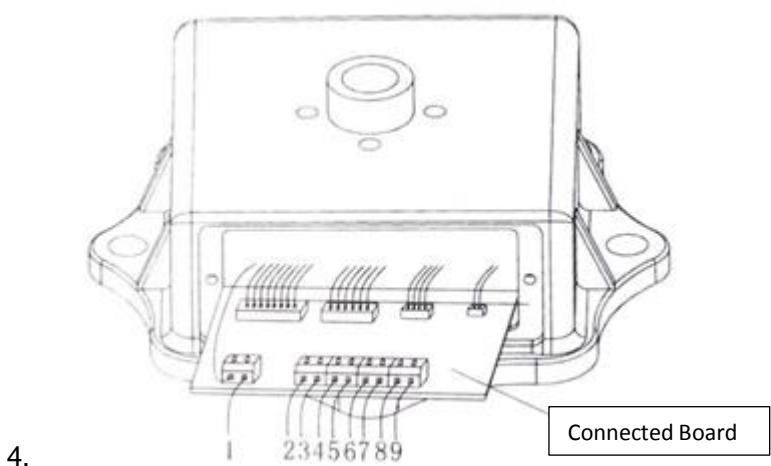
Connected Board

oard

2. Use two outlet port protection to avoid water or moisture



3. Connect the external cable



#### Definition:

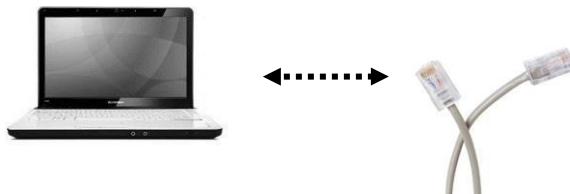
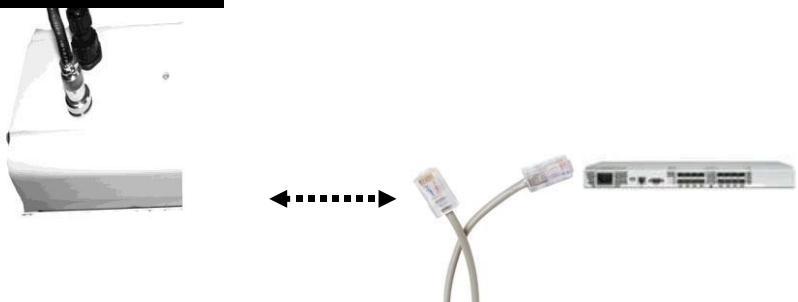
No.	Definition	No.	Definition
1	Ground	6	Alarm
2	AC24V	7	RS485 Ground
3	AC24V	8	Video core
4	RS485B	9	Video Ground
5	RS485A		

#### Note :

1. When connect PTZ power line (AC24V) to power line inside the distribution box, must welding, and wrapped with waterproof tape. After connecting the wiring harness please detect the short circuit.
2. PTZ lightning line (Olivine wire) must be grounded with the earth, the earth resistance < 4 ohms.
3. Check the crystal head and self-locking to ensure connection is reliable. 4. Use shielded twisted-pair to connect RS-422 / RS-485 port , the shield should be effectively connected to the signal GND, if not, may interfere the communication or video work .
5. Please use the standard video cable to connect the video port , in order to ensure the normal video signal .

# 5 Devices connection

Connect thermal imager



1. Please use the two with a standard RJ45 crystal connector cable, the thermal image monitoring system network interface connected to the router or switch. Then will the router is connected to the computer network.
2. Power line and an external power supply is connected, after connecting, when energized, PTZ will check once, if the test is successful, the console will remain in a fixed position. Only when self is completed, can be to the pan-tilt other operations. For example: testing the basic normal movements.

Note: because the tilt circuit capacitance discharge phenomenon, so the head off after 1 minute can again be energized, otherwise the platform will likely identify cut-off process.

# 6 Remote landing

Connect PC

You can use the IE browser to directly access the thermal imager . If your computer has installed monitoring software , you can also use it to access the thermal imager .

## 6.1 WEB services

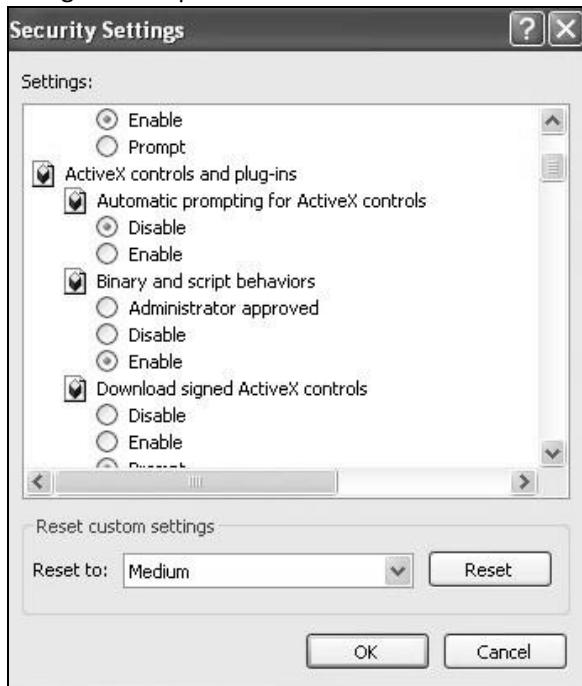
### 6.1.1 Preparation

1. The original IP address of the camera is 192.168.1.2, Subnet mask 为 255.255.255.0, Set the IP address of PoE router as 192.168.1.XXX (XXX should be different to camera).
2. Under WINDOWS follow the steps Start → run → command to open the Command Prompt window , type in "Ping 192.168.1.2", if not show "Request time out", it indicates that the start is successful.
3. The thermal video needs an ActiveX controls and plug-ins to be displayed by IE.

- 1.** Open the IE browser, choose the “tools” menu and choose the “Internet options” and then the Internet options dialog box is open.



2. In the Internet options dialog box, choose the “security” label, and then in the security level for this zone click the “custom level” bottom, then the security settings box is open.



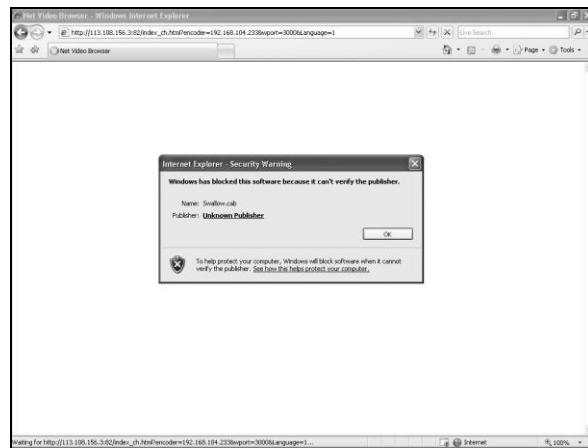
3. In the security settings box, in the “ActiveX controls and plug-ins” options ,set the following options as “enable”:

Automatic prompting for ActiveX controls,  
Download signed ActiveX controls,  
Download unsigned ActiveX controls,  
Initialize and script ActiveX controls not marked as safe,  
Run ActiveX controls and plug-ins And the  
other options retain the default value.

After the first time log in the video server interface, debug is passed and the browsing function and other function is used regular, if want to ensure the security of IE, then you can reset “Internet security level for this zone” as default value or custom other levels directly.

### 6.1.2 Log on

1. Input the IP address in to the IE address bar. (for example 192.168.104.233). Then the IE will pop up a message that downloads and installs an ActiveX controls. And then click “Install” to install the “Swallow.cab”.



2. After installed the ActiveX controls, the login page appears as shown below :



Login screen

4. Input the log on items as below:

Items	Content
language	Chinese or English
User Name	Input the User Name, the default value is Admin
Password	Input the Password, the default value is Admin
Port	The digital port of the camera, the default value is 3000.

4. Click the OK button to enter the thermal imaging preview screen. As shown below

# 7 WEB setting

## WEB server settings



Note:

- 1、 Different types of thermal camera will get different thermal video.
- 2、 Microsoft IE version 6.0 or above

### 7.1 PTZ control

1. Click the [Device] item after log on.



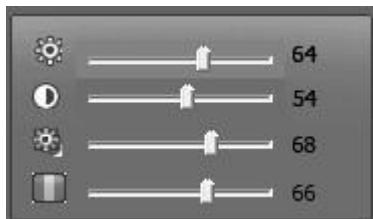
2. The items of [Device] is below:

Items	Content
<b>Protocol</b>	<b>The protocol of controlling PTZ, the default is Pelco-P</b>
<b>Status</b>	<b>The status of PTZ, the default is 9600</b>
<b>Address</b>	<b>The address of PTZ, the default is 2</b>
<b>SetView</b>	<b>Set the angle of PTZ pointing</b>
<b>CallView</b>	<b>Rotate PTZ to the angle of SetView</b>
<b>Speed</b>	<b>The speed of rotating PTZ</b>

## 7.2 Display settings

Note: Please don't change the settings not mentioned, in order to avoid unintended consequences, resulting in the damage of thermal imager.

1. Set the display through the right part of the interface



Brightness  
Contrast  
Saturation (not used yet)  
Tone (not used yet)

2. Adjust the display mode under the images



Single screen Four screen Nine screen Sixteen screen Full-screen

## 7.3 Advanced Settings

Click the [General setting] item after log on to inter the Advance setting 7.3.1 General setting

Click the [General setting] item after log on.

## General Setting

Channel Num: Channel 1 Major ▾



Set Video Cover Area

Clean Area

Showing frame-rate and bit-stream information

Here you can set the video block area, the display frame rate and stream.

### 7.3.2 Video parameter

Click on the right part of the interface to set video parameter.

Video Param	
Channel Num:	Channel 1 Major ▾
Video Quality:	Best ▾
Frame Rate:	25 ▾
Stream Type:	Audio Video ▾
Prefer Mode:	Frame Rate ▾
Rate:	1536 <input type="button" value="Set"/>
Resolution:	HD1 <input type="button" value="Set"/>
Encode Mode:	VBR <input type="button" value="Set"/>
N/P Mode:	PAL <input type="button" value="Set"/>
Video Encoder:	H.264 <input type="button" value="Set"/>
Audio Encoder:	ADPCM_DIV4 <input type="button" value="Set"/>
Play Impression:	Low Delay <input type="button" value="Set"/>
IFrame Rate:	100 <input type="button" value="Set"/>
Encrypt Type:	None <input type="button" value="Set"/>
Encrypt Password:	<input type="text"/>
Password Confirm:	<input type="text"/> <input type="button" value="Set"/>

Here you can change detail settings, such as the frame rate, rate of resolution.

### 7.3.3 OSD

Click [OSD] on the right part of the interface to set Character overlap.



Here, you can set the characters, such as adding the channel name, time, date, additional characters, can also change the character superimposing position.

### 7.3.4 Alarm settings

Click [Alarm settings]-[Port Alarm] on the right part of the interface to set this parameter.

The screenshot shows the 'Port Alarm' configuration window. It has three main sections:

- Top Section:** Contains four fields: 'InPort' (set to 1), 'Mode Set' (set to OFF, highlighted in blue), 'OutPort' (set to 1), and 'Mode Set' (set to OFF). To the right of 'InPort' is a checked checkbox labeled 'Enable'.
- Middle Section:** Labeled 'Schedule: Tuesday'. It contains four pairs of time selection boxes. Each pair consists of a checkbox followed by two dropdown menus for hours and minutes, separated by a colon and a double-headed arrow symbol (~). The first pair is checked and set to 00:00. The other three pairs are unchecked. Below these pairs is a 'Set' button.
- Bottom Section:** Labeled 'Link Type: Link Out'. It includes four rows of checkboxes for selecting link types:
  - (1-8)
  - (9-16)
  - (17-24)
  - (25-32)A 'Set' button is located at the bottom of this section.

Only need to change the items like the picture when encountering the following conditions:

- a. Thermal imager network module reset.
- b. Thermal imager does not alarm .

### 7.3.5 Network parameters

#### 1、Wire setting

Click [Wire Setting] on the right part of the interface to set this parameter.

The screenshot shows a configuration interface titled "Wire Setting". It includes several input fields for network parameters:

- A checkbox labeled "Obtain an IP Address Automatically".
- IP address field: 192.168.104.233
- SubMask field: 255.255.255.0
- Gateway field: 192.168.104.254
- DNS field: 192.168.100.254
- MAC address field: 00:50:c2:29:35:c9
- A "Set" button next to the MAC field.
- At the bottom, there is another "Set" button next to a "WEB Port" field containing the value 82.

Here you can set gateway IP address, DNS, WEB port according to the reality.

## 2、 DDNS setting

Click [DDNS Setting] on the right part of the interface to set this parameter.

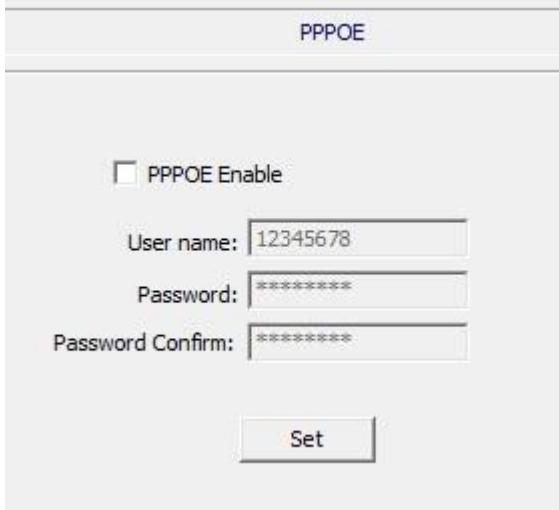
The screenshot shows a configuration interface for DDNS. At the top, there is a checkbox labeled "DDNS Enable". Below it, several input fields are arranged vertically: "Server Domain" with the value "nvs.3322.org", "DDNS Domain" with a dropdown menu showing "www.3322.org", "Port" with the value "80", "User name" with the value "nvs", "Password" with the value "\*\*\*", and "Password confirm" also with the value "\*\*\*". At the bottom right of the form is a "Set" button.

Here you can set DDNS

DDNS (Dynamic DNS) is a method/protocol/network service that provides the capability for a networked device, such as a router or computer system using the Internet Protocol Suite, to notify a Domain Name System (DNS) name server to change, in real time, the active DNS configuration of its configured hostnames, addresses or other information.

### 3、POE setting

Click [PPPOE] on the right part of the interface to set this parameter.



Here you can set the PPPOE account number, password according to the reality. Generally used when ADSL broadband access is needed.

The Point-to-Point Protocol over Ethernet (PPPoE) is a network protocol for encapsulating Point-to-Point Protocol (PPP) frames inside Ethernet frames.

### 7.3.6 Advanced Options

#### 1、 Version information

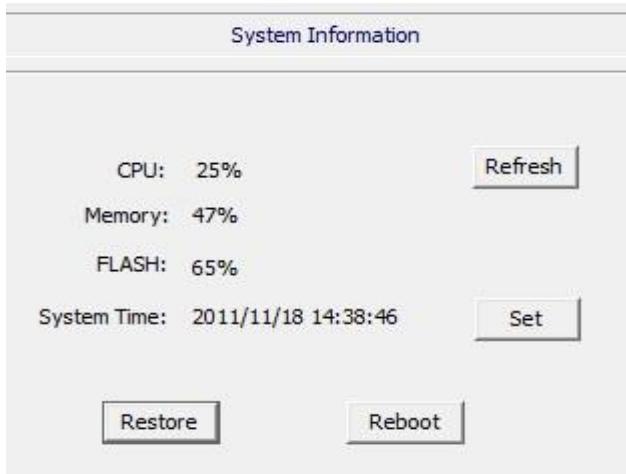
Click [Version Information] on the right part of the interface to set this parameter.



Here, you can see imager network module, serial number, firmware version.

#### 2、 System information

Click [System Information] on the right part of the interface to set this parameter.



Here, you can see system resource utilization ratio of imager network module, also can do reset , restart operations.

### 3、Access platform

Click [Access platform]on the right part of the interface to set this parameter.



The existing platform is compatible with the ONVIF protocol, can be start according to actual need.

#### 4、User Management

Click [User Management] on the right part of the interface to set this parameter.

User Management

User List: Admin ▾

User Name: Admin

Old Pwd: \*\*\*\*\*

New Pwd:

Password Confirm:

Authority: Admin ▾

Add | Delete | Modify Pwd

The setting for this project is as follows:

Items	Content
User List	Select user
User Name	User's name
Old pwd	Old password
New Pwd	New password
Password Confirm	Confirm new password
Authority	User's authority
Add	Add new user
Delete	Delete user
Modify Pwd	Modify password

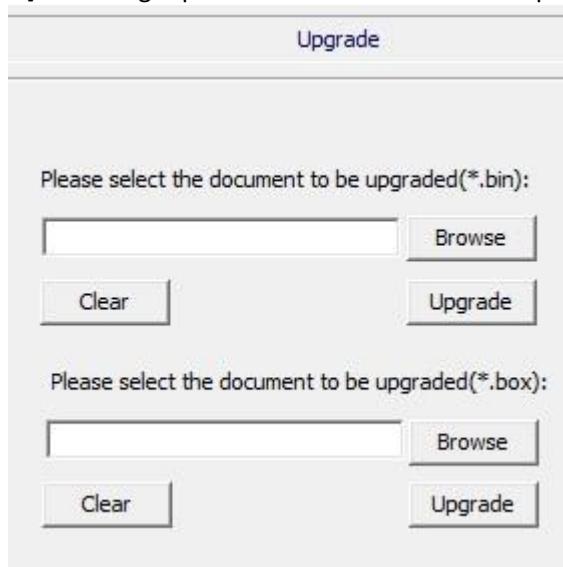
## 5、Connect info

Click [Connect Info] on the right part of the interface to set this parameter.

Here you can see the current thermal imager connection information.

## 6、Upgrade

Click [Upgrade] on the right part of the interface to set this parameter.



Here you can upgrade the firmware of imager network module

Upgrade process:

- 1、 When upgrading the kernel , click the [Browse] button on the top , choose the .bin file , then click [ Upgrade] button and wait for the prompts to complete the upgrade .
- 2、 When upgrading the web, click the [Browse] button on the top , choose the .box file , then click [ Upgrade] button and wait for the prompts to complete the upgrade .

NVS SYSTEM (hereinafter referred to as NVS) is stored in the supplied "CD-ROM →" Software "folder

### .8.1 Software Description

NVS system is a computer network-based and multiple channel monitoring system. The system uses advanced computer data compression technology and network transmission technology, via a standard Ethernet network cable (RJ45)-level monitoring

This powerful system can be used for device thermal fault inspection, quarantine assistance, fire prevention, and security surveillance.

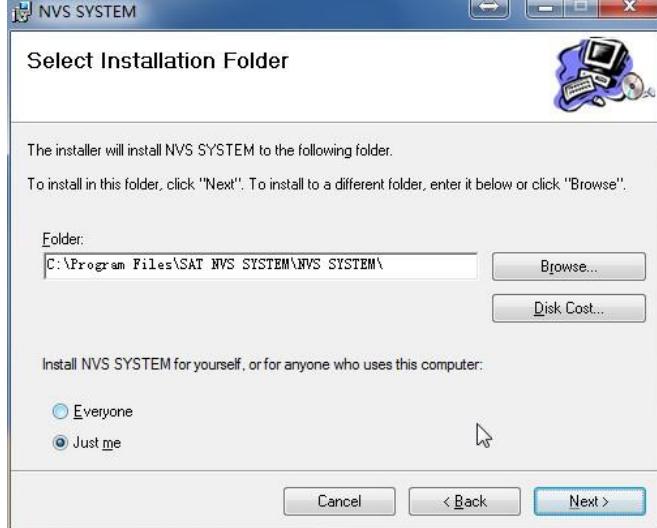
# 8 Software Setup

## Client Installation

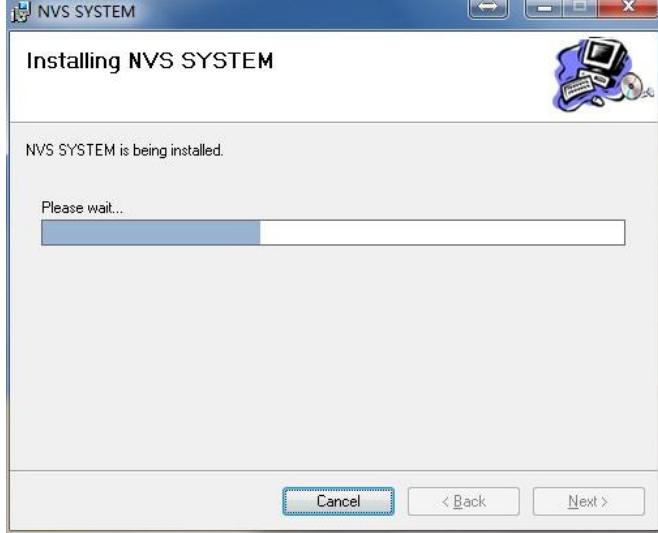
### 8.2 Software Setup

1. Double click the program file icon, then customize the Setup or use the default setup.,





Click [ Next ] button to start the installation :



### 8.3 Software Operation

Specific software instructions see the supplied manual.

Shortcut Key :

F1: Open the software instructions.

F2: Open server search software.

F3: Show the software version.

# Troubles Shooting

Trouble	Possible reasons	Solution
After electrical connection , PTZ not self-test , no infrared images	Power wires failure	Please re - check the wiring
	power system was damaged	Please replace the power supply
PTZ not self-test , the infrared image is normal	PTZ board failure	overhaul
PTZ self-test can not be carried or accompanied by a noise	Insufficient power supply	Please replace the power supply
	PTZ stuck	Please check the PTZ
	Mechanical failure	overhaul
PTZ self-test is normal , but the infrared monitor can not connect	Network Cable is poor contact	Please check if the network cable is good contact
	Router or switch is not turned on.	Turn on the router or switch
	IP address conflict	reset the ip address

PTZ can self-test, but no infrared image , or image instable	Lack of power input	Please check whether the input voltage could meet the requirements
PTZ can self-test, but can't be controlled by the software	was modified	default settings , that is, the address bits is 2 , the baud rate is 9600 , the agreement is Pelco-P
	485 control lines loose	reinforce the 485 control line
	Circuit board failure	overhaul
Infrared image lost when the PTZ rotating	Lack of power input	Please check whether the input voltage could meet the requirements
	Infrared video cable is poor contact	Reconnect the video cable
	Circuit board failure	overhaul
Thermal image can not be displayed on the computer	Computer and thermal imager connection error.	Reconnect the computer and the thermal imager.
	The IP address is error.	Enter the correct IP address.
	Fail to install ActiveX	Allow IE to install the ActiveX.
over temperature alarm failure	Not open the over temperature alarm	Open the over temperature alarm

	Not set the over-temperature alarm value	Re - set the over temperature alarm value
	Error alarm settings	Re- set alarm setting in accordance with 7.3.4
	Circuit board failure	overhaul

# Specification

All data are based on the test standards of the SAT. Those data are subject to change without notice .

Model	CK350-W
FOV/Min Focus distance	24°×18°/50cm
Detector type	FPA
Resolution	384×288
Spatial resolution	1.09mrad
Spectral range	8~14um
NETD	60mK@30°C
Focus	Motorized (software control)
Video output	NTSC (60Hz) /PAL (50Hz)
Format	H.264 D1
Network output frame rate	1-30Hz
Measurement range	-20~+250°C, up to 2000°C
Accuracy	±2°C or 2% of reading
Functions	spot analysis/maximum(minimum) temperature Auto tracking/Isothermal analysis/Area analysis/Trend Analysis/Isothermal analysis
parameter settings	emissivity/ ambient temperature / distance / humidity
Power consumption ( heating / normal)	≤100W/≤25W
Operating temperature	-35°C to +50°C
Storage temperature	-40°C to +70°C
Humidity	≤90% (non-condensing)
Encapsulation	IP66
Power supply	24V AC
Size	376mmX133mmX160mm
Weight	about 3KG
Interface	RJ45

Product specifications and designs are subject to change without notice.  
There may be minor differences between this manual and the actual screen

## Manufacturer Information

SATIR Europe (Ireland) Co. Ltd

Marley's Business Park

Marley's Lane

Drogheda

Co. Louth

Ireland

TEL: +353 (0)41 9844371

URL: [www.satir.com](http://www.satir.com)

E-Mail: [service@satir.com](mailto:service@satir.com)