

Thermal High-Speed Hybrid PTZ Camera

Quick Start Guide

Version 1.0.0

Welcome

Thank you for purchasing our network cameras.

This user's manual is designed to be a reference tool for using your product.

Please read the following safeguards and warnings carefully before you use this series product.

Please keep this user's manual well for future reference.

Important Safeguards and Warnings

Electrical safety

- All installation and operation should conform to your local electrical safety codes.
- The power source shall conform to the requirement of the Safety Extra Low Voltage (SELV) standard, and supply power according to the Limited Power Source requirement of IEC60950-1. Please note that the power supply requirement is subject to the device label.
- Make sure the power supply is correct before operating the device.
- A readily accessible disconnect device shall be incorporated in the building installation wiring
- Prevent the power cable from being trampled or pressed, especially the plug, power socket and the junction extruded from the device.
- We assume no liability or responsibility for all the fires or electrical shock caused by improper handling or installation.

Environment

- Do not aim the device at strong light to focus, such as lamp light and sun light, otherwise it might cause over brightness or light marks, which are not the device malfunction, and affect the longevity of Charge Coupled Device (CCD) or Complementary Metal-Oxide Semiconductor (CMOS).
- Do not place the device in a damp or dusty environment, extremely hot or cold temperatures, or the locations with strong electromagnetic radiation or unstable lighting.
- Keep the camera away from water or other liquid to avoid damages to the internal components.
- Keep the indoor device away from rain or damp to avoid fire or lightning.
- Keep sound ventilation to avoid heat accumulation.
- Transport, use and store the device within the range of allowed humidity and temperature.
- Heavy stress, violent vibration or water splash are not allowed during transportation, storage and installation.
- Pack the device with standard factory packaging or the equivalent material when transporting the device.

Operation and Daily Maintenance

- Do not directly touch the heat dissipation component of the device to avoid scald.
- Do not dismantle the device because there is no component that can be fixed by users themselves. Otherwise, it might cause water leakage or bad image due to unprofessional dismantling.

- Please contact after-sale service to replace desiccant when it becomes green.
- It is recommended to use the device together with lightning arrester to improve lightning protection effect.
- It is recommended to get the grounding holes to be grounded to enhance the reliability of the device.
- Do not directly touch the optic component CCD or CMOS. You can use the air blower to blow away the dust or dirt on the lens surface. Please use a dry cloth wetted by alcohol to wipe away the dust gently if necessary.
- Use the dry soft cloth to clean the device. If the dust is difficult to be removed, please wipe it away with a clean cloth wetted slightly by the mild detergent, and then use the dry cloth to clean the device. Do not use volatile solvents like alcohol, benzene, thinner, or strong detergent with abrasiveness, otherwise it will damage the surface coating or reduce the working performance of the device.
- When installing or using the device, do not directly touch or wipe the surface of the dome cover because it is an optical device. If stained with dirt, use oil-free soft brush or air blower to gently wipe it away. If stained with grease or fingerprint, use soft cloth to gently wipe the water drop or oil and wait till it is dry, and then use oil-free cotton cloth or lens cleaning paper soaked with alcohol or detergent to wipe from the lens center outward till it is clean.
- We are not liable for any problems caused by unauthorized modification or attempted repair.

Warnings

- Please modify the default password after login to avoid being stolen.
- Use the standard components provided by manufacturer and make sure the device is installed and fixed by professional engineers.
- The surface of the image sensor should not be exposed to laser beam radiation in an environment where a laser beam device is used.
- Do not provide two or more power supply sources for the device, otherwise it might damage the device.

Disclaimer

- This manual is for reference only. Please refer to the actual product for more details.
- Minor differences might be found in user interface, and there might be deviation between the actual value of some data and the value provided in the manual due to the reasons such as the real environment is not stable. Please refer to the final explanation of the company if there is any doubt or dispute.
- All the designs and software are subject to change without prior written notice. The manual will be regularly updated according to the product upgrade without prior announcement.
- Please contact the supplier or customer service if there is any problem occurred when using the device.
- Please contact the customer service for the latest procedure and supplementary documentation.
- Please visit our website or contact your local service engineer for more information.
- The company is not liable for any loss caused by the operation that does not comply with the manual.

- If there is any uncertainty or controversy, please refer to our final explanation.

Regulatory Information

FCC Information

1.1 FCC conditions:

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference
- This device must accept any interference received, including interference that may cause undesired operation.

1.2 FCC compliance:

This equipment has been tested and found to comply with the limits for a digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference. This equipment generate, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communication. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Note

- Please refer to the disk for more details, check and download the corresponding user's manual and tool.
- Before installation, please open the package and check all the components are included.
- Contact your local retailer as soon as possible if something is broken in your package.

Component list	Quantity
Thermal Camera	1
Power Adapter	1
Quick Start Guide	1
Installation Accessories Bag	1

Table of Contents

1 Device Framework.....	5
1.1 Device External Cable	5
1.2 Dimension	6
2 Device Installation	8
2.1 Install Micro SD Card and Reset Device	8
2.2 Device Installation (Side Cable Exit).....	9
2.3 Device Installation (Bottom Cable Exit)	10
3 Network Configuration.....	13
3.1 Modify IP Address	13
3.2 Login WEB Interface	14
4 Appendix I Lightning Protection and Surge Protection	16

1 Device Framework

1.1 Device External Cable

Note

- The following structure figure is for reference only. It is only used to know the functions of cable ports.
- There might be some minor differences between different devices, so please refer to the actual products you purchased.

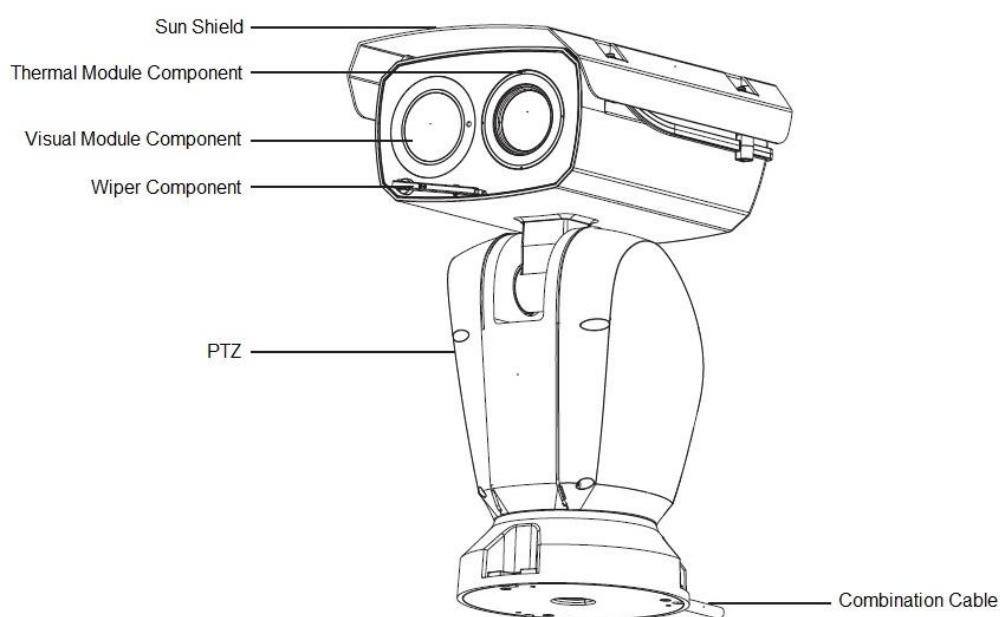


Figure 1-1

Thermal hybrid PTZ camera is equipped with a multifunctional combination cable, which is shown in Figure 1-2

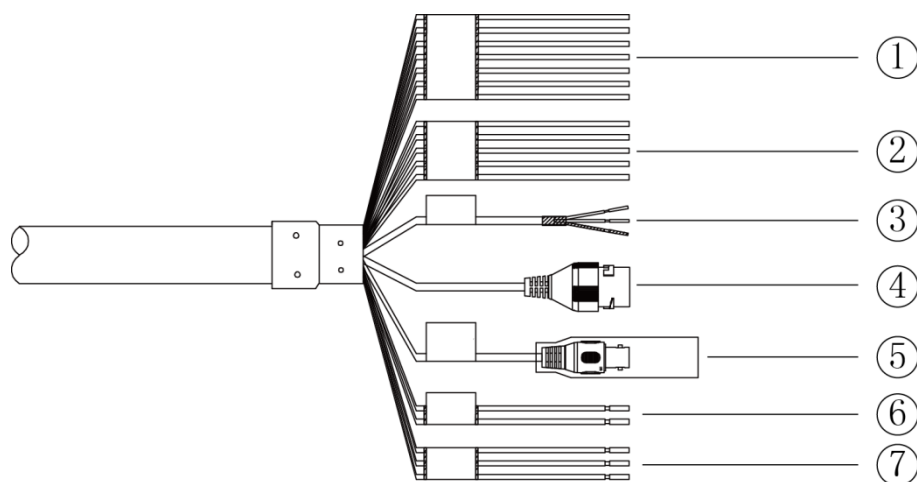


Figure 1-2

Please refer to Table 1-1 and Table 1-2 for the functions of external cable and I/O port.

SN	Port	Port name	Connector	Function description
1	I/O	I/O port	Various external alarm devices	Include alarm input and output, please refer to Table 1-2 for more details.
2				
3	AUDIO IN	Audio input port	RCA	Input audio signal, receive analog audio signal from pickup and other devices.
	AUDIO OUT	Audio output port	RCA	Output audio signal to speaker and other devices.
	AUDIO GND	Audio grounding terminal	-	GND
4	LAN	Network port	Ethernet port	Connect to standard Ethernet cable. Note Take out the connector from accessory bag and insert it into the network port before device power on, and then BNC outputs HDCVI signal.
5	VIDEO OUT	Analog video output	BNC	Output analog video signal, it can connect to TV monitor to check image.
6	RS485	RS485 port	-	RS485 port, control PTZ and so on.
7	POWER	Power input port	-	Input AC 24V, please be sure to supply power to the device according to the device label instruction. Caution It may cause damage to the device if it fails to power the device according to label instruction.

Table 1-1

Port name	Cable name	port	Function description
I/O port	ALARM_OUT1		Alarm output port 1, output alarm signal to alarm device. Note
	ALARM_COM1		ALARM_OUT1 can only be used together with ALARM_COM1 when connecting to alarm device.
	ALARM_OUT2		Alarm output port 2, output alarm signal to alarm device. Note
	ALARM_COM2		ALARM_OUT2 can only be used together with ALARM_COM2 when connecting to alarm device.
	ALARM_IN1~ALARM_IN7		Alarm input port 1~alarm input port 7, receive on-off signal from external alarm source.
	ALM_IN_GND		GND terminal.

Table 1-2

1.2 Dimension

Note

The following figures are for reference only, which are only used to know the device dimension.

Refer to Figure 1-3 and Figure 1-4 for the device dimension and pole-mounted chassis respectively. The unit is mm.

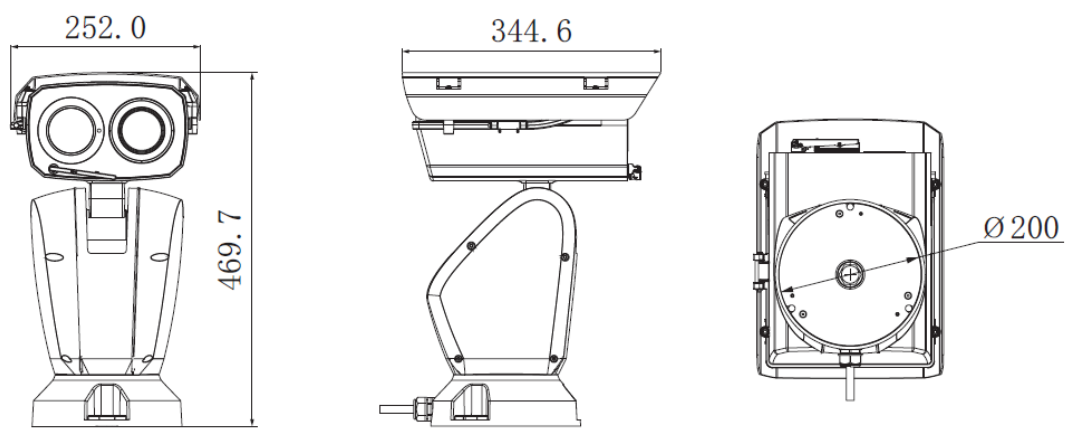


Figure 1-3

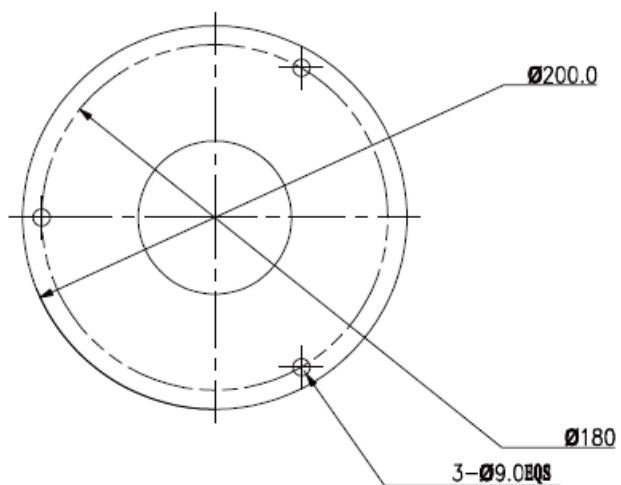


Figure 1-4

2 Device Installation

There are various types of brackets which can satisfy various scene application for PTZ, it takes pole-mounted bracket as an example to introduce the device operation.

Note

The following figures are for reference only, please refer to actual device for more details.

Warning

It shall avoid device, parts, tools and other objects falling from high altitude during installation, which is to avoid injuring people and damaging other objects.

2.1 Install Micro SD Card and Reset Device

Caution

- Micro SD card installation needs to be operated by professional technician; the company is not liable to the device malfunction if it is operated unprofessionally.
- Make sure the sealing gasket is located in the sealing slot when locking it firmly, and then lock 2 M4 screws firmly to make sure the housing is waterproof.

Open the PTZ housing, you can the Micro SD card slot and reset button. Find Micro SD card installation slot in the location shown in Figure 2-1, adjust the direction of Micro SD card, insert it into the slot and install the Micro SD card properly.

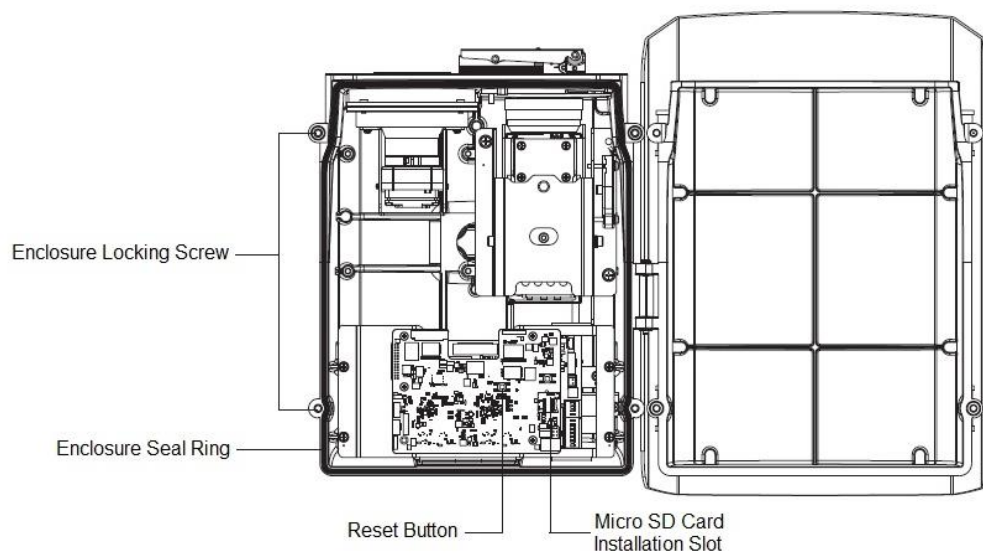


Figure 2-1

Note

Long press the reset button for 4 to 5 seconds to realize device reset function.

2.2 Device Installation (Side Cable Exit)

Note

The installation surface has to sustain the total weight of device and its installation structure, which is no less than 80kg.

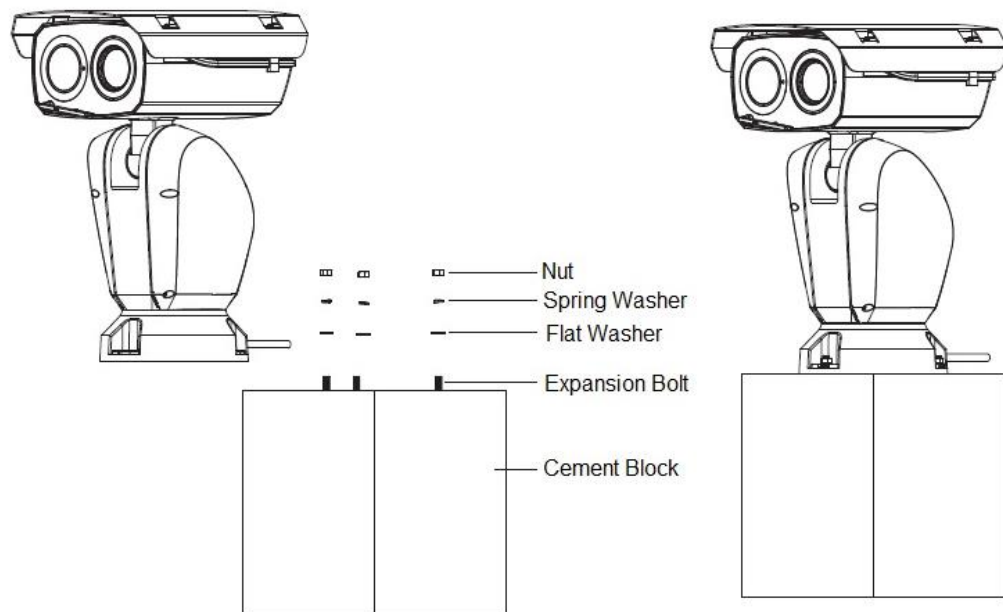


Figure 2-2

- Step 1** Dig three mounting hole sites on the cement block according to the mounting holes, Make sure the size of hole diameter needs to be in accordance with expansion bolt, and there shall be no deviation for hole site.
- Step 2** Use a small hammer to knock the expansion bolts into the holes you just dug, bury the expansion tube of expansion bolts into the wall and make it flat with the installation surface.
- Step 3** Insert the three mounting holes of camera through expansion bolts, cover it with flat washer and spring washer successively, use nut to lock it firmly and fix the device on the cement block stably.
- Step 4** Connect the external cable well according to the use requirement.

- Connect the corresponding power, video output, audio cable, RS485 control cable, alarm input and output terminal according to requirement, and then twine the cable connection location with insulated rubber tape to make it waterproof.

Caution

The video port is covered the heat shrink tube of high shrinking ratio. After the video connection, please heat the tube and wrap it with waterproof tape, including other video connection ports. Make sure the video port is damp proof and waterproof.

- Connect the network cable to the corresponding network port of device according to step 5.

Note

It is recommended that the GND hole shall be connected to ground, which is to improve device reliability.

Step 5 Install waterproof connector for network port, which is shown in Figure 2-3.

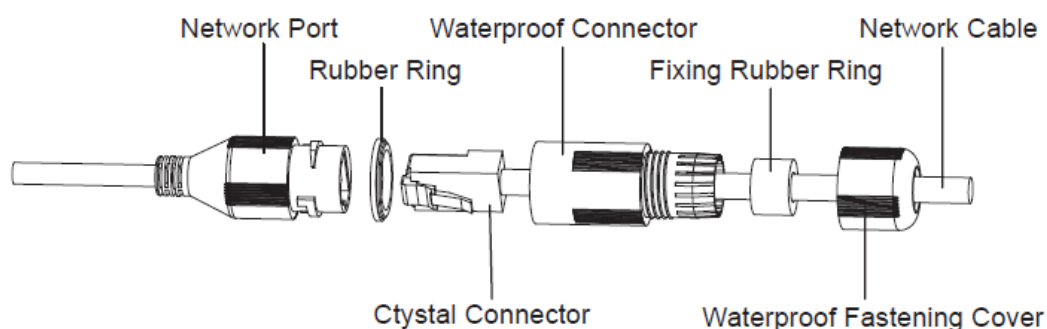


Figure 2-3

- 1) Keep the convex groove outward and install the rubber ring into the network port, and keep the smaller hole of the rubber ring outward and install the fixing rubber ring into the main body of the waterproof connector.
- 2) After pulling the network cable without crystal head through main body of waterproof connector, fixing rubber ring and waterproof fastening cover, make the crystal connector 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 fastening cover on the main body of waterproof connector and rotate it clockwise to lock the waterproof connector and waterproof fastening cover firmly.

2.3 Device Installation (Bottom Cable Exit)

Pole-mounted PTZ can be used for pole-mounted bracket structure both indoors and outdoors.

- The hole sites of pole-mounted bracket should be matched with corresponding hole sites of PTZ pedestal.
- Pole-mounted bracket should sustain at least 8 times weight of PTZ.
- Pole-mounted bracket has to be stable and reliable, it can't be installed in the application environment which is not stable.

Note

Please make sure there is enough space in the bracket for pulling cables when it adopts bottom cable exit.

Step 1 Replace cable exit location.

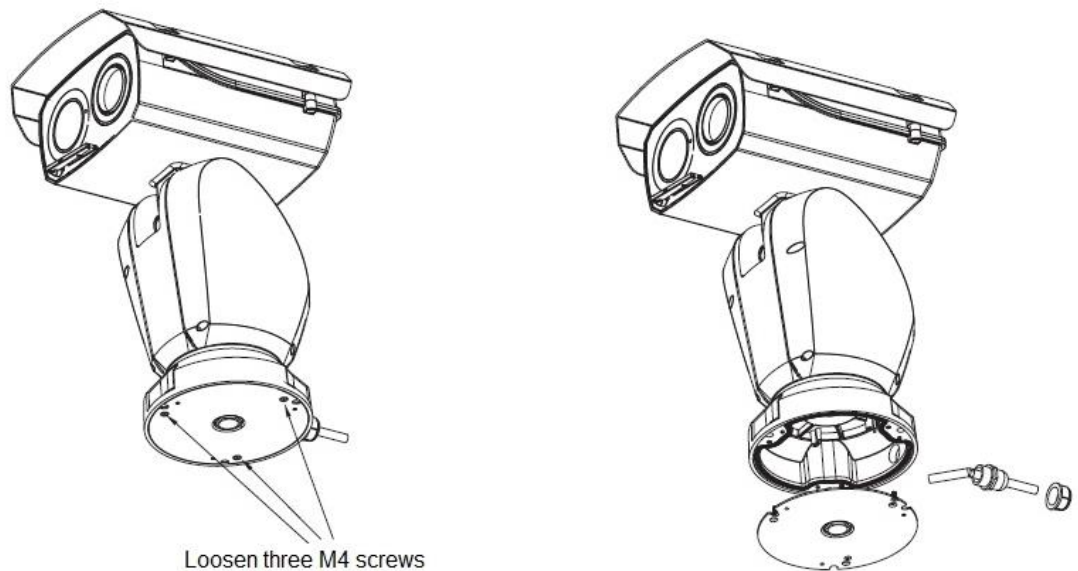


Figure 2-4

- 1) Use inner hex wrench to loosen three screws on the bottom.
- 2) Open white plug of combination cable, loosen the connector of combination cable and bottom cover respectively, and then pull the cable for replacement.
- 3) Install back three chassis screws and cover, and then lock them firmly.

Caution

It needs to make sure that the sealing gasket is located in the sealing slot, which is to avoid water leaking and causing damage to the device.

Step 2 Pull the cable through the pole-mounted bracket.

Step 3 Align the screw holes of PTZ bottom with the mounting hole sites of pole-mounted bracket, and then use fixing bolt to fix the device on the pole-mounted bracket.

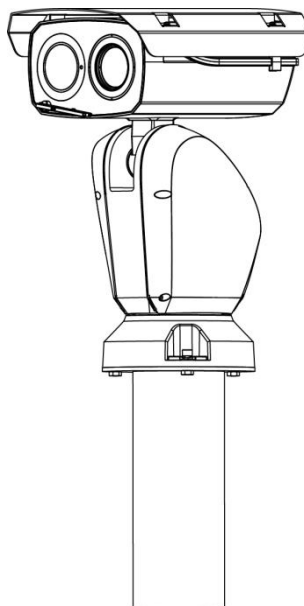


Figure 2-5

Step 4 Connect the external cable well according to the use requirement.

- Connect the corresponding power, video output, audio cable, RS485 control cable, alarm input and output terminal according to requirement, and then twine the cable connection location with insulated rubber tape to make it waterproof.

Caution

The video port is covered the heat shrink tube of high shrinking ratio. After the video connection, please heat the tube and wrap it with waterproof tape, including other video connection ports. Make sure the video port is damp proof and waterproof.

- Connect the network cable to the corresponding network port of device according to step 5.

Note

It is recommended that the GND hole shall be connected to ground, which is to improve device reliability.

Step 5 Install waterproof connector for network port, which is shown in Figure 2-6.

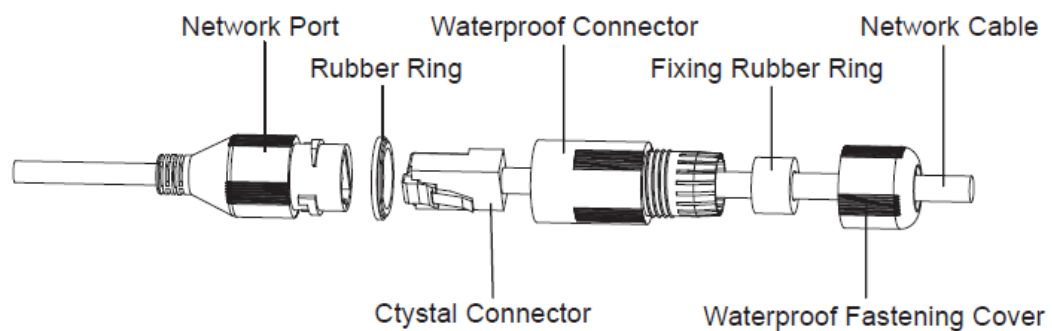


Figure 2-6

- 1) Keep the convex groove outward and install the rubber ring into the network port, and keep the smaller hole of the rubber ring outward and install the fixing rubber ring into the main body of the waterproof connector.
- 2) After pulling the network cable without crystal head through main body of waterproof connector, fixing rubber ring and waterproof fastening cover, make the crystal connector 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 fastening cover on the main body of waterproof connector and rotate it clockwise to lock the waterproof connector and waterproof fastening cover firmly.

3 Network Configuration


The IP address of all the cameras is the same when leaving factory (default IP 192.168.1.108). To make the camera access to the network smoothly, please plan the available IP segment reasonably according to the actual network environment.

3.1 Modify IP Address

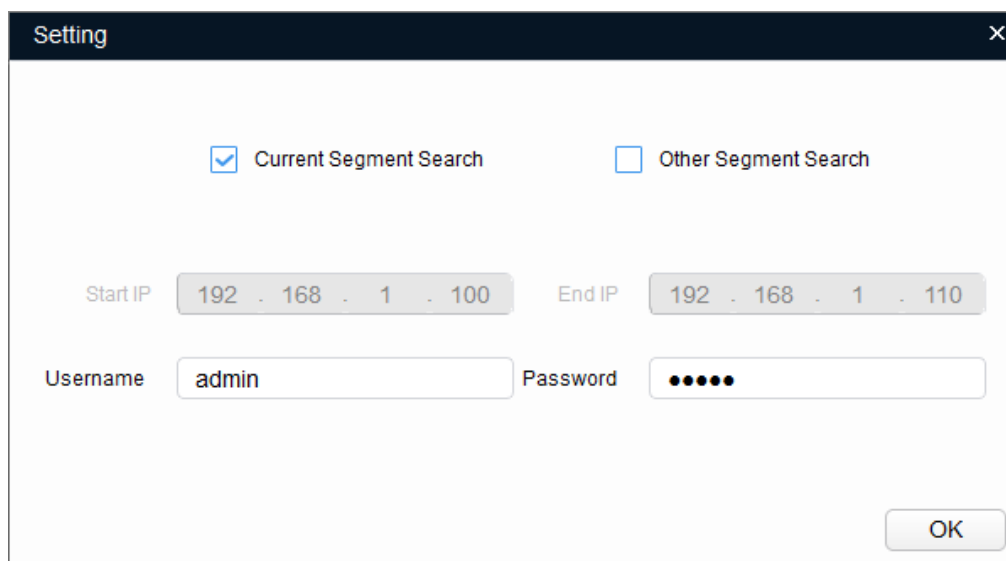
The cameras which are accessed via wired network can acquire and modify the IP address through "Quick Configuration Tool". This section introduces the approach of modifying IP address via "Quick Configuration Tool". You can also modify the IP address in the network parameters of the WEB interface. Please refer to the document *WEB Operation Manual* for more details.

To modify IP address, do the following:

Step 1 Double-click "ConfigTool.exe" to open the "Quick Configuration Tool".

Step 2 Click  to enter the interface where you can modify IP address, and then click **Search setting**.

The system pops up the **Setting** dialog box, see Figure 3-1.



The image shows a 'Setting' dialog box with a dark title bar and a close button (X). Inside, there are two checkboxes: 'Current Segment Search' (checked) and 'Other Segment Search' (unchecked). Below these are two IP address ranges: 'Start IP' (192 . 168 . 1 . 100) and 'End IP' (192 . 168 . 1 . 110). At the bottom, there are fields for 'Username' (admin) and 'Password' (masked with dots). An 'OK' button is in the bottom right corner.


Figure 3-1

Step 3 Set the device network segment, login user name and password, and then click **OK**. The system will display the searched devices after searching completes.

Note

The default username and password is **admin** and **admin** respectively.

Step 4 Select the devices which IP addresses need to be modified, and then

click  **Batch Modify IP**.

The system will pop up the **Modify IP Address** dialog box, see Figure 3-2.

Modify IP Address

Mode ☒ Static ☐ DHCP

Start IP 192 . 168 . 8 . 2 ☐ Same IP

Subnet Mask 255 . 255 . 0 . 0

Gateway 192 . 168 . 8 . 1

Selected number of devices: 2 OK

Figure 3-2

Step 5 Set the mode as **Static**, and input the planned **Start IP**, **Subnet Mask** and **Gateway**.

Note

Set the mode as **DHCP** when there is DHCP server in the network, the device will automatically acquire IP address from the DHCP server.

Step 6 Click **OK** to finish modification.

3.2 Login WEB Interface

Note

Different devices might have different WEB interfaces, the figures in this document are just for reference, please refer to the document *WEB Operation Manual* and the actual interface for more details.

To login WEB interface, do the following:

Step 1 Open IE browser and input the modified camera IP address in the address bar, and then press **Enter** key. The system displays the login interface, see Figure 3-3.

Thermal Camera

Username: admin

Password:

Login Cancel

Figure 3-3

Step 2 Input username and password.

Note

The default username and password is **admin** and **admin** respectively, please modify the administrator password as soon as possible after you successfully logged in.

Step 3 Click **Login** and the system will display the main interface, which is shown in Figure 3-4

Note

Please install plug-in according to system prompt for the first login.

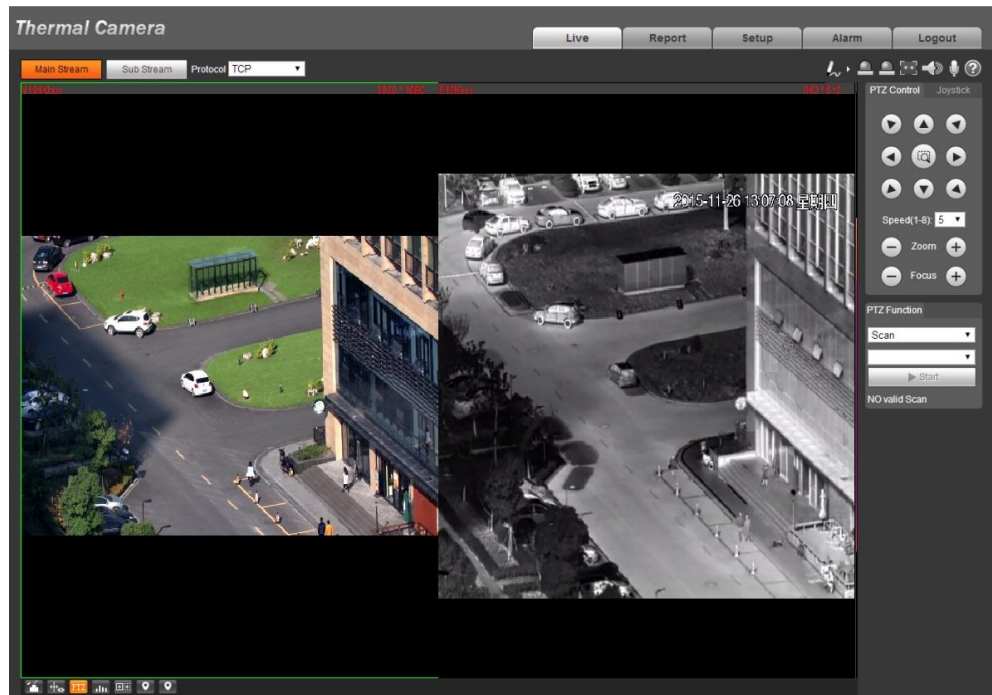


Figure 3-4

4 Appendix I Lightning Protection and Surge Protection

This series speed dome adopts TVS lightning protection technology. It can effectively prevent damages from various pulse signals below 6000W, such as sudden lighting and surge. While maintaining your local electrical safety code, you still need to take necessary precaution measures when installing the speed 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 be more than $25\ \text{mm}^2$. See Figure 4-1.

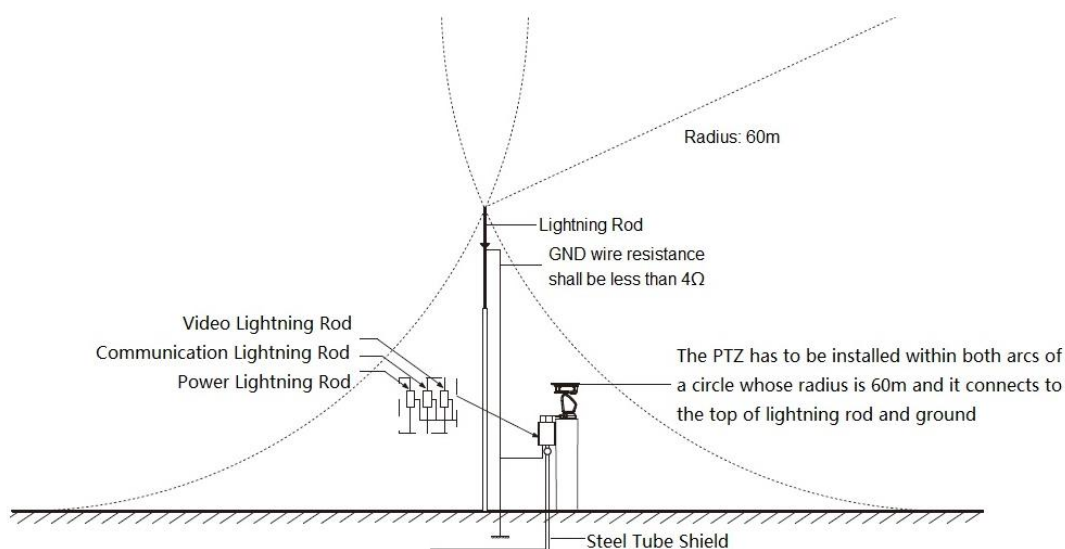


Figure 4-1