wanscam

Wireless/Wired Network IP Camera

(For PC View)

Night Vision & Remote Operation

User Manual

Thank you for buying our IP camera

Wanscam AJ Series IP Camera products are designed and equipped for local and

remote network video surveillance system, including wired IP bullet camera, wireless IP

bullet camera, IP IR dome camera, IP IR waterproof camera, IP Pan/Tilt/Zoom Camera etc.

We adopt high performance chip to ensure high quality media processor which processes

audio and video collection, compression and transmission. Standard M-JPEG

compression format ensures clear and streaming video performance. It enables users to

view live video via IE6.0, IE7.0, IE8.0, Firefox, Google browser or other standard browser.

Wanscam AJ series IP Camera products are applicable for big, medium-sized and

small enterprises, chain store, factory, home and all kinds of spots where remote network

video transmission and control supposed to be installed, they are easy to be installed and

operated. Before the installation of the IP camera, please check if your product

accessories in the package are complete

Packing List

Untie the pack and check the items contained against the following list:

•IP Camera X1

Warranty Card X1

•DC Power Supply X1

•CD X1

Certificate of Quality X1

Mounting bracket X1

NOTE: Please contact us immediately if anything damaged or short of contents.

1

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1. Product Introduction

1.1 Safety Instructions

(1). Use the proper power source.

Do not use this product with a power source that supplies more than the specified Voltage (100-240V AC).

(2). Never insert anything metallic into the camera.

Inserting metal object into the camera can be a source of dangerous electric shock.

(3). Do not operate in wet or dusty environment.

Avoid places like a damp basement or dusty hallway.

(4). Do not attempt to disassemble the camera.

You may be subjected to severe electrical shock if you attempt to take apart the camera while the camera is connected to its power source. If there are any unusual sounds or smells coming form the camera, unplug it immediately and contact Customer Service.

(5). Handle the camera carefully

Dropping the camera on any hard surface may cause a malfunction. If the camera does not work properly due to physical damage, please contact Customer Service for repair or exchange.

(6). Apply to FCC and CE Rule

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

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

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. This equipment complies with FCC and CE radiation exposure limits set forth for uncontrolled environment. This equipment should be installed and operated with minimum distance 20 cm between the radiator & your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

1.2. Product Specifications

- *- Adopt high Performance, strong function media processor 32Bit RSIC
- *- High sensor CMOS
- *-Adopt optimized MJPEG video compression algorithm, realize high-definition images transmission in narrow bandwidth;
- *-Maximum support 15 users viewing at the same time, no limit for users if using forwarder Server function;
- *- Built in Web Server, convenient for users to use standard browse to realize the real time monitoring and setting administration;

- *-Support WIFI:802.11 b/g/n wireless networking;
- *-Support remote system update;
- *-Support DDNS analysis, support LAN & Internet (ADSL,Cable Modem)
- *-Support variety of network protocol: TCP/IP, UDP, SMTP, PPPoE, Dynamic DNS, DNS Client, SNTP, BOOTP, DHCP, FTP, SNMP, WIFI/802. 11b/g
- *-Parts of modes products support one/ two way audio, talkback;
- *-Support motion detection alarm function (area & sensitivity Configurable);
- *-Support image snapshot
- *-Abnormal automatic recovery function, auto reconnection available when network Interruption occurred.
- *-Dynamic alarm function, alarm time-schedule configurable.

1.3. System Requirements

CPU:	2.06GHZ or above
Memory:	256M or above
Network Card:	10M or above
Display Card:	64M or above
Operating System:	Windows XP/Vista/Windows 7 (32 bit)
Hard Disk Drive:	No Maximum Storage Requirement
Internet Explorer:	Version 5.0 or above
DirectX:	Version 8.0 or above
Audio Card:	PC must have microphone and speaker connected and configured for 2-Way audio play.
Network Protocol:	TCP/IP, UDP, SMTP, PPPoE, Dynamic DNS, DNS Client, SNTP, BOOTP, FTP, SNMP, Wifi (802.11 b/g)

1.4. Product Views

1.4.1 Front View

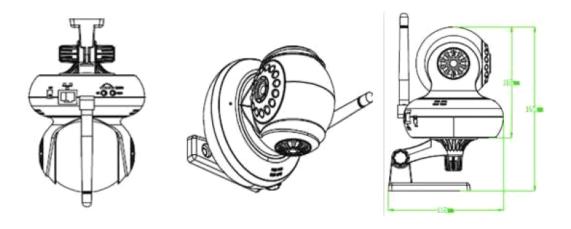


Figure 1.1

1.4.2 Interface View



Figure 1.2





- 1: Audio Out , 2: Audio In
- 3: Ethernet interface: RJ-45 interface. Power Supply Light: constant on after power up Network light: constant sparkle after power up data transmission.
- 4: Antenna:
- 5: Power input interface: connect direct current 5V Power

1.5 Hardware Installation

Follow the steps below to set up your camera hardware. Make sure to follow each step carefully to ensure that the camera operates properly

- 1. Install the Wi-Fi antenna (For wireless model) .
- 2. Plug the power adaptor into camera
- 3. Plug the network cable into camera, the other side to the router/switch
- 4. It takes approx 30 seconds to boot up the camera, then you will find the IP address from "Search Tool" (Figure: 1.8)
- 5. When the power on and network cable connected, the green led of the real panel will keep on, The yellow led will keep flash.

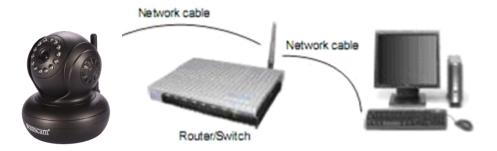


Figure 1.3

1.6 Software Installation

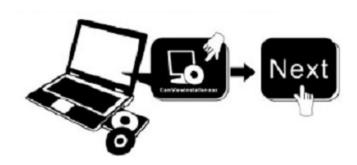


Figure 1.4

Open the CD Install the follow software:

- 1. ActiveX: Click "OCX setup"—"Next"—"Install"—"Finish".
- 2. Search Tool: Open the CD, click , The Search Tool will run automatically. (No need to install. You can copy this software to your desktop.)



Figure 1.5

2. Software operation

2.1 Search Tool Software

2.1.1 Search the IP address of the camera

When the device has been mounted properly, you can double click the Icon



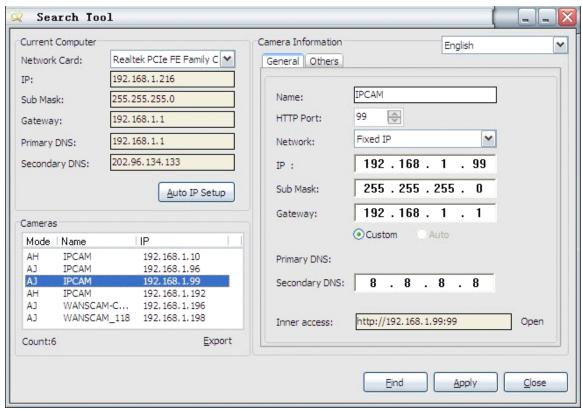


Figure 2.1

Note: The software searches IP Servers automatically over LAN. There are 2 cases:

- 1. No IP Cameras found within LAN. After about 1 minute search, the Equipments List Field not show the IP address.
- 2. IP Cameras have been installed within LAN. All the IP Cameras will be listed and the total number is displayed in the Equipments list field as shown in Figure 2.1

Note:

- **1. Current Computer** indicates the Computer's IP Address information.
- **2. Equipment information** indicates the IP camera's IP Address information.
- 3. If you find that the camera's "Subnet Mask", "Gateway", "DNS Server" is not as some as your current computer's. You need try to change the camra's IP address.

 Make sure the "Subnet Mask", "Gateway", "DNS Server" is the same as your router's or your current computer's.

4. If you don't know how to configure your camera's IP address. You can click "Update" button. The Search Tool software can help you configure a usable IP camera automatically.

2.1.2 Configuration of the Network

Once your camera's IP address' **Subnet Mask, Gateway, DNS Server** is the same as your PC or router, you need configure the camera's Network parameter manually.

IP address: Fill in the IP address assigned and make sure it is in the same subnet as the **Gateway**, and the subnet should be the same as your computer or router. (i.e. the first three sections are the same)

Subnet Mask: The default subnet mask of the equipment is: 255.255.255.0. You can find the subnet mask from your PC or router.

Gateway: Make sure it is in the same subnet with PC's IP address .Here gateway is the LAN IP of your router.

Primary DNS: IP address of IPS network provider. You can also set it as the same as the Gateway.

NOTE: You can find out the **Subnet Mask**, **Gateway**, **Primary DNS** of your PC from the "Search Tool" software.

Http Port: LAN port assigned for the equipment, default is 99. You can change the port number to any one you want such as: 98,211,9999 etc.

3: Real-time Video Demonstration.

3.1. Camera Login:

You can access the camera through IP Camera Tool or IE, Firefox, Safari, Google Chrome or other standard browser directly.

- 1. Double click the IP address of the IP Camera listed (Figure 2.1). The default browser you use will run automatically and come to the camera login interface. (Figure 3.1)
- **2.** To access the camera by IE Browser directly, just type the camera's IP address, for example, if the camera's IP address is 192.168.1.99:99:



Figure 3.1

Default username: admin Password: no password.

Input the correct user name and password, the Sign In interface will pop-up. There are three models to login (figure 3.2).



Figure 3.2

- (1) ActiveX Mode (For IE Browser): available in IE6.0 or above explorer
- (2) "RTSP Stream Mode": available in Firefox, Safari, and Google browser.
- (3) "No Plug-In Mode": available in smart phone browser.
- (4) SD card video playback online

3.2. View via IE Browser.

Choose Active Mode (For IE Browser), and sign in.

OCX_Setup

The first time login the camera, maybe get ActiveX prompt as the picture below, please

download the Ocx(or run in the camera again, then will see live video, details as below:



Figure 3.3
After Download Ocx-Setup (oPlayer Software), Click and install it, untill finished.

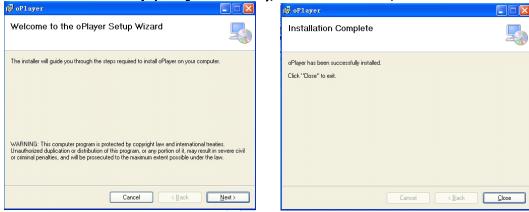


Figure 3.4

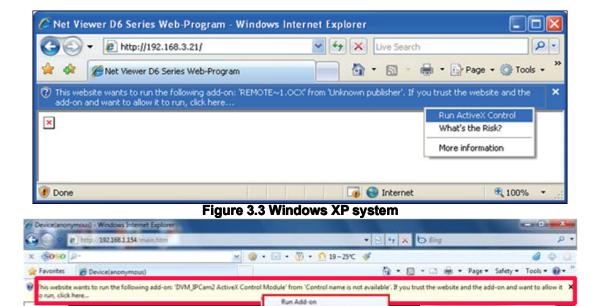


Figure 3.4 Win7 System

What's the Risk?

Run Add-on on All Websites

wanscam

Note: If there is still no live video after run ActiveX, please try to enable the ActiveX options of IE security settings, please do the follow steps:

- 1. Close the firewall of your computer.
- 2. Change the ActiveX settings, "IE" browser > "Tool" > "Internet Options" > "Security">
- "Custom Level" > "ActiveX control and Plug-ins", all the ActiveX options set to be

"Enable": Especially:

Enable: Download unsigned ActiveX controls

Enable: Initialize and script ActiveX controls not marked as safe

Enable: Run ActiveX controls and plu-ins

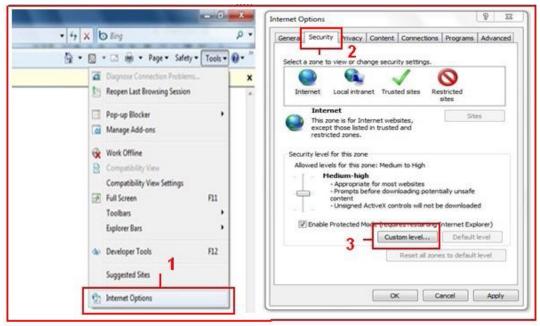


Figure 3.5

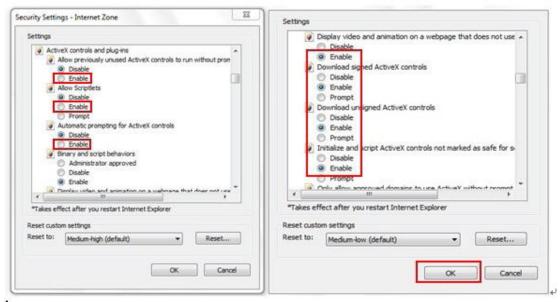


Figure 3.6

In Addition: you can also click "start" menu->"Internet Explorer", choose "Internet attributes " to enter, or via "Control Panel" ->"Internet Explorer", enter to Security setting.

3. If there is still no image, please close your anti-virus software, and then try step 1 & 2 again.

4. If you allowed the Active X running, But still could not see live video, Only a Red

Cross in the center of the video, And the device status light change to yellow color, not green please change another port number to try, Don't use port 80, usd other port such as 99, 199 etc.

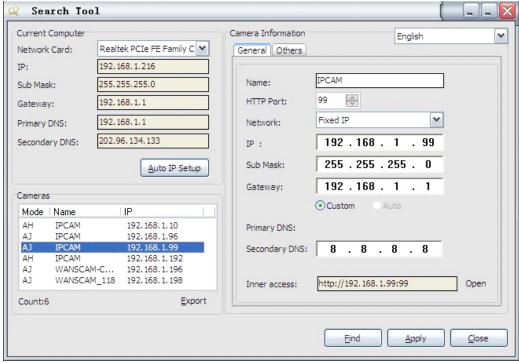


Figure 3.7

NOTE: Make sure that the firewall or anti-virus software doesn't block the software or ActiveX. If you couldn't see live video, please close your firewall or anti-virus software, and try again.

3.3. View via Safari, Firefox, Google Browser

Choose Server Push Mode (For Safari, Firefox, Google Browser), and sign in Server Push Mode doesn't support ActiveX, so some functions are not available, such As Record, Audio, Talk, Speaker,The speed control bar, Zoom etc.),if you want to use these functions, please use IE Browser.

The Control Interface in this mode is as bellow:



3.4. Main Menu interface introduction

Take the "Active Mode(For IE Browser)" For example:

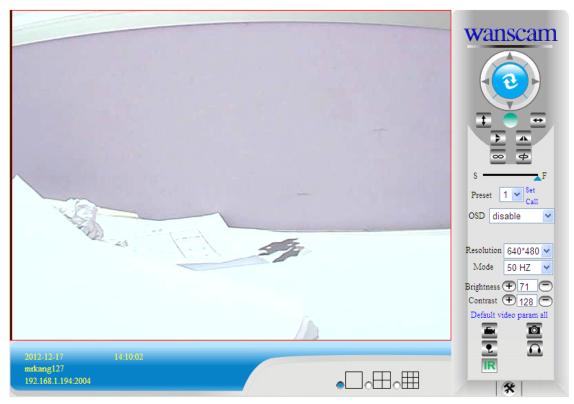
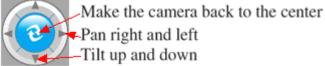


Figure 3.8

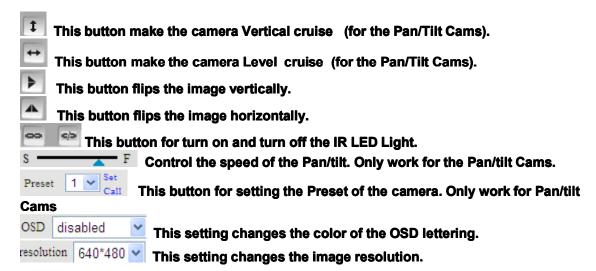


-

The Pan/Tilt Feature only work when

the cameras have this Pan/Tilt function.

This option enables log detection. After the online user clicks this button, a log is entered into the camera's Log Data documenting the IP address of users who have accessed the IP camera. This Option enables alarm detections too.



mode 5	50 HZ Y This setting changes the image frequency.
Brightness	This setting changes the image brightness.
Contrast (This setting changes the image contrast.
Default vid	deo param all This option resets all main menu options to factory default.
_	is option opens the camera's recording functionality menu.
	s option takes a snapshot of the current screen and saves the snapshot to the rd Drive.
This	s option enables User-to Camera audio. If the online user
and conf	is option enables Camera-to-User audio. If the online user has speakers connected figured to their PC, clicking this option will allow them to hear audio from the of the camera.
⅔ Thi	is button opens the IP camera's Backend Menu
• □ oE	These options enable single view, quad screen view, or 9 screen view:
	ction serves no purpose unless you have more than one camera connected and
	ed to your interface. ease refer to section 8.1.1 Multi-Device Settings*
IR	pen and close the infrared function. IR On , IR OFF

3.5. Administer Setting Instruction

When login as Administrator, you can enter the IP Camera for Administrator.

Administrator supports all the settings and operations of the camera; you can set and control it freely There are some special functions only for administrator as below:

Alias setting: You can set your favorite device aliases.

Date&Time set: seting the date and time.

Uer settings: Can be set up to 8 users. On this page you can set up accounts of the user name, password, as well as in their packet (administrator, operator, visitor).

- Visitor: In this mode, you can only visit.
- **Operator**: You can set the direction of the lens device, set the video screen's brightness, contrast and other parameter.
- Administrator: You can set the device advanced configuration.

UPnP set: If you want internet access IPCAM, to ensure that the state is successful UPnP. **Device Firmware Upgrade:** The system firmware update the device firmware and application of **Restore factory settings:** When there is not a response when the error occurred, you can restore the factory settings to resolve the device.

I reported the device: reported the device.

Back: Return to monitor mode

3.5.1 Multi-Device Settings

Add a local area network equipment
 In the multi-device configuration page, you can see all the equipment inside the LAN.

 The first device is the default device. You can add more devices listed in the list of

equipment. Embedded applications, up to 4 devices at the same time-line. Click the "second road equipment" and double-click "Current list of devices in the LAN" in the device entry name, host address, Http port will automatically be filled, require the user to fill in the correct account name and password, click "Add." Repeat this process you can continue to add devices. Finally do not forget to click on the "Settings" button.

		-	Device information
	Multi-Device Settings		Alias Settings
	IPCAM(192.168.1.108)		Device date&Time Settings
Device List in Lan	IPCAM(192.168.1.99)		Users Settings
Device List III Laii			Multi-Device Settings
	Refresh		Basic Network Settings
The 1st Device	This Device		Wireless Lan Settings
The 2nd Device	None		UPnP Settings
Alias	IPCAM		DDNS Service Settings
			Mail Service Settings
Host	192.168.1.99		Ftp Service Settings
Http Port	99		Alarm Service Settings
User	admin		PTZ Settings
			Record Path
Password			Upgrade Device Firmware
	Add Remove		Alarm Log
The 3rd Device	None		Back



Figure 3.10

3.5.2 Network Settings

Basic Network Settings		Device information Alias Settings
Obtain IP from DHCP Server		Device date&Time Settings
IP Addr	192.168.1.99	Users Settings
Subnet Mask	255, 255, 255, 0	Multi-Device Settings
0-1	400 400 4 4	Basic Network Settings
Gateway	192.168.1.1	Wireless Lan Settings
DNS Server	8.8.8.8	UPnP Settings
Http Port	99	DDNS Service Settings
•		Mail Service Settings
	Submit Refresh	Ftp Service Settings
Cubin		Alarm Service Settings
		PTZ Settings
		Record & Capture Path
		Upgrade Device Firmware
		Alarm Log
		Back

Figure 3.11

This sector is for DHCP and IP configuration, port forwarding is needed, If you choose to set IP address, please fill in the relative IP address, subnet mask, gateway, DNS server, Http port;

3.5.3 Wireless Settings

- 1. Make sure the router is a wireless router.
- 2. Make sure the Wi-Fi antenna installed.
- 3. Make sure whether there is encryption of the WLAN of the router, if there is encryption, keep the key.
- 4. Login the camera, click | "Wireless Lan Settings">"Scan", please scan 2times, then you will find the WLAN from the list, choose the one you use.
- 5. If there is no encryption, just click "Submit", if there is encryption, please input the key, then click "Submit".
- 6. Wait about 30 seconds, the camera will reboot, then unplug the network cable.

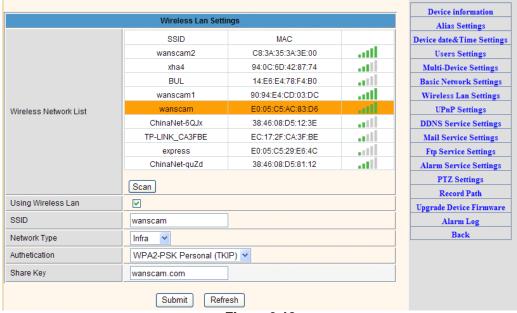


Figure 3.12

3.5.4 Dynamic DNS Setting (DDNS)

3.5.4.1 DDNS Setting:

(1): Click | > "DDNS Service Settings".



Figure 3.13

(2): Choose the DDNS, there are 4 kinds of options:

(1): Manufacturer' DDNS: We provide a free DDNS: vipcam.org. This domain is provided by manufacturer.

Note: 88safe.com is old DDNS provided by manufacturer also. If you want use the manufacturer's free DDNS, Please Choose to use vipcam.org.

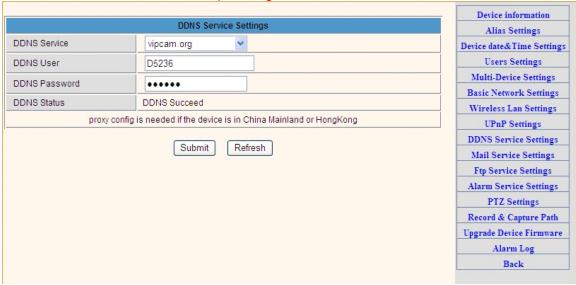


Figure 3.14

(2): The Third Party DDNS: This domain is provided by the 3rd party, such as Dyndns, Orav. 3322

If you use the third party DDNS, please choose the server you need, such as "3322.org" or "dyndns.org" as below:



Figure 3.15



Figure 3.16

You have to register an account firstly, keep the user, password, host, then fill in it. Note: Only one DDNS can be chosen, for example, if you use manufacturer's DDNS, the 3rd party one won't work, if use the 3rd party DDNS, the manufacturer's one won't work.

3.5.4.2 Port forwarding settings:

1: Setting the IP address of the camera

The default IP address of the camera is: http://192.168.1.99:99 The default IP address of camera you can change to any other one you like, such as:

Change to: 192.168.1.109:109. or 192.168.1.99:90 etc.

Click "Apply">fill in the user name and password of the camera>click "OK" then the camera will reboot, wait about 30 seconds. You will get your changed IP address.

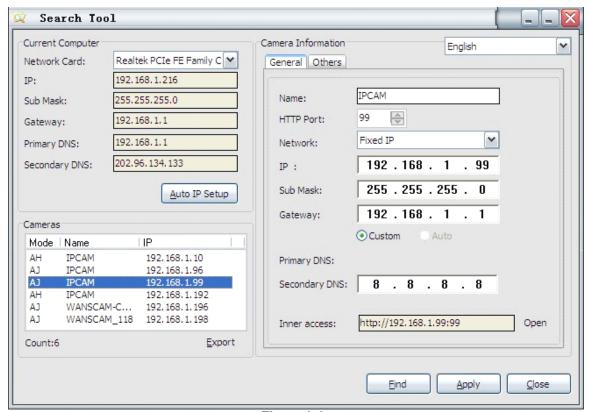


Figure 3.17

Make sure the "Subnet Mask", "Gateway", "DNS Server" is the same as your router.

2: Setting Port Forwarding in the router.

This is the most important step. Set port forwarding in router refer to the IP of your camera correctly, then the DDNS will work. Because there are so many kinds of routers from all over the world, so it's difficult to show a fix steps, but there are some samples of different routers' port forwarding settings as below, just for reference:

TP-LINK:

- (1) Login the router.
- (2) Choose "Forwarding", select "Virtual Servers"



(3) Click the Add New button, pop-up below:

Service Port:	(XX-XX or XX)	
IP Address:		
Protocol:	ALL	
Status:	Enabled	
Common Service Port:	-Select One- ▼	

Fill the service port (except 80), IP address of the camera, then click Save The port and IP address should be the same as Camera.

BELKIN:

- (1) Login the router.
- (2) Choose "Firewall", select "Virtual Servers"
- (3) Input the port (except 80) and IP address, then click save. Note: The port and IP address should be the same as Camera.

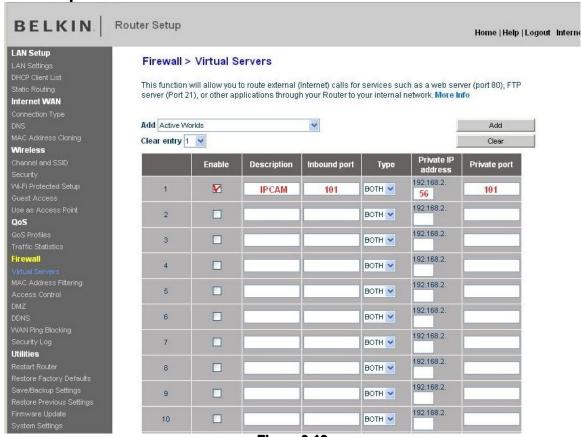


Figure 3.18

DLINK:

- (1) Login the router.
- (2) Choose "Advanced", select "Virtual Servers"

(3) Input the port, IP address, Protocol, then click save.

Note: The "public port" & "private port" should be the same as camera's port, choose the

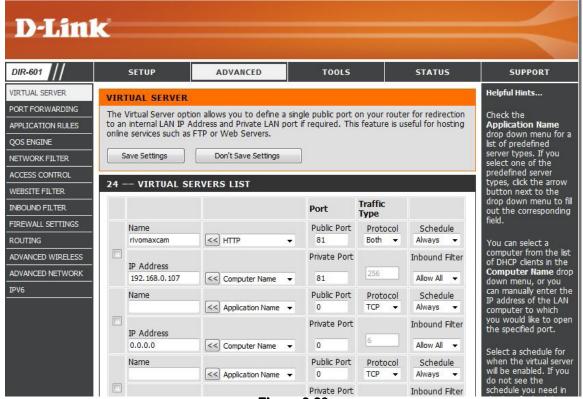


Figure 3.29

After all these 4 steps done, then you can use the DDNS freely, check the DDNS status from the camera as below, and get the link of DDNS for internet view.

Step: "Login">" >"Device Info":

protocol to be "both".

Device Status	
Device Firmware Version	67.2.0.120
Device Embeded Web UI Version	9.0.0.35
Alias	mrkang127
Device ID	JWEV-000938-ECRWE
Alarm Status	None
UPnP Status	UPnP Succeed
DDNS Status	DDNS Succeed
MAC	00:12:12:15:00:52
WIFI MAC	00:02:2A:F0:52:B6
Language	English 💌

Figure 3.20

3.5.5.3 DDNS Register

For example, you can go to Dyndns website to register a free account. http://www.dyndns.org / http://www.dyndns.com.

Step1: enter http://www.dyndns.com/ and Create Account

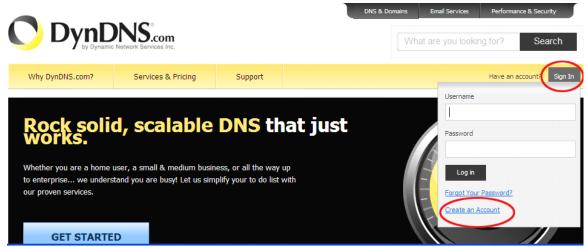


Figure 3.21

Step2: Set the username and password as below:

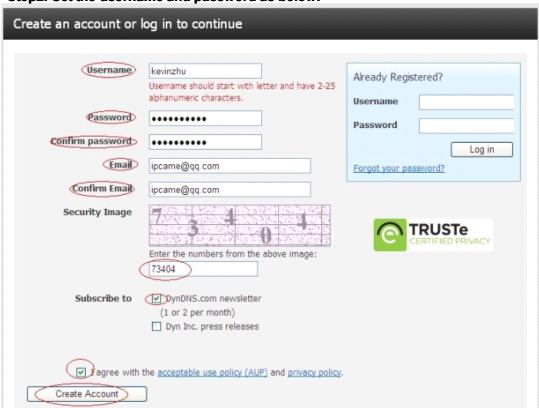
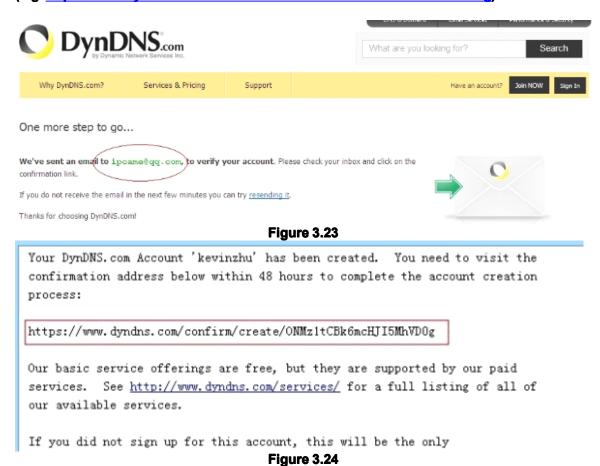


Figure 3.22

Step3: After a minute, you will receive a E-mail from DynDNS Support and it will give you a confirmation address

(e.g. https://www.dyndns.com/confirm/create/ONMzItcCBk6mcHJI5MhVD0g)



Step4: When the Account Confirmed, login and start using your account. Choose Add Host Services(Figure 3.25) and enter Add New Hostname (Figure 3.26)page.



Figure 3.25

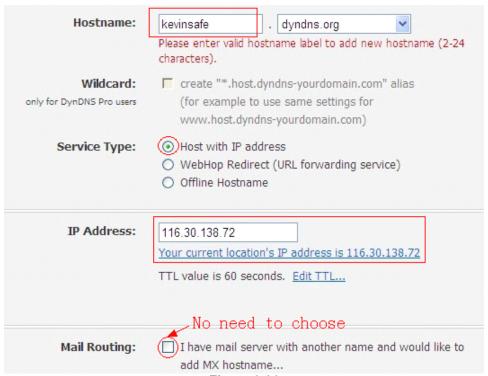


Figure 3.26

Step5: On the Add New Hostname page.

- 1) input your Hostname.
- 2) choose Host with IP address
- 3) click Use auto detected IP address xxx.xx.xxx. Then click Create Host.
- 4) after you have added a New Hostname, you need "Proceed to checkout"

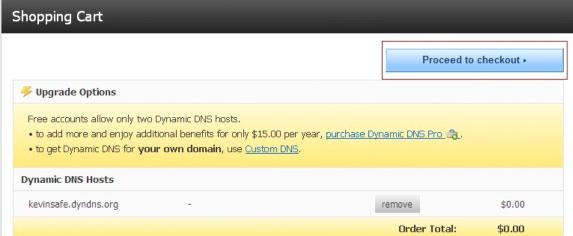


Figure 3.27

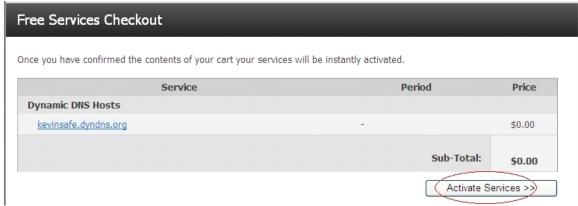


Figure 3.28



Figure 3.29

Step6: Now you obtained a Dynamic Domain Name(Figure 3.30), and can use it in the DDNS Service Settings(details: 3.5.5)

Notice:

If you have a dynamic IP address, Make sure you have download the DynDNS's "Update Client". And installed it succeed in your computer.

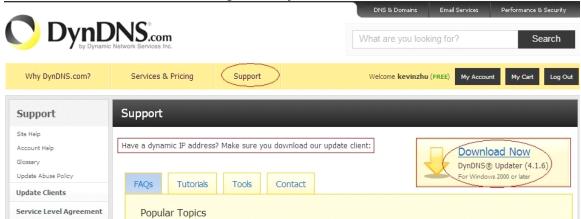


Figure 3.30

3.5.6 E-mail and FTP service Settings



Figure 3.31

The above setting is a preparation for the alarm function, the sender should be entered the sender's email address, recipient 1、2、3、4 is filled with recipient E-mail address; SMTP server should be filled with the sender email SMTP server, e.g. the sender email address is abc@163.com, and enter mail.163.com. Generally SMTP port is 25, do no need to change; when needs to check, just tick it, and enter SMTP user and SMTP password, both of them are provided by Email provider, and test according to reference; when needs to send, please tick Email notification Internet IP address; The e-mail server and other information can be obtained from the mail service provider the email notification is image captured when alarming if no email notification is needed when alarming, and then no need to enter.

Set up FTP service, you can fill in parameters like following:

	Ftp Service Settings
FTP Server	
FTP Port	21
FTP User	
FTP Password	
Upload Interval (Seconds)	0 Empty or 0 means do not upload pictures
	Test Please set at first, and then test.
	Submit Refresh

Figure 3.32

The above setting is equally similar to Mail Server Settings, when alarming is triggered it also sends image, please enter FTP server, FTP port, FTP user, FTP

password, FTP upload directory,FTP mode,FTP mode has two options: PORT and POSV. If needs a quick upload image, then select it, edit upload image interval (second)

3.5.7. Alarm Service Settings

As shown below, there are two modes of alarm trigger, first one is motion detection, please refer to below interface. the sensitivity of motion detection can be adjusted according to the users' requirement, the higher the number is, the lower sensitivity is; Another mode is input alarm, when connected, it triggers alarm through alarm input signal which connects to linkage alarm GPIO;

When triggered, there are 3 alarm modes: one is IO alarm linkage, camera connects with linkage alarm box through GPIO, sound the siren; the second is email notification, send email with images captured; the last is upload pictures alarm, as the way mentioned before FTP upload pictures alarm, Upload pictures interval (second) keeps consiste nt with the mentioned upload pictures interval of Ftp service settings. The schedule refers to arming time, as the selected time interval: 0: 00 minute per week to 0: 45 minutes and Monday 1: 00 hour and 2: 00 hour

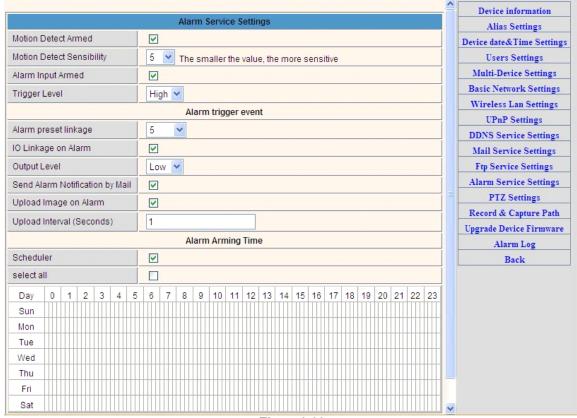


Figure 3.33

3.5.8 Record&Capture Path

This sector is for Record&Capture Path in your computer.It include: Record&Capture Path, Record file length(MB), Record time length(Minute), Reserved disk space(MB), Record cover.



Figure 3.34

3.5.9 Reset/Firm Ware Upgrade

This sector is for camera firmware upgrade, it includes device system firmware

Upgrade Device Firmware and device application firmware

Upgrade Device Embeded Web UI

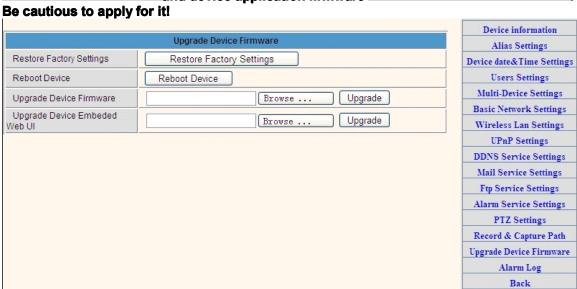


Figure 3.35

3.5.9.1 Restore Factory Settings

When users forget password, we can restore ex-factory settings, when click, a picture will pop up, Click ok, and wait for 1 minute and you can use it normally. User setting feature restores



Figure 3.35

3.5.9.2 Reboot Equipment

Click restart, it appears the above picture, click ok, wait for 1 minute and you can use it normally



Figure 3.36

4 Warranty

Under normal use condition, products resulting from its own failures in the warranty period will be free maintenance. Warranty Terms as following:

- a) Charge-free maintenance of the product is one year. We can repair it for free during the guarantee period (Damages not caused by misuse or vandalism). Repair over guarantee period, we will charge maintenance fee.
 - b) During guarantee period, breakdown caused by misuse or other reasons out of

range of warranty. You could ask repair depend on the card. We only charge for changed components, the maintenance charge is free.

- c) When the products need maintenance, hand up the card with products to the manufacture or local distributor.
- d) Take apart item crust, tear up the sealing label privately, this is out of warranty range.
- e) We do not accept the damaged item due to modification or add other functions.

The Following Circumstances will not be free warranty

- a) Period check, maintenance or change components due to normal attrition.
- b) The damages due to crash, extrusion, artificial flooding, moisture or other personal reasons.
- c) The damages due to floods, fire, lightning strike and other natural calamities or force majeure incidents factors
- d) Repaired item by non-authorized repair centers.

 All above terms, if changed, regarded to relevant regulations.

THAT'S ALL, THANK YOU!

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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

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

The antenna(s) used for this device must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.