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# **Thermal Tribrid PTZ Camera Quick Start Guide**

**Version 1.0.0**

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## Welcome

Thank you for purchasing our thermal tribrid dome!

**Please read the following safeguards and warnings carefully before you install or use the product!**

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# Important Safeguards and Warnings

## Safety Measures

### 1. Qualified Engineer Needed

- The installation engineer or maintenance engineer shall have corresponding CCTV system installation certificate or maintenance qualification certificate.
- The installation engineer or maintenance engineer shall have qualification certificate for work at height.
- The installation engineer or maintenance engineer shall have the basic knowledge and operation technique for low-voltage cable layout and low-voltage electronic cable connection.
- Please read the installation manual carefully and keep it well for future reference,
- We are not liable for any problems caused by unauthorized modifications or attempted repair.

### 2. Lifting Appliance Requirement

- Please select the proper thermal tribrid dome installation mode and use the lifting appliances at the safety environment.
- The lifting appliances shall have the enough capacity to reach the installation height.
- The lifting appliances shall have safe performance.

### 3. Power Requirements

- All installation and operation here should conform to your local electrical safety codes. We assume no liability or responsibility for all the fires or electrical shock caused by improper handling or installation.
- Please check if the power supply is correct before device operation.
- The power shall conform to the requirement in the SELV (Safety Extra Low Voltage) and the rated voltage of Limited power source according to IEC60950-1. The power supply requirement is subject to the device label.
- Please install easy-to-use power failure device when installing the cables, which is for emergent power off when necessary.
- Please prevent the line cord from being trampled or pressed, especially the plug, power socket and the junction from the device.
- The power adapter is provided by default.

**The precaution measures include two types: Warning and Note.**

- **Warning:** It is to alert you there is an optional risk of death or series injury!

- 
- **Note:** It is to alert you there is an optional risk of damage or property loss!

## Warning

1. Be sure to use all the accessories (such as power adapter) recommended by manufacturer.
2. Do not connect several thermal tribrid domes to one power adapter. It may result in overheat or fire if it exceeds the rated load.
3. Avoid aiming the lens at the strong radiation source directly (such as sun, laser, molten steel etc); in case it may cause unrecoverable damage to the thermal imaging detector. What's worse, it may cause severe damage to the detector.
4. Avoid oil stain and kinds of chemicals tarnishing and damaging the lens surface.
5. Store the device in a cool and dry place where there is ventilation but no intense electromagnetic field.
6. Violent vibration or crash is not allowed during transportation and application.
7. Before you connect the cable, install or uninstall, or begin the daily maintenance work, please turn off the power and unplug the power cable.
8. Please make sure the produce is secure firmly on the wall or the ceiling.
9. Please turn off the power and unplug the power cable, If there is any smoke, disgusting smell, or noise. Please contact your local retailer or customer service centre for help.
10. All the examination and repair work should be done by the qualified service engineers. We are not liable for any problems caused by unauthorized modifications or attempted repair.

## Laser Radiation

Please pay attention to the following items if the camera adopts laser device.

- Laser can cause damage to human eyes, so it is prohibited to emit laser to the people within 50m away from the ranging device.
- Laser may cause perpetual damage to the device, so it is prohibited to make laser ranging to the targets within 50m away from the ranging device.
- Laser radiation can cause perpetual damage to human skin and eyes, besides it can ignite flammables, so it should be avoided exposing any goods (scattering terminal or absorber excluded) to the laser beam, do not place some volatile flammables (such as alcohol) in the working area of laser radiation product, which is to avoid laser radiation or fire caused by spark which is generated by high voltage discharge.
- It should remove all the objects which can generate specular reflection in the working area of the laser radiation product, because even if it is the reflected or scattered light of the laser, it is still very intensive, which can cause damage to human eyes. Please take necessary measures to control the reflecting and scattering range of the laser if it has to use such kind of goods.
- If it needs to dismantle or move the ranging device, please wait for 5 minutes after the laser ranging device stops working, which is to make sure the internal accumulated charge has totally released in order to avoid electric shock of accumulated charge.
- It is prohibited to touch circuit of the ranging device in the working state, especially for the laser power supply with high voltage of over 1000V.
- It is prohibited to plug in or out cable when the power is on.

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## Note

### 1. Safety Transportation

- Heavy stress, violent vibration or water splash are not allowed during transportation, storage and installation.
- This series product must use split type package during the transportation.
- We are not liable for any damage or problem resulting from the integrated package during the transportation.

### 2. When device is malfunction

Shut down the device and disconnect the power cable immediately if there is smoke, abnormal smell or abnormal function. Please contact your local retailer ASAP.

### 3. Do not try to dismantle or modify the device

- There is risk of personal injury or device damage resulting from opening the shell.
- Please contact your local retailer if there is internal setup or maintenance requirement.
- We are not liable for any problems caused by unauthorized modifications or attempted repair.

### 4. Do not allow other object falling into the device

- Please make sure there is no metal or inflammable, explosive substance in the thermal tribrid dome.
- The above mentioned objects in the device may result in fire, short-circuit or damage.
- Please shut down the device and disconnect the power cable if there is water or liquid falling into the camera. Please contact your local retailer ASAP.
- Please pay attention to the camera. Avoid the sea water or rain to erode the camera.

### 5. Handle carefully

Do not allow this series product fall down to the ground.

Avoid heavy vibration.

### 6. Installation Environment Requirement

- This series thermal tribrid dome should be installed in a cool, dry place away from direct sunlight, inflammable, explosive substances and etc.
- This series product shall be away from the strong electromagnetism radiant, please keep it away from wireless power, TV transmitter, transformer and etc.

### 7. Daily Maintenance

- Please use the soft cloth to clean dust on the shell, or you can use soft cloth with cleaning liquid to clean the shell and then use soft cloth to make it dry.
- Do not use gasoline, dope thinner or other chemical material to clean the shell. It may result in shell transfiguration or paint flake.
- Do not allow the plastic or rubber material to touch the shell for a long time. It may result in paint flake.

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## 1 Accessory List

Please check if there is any obvious damage to the device appearance when opening the external packing box, besides, you need to confirm if the accessories are in accordance with the ones on the list. Please refer to sheet 1-1 for the accessories; please be aware that the actual config is based on the specific product.

SN	Name	Quantity
1	PTZ Housing	1
	Quick Start Guide	1
	RJ45 network cable waterproof joint	1
	M6*20 Screw	4
2	Tribrid PTZ	1
	M10*35 outer hex screw package	7
	5mm inner hex wrench	1
	Power Adapter	1

Sheet 1-1

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## 2 Device Structure

### 2.1 Structure Components

The device structure components are shown in Figure 2-1.

**Note:**

- The following figures are for reference only, which are only used to know each structure component and cable port function.
- Slight difference may exist between different device structure components and cables, please refer to the actual device for more details.

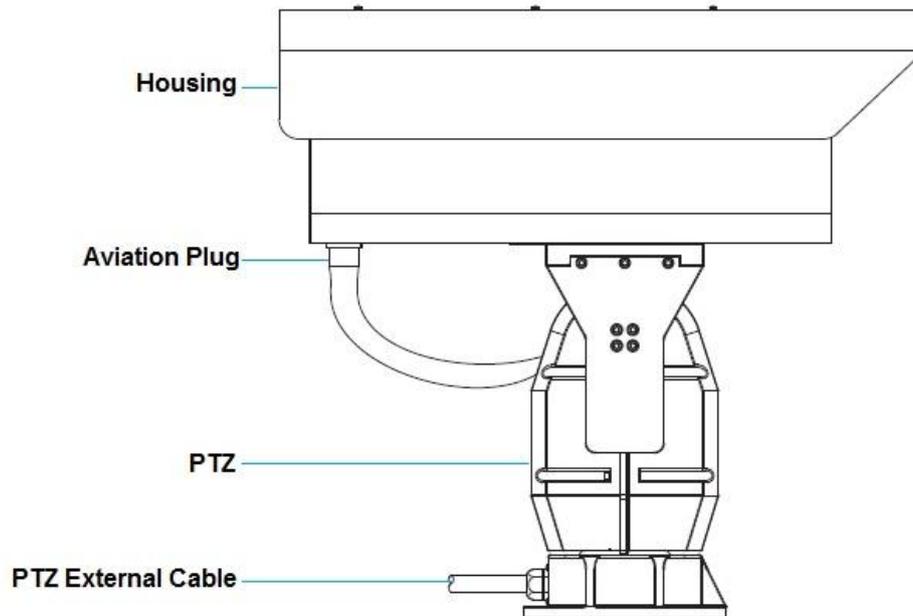


Figure 2-1

Please refer to Figure 2-2 for more details about the cable.

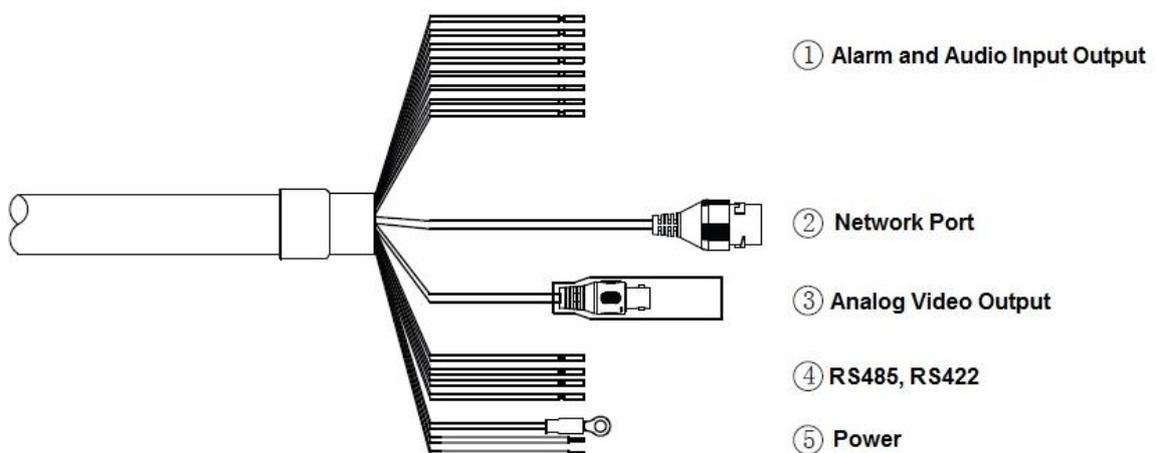


Figure 2-2

Please refer to sheet 2-1 for more details about the cable.

SN	Port	Port Name	Connector	Note	
①	Alarm IN1 (green)	Alarm input	Various external alarm devices, such as smoke detector etc.	Alarm input port; it is to receive the on-off signal of external alarm source.	
	Alarm IN2 (blue)				
	Alarm OUT NO (pink)	Alarm output		Alarm output port, it is to output alarm signal to alarm device.	
	Alarm OUT C (brown)				
	Audio IN (white)	Audio input		RCA	Input audio signal, it is to receive analog audio signal of pickup and etc.
	Audio OUT (red)	Audio output			Output audio signal to speaker and etc.
	GND (black)	GND		-	GND
②	LAN	Network port	Ethernet port	Connect to standard Ethernet cable <b>Note:</b> Some devices don't support PoE power supply.	
③	video out	Analog video output	BNC	Output analog video signal, it can connect to TV monitor to check image.	
④	RS485_A (orange)	RS485	-	There are two connection modes for RS485 port: <ul style="list-style-type: none"> <li>As a RS485 port, it connects to external keyboard and etc.</li> <li>As a RS422_Rx, it is used with RS422_Tx.</li> </ul>	
	RS485_B (yellow)				
	RS422_Y (gray)	RS422_Tx		-	RS422_Tx and RS485 (as RS422_Rx) are used cooperatively, reserve function.
	RS422_Z (purple)				
⑤	POWER	Power input port	-	Power port, input default DC 24V, AC 24V optional. <b>Note:</b> Please use the default adapter, please confirm with the supplier if it is to use other adapters.	

Sheet 2-1

## 2.2 Device Dimension

Please refer to Figure 2-3 and 2-4 for the device dimension.

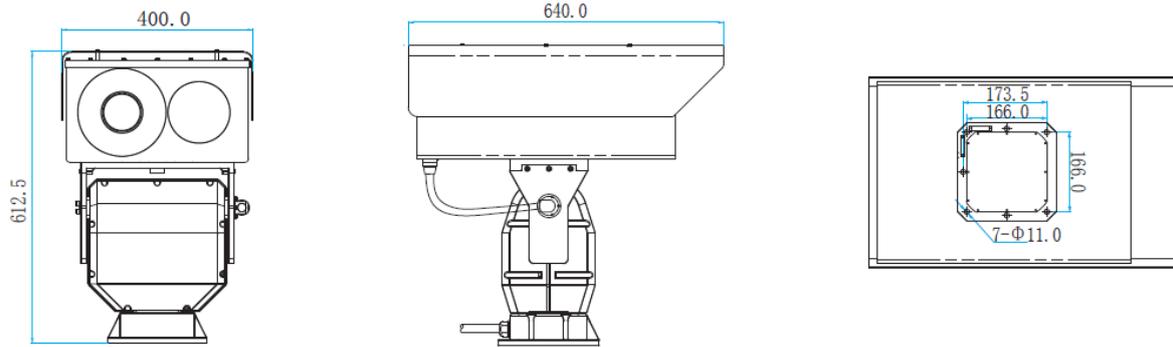


Figure 2-3

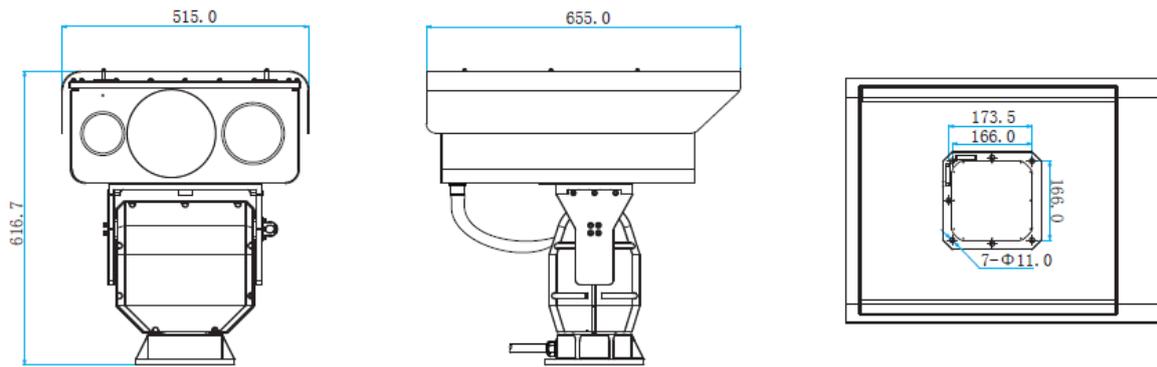


Figure 2-4

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## 3 PTZ INSTALLATION

### 3.1 Installation Preparation

#### 3.1.1 Check installation space and intension

Please make sure the installation environment has enough space to install the PTZ and its corresponding bracket.

Please make sure the ceiling, wall and the bracket can support the total weight of PTZ and its corresponding installation component. It is required to have 8 times of safety factor.

#### 3.1.2 About cable

- Select required power cable

The device provides power adapter by default, it is advised to refer to the following requirements when users need to extend the power cable.

The recommended max transmission distance is shown in the following sheet when the wire diameter is fixed and 24V AC (or 24V DC) voltage loss rate is lower than 10%.

Wire diameter (mm)	Max distance (ft/m)
1.000	22ft (6m)
1.250	35ft (10m)
2.000	90ft (27m)

- Select required signal cable

All the signal cables (audio, alarm input output, RS485 and etc) are recommended to use 0.56mm (24 AWG) and bigger wire as signal cable extension wire.

- Select required video cable
  - 75 ohm impedance
  - Full cable with copper conductor
  - 95% knitted copper shield

International Model	Max Transmission Distance (ft\m)
RG59/U	750Ft (229m)
RG6/U	1,000Ft (305m)
RG11/U	1,500Ft (457m)

### 3.2 Installation Steps

#### Note:

Device installation shall be implemented by users themselves, it has to meet the following installation conditions during device installation:

- The hole sites of the installation desktop have to match those of the device pedestal.
- The device is recommended to be installed on a installation desktop which can sustain the weight of more than 1T.
- The device can't be installed in an application environment which is not stable.
- All the installation screws have to be firmly tightened; otherwise, it will affect the rotation accuracy, anti-seismic level, waterproof performance and service life of the PTZ etc.

- It needs more than 3 people to install the device, pay attention to protect the lens during installation.
- It is not allowed to power on the device before fixing the device on the installation desktop, otherwise, the device may fall over and cause damage to the upper component especially the lens during power on self test of the device.

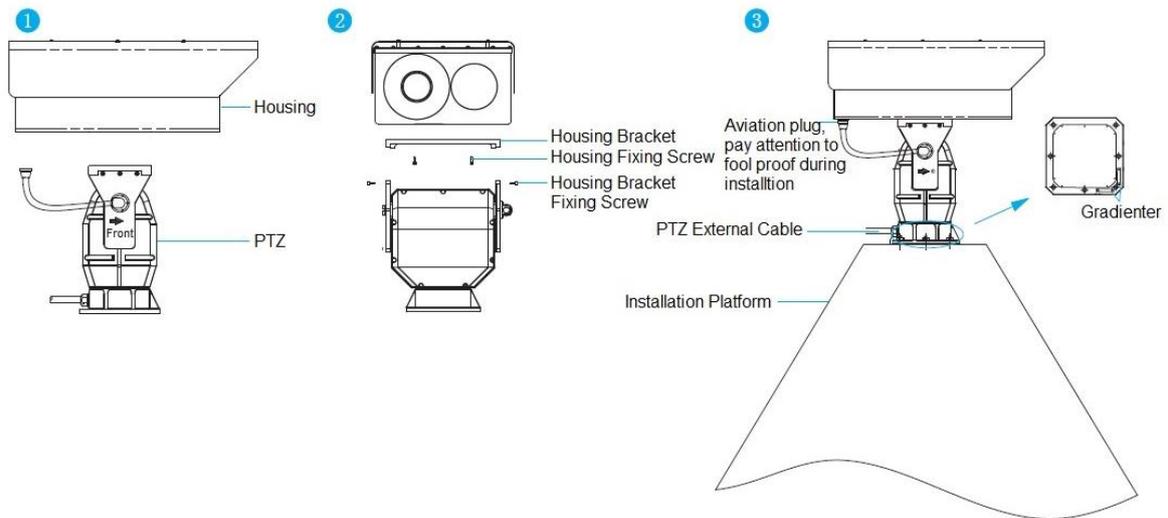


Figure 3-1

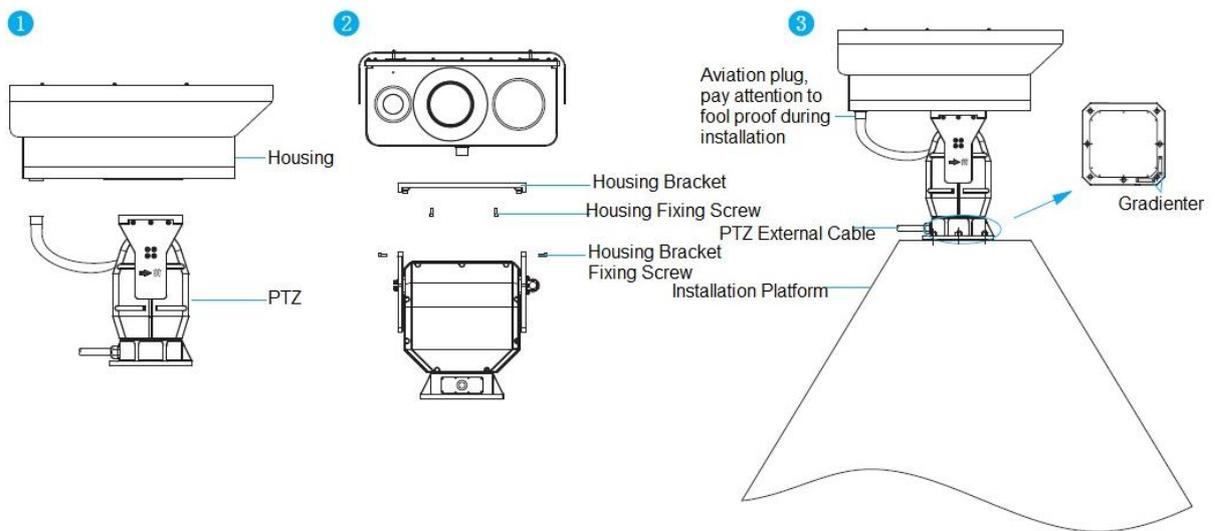


Figure 3-2

The installation steps are shown as follows:

**Step 1**

Use the inner hex wrench in the PTZ accessories bag to loosen the screws on both sides of the PTZ housing and demount the housing bracket.

**Step 2**

Use the screws in the housing accessories bag to install the housing bracket which is demounted in step 1 on the bottom of the housing.

**Step 3**

Install the housing with bracket on the top of the PTZ according to the direction shown on PTZ, use inner hex wrench to fix the bracket well.

**Step 4**

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The “Front” logo is printed on the side of the PTZ (shown in Figure 3-1 ①), pay attention not to install in a wrong direction, make sure the arrow direction is in accordance with the indication direction.

**Step 5**

Connect the PTZ aviation plug to the corresponding location of the aviation port of the housing and tighten the aviation plug firmly.

**Step 6**

Carry the device onto the installation platform designated by users; use the screws in the PTZ accessories bag to fix the PTZ on the installation platform. Pay attention to observe the gradienter on the PTZ pedestal when fixing the device, the bubble should stay in the middle of the gradienter.

**Step 7**

It can properly extend the PTZ cable according to the actual construction, the power adapter is included by default, and please consult relevant people of the company before installation if it is to use other power adapters. The extended cable should be prepared by users themselves, please refer to “3.1.2 Cable Preparation” for the requirements of extended cables.

**Note:**

It is recommended that the grounding holes of the device should be connected to ground, which is to improve the device stability.

**Step 8**

Install waterproof connector for network port (optional), which is shown in Figure 3-3.

**Note:**

Please implement this step if the device is equipped with network port waterproof connector and it is used outdoors.

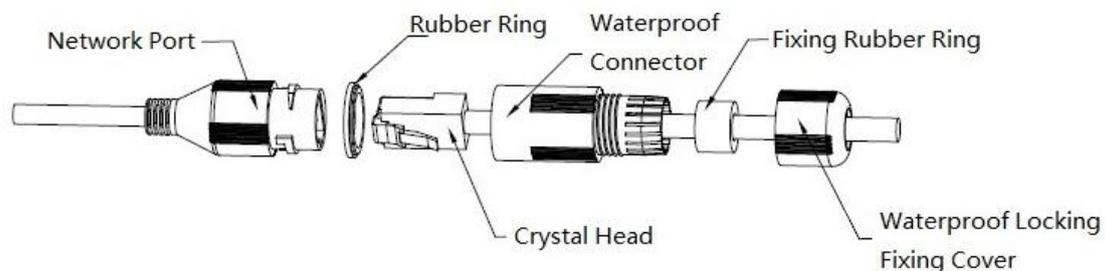


Figure 3-3

1. Keep the convex groove outward and install the rubber ring into the network port, keep the smaller hole of the rubber ring outward and install the fixing rubber ring into the main body of the waterproof connector.
2. Pull the network cable without crystal head through main body of waterproof connector, fixing rubber ring and waterproof locking cover, make the crystal head of network cable, and then insert it into the network cable.
3. Put the main body of waterproof connector on the network port and rotate it clockwise to lock the network port and waterproof connector firmly.
4. Put the waterproof locking cover on the main body of waterproof connector and rotate it clockwise to lock the waterproof connector and waterproof locking cover firmly.

## 4 Network Configuration

### 4.1 Modify IP Address

IP address can be acquired and modified through quick configuration tool for the thermal tribrid dome (the default IP address is: 192.168.1.108), please refer to the << Quick Configuration Tool Operation Manual>> for more details. Users can modify device IP via this method when they forget the device IP.

#### Step 1

Connect the PC to the device directly via network cable.

#### Note:

Network direct connection means PC and device can't be connected via router.

#### Step 2

Double click the "ConfigTools.exe" and open the quick configuration tool.

#### Step 3

Double click the device to be configured; the system will pop out the "Login" dialog box. Enter the IP address, user name, password and port number of the camera, and click "OK".

#### Note:

The default user name and password are admin and admin respectively, the default port is 37777. See Figure 4-1 for more details.

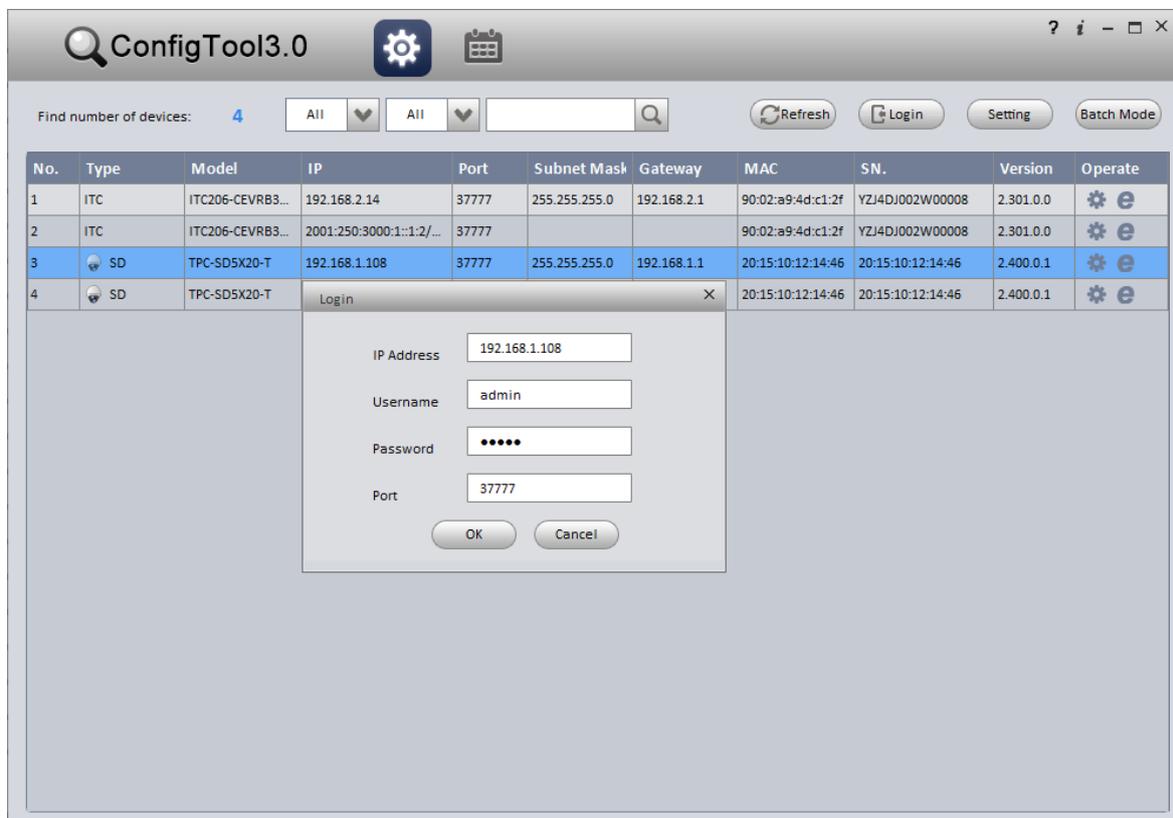


Figure 4-1

#### Step 4

Modify the camera IP address on the “Net” interface, click “Save” to finish modification.

See Figure 4-2 for more details.

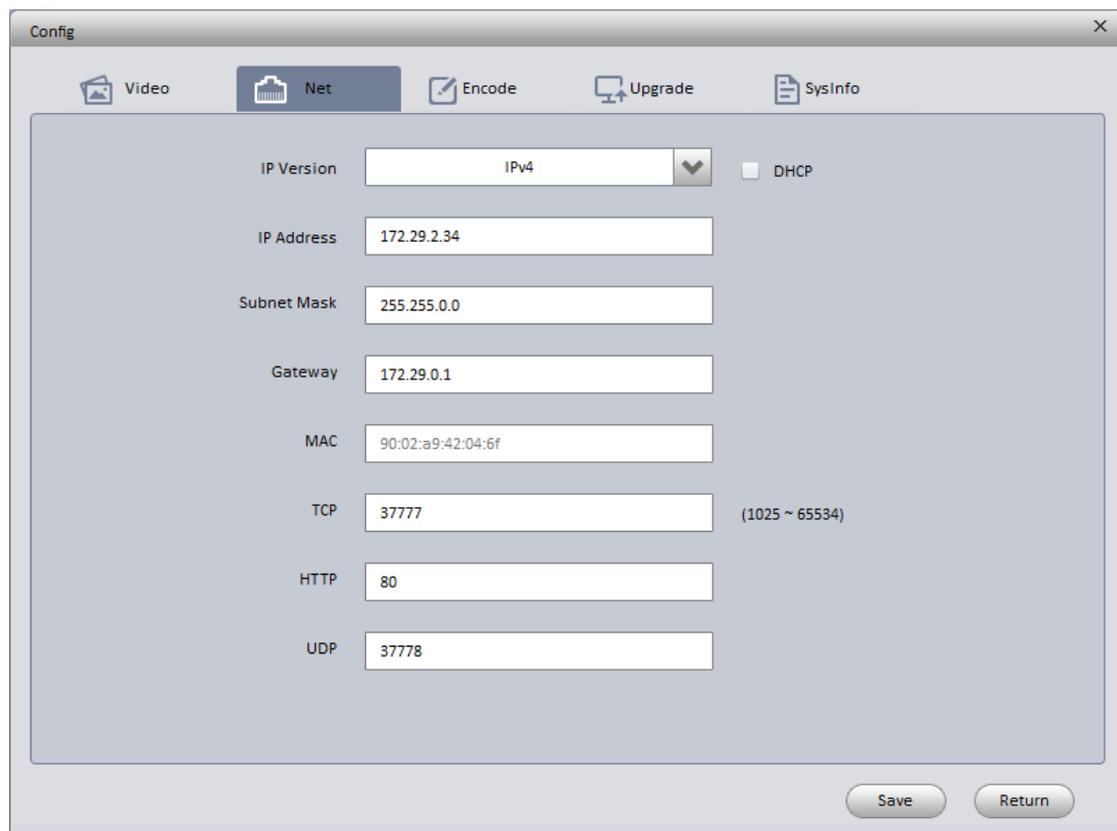


Figure 4-2

## 4.2 Login WEB Interface

### Note:

Different devices may have different WEB interfaces, the figures below are just for reference, please refer to the <<WEB Operation Manual>> in the disk and the actual interface for more details

### Step 1

Open IE and input the modified camera IP address in the address bar. The system will pop out a login box, which is shown in Figure 4-3.

### Step 2

The login interface is shown below; please input your user name and password (Default user name is admin and password is admin respectively), click “login”. See Figure 4-3 for more details.



Figure 4-3

Step 3

Install controls according to the system prompt; see Figure 3-4 for the WEB main interface. Please modify the administrator password as soon as possible after you successfully logged in.

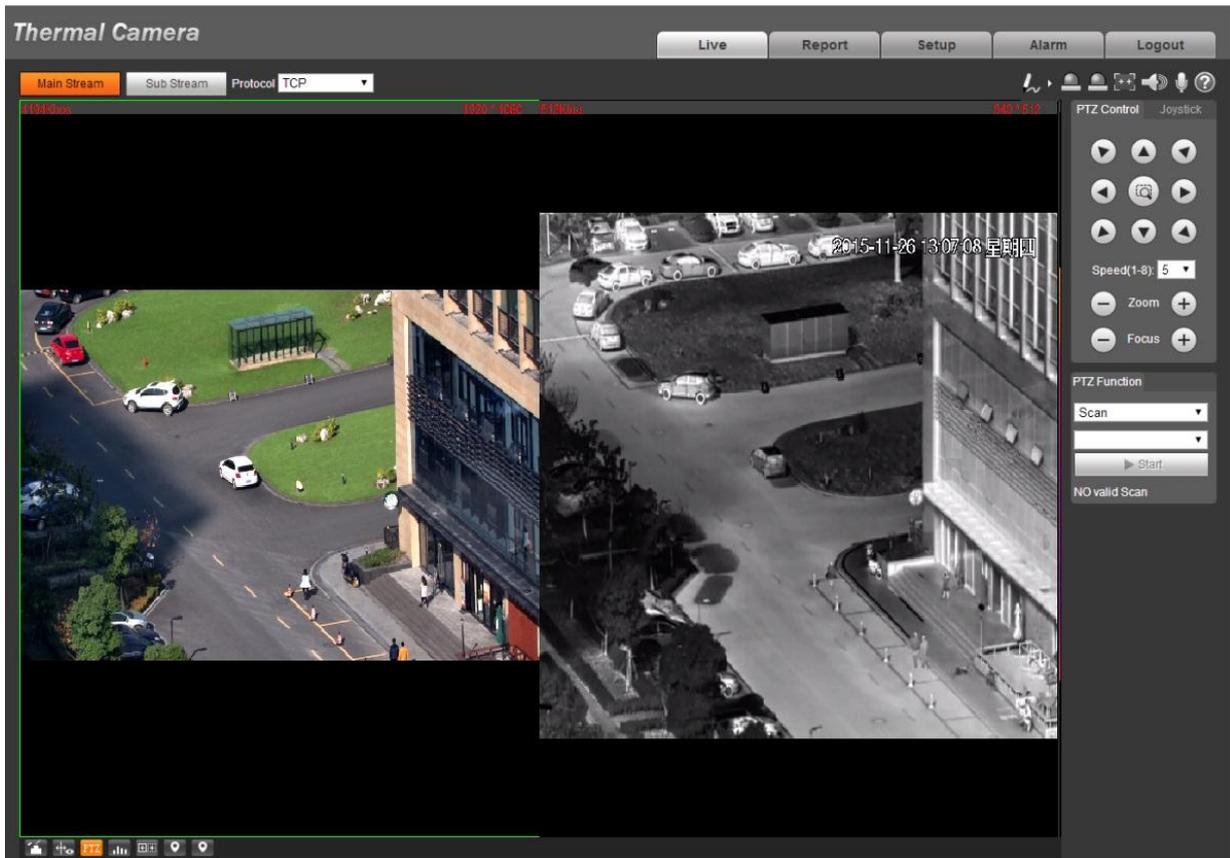


Figure 4-4

## 5 APPENDIX I LIGHTENING PROTECTION AND SURGE PROTECTION

This series thermal tribrid dome adopts TVS lightning protection technology. It can effectively prevent damages from various pulse signals below 6000W, such as sudden lightning and surge. While maintaining your local electrical safety code, you still need to take necessary precaution measures when installing the thermal tribrid dome in the outdoor environment.

- The distance between the signal transmission cable and high-voltage device (or high-voltage cable) shall be at least 50 meters.
- Outdoor cable layout shall go under the penthouse if possible.
- For vast land, please use sealing steel tube under the land to implement cable layout and connects one point to the earth. Open floor cable layout is forbidden.
- In area of strong thunderstorm hit or near high sensitive voltage (such as near high-voltage transformer substation), you need to install additional high-power thunder protection device or lightning rod.
- The thunder protection and earth of the outdoor device and cable shall be considered in the building whole thunder protection and conform to your local national or industry standard.
- System shall adopt equal-potential wiring. The earth device shall meet anti-jamming and at the same time conforms to your local electrical safety code. The earth device shall not short circuit to N (neutral) line of high voltage power grid or mixed with other wires. When connect the system to the earth alone, the earth resistance shall not be more than  $4\ \Omega$  and earth cable cross-sectional area shall below  $25\ \text{mm}^2$ . See Figure 5-1.

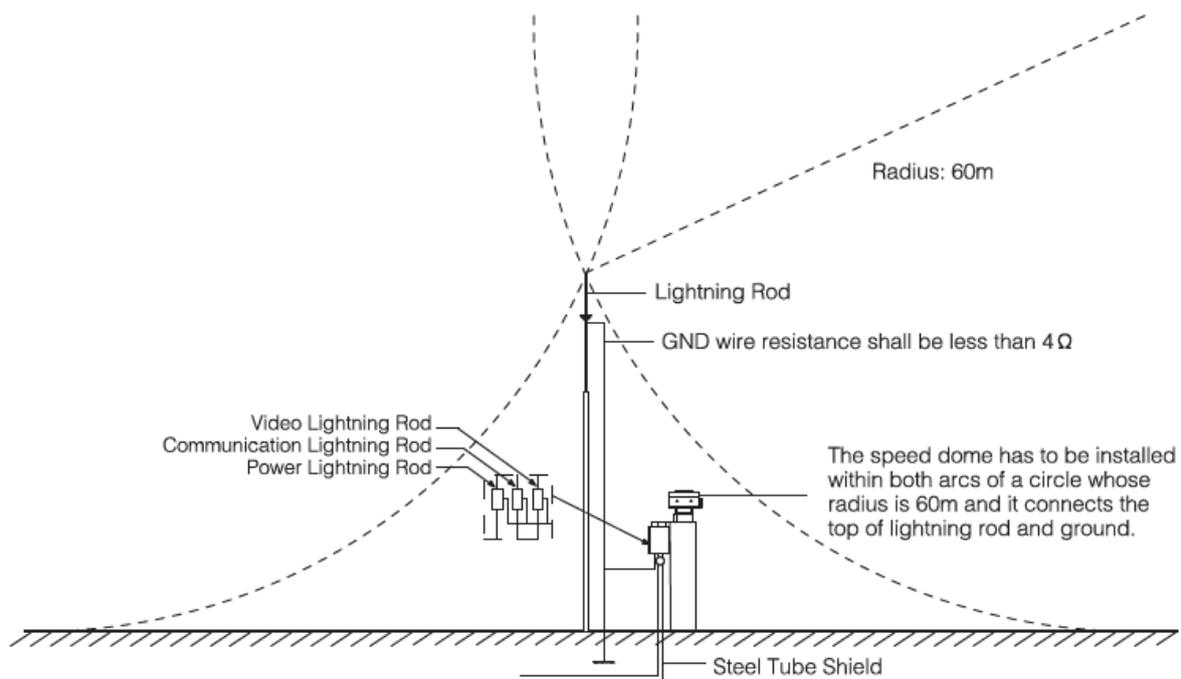


Figure 5-1

## 6 APPENDIX II PROBLEMS AND SOLUTIONS

SYMPTOM	CAUSE	SOLUTION
1) No self-diagnosis, no video signal when I connect PTZ to power.	Red LED is not on. <ul style="list-style-type: none"> <li>Your power supplying does not apply to the power. Or connection is too loose.</li> <li>Power off or transformer problem.</li> </ul>	<ul style="list-style-type: none"> <li>Check power is connected or properly earthed.</li> <li>Check power supply condition or check transformer.</li> </ul>
	Red LED light on the power board is on <ul style="list-style-type: none"> <li>Power supplying is low</li> <li>Something wrong with power board.</li> </ul>	<ul style="list-style-type: none"> <li>Use multimeter to check dome load.</li> <li>Please contact retailer to replace power board.</li> </ul>
2) No self diagnosis. There is a noise	Power supplying is inadequate.	Replace power supplying.
	Mechanical malfunction.	Need electrical engineer help.
3) Video signal loss occurs in high speed rotation.	Power supplying is not sufficient	Replace power supplying.
4) Video signal is not successive	Circuit connection is too loose.	Connect tightly.
	Video switch or power problem	Need electrical engineer help.
5) Video is not clear.	Focus is in manual mode.	Control manually.
	PTZ cover is dirty.	Wash PTZ cover
6) During PTZ switch, there is a tilt movement in the monitor.	Camera power is not in the same Phase.	When several PTZs are connected to one transformer, please connect the transformer output cable to the domes' same side.
7) The PTZ keeps rotating and it is out of control	The supply voltage is too low or the power is insufficient.	Use multimeter to check the PTZ voltage and current, if it is too low, then it needs to improve supply voltage till the device runs normally.

### Note

- This manual is for reference only. Slight difference may be found in the user interface.
- All the designs and software here are subject to change without prior written notice.
- All trademarks and registered trademarks are the properties of their respective owners.
- If there is any uncertainty or controversy, please refer to the final explanation of us.
- Please visit our website or contact your local service engineer for more information.