Wireless/Wired Network Camera

Night Vision & Remote Operation

User Manual

Thank you for buying our IP camera.

This Series Products are designed and equipped for network video surveillance system, including wired IP bullet camera, wireless IP bullet camera, IP IR dome camera, IP IR waterproof camera etc. We adopt high performance chip to ensure high quality media processor which processes audio and video collection, compression and transmission. Standard MJPEG compression format ensures clear and streaming video performance. It enables users to view via IE browser, centre management software client software;

AJ series 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 install and operate. Before the installation of the IP camera, please check if your product accessories in the package are complete

Product Components and Features:

IP camera ----------1 PC
Bracket（optional）---------- -1 PC
Power adapter ----------1 PC
Warranty card----------1 PC
CD----------1 PC

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General Introduction

IP Camera is a new generation product with the combination of analog camera & IP video technology. Despite all functions which analog cameras have, IP camera can compress and encrypt video and audio signal then send it to remote terminals through internet with its built-in processor and web server. With its IP address, users can use standard PC IE browser to visit IP camera, real time monitor targets, manage and store video or image, PTZ control also is available through network.

As a new member in camera family, IP camera shares the same operation function with the analog camera, such as, auto white balance, auto shutter speed, AGC, auto backlight compensation etc. On the other hand, IP camera supports remote access through internet, and support multi-user visit, some IP cameras are able to extend to both analog and digital signal.

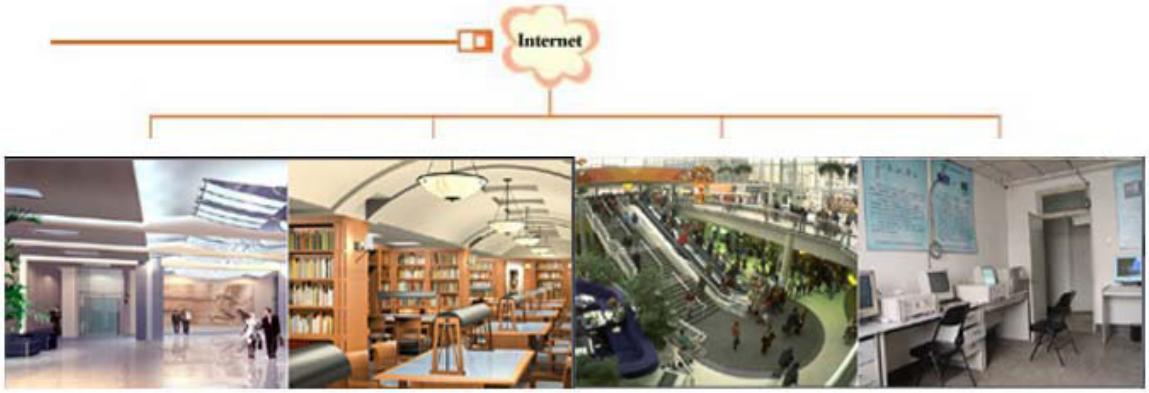
The core of F series IP cameras is 32Bit RSIC, adopts standard MJPEG compression format, camera sensor is CMOS, support auto white balance and backlight balance, support IE, cell phone browser， centralized monitor interface management. In general, according to the function of audio simplex & duplex, infrared, wired, wireless, POE, PZT, local storage, it has hundreds of products, to meet requirements of high, middle, low ranks of users.

1.1. 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，it is convenient for users to use standard browse to realize the real time monitoring and setting administration;
*-Support WIFI：802．11b/g 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 (set area & sensitivity);
*-Support image snap
*-Abnormal automatic recovery function，if Network Interruption can auto connection
*-Dynamic alarm function, set alarm period.

1.2. Applications

The series products usually are ideal for big department, supermarket, home, factory, workshop etc.



1.3. System Requirements

Minimum Hardware Configuration

CPU: Pentium 1.6 GHz
Memory: 256MB
Audio card: need audio monitor, two way talkback essential
Hard Disk : if it need video image，no less favorable than 40G
Operation System: 32 bit simple/ English Windows2000、WindowsXP、Windows2003、Windows Vista & 64 bit simple Chinese/English Windows2003、Windows XP、Windows Vista etc.
Software environment
IE 5.0 or above version
DirectX8.0 or above version
TCP／IP network protocol

2. Interface & Installation

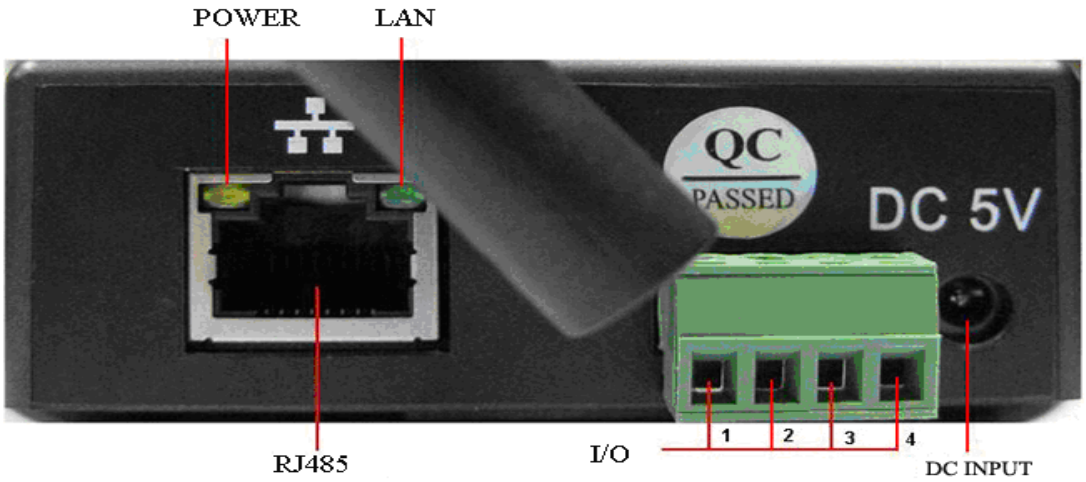
There are two kinds of AJ series IP camera interfaces: one is body guard interface, the other is the extend line interface, set two representative products as examples, to give explanation:

*Non-extended line IP Camera icon

*Extended line IP Camera icon

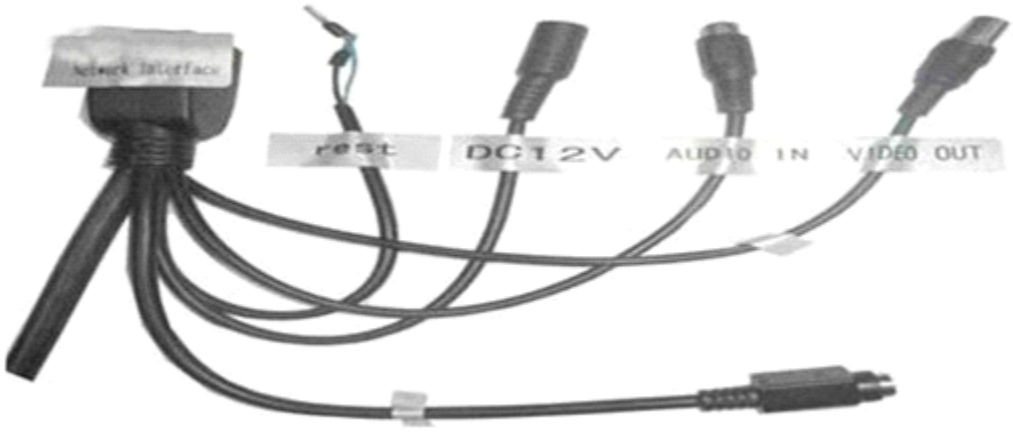
2.1. Interface

*Non-extended line IP Camera Tailgate

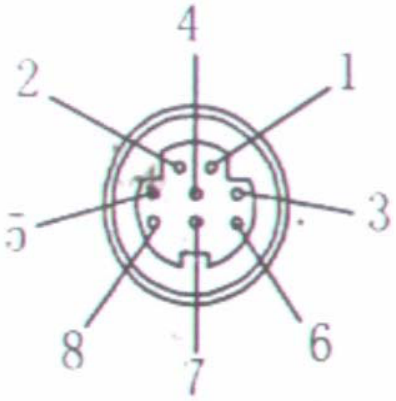


Power Supply Light: constant on after power up
Network light: constant sparkle after power up data transmission.
Ethernet interface: RJ-45 interface.
I/O interface: 1 router alarm input, accept 3, 4 two terminals (input terminal grounding, low level effective trigger); 1 router TTL control input, connect 1,2 two terminals (1,2 terminals short connections).
Power input interface: connect direct current 5V Power

*Extension line interface definition icon:



Power: direct current 12V.
GPIO alarm interface: accept external connection linkage alarm equipment (for example: door magnet, infrared)
Reset line: two reset line short circuit, equipments restore to ex- factory standards.
Ethernet interface: RJ-45 network interface.
Backup: follow-up product extend interface.



About GPIO alarm interface (S terminal) definition:

1# +DC12V
2# RS485（A）
3# Earth（GND）
4# IO2 （OUT PUT）
5# RS485 （B）
6# IO1 （IN PUT）

GND: Ground，alarm input ground，RS485 ground

RS485: RS485 control interface，left connection RS485 negative right connection RS485 positive. connect P/T decoder，support variety P/T protocol.

2.2. Installation

IP camera process image transmission on network through the use of Internet Technology, it offers DDNS function for static IP, dynamic IP, PPPoE dialing users. IP Camera can connect to outer net through LAN, also connect directly.3 networking connecting ways are widely applied in IP Camera:

2.2.1. Installation in LAN.

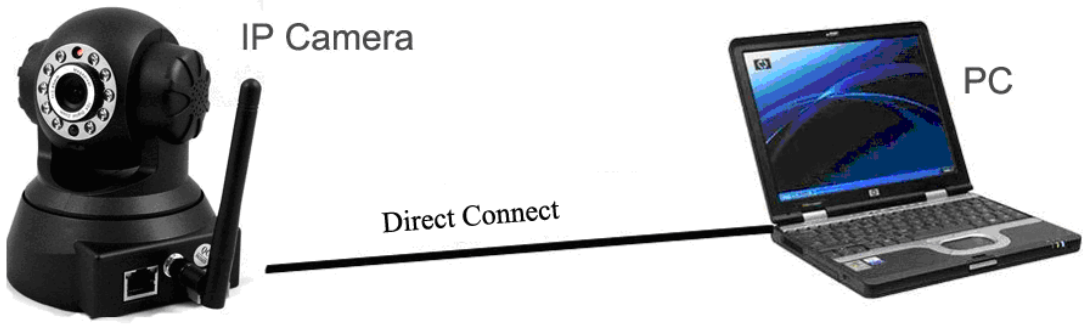
This is the most popular network access way, as long as there is a router, internet cable connect router directly to IP Camera, IP Camera can connect to Internet as normal PC, as shows:

2.2.2. PPPoE Installation

Under the condition, users need set PPPoE dialing parameter on IP Camera: input the username and password ISP supplier' offer permit IP Camera dialing connects to Internet. As to set the PPPoE dialing parameter, you can connect device to network through the first way, then write parameter to the device, also through following third way, direct process parameter written to device. The way how to set PPPoE, please refer to 3.4.5.for detailed steps

2.2.3. IP Camera & PC connection

This method is not used too often, when you process machine write parameter or program shift, we recommend you adopt the first connect network way, to process the modification of machine parameter.



connect to IP camera (note: don't apply for wrong power), after one minute

modification of IP camera, video could be connected by internet cable to IP camera; under the normal condition, yellow light is on, green light flickers, now physical connection of IP camera finish at this time (in order to connect successfully, we advise to set camera IP as the stable IP at the same net range of PC in LAN , how to set, please refer to 8 frequent questions answer).

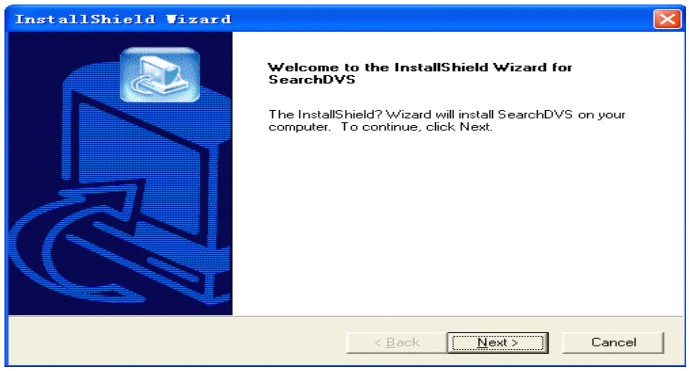
3. **IE Browse to IP Camera**

After IP camera connects to PC LAN through router, you can operate on IP camera via PC, first please run the relative software in the CD kit

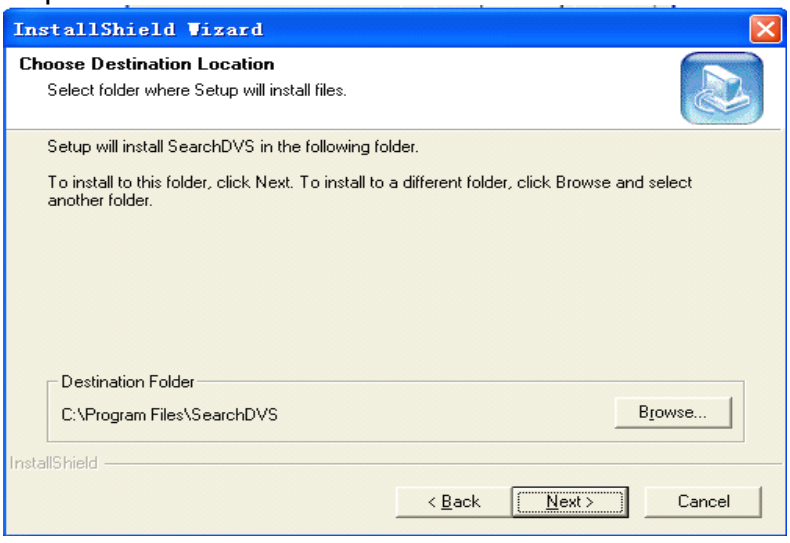
3.1. Use IP Finder Software

Open the disk, double click 

icon (the IP Finder software), and appear the following interface:



Click **Next**, complete the installation



Note: Before using the product installation, please just use IPCAM standard power adapter. The use of non-certified power adapter may damage the IPCAM. IPCAM should only be installed in the indoor environment

After you finished install the IP Finder software, You will finder that 

icon in your computer program. double click 

icon. The IP Finder is run.

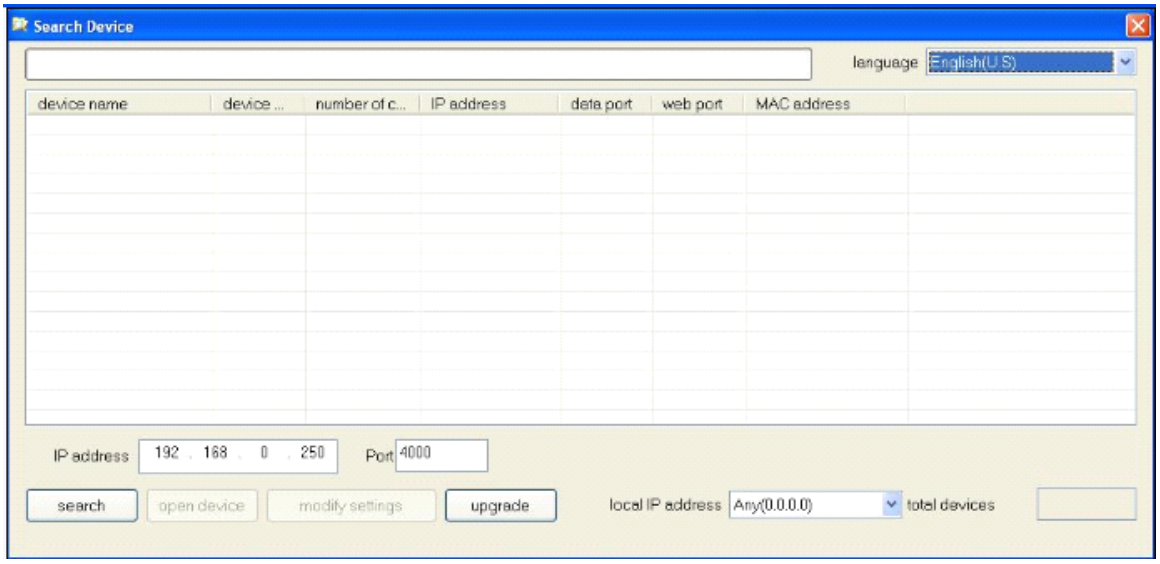
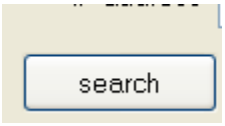


Figure3.1

If the internet cable power connect is correct, after click 

button it appears device styles, name, and IP address in the list, (if it doesn't appear, please confirm power & internet cable work normally).

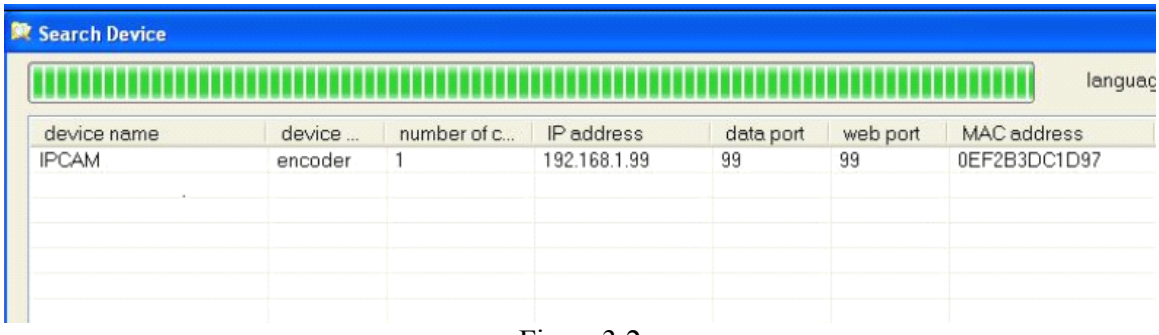


Figure3.2

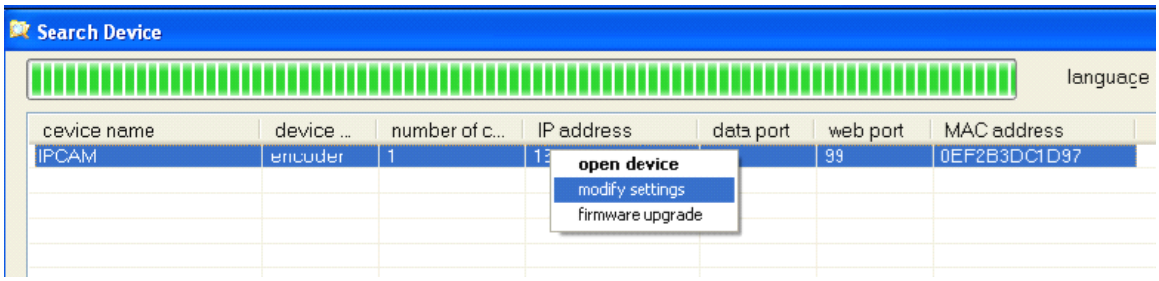


Figure3.3

Note: After click search button the software will automatically search for all the devices' IP address within a local area network..
There are three cases:
1 IP cameras' IP address not found. After click search button devices' IP address did not showing in the software's list: e.g. Figure3.1
2 IP camera's IP address being found, but the IP Camera's network segment not as same as the local IP address'. In that way,first you should change the IP Camera's network segment as same as the local IP address'. You can change this following **3.1.1 Configure Network Parameter** e.g. Figure3.4(e.g. The local computer's IP address is :192.168.0.15.But the device's IP address is: 192.168.1.99.You need change the device's IP address:192.168.1.99 to:192.168.0.99)
3 IP cameras' IP address being found. And the device's network segment as same as the local IP address'. And all devices are listed in software' s list:

Note:
1. If it needs manual modify camera name, HTTP interface, IP address, sub-net mask, gateway, main DNS server, backup DNS server, etc. please click apply after modification, enter IP camera username and password, click confirm is OK.
2. Inner visit address is LAN visit address; outer visit address is WAN visit address.

3.1.1 Configure Network Parameter

First select the device's IP address. right-click to open the network configuration dialog box, then you can configure the devices' network parameters On this page.

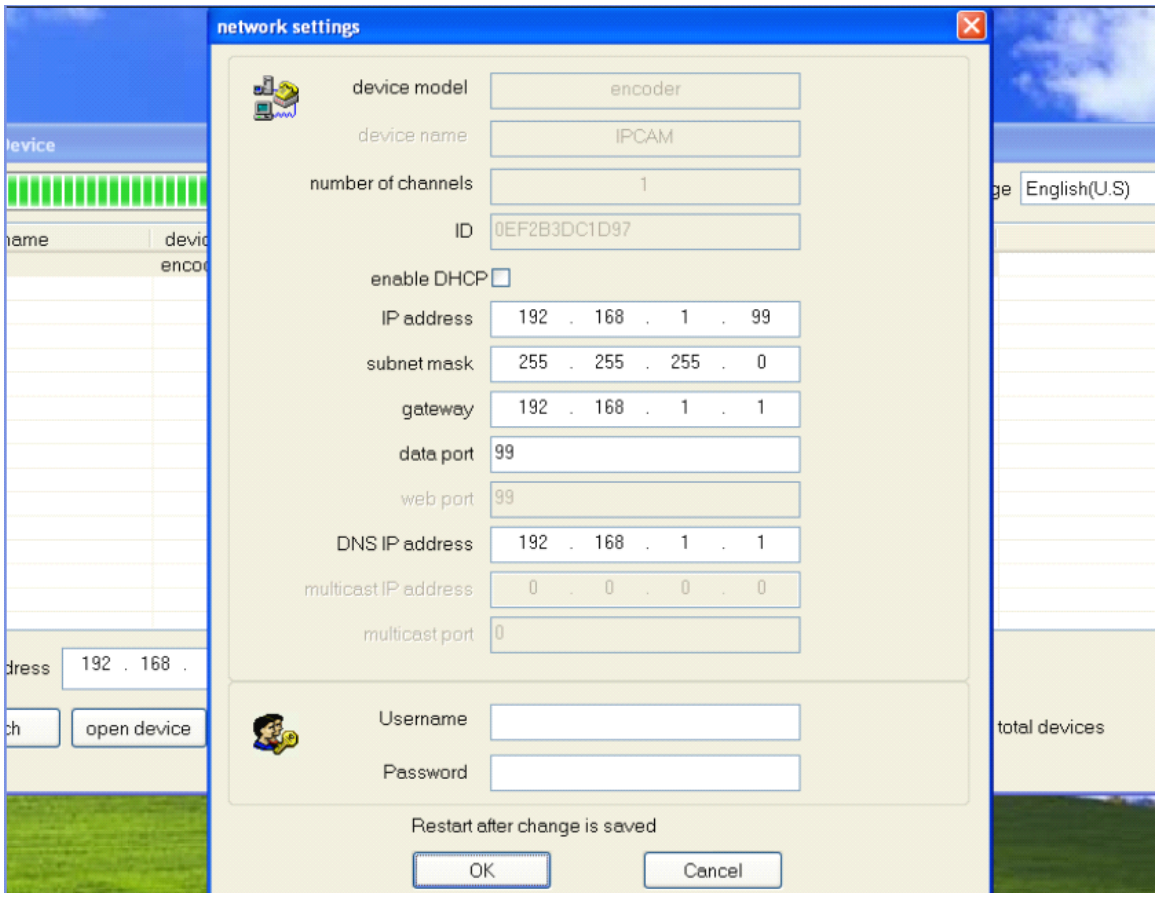


Figure3.4

NOTE:
IP Address: Fill in IP address, ensure that the IP address' network segment you have filled as same as the PC network segment.
Mask: Use the default subnet mask e.g.: 255.255.255.0
Gateway: Ensure that the device's network gateway as same as your PC' s.
DNS: DNS service provider's IP address.
Port: Device provides HTTP services, port, usually 80
User and password: The default administrator account is admin password is blank
Use DHCP Device uses Dynamic Host Configuration Protocol, if enabled device each time you start will be from a DHCP server (typically a router or modem) to obtain IP addresses , or require users to manually set the IP address of.

Type the correct user name and password (user must have administrator privileges) update system firmware with the Web UI firmware

3.2. Logging and Active X installation

Before IE monitoring through web, it is necessary to install video plug-in, installation mode as below:

Open disk, find 

that icon. double click the icon. process installation, Click the next step to until finish.

There are two way to logging IP camera
1) Double-click the device' IP address in the list of IP Finder. (Figure 3.2). IE will automatically open and display the device's login screen.
2) Access directly through IE by directly input the device IP address in the IE browser's address bar, For example: Figure3.6

Figure3.6

When the item connects to outer networking, a log-in interface will appear. For example: Figure3.7

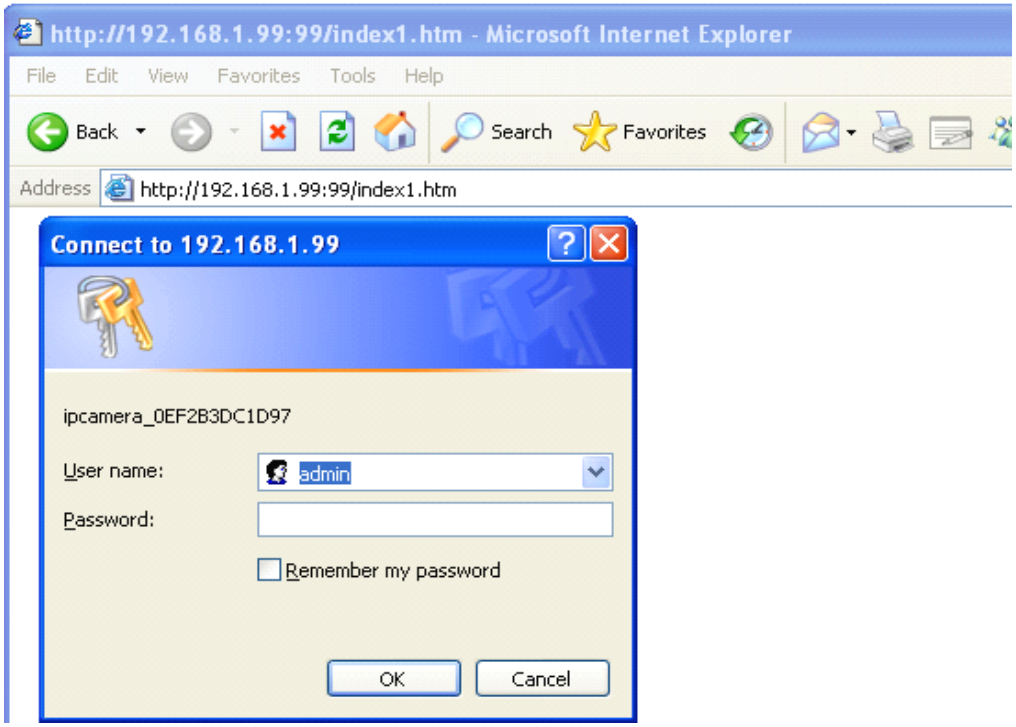


Figure3.7

enter log in information, click OK to enter, an installation pop-up will appear: e.g. Figure3.7

Figure3.8

Select the needed language, and the way you want to visit. Click Sign in. after installation Active X you can use it. If it is blocked and requires plug-in installation by antivirus software, please remove block.

Note：
1. Default device account is **admin**，no password.

3.3. Main Operation Interface

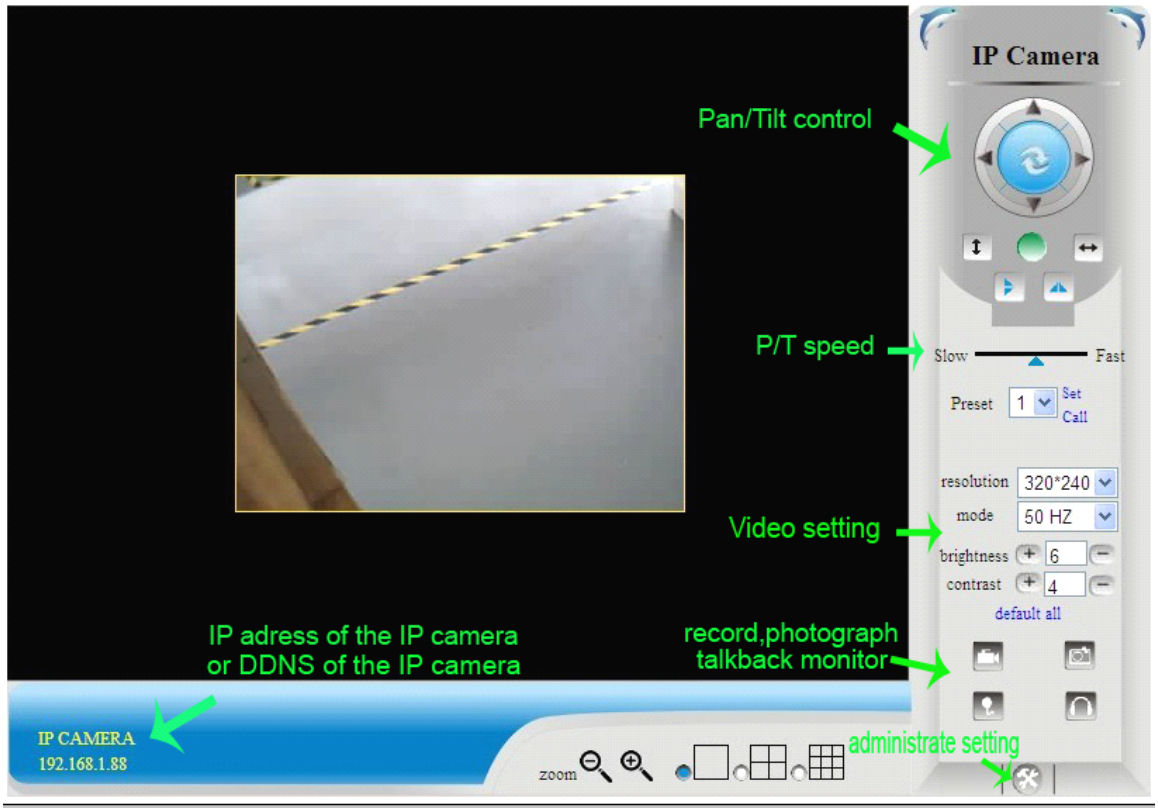


Figure3.9

For example: If the  is a bright , indicating the device is the first way to monitor the status.
When you log on the operator interface, you can perform PTZ and video parameters

Direction control: Click the arrows in different directions can be the lens to the appropriate direction of rotation

 Vertical cruise  Level cruise

1. Image mirror indicates a reverse image.
2. Resolution, mode, brightness, contrast default setting are：320*240、50HZ、6、4、mode is mainly for the adjustment of Light strength, please adjust to 60HZ when light is poor or in dark.
3. There are 3 browse modes in IE mode: visitor, operator, administrator, the authority

of administrator is the highest, log in different authorities, the operation will be different. Regarding to 3 user authorities, please refer to 3.4.4. Equipment User Administration.

If you want to see 4-way,or 9-way， you can click the icon  or 
OSD: In the video display date and time. You can disable the OSD function or choose the color of OSD.

Snapshot Photo: Click the icon  interception photo.

Video: Click  icon to enter the recording mode, the icon becomes  ， again, click the end of the recording.

3.4. Manager Operation

When you logged on as Administrator, click on “Administrator action” to enter setting interface. Device Information: You can see the device serial number, equipment systems and device firmware version of the application firmware version of the.

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 rebooted the device :I rebooted the device.
Back: Return to monitor mode

3.4.1 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.

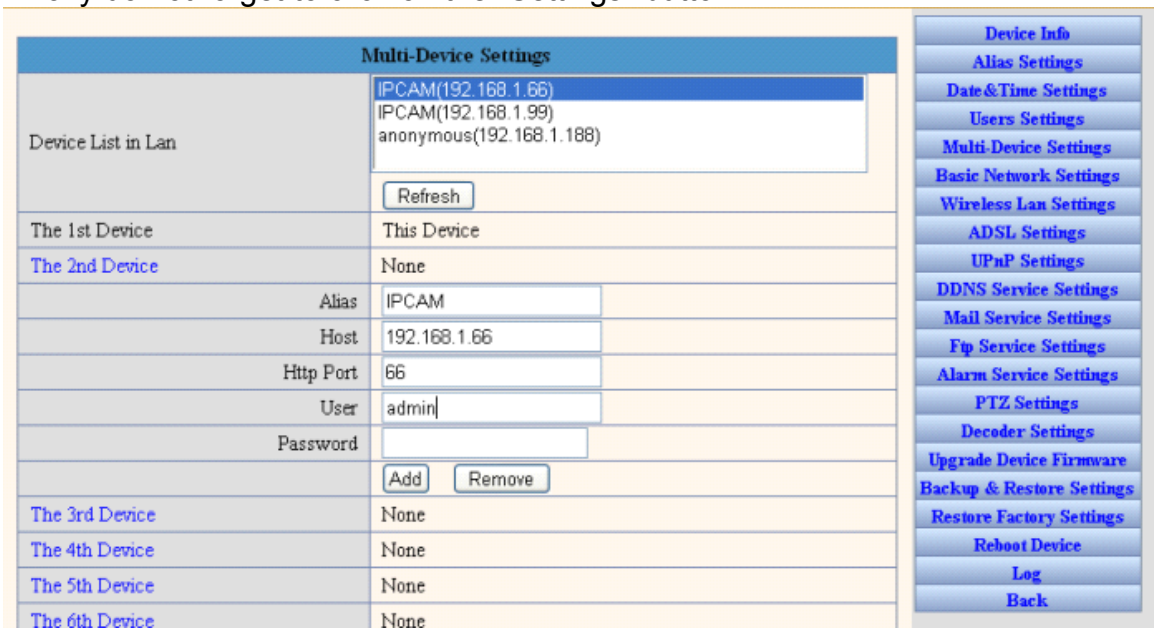


Figure3.10

- **Add a device on the internet**

First, make sure you want to add devices to access via IP address or domain name. For example:http://202.96.133.134: 9008 or http://IPcam.dyndns.org:9008. And then fill in host address: 202.96.133.134 **HttpPort**: 9008 or host address: IPcam.dyndns.org **Http port**: 9008. and fill in the correct account name and password to the last click on “Add.” Repeat the above steps can add other devices

Figure3.11

3.4.2 Basic Network Settings

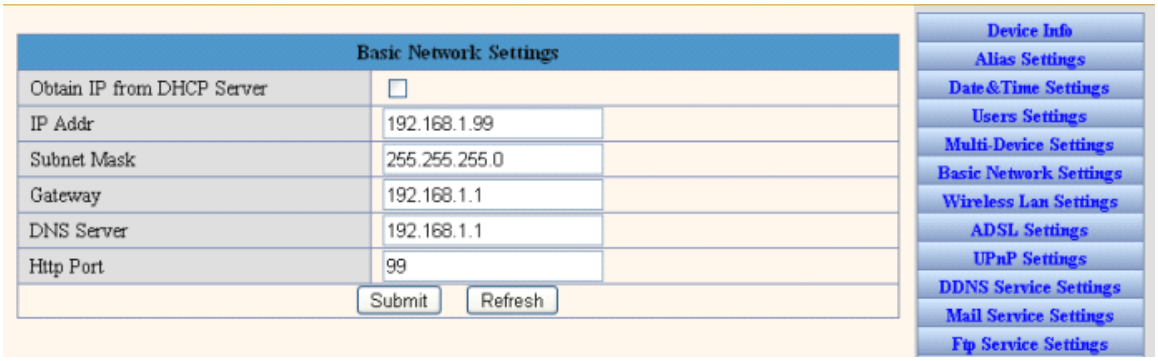


Figure3.12

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;

3.4.3 Wireless Setting

First make sure that your wireless router is working well. Then click the 

button. After you click twice. The camera will find out the Wireless LAN automatically. Then select the Wireless LAN you wanted. Then the Wireless LAN's information will showing. Finally input the Wireless password and submit.

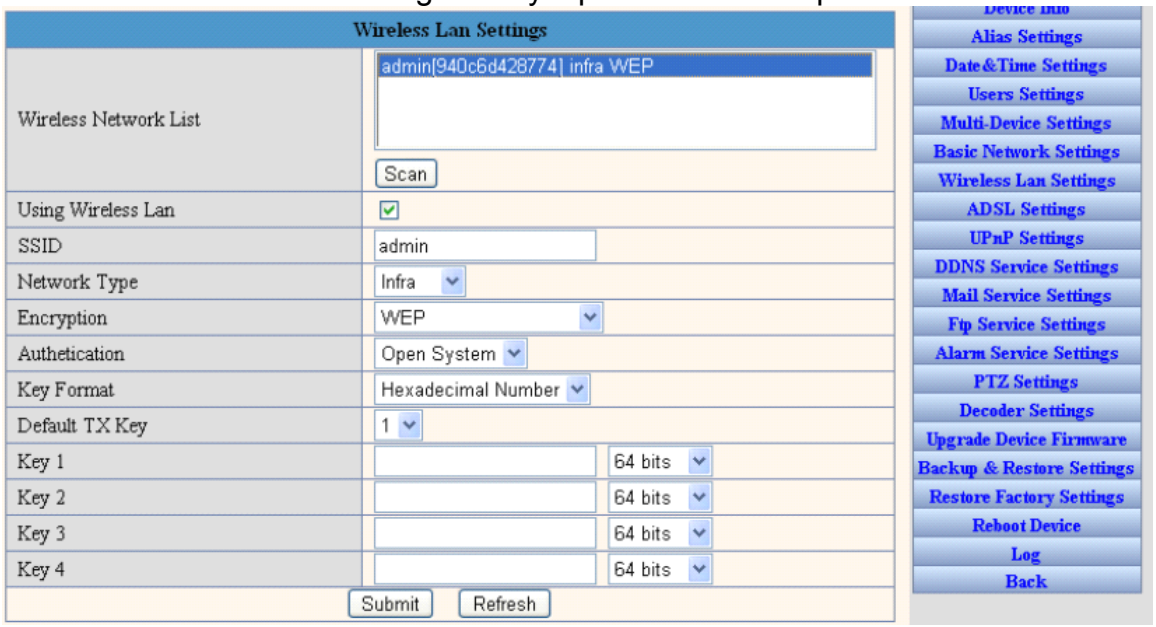


Figure3.13

3.5.4 ADSL Setting

When your device directly connected to the Internet via ADSL, when you need to enter fill in your ISP service providers obtain from the account name and password. Duly completed and click "Settings" button. Your device can connect to the internet has.

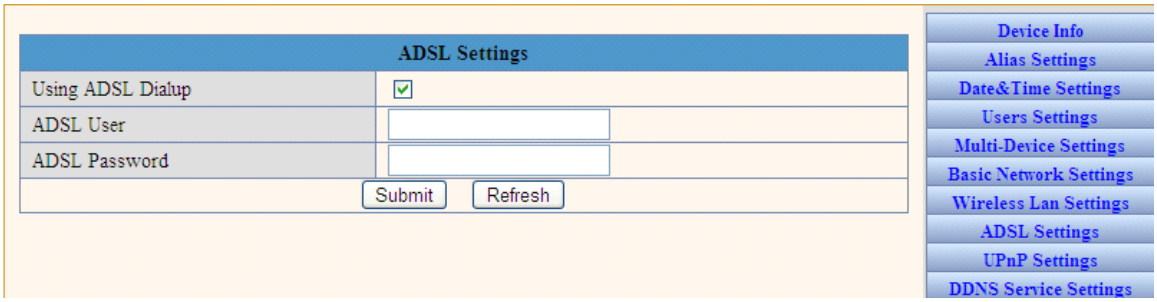


Figure3.14

Dynamic DNS Setting(DDNS)

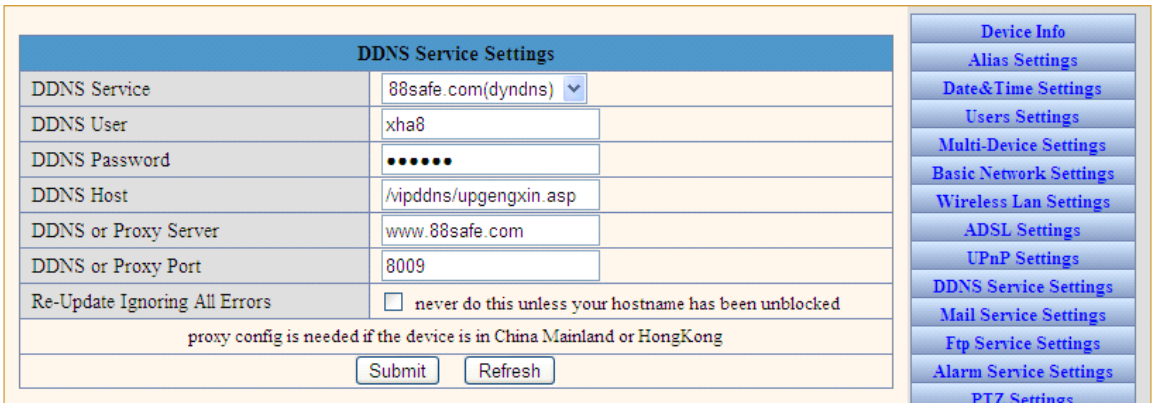


Figure3.15

All the above information is set up when the device is ready to deliver; users generally do not need to change. In case of any accidental loss, user needs to re-obtain the domain name, and fill it himself, juts do as the above, the user's name is just the first four characters, and this is for remote access. For example, http://abcd.88safe.com the user's name is abcd. The password is DDNS. (The password can be obtained on the device body or contact the supplier). When connected, it displays "xxxxx is OK" on Device Info; it means that it was successfully set. If you need to use your own Dynamic DNS, please select the appropriate service providers (on DDNS service) then enter the following information, then save it;.

3.5.6 E-mail and FTP service Settings

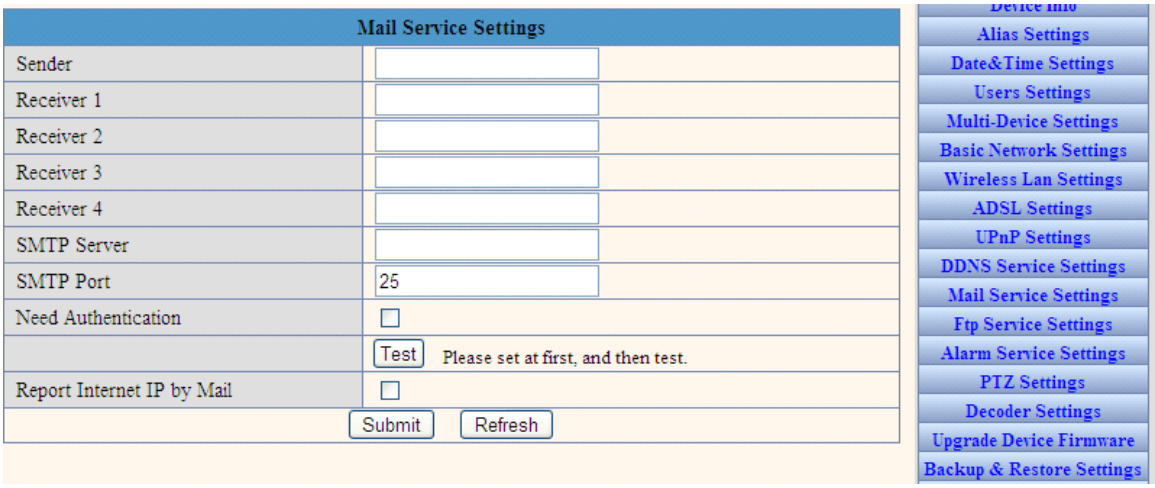


Figure3.16

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:

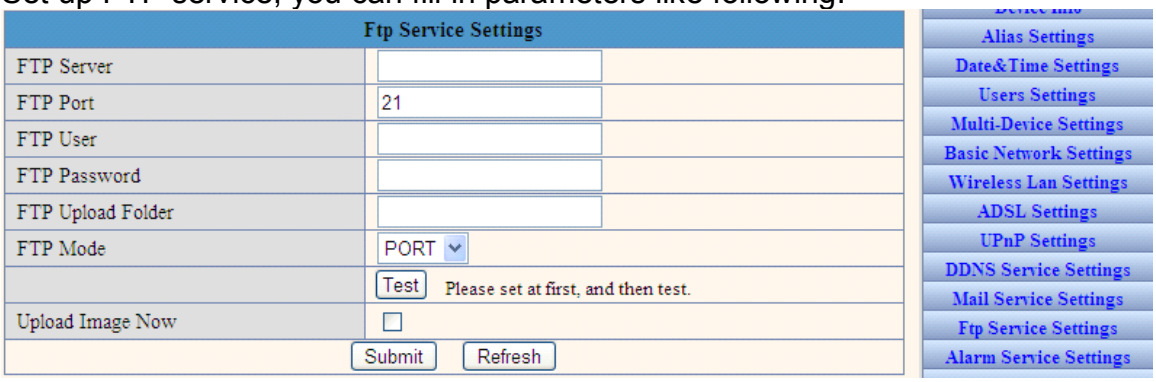


Figure3.17

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, pleas 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

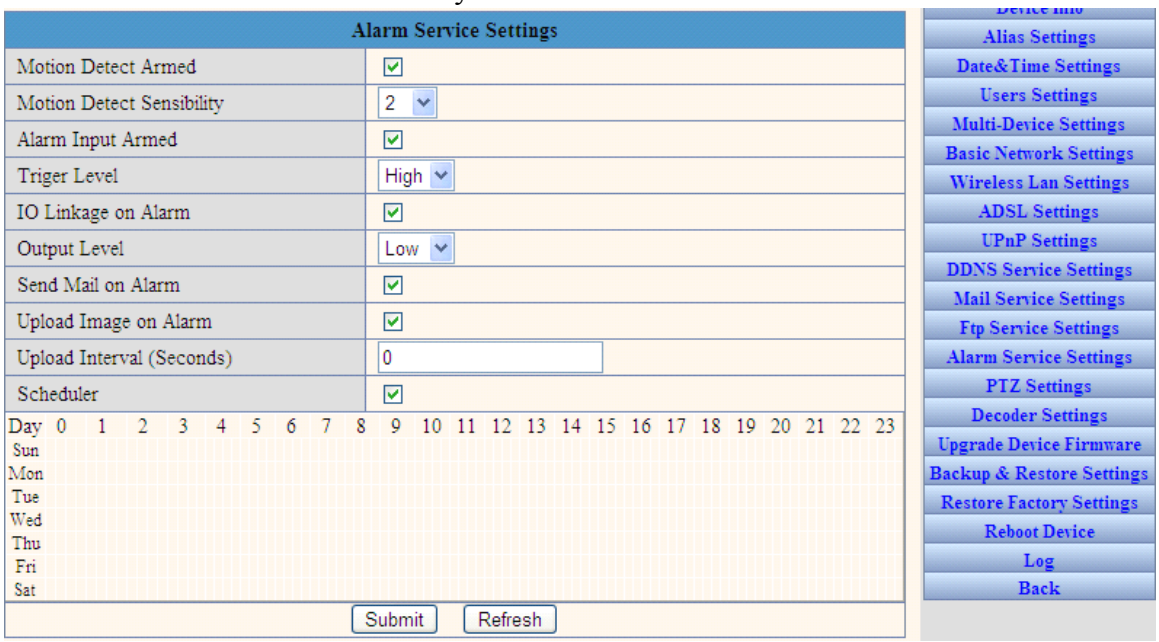


Figure3.18

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. Be cautious to apply for it!

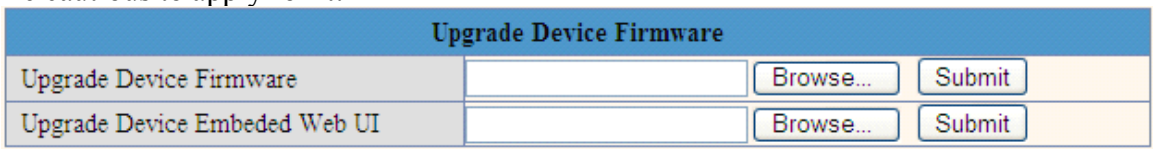
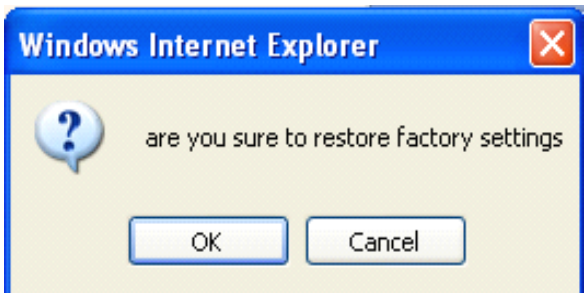


Figure3.19

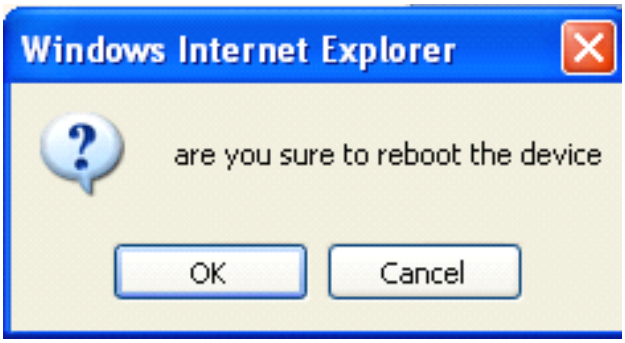
Restore Factory Settings

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



Reboot Equipment

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

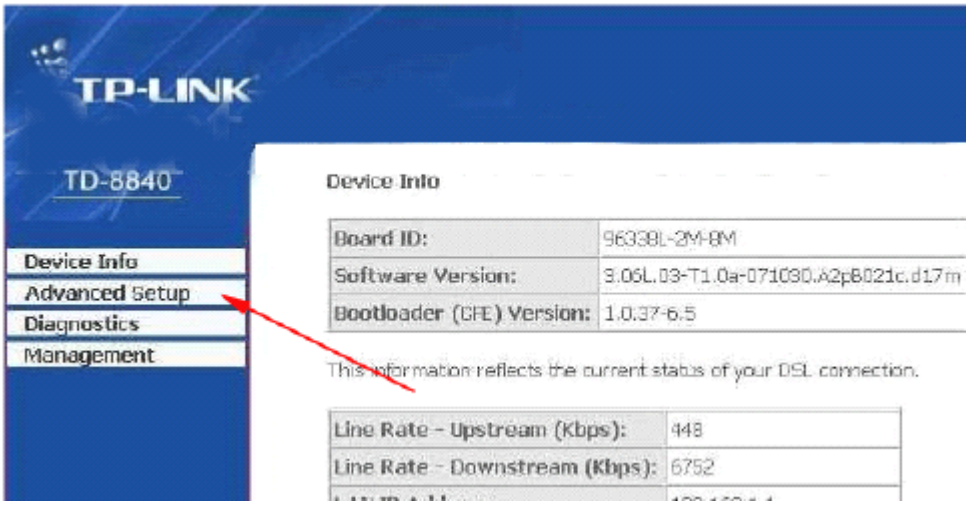


4. Others

4.1 Port Forwarding Settings in router

When a remote access via internet visit, port forwarding in router is a must, different brands routes have different name, but the operation is the same.
Take the TP-LINK TD-8840 router port mapping setting as example. To set up IP Camera as an example: router inner web IP is 192.168.1.1, IP camera inner web

address is 192.168.1.50, and port is 80.
1. First log in router web administration interface.
2. Click in front of left side “Advanced Setup



3. Click “virtual server” in the unfolded menu.

4. fill “80” under the right **port start** or **port end**, **Server IP address** fill "192.168.1.50", protocol select "TCP/UDP"OR” “TCP” , finally don’t forget click under “"save/apply”
1. DLINK ex-factory definition router address is 192.168.0.1
2. Linksys ex-factory definition router address is 192.168.1.1
3. 3com ex-factory definition router address is 192.168.2.1
4. Microsoft ex-factory definition router address is 192.168.2.1
5. Net gear ex-factory definition router address is 192.168.1.1
6. Asus ex-factory definition router address is 192.168.1.1

4.2 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.

FCC STATEMENT□□

1. 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.□
(2) This device must accept any interference received, including interference that may cause undesired operation.

2. 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.

FCC Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.
This equipment should be installed and operated with minimum distance 20cm between the radiator & your body□□□