Cost-effective HD Indoor Network Camera User's Manual

Version 4.0.0

Zhejiang Dahua Technology CO.,LTD

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. (Refer to general introduction) **Please note: Do not connect 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 studs 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
CS/C Adapter Ring	1
Quick Start Guide	1
CD	1

Table of Contents

1 General Introduction

1.1 Overview

This series network camera integrates the traditional camera and network video technology. It adopts 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, which maximally guarantees the video quality.

This series network camera has megapixel definition. It supports DC 12V power supplying, watermark function and etc.

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. Comparing with the products of the same cost, it realizes the high definition standard. And due to its multiple functions and various uses, this series network camera is widely used in many indoor environments and the places of the monitor requirements.

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 network storage function such as FTP.
Network Monitor	● Network camera supports one-channel video data transmit to network terminal and then decode. Delay is within 270ms (network bandwidth support needed) ● Max supports 20 connections. Max support 24Mbps output band width. The new query may fail if it has reached the threshold. ● Adopt the following video transmission protocol: HTTP, TCP, UDP, MULTICAST, RTP/RTCP, RTSP and etc. ● Support web access.
Network Management	● Realize network camera configuration and management via Ethernet. ● Support device management via web or client-end.
Power	● External power adapter DC12V. ● Support PoE. **Warning！** **Do not connect these two power supplying sources to the device at the same time; it may result in device damage!**
Assistant Function	● Log function ● Support system resource information and running status real-time display. ● Day/Night mode auto switch. ● Support picture parameter setup such as electronic shutter and gain setup. ● Support motion detect function. ● Backlight compensation: screen auto split to realize backlight compensation to adjust the bright. ● Support video watermark function to avoid vicious video modification.

1.3 Specifications

1.3.1 Performance

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

Model / Parameter		IPC-HF2100 Series
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	Bit stream statistics, log, and software version.
Video Parameter	Image Sensor	1/3-inch CMOS
	Pixel	1280(H)*960(V)
	Day/Night Mode	Support day/night mode switch.
	Auto Iris	On
	Gain Control	Fixed/Auto
	White Balance	Manual/Auto
	BLC	Off/BLC/WDR (1-100 adjustable) /HLC (anti-flicker is outdoor which is 1-100 adjustable only when exposure mode set to auto.)
	Exposure Mode	Manual/Auto PAL: It ranges from 1/3 to 1/10000. NTSC: It ranges from 1/4 to 1/10000.
	Video Compression Standard	H.264/H.264H/H.264B/MJPEG
	Video Frame Rate	PAL: Main stream(1280*960@15fps) extra stream(352*288@15fps), Main stream(1280*720@25fps） extra stream(352*288@25fps）
		NTSC: Main stream(1280*960@15fps) extra stream(352*240@15fps)), Main stream(1280*720@30fps) extra stream(352*240@30fps)
	Video Bit Rate	H.264: 56Kbps-6144Kbps H.264H: 16Kbps-6144Kbps H.264B: 56Kbps-6144Kbps 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, camera masking.
	Lens	C/CS
	Lens Interface	Lens is optional.

Video	Motion Detect	396 (18*22) detection zones; sensitivity level ranges from 1 to 100; Area threshold ranges from 1 to 100. Activation event: video storage, image snapshot, log, email and etc.
Record and Backup	Record Priority	Manual>External alarm >Video detect>Schedule
	Storage Management	Support display network storage status
Network	Wire Network	1-channel wire Ethernet port, 10/100 Base-T Ethernet.
	Network Protocol	Standard HTTP, TCP/IP, ARP, IGMP, ICMP, RTSP, RTP,UDP, RTCP, SMTP, FTP, DHCP, DNS, DDNS, PPPOE, UPNP, NTP, Bonjour, SNMP.
	Remote Operation	Monitor, system setup, file download, log information, maintenance , upgrade and etc.
AUX Interface	Video Output	1-ch analog video output. BNC port.
	Network Interface	1-ch wire Ethernet port. 10/100 Base-T Ethernet
	RS485 Port	PTZ Control port. Support various protocols.
General Parameter	Power	Support DC12V power or PoE. **Warning！** **Do not connect these two power supplying sources to the device at the same time; it may result in device damage!**
	Power Consumption	2.5W MAX
	Working Temperature	-10℃~+60℃
	Working Humidify	10%~90%
	Dimensions(mm)	66.2*62.8*131
	Weight	196g（Excluding box）
	Installation	Installation with the bracket.

1.3.2 Factory Default Setup

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

Setup		Item	Default Setup
			IPC-HF2100 Series
Camera	Conditions	Config File	Normal
		Brightness	50
		Contrast	50
		Saturation	50
		Sharpness	50
		Anti-flicker	Outdoor
		Exposure Mode	Auto
		Auto Iris	On
		Profile	Auto
		Day&night	Auto

Setup		Item			Default Setup
					IPC-HF2100 Series
		BLC Mode			Off
		Mirror			Off
		Flip			Off
		Profile Management			Normal
	Video	Video bit stream	Main Stream	Bit stream type	General
				Encode mode	H.264
				Resolution	720P（1280*720）
				Frame Rate（FPS）	PAL: 25 NTSC:30
				Bit Rate Type	CBR
				Recommended Bit	PAL:1536-6124 Kb/S NTSC:2048-6144Kb/S
				Bit Rate	4096
				I Frame interval	PAL:50 NTSC:60
				Watermark	Enable
				Watermark character	DigitalCCTV
			Sub Stream	Enable	Enable
				Bit stream type	General
				Encode mode	H.264B
				Resolution	CIF(352*288/352*240)
				Frame Rate（FPS）	PAL: 25 NTSC:30
				Bit Rate Type	CBR
				Recommended Bit	192-1024Kb/S
				Bit Rate	512
				I Frame interval	PAL:50 NTSC:60
			Snapshot	Snapshot Type	General
				Image Size	720P（1280*720）
				Quality	Better
				Bit Rate	Main stream
				Interval	1s
			Video Overlay	Privacy Mask	Disable
				Channel Title	Enable

Setup	Item		Default Setup
			IPC-HF2100 Series
		Time Title	Enable
	Path	Snapshot Path	C:\PictureDownload
		Record Path	C:\RecordDownload
Network	TCP/IP	Host Name	IPC
		Ethernet Card	Wire(Default)
		Mode	Static
		Mac Address	Device MAC address when it is shipped out of the factory
		IP Version	IPV4
		IP Address	192.168.1.108
		Subnet Mask	255.255.255.0
		Default Gateway	192.168.1.1
		Preferred DNS	8.8.8.8
		Alternate DNS	8.8.8.8
		Enable ARP/Ping set device IP address service	Enable
	Connection	Max Connection	10
		TCP Port	37777
		UDP Port	37778
		HTTP Port	80
		RTSP Port	554
		HTTPs On	Disable
		HTTPs Port	443
	PPPoE	Enable	Disable
		Username	none
		Password	N/A
	DDNS	Server Type	Disable，Dahua DDNS
		Server Address	www.dahuaddns.com
		Model	Auto
		Domain Name	"MAC address". dahuaddns.com
		Username	none
	IP Filter	Trusted Sites	Disable
	SMTP(Email)	SMTP Server	none

Setup	Item			Default Setup
				IPC-HF2100 Series
			Port	25
			Anonymity	Disable
			Username	anonymity
			Password	****
			Sender	none
			Authentication	none
			Title	IPC Message
			Attachment	Enable
			Mail Receiver	N/A
			Interval	0 Second
			Health Mail	Disable，interval=60 Seconds
	UPnP		Enable UPnP	Disable
	SNMP		SNMP Port	161
			Read Community	public
			Write Community	private
			Trap Address	N/A
			Trap Port	162
			SNMP v1	Disable
			SNMP v2	Disable
			SNMP v3	Disable
	Bonjour		Enable	Enable
			Server Name	"SN". It depends on the device.
	Multicast	Main Stream	Enable	Enable
			Multicast Address	239.255.42.42
			Port	36666
		Extra Stream	Enable	Disable
			Multicast Address	239.255.42.42
			Port	36667
	IEEE802		Enable	Disable
			Verification	PEAP
			Username	none
			Password	****
	QoS		Real-time Monitor	0

Setup	Item			Default Setup
				IPC-HF2100 Series
			Command	0
Event	Video detect	Motion Detect	Enable	Disable
			Anti-dither	5 seconds
			Record	Enable
			Record Delay	10 seconds
			Send Email	Disable
			PTZ	Disable
			Snapshot	Disable
		Video Masking	Enable	Disable
			Record Channel	Enable
			Record Delay	10 seconds
			Send Email	Disable
			PTZ	Disable
			Snapshot	Disable
	Abnormity	Disconnection	Enable	Disable
			Record	Enable
			Record Delay	10 seconds
		IP Conflict	Enable	Disable
			Record	Enable
			Record Delay	10 seconds
Storage	Schedule	Holiday schedule	Record	Disable
			Snapshot	Disable
	Destination	FTP	Enable	Disable
			Server Address	N/A
			Port	21
			User Name	anonymity
			Password	N/A
			Remote Directory	share
		Record Control	Pack Duration	8 minutes
			Pre-event Record	5 seconds
			Disk Full	Overwrite
			Record Mode	Automatic
			Record Stream	Main Stream
System	General	Local Host	Device Name	Device factory SN
			Language	English
			Video Standard	PAL

Setup	Item			Default Setup
				IPC-HF2100 Series
		Date and time	Date Format	Y-M-D
			Time Format	24H
			Time Zone	GMT+08:00
			Current Time	Sync
			DST Enable	Disable
			DST Type	Date
			Start Time	00:00:00 January 1st
			End Time	00:00:00 January 2nd
			Synchronize with NTP	Disable
			NTP Server	clock.isc.org
			Port	123
			Update Period	10 minutes
	Account		Anonymous Login	Disable
	PTZ Settings		Protocol	PELCOD
			Address	1
			Baud Rate	9600
			Data Bit	8
			Stop Bit	1
			Parity	none
	Auto Maintenance		Auto Reboot	Enable, Tuesday 02:00
			Auto Delete Old Files	Disable

2 Structure

2.1 Rear Panel

You can refer to the following figure for rear panel information. See Figure 2-1.
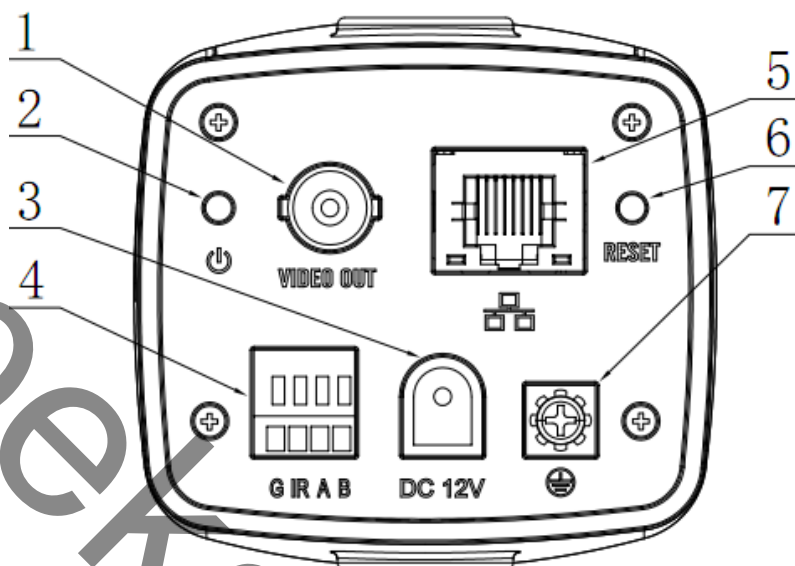
Figure 2-1 Rear panel

Please refer to the following sheet for detailed information.

SN	Port Name	Function	Connection	Note
1	VIDEO OUT	Video output port	BNC	Output analog video signal. Can connect to TV monitor to view video.
2	Indication Light	Red light ⏻		● System boot up-red light is on ● System upgrades-red light flashes. ● System resets-red light is on.
3	DC 12V	Power port		● Power port. ● Input DC 12V.
4	A	RS485 port		RS485_A port, control external PTZ
	B	RS485 port		RS485_B port, control external PTZ
	G	GND		RS485 ground port.
	IR	IR light port		Connect to peripheral IR light control port.
5	LAN 品	Network port	Ethernet port	● Connect to standard Ethernet cable. ● Support PoE function.
6	RESET	Reset button		Restore factory default setup. When system is running normally, press the RESET button for at least 5 seconds, system can restore factory default setup.
7	⏚	GND port		Please make sure the device is securely earthed to prevent the thunderstorm strike.

2.2 Framework and Dimension

Please refer to the following figure for dimension information. The unit is mm. See Figure 2-2 and Figure 2-3.
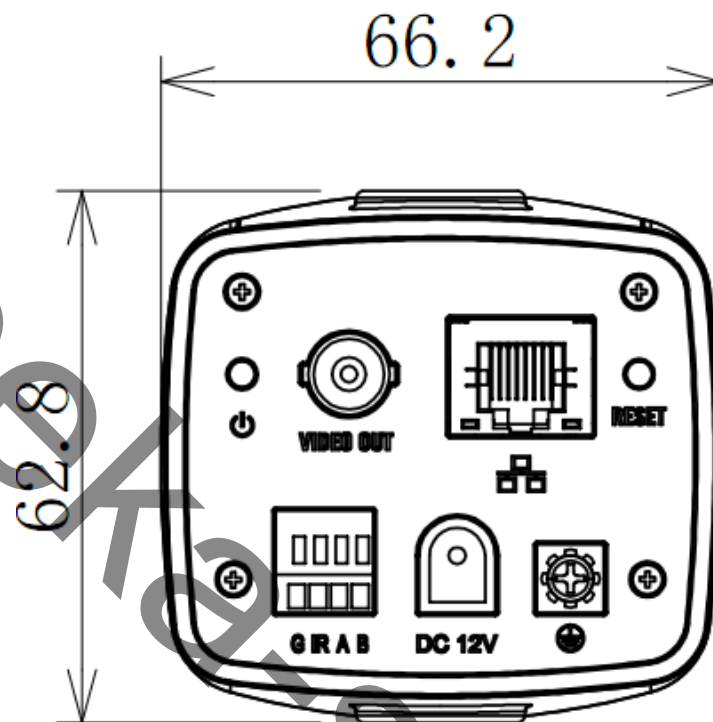
Figure 2-2 Dimension illustration 1
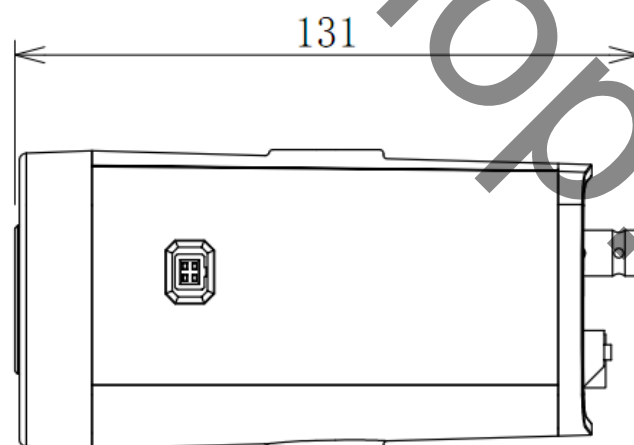
Figure 2-3 Dimension illustration 2

3 Device Installation

This series camera support two installation modes: wall mount and pendant mount.

Important

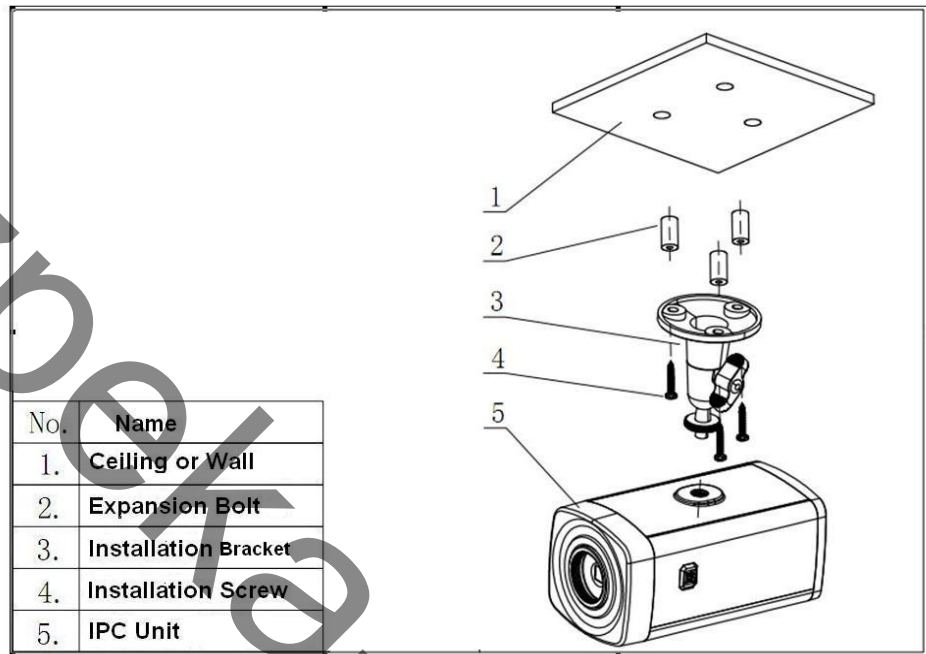**Please make sure the installation surface can min support the 3X weight of the camera and the bracket.**

No.	Name
1.	Ceiling or Wall
2.	Expansion Bolt
3.	Installation Bracket
4.	Installation Screw
5.	IPC Unit

Figure 3-1 Device installation illustration 1

Step 1

Please select the corresponding installation bracket before your installation.

If it is the cement wall, please install the expansion bolt first. Please make sure the expansion bolt installation position shall be identical with the bracket. Then you can install the bracket. See Figure 3-1.

If it is the wood wall, you can use the self-tapping bolt to install the bracket directly.

Step 2

Install the camera. Please use the installation pedestal at the bottom of the camera to use the screw to fix the camera on the bracket.

Step 3

Install the lens to the camera.

Step 4

Connect the auto iris port. See Figure 3-2.
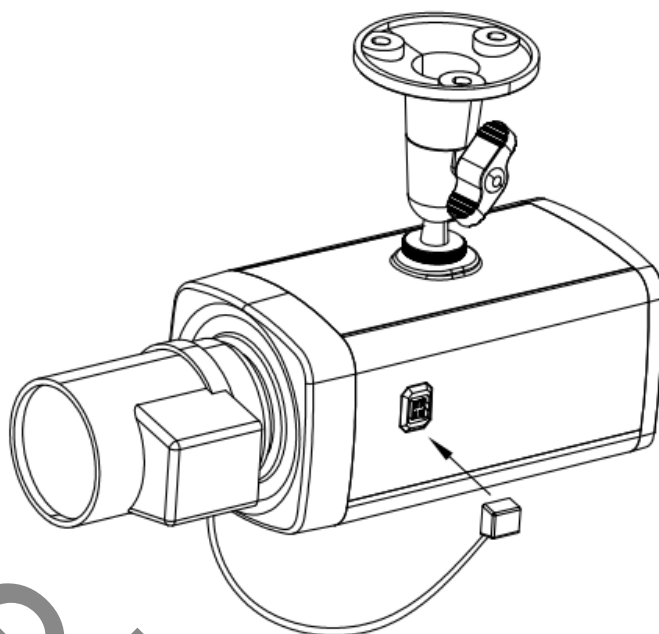
Figure 3-2 Device installation illustration 2

Step 5

After adjust the camera to proper surveillance position.
Step 6

Secure the knob of the bracket to fix the camera.

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.
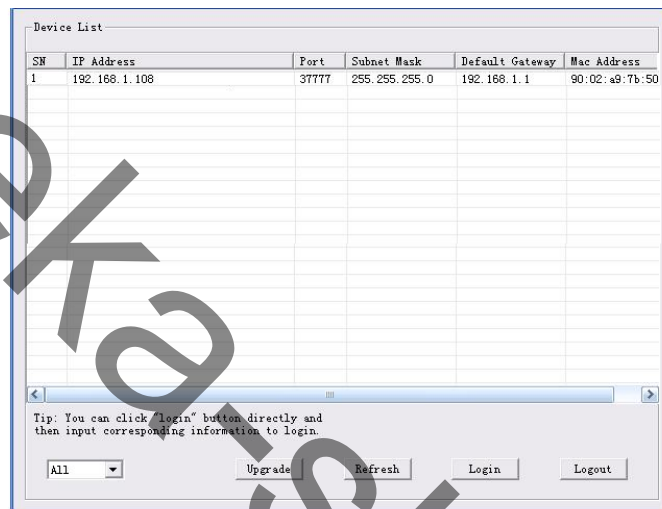
Figure 4-1 Search interface

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.
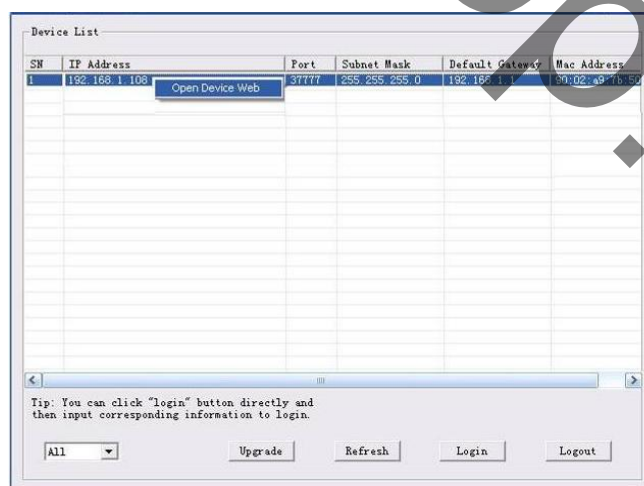
Figure 4-2 Search interface 2

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.
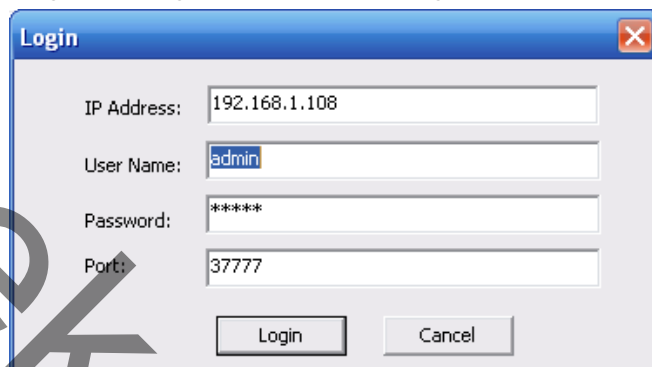
Figure 4-3 Login prompt

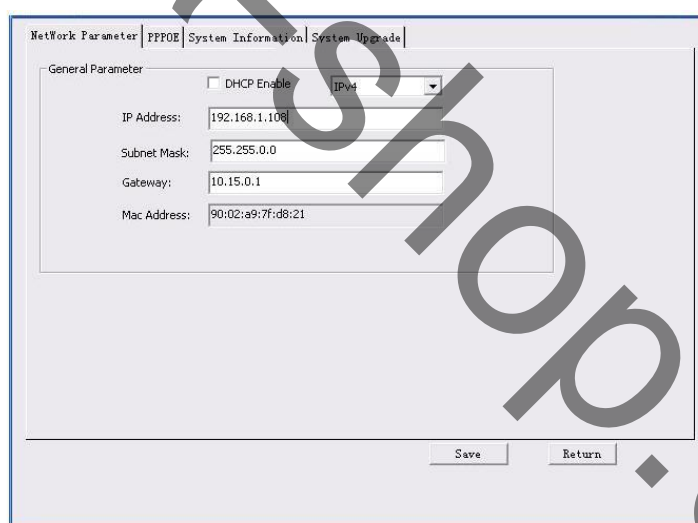After you logged in, the configuration tool main interface is shown as below. See Figure 4-4.

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.
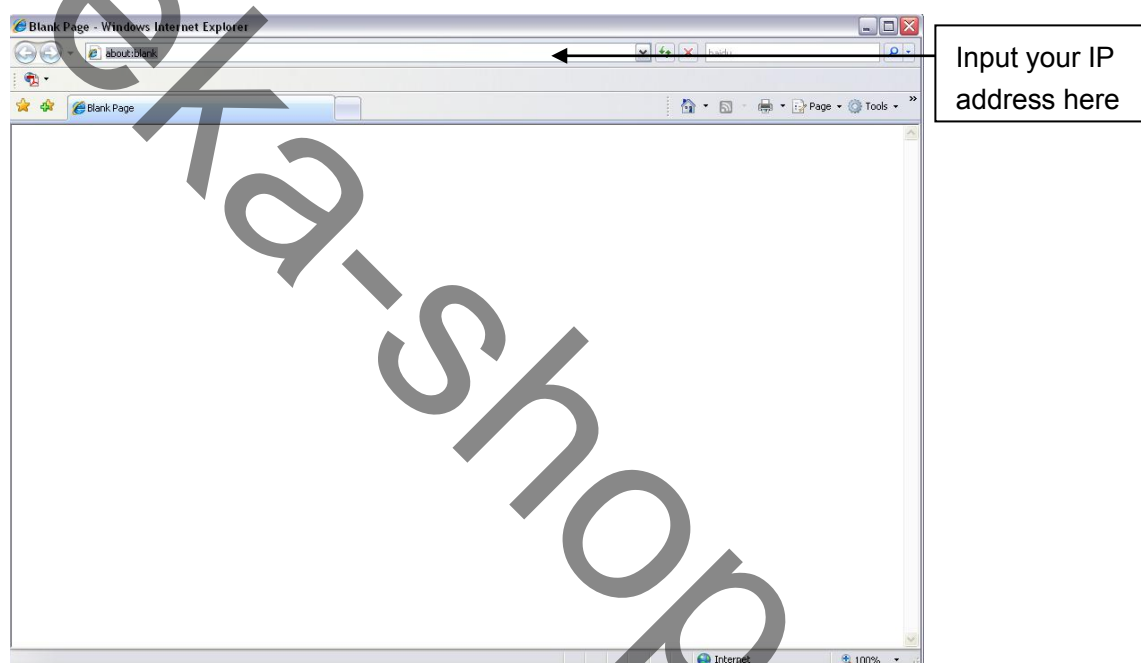

Input your IP address here

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 login 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.

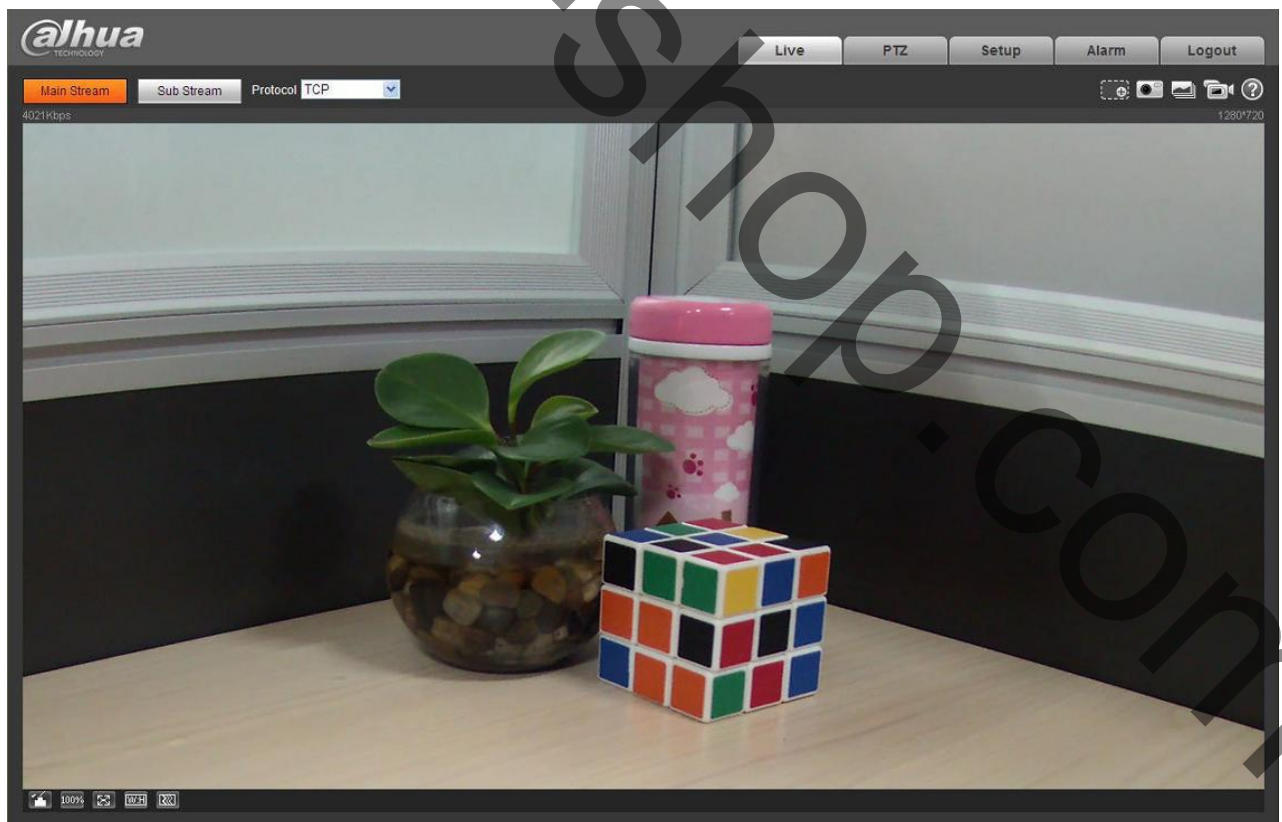After you logged in, you can see the main window. See Figure 5- 3.

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 upgrade the device via network.	When network upgrade operation failed, you can use port 3800 to continue upgrade.
I can not login the client-end or the WEB.	• For Windows OS 98 or Windows ME user, if you can not install the client-end or can not view after the installation. We recommend the win2000sp4 OS or install the client-end of the low version. • The Active X control is blocked. • The display card version shall be dx8.1 or higher. • Network connection error occurred. • Invalid network setup. • Invalid user name or password.
I can not play the download file.	• There is no player. • There is no DX8.1 or higher. • For the MEDIA PLAYER, there shall be Div X503Bundle.exe plugin if you play the .AVI file. • For Windows XP user, you need to install the plugin DivX503Bundle.exe and ffdsho-2004 1012.exe.
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 general power adapter 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 Case	○	○	○	○	○	○
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.**
- **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 for more information.**

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