Da vinci Series IP Camera User's Manual

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 safeguards and warnings carefully before you use or install the IP camera.

Important Safeguards and Warnings

1．Electrical safety

All installation and operation here should conform to local electrical safety codes.
We assume no liability or responsibility for all the fires or electrical shock caused by improper handling or installation.

2．Transportation security

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

3．Installation

Please make sure the proper ventilation.
Do not apply power to the IP camera before completing installation.

4．Qualified engineers needed

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

5．Environment

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

The working temperature ranges from 0℃ to +50℃.

The IP camera shall be away from the strong electromagnetism radiant, please keep it away from wireless power, TV transmitter and etc.
Do not use the IP camera to shoot the shining objects such as the lamplight or sun. The unstable light may result in flashing video.

6. 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 missing in your package.

Table of Contents

1 Overview

1.1 General Introduction

This series IP camera combines the traditional camera and network video technology together. It integrates video capture, video process, network transmission and storage. You can just connect it to the network to use without other assistant device. It has one mega resolution and supports PoE, wireless application, audio talk. It also has built-in electronic PTZ, FTP network storage and playback, data watermark and etc.
You can connect it to the internet and then configure a client-end program to use. Or you can connect it to the LAN.
It is suitable in various environments such as office, bank and road monitor.

1.2 Features

User Management	● Different user rights for each group, one user belongs to one group. ● You can freely set monitor right when there is no user login
Backup Function	● Support central server backup function in accordance with your configuration and setup in alarm or schedule setting ● Support local record function and backup recorded video in client end. ● Support SD card hot swap and memory backup function, support short time backup when encounter network connection failure. ● Storage recorded file and image in the SD card. ● Support file records transmission and image via FTP.
Alarm Function	● Real-time respond to external alarm input(within 200MS) as user pre-defined activation setup and exert corresponding message in screen and audio prompt(allow user to pre-record audio file) ● Provide central management server management option so that system can initiatively send alarm notice remotely. Alarm input can connect with various peripheral equipments. ● Provide prompt or alarm option when encounter video loss. ● Reserve 9M for you to record and backup audio and video file ● Support SMS (short messaging service) function when alarm occurs. ● When camera masking occurs, system can prompt or alarm as you set. ● System can alarm or prompt when network disconnection or IP conflict occurs.
Network Monitor	● IPC one-channel audio/video data transmit to network terminal and then decode. ● Delay within 250 ms (network bandwidth support needed). ● Max supports 10 connections. ● Adopt the following audio and video transmission protocol: HTTP、TCP、UDP、RTP/RTCP. ● Send some alarm data or message via SMTP. ● Support web access, used in WAN.
Network Management	● Realize IPC configuration and management via Ethernet. ● Support web and client -end.

Peripheral Equipment	● Support peripheral equipment management, each peripheral equipment control protocol and interface can be set freely. ● Support serial port(RS485) transparent data transmission
Assistant Function	● Support auto day/nigh mode switch. ● Support system resource information and running status real-time display. ● Support log function. ● Support electronic PTZ, electronic zoom, and direction move. ● Support auto aperture setup. ● Support backlight compensation. Realize image zone auto split to add black zone brightness.

2 Interface

2.1 Lens

Besides the lens included in package, you can use other CS installation lens.

Note:

This series IP camera supports CS port only. You need to use a 5mm C/CS lens conversion ring if you want to use a C type lens.

2.1.1 General Lens

The lens shall be CS installation type and less than 0.5kg. The rear panel shall be less than 4mm. See Figure 2-1.

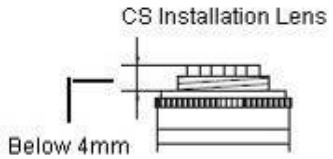

Figure 2-1

2.1.2 Auto Aperture Lens

You can use DC (direct current) auto aperture lens.

You need a LENS connection socket if you want to connect to an auto aperture lens. See Figure 2-2.

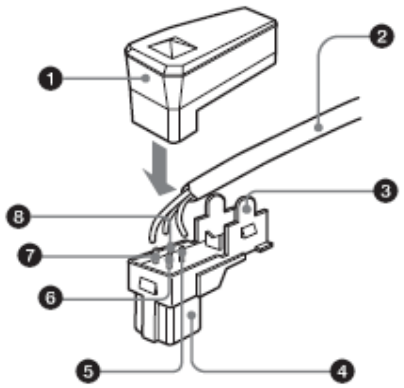

Figure 2-2

Please refer to the following sheet for auto aperture PIN definition.

❶	Cap
❷	Lens cable
❸	Rib（You can cut rib if cable is too thick.）

❹ Socket（not included in the package）
❺ PIN 4：Driver－（ground）
❻ PIN 2：Control＋
❼ PIN 1：Control－
❽ PIN 3：Driver＋

2.1.3 Lens Installation

Please follow the steps listed below. See Figure 2-3.

- Line up the lens to the installation position and turn it clockwise until it is fixed firmly.
- Insert lens cable plug into auto lens shutter connector. (Go to step 3 directly if you are installing manual lens.)
- You can use slot screwdriver to turn screw to adjust focus if you can not adjust properly when it is ∞ (infinity).

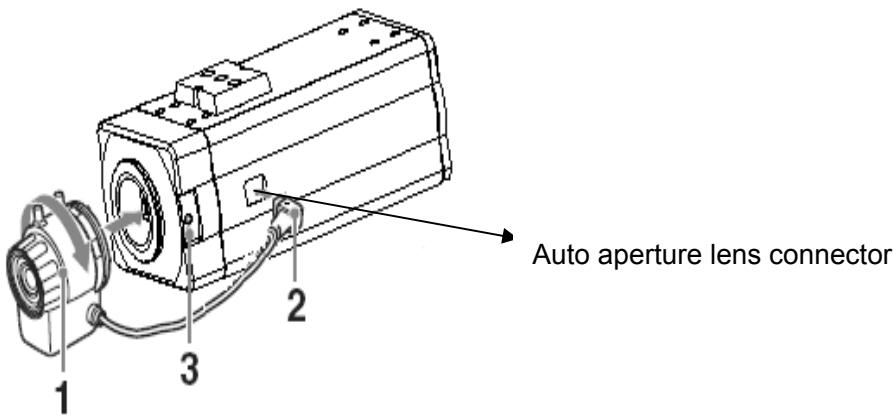

Figure 2-3

2.1.4 Dismantle Lens

Please follow the steps listed below to dismantle the lens. See Figure 2-4.

- Unplug the lens cable from the auto aperture lens connector.
- Turn the lens counter clockwise to remove it from the camera.

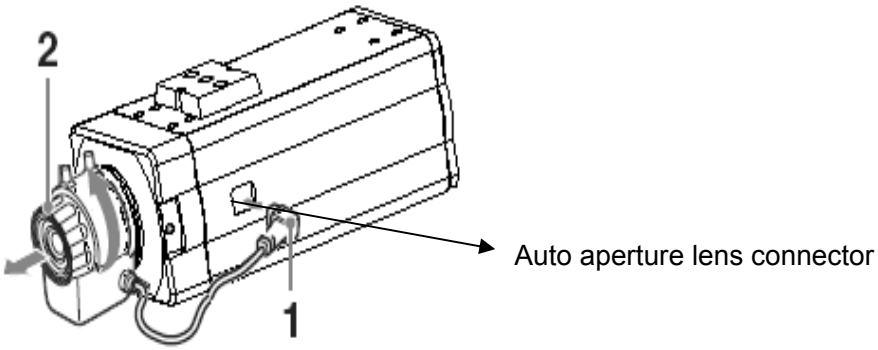

Figure 2-4

2.2 Rear Panel

Please refer to the following sheet and Figure 2-5 for IP camera interface information.

Interface Name		Connector	Function
VIDEO OUT	Video output port	BNC	Output analog video signal. Can connect to TV monitor to view video.
Wireless antenna port			Connect to wireless antenna to receive WIFI wireless signal.
DC 12V			Power port. Input 12V DC
STATUS	Status indication light		It is to indicate camera working status: ● The red light becomes on when connect the camera to the power. The green

			light flashes and then becomes on, which means application is running normally. Now you can log in via network. ● The indication light becomes off when you reboot the system via software. ● The green light flashes when system is recording. ● The red light flashes when system is upgrading. ● The red light flashed when system is in safety mode.
WLAN	Wireless network indication light		The wireless network indication light is to display wireless network working status. The network indication light becomes green

			when you connect the IP camera to the wireless network.
A	RS485 port	I/O port	RS485_A port, control external PTZ
B			RS485_B port, control external PTZ
1	1-2ch alarm		Alarm input port 1. To receive the signal from the external alarm device.
2			Alarm input port 2. To receive the signal from the external alarm device.
NO	1ch alarm output		Alarm output port. To output alarm signal to the alarm device. NO: Normal open alarm output end. C: Alarm output public end,
C			
RX	Transparent debug serial port		RS232_RX，RS232 receive end.
TX			RS232_TX，RS232 COM send out end.
G	GND		Ground end
RESET	RESET button		Restore factory default setup.

LEVEL	Auto aperture adjustment button		Adjust aperture level.
AUDIO OUT		Audio output 3.5mm JACK port.	Output audio signal to the device such as sound box.
AUDIO IN		Audio input 3.5mm JACK port.	Input audio signal. Receive signals from devices such as pick-up.
LAN		Ethernet port	Connect to standard Ethernet cable.
SD	SD card port		Connect to SD card. Please note: ● When install SD card, please make sure the SD card is idle(it is not in writing status) and then insert it to the socket. ● Please makes sure SD card is idle (it is not in writing or reading status) before you remove it from the lens, otherwise it may result in data loss or card damage. ● Before you hot

			swap card, please stop recording first.

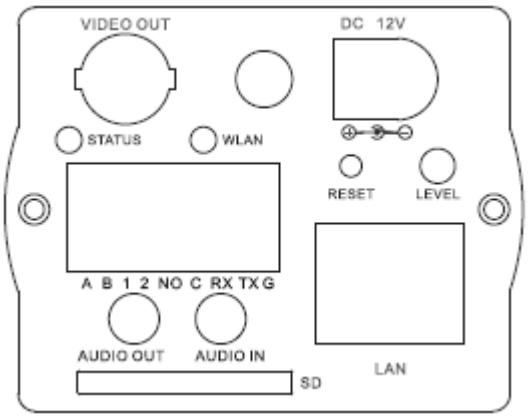

Figure 2-5

2.2.1 I/O Socket Operation Introduction

First use small slotted screwdriver press the button in the cable slot, and then insert the cable into the slot. Finally release the screwdriver. See Figure 2-6.

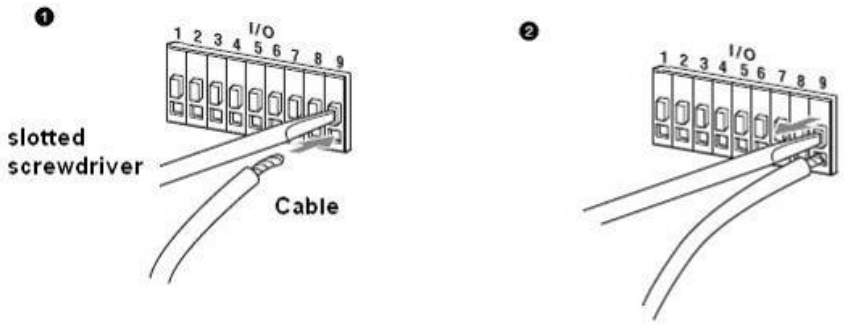

Figure 2-6

2.2.2 Alarm Connection and Setup Introduction

2.2.2.1 Alarm Setup

You can go to alarm setup menu in the web to configure alarm input and output setup,and the control of IP camera I/O port when there is external alarm. Please refer to web operation user's manual.

2.2.2.2 Alarm Connection

You can connect the peripheral device to the IP camera I/O alarm output port. Please refer to Figure 2-7 for alarm input cable layout.

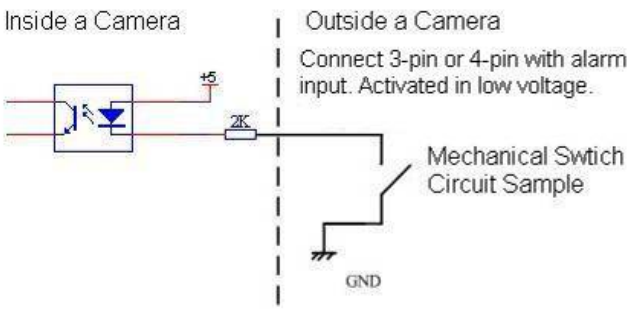

Figure 2-7

Please refer to Figure 2-8 for alarm output layout.

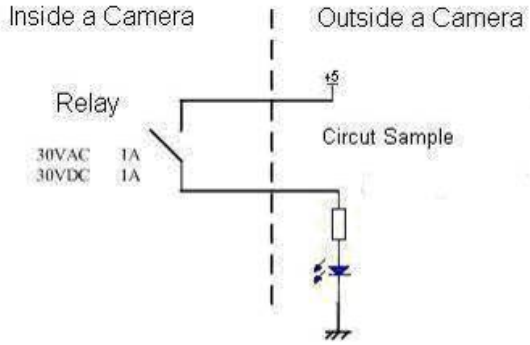

Figure 2-8

3 Installation

3.1 System Requirement

This series IP camera has the following system requirement.

- **Processor**

Pentium 4, 1.5 GHz or higher（Pentium 4, 2.4 GHz or higher recommended）

- **RAM**

256 MB or higher

- **OS**

Microsoft Windows 2000, Windows XP

- **Network Browser**

Internet Explorer 6.0 or higher

3.2 Hardware Installation

IP camera shall be installed in the internet. There are two conditions.
Please us crossover cable if you connect IP camera to the PC.
Please use straight-through cable if you connect the IP camera to the network.
For special use, please contact your local network service provider.

3.2.1 LAN

Please refer to Figure 3-1 for network cable connection.

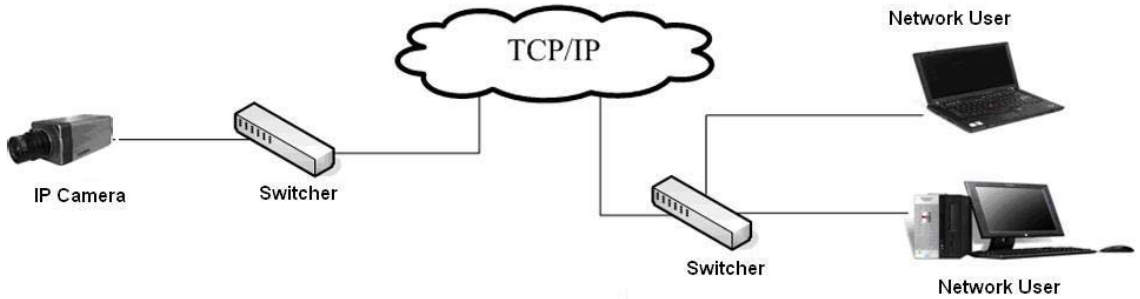

Figure 3-1

3.2.2 Public Network

Please install the IP camera in a LAN. Then use a PC (In the same LAN) to set PPPoE, DDNS, or public IP (Please get corresponding information from your local internet service provider). And then you can refer to Figure 3-2 for cable connection.

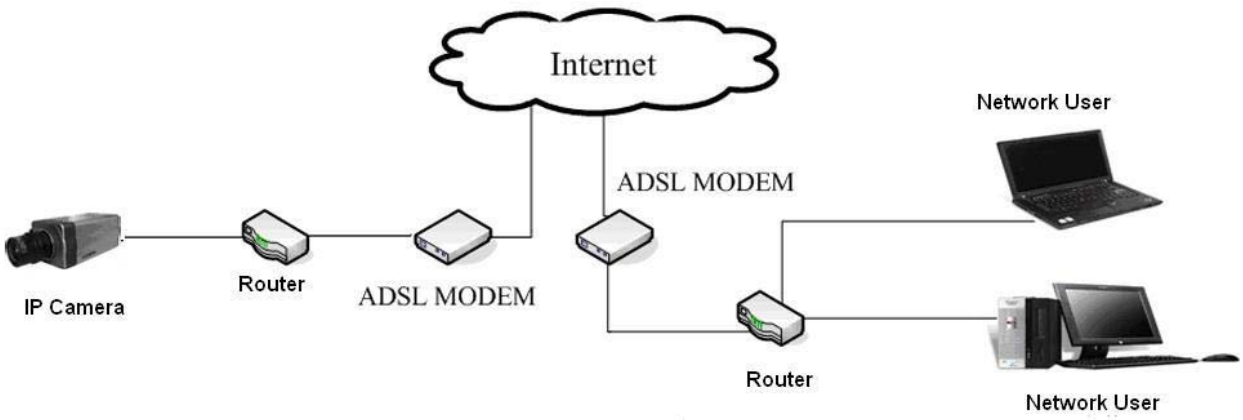

Figure 3-2

Note:

- If you want to connect IP camera to the ADSL MODEM, you need to refer to the PPPoE setup section.
- If there is more than one IP camera need to be connected, you need to set different IP addresses for each camera respectively.

4 Auto Search IP Function

Auto search IP tool allows you to search or modify IP camera current IP address.

Open **AutoSearchDevc.exe** (), click device list item you can an interface is shown as in Figure 4-1. Here you can view device IP address, port, sub-net mask and gateway information.

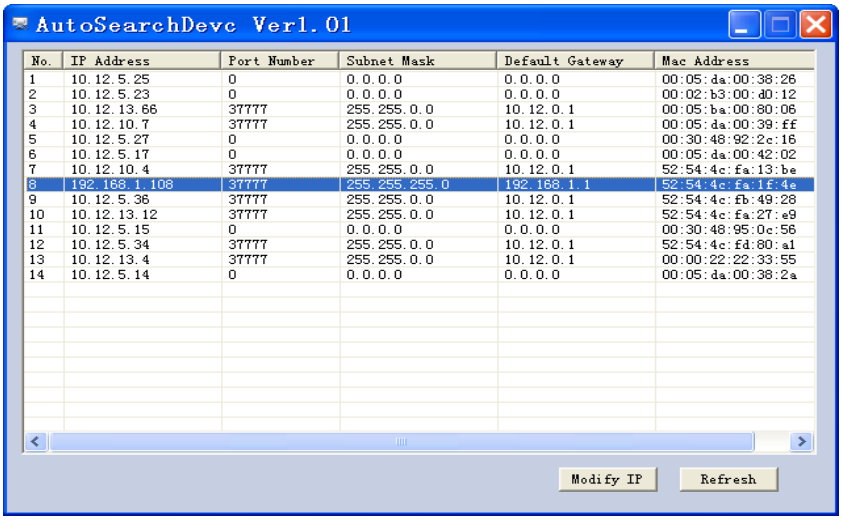

Figure 4-1

In Figure 4-1, double click one IP address you can see a web interface. See Figure 4-2.

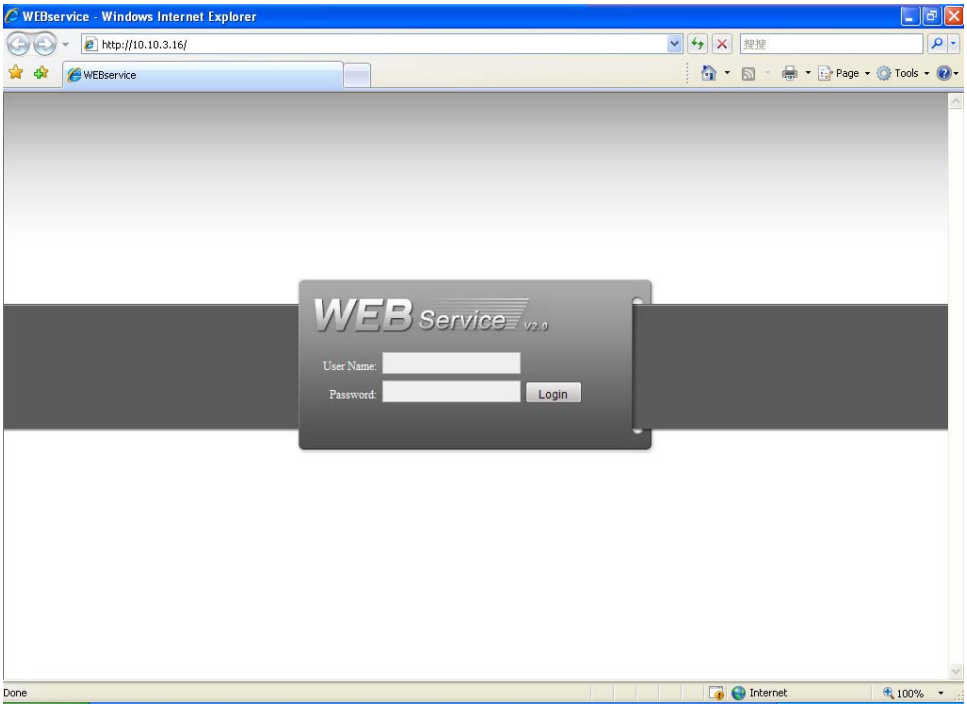

Figure 4-2

In Figure 4-1, select one IP and then click “modify” button, you can see an interface is shown as in Figure 4-3. You can input device user name and address and then log in.

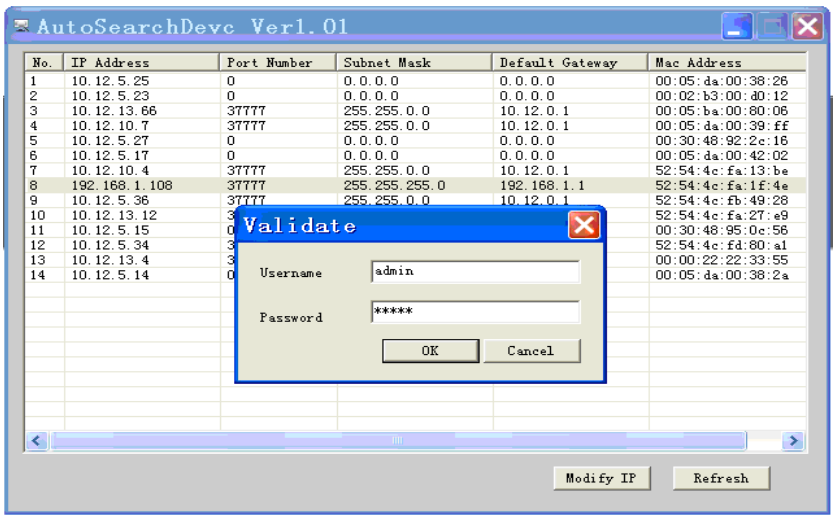

Figure 4-3

After you logged in, you can see an interface is shown as in Figure 4-4. Here you can modify device IP address, sub-net mask and gateway information.

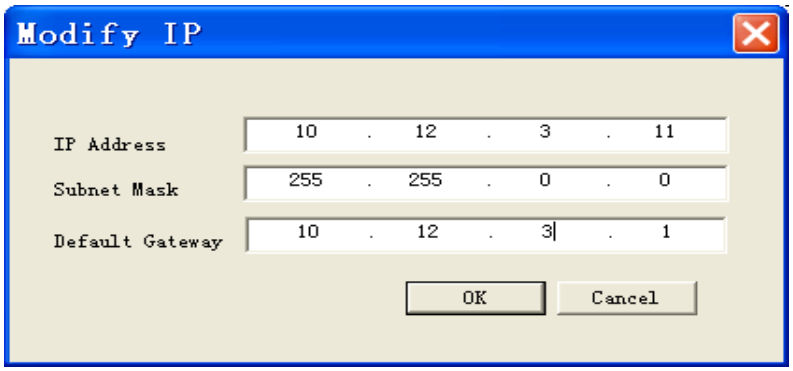

Figure 4-4

5 Network Safety Level Setup

You need to modify your IE security setup if you can not install controls properly. Open your IE browser, Tools->Internet Options->Security, select Local Intranet. See Figure 5-1.

Figure 5-1

Click custom level, the interface is shown as below. See Figure 5-2.
Please set as below.

- Set “initialize and script ActiveX controls not marked as safe” as enable or prompt.
- Set “download unsigned ActiveX controls” as enable or prompt.

Click OK to save modification, system pops up warning dialogue box asking you to confirm modification, please click Yes button.

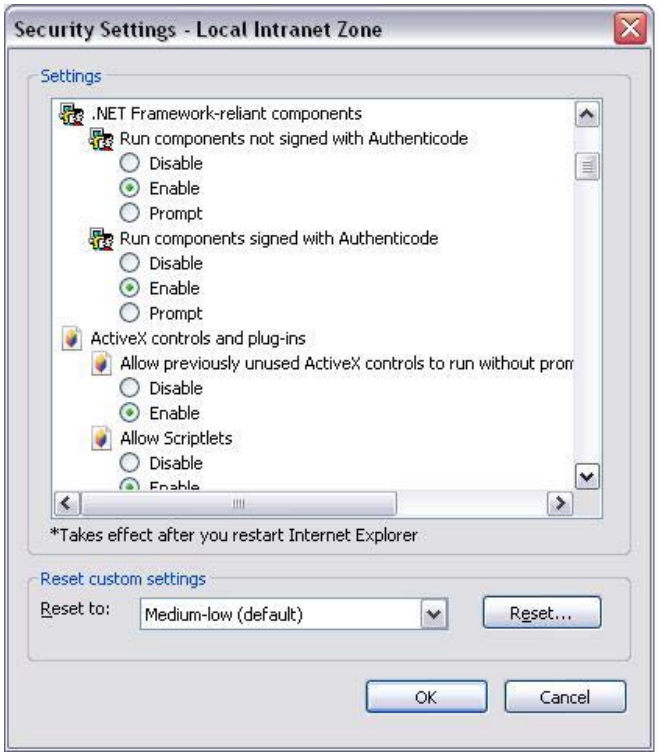

Figure 5-2

Then system goes back to Figure 5-1, click “sites” button, system pops up the following dialogue box. See Figure 5-3.

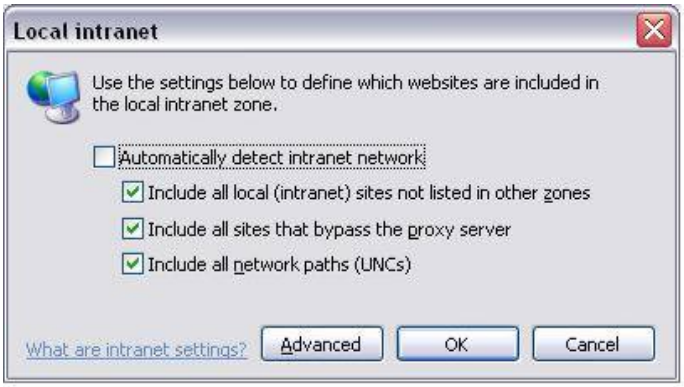

Figure 5-3

Click advanced button, system pops up the following dialogue box. See Figure 5-4. Click add button to add a website to the zone.

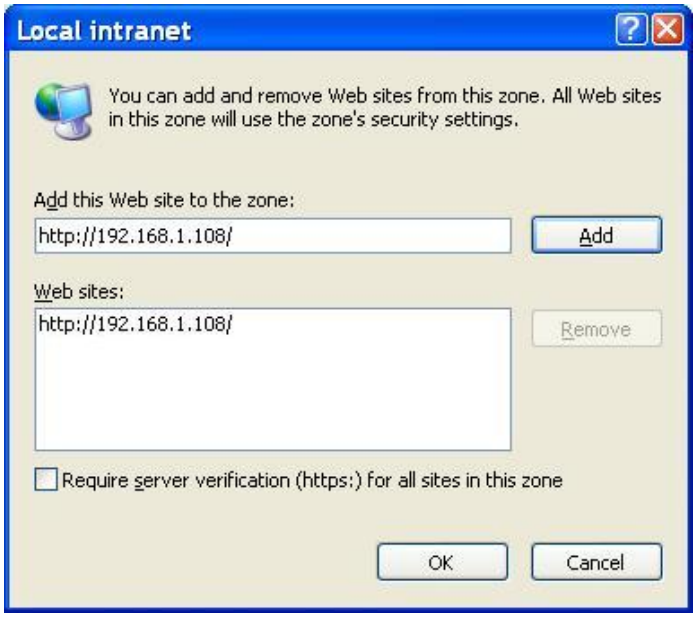
Local intranet
You can add and remove Web sites from this zone. All Web sites in this zone will use the zone's security settings.
Add this Web site to the zone:
http://192.168.1.108/
Add
Web sites:
http://192.168.1.108/
Remove
Require server verification (https:) for all sites in this zone
OK
Cancel

Figure 5-4

6 Client Operation

IP camera factory default setup:

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

6.1 Network Connection

Please follow the steps listed below for network connection.

- Connect IP camera to PC via switcher. Now you have established a LAN.
- PC IP address shall be in the same network section. For example:
  - ✧ IP address:192.168.1.XXX
  - ✧ Subnet mask:255.255.255.0
  - ✧ Gateway:192.168.1.1.
- IP camera and PC network setup is right.
- Use order ping ***.***.***.***(* IP camera address) to check connection is OK or not. Usually the return TTL value should be less than 255. Please check network connection if system prompt *requestion time out*. You can use auto search IP tool (chapter 3) to search IP camera IP.

6.2 Login and Logout

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 6-1.

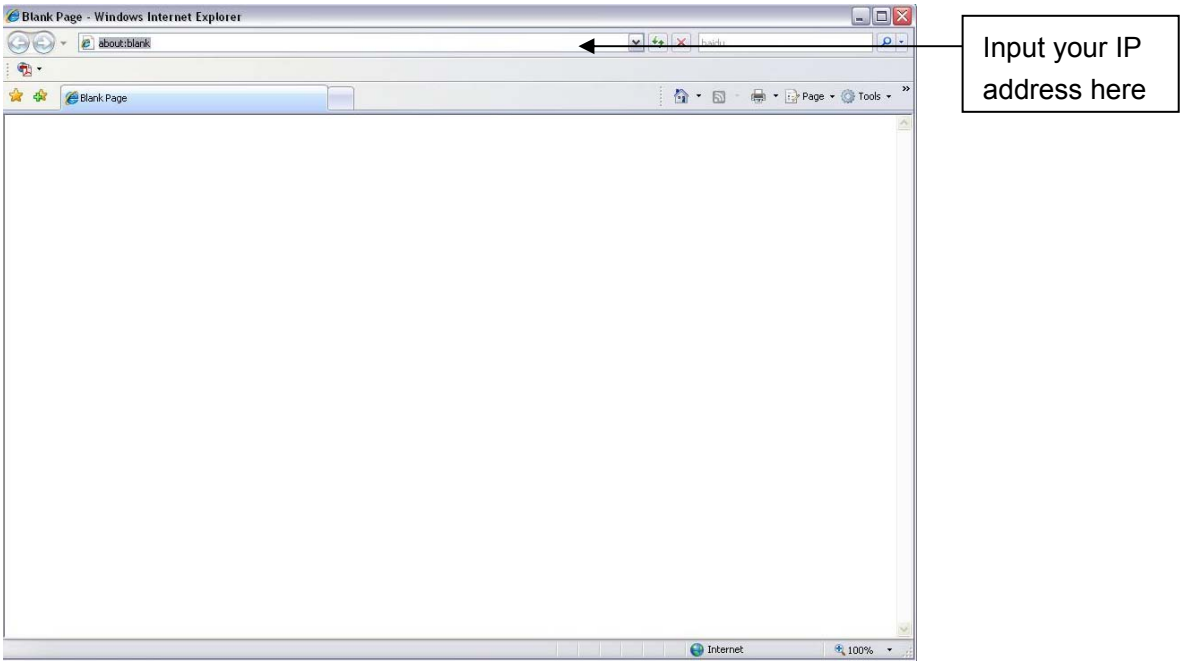

Figure 6-1

System pops up warning information to ask you whether install controls or not. Please click OK button.

If you can't download the ActiveX file, please modify your settings as follows. See Figure 6-2.

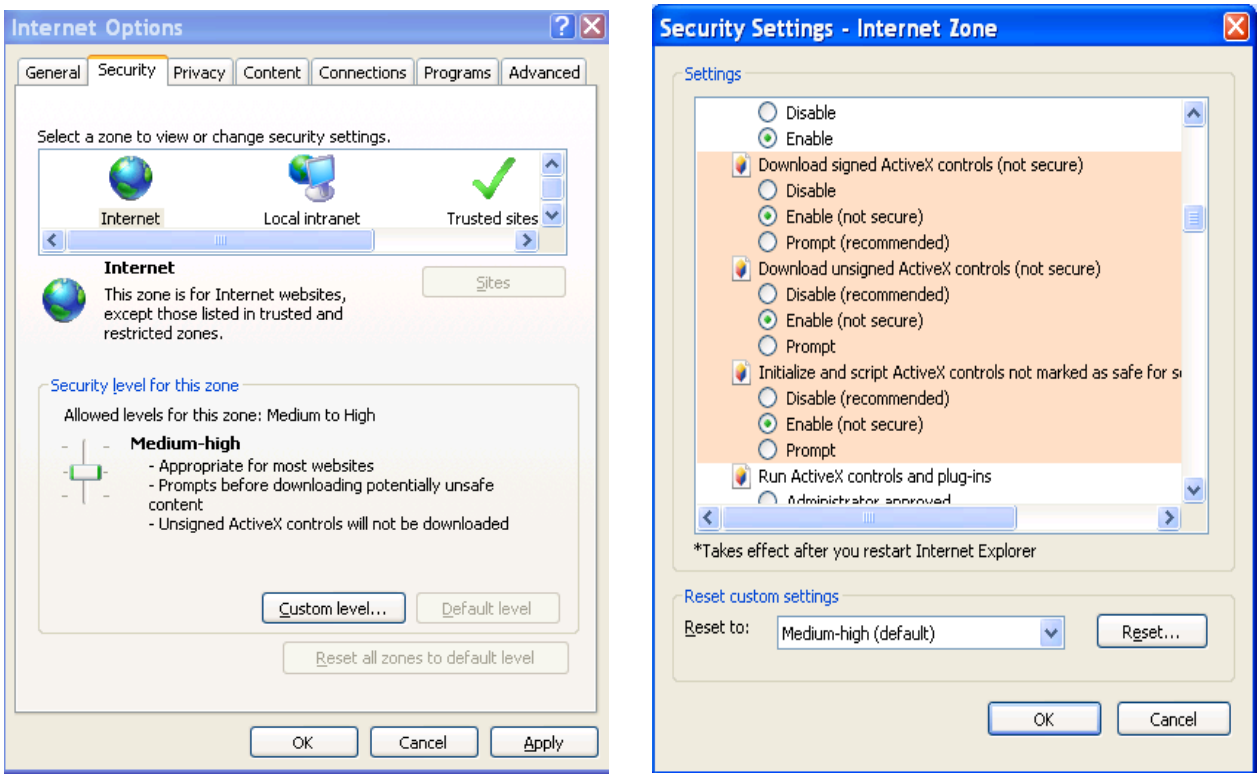

Figure 6-2

After installation, the interface is shown as below. See Figure 6-3.
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.

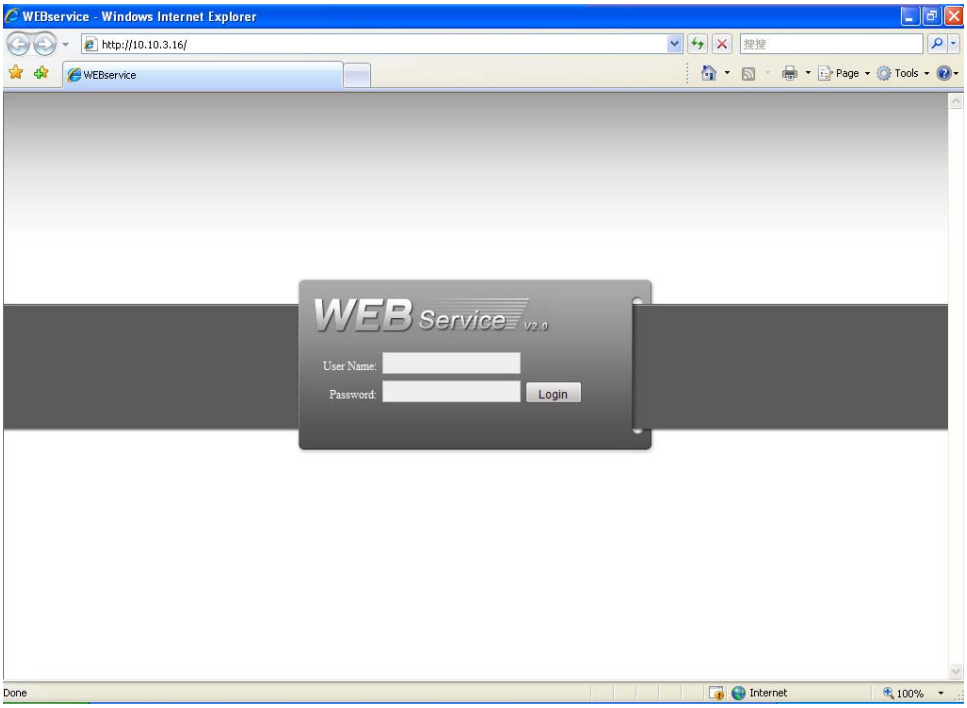

Figure 6-3

After you logged in, you can see the main window. See Figure 6-6.
This main window can be divided into the following sections.

- Section 1: there are five function buttons: configuration, search, alarm, about , log out .
- Section 2: there is a channel number and three function buttons: refresh, start dialog and local play.
- Section3: there are PTZ, color button and you can also select picture path and record path.
- Section 4:real-time monitor window. Please note current preview window is circled by a green rectangle zone.
- Section 5: Here you can view window switch button. You can also select video priority between fluency or real-time.
  - ✧ System monitor window switch supports full screen/1-window/4-window/6-window/8-window/9-window/13-window/16-window/20-window/25-window/36-window. See Figure 6-4.

Figure 6-4

- ✧ Preview window switch. System support 1/4/8/9/16-window real-time preview. Please you need to have the proper rights to implement preview operation. You can not preview if you have no right to preview the either channel. See Figure 7-5.

Figure 6-5

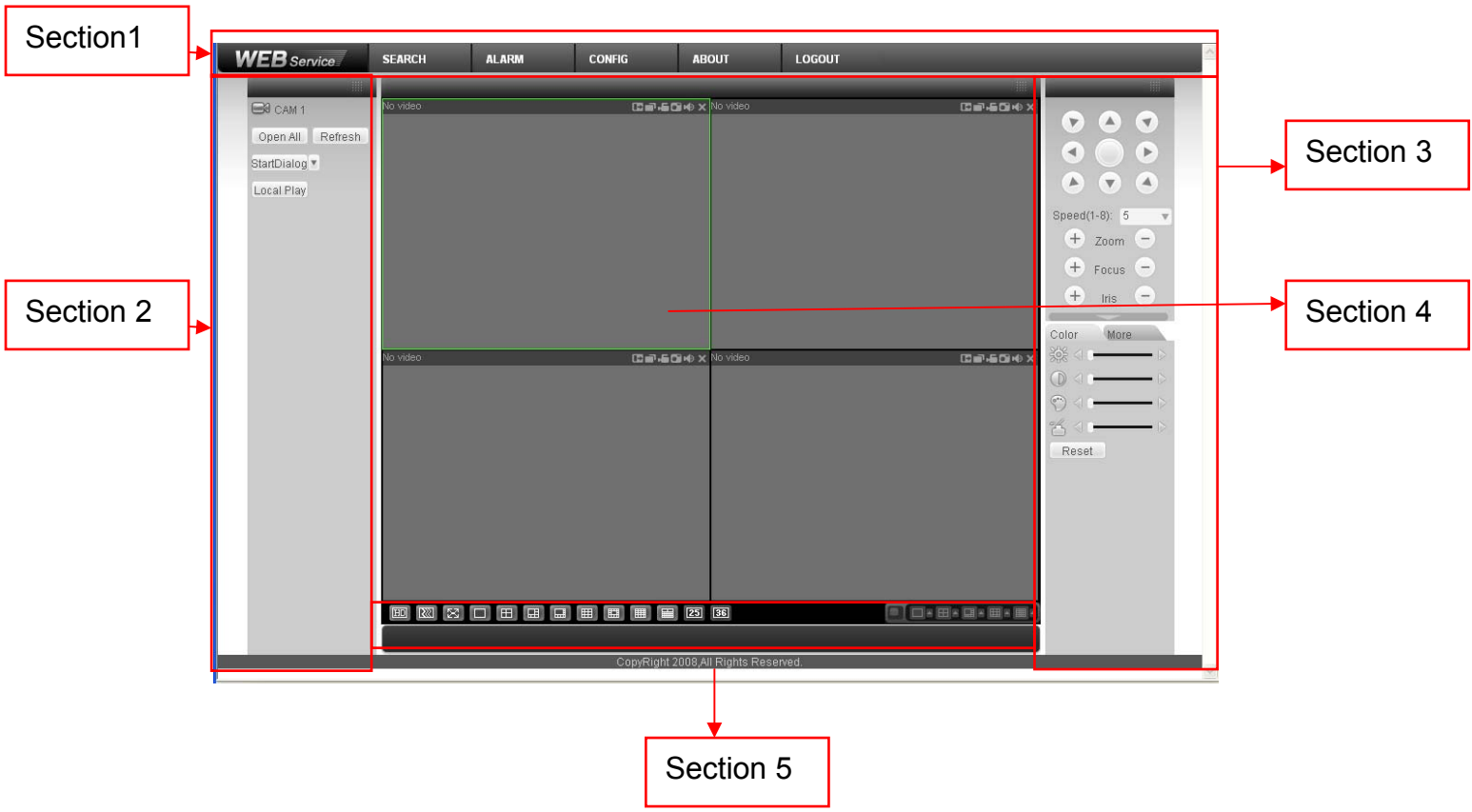

Figure 6-6

Please refer to the web operation manual for detailed information.

Note:
Slight difference may be found in user interface.
All the designs and software here are subject to change without prior written notice.
Please visit our website for more information.

7 Appendix 1 Specification

Specification		Index	Note
Video	Standard Supported	PAL : 25f/s NTSC: 30f/s	
	Encode capacity	One D1 + one CIF or One 6-frame 6 UXGA＋one QCIF	
	Encode bit stream	UXGA（1600×1200） WSXGA（1600×1024） SXGA（1280×1024） WXGA（1280×800） XVGA（1024×768） SVGA（800×600） SVCD（480×480） QVGA（320×240） VGA（640×480） CIF（352×288） BCIF（720×288） HD1（352×576） D1 （704×576）	
	Encode Speed	Real-time mode： NTSC 1f/s-30f/s for each channel (Adjustable). PAL 1f/s-25f/s for each channel (Adjustable)	
Network		Max support 10 users to view real-time video via network.	Delaying time is within 100ms.
Power Consumption		Usually 3W. It is less than 4w.	
Power	DC 12V	12V DC	
	PoE	PoE(48V DC)	
Temperature	Working temperature	0-50℃	
	Chassis risen temperature (when system is running)	<20℃	When system is running, the chassis temperature deducts environment temperature.
Working Environment Humidity		Less than 90%	

Weight		

8 Appendix 2 Function List

Specification		Note
Lens Control	Zoom Adjustment	Manual
	Focus Adjustment	Manual
	Aperture Adjustment	Auto /manual DC adjustment
CCD Video Process	White balance adjustment	Auto
	Backlight compensation control	Auto
	Contrast ness adjustment	Auto/Manual
	Bright ness adjustment	Auto/Manual
	Electronic shutter control	Auto
	Color/B&W(Day/Night) switch	Auto/Manual
		Here color/B&W(Day/Night) switch means electronic switch ,just remove the color and leave the black/white, it is not filter switch.
Video	UXGA/WSXGA/SXGA/WXGA /XVGA/SVGA/SVCD/QVGA /VGA/CIF/BCIF/HD1/D1	Max support UXGA resolution.
	H.264 Video compression	Standard H.264 encode/decode format
	Motion Detection	Take 16*16 pix as a macro unit. Support 1620 detection zones. Sensitivity value ranges from 0 to 100.
	Dual-stream	1ch D1(20FPS) + 1ch CIF(20FPS) or 1ch 6-frame UXGA+1ch QCIF
Audio	Audio Talk	Delaying value within 200ms
	Audio Listening	1-ch MIC input.
Network	WEB Access	Hisilicon standard H.264 decode library
	PPPoE	Dial function
	DHCP	Auto get IP address
	DDNS	Dynamic Domain Name Server
	SMTP	Email function
	FTP	File transmission protocol
	NTP	Time revise
	DNS	Network domain name parse.
	Support IP address auto search function	
	Wireless Network Interface	802.11b/g
Record	Schedule Record	Support max 6 periods.
	Manual Record	After enabling manual record, no matter system is in schedule or alarm status

		or not, system just begins recording.
	Alarm Record	System automatically enables recording function when alarm occurred.
	Motion Detection Record	When input video changes, system automatically enables record operation.
OSD	Time Title Display	● There are 256 layers. O is the bottom layer and 255 is the highest layer. ● Transparent value ranges from 0 to 255. O means completely transparent and 255 is opaque. ● OSD character type zone is within 40000 pixels.
	Channel Title Display	Please refer to the above information.
	Privacy Mask	Max support 8 zones.
Storage	Local MicroSD storage	Support high-speed card/low-speed card.
	Based on SDK network storage	Storage directory can be modified. Local HDD support FAT32 protocol.
	Based on FTP network storage	
Alarm	Network alarm/local alarm output	1-ch output
	Local alarm/network alarm input	2-ch input
Event Management	Activate alarm via motion detection or external input	Please enable pre-record function when activating the alarm
	Upload video file or JPEG file via email、FTP、HTTP	Upload initiatively
	Send out alarm notice via email, HTTP and external port.	Support anti-dither when alarm occurs frequently.
	Support video short time buffer storage before or after alarm	Pre-record is 2Mbytes Buffer storage video of 5s.
Control	RS485 PTZ control	Support semi-duplex communication way.
	RS232	For debug
On-line Upgrade	Network remote upgrade	Upgrade program via web or client-end.
	Serial port upgrade	Upgrade from network via serial port command.
Device Management	Serial port control platform	View PC running status or IPC parameter via serial port.
	Network client-end	Log in the client-end software in the PC to monitor IPC.
Parameter Configuration	Device information, video information, serial port setup, record setup, motion detection	IPC provides interface to modify system setup.

	setup, alarm setup, OSD information.	
	Search log, status, user management, email setup, data modification, program upgrade, reboot and etc.	IPC provides interface to check system running information.
Log	Important event log record	Record the following information： System operation, setup operation, alarm event, record management, user management, clear log.
Digital watermark		Prevent from unauthorized data modification.
Power supply	PoE	Comply with IEEE802.3af standard. For –P series only.
	DC12V power supply	
RESET	Support hardware/software/Watchdog reset	Watch dog max support 35 seconds.
Port ESD protection	Alarm input port	
	Analog audio/ video output/input port	
	Network Interface	
	12V adapter	
Interface	Alarm input（two）	
	Alarm output（one）	
	Network interface（RJ45 10M/100M self-adaptive Ethernet port）	
	Wireless network port(One antenna)	For –W series only
	SD card port（one）	Support high-speed card/low-speed card.
Others	Running status indication light	One red/green indication light.
	Network receive and send indication light （one green light）	Network interface seat has
	Network connection indication light （one yellow light）	
	Wireless network connection indication light （ one green light ）	For –W series only.
	RESET button（one ）	Button
	Auto aperture port	One port, DC type.

9 Appendix 3 Device Factory Default Setup

Function Configuration Type	Item Name	Default setup
General Setup	Date format	Y-M-D
	Date separator	‘ _ ’
	Time format	24H
	Language	Simplified Chinese
	When HDD is full	Overwrite
	Record duration	60M
	Device No.	8
	Video type	PAL
Encode Setup	Channel	Channel01
	Encode mode	H.264
	Audio/Video enable	Enable audio and video
	Resolution	SVGA
	Frame rate	25
	Bit stream control	VBR
	Quality	Good
	Bit stream value	2048
	I frame interval control	50
	Video color	Brightness:50 Contrast:50 Sautratioon:50 Hue:50
	Watermark	Enable Watermark: all Watermark type: character Watermark: Digital CCTV
	Privacy mask	Never
	Time title	Enable. OSD transparent :128
	Channel title	Enable. OSD transparent :128
Record Setup	Channel	Ch01
	Pre-record	4 seconds. Enable redundant
	Storage setup	● Record: schedule/motion detection/alarm local storage ● Snapshot: schedule/motion detection/alarm, local storage
	Start time	0:00:00
	End time	23:59:59
	Record	Enable schedule/motion detection/alarm
	Snapshot	Enable motion detection/alarm
	Week	Current date
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	37776
	Network user connection amount	10
	Network transmission QoS	Disable
	Remote host	Multiple broadcast group
	Enable	Disable
	IP address	255.255.255.0
	Port	36666
	Email setup	Enable
	Multiple DDNs	Disable
	NAS setup	Disable
	NTP setup	Disable
	Alarm server	Disable
Alarm Setup	Event type	Local
	Alarm input	Input 01, disable
	Type	Normal open
	Setup	Period: Start time 0:00:00 End time:23:59:59 Period 1:enable Week: Current week
	Anti-dither	0 second
	General output	Disable
	Alarm latch	10 seconds
	Record channel	1, enable
	Record latch	10 seconds
	Send	Disable
	Tour No.	Disable
	PTZ activation	Event type: never Address: 0
	Snapshoot	Disable
Video Detection	Event type	Motion detection
	Channel	Ch1, Disable
	Sensitivity	3
	Time period setup	Period: Start time 0:00:00 End time:23:59:59 Period 1:enable Week: Current week
	Anti-dither	5 seconds
	General output	Disable
	Alarm latch	10 seconds
	Record channel	Disable
	Record latch	10 seconds
	Send	Disable
	Tour channel	Disable
	PTZ activation	Event type: Never Address: 0 Disable

	Snapshot		Disable
PTZ Setup	Channel		Ch01
	Protocol		EPTZ
	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
	User account		admin--- password: admin 888888--- password: 888888 666666--- password: 666666 default--- password: tluafed
	Snapshot	Channel	Ch01
		Snapshot mode	Scheduled
		Frame rate	1f/s
		Resolution	SVGA
		Quality	60%
	Auto maintain	Auto reboot	Never
		Auto delete old files	Never
Camera Property	Channel		1
	Exposure mode		Auto
	Day/night mode		Color
	Backlight compensation		Middle
	Auto aperture		Disable
	Image		Disable
	Flip		Disable
Auto registration	Enable		Disable
	SN		1
	IP		0.0.0.0
	Port		7000
	Device ID		Dahua
DNS Setup	DNS		202.101.172.35
	Alternative DNS		202.101.172.35

10 Appendix 4 FAQ

Question	Fix
Device can not boot normally	Press RESET button for at least 20 seconds to restore factory default setup.
SD card hot swap	Please stop recording before you remove SD card.
SD card write and erase amount	SD card write and erase max amount is 100,000. Do not save scheduled record files to the SD card, otherwise it may reach the max amount and result in card damage.
Can not use disk to storage	Please format SD card when disk status information is hibernation or capacity is 0.
Network upgrade failed	The status indication light is red when network upgrade failed, you can use port 3800 to upgrade.
Electronic PTZ	Please select PTZ protocol as EPTZ first if you want to use electronic PTZ. Please make sure the device resolution is less than SVGA.