

HD Vandal Proof Network Dome Camera User's Manual

Version 4.0.1

Welcome

Thank you for purchasing our network camera!

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

Please read the following safeguard and warnings carefully before you use this series product!

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

Important Safeguards and Warnings

1 . Electrical safety

All installation and operation here should conform to your local electrical safety codes.

The power shall conform to the requirement in the SELV (Safety Extra Low Voltage) and the Limited power source is rated 12V DC or 24V AC in the IEC60950-1. This series supports power supply via PoE. (Please refer to general introduction) **Please note: Do not connect these two power supplying sources to the device at the same time; it may result in device damage!**

We assume no liability or responsibility for all the fires or electrical shock caused by improper handling or installation.

We are not liable for any problems caused by unauthorized modification or attempted repair.

2 . Transportation security

Heavy stress, violent vibration or water splash are not allowed during transportation, storage and installation.

3 . Installation

Do not apply power to the camera before completing installation.

Please install the proper power cut-off device during the installation connection.

Always follow the instruction guide the manufacturer recommended.

4 . Qualified engineers needed

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.

5 . Environment

This series network camera should be installed in a cool, dry place away from direct sunlight, inflammable, explosive substances and etc.

Please keep it away from the electromagnetic radiation object and environment.

Please make sure the CCD (CMOS) component is out of the radiation of the laser beam device.

Otherwise it may result in CCD (CMOS) optical component damage.

Please keep the sound ventilation.

Do not allow the water and other liquid falling into the camera.

Thunder-proof device is recommended to be adopted to better prevent thunder.

The grounding holes of the product are recommended to be grounded to further enhance the reliability of the camera.

6. Daily Maintenance

Please shut down the device and then unplug the power cable before you begin daily maintenance work.

Do not touch the CCD (CMOS) optic component. You can use the blower to clean the dust on the lens surface.

Always use the dry soft cloth to clean the device. If there is too much dust, please use the water to dilute the mild detergent first and then use it to clean the device. Finally use the dry cloth to clean the device.

Please put the dustproof cap to protect the CCD (CMOS) component when you do not use the camera. Dome enclosure is the optical component, do not touch the enclosure when you are installing the device or clean the enclosure when you are doing maintenance work. Please use professional optical clean method to clean the enclosure. Improper enclosure clean method (such as use cloth) may result in poor IR effect of camera with IR function.

7. Accessories

Be sure to use all the accessories recommended by manufacturer.

Before installation, please open the package and check all the components are included.

Contact your local retailer ASAP if something is broken in your package.

Accessory Name	Amount
Network Camera Unit	1
Quick Start Guide	1
Accessories Bag	1
CD	1

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1 General Introduction

1.1 Overview

This series network camera integrates the traditional camera and network video technology. It adopts audio and video data collection, transmission together. It can connect to the network directly without any auxiliary device.

This series network camera uses standard H.264 video compression technology and G.711a audio compression technology, which maximally guarantee the audio and video quality.

This series network camera enclosure has the strong resistance capacity, which can guarantee the proper work performance under heavy strike. It supports real-time monitor and listening at the same time. It supports analog video output and dual-way bidirectional talk.

It can be used alone or used in a network area. When it is used lonely, you can connect it to the network and then use a network client-end. Due to its multiple functions and various uses, this series network camera is widely used in many environments such office, bank, road monitor and etc.

1.2 Features

User Management	<ul style="list-style-type: none">● Different user rights for each group, one user belongs to one group.● The user right shall not exceed the group right.
Storage Function	<ul style="list-style-type: none">● Support central server backup function in accordance with your configuration and setup in alarm or schedule setting● Support record via Web and the recorded file are storage in the client-end PC.● Support built-in Micro SD card.● Support local Micro SD card hot swap, support short-time storage when encounter disconnection.
Alarm Function	<ul style="list-style-type: none">● Real-time respond to external local alarm input and video detect as user pre-defined activation setup and exert corresponding message in screen and audio prompt(allow user to pre-record audio file)● Real-time video detect: motion detect, camera masking.● Can generate an alarm when network abnormal, Micro SD card abnormal event occurred.
Network Monitor	<ul style="list-style-type: none">● Network camera supports one-channel audio/video data transmit to network terminal and then decode. Delay is within 270ms (network bandwidth support needed)● Max supports 20 connections.● Adopt the following audio and video transmission protocol: HTTP, TCP, UDP, MULTICAST, RTP/RTCP, RTSP and etc.● Support web access, widely used in WAN.
Network Management	<ul style="list-style-type: none">● Realize network camera configuration and management via Ethernet.● Support device management via web or client-end.● Support various network protocols.
Peripheral Equipment	<ul style="list-style-type: none">● Support the on-off alarm device to alarm via the sound or the light.
Power	<ul style="list-style-type: none">● External power adapter DC12V/AC 24V● Support PoE.
Assistant Function	<ul style="list-style-type: none">● Log function● Support PAL/NTSC● Support system resource information and running status real-time display.

	<ul style="list-style-type: none"> ● Day/Night mode auto switch (ICR switch). ● Built-in IR light. Support IR night vision (For HDBW Series only). ● Backlight compensation: screen auto split to realize backlight compensation to adjust the bright. ● Support electronic shutter and gain setup. ● Support video watermark function to avoid vicious video modification.
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1.3 Specifications

1.3.1 Performance

Please refer to the following sheet for network camera performance specification.

Model		IPC-HDB/HDBW3300 Series	IPC-HDB/HDBW3110 Series	
Parameter				
System	Main Processor	TI Davinci high performance DSP		
	OS	Embedded LINUX		
	System Resources	Support real-time network, local record, and remote operation at the same time.		
	User Interface	Remote operation interface such as WEB, DSS, PSS		
	System Status	Micro SD card status, bit stream statistics, log, and software version.		
Video Parameter	Image Sensor	1/2.8-inch CMOS	1/3-inch CCD	
	Pixel	2048 (H) *1536 (V)	1280(H)*960(V)	
	Day/Night Mode	Support day/night mode switch and IR-CUT at the same time.		
	Auto Iris	DC drive		
	Gain Control	Fixed/Auto		
	White Balance	Manual/Auto		
	BLC	Off/BLC/WDR (1-100)/HLC(anti-flicker is outdoor and is valid only when exposure mode is auto with range 1-100)	Off/BLC	
	Electronic Shutter	Manual/Auto It ranges from 1/3 to 1/10000.	Manual/Auto PAL: It ranges from 1/3 to 1/100000. NTSC: It ranges from 1/4 to 1/100000.	
	Video Compression Standard	H.264/H.264H/H.264B/MJPEG		
	Video Frame Rate	PAL: Main stream (2048*1536@18fps) extra stream (704*576@18fps) Main stream (1920*1080@25fps) extra stream (704*576@25fps) NTSC: Main stream (2048*1536@20fps) extra stream (704x480@20fps) Main stream (1920*1080@30fps) extra stream (704x480@30fps)	PAL: Main stream(1280*960@12fps) extra stream (704*576@12fps) Main stream (1280*720@25fps) extra stream (704*576@25fps) NTSC: Main stream (1280*960@22fps) extra stream (704x480@22fps) Main stream (1280*720@30fps) extra stream (704x480@30fps)	
	Video Bit Rate	H.264: 56Kbps-8192Kbps. H.264H: 16Kbps-8192Kbps. H.264B: 56Kbps-8192Kbps. MJPEG is adjustable and bit rate is adjustable.		

		Support customized setup.	
	Video Flip	Support mirror. Support flip function.	
	Snapshot	Max 1f/s snapshot. File extension name is JPEG.	
	Privacy Mask	Supports max 4 privacy mask zones	
	Video Setup	Support parameter setup such as bright, contrast.	
	Video Information	Channel title, time title, motion detect, privacy mask.	
	Lens	3.3~12mm@F1.4	2.8~12mm@F1.4
	Lens Interface	CS. Lens is the default accessories	
Audio	Audio Input	1-channel, RCA audio input.	
	Audio Output	1-channel, RCA, audio output.	
	Bidirectional Talk Input	Reuse the first audio input channel	
	Audio Bit Rate	16kbps 16bit	
	Audio Compression Standard	G.711A/G.711Mu/PCM	
Video	Motion Detect	396 (18*22) detection zones; sensitivity level ranges from 0 to 100; area threshold ranges from 0 to 100. Activation event, alarm device, audio/video storage, image snapshot, log, email function and etc.	
	Video Loss	Activation event, alarm device, audio/video storage, image snapshot, log, email function and etc.	
Alarm Input		2-channel input, 1-channel output	
Backup and Record	Record Priority	Manual>External alarm >Video detect>Schedule	
	Local Storage	Support Micro SD card storage	
Network	Wire Network	1-channel wire Ethernet port, 10/100 Base-T Ethernet	
	Network Protocol	Standard HTTP, TCP/IP, IPv4/IPv6, ARP, IGMP, ICMP, RTSP, RTP, UDP, SMTP, FTP, DHCP, DNS, DDNS, PPPOE, UPNP, NTP, Bonjour, SNMP, NFS.	
	Remote Operation	Monitor, system setup, file download, log information, maintenance , upgrade and etc	
AUX Interface	Video Output	1-channel analog video output, BNC port, 9-pin port connection	
	Reset	External button	
	IR light	35 LED, IR distance 10 to 20 meters (For HDBW series product only)	
General Parameter	Power	Support AC24V/DC12V power. PoE	
	Power Consumption	General series: below 7W. IR series: below 13W.	General series: below 14W. IR series: below 16W.
	Working Temperature	-20℃~+60℃	
	Working Humidify	≅ 95%	
	Dimensions(m m)	ø160x118.5	
	Weight	1.25g	
	Installation	Support various installation modes (Enclosure and bracket is optional)	

2 Structure

2.1 Multiple-function Combination Cable

You can refer to the following figure for multiple-function combination cable information. See Figure 2-1.

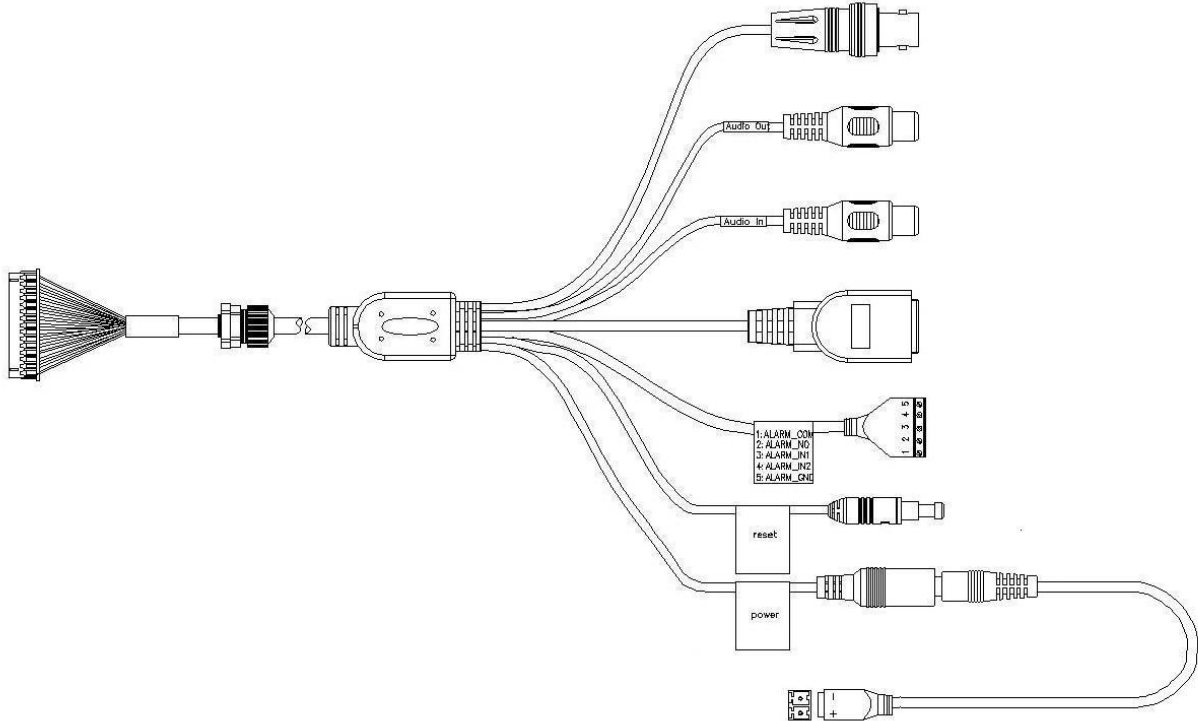


Figure 2-1 Multiple-function combination cable

Please refer to the following sheet for detailed information.

Port Name	Function	Connection	Note
VIDEO OUT	Video output port	BNC	Output analog video signal. It can connect to the TV monitor to view the video.
AUDIO IN	Audio input port	RCA	Input audio signal. It can receive the analog audio signal from the pickup.
AUDIO OUT	Audio output port	RCA	Output audio signal to the devices such as the sound box.
LAN	Network port	Ethernet port	<ul style="list-style-type: none"> ● Connect to standard Ethernet cable. ● Support PoE.
I/O	I/O port	/	Includes alarm input and output.
RESET	Reset button	/	The reset button is to restore device factory default setup.
POWER	Power input port	/	Power port. Input DC 12V or AC 24V power. Please connect the DC5.5 round port to 2-pin converter cable when you are using AC 24V power.

Please refer to the follow sheet for detailed pin information.

Port Name	SN	Name	Note
I/O Port	1	ALARM_COM	Alarm output public port.
	2	ALARM_NO	Alarm output port. It is to output the alarm signal to the alarm device. NO: normal open alarm output port.
	3	ALARM_IN1	Alarm input port 1. It is to receive the on-off signal from the external alarm source.
	4	ALARM_IN2	Alarm input port 2. It is to receive the on-off signal from the external alarm source.
	5	GND	Ground port

2.2 Framework and Dimension

Please refer to the following two figures for dimension information. The unit is mm. See Figure 2-2 and Figure 2-3.

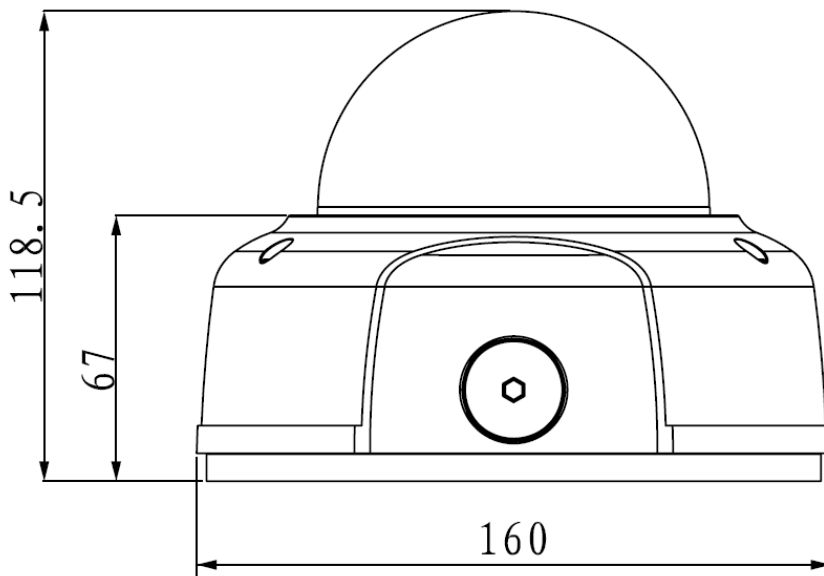


Figure 2-2 Dimension illustration 1

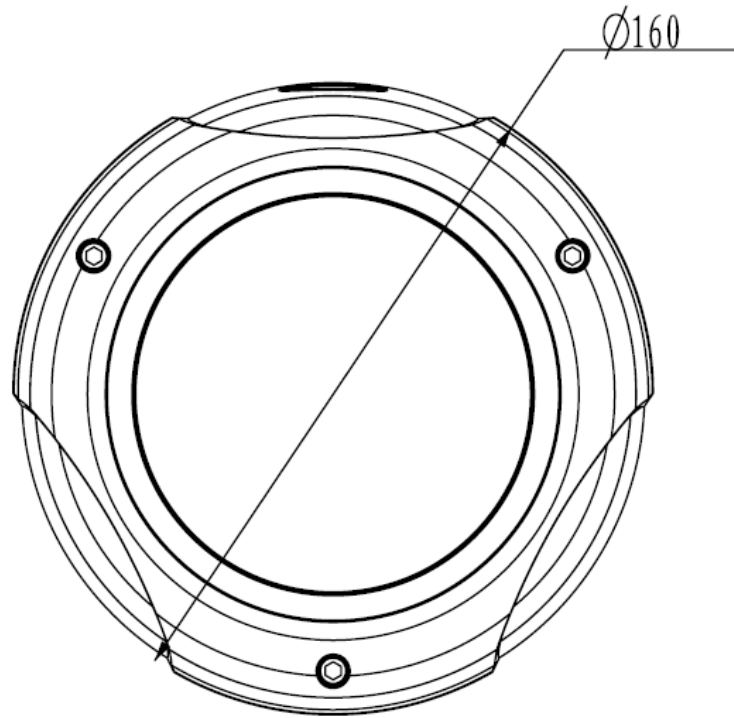


Figure 2-3 Dimension illustration 2

2.3 Bidirectional talk

2.3.1 Device-end to PC-end

Device Connection

Please connect the speaker or the MIC to the audio input port of the device. Then connect the earphone to the audio output port of the PC.

Login the Web and then click the Talk button to enable the bidirectional talk function.

You can see the button becomes orange after you enabled the bidirectional talk function.

Click Talk button again to stop the bidirectional talk function.

Listening Operation

At the device end, speak via the speaker or the pickup, and then you can get the audio from the earphone or sound box at the pc-end.

2.3.2 PC-end to the Device-end

Device Connection

Connect the speaker or the MIC to the audio input port of the PC and then connect the earphone to the audio output port of the device.

Login the Web and then click the Talk button to enable the bidirectional talk function.

You can see the button becomes orange after you enabled the audio talk function.

Click Talk button again to stop the bidirectional talk function.

Please note the on-site listening operation is null during the bidirectional talk process.

Listening Operation

At the PC-end, speak via the speaker or the pickup, and then you can get the audio from the earphone or sound box at the device-end.

2.4 Alarm Setup

The alarm interface is shown as in Figure 2-4. Please follow the steps listed below for local alarm input and output connection.

- 1) Connect the alarm input device to the alarm input port (No.3 pin or No.4 pin) of the I/O cable.
- 2) Connect the alarm output device to the alarm output port (No.2 pin) and alarm output public port (No.1 pin). The alarm output port supports NO (normal open) alarm device only.
- 3) Open the Web, go to the Figure 2-4. Please set the alarm input 01 port for the first channel of the I/O cable (No.3 pin). The alarm input 02 is for the 2nd channel of I/O cable (No.4 pin). Then you can select the corresponding type (NO/NC.)
- 4) Set the WEB alarm output. The alarm output 01 is for the alarm output port of the device. It is the No.2 pin of the I/O cable.

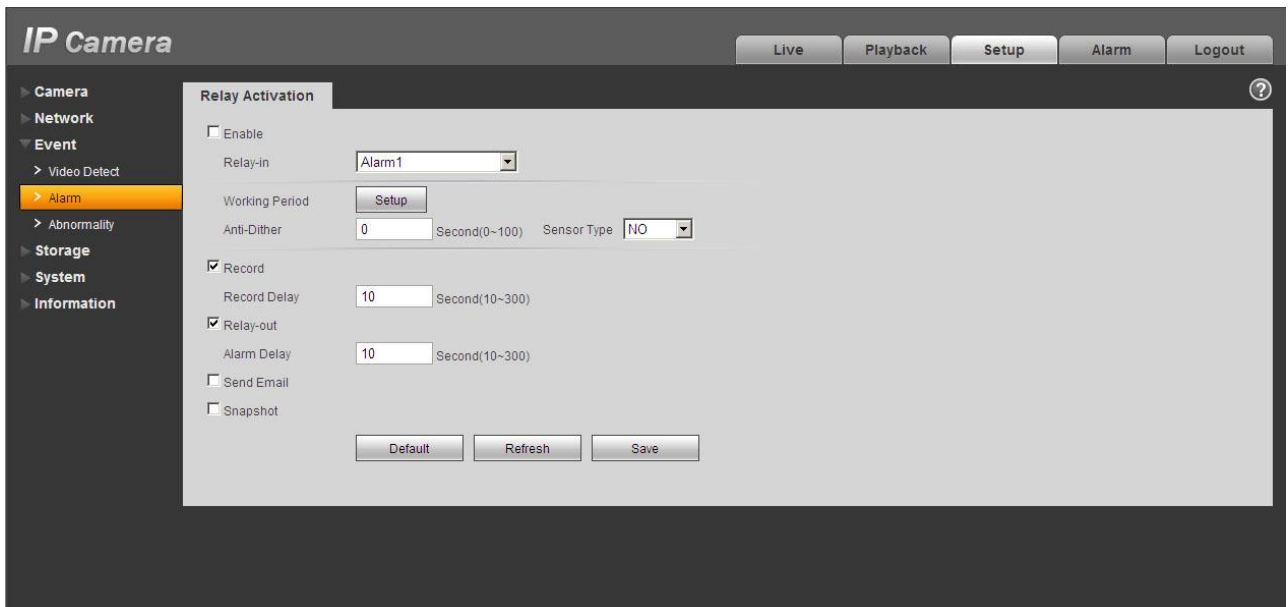


Figure 2-4 Alarm

Please refer to the following figure for alarm input information. See Figure 2-5.

Alarm input: When the input signal is idle or grounded, the device can collect the different statuses of the alarm input port. When the input signal is connected to the 3.3V or is idle, the device collects the logic "1". When the input signal is grounded, the device collects the logic "0".

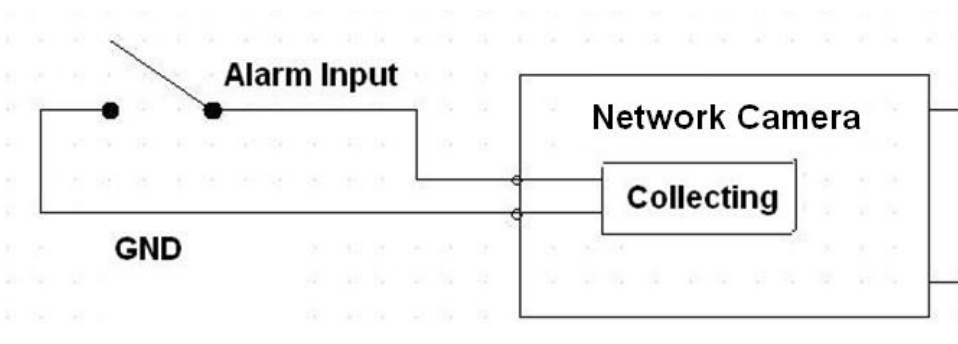


Figure 2-5 Alarm input

Please refer to the following figure for alarm output information. See Figure 2-6.

Port ALARM_C and Port ALARM_NO composes an on-off button to provide the alarm output.
If the type is NO, this button is normal open. The button becomes off when there is an alarm output.

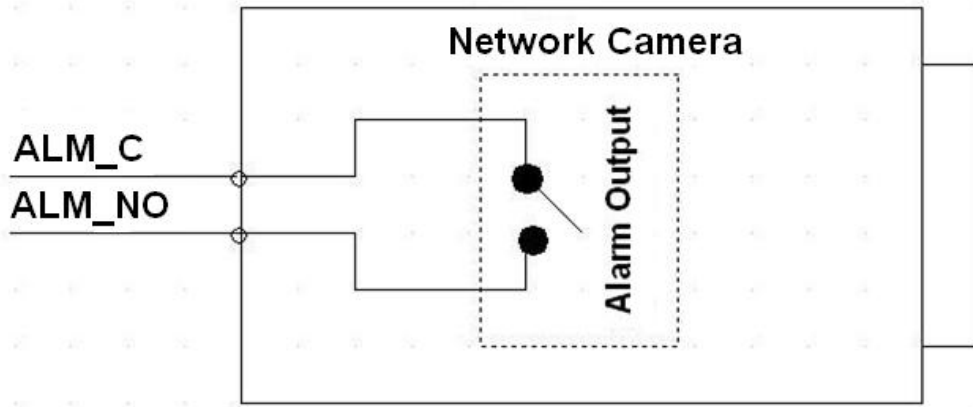


Figure 2-6 Alarm output

3 Installation

Important

- Before you complete the installation and setup, do not remove the electrostatic attraction film on the transparent enclosure. Otherwise it may result in injury.
- After remove electrostatic attraction film, do not touch dome enclosure in case it may leave stain.
- Before the installation, please make sure the installation surface can sustain at least 3X weight of the bracket and the camera.

3.1 Device Installation

Step 1

Use the inner hexagonal wrench (provided) to loose the three inner hexagon screws in the dome cover and then open the cover. The device is shown as in Figure 3-1

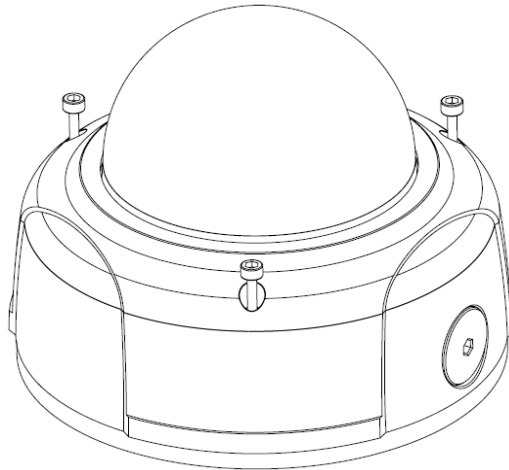


Figure 3-1 Device installation illustration 1

Step 2

Use the inner hexagonal wrench (provided) to loose the three inner hexagon screws in the dome and then remove the device pedestal. See Figure 3-2 .

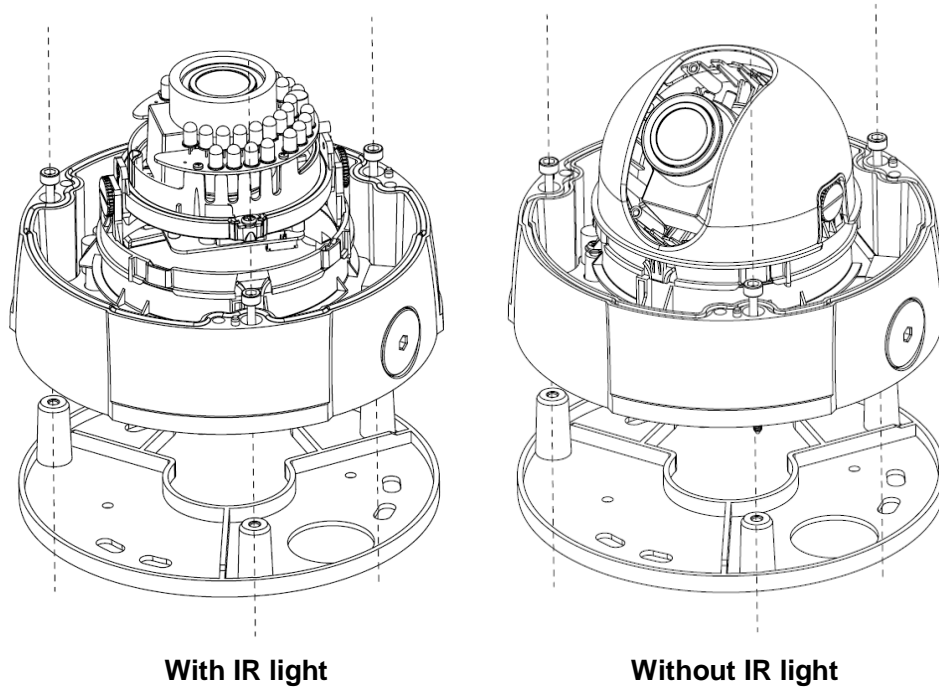


Figure 3-2 Device installation illustration 2

Step 3

Draw out the cable exit and four screw holes in the installation position according to the device pedestal. Dig the four plastic expansion bolt holes and cable exit. Insert the four plastic expansion bolts into the screw holes

Step 4

Adjust the camera pedestal to the proper position and then draw the cable through the cable exit you just dug in the ceiling (wall). Line up the four screw holes in the device pedestal to the four plastic expansion bolt holes in the installation position. Put the four self-tapping screws in the device pedestal and then use the screwdriver to secure the screws in the four plastic expansion bolts firmly.

Step 5

Adjust the device position and line up the three inner hexagon screws of the device to the three holes of the installation position. Put the three inner hexagon screws into the screw holes at the bottom of the pedestal. Use the inner hexagon screwdriver to fix firmly. Connect the GND to the ground wires to improve stability. See Figure 3-3 .

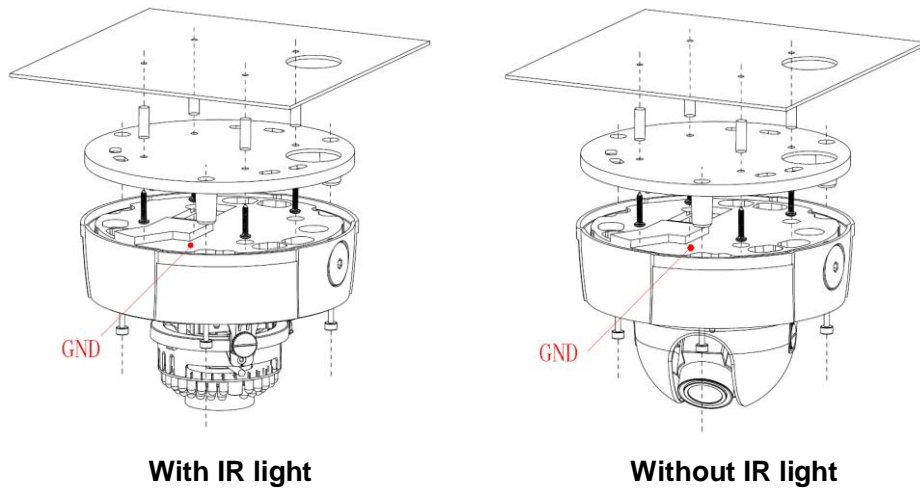


Figure 3-3 Device installation illustration 3

Step 6

Adjust the X-Y-Z axis module to turn the device to the proper monitor angle. Please follow the steps listed below to adjust. See Figure 3-4.

Please note, for the dome of the IR light, you can skip step a) and step e).

- a): Slightly push the two sides to squeeze the plastic hook so that you can take off the dome enclosure.
- b): Slightly loose the screws at the two sides of the X-Y-Z module manually, you can adjust the module tilt rotation angle ($15^{\circ} \sim 90^{\circ}$).
- c): Slightly loose the screw of the pressing slice, you can adjust the video rotation angle of the module ($0^{\circ} \sim 355^{\circ}$).
- d): Adjust the turning ring of the pedestal, you can adjust the module pan rotation angle ($0^{\circ} \sim 355^{\circ}$).
- e): Put the enclosure back after you completed the setup.

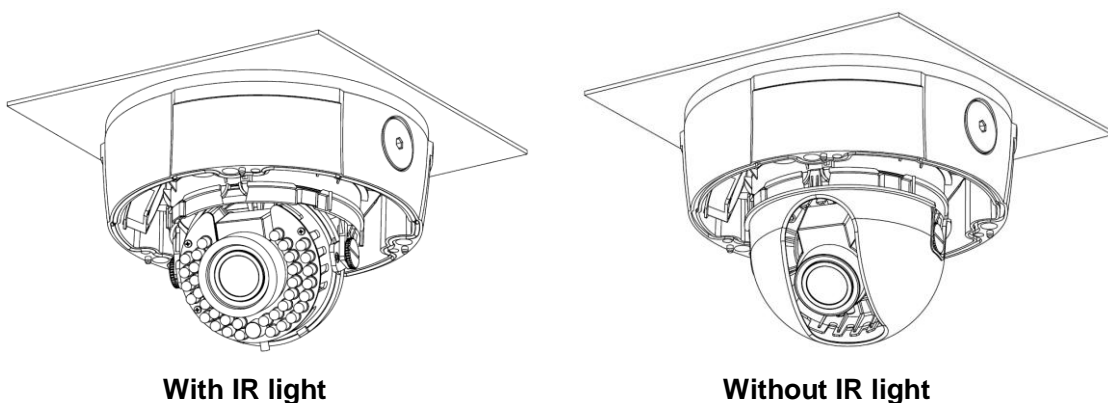


Figure 3-4 Device installation illustration 4

Please note, the screws in the following figure are the optical adjustment component. Please make sure it is outward and do not allow it to touch the X-Y-Z axis module. See Figure 3-5

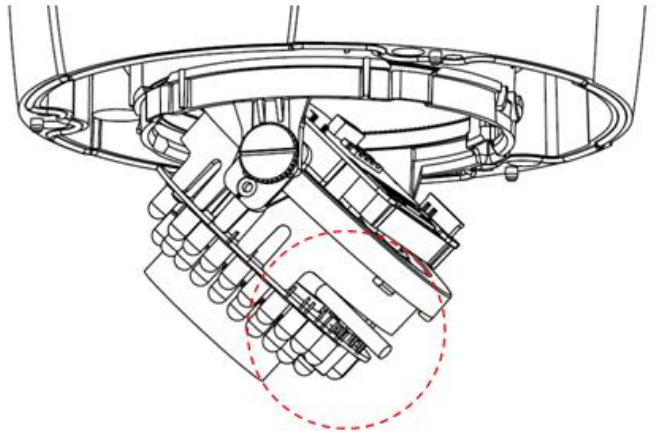


Figure 3-5 Device installation illustration 5

Step 7

Put the dome cover back and then put the three inner hexagon screws into the holes of the device. Use the inner hexagonal wrench to fasten these three screws. See Figure 3-6

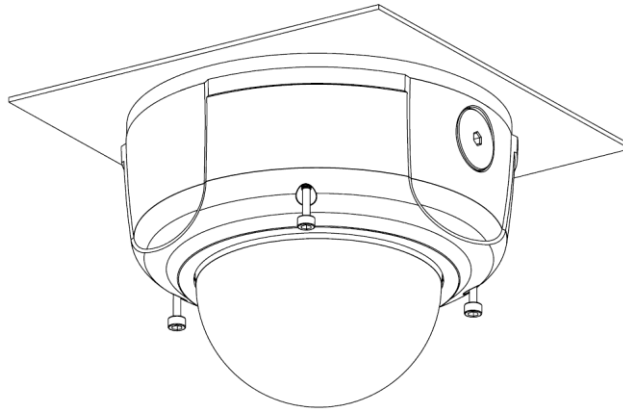


Figure 3-6 Device installation illustration 6

3.2 Micro SD Card Installation

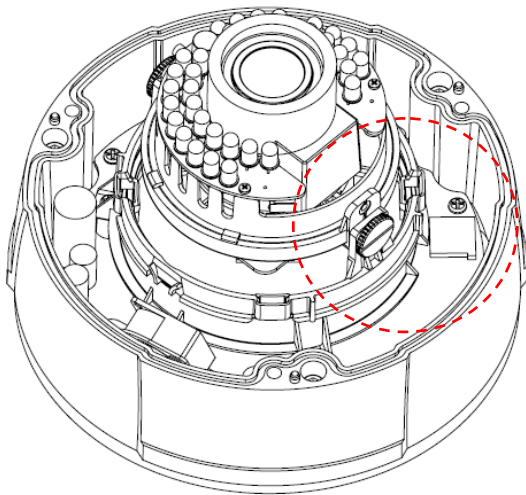
Important

Before you install the Micro SD card, please unplug the power cable to shut down the device!

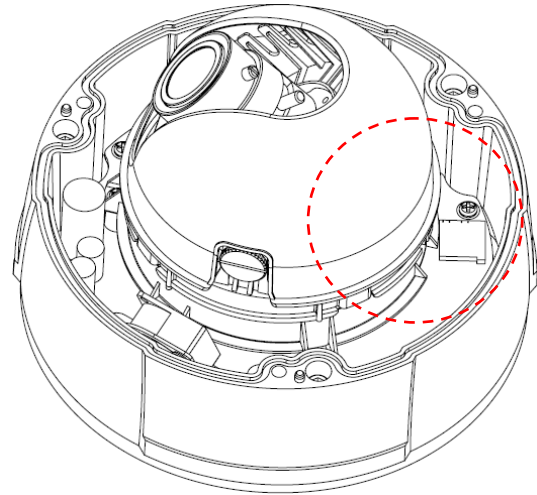
First, please refer to the step 1 in the chapter 3.1 to open the device.

Second, please adjust the proper position to install the Micro SD card.

Last, please refer to the step 7 in the chapter 3.1 to complete the installation. See Figure 3-7.



With IR light



Without IR light

Figure 3-7 Micro SD card installation illustration

3.3 Lens Adjustment

Step 1

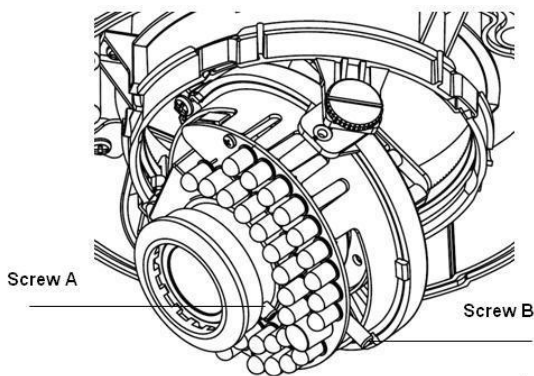
Slightly loose the screw B manually and then turn the screw B slowly. Adjust the lens focus distance to the proper position according to the monitor video. See Figure 3-8.

Step 2

Use the flat screwdriver to loose the screw A slightly and then turn the Screw A slowly. Adjust the lens focus to get the clear video and then use the flat screwdriver to secure the screw firmly.

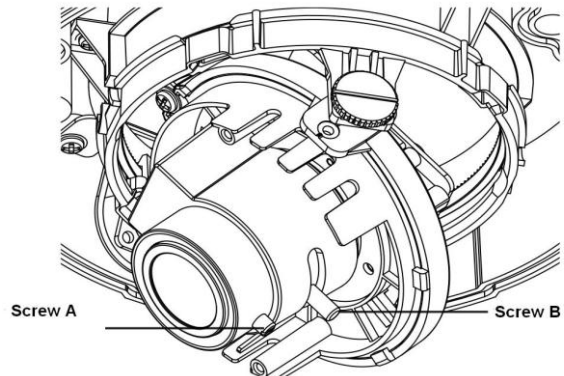
Step 3

When you are adjusting the screw A, the video may becomes blur. Please slightly adjust the screw B manually to get the vivid video. Finally fix the screw.



Screw A: Lens focus. Screw B: Lens zoom.

With IR light



Without IR light

Figure 3-8 Lens adjustment

4 Quick Configuration Tool

4.1 Overview

Quick configuration tool can search current IP address, modify IP address. At the same time, you can use it to upgrade the device.

Please note the tool only applies to the IP addresses in the same segment.

4.2 Operation

Double click the “ConfigTools.exe” icon, you can see an interface is shown as in Figure 4-1.

In the device list interface, you can view device IP address, port number, subnet mask, default gateway, MAC address and etc.

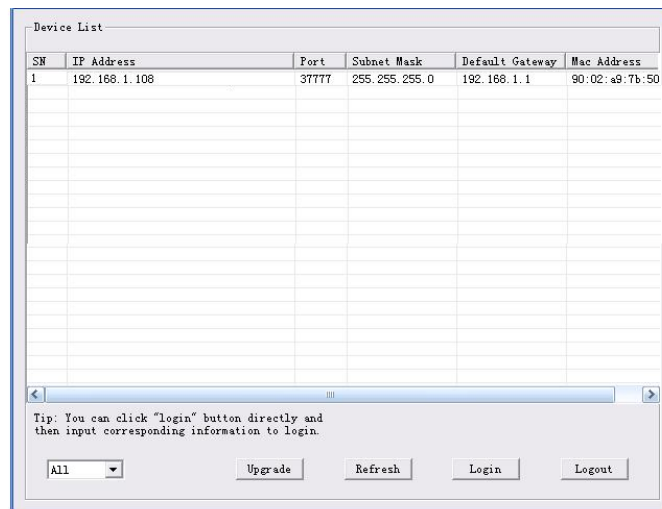


Figure 4-1 Search interface

Select one IP address and then right click mouse, you can see an interface is shown as in Figure 4-2. Select the “Open Device Web” item; you can go to the corresponding web login interface.

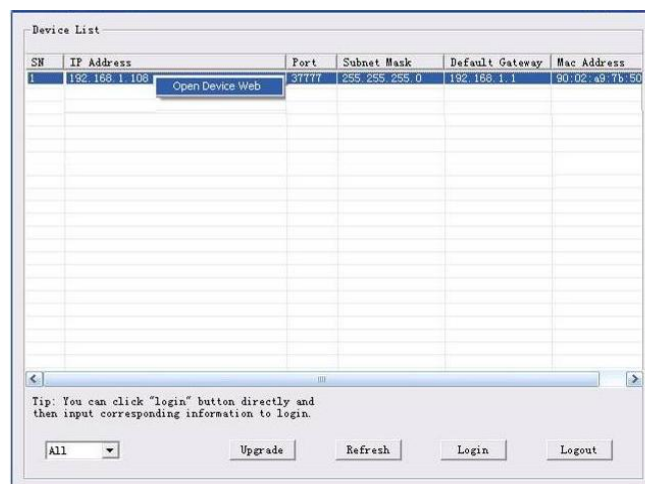


Figure 4-2 Search interface 2

If you want to modify the device IP address without logging in the device web interface, you can go to the configuration tool main interface to set.

In the configuration tool search interface (Figure 4-1), please select a device IP address and then double click it to open the login interface. Or you can select an IP address and then click the Login button to go to the login interface. See Figure 4-3.

In Figure 4-3, you can view device IP address, user name, password and port. Please modify the corresponding information to login.

Please note the port information here shall be identical with the port value you set in TCP port in Web Network interface. Otherwise, you cannot login the device.

If you are using device background upgrade port 3800 to login, other setups are all invalid.

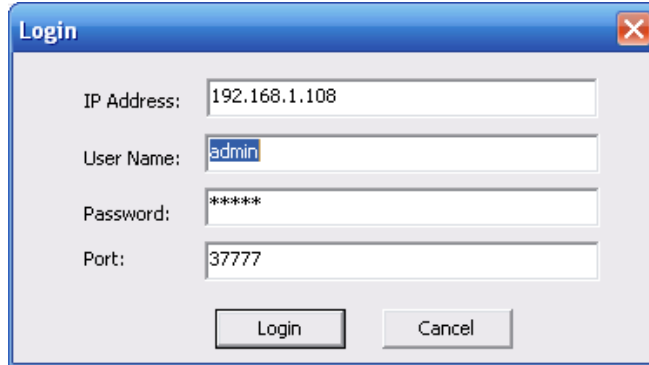
A screenshot of a 'Login' dialog box. It has a blue title bar with the text 'Login' and a close button (X) on the right. The dialog contains four text input fields: 'IP Address' with the value '192.168.1.108', 'User Name' with the value 'admin', 'Password' with the value '*****', and 'Port' with the value '37777'. At the bottom, there are two buttons: 'Login' and 'Cancel'.

Figure 4-3 Login prompt

After you logged in, the configuration tool main interface is shown as below. See Figure 4-4.

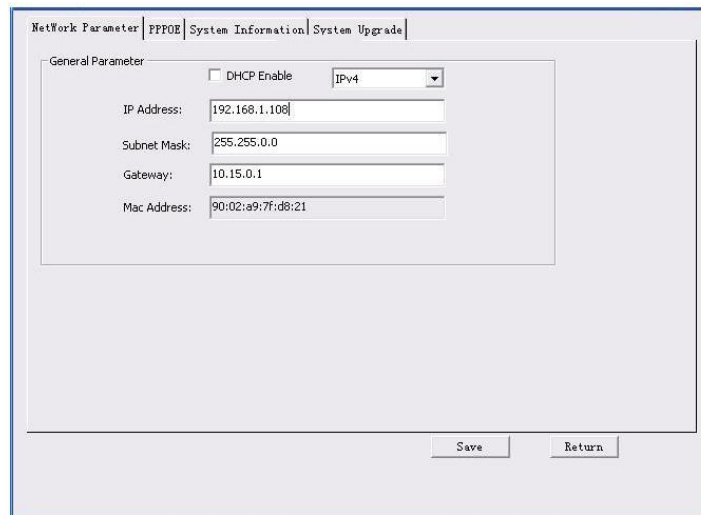
A screenshot of the configuration tool main interface. At the top, there are four tabs: 'Network Parameter', 'PPPOE', 'System Information', and 'System Upgrade'. The 'Network Parameter' tab is selected. Below the tabs, there is a 'General Parameter' section. It contains a checkbox for 'DHCP Enable' which is unchecked, and a dropdown menu for 'IPV4' showing 'IPv4'. Below these are five text input fields: 'IP Address' (192.168.1.108), 'Subnet Mask' (255.255.0.0), 'Gateway' (10.15.0.1), and 'Mac Address' (90:02:a9:7f:d8:21). At the bottom right, there are two buttons: 'Save' and 'Return'.

Figure 4-4 Main interface

For detailed information and operation instruction of the quick configuration tool, please refer to the *Quick Configuration Tool User's Manual* included in the resources CD.

5 Web Operation

This series network camera products support the Web access and management via PC. Web includes several modules: Monitor channel preview, system configuration, alarm and etc.

5.1 Network Connection

Please follow the steps listed below for network connection.

- Make sure the network camera has connected to the network properly.
- Please set the IP address, subnet mask and gateway of the PC and the network camera respectively. Network camera default IP address is 192.168.1.108. Subnet mask is 255.255.255.0. Gateway is 192.168.1.1
- Use order ping `***.***.***.***(* network camera address)` to check connection is OK or not.

5.2 Login and Main Interface

Open IE and input network camera address in the address bar. See Figure 5- 1.

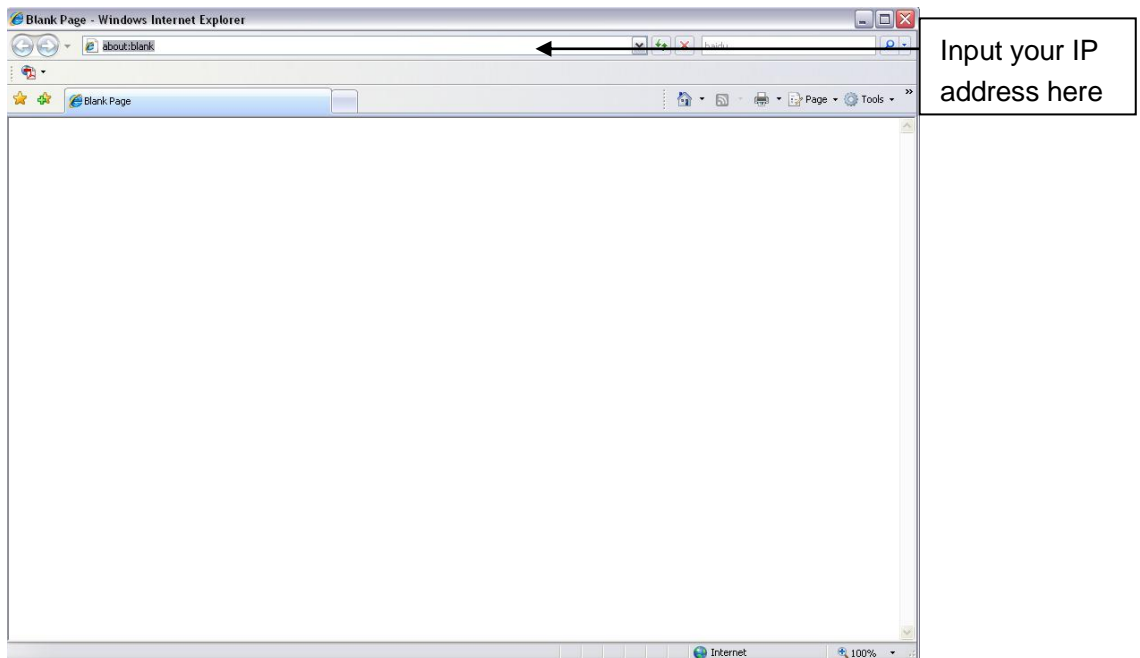


Figure 5- 1 IP address

The login interface is shown as below. See Figure 5- 2.

Please input your user name and password.

Default factory name is admin and password is admin.

Note: For security reasons, please modify your password after you first login.



Figure 5- 2 Web login

If it is your first time to log in, system pops up warning information to ask you whether install web plug-in or not after you logged in for one minute. For detailed plug-in installation, please refer to the Web Operation Manual included in the resource CD.

After you logged in, you can see the main window. See Figure 5- 3.

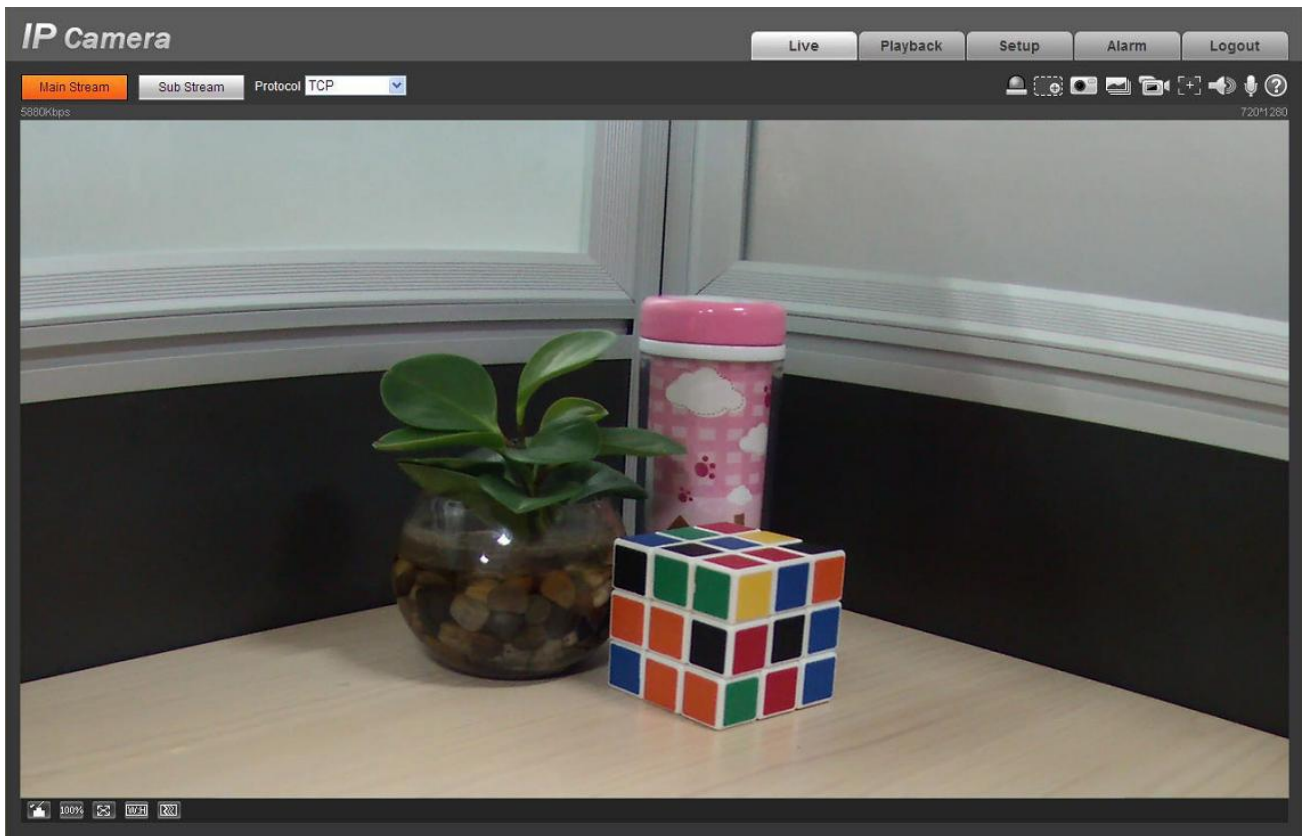


Figure 5- 3 Web monitoring window

Please refer to the Web Operation Manual included in the resource CD for detailed operation instruction.

6 FAQ

Bug	
I can not boot up the device.	Please click RESET button for at least five seconds to restore factory default setup.
Micro SD card write times	Do not set the Micro SD card as the storage media to storage the schedule record file. It may damage the Micro SD card duration.
I can not use the disk as the storage media.	When disk information is shown as hibernation or capacity is 0, please format it first (Via Web).
I can not upgrade the device via network.	When network upgrade operation failed, you can use port 3800 to continue upgrade.
Recommended Micro SD card brand	Kingston 4GB, Kingston 1GB, Kingston 16GB, Transcend 16GB, SanDisk 1G, SanDisk 4G. Usually we recommend the 4GB (or higher) or industry-level high speed card in case the slow speed results in data loss.
Audio function	Please use active device for the audio monitor input, otherwise there is no audio in the client-end.
The lightproof ring of the IR device	The lightproof ring of the IR device lens is the necessary component when it works. You can not view the clear video when the IR light is on if you remove the lightproof ring.

Appendix Toxic or Hazardous Materials or Elements

Component Name	Toxic or Hazardous Materials or Elements					
	Pb	Hg	Cd	Cr VI	PBB	PBDE
Circuit Board Component	○	○	○	○	○	○
Device Construction Material	○	○	○	○	○	○
Wire and Cable	○	○	○	○	○	○
Packing Components	○	○	○	○	○	○
Accessories	○	○	○	○	○	○

O: Indicates that the concentration of the hazardous substance in all homogeneous materials in the parts is below the relevant threshold of the SJ/T11363-2006 standard.

X: Indicates that the concentration of the hazardous substance of at least one of all homogeneous materials in the parts is above the relevant threshold of the SJ/T11363-2006 standard. During the environmental-friendly use period (EFUP) period, the toxic or hazardous substance or elements contained in products will not leak or mutate so that the use of these (substances or elements) will not result in any severe environmental pollution, any bodily injury or damage to any assets. The consumer is not authorized to process such kind of substances or elements, please return to the corresponding local authorities to process according to your local government statutes.

Note

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