

***ThermalTronix***  
TT-LN-BFTC Series  
**Thermal Camera Specifications**

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**User Manual**





## Warnings

- Please avoid aiming the lens at extreme high temperature radiation source, such as the sun, molten steel or laser in any situation; otherwise, the detector may be damaged.
- Please do not touch the lens to avoid contaminating and damaging. Please pay attention to protect the lens to avoid causing abrasion, scratches even breaches, otherwise, it will affect the device performance badly, even damage the device.
- This device is a precise optoelectronic product. Please protect it properly during usage, storage and transportation, where improper use (such as drop and collision) will cause damage to the device. If the internal connection is broken during the assembly process or the apparatus is damped (rain wet), the performance will be reduced and even the device will be damaged.
- Make sure that the power control connection is reliable. If the power control wire is in bad connection, it will damage the device.
- Ensure the proper connection of power control cable and data cable. Wrong connection may cause damage to the device.
- Do not swag fiercely or collide the device during transportation, otherwise, it will cause performance-reduction and even damage to it.
- Please use the specified power supply; otherwise, it will cause improper working, even damaging the apparatus.

If the product works abnormally, please contact the dealer or the nearest after-sale service center.

Please do not dismantle or replace it in any manners.

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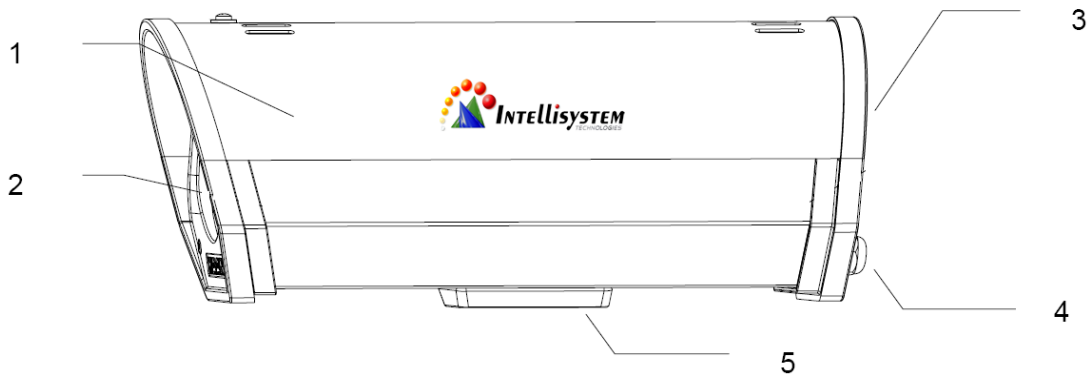
# 1 Overview

## 1.1 Features

1. Provider good image quality in total darkness
2. Multiple optional lenses for thermal camera, meet different requirements of surveillance distance
3. Easy integration into IP network, support multiple network and PTZ control protocols, video transmission over Ethernet
4. Lightweight, IP66 encapsulation suitable for operation in extreme environmental conditions



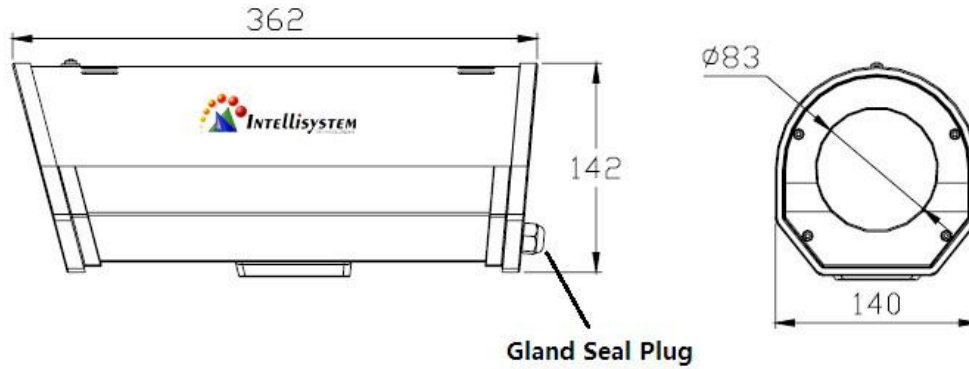
## 1.2 Appearance



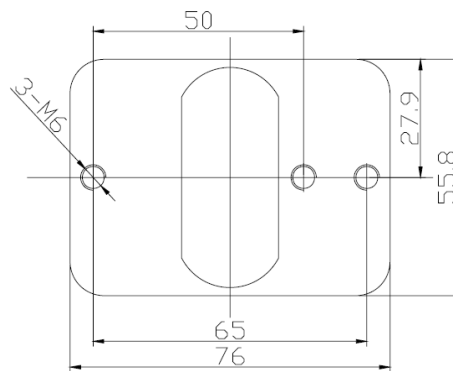
Num	Definition	Description
1	Sunshield	
2	Camera lens	
3	Rear panel	Camera info on it(system IP, camera control address, baud rate.eg )
4	Gland seal plug	Ethernet cable, Power cables(DC12V)
5	Base	Connect with wall mount bracket(optional accessory)

### 1.3 Dimensions

Thermal camera:

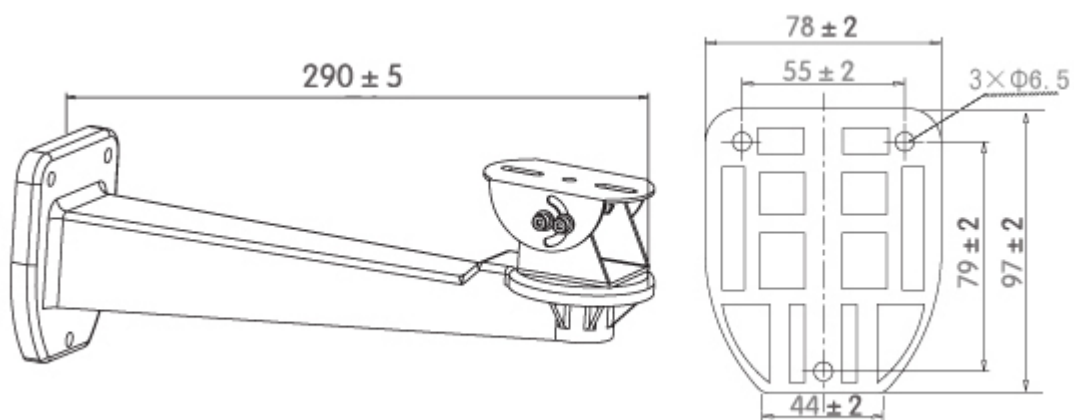


Side and Front view of the camera



Button view of the camera

Optional accessory (wall mount bracket):



Wall mount bracket

## 2 Electrical connections

### 2.1 Connecting power

The camera itself does not have an on/off switch. Connect DC12V power supply, If power is supplied to it, the camera will be Powered On.

Note: Generally the camera will be connected to a circuit breaker and the circuit breaker will be used to apply or remove power to the camera

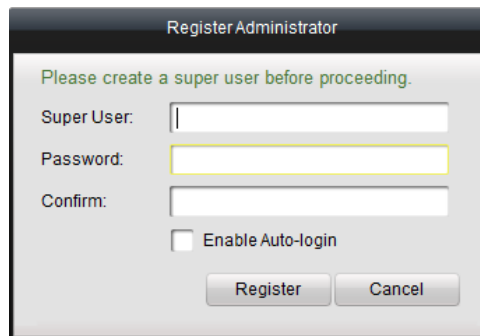
### 2.2 Ethernet connection

The camera provides a standard RJ 45 Ethernet jack. It can be easy integrated into any existing IP network. Video and control command transmission over Ethernet

## 3 VMS Software Quick Start

### 3.1 Starting the VMS Client Software

Note: This chapter only introduce some basic function, more specifics and functions, pls check “VMS Client software User Manual” (refer to chapter 3.2: click help, and open user manual). Install the VMS Software on your PC according to the prompts. For the first time to use the VMS Software, you need to register a super user for login.



The image shows a dialog box titled "Register Administrator". It contains the following elements: a green instruction "Please create a super user before proceeding.", three input fields labeled "Super User:", "Password:", and "Confirm:", a checkbox labeled "Enable Auto-login" which is currently unchecked, and two buttons at the bottom labeled "Register" and "Cancel".

Register User

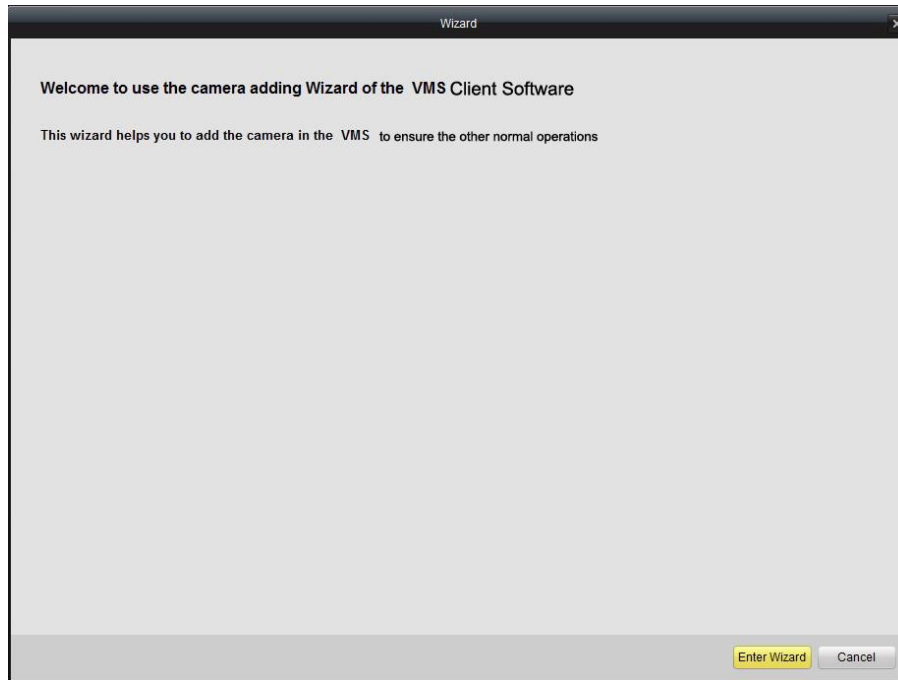
Enter the super user name, password, confirm the password in the dialog box, and click **Register**. Then, you can log in as the super user.

**Note:** Enter, Space, and TAB keys are invalid for the user name and password. The password cannot be empty, and it should not be less than six characters and can't be copied and pasted.

### 3.2 Wizard for Importing Device

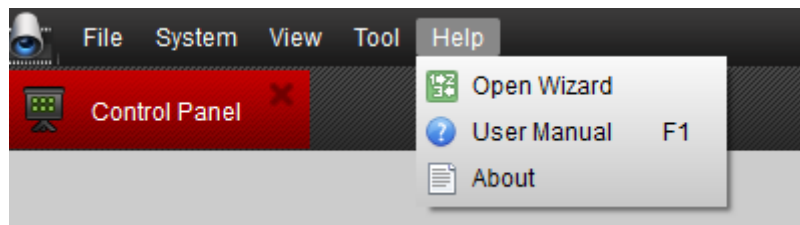
The main function of the VMS is to manage network devices remotely. Thus, the task on the top hierarchy is to register the device to the management list.

For the first time user, the wizard message box pops up to ask you whether you want to be guided for the basic operation of the client software.



Wizard

If this is not the first time, you use the client software, the wizard doesn't pop up, and you can also use the wizard, click Help and Open Wizard (or user manual if necessary).



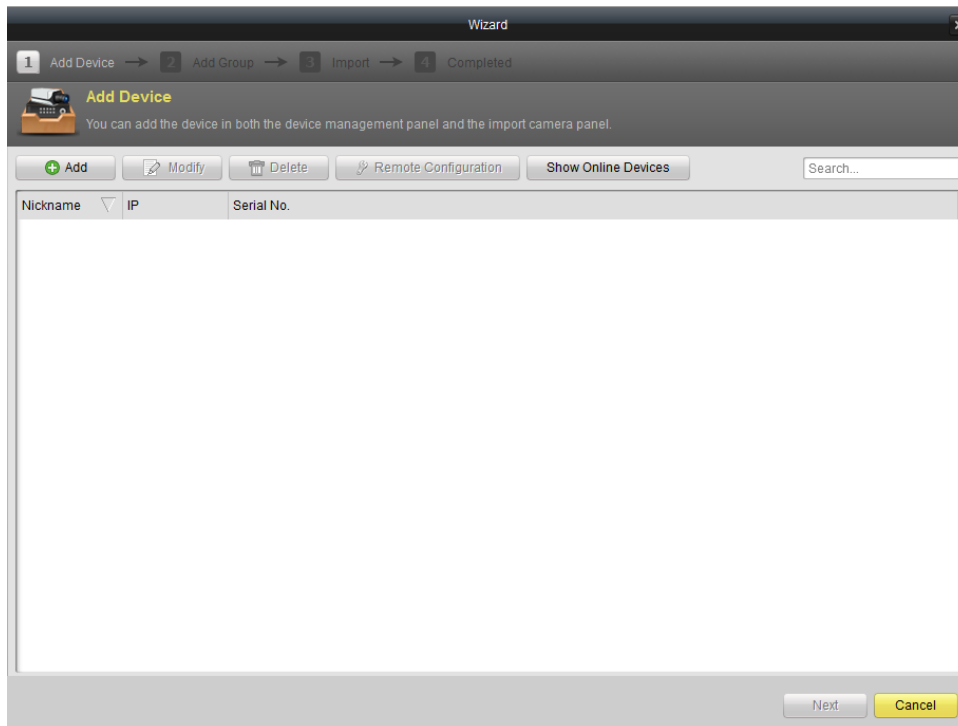
Open wizard and User Manual

Click **[Entering Guide]** to start the wizard, or click **Cancel** to exit the wizard.

Steps:

1. According to the hint, click Add icon to add devices to the management list of the software

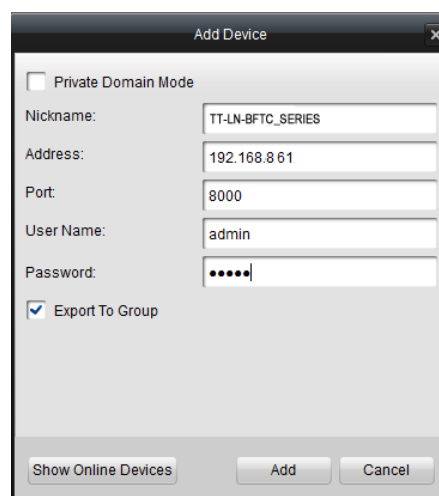




2. Create a nickname for the device, enter the IP address and the port number of the remote device, enter the user name, and the password of the device.

**Note: Default IP address marked on the rear of camera**

**Default user name: admin**



**Default password: 12345**

3. Click Add icon to add the device.

You can also click *Show online device* to show the device connected to the same Local Area Network.

Show Online Devices ✕

Index	Added	Device Type	IP	Port	Serial No.
001	Yes	TT-6602BF	192.168.1.10	8000	TT-6602BF002013

**Device Information**

MAC Address:

Software Version:

Device Serial No.:

**Network Information**

IP Address:

Subnet Mask:

Port:

Please Input Administrator Password:

**Recover Default Password**

Refresh Every 15s

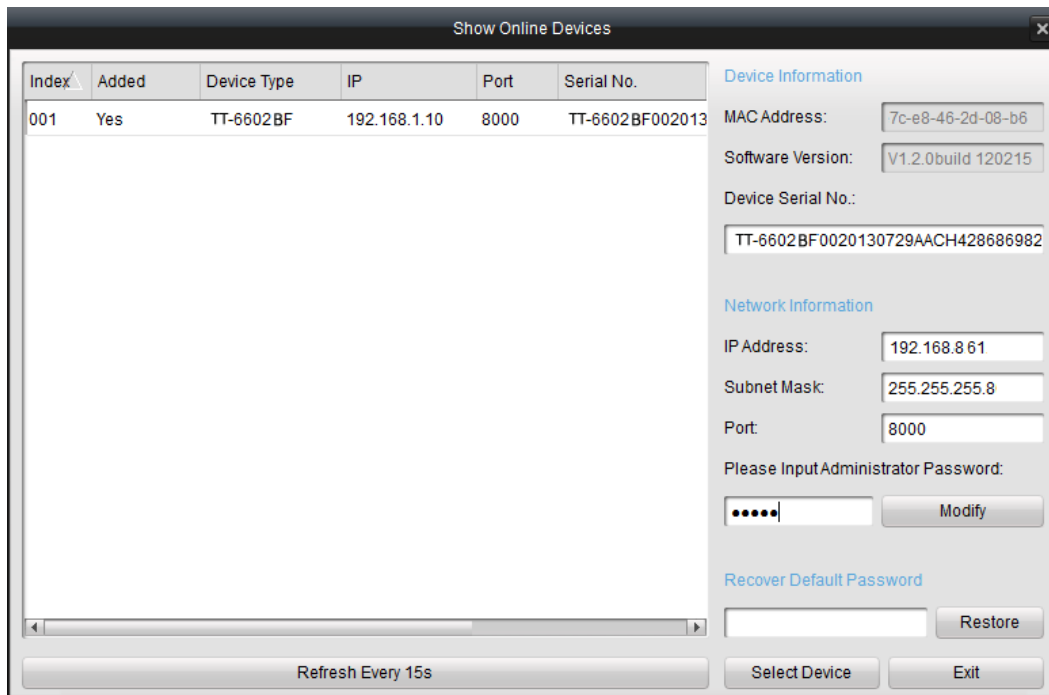
### Adding the active online devices

#### Steps:

- 1) Select the device in the device list, and the information of the device such as the MAC address the software version and the serial number is shown in the left part. The information in this part can't be modified.
- 2) In the Network information area, you can modify the IP address the Subnet Mask and the Port number with entering the admin password of the device.

Note: Default password: 12345

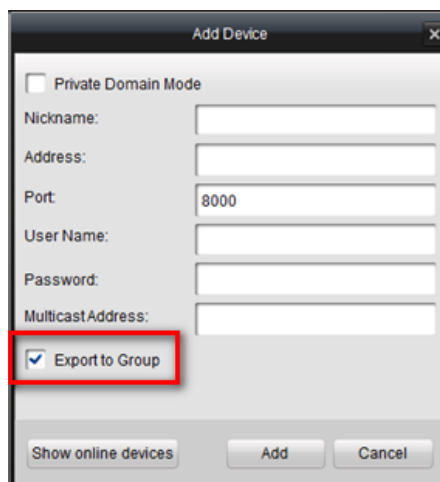
- 3) You can also recover the default password for the device, with the code provided by the authorized engineers.



#### 4.) Adding Camera Group


When adding a device, you can check the Export to group checkbox to export the device you added to certain camera group.

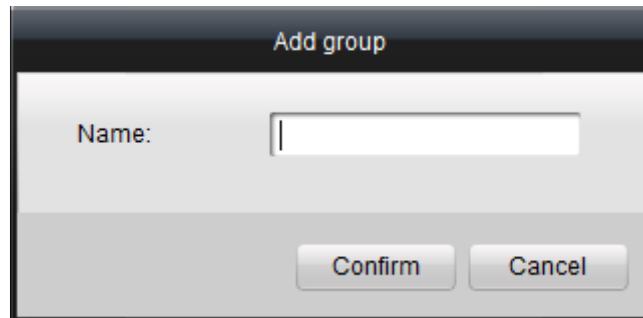
By default, the name of the group is the same with the name of the device you just added.



If you want customize the camera choosing for the group and the group name. You uncheck the Export to Group checkbox and click Next page on the Wizard, to enter the adding group interface.

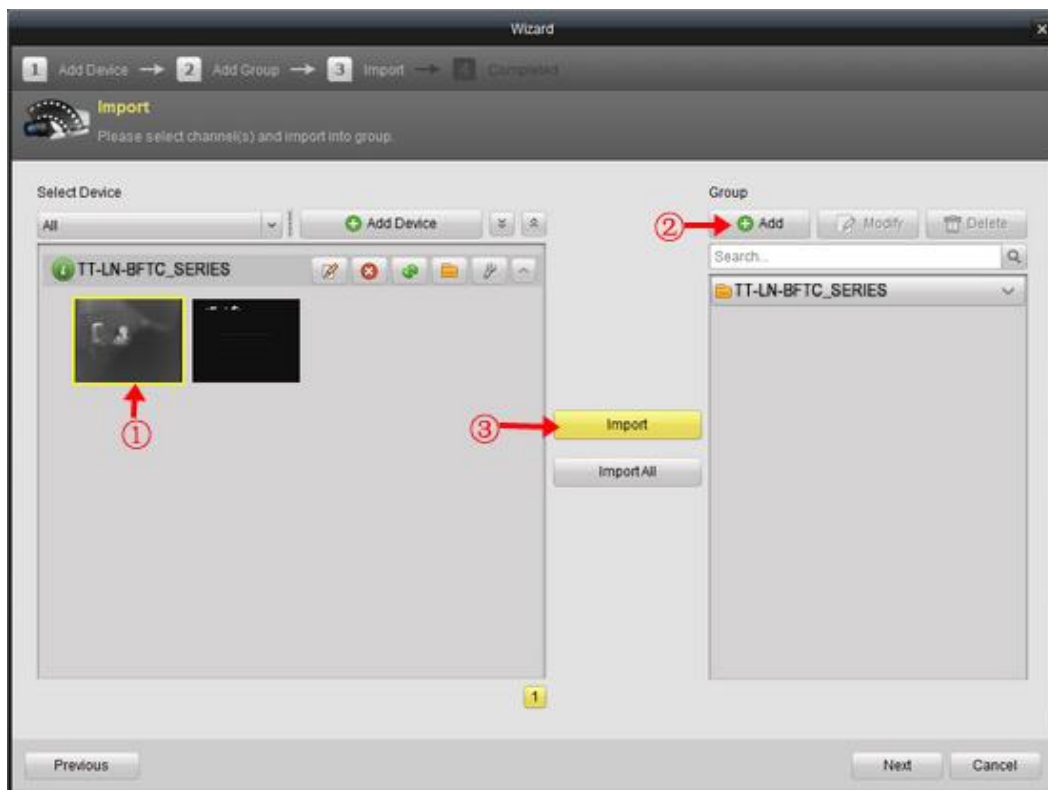
Click **Save** to add a new user. Click **Modify** to change the settings for the new user.

Click the  on Group dialog box. Edit the name of group and then click **OK** to save your settings. The added group will be displayed in the list.



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5). Import Channels to Group In the left area on the Camera Import interface, click to select the channels and then click **Import** button to import the selected channels to the Group on the right.



6). You can drag and select multiple channels to import them to the group you added.

**Note:**

The devices to be added must be online currently.

One channel can be added to different groups.

Up to 256 groups can be added, and 64 channels can be added to each group, with a maximum

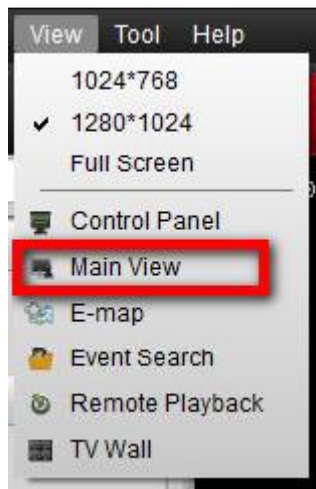
of 1024 channels for all the groups totally. After importing the selected channels to the group, you can return to the control panel and then enter the Main View interface to get a live view of the added channels.

### 3.3 Live view

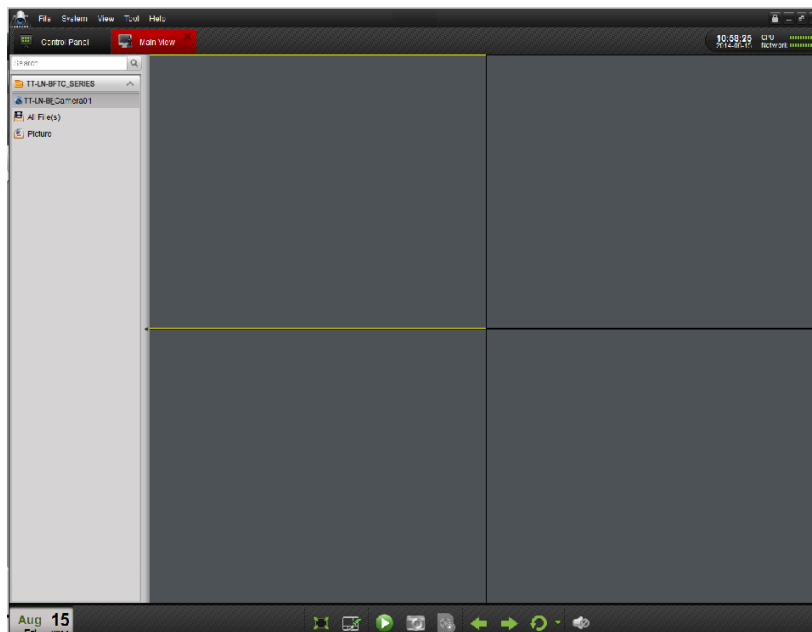
**Entering the Live View Interface:**



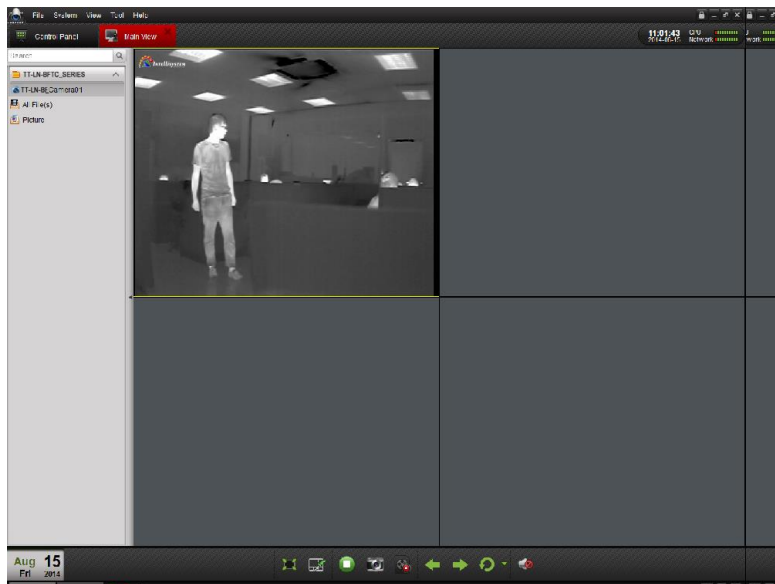
Click the main view icon on the control panel, or click View -> Main View on the toolbar to enter the live view interface.



The main view interface is shown in the following figure:




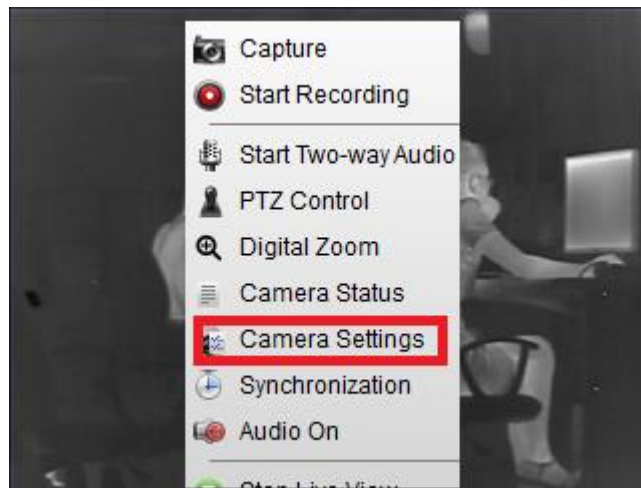
To view the live video, drag the camera from the list to the display window, or double click the camera name after you select one screen.



### 3.4 Camera control

#### A. How to set the control configuration

Click the  icon on the toolbar on the screen for each camera or click the right button of the mouse to pop up the menu

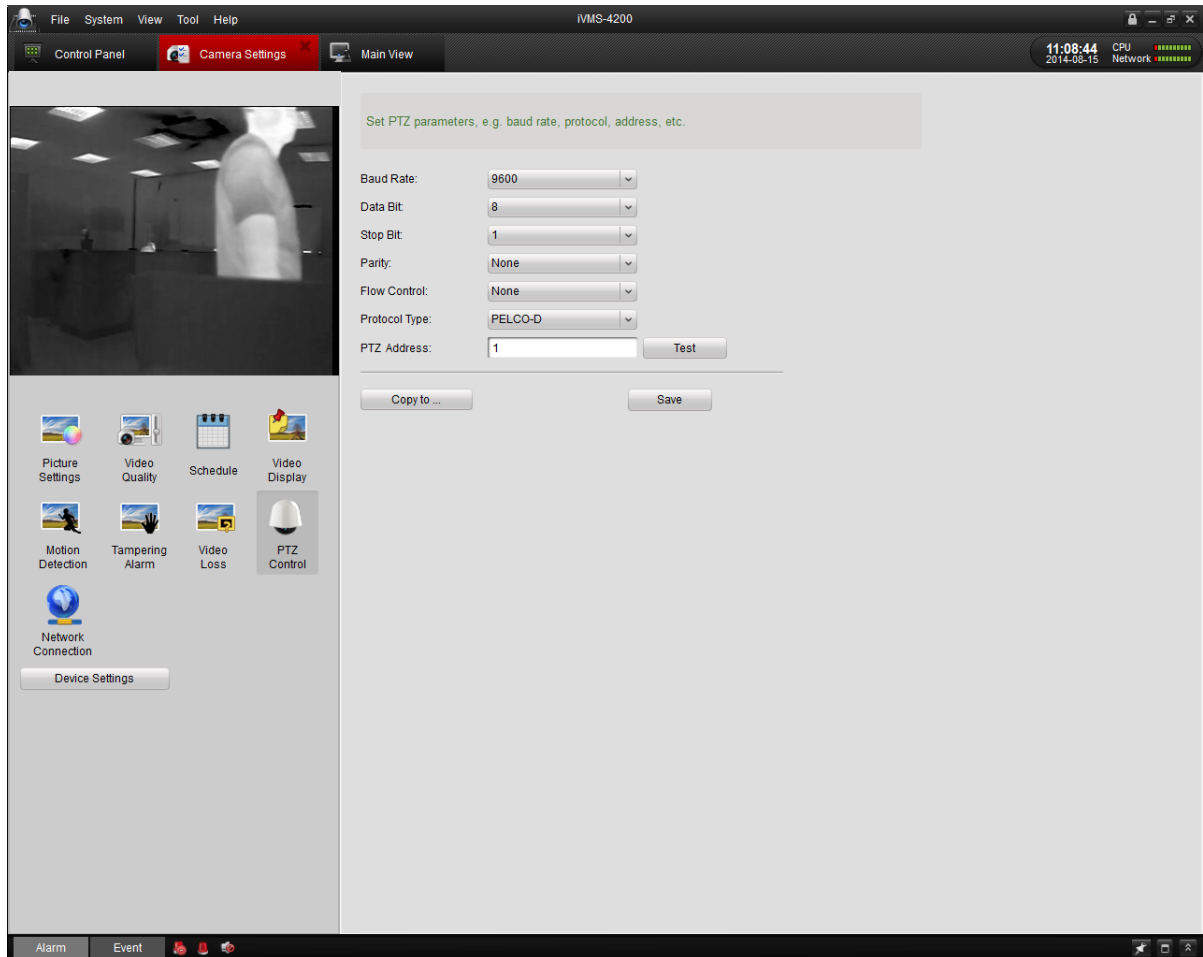


camera setting option

On the PTZ parameters configuration page, you can specific the camera connection parameters, such as baud rate, data bit, PTZ protocol and PTZ address. The info (including IP address) marked on the rear of the housing.


Note: The default setting (Baud rate: 2400; Protocol: PELCO-D; PTZ address: 1), you can also check the default info on the rear of the housing.

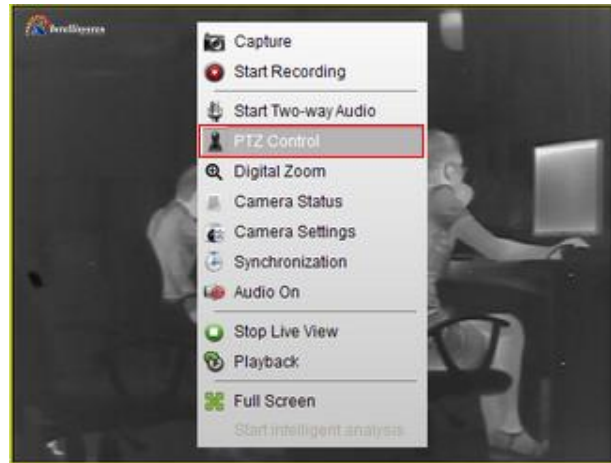
Click save button to save the changes



PTZ parameters configuration

## B. how to communication with the camera

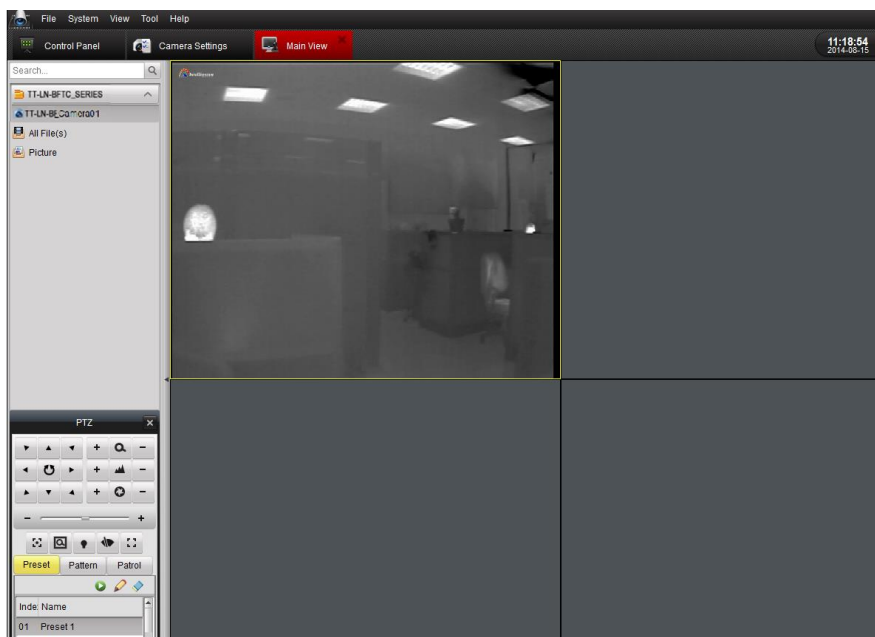
After configure the PTZ parameters, click the  icon on the toolbar on the screen for each camera or click the right button of the mouse to pop up the menu, and the PTZ control panel will be displayed on the left side of the Main View.



PTZ control option

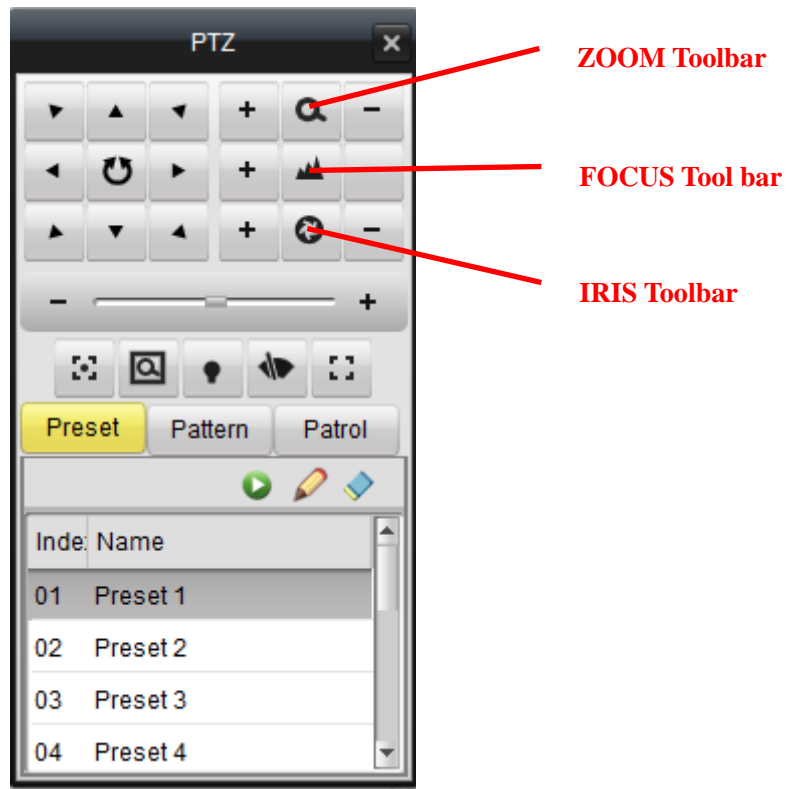


PTZ control toolbar


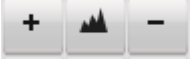





PTZ control panel display on the left side of the main view





Camera control board PTZ control board


Button	Description
	Zoom: N/A Zoom-: Digital zoom (shortcut key) Zoom+: Alarm switch (shortcut key)
	Focus: N/A Focus-: when there is a menu, modify the option or reduce the value Focus+: when there is a menu, modify the option or increase the value
	Iris: N/A Iris-: when there is a menu, move the cursor from up to down Iris+: uniformity calibration manually (shortcut key)
	Preset configuration
	Calling function Calling preset 100 to pop up the menu

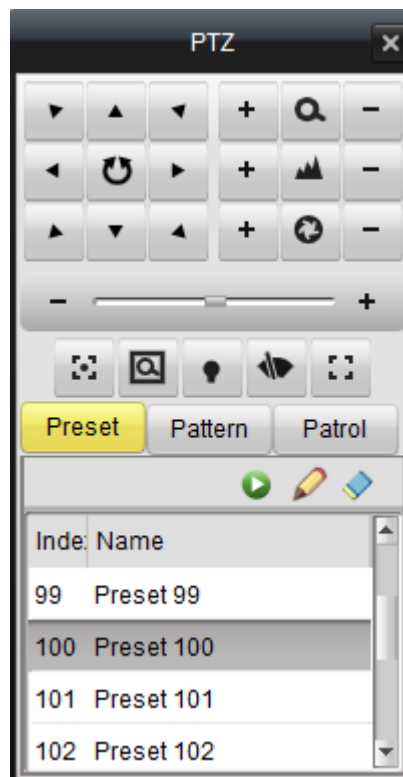
Note: The camera will do the uniformity calibration automatically every 20 minutes when the working time more than 2 hours. You can also operate the calibration manually (Iris+ command), when camera receives the command, the lens will be covered by internal shutter, then image display nothing as below figure, after approx 0.5 second, the image display become normally.



The image in calibration procedure

### C. Pop up the thermal camera configure menu:

Select a PTZ preset number from the preset list, and double click preset 100 or click  to call preset 100, the camera configure menu display on the image.

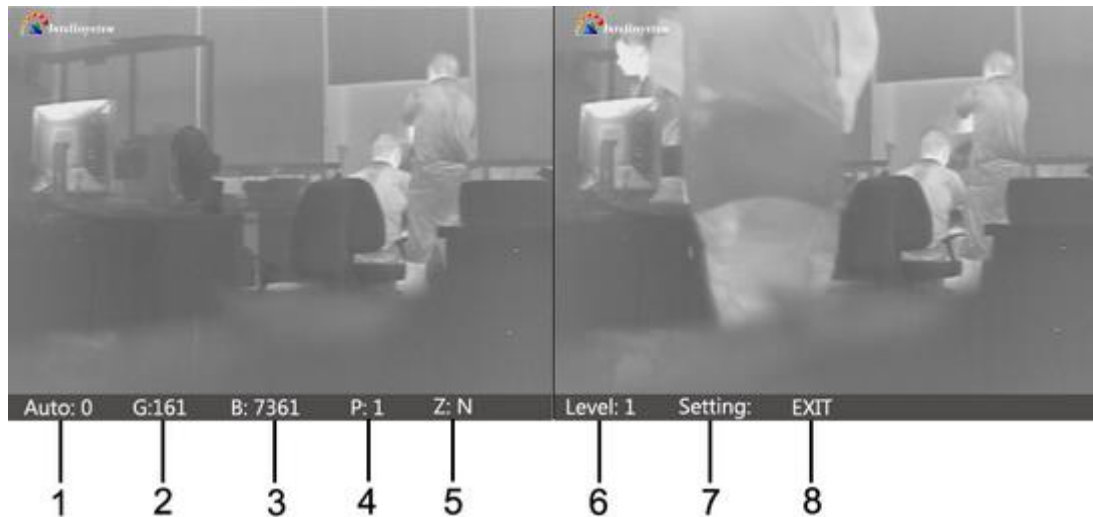


PTZ preset setting

## 4. Thermal camera configuration menu

### 4.1 Main menu

After pop the menu via call preset 100, the menu display on the bottom of the image:



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Press key "IRIS-" move the cursor , Press key "FOCUS+" or "FOCUS-" to change the value where the cursor is. Auto save when exit

- 1、 **Auto: XXX**      Display the current image auto mode. Three options:  
  
                                  0: manual gain, manual brightness;  
                                  1: manual gain, auto brightness;  
                                  2: auto gain, auto brightness; ( Factory default )
- 2、 **G: XXX**      Gain value, range: 1 ~ 1023 ;
- 3、 **B: XXX**      Brightness value, range
- 4、 **P: XXX**      White/black hot display mode  
  
                                  0: black hot    1: white hot



Black hot

White hot

5. **ZOOM : Y/N** Zoom status

N : no zoom ( default ) Y : Zoom 2 times



No zoom

Zoom 2 times

6. **Level : X** show the level of alarm : From 1 to 6, default is 4. Alarm feature was invalid in this system

7. **Setting :** Press key "FOCUS+" or "FOCUS-" , show the password dialogue

Press "FOCUS-, FOCUS+, FOCUS-, FOCUS+, FOCUS-, FOCUS+" to enter sub menu dialogue

8. **EXIT:** Exit the menu

Note :

- 1) All parameters are save automatically after exit
- 2) The camera will run the last setup after reboot

## 4.2 Sub menu

In the main menu, move the cursor to “Settings “option ,press “Focus+”or “Focus-” show the password dialogue, input the password “FOCUS-, FOCUS+, FOCUS-, FOCUS+, FOCUS-, FOCUS+” to enter.



Password dialogue



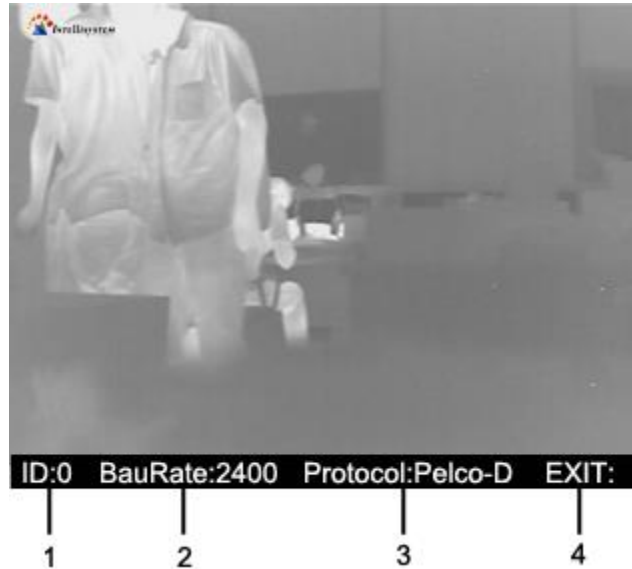
Sub menu

Press key “IRIS-” move the cursor, Press key “FOCUS+” or “FOCUS-” to change the value where the cursor is . Auto save when exit

## 1 COM option:

press key “FOCUS+” or “FOCUS-” show the password dialogue , Input the password “FOCUS-,

FOCUS+, FOCUS-, FOCUS+, FOCUS-, FOCUS+” enter the “COM” option



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In the menu “COM” , Press key “IRIS-” move the cursor, Press key “FOCUS+” or “FOCUS-”

to change the value where the cursor is . Auto save when exit

- (1) ID : XXX    ADD : 0~254。
- (2) Baud Rate : XXX    Baud :1200,2400,4800,9600,14400,19200,38400。
- (3) Protocol :    PELCO-D/P。
- (4) Exit :    Press key IRIS+ to exit

**Default : Add:1    Baud:2400    Protocol: PELCO-D**

## 2 Mode option :

Press key “FOCUS+” or “FOCUS-” show the password dialogue , Input the password “FOCUS-,

FOCUS+, FOCUS-, FOCUS+, FOCUS-, FOCUS+” enter the “Mode” option



In the menu “Mode” , Press key “IRIS-” move the cursor, Press key “FOCUS+” or “FOCUS-” to change the value where the cursor is . Auto save when exit

- (1) **Gain : XXX** Range: 0~255。
- (2) **Bright : XXX** Range :0~255。
- (3) **Exit :** Press key IRIS+ to exit

Default : G:32 B:188

### **3 Alarm Valve:**

Invalid in this system

### **4 Debug:**

Use to debug the firmware, do not open to end-user

### **5 Recover : H/L/N**

Setup as H /L/N ;

**Setup as H :** Calibrate 1 time during the 1 minute if working time less than 10 minutes. Calibrate 1 time during 2 minutes if working time between 10 and 30 minutes .calibrate 1 time during 5 minutes if working time between 30 minutes and 1 hour. Calibrate 1 time during 10 minutes if working time more than 1 hour. Calibrate 1 time during 20 minutes if working time more than 2 hours.

**Setup as L :** Calibrate 1 time during the 1 minute if working time less than 0 minute. Calibrate 1 time during 2 minutes if working time between 10 and 30 minutes, calibrate 1 time during 5 minutes if working time more than 30 minutes

Setup as /N : calibrate manually;

## 6 Image: H/M/L

setup as high/middle/low ;

Each grade relatively corresponds to a value of image quality, default is middle

## 7 Alarm : X

show the status of gray alarm : N/Y

N: off ;( Default )    Y: On

## 8 E : X

Show the status of image enhancement , setup as C/1/2 ;

C:Close ;( default )    1/2 : Open relatively Gain grade

## 9 Backup :

factory default , including auto , polarity , alarm range , calibration , image , alarm ,  
alarm pixel Number.

## 10 Exit : XXX

press key "FOCUS+" or "FOCUS-" to exit

# 5. Specifications

Items	<i>ThermalTronix</i>			
	TT-1009LN-BFTC	TT-1018LN-BFTC	TT-1037LN-BFTC	TT-1050LN-BFTC
One head surveillance system				
<b>Detector type</b>	Amorphous Silicon micro-bolometer FPA			
<b>Spectral range</b>	8~14μm			
<b>Pixels</b>	384×288			
<b>Pixel size</b>	25μm			



<b>Focus length</b>	9mm	18mm	37mm	50mm
<b>Lens type</b>	Athermalized, focus free			
<b>FOV</b>	61.1°*45.8°	30.6°*22.9°	14.8°*11.1°	11°*8.2°
<b>Free focus distance</b>	0.8m~∞	3m~∞	12m~∞	23m~∞
<b>Video output</b>	(H.264/MPEG4/MPEG2/MJPEG)			
<b>Frame rate</b>	50Hz			
<b>Image polarity</b>	Black hot /white hot			
<b>Interface</b>	RS485, PELCO-D/PELCO-P/Intellisystem			
<b>Housing</b>				
<b>Color</b>	White			
<b>Material</b>	Aluminum			
<b>Sun shield</b>	YES			
<b>Fan and heater</b>	YES			
<b>System characteristics</b>				
<b>Dimensions</b>	362(L)×140(W)×145(H)			
<b>Protection level</b>	IP66			
<b>Weight</b>	3.5kg			
<b>Working Temp</b>	-20°C ~ 50°C			
<b>Storage Temp</b>	-40°C ~ 70°C			
<b>System interface</b>				
<b>Video</b>	PAL 1 CH			
<b>Com</b>	RJ-45 10M/100Mbps			
<b>Protocol</b>	TCP/IP,UDP,IPv4/v6,HTTP,FTP,RTP,RTSP,DHCP,DNSNDynDNS,SMTP, BonjourSNMPv1/v2c/v3,OnVIF,PSIA,UPNP, Multiple ptz protocols			
<b>Baud rate</b>	2400/4800/9600 bps			
<b>Power supply</b>	DC12V			
<b>Power consumption</b>	<60W (add heater)			