HD Vandal Proof IP Dome Camera User's Manual

Version 1.1

Welcome

Thank you for purchasing our IP 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.
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 IP 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.

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.

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
IPC Unit	1
MD9M data converter cable	1
Accessories bag	1
Quick Start Guide	1
CD	1

Table of Contents

1 General Introduction

1.1 Overview

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

This series IPC 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 IPC is widely used in many environments such office, bank, road monitor and etc.

1.2 Features

User Management	● Different user rights for each group, one user belongs to one group. ● The user right shall not exceed the group right.
Storage Function	● 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 SD card. ● Support local SD card hot swap, support short-time storage when encounter disconnection.
Alarm Function	● Real-time respond to external local alarm input, and video detect(within 200MS) 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, video loss.
Network Monitor	● IPC supports one-channel audio/video data transmit to network terminal and then decode. Delay is within 350ms (network bandwidth support needed) ● Max supports 10 connections. ● Adopt the following audio and video transmission protocol: HTTP, TCP, UDP, MULTICAST and RTP/RTCP and etc. ● Support web access, widely used in WAN.
Network Management	● Realize IPC configuration and management via Ethernet. ● Support device management via web or client-end.
Peripheral Equipment	● Support peripheral equipment management, each peripheral equipment control protocol and interface can be set freely. ● Support serial port (RS232/RS485) transparent data transmission.
Power	● External power adapter DC12V/AC 24V and PoE.
Assistant Function	● Log function ● Support PAL/NTSC ● Support system resource information and running status real-time display.

	● Day/Night mode auto switch (ICR switch). ● Built-in IR light. Support IR night vision (**For HDBW3300P/N 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.

1.3 Specifications

1.3.1 Performance

Please refer to the following sheet for IPC performance specification.

Model / Parameter		HDB/HDBW3300P/N
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	SD card status, bit stream statistics, log, and software version.
Video Parameter	Image Sensor	1/2.8-inch CMOS
	Pixel	2048（H）*1536（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
	Exposure Mode	Manual/Auto（It ranges from 1/50 to 1/10000）
	Video Compression Standard	H.264/JPEG
	Video Frame Rate	PAL: Main stream（2048*1536@15fps），extra stream,（D1@12fps） Main stream（1920*1080@25fps），extra stream（D1@25fps） NTSC: Main stream（2048*1536@15fps），extra stream（D1@12fps） Main stream（1920*1080@30fps），extra stream（D1@15fps）
	Video Bit Rate	Main stream: 56kbps~8192kbps. Extra stream: 14kbps~4096kbps. Support customized setup.
	Video Flip	Does not support mirror. Support flip function.
	Video Quality	1~6 level（The 6th level has the highest quality）
	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, video loss, motion detect, privacy mask.
	Lens	4.5~10mm@F1.6
	Lens Interface	C/CS, lens is the default accessories
Au	Audio Input	1-channel，RCA audio input.
	Audio Output	1-channel, RCA, audio output.

Audio	**Bidirectional Talk Input**	Reuse the first audio input channel
	Audio Bit Rate	8kbps 16BIT
	Audio Compression Standard	G.711a/G.711u/PCM
Video	**Motion Detect**	396 (18*22) detection zones；sensitivity level ranges from 1 to 6 (The 6th level has the highest sensitivity) Activation event, alarm device, audio/video storage, image snapshot, log, email SMTP function and etc.
	Video Loss	Activation event, alarm device, audio/video storage, image snapshot, log, email SMTP function and etc.
Alarm Input		2-channel input，1-channel output（on-off ）
Record and Backup	**Record Priority**	Manual>Alarm >Motion detect>Schedule
	Record Search Mode	Support local data search via time/date, event type(alarm, motion detect, external alarm) and file type (record/image)
	Local Storage	Support Micro SD card hot swap
	Storage Management	Support display local storage status
Network	**Wire Network**	1-channel wire Ethernet port, 10/100 Base-T Ethernet
	Network Protocol	Standard HTTP,TCP/IP,ICMP.RTSP,RTP,UDP,RTCP,SMTP,FTP,DHCP,DNS,DDNS,PPPOE.
	Remote Operation	Monitor, PTZ control, playback, 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	9-pin port connection
	IR light	35 LED, IR distance 10 to 20 meters (For HDBW series product only)
	RS485 port	PTZ control interface. Support various protocols.
General Parameter	**Power**	Support AC24V/DC12V power. PoE
	Power Consumption	7W MAX
	Working Temperature	-10℃~+55℃
	Working Humidify	10%~90%
	Dimensions	¢160x118.5
	Weight	1.25g
	Installation	Support various installation modes（Enclosure and bracket is optional）

1.3.2 Factory Default Setup

Please refer to the following sheet for factory default setup information.

Function Configuration Type	**Item Name**	**Default setup**	
		HDB/HDBW3300P Series	**HDB/HDBW3300N Series**
General Setup	Date format	Y-M-D	
	DST	Disable by default	
	Date separator	‘_’	
	Time format	24H	
	Language	Simplified Chinese	
	When HDD is full	Overwrite	
	Record duration	8M	

		Device No.		8
		Video type		PAL
Encode Setup	Main Stream	Channel		Channel01
		Encode mode		H.264
		Audio/Video enable		Enable audio and video
		General bit stream		General bit stream
		Resolution		1080P
		Frame rate	25	30
		Bit stream control		CBR
		Quality		Good
		Bit stream value		8192
		I frame interval control	50	60
	Extra Stream	Extension Stream		General bit stream
		Audio/Video enable		Disable
		Resolution		D1
		Frame rate	25	30
		Bit stream control		CBR
		Quality		Good
		Bit stream value		2048
		I frame interval control	50	60
		Image Color		Brightness:50 Contrast:50 Sautratioon:50 Hue:50 Gain:80.Disable
		Watermark		Enable Watermark: all Watermark type: character Watermark: DigitalCCTV
		Privacy Mask		Never
		Time title		Enable.
		Channel title		Enable.
Record Setup		Channel		Ch01
		Pre-record		1 second.
		Time Setup	Start Time	0:00:00
			End Time	23:59:59
			Record	Period 1:Enable motion detection/alarm
			Snapshot	Period 1: Enable motion detection/alarm
COM Setup		Option		COM01
		Function		General
		Data bit		8
		Stop bit		1
		Baud rate		115200
		Parity		None
Network Setup		Ethernet		Port 01
		DHCP		Disable
		IP address		192.168.1.108
		Subnet mask		255.255.0.0
		Gateway		192.168.0.1
		Device name		Device factory default name
		TCP port		37777
		HTTP port		80
		UDP port		37778
		Network user connection amount		4

	DNS		8.8.8.8
	Alternative DNS		8.8.8.8
	Advanced	Network transmission QoS	Disable
		Remote host	Multiple broadcast group
		Enable	Disable
		IP address	239.255.42.42
		Port	36666
	Email setup		Enable
	Multiple DDNs		Disable
	NAS setup		Disable
	NTP setup		Disable
	Alarm server		Disable
Alarm Setup	Event type		Local alarm
	Alarm input		Input 01.
	Type		Normal open
	Setup		Period: Start time 0:00:00 End time:23:59:59 Period 1:enable
	Anti-dither		0 second
	Alarm output		Disable
	Alarm latch		10 seconds
	Record channel		1, enable
	Record latch		10 seconds
	Send email		Disable
	PTZ activation		Disable Event type: never Address: 0
	Snapshoot		Disable
Video Detection	Event type		Motion detection
	Channel		Ch01, Disable
	Sensitivity		3
	Time period setup		Period: Start time 0:00:00 End time:23:59:59 Period 1:enable
	Anti-dither		5 seconds
	Alarm output		Disable
	Alarm latch		10 seconds
	Record channel		Disable
	Record latch		10 seconds
	Send email		Disable
	PTZ activation		Event type: Never Address: 0 Disable
	Snapshot		Disable
PTZ Setup	Channel		Ch01
	Protocol		DH-SD1
	Address		1
	Baud rate		115200
	Data bit		8
	Stop bit		1
	Parity		None

Default and Backup	All		Disable
	General		Disable
	Encode		Disable
	Record		Disable
	COM		Disable
	Network		Disable
	Alarm		Disable
	Video detection		Disable
	Display output		Disable
	Channel No.		Disable
Advanced	Record control		Auto. Ch1 (This series device **does not** support this function.)
	Abnormity	Even Type	No HDD, Disable
		Alarm Output	Disable
		Alarm Latch	10 seconds
		Send email	Disable
	Alarm I/O		Alarm output
	Record Control		Auto: Ch1 (This series device **does not** support this function.)
	User account		admin--- password: admin (reusable) 888888--- password: 888888(reusable) 666666--- password: 666666(reusable)
	Snapshot	Channel	Ch01
		Snapshot mode	Scheduled
		Frame rate	1f/s
		Resolution	1080P
		Quality	80%
	Auto maintain	Auto reboot	2.00 each day
		Auto delete old files	Never
Additional		Enable	Disable
		SN	1
		IP	0.0.0.0
		Port	7000
		Device ID	None
		Channel	1
		Exposure mode	Auto
		BLC	Disable (This series device **does not** support this function.)
		Day/Night mode	Auto
		Signal Type	INT
		Mirror	N/A
		Flip	Disable
		Auto Aperture	Enable
		Scene mode	Auto
	Talk Encode	Talk Encode	G.711A

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

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.
12V DC/AC24V	Power input port	/	Power port. Input DC 12V/AC 24V
I/O	I/O cable port	/	Connect to I/O port cable.
LAN	Network port	Ethernet port	● Connect to standard Ethernet cable. ● Support PoE.

Please refer to the follow sheet for detailed information of MD9M data converter cable.

Port Name	Cable Color	Name	Note
I/O Port Pin	Yellow	RS485_A	RS485_A port. It is to control the PTZ.
	Black	RS485_B	RS485_B port. It is to control the PTZ.
	Red	ALARM_COM	Alarm output public port.
	Brown	ALARM_IN1	Alarm input port 1. It is to receive the on-off signal from the external alarm source.
	Grey	ALARM_IN2	Alarm input port 2. It is to receive the on-off signal from the external alarm source.

Port Name	Cable Color	Name	Note
	White	ALARM_NO	Alarm output port. It is to output the alarm signal to the alarm device. NO: normal open alarm output port. It works with the ALARM_COM port.
	Blue	RESET	It is to restore factory default setup. When the device is working properly, please connect the blue cable (restore default setup port) to the orange cable (GND signal) for 5 seconds, the device can resume factory default setup.
	Orange	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.

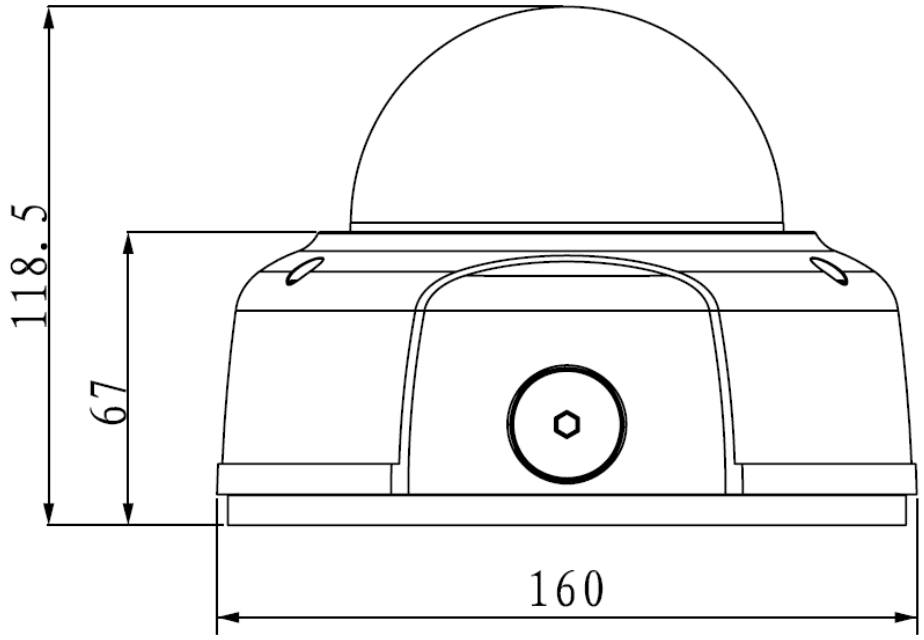


Figure 2-2

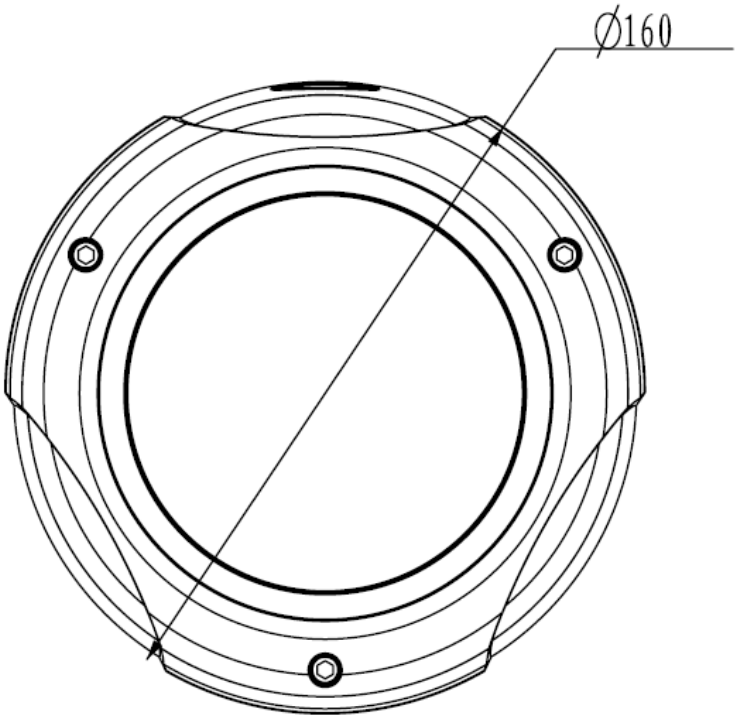


Figure 2-3

2.3 Bidirectional talk

2.3.1 Device-end to PC-end

Device Connection

Please connect the speaker or the pickup to the first audio input port in the device rear panel. Then connect the earphone or the sound box to the audio output port in the PC.

Login the Web and then enable the corresponding channel real-time monitor.

Please refer to the following interface to enable bidirectional talk.

Figure 2-4

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 pickup to the audio output port in the PC and then connect the earphone or the sound box to the first audio input port in the device rear panel.
Login the Web and then enable the corresponding channel real-time monitor.
Please refer to the above interface (Figure 2-4) to enable bidirectional talk.

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 2-5. Please follow the steps listed below for local alarm input and output connection.

1) Connect the alarm input device to the alarm input port (grey or brown pin of I/O port cable).

2) Connect the alarm output device to the alarm output port (White-pin) and alarm output public port (Red-pin). The alarm output port supports NO (normal open) alarm device only.

3) Open the Web, go to the Figure 2-5. Please set the alarm input 01 port for the brown-pin (the 1st channel) of I/O port cable. The alarm input 02 is for the grey-pin (the 2nd channel) of I/O port cable. Then you can select the corresponding type (NO/NC.)

4) Set the WEB alarm output. The alarm output port of the alarm output 01 device (The white-pin of the I/O port cable).

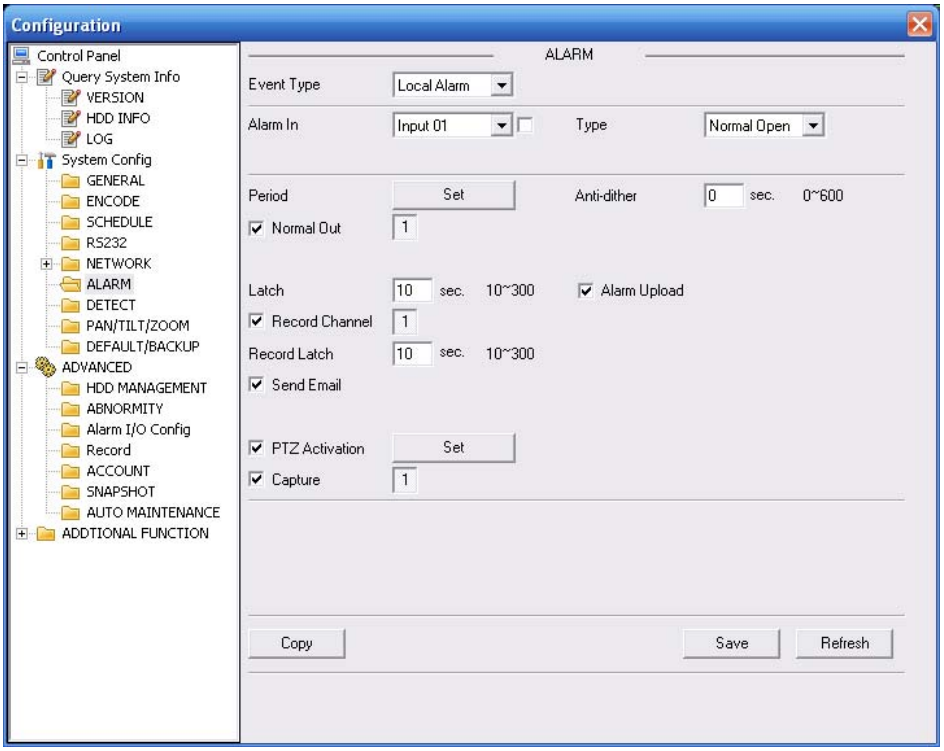


Figure 2-5

3 Installation

This series IPC can be put on the table to realize surveillance. Or you can use the bracket or the in-ceiling installation to realize the hang function. Please refer to the steps listed below.
The device is shown as in Figure 3-1.

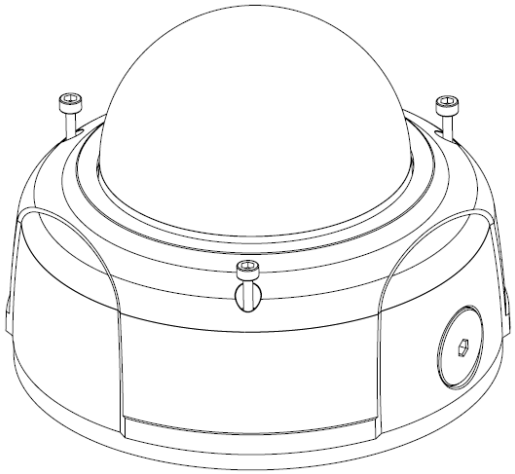
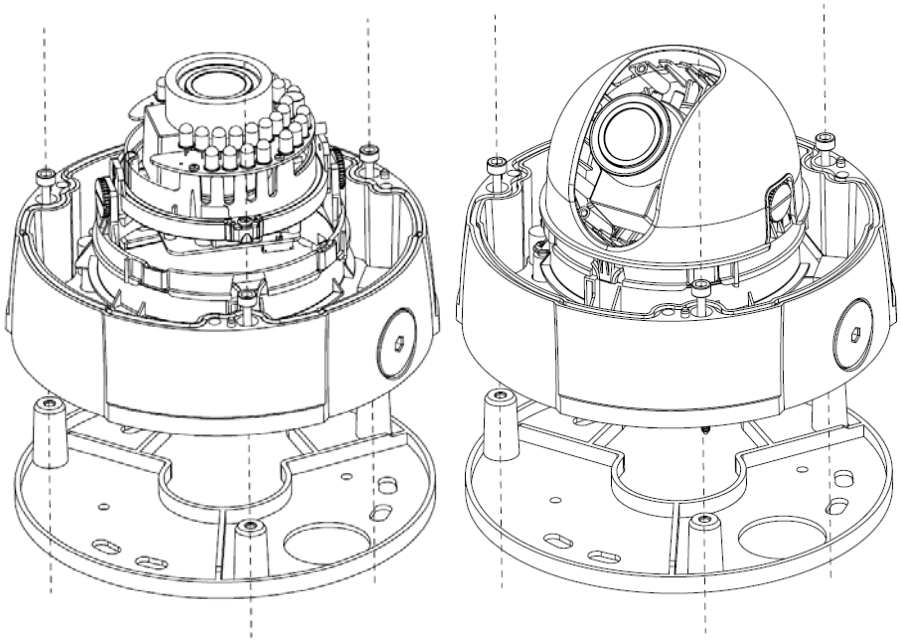


Figure 3-1

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. See Figure 3-2.

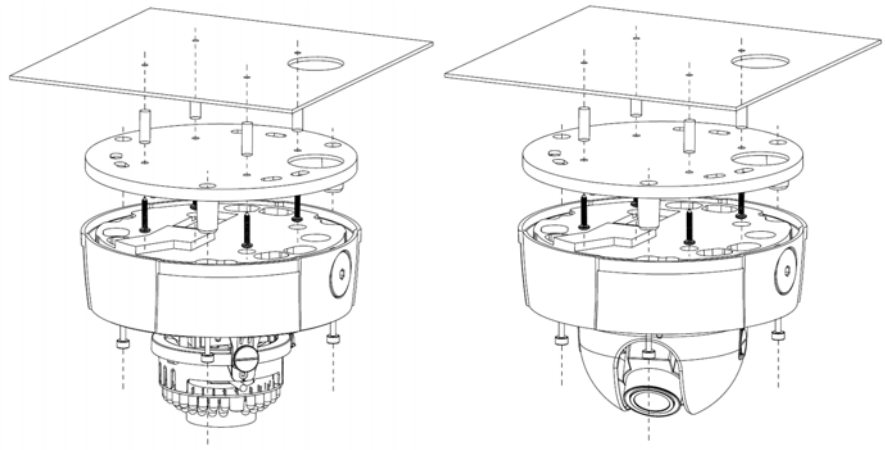


With IR light **Without IR light**

Figure 3-2

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 3-3.



With IR light **Without IR light**

Figure 3-3

Step 3

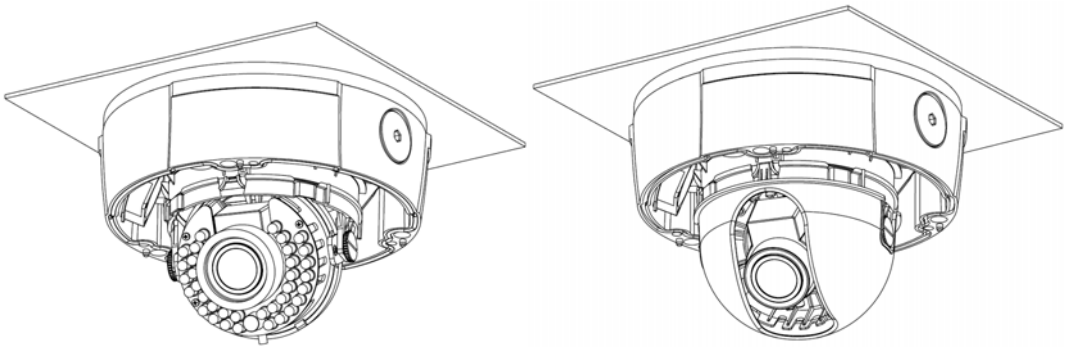
Draw out the cable exit and four screw holes in the installation position according to the device pedestal. Dig the four plastic expansion bolt holes and cable exit. Insert the four plastic expansion bolts into the screw holes

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. See Figure 3-4.



With IR light **Without IR light**

Figure 3-4

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.

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° ～90°).
- c):Slightly loose the screw of the pressing slice, you can adjust the video rotation angle of the module (0° ～355°)
- d):Adjust the turning ring of the pedestal, you can adjust the module pan rotation angle (0° ～355°).
- e): Put the enclose back after you completed the setup.

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

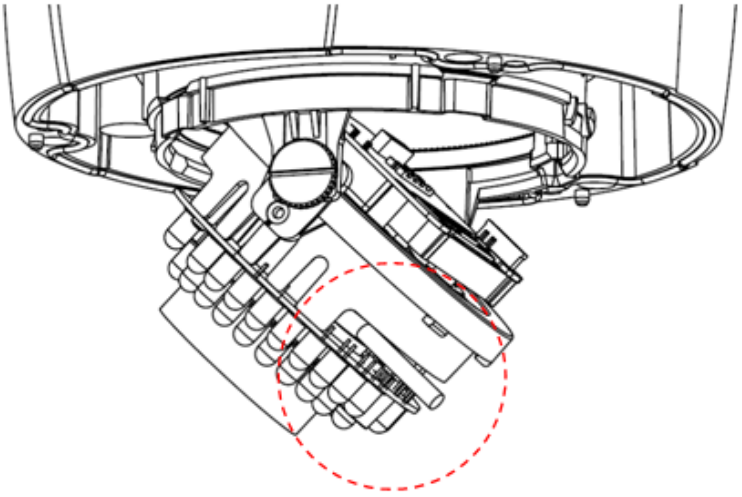


Figure 3-5

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

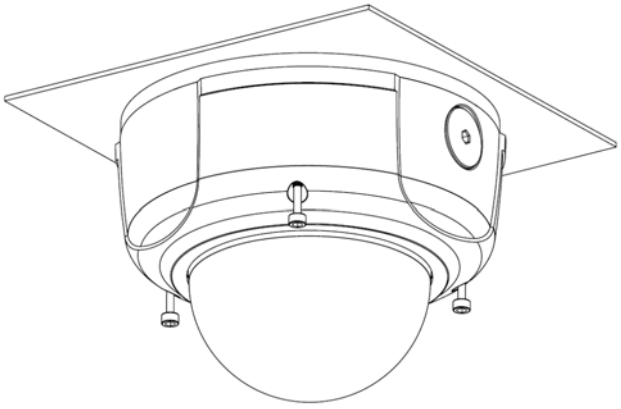


Figure 3-6

3.2 SD Card Installation

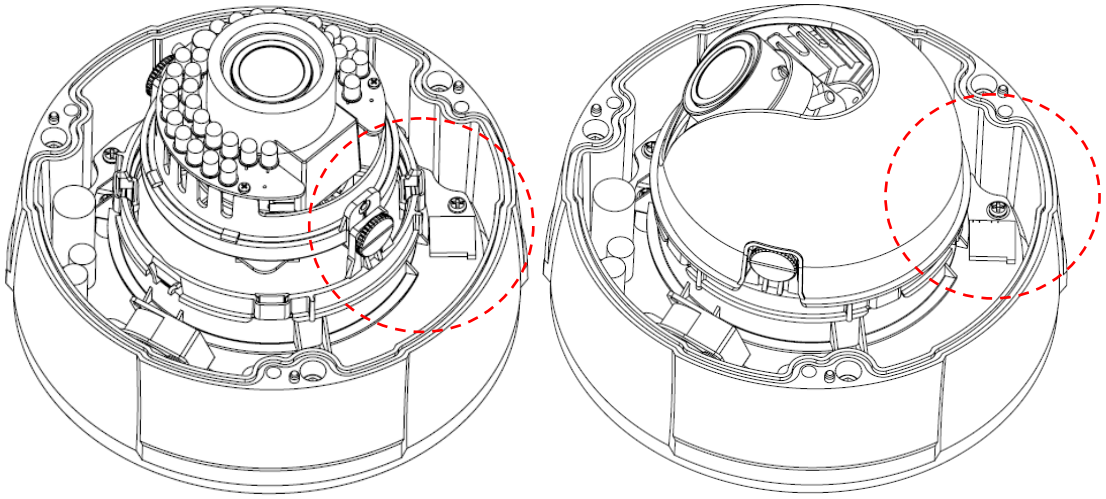
Important

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

First, please refer to the step1 in the chapter 3.1 to open the device.

Second, please adjust the proper position to install the 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

3.3 Lens Adjustment

Step 1

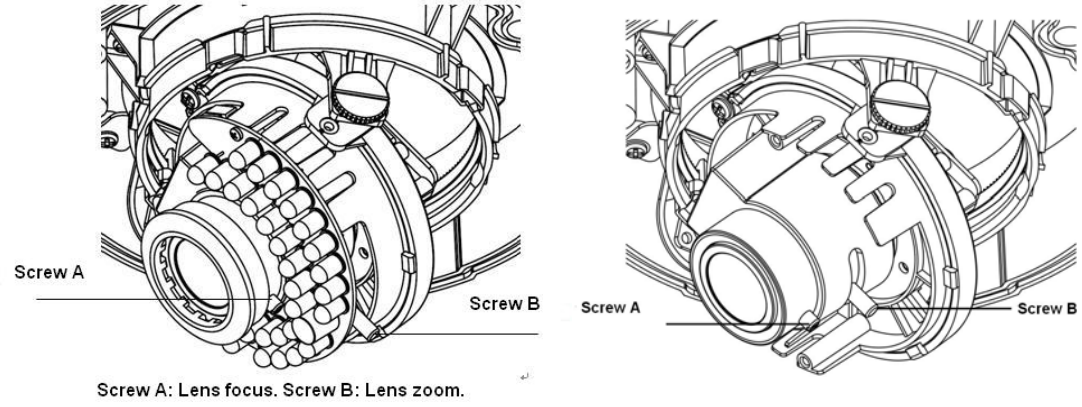
Slightly loose the screw B manually and then turn the screw B slowly. Adjust the lens focus distance to the proper position according to the monitor video. See Figure 3-8.

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.



With IR light **Without IR light**

Figure 3-8

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.

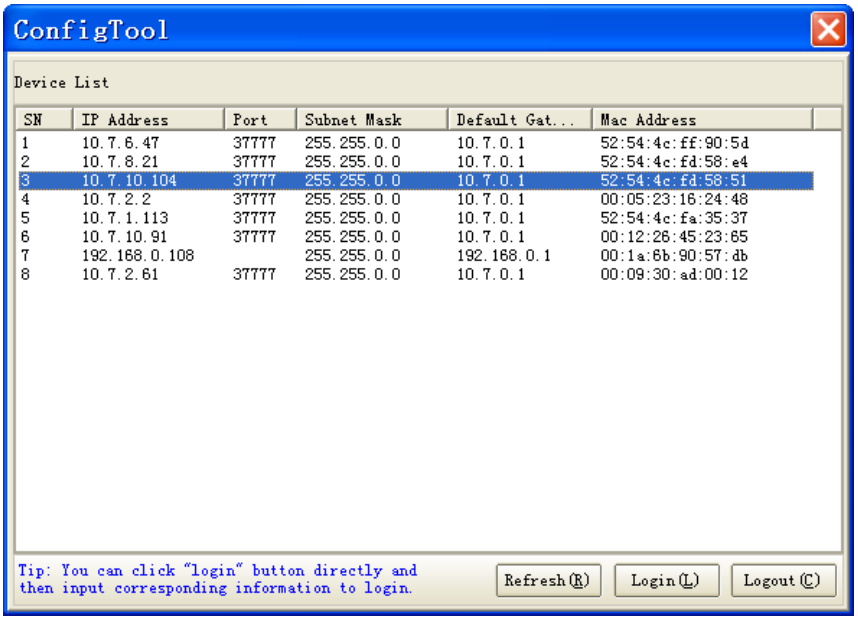


Figure 4-1

Select one IP address and then right click mouse, you can see an interface is shown as in Figure 4-2.

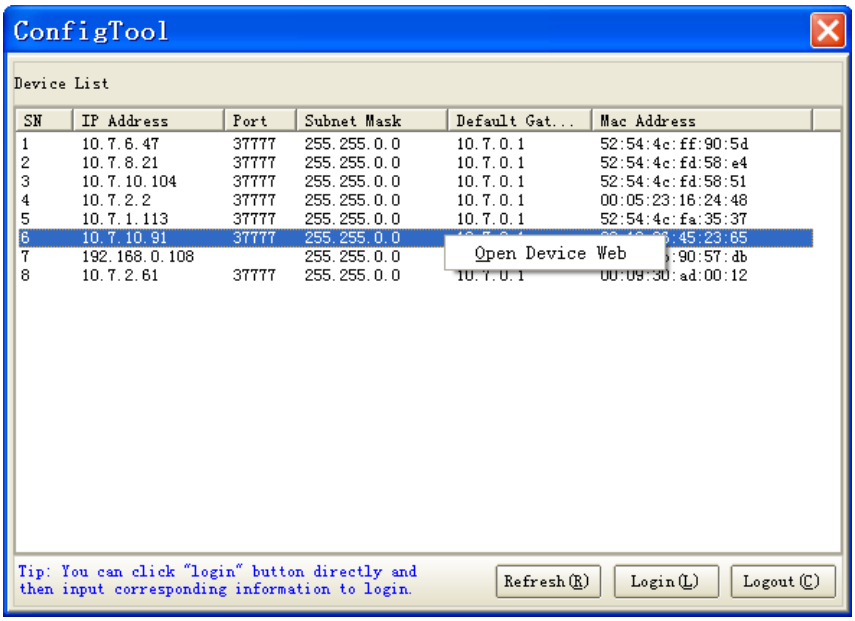


Figure 4-2

Select the “Open Device Web” item; you can go to the corresponding web login interface. See Figure 4-3.

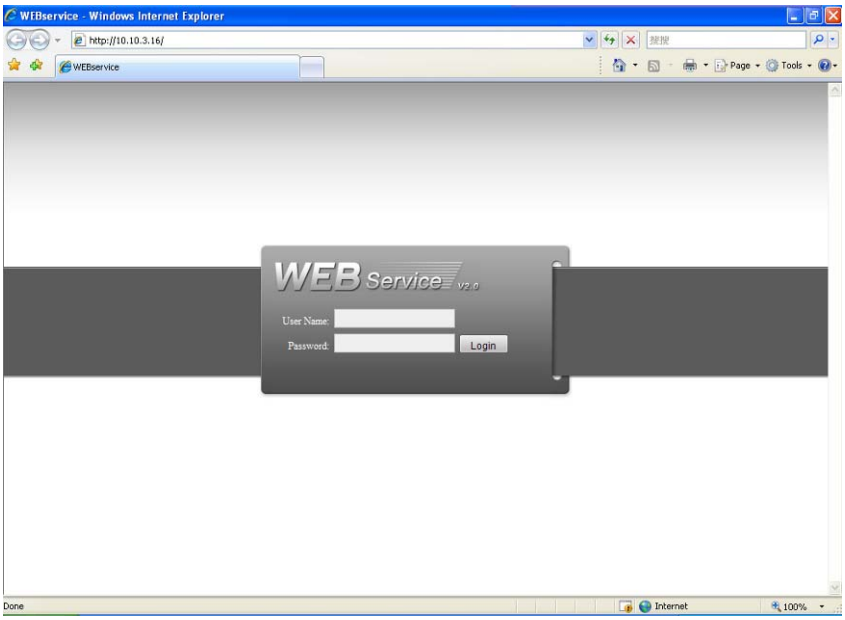


Figure 4-3

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 4-4.

In Figure 4-4, 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 can not login the device.

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

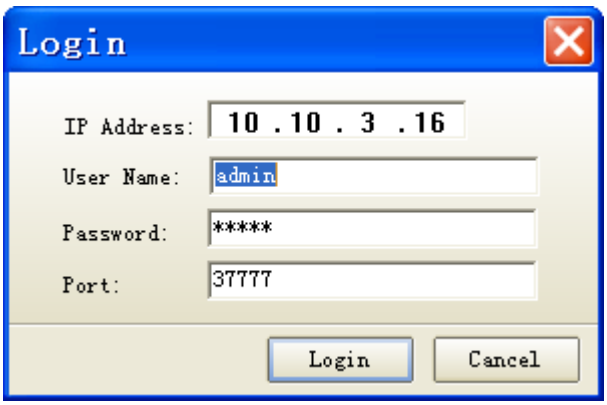


Figure 4-4

After you logged in, the configuration tool main interface is shown as below. See Figure 4-5.

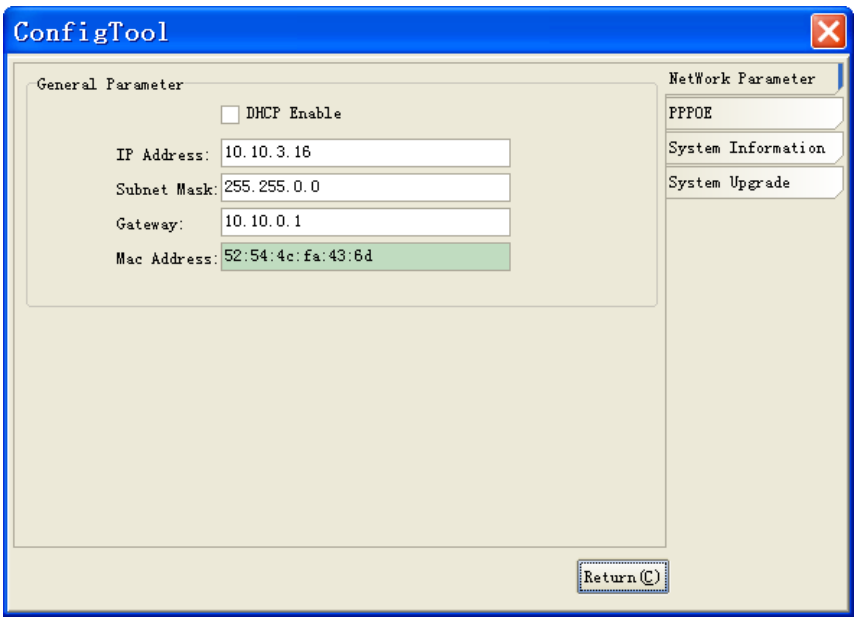

ConfigTool
General Parameter
DHCP Enable
IP Address: 10.10.3.16
Subnet Mask: 255.255.0.0
Gateway: 10.10.0.1
Mac Address: 52:54:4c:fa:43:6d
NetWork Parameter
PPPOE
System Information
System Upgrade
Return(C)

Figure 4-5

5 Web Operation

This series IPC product support the Web access and management via PC.
Web includes several modules includes monitor channel list, record search, alarm setup, system configuration, PTZ control, monitor window and etc.
IP camera factory default setup:

- IP address: 192.168.1.108.
- User name: admin
- Password: admin

5.1 Network Connection

Please follow the steps listed below for network connection.

- Make sure the IPC has connected to the network properly.
- IPC IP address and PC IP address shall be in the same network segment. IPC default IP address is 192.168.1.108. If there is router, please set the corresponding gateway and subnet mask.
- Use order ping ***.***.***.***(* IP camera address) to check connection is OK or not.

5.2 Login and Main Interface

Open IE and input IP camera address in the address bar.
For example, if your camera IP is 192.168.1.108, then please input http:// 192.168.1.108 in IE address bar. See Figure 5-1.

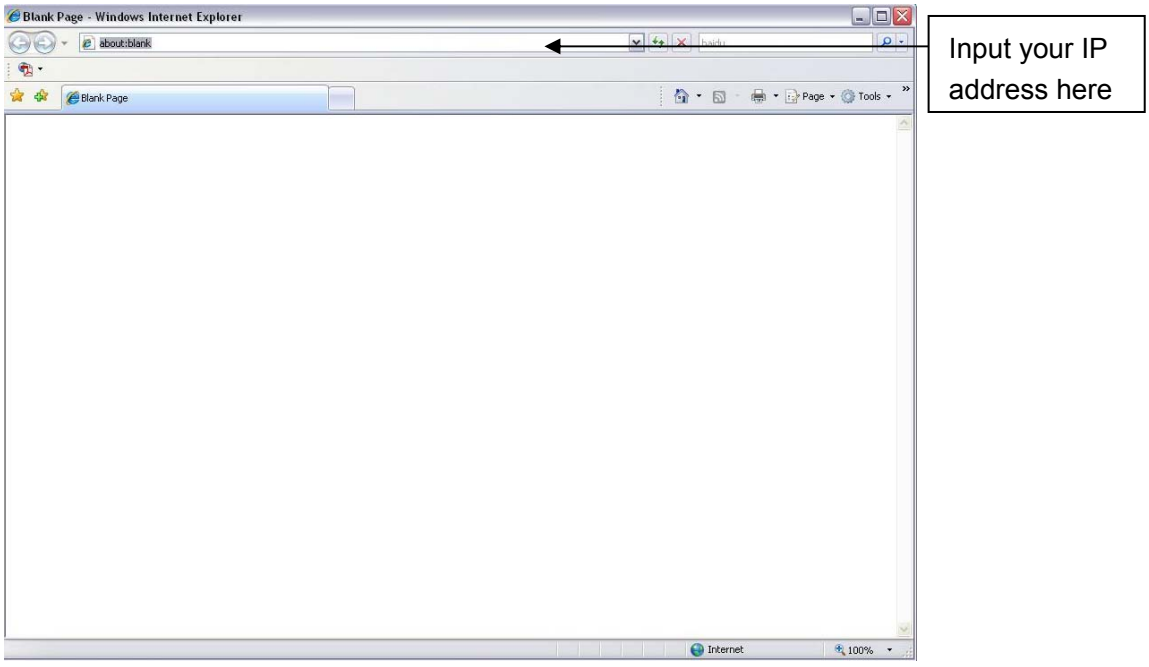


Figure 5-1

System pops up warning information to ask you whether install control webrec.cab or not. Please click OK button, system can automatically install the control. When system is upgrading, it can overwrite the previous Web too.
If you can't download the ActiveX file, please check whether you have installed the plug-in to disable the control download. Or you can lower the IE security level. See Figure 5-2.

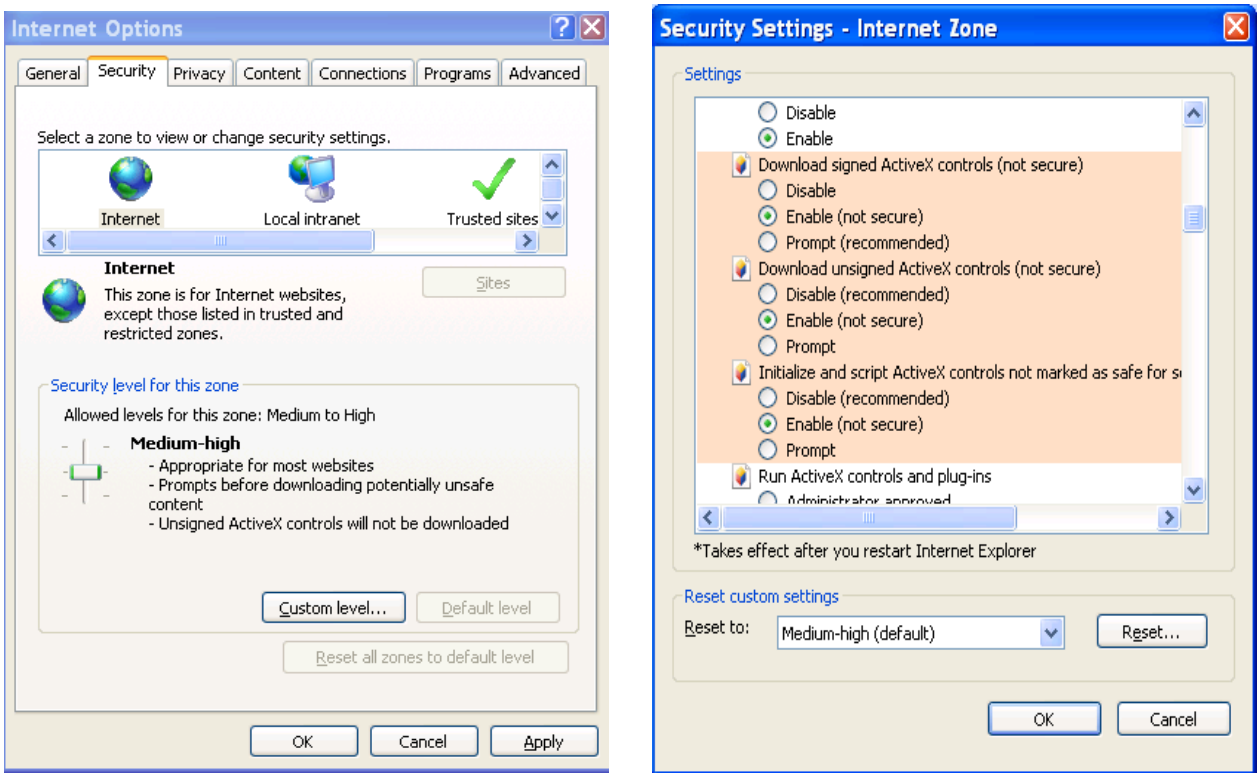


Figure 5-2

After installation, the interface is shown as below. See Figure 5-3.

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.

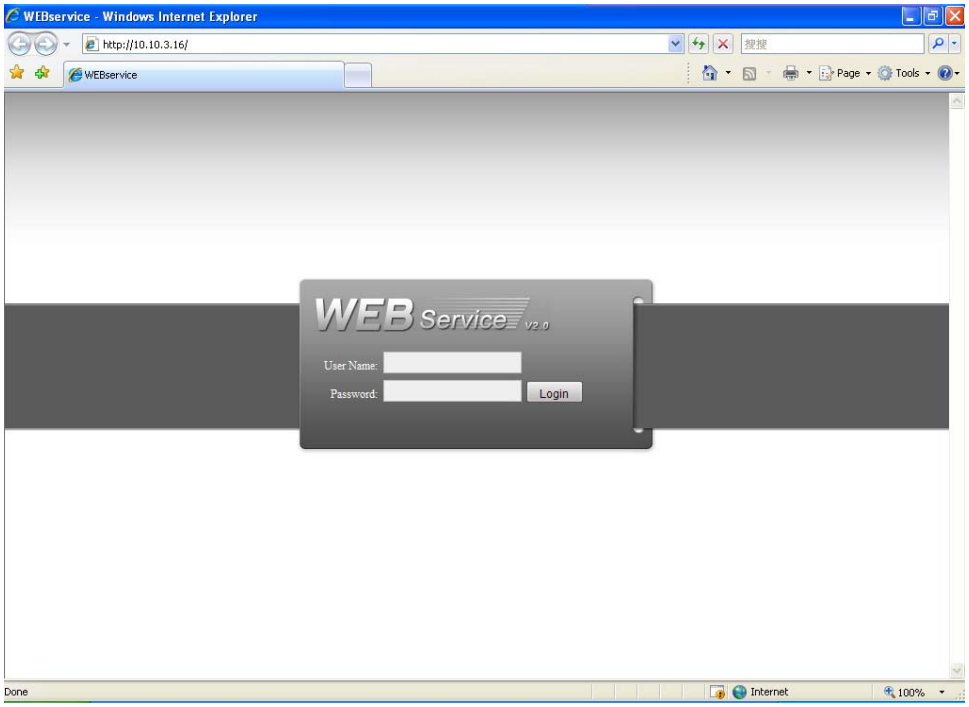


Figure 5-3

After you logged in, you can see the main window. See Figure 5-4.

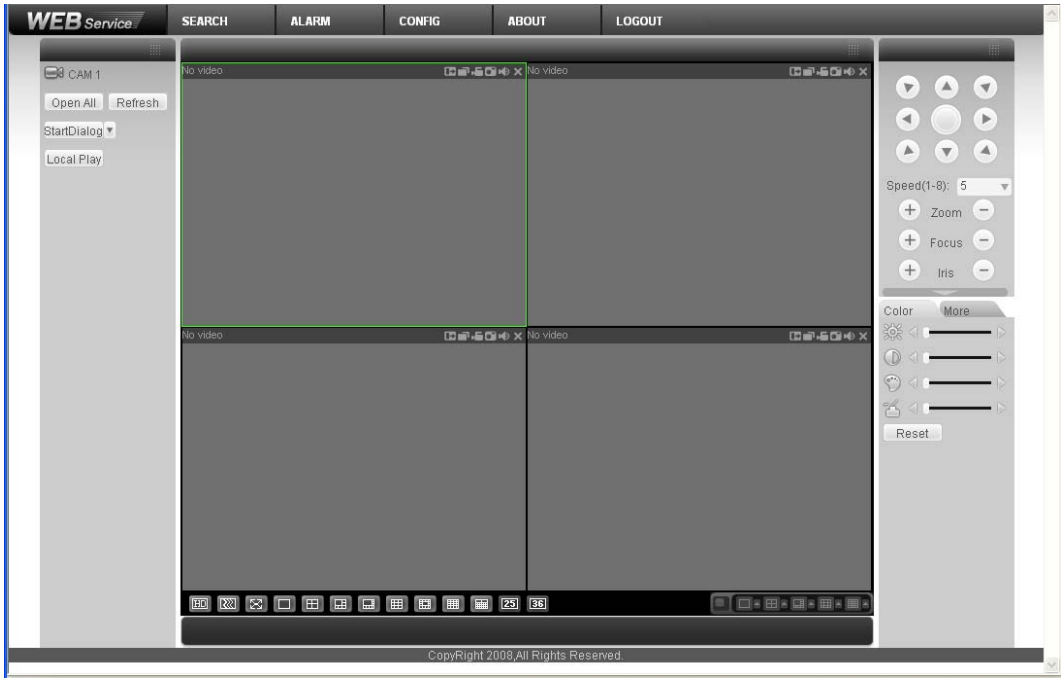


Figure 5-4

Please refer to the *HD Vandal Proof IP Dome Camera 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.
SD card write times	Do not set the SD card as the storage media to storage the schedule record file. It may damage the 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 SD card brand	Kingston 4GB， Kingston 1GB， Kingston 16GB， Transcend 16GB， SanDisk 1G， SanDisk 4G Usually we recommend the 4GB (or higher) 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.
To guarantee setup update	After you modified the important setup, please reboot the device via the software to make sure the setup has been updated to the storage medium.
Power adapter	The power adapter included in the accessories bag can work ranging from 0℃ to 40 ℃. The device may result in unstable power supply when the temperature exceeds the working temperature. Please replace an industry-level power adapter if you are using in the harsh environments.

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.**