



BU-3025

**3-MegaPixel Outdoor 25 meter
IR IPCAM**

User's Manual



www.airlive.com



Owner's Record

The model and serial numbers are located at the bottom of device. Record these numbers in the spaces provided below. Refer to these numbers whenever you call upon your dealer regarding this product.

Model No. _____

Serial No. _____

WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.
For AC Adaptor to avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.



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

For customers in the U.S.A.

This equipment has been tested and found to comply with the limits for a 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.

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

The shielded interface cable recommended in this manual must be used with this equipment in order to comply with the limits for a digital device pursuant to Subpart B of Part 15 of FCC Rules.

Declaration of Conformity

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.



IMPORTANT NOTE: To comply with the FCC RF exposure compliance requirements, no change to the antenna or the device is permitted. Any change to the antenna or the device could result in the device exceeding the RF exposure requirements and void user's authority to operate the device.

NOTICE TO USERS

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We reserve the right to make any modification to this manual or the information contained herein at any time without notice. The software described herein may also be governed by the terms of a separate user license agreement.



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1

Introduction



1.1 Overview

This user's guide explains how to operate AirLive BU-3025 from a computer. A user should read this manual completely and carefully before you operate the device.

AirLive BU-3025 is high-end 3.0 MegaPixel (MP) network camera which is designed for professional outdoor surveillance and security applications. This 3.0MP IP camera offers many improvements in image quality as comparing to the conventional surveillance cameras. Users are able to view live video streaming over the Internet, and it is not the only one of the benefits for using AirLive IP Camera.

It is also designed to offer high-performance surveillance, and it is equipped with PoE port which allows power and data to be transmitted via a single Ethernet cable. This useful function provides an easier installation, lower cabling costs and allows placement of



AirLive PoE cameras in locations without access to electrical source.

With the IP-66 waterproof housing, AirLive BU-3025 suits for environments such as stairs, main entrance, street, and basement.

The device is accessible via the LAN or Internet connection. Connect your device directly to a local area network or xDSL modem, and with Microsoft® Internet Explorer, you get instant, on demand video streams. Within minutes you can set up the device to capture a video sequence to a PC. The live video can be uploaded to a website for the world to see.

Features

- 3 MegaPixel CMOS H.264 IP Camera
- Compatible with ONVIF Standard
- Up to 20fps at QXGA Resolution and up to 30fps @1080p Full HD
- Support 802.3af Power over Ethernet Standard
- Mechanical IR-Cut Filter Removable
- Built-in SD/SDHC Memory Card Slot for Local Storage
- IP-66 Weatherproof Housing for Most of Environments
- Equips High Illuminate IR LED, Project up to 25 Meters!
- Support H.264, MPEG, MJPEG
- Support Two-Way Audio

Minimum System Requirements

- VGA Monitor Resolution 1280 x 1024 or Higher
- Pentium-4 3.6 GHz or higher
- Memory Size: 1GB or More
- Windows XP, Vista, 7
- Browser: Mozilla Firefox, IE7 or above, Chrome, Safari
- Microsoft Media Player 11.0 or Later (to Playback Recorded File)
- Quick Time: 6.5 or above
- Cell Phone: 3GPP Player

1.2 Package Contents

A user can find the following items in the package:

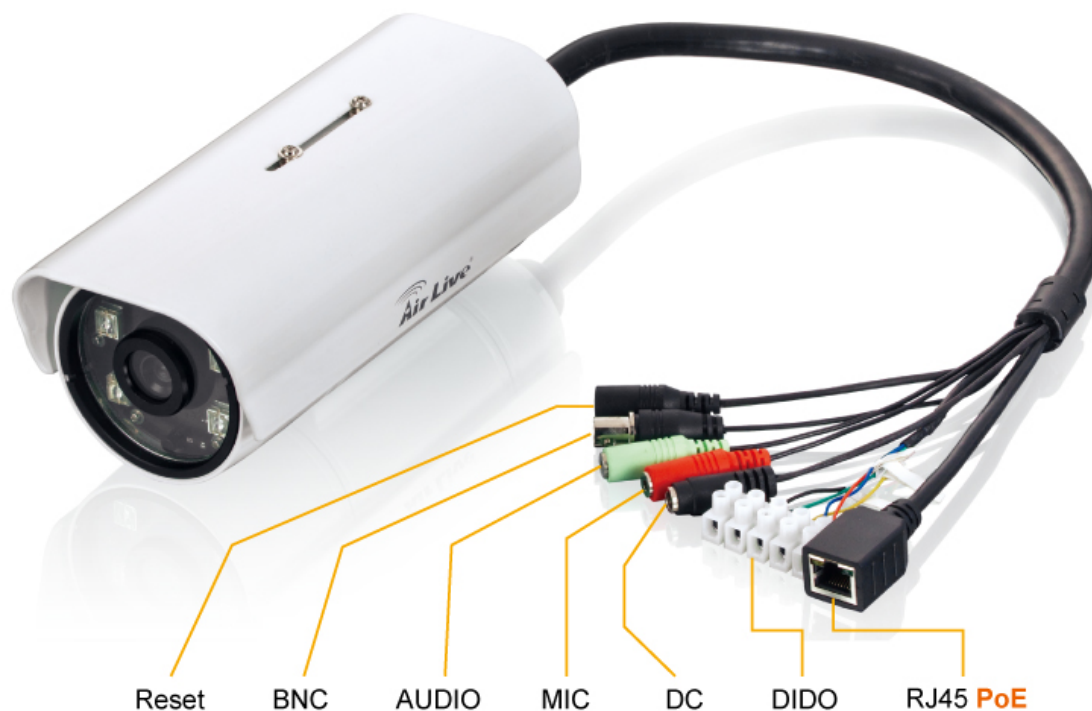
1. **BU-3025** 、 **Wall Mount Kit & Wall Mount Stand**
2. **Power Adapter** dedicates 12V DC electric power output to Network Camera.



3. **Installation CD** provides installation software, application program, tutorial videos, important information and instructions for operating the Network Camera.
4. **Quick Start Guide** provides important information and instructions for installing this device.

Note: Using a power supply with a different voltage than the one included with the Network Camera will cause damage and void the warranty for this product.

1.3 Physical Overview and Connections



1. RJ45 LAN socket:

Connect to PC or Hub/Switch.

For connections to 10Base-T Ethernet or 100Base-TX Fast Ethernet cabling. This Ethernet port built N-Way protocol can detect or negotiate the transmission speed of the network automatically. Please use Category 5 cable to connect the Network Camera to a 100Mbps Fast Ethernet network switch or hub.



RJ45 LAN socket: In the LAN socket, there are two LEDs embedded:

LAN LED (green color)

This LED will be flashing while network accessing via Ethernet.

Power (orange color)

This LED is used to indicate whether DC power is on or not. In addition, this LED will be flashing while the wireless accessing of the Camera.

2. DI/DO connector:

DI/ DO: Connect to sensor in and alarm out the device

Cable for I/O connectors:

Name	Cable Color	Function
GND	Black	GND
Sensor IN 1	Blue	Digital signal input
Alarm OUT 1	Green	Digital signal output
RS485 D+	Orange	RS485 data +
RS485 D-	Yellow	RS485 data -

3. DC-in Jack:

The input power is 12VDC.

Note that supply the power to the Network Camera with the power adapter included in package.

4. MIC in (audio in):

Connect a microphone to the network camera.

5. Line out (audio out):

Connect a loud speaker to the network camera. This function is for voice alerting and two-way audio.

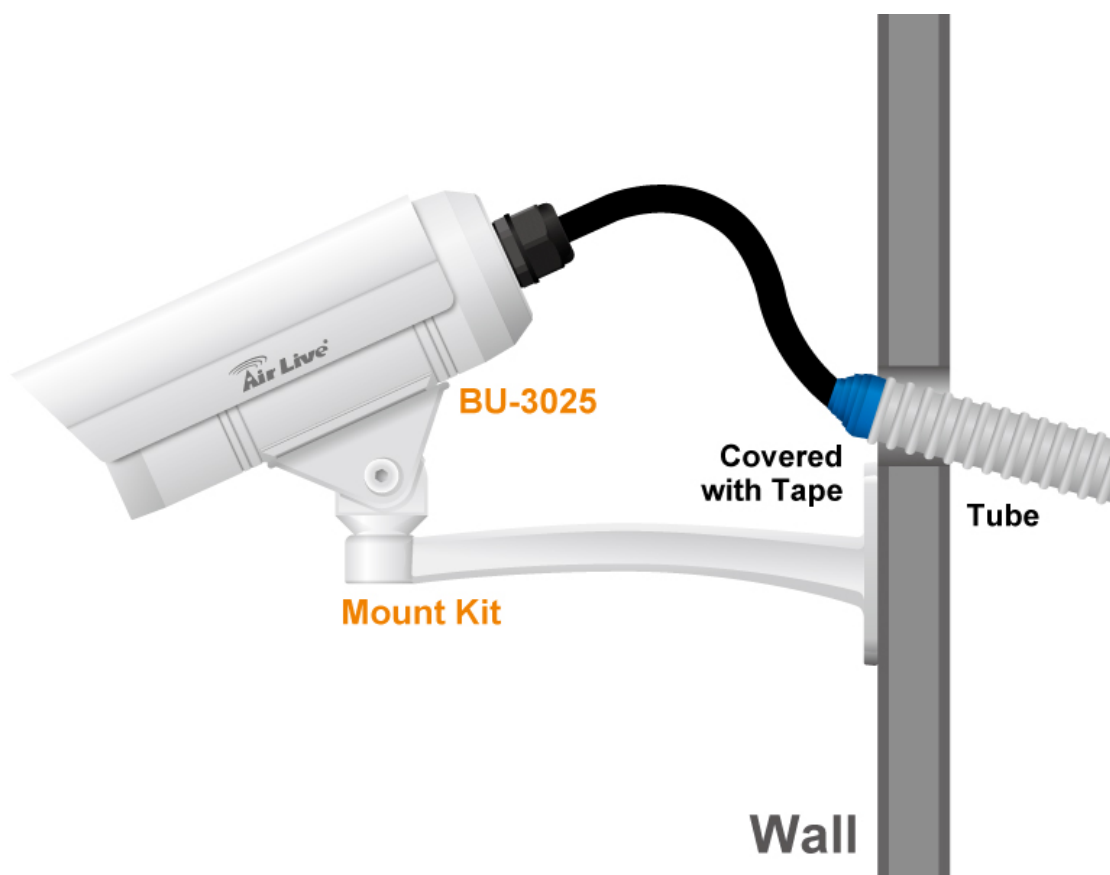
6. BNC Connector:

The composite video format will be sent out through this connector. A user might connect the IP Camera to a monitor or DVR via this connector.



1.4 Mounting the Camera

Fix the camera with bundle wall mount kit as below.



1.5 Install the Camera in LAN

1. Plug an Ethernet cable into the Camera

Connect an Ethernet cable to the LAN socket and attach it into the network.

2. Connect the external power supply to Camera

Connect the attached power adapter to the DC power jack of the camera.

Note: Use the power adapter, 12VDC, included in the package and connect it to wall outlet for AC power.

Once you have installed the camera well and powered it on, the power LED (orange) will turn on later. The power LED turns on, which means the system is booting up successfully. Furthermore, if you have a proper network connection, and access to the camera, the LAN LED (green) will flash.

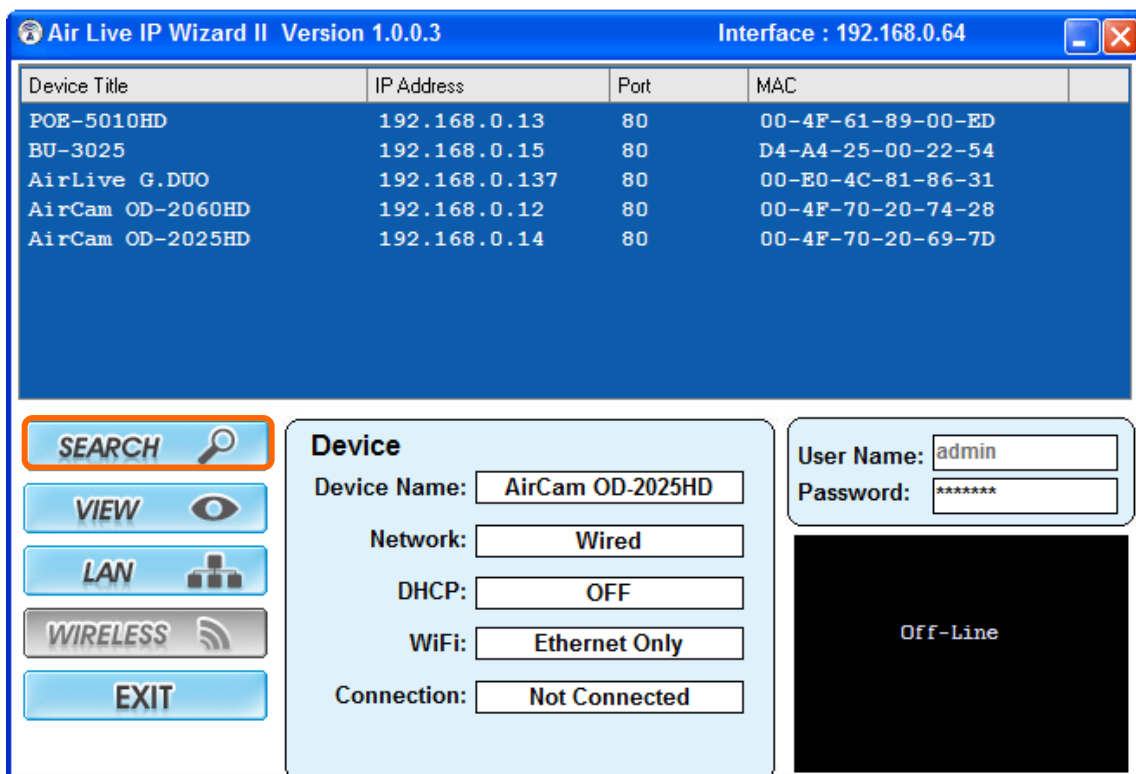
2

Preparation

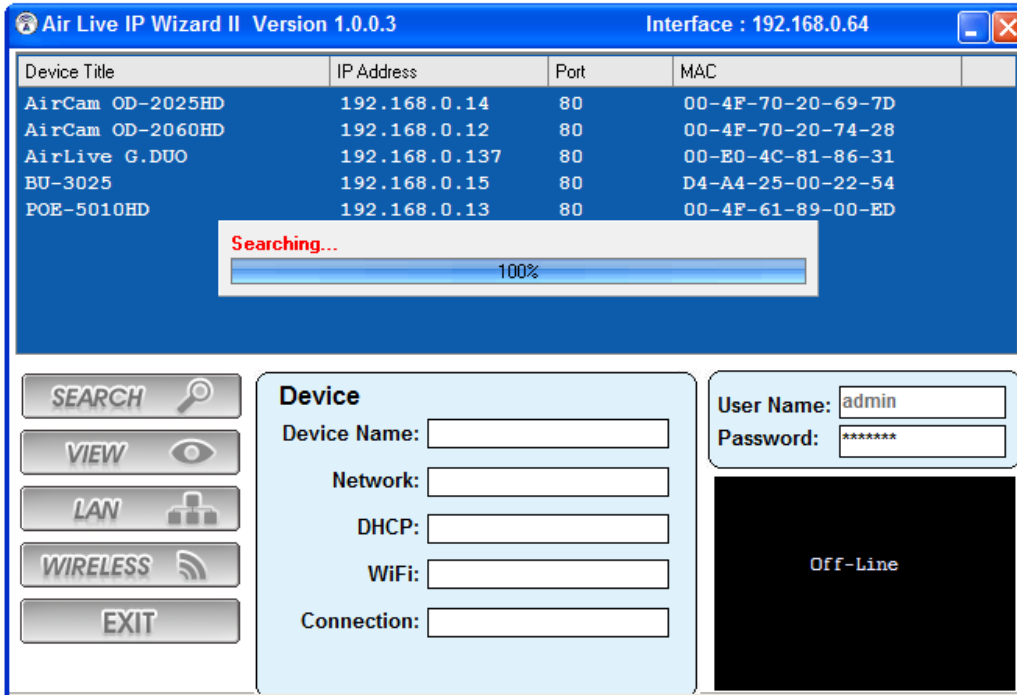
2.1 Search and Set up by IP Wizard II

When you install the Camera on a LAN environment, you have two easy ways to search your Camera by IP Wizard II or UPnP™ discovery. Here is the way to execute IP Wizard II to discover Camera's IP address and set up related parameter in a Camera.

2.1.1 Search

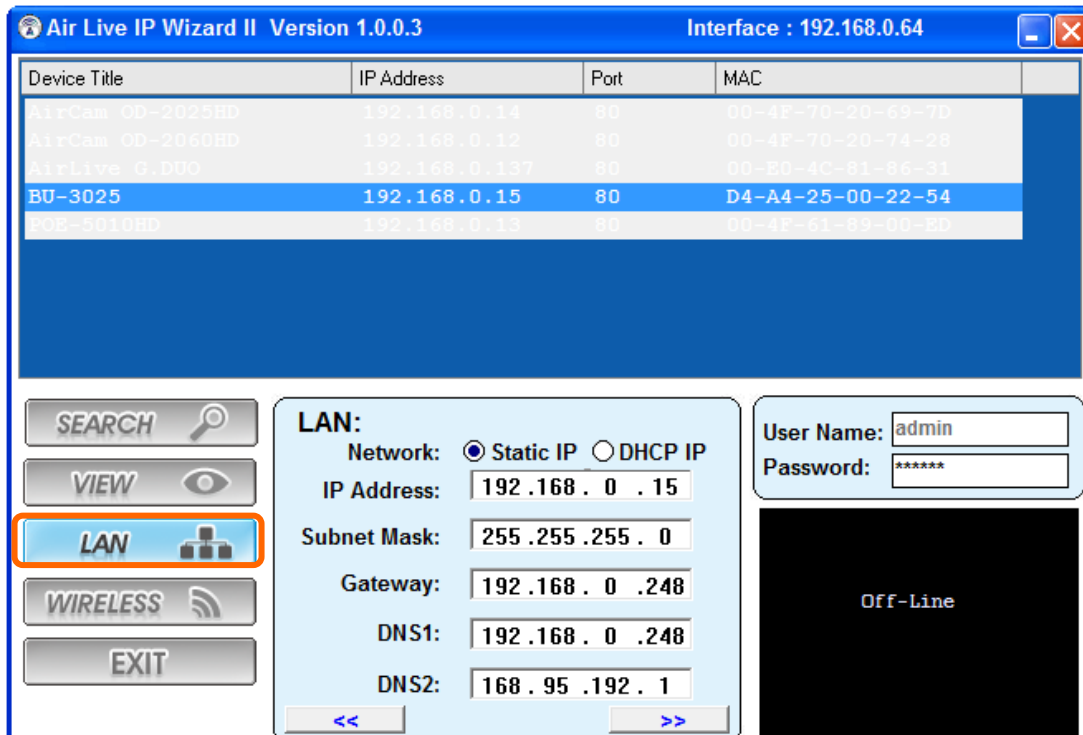


When launch the IP Wizard II, a searching window will pop up. IP Wizard II is starting to search Network Cameras on the LAN. The existed devices will be listed as below.

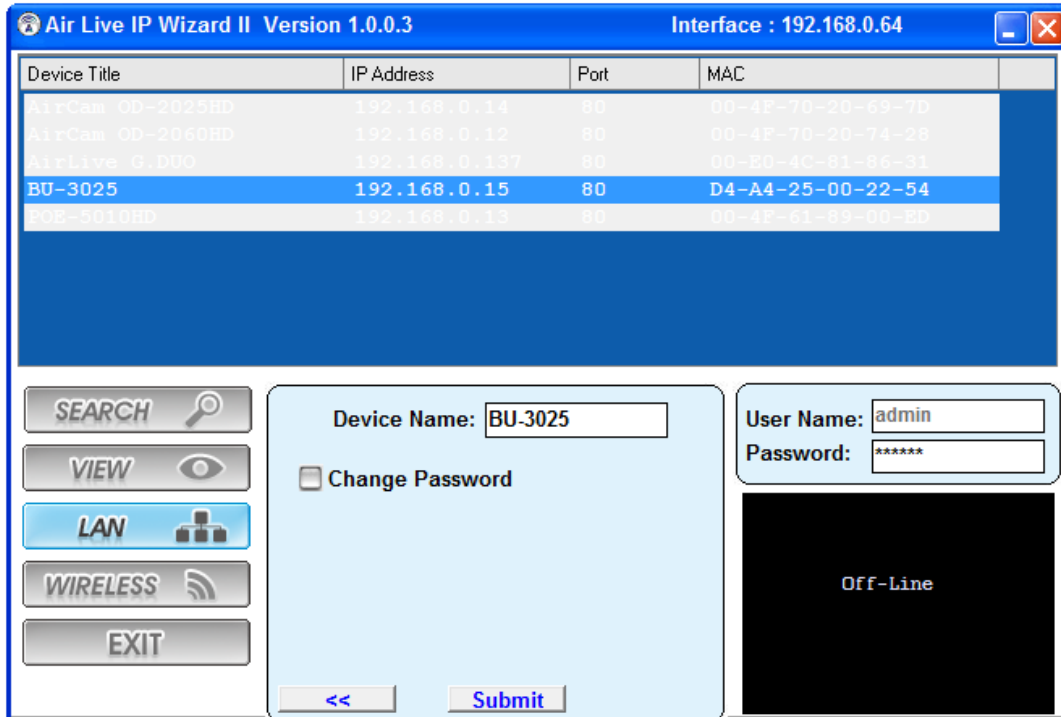


2.1.2 LAN

In case you want to change the IP related parameters of wired interface, please select the device you want to configure and click the LAN button. Relative settings will be carried out as below.

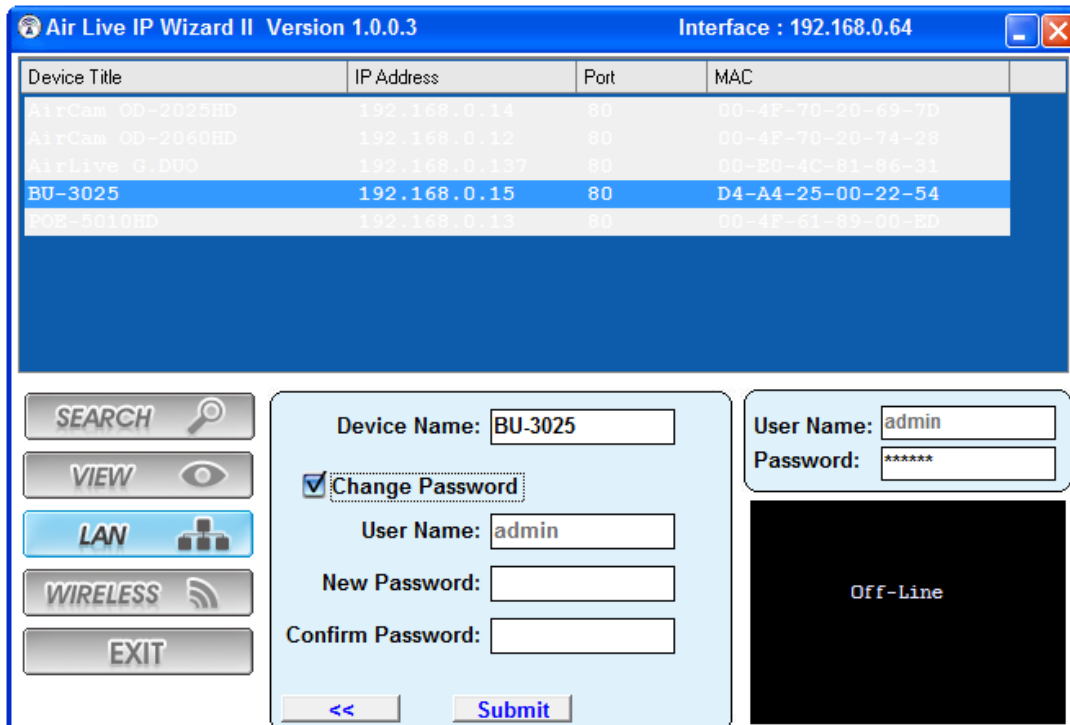


You could modify the relative settings of the selected device. Click "<<" button will quit the LAN setting procedure and click ">>" button will move to next page as below.



In case, you do not want to change username and/or password, then just click “**Submit**” button to perform your setting accordingly. Click “<<” button will go back to previous page.

If you like to change username and/or password of the device, just click the check button. Then, the related fields will show up as below.



After keying in new username and password, click “**Submit**” button to perform your setting accordingly. Click “<<” button will go back to previous page.

2.1.3 Wireless

This model does not support wireless function. Therefore, IP Wizard II disables this function automatically.

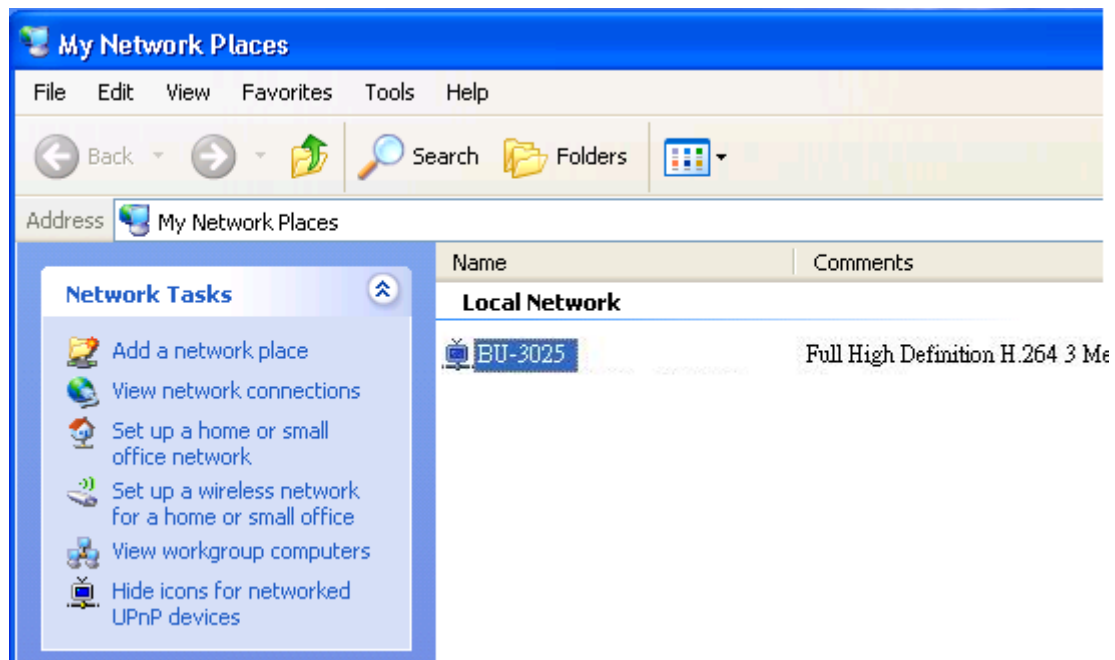
2.2 UPnP of Windows® XP, Vista or 7

UPnP™ is short for Universal Plug and Play, which is a networking architecture that provides compatibility among networking equipment, software, and peripherals. This device is an UPnP enabled device. If the operating system, Windows XP, Vista or 7, of your PC is UPnP enabled, the Network Camera will be very easy to be found.

Please refer to Appendix J to enable UPnP settings only if your operating system of PC is running Windows XP.

Note: Windows 2000 does not support UPnP feature.

To discover your device, go to your Desktop and click **My Network Places**.



Click the targeted **Device**. Then Internet Explorer will connect to this Network Camera automatically.

2.3 Install the Device behind a NAT Router

Once installed, the device is accessible on your LAN. To access the device from the Internet, you must configure your broadband router to allow incoming data traffic to the device. If the device is installed on the LAN with a router, then it may get a dynamic IP address from the DHCP server. However, if the device wants to be accessed from the WAN, its IP address needs to be setup as fixed IP, also the port forwarding or Virtual Server function of router needs to be setup.

However, if your NAT router supports UPnP feature, it can be very easy to achieve NAT traversal automatically. To do this, enable the NAT-traversal feature, which will attempt to automatically configure the router to allow access to the camera.

Installing the device with an UPnP router on your network is an easy 3-step procedure:

- (1) Enable UPnP option of your NAT router
- (2) Enable UPnP NAT traversal option of the Network Camera (default)
- (3) Access your Network Camera by DIPS

(1) Enable UPnP option of your NAT router

To use UPnP IGD function (NAT traversal), you need to make sure the UPnP function is enabled in your router. Most new home routers should support this function. Some of routers are default enable and others are not. Please check user's manual of your NAT router for detail.

(2) Enable UPnP NAT traversal option of the Network Camera

Refer to **Setting → Network → UPnP** page for detail NAT traversal setting.

Note that this option is default enabled.

(3) Access your Network Camera by DIPS

Refer to **Setting → System → System** page for detail DIPS information.

2.4 Access the Device from the Internet Explorer for the First Time

1. Start the web browser on the computer and type the IP address of the Camera you want to monitor as below:



The Login Window of the Camera is prompted:



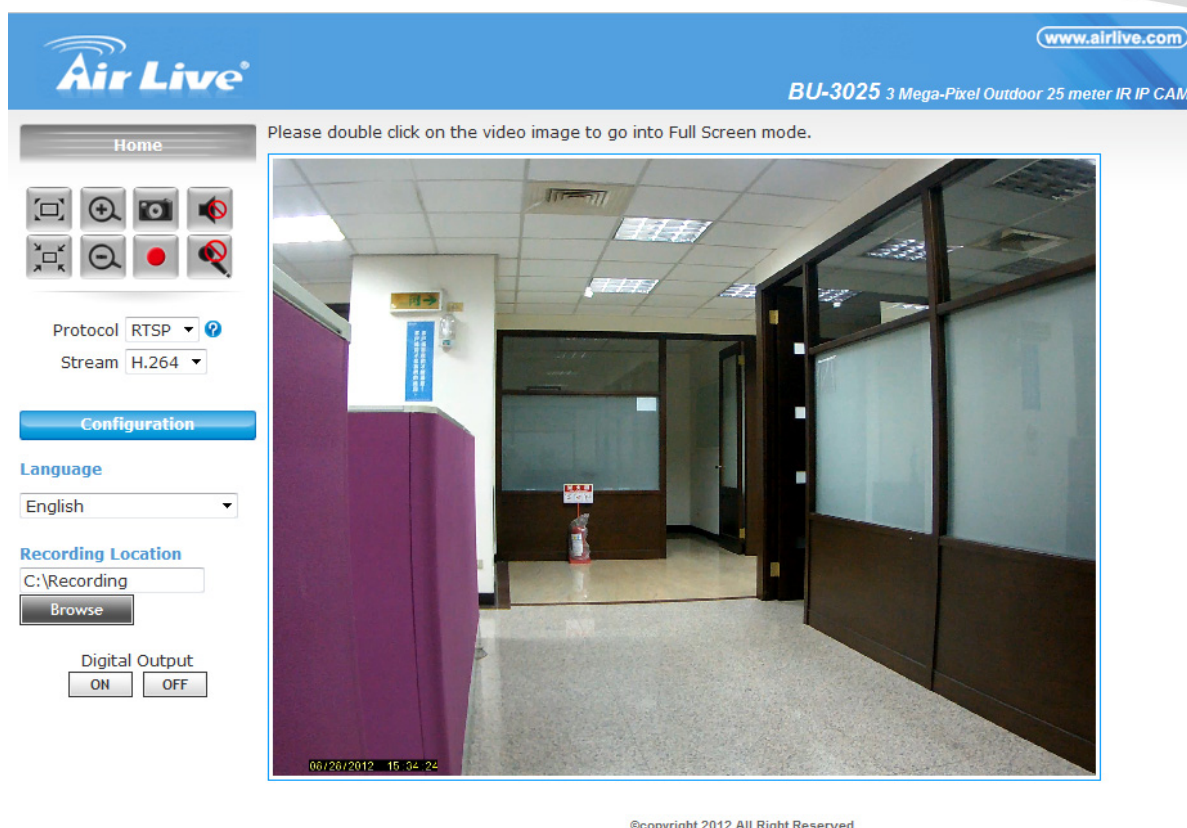
2. Type in your login name and password under “USERNAME” and “PASSWORD” textbox. For the first time use (default value), input the

User Name: **admin**

Password: **airlive**

After typing in “**admin**” on the “USERNAME” and “**airlive**” on the “PASSWORD”, click “OK” button to start the main menu.

3. According your browser’s security setting, the IE Web Page may prompt the “Security Warning” window. If so, select “Yes” to install and run the ActiveX control into your PC. Otherwise, the system will load the ActiveX silently.
4. After the ActiveX control is installed and ran, the first image will be displayed.



2.5 Logging in as an User

If you log in the Camera as an ordinary User, "Configuration" function will be not accessible.

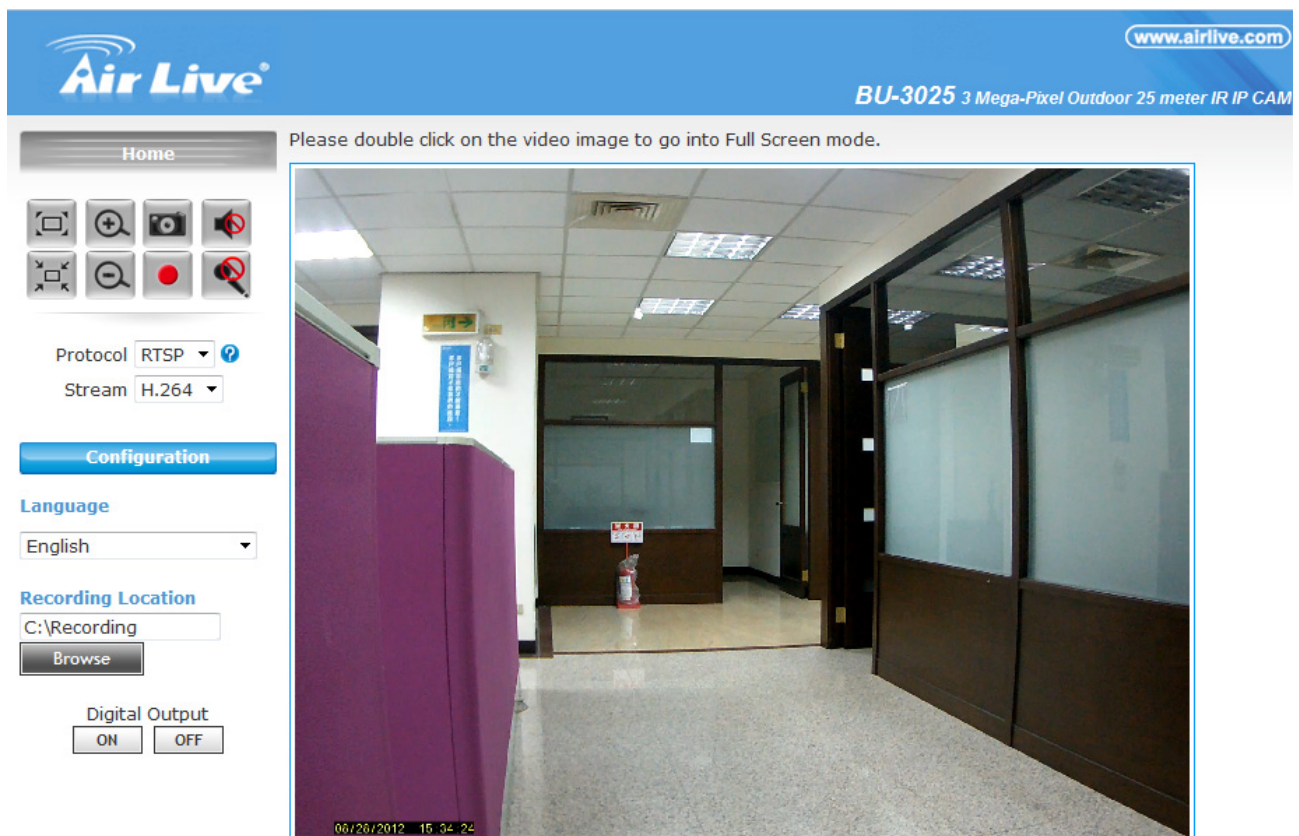
2.6 Logging in as an Administrator

If you log in the Camera as the Administrator, you can perform all the settings provided by the device.

3

Operating the Network Camera

Start-up screen will be as follow no matter an ordinary users or an administrator.



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Configuration

Click for configuring the camera settings.

Language

The device can provide multiple languages to meet customer's requirement.

Stream

The device supports multi-profile function for H.264, MPEG4 and JPEG simultaneously. A user can choose the proper and/or preferred profile which is listed here.

Protocol

A user can select proper streaming protocol according to network environment.

Digital Output

Switch digital output interface on or off.

2-Way Audio

The device supports 2-way audio function. A user can choose to enable or disable this function by toggling the icon below.



: Disable speaker function.



: Enable speaker function.



: Disable audio uploading function.



: Enable audio uploading function.



Volume

Click Speaker button to activate this function. Scroll the control bars to adjust the audio attribute.

Original size



Preview Size



Switches live image view between original size (full size: 3MegaPixels) and preview size (smaller size).

Digital Zoom



From 1X to 10X, so you can see objects in video in detail.

Please note: that digital zoom uses computer algorithm to enlarge the video and some details may be lost. If you need to focus on detail of specific objects in video view, please use optical zoom ring on lens set of IP camera.

Snapshot

Take a snapshot or camera video and save image file on your computer. When you click this button, a new window will appear.



Click 'Save' button when you see the image you wish to save, and you'll be prompted to indicate the folder on your computer to save image file.

If you changed your mind and don't want to save image file, click 'Cancel'.

Record

Click Record to activate this function. Press Record button to start recording. The video file is saved as ASF format into your local PC. While you want to stop it, press Stop to stop recording.

Recording Location

Select Recording Location to select the save path and file name prefix, select OK to continue.

4

Administrating the Device

System Setting

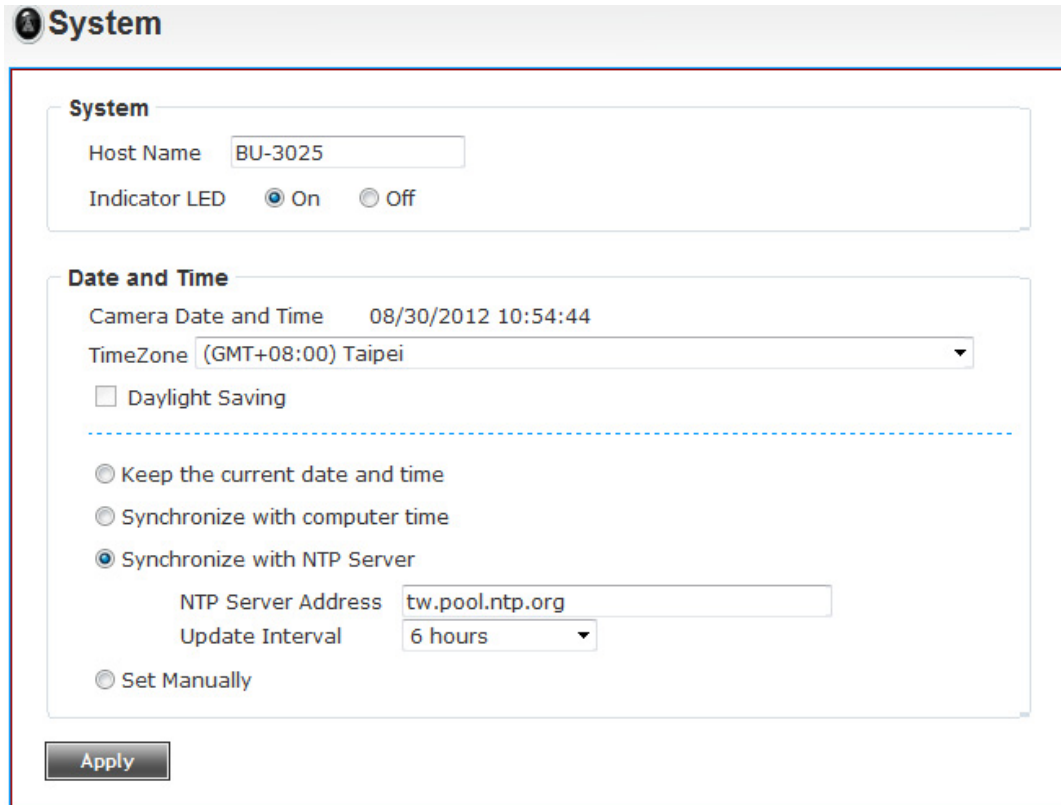
This function is only available for a user logs into Camera as administrator.

Click on each menu name to display its setting page.

Item	Action
System	Configure basic IP camera settings like hostname and time.
Security	Configure IP camera's login account.
Network	Configure Network settings such as DHCP, DDNS, RTSP, PPPoE and UPnP
IP Filter	You can enter different user's IP address which are allowing enter or denying by the device
Video	Configure bit rate and frame rate of video profiles
Audio	Configure audio parameters
Motion	Setup Motion detection
PTZ Control	Configure Pan tilt control via RS-485 connection
Event	Setup Event server, Motion Detection, I/O Ports and Event configuration.
Recording	Setup External storage Recording
SDHC	Status and configuration of SD card
Log	Check the usage log of IP camera
Device info	Check the information and network settings of this IP camera.
Maintenance	Setup maintenance function of this IP camera

4.1 System

In this menu, you can configure basic IP camera settings like hostname and time.



The screenshot shows the 'System' configuration page. It is divided into two main sections: 'System' and 'Date and Time'.
In the 'System' section, there is a text input field for 'Host Name' containing 'BU-3025' and a radio button selection for 'Indicator LED' with 'On' selected.
The 'Date and Time' section shows the current 'Camera Date and Time' as '08/30/2012 10:54:44' and a dropdown menu for 'TimeZone' set to '(GMT+08:00) Taipei'. There is an unchecked checkbox for 'Daylight Saving'. Below a dashed line, there are three radio button options: 'Keep the current date and time', 'Synchronize with computer time', and 'Synchronize with NTP Server' (which is selected). Under the 'Synchronize with NTP Server' option, there is a text input field for 'NTP Server Address' containing 'tw.pool.ntp.org' and a dropdown menu for 'Update Interval' set to '6 hours'. At the bottom of the section is an unchecked radio button for 'Set Manually'. An 'Apply' button is located at the bottom left of the form.

Here are the descriptions of every setup item:

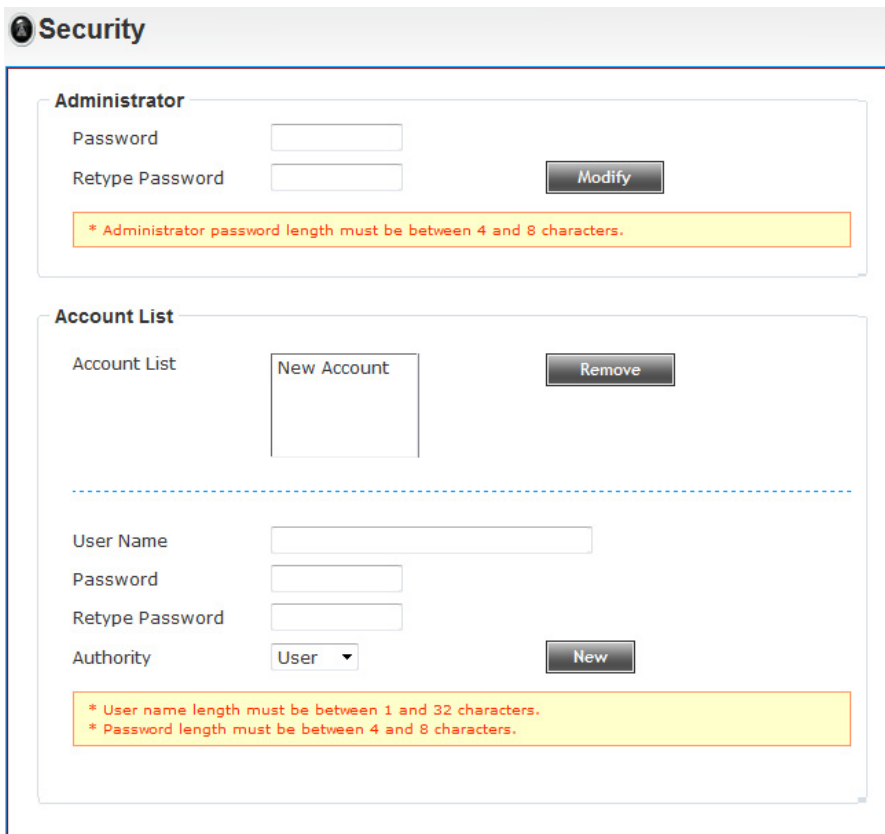
- **Host Name:**
You can enter the name of this unit here. It's very useful to identify the specific device from multiple units. The information will be shown on IP Wizard II once the device is found.
- **Indicator LED:**
Turn on or off Indicator LED.
- **Time Zone:**
Set the time difference from Greenwich Mean Time in the area where the device is installed.
- **Daylight Saving:**
Disable or enable the daylight saving adjustment.

- **Keep the current date and time:**
Select this option and date / time setting will not be changed when you click 'Apply' in the page. You can check 'Camera Date and Time' item in this page to know IP camera's current date and time setting.
- **Synchronize with computer time:**
Click this option to enable time synchronization with PC time.
- **Synchronize with NTP Server:**
Click this option if you want to synchronize the device's date and time with those of time server called NTP server (Network Time Protocol).
- **Set Manually:**
Click this option to set time and date manually..

When you finish with above settings, click 'Apply' button to save changes.

4.2 Security

In this menu, you can configure IP camera's login account.



The screenshot shows the 'Security' configuration page. It is divided into two main sections: 'Administrator' and 'Account List'.

Administrator Section:

- Fields for 'Password' and 'Retype Password' are present.
- A 'Modify' button is located to the right of the 'Retype Password' field.
- A yellow warning box below the fields states: '* Administrator password length must be between 4 and 8 characters.'

Account List Section:

- There is an 'Account List' table with one entry: 'New Account'.
- A 'Remove' button is located to the right of the 'New Account' entry.
- Below the table, there are fields for 'User Name', 'Password', and 'Retype Password'.
- An 'Authority' dropdown menu is set to 'User'.
- A 'New' button is located to the right of the 'Authority' dropdown.
- A yellow warning box below the fields states: '* User name length must be between 1 and 32 characters.' and '* Password length must be between 4 and 8 characters.'

There are three kinds of account:

- Administrator:
An administrator can view IP camera's video and make changes of camera setting.
- User:
A user can view IP camera's video and see settings, but can't make any change.
- Guest:
A guest can view IP camera's video only.

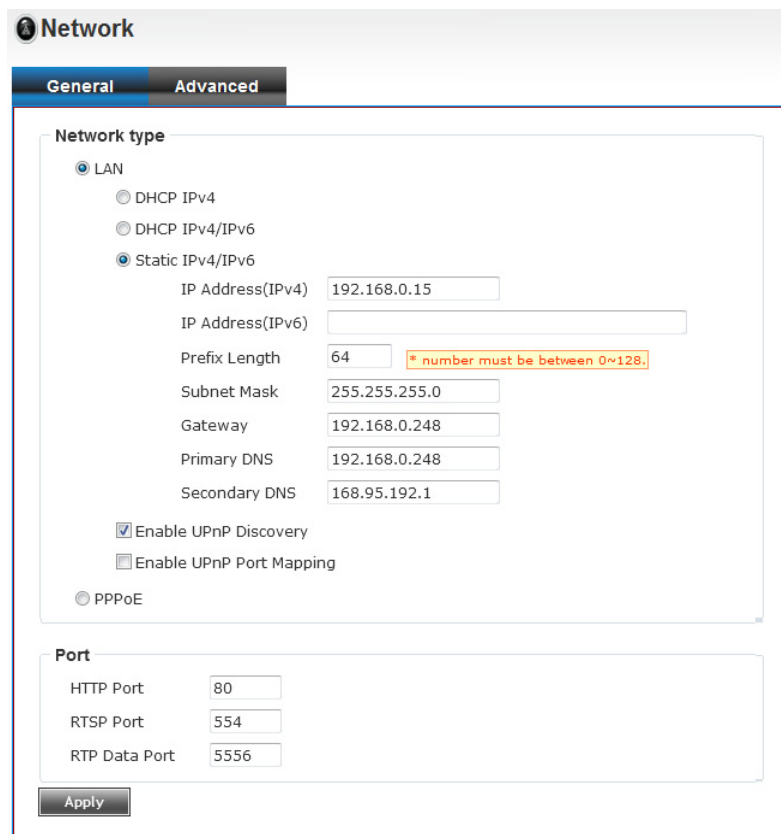
There can be multiple users, but only one administrator is allowed, and you can't change administrator's user name (it will always be 'administrator').

4.3 Network

In this menu, you can configure IP camera's network setting.

4.3.1 General

Setup the IP address for BU-3025. This IP camera supports both IPv4 and IPv6 IP address.



Network

General Advanced

Network type

- LAN
 - DHCP IPv4
 - DHCP IPv4/IPv6
 - Static IPv4/IPv6
 - IP Address(IPv4) 192.168.0.15
 - IP Address(IPv6)
 - Prefix Length 64 * number must be between 0~128.
 - Subnet Mask 255.255.255.0
 - Gateway 192.168.0.248
 - Primary DNS 192.168.0.248
 - Secondary DNS 168.95.192.1
- PPPoE

Enable UPnP Discovery

Enable UPnP Port Mapping

Port

HTTP Port 80

RTSP Port 554

RTP Data Port 5556

Apply

Here are the descriptions of every setup item:

- LAN:
Select this option to assign an IP address to LAN port (or obtain an address from DHCP server automatically).

Available options are:

- DHCP IPv4: Obtain an IPv4 IP address from DHCP server on LAN automatically.
- DHCP IPv4 / IPv6: Obtain both IPv4 and IPv6 address from DHCP server on LAN automatically.
- Static IPv4 / IPv6: Assign an IPv4 / IPv6 address to IP camera manually. If you don't have a DHCP server on your local area network, you must use this option to specify an IP address.
- IP Address (IPv4): Input IPv4 IP address*
- IP Address (IPv6): Input IPv6 IP address*
- Prefix Length: Input IPv6 IP address' prefix length (0-128)
- Subnet Mask: Input subnet mask
- Gateway: Input gateway address
- Primary DNS: Input DNS server's IP address
- Secondary DNS: Input backup DNS server's IP address, you can leave this field blank.

* You can leave this field blank, if you only wish to use IPv4 or IPv6 IP address.

Enable UPnP Discovery: Check this box to enable other devices on network to discover the presence of this IP camera by UPnP. It's recommended to enable this function.

Enable UPnP Port Mapping: When UPnP is enabled, check this box to enable UPnP's port mapping.

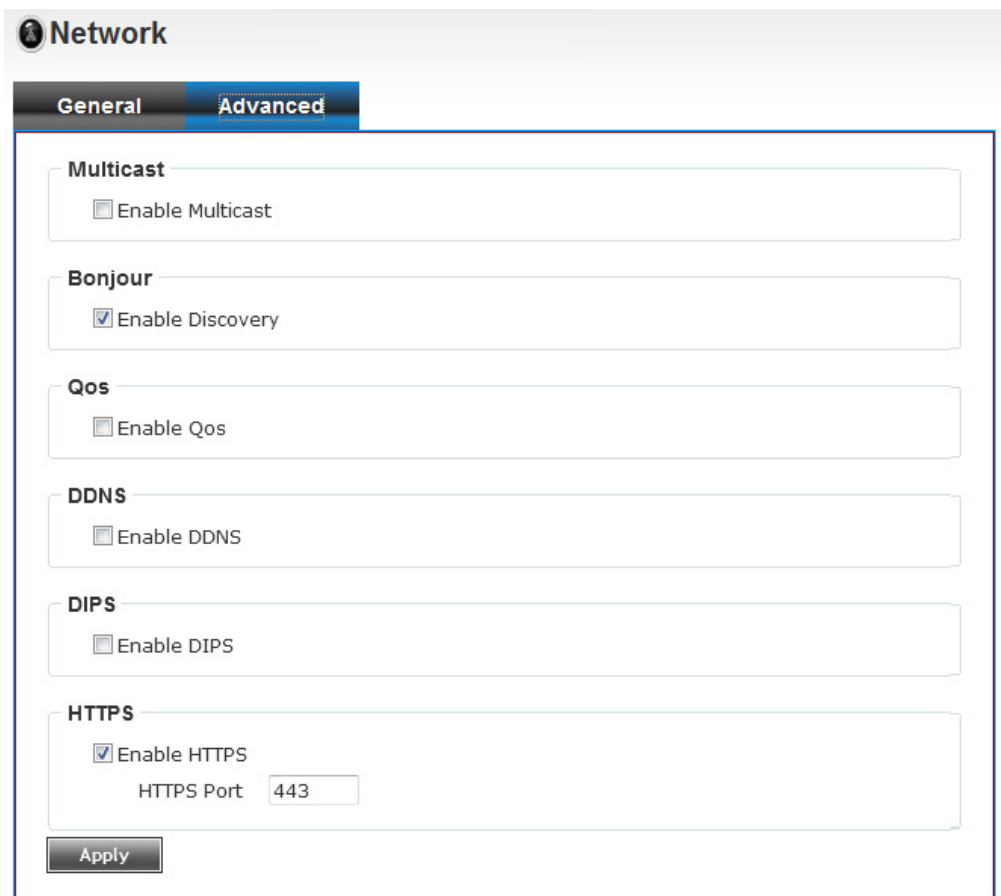
- PPPoE:
Select this option to use PPPoE to connect to network. You have to input PPPoE username and password assigned by network operator to get connected.
- HTTP Port:
Input IP camera's web connection port number here. When this port number is changed, you need to change web browser's port number you used to connect to IP camera.
For example, if the IP camera's IP address is 192.168.2.3 and you changed HTTP port number to 82, please input 'http://192.168.2.3:82' in web browser's address bar to access IP camera's web configuration interface.

- **RTSP Port:**
Input RTSP port number. When this port number changes, you must change corresponding settings in external network devices (NVR or CMS software) so they can receive this IP camera's video.
- **RTP Data Port:**
Input RTP data port number here.

When you finish with above settings, click 'Apply' button to save changes.

4.3.2 Advanced

You can setup advanced network settings in this page. This page is intended for advanced settings only, and this IP camera will work fine even you don't make any changes to this page.



The screenshot shows the 'Network' configuration page with the 'Advanced' tab selected. The page contains several sections with checkboxes and input fields:

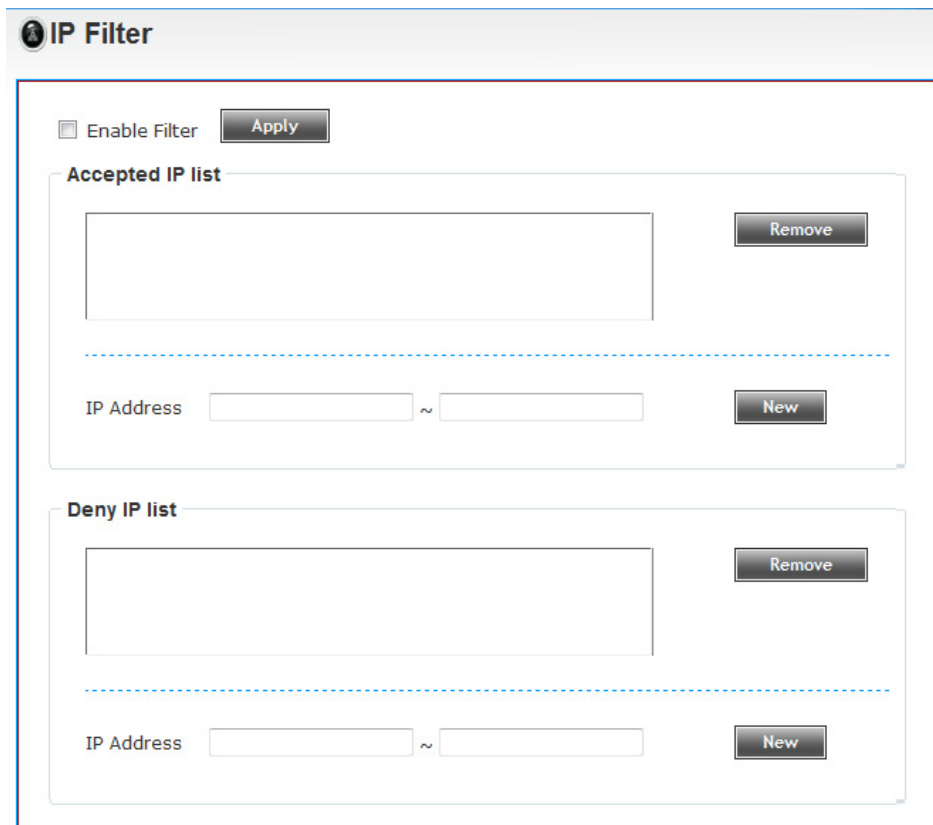
- Multicast:** Enable Multicast
- Bonjour:** Enable Discovery
- Qos:** Enable Qos
- DDNS:** Enable DDNS
- DIPS:** Enable DIPS
- HTTPS:** Enable HTTPS
HTTPS Port:

An 'Apply' button is located at the bottom of the form.

- **Multicast:**
Enable video multicast:
Multicast Group Address: Input multicast group address here, must be an address between 232.0.0.0 to 232.255.255.255.
Multicast video port: Input port number for video multicast here.
Multicast RCTP video port: Input port number for RCTP video here.
Multicast audio port: Input port number for audio here.
Multicast RCTP audio port: Input port number for RCTP audio here.
Multicast TTL: Input TTL value for multicast here.
- **Bonjour:**
If you're using Mac OS and you have Bonjour installed, you can use it to discover this IP camera.
- **QoS:**
Enable QoS to improve the data transfer priority of this IP camera (Your local area network must support QoS).
You can select Video / Audio's QoS DSCP value (0 to 63), or both video and audio.
- **DDNS:**
Enable DDNS support if your ISP assigns dynamic IP address to you. You must register a dynamic IP service first. Currently this IP camera supports DynDNS and TZO dynamic IP service.
Provider: Select dynamic IP service provider.
Host Name: Input the host name you obtained from dynamic IP service provider.
User name: Input user name used to login dynamic IP service provider.
Password: Input the password used to login dynamic IP service provider.
- **HTTPS:**
Check 'Enable HTTPS' box to enable HTTPS channel to encrypt transferred data.
You can also define HTTPS port number in 'HTTPS Port' field if you don't want to use default value '443'.

4.4 IP Filter

When this IP camera is directly connected to Internet and not protected by firewall, this function acts like a mini built in firewall to protect the safety of this IP camera and avoid attacks from hackers.



- **Enable Filter:**
Check this box to enable IP address filter, uncheck this box to disable this function.
- **Accepted IP list:**
Here lists all IP address that can build connections to this IP camera. If you want to remove a set of IP address from the list, click on the IP address and click 'Remove' button.
- **IP Address (Accepted IP list):**
Input the starting and ending IP address of IP address you wish to accept connections here. IP camera will only accept connections established from these IP address. If you want to specify one IP address only, input the same IP address in both field. Click 'New' button to add IP address into accepted IP list.

- Deny IP list:
Here lists all IP address that cannot build connections to this IP camera. If you want to remove a set of IP address from the list, click on the IP address and click 'Remove' button.
- IP Address (Deny IP list):
Input the starting and ending IP address of IP address you wish to deny connections here. IP camera will deny connections established from these IP address. If you want to specify one IP address only, input the same IP address in both field. Click 'New' button to add IP address into deny IP list.


4.5 Video

4.5.1 Image Setting

You can adjust the image parameters in this page.

Image Setting
Video Setting
Overlay

Image Adjustment



Brightness:

Contrast:

Saturation:

Sharpness:

Others

Mirror Vertical Horizontal

Power Line Frequency

Condition(AWB)

TV out Enable

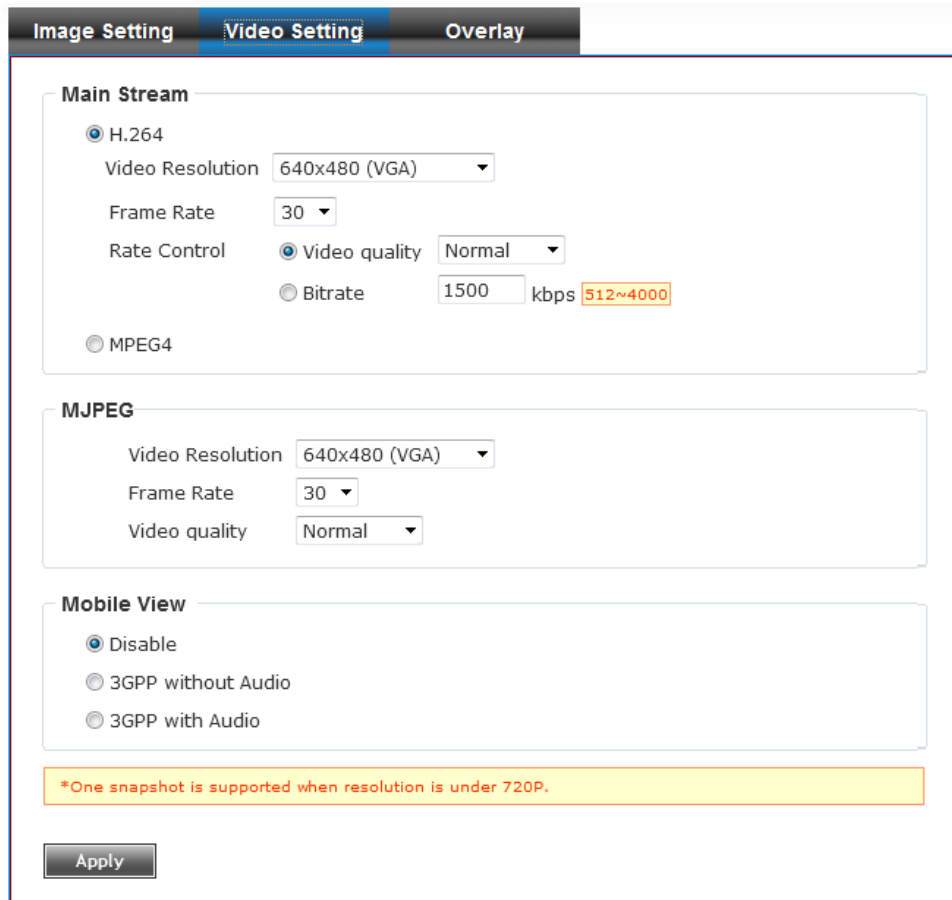
IR-Cut(Day/Night) Auto Always ON(B/W) Always OFF(Color)

Day Schedule From: : To: :

- **Brightness /Contrast /Saturation /Sharpness:**
Control the image parameters. Click ' - ' to decrease value, or click ' + ' to increase value. You can also input the value in the field directly.
- **Default:**
Check "Vertical" and "Horizontal" box to flip the image vertically or horizontally, this will help to correct the orientation of image when IP camera is hanged bottom up by camera holder.
You can click both "Vertical" and "Horizontal" box at the same time.
- **Power Line Frequency:**
Select the frequency of power line of the place you're using this IP camera. This will help to reduce the flicker of certain lights in the image.
- **Condition:**
Select the condition that you'll be using this IP camera from dropdown menu.
Auto: IP camera will adjust its parameters automatically.
Night: You'll be using this IP camera in dark places where lights are insufficient.
- **TV Out:**
Click "Enable" box to enable its "VIDEO OUT" function for connections and video sending to TV monitors or DVRs.
- **IR cut:**
An IR cut filter is built in this IP camera to reduce the effect of IR lights (which will change the color of image and makes it looks different than what you see through your eyes), and most of IR lights are coming from sunlight.
You can select the behavior or IR cut filter:
Auto: IR filter will act automatically. If you don't know wheatear you should use IR filter or not, select this option.
Always ON: IR filter is always on.
Always OFF: IR filter is always off.
- **Day:**
Select the condition that you'll be using this IP camera from dropdown menu.
Auto: IP camera will adjust its parameters automatically.
Night: You'll be using this IP camera in dark places where lights are insufficient.

4.5.2 Video Setting

You can adjust the video transfer parameters in this page.

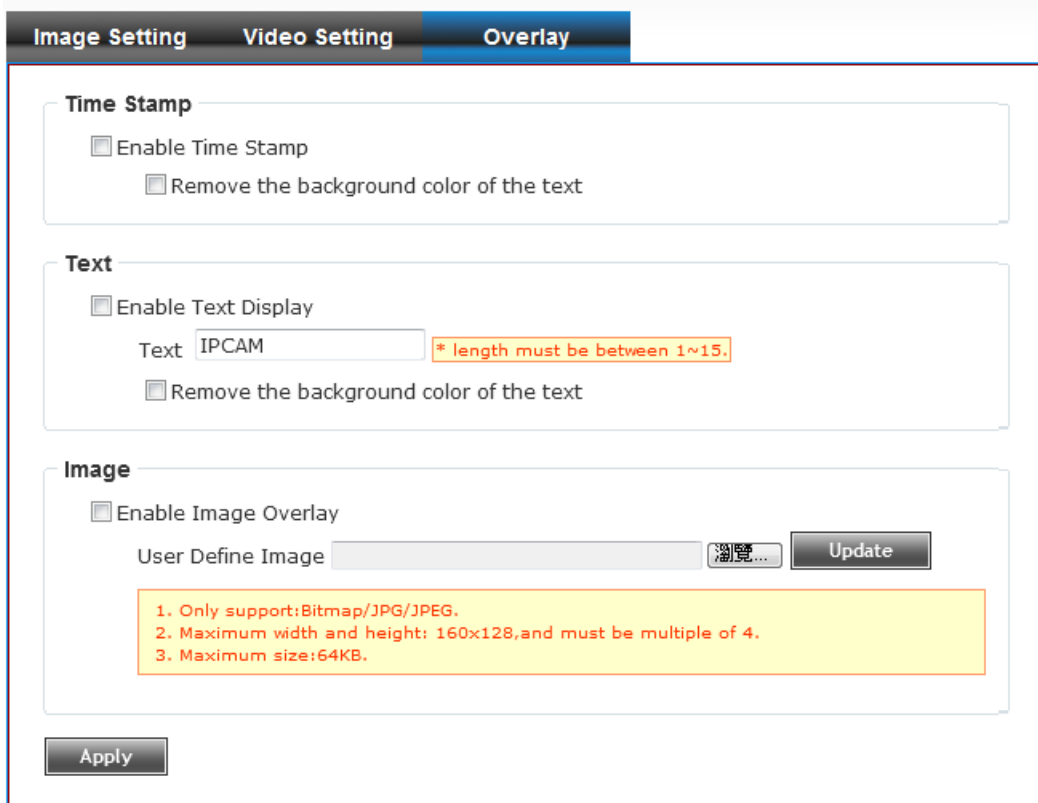


- H.264/MPEG4:**
 Select video resolution.
 Please note that some video resolution is not available when video encoder is 'MPEG4'.
 When network speed is insufficient, selecting a lower video resolution will help.
- Frame Rate:**
 Select video frame rate. Please note that some frame rates are not available when video encoder is 'H.264'.
 When network speed is insufficient, selecting a lower frame rate will help.
- Rate Control:**
 Select video bit rate. You can control bit rate by both Video quality and Bitrate.
 Video quality: There are 5 levels of video quality, select 'very high' to improve video quality but consumes more network bandwidth, and select 'very low' will decrease video quality and consumes less network bandwidth.
 Bitrate: Input video's bit rate directly. It must be an integer between 512 and 4000. Higher bit rate provides better video quality, but consumes more network bandwidth.

Note: MJPEG options are only available for portable devices like cell phone.

4.5.3 Overlay Setting

You can adjust the video overlay parameters in this page.



- **Enable Time Stamp:**
Check this box to enable overlaying time stamp on video.
- **Remove the background color of the text(for Time Stamp):**
Check this box to remove time stamp's background color. You may find this will help the readability of time stamp text in some cases.
- **Enable Text Display:**
Check this box to display certain text on video; this will help when you need to identify certain IP camera when you have a lot of IP cameras.
Please input the text in 'Text' field. You can input up to 15 characters.
- **Remove the background color of the text (Text):**
Check this box to remove custom text's background color. You may find this will help

the readability of text in some cases.

- **Enable Image Overlay:**

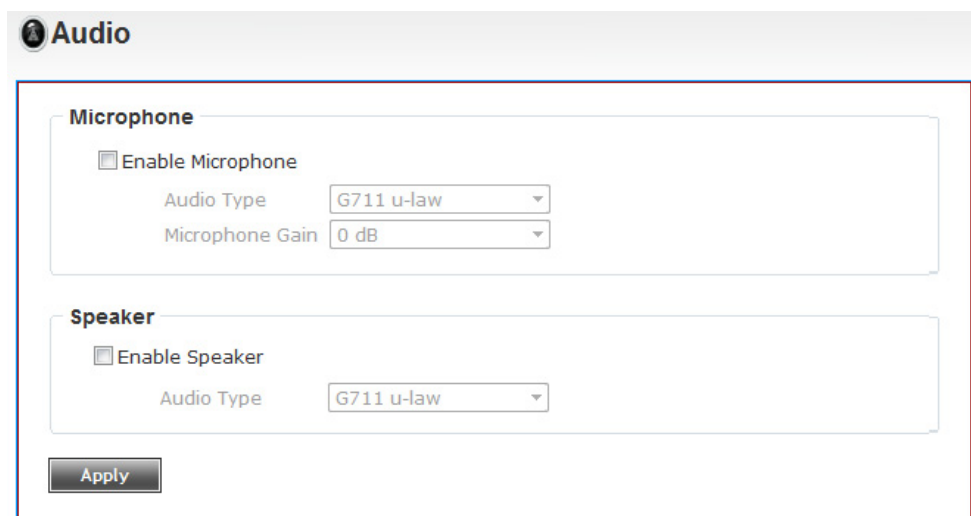
Check this box to overlay a specific image on video, so you can show certain text / picture on the video and help people to identify this IP camera.

Click 'Browse' button to pick a picture on your computer, then click 'Update' button to use the picture. Please note that there are certain restrictions:

- Select .bmp / .jpg / .jpeg image files only.
- Image's resolution should be less than 160 x 128, and can be divided by 4.
- Do not upload image files that size is greater than 64KB.

4.6 Audio

You can adjust audio input / output parameters here.



- **Enable Microphone:**

Check this box to enable microphone. If you don't want to hear voice from IP camera, you can uncheck this box to disable it.

- **Audio Type(Microphone):**

The format is fixed as G.711

- **Microphone Gain:**

If the voice received by microphone is too loud or silent, you can use this function to

improve voice volume, so you can hear voice from IP camera more clearly.

Select 2 or 1 dB to correct the voice that is too loud;

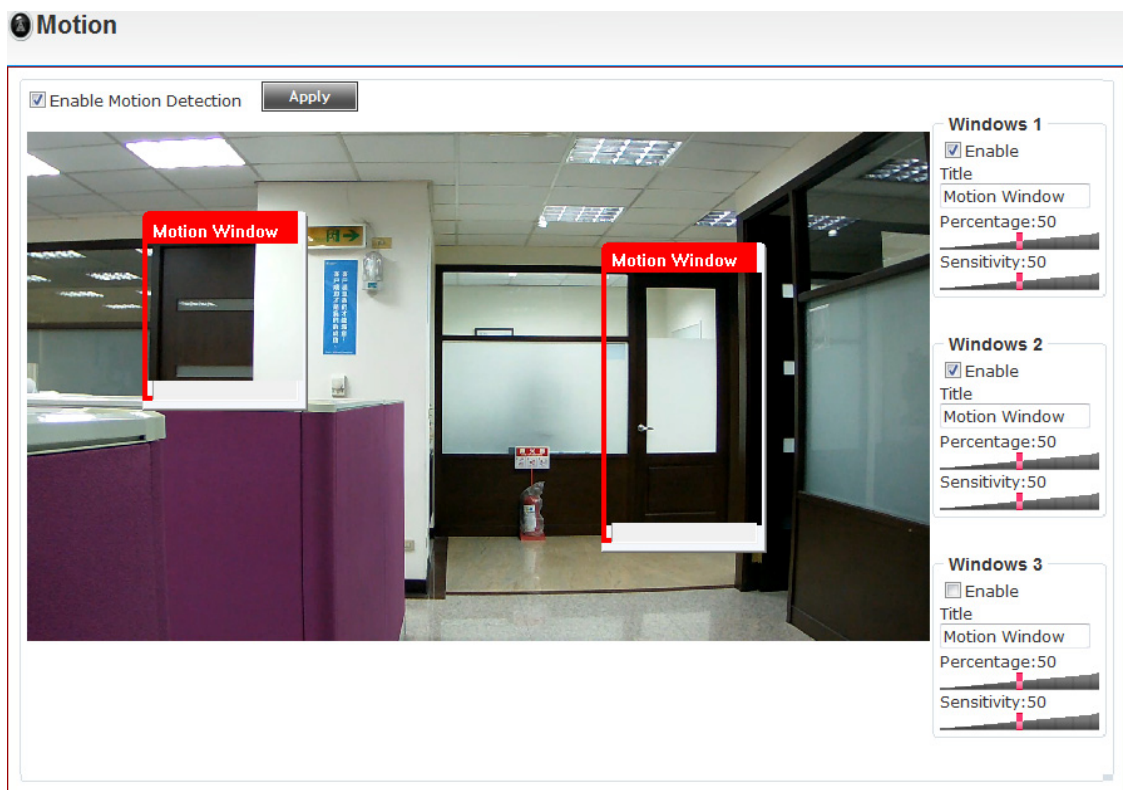
Select 0 dB, IP camera will do nothing on the voice;

Select +2 dB to +26 dB to amplify the voice.

- **Enable Speaker(Speaker):**
Check this box to enable speaker. If you don't want people at IP camera to hear you, you can uncheck this box to disable it.
- **Audio Type(Speaker):**
The format is fixed as G.711

4.7 Motion

This IP camera is capable to detect object's motion, so IP camera will only record when there's motion and save disk storage space. Motion detection is performed by examine the movement of objects in rectangular motion detection area. You can define up to 3 motion detection areas.



- **Enable Motion Detection:**
Check this box to enable motion detection.

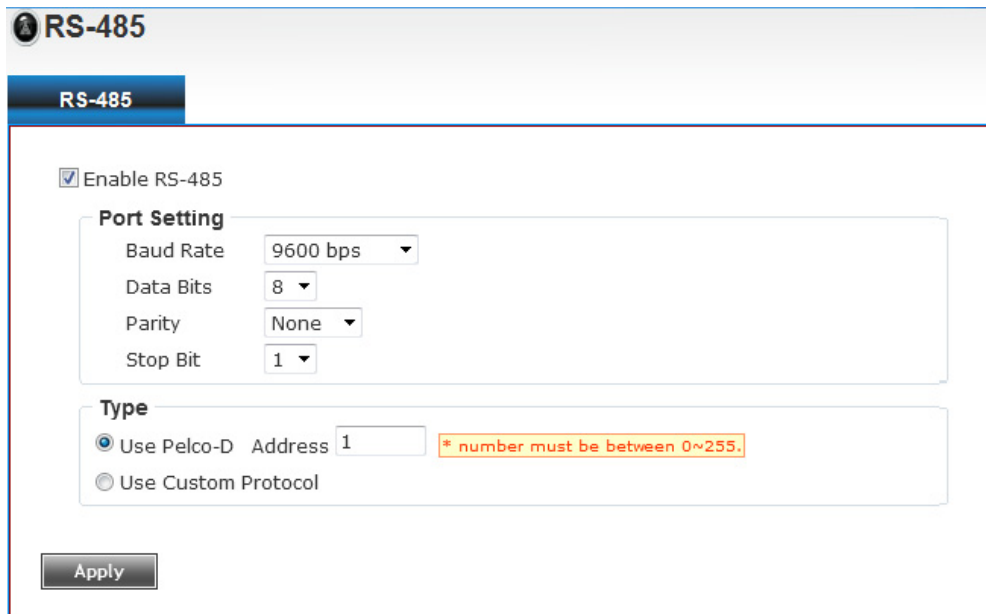
- **Enable (Window 1 to Window 3):**
Check this box to enable this motion detection window. You can select window 1 to 3 to enable up to 3 motion detection windows. When a motion detection window is enabled, a rectangular will appear on camera's view, with its title on the top.
To move / resize a motion detection window:
Move: Use the mouse to drag the title text.
Resize: Use the mouse the drag the four corners (upper left/right, lower left/right) to resize it. If you only want to adjust width or height, drag the four sidebars (top, bottom, left, and right).



- **Title (Window 1 to Window 3):**
Input characters in title field to change motion detection area's title text, so you can identify it.
- **Percentage:**
Select the percentage of pixel change that will trigger motion detection alert. Select a lower percentage and you can detect tiny changes in motion detection area.
- **Sensitivity:**
Select the sensitivity level that will trigger motion detection alert. Select a higher sensitivity and you can detect tiny changes in motion detection area.

4.8 PTZ Control

If you mount the IP camera on pan-tilt camera cradles that support pan-tilt control via RS-485 connection, you can use this function to control pan-tilt camera cradle. Therefore, you can control the orientation of IP camera from remote place.

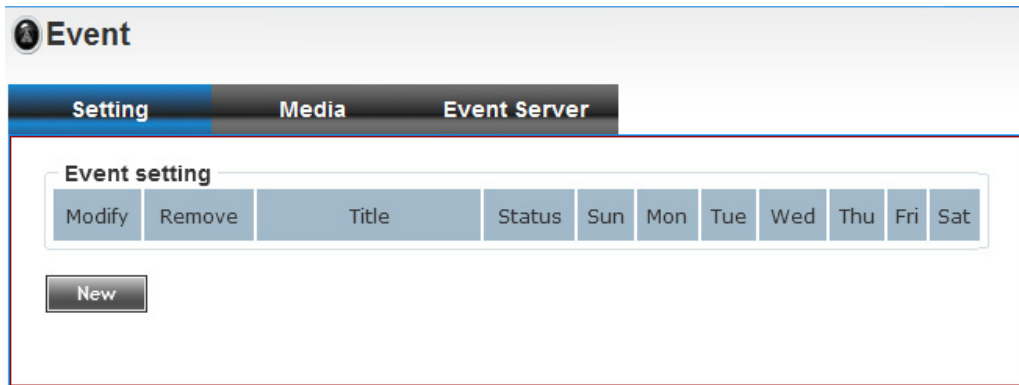


- **Use Pelco-D:**
 Select this option and RS-485 interface will output pan-tilt control signal in Pelco-D format. This format is widely accepted by most of pan-tilt camera cradles. You have also input pan-tilt camera cradle's address code in 'Address' field. This code must be identical to pan-tilt camera cradle's address code.

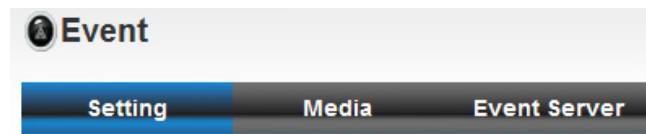
- **Use Custom Protocol:**
 When the pan-tilt camera cradle does not support Pelco-D protocol, you can define a protocol's detail by this function. Please refer to pan-tilt camera cradle's user manual to define the protocol.
 - **Baud Rate:** Select data baud rate of RS-485 interface that pan-tilt camera cradle will accept. When the length of RS-485 connection is very long (longer than 200M), it's not recommended to use high speed connection (greater than 2400bps).
 - **Data Bits:** Select data bits of RS-485 connection.
 - **Parity:** Select parity bit, odd, even, or space.
 - **Stop Bit:** Select stop bit, 1 or 2.
 - **Home/Up/Down/Left/Right:** Input the command string used to move pan-tilt camera cradle to home or up/down/left/right position. You can click 'Test' button to send command string for testing.
 - **Command 1 ~ 5:** You can define extra pan-tilt camera cradle control strings here by giving it a name (Command Name) and command string (Hexadecimal Message). You can also click 'Test' button to send command string for testing.

4.9 Event

When there's an event, you can use this setup page to define what IP camera should do, like send an Email or trigger digital output to activate external alarm.



There are three setup pages:



1. Setting: Define a new event and manage events.
2. Media: Define what kind of media file should be saved on designate media.
3. Event Server: Define the details of remote server.

Please refer to following sections for detailed instructions.

4.9.1 Image Setting

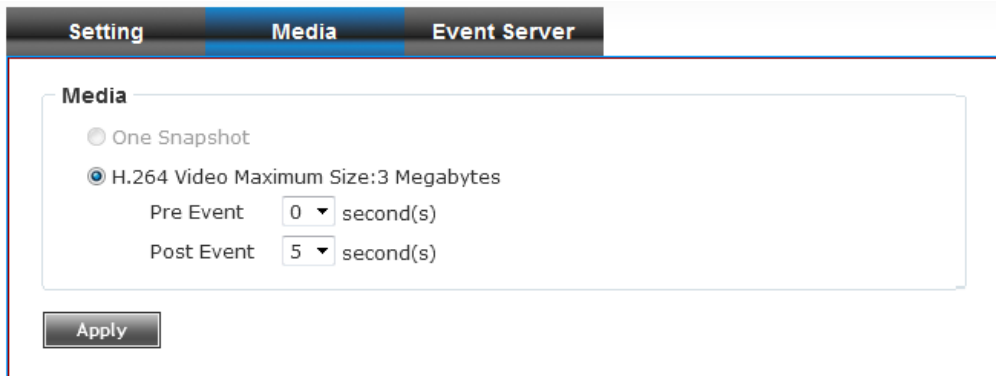
This page lists all existing events. You can click 'Modify' button to edit an existing event, or 'Remove' to delete an existing event. To create a new even, just click "New" button to add an Event setting.

Setting		Media	Event Server							
Event setting										
Modify	Remove	Title	Status	Sun	Mon	Tue	Wed	Thu	Fri	Sat
New										
Setting										
<input type="checkbox"/> Enable Setting										
Title <input type="text"/>										
Trigger										
<input type="checkbox"/> Motion Detection										
<input type="checkbox"/> Digital Input 1 <input type="text" value="High"/>										
Schedule Time										
<input type="checkbox"/> Enable Schedule Time										
<input type="checkbox"/> Sun <input type="checkbox"/> Mon <input type="checkbox"/> Tue <input type="checkbox"/> Wed <input type="checkbox"/> Thu <input type="checkbox"/> Fri <input type="checkbox"/> Sat										
Time: <input checked="" type="radio"/> Always										
<input type="radio"/> From <input type="text" value="00"/> : <input type="text" value="00"/> To <input type="text" value="23"/> : <input type="text" value="59"/>										
Action										
<input type="checkbox"/> Enable FTP										
<input type="checkbox"/> Enable EMAIL										
<input type="checkbox"/> Enable Samba(Net Storage)										
<input type="checkbox"/> Enable SD CARD										
<input type="checkbox"/> Trigger digital output for <input type="text" value="01"/> second(s)										

- **Title:**
Input any description text for this event so you can identify it quickly. You can use alphabets, numbers, and symbols include: ! \$ - . @ ^ _ ~ (no spaces allowed).
- **Trigger by::**
Select the triggered sources.
- **Enable Schedule Time:**
Define the feasible time slot.
- **Action:**
Define the actions once event triggered.

4.9.2 Media

You can define what kind of media file should be saved on designated media.



- One Snapshot:
Save a picture file when event is triggered.
- H.264 Video:
Save a H.264 video clip. You can also select the recording length before and / or after the time when event is triggered in 'Pre Event' and 'Post' Event'.
For example, if you set 'Pre Event' to '10' and 'Post Event' to '5', and an event is triggered at 14:10:30, then the video file will be 15 seconds long, starting from 14:10:20 to 14:10:35.


Tips: You may want to know what happened before event is triggered in many cases, especially when object is outside of motion detection window.

Note: If the "Pre Event" set to "0" second, the "Post Event" cannot set to "0" second.

4.9.3 Event Server

You can define the details of remote media server: FTP (File), SMTP (Email), and Samba (File).

A Samba server can be any computer running windows operating system with network neighbor function enabled. Many stand-alone network file servers also support samba server function.



FTP Server

- **FTP Server:**
FTP server's IP address or hostname.
- **Port:**
Input FTP server's port number. In most cases, it should be default value '21'.
- **User Name:**
Input FTP server's username.
- **Password:**
Input FTP server's password.
- **File Path Name:**
Input the path where you want to save file on FTP server, like 'upload/record'. If you want to save file on this FTP user's home directory, you can leave this field blank.

- **Enable Passive Mode:**
Check this box to force IP camera to communicate with FTP server in passive mode. (Some FTP Server may only work when you check this box, while others don't).
- **Test FTP:**
Click this button to test FTP server settings above immediately.

SMTP Server

- **SMTP Server:**
Input SMTP server's IP address or hostname.
- **Port:**
Input SMTP server's port number. In most cases, it should be default value '25'.
- **Sender Email Address:**
Input the sender's email address that will appear in the Email send by IP camera. This will help you to identify the Email sent by this IP camera, and may help when you have anti-spam software installed (you can set this Email address to 'White List' in your anti-spam software).
- **Receiver #1 Email Address:**
Input primary recipient's Email address. This field is required.
- **Receiver #2 Email Address:**
Input primary recipient's Email address. This field is optional.
- **Subject:**
Input Email title that will appear in the Email send by IP camera. This will help you to identify the Email sent by this IP camera.
- **Authentication:**
Check this box when authentication is required by the Email server you're using. You also need to input Email server's username and password in corresponding field.
- **Requires SSL Encryption:**
If your Email server required SSL encryption, check this box. Please note that some Email server uses different port number than standard port 25 when SSL encryption is used.

- **STARTTLS:**
If your Email server required STARTTLS encryption, check this box. Please note that some Email server uses different port number than standard port 25 when STARTTLS encryption is used.
- **Test SMTP:**
Click this button to test SMTP server settings above immediately.
- **Receiver #2 Email Address:**
Input primary recipient's Email address. This field is optional.

Samba Server

- **Samba Server Address:**
Input Samba server's IP address or hostname.
- **Path:**
Input the path where you want to save file on Samba server, like 'upload/record'. If you want to save file on this user's home directory, you can leave this field blank.
- **User Name:**
Input Samba server's username.
- **Password:**
Input Samba server's password.
- **Test SMB:**
Click this button to test Samba server settings above immediately.

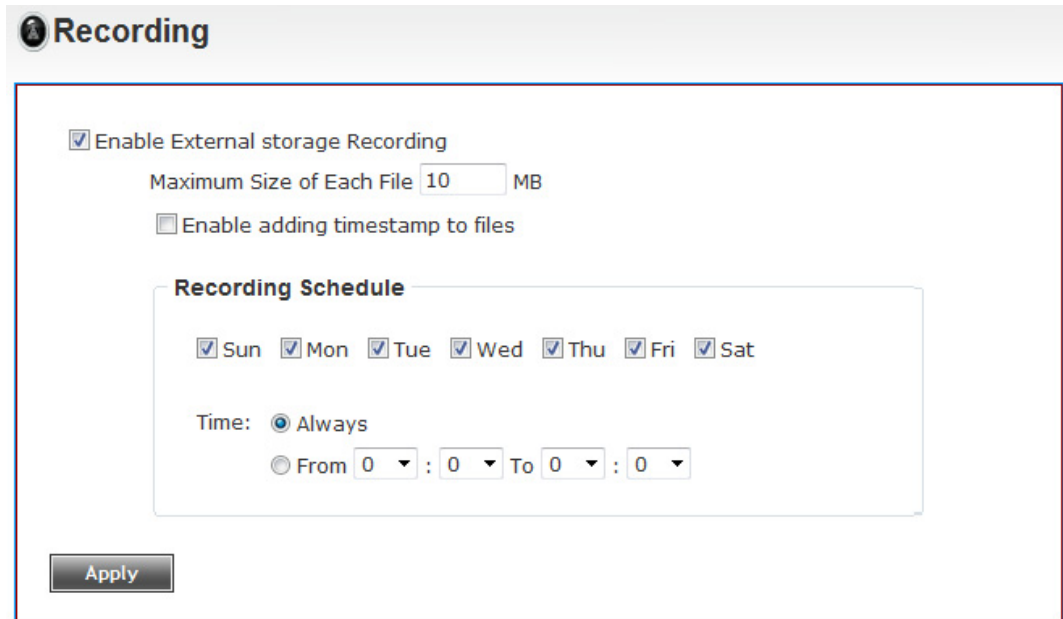
Tips: Some samba servers do not have username and password check, you can just input samba server address and path to access the file storage space.

4.10 Recording

When a SD card is inserted into IP camera, you can save video files on it.

Note:

1. Be sure that the SD Card format should be FAT32. The NTFS format cannot be supported by this camera.
2. Unlink motion detection, this function will record video at specified time period on selected weekday(s).



Recording

Enable External storage Recording

Maximum Size of Each File MB

Enable adding timestamp to files

Recording Schedule

Sun Mon Tue Wed Thu Fri Sat

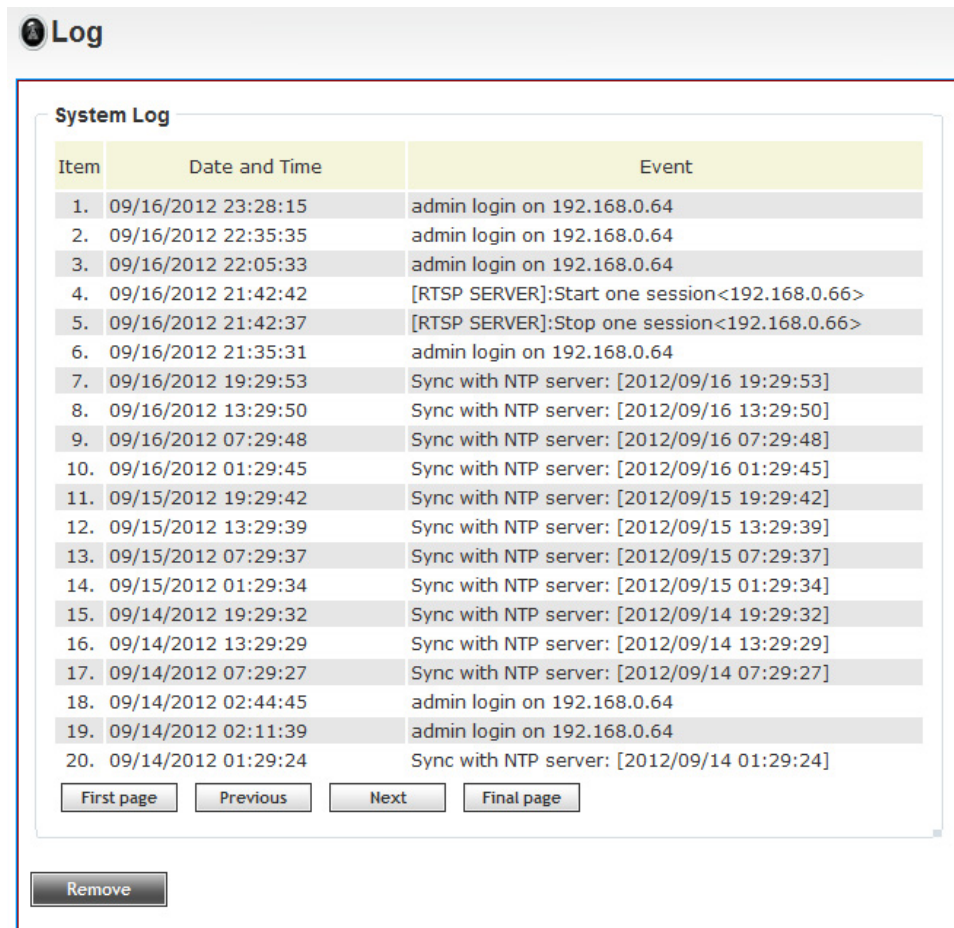
Time: Always

From : To :

- **Maximum Size of Each File:**
Input the maximum size of every video file from 1MB to 50MB. IP camera will start a new video file when a recording video file reaches the size limit stated here.
- **Recording Schedule:**
Define the recording schedule. You can check Sun to Sat boxes to represent a weekday, and specify time period in 'From' and 'To' field. Select 'Always' to record 24 hours in selected weekday(s).

4.11 Log

You can check the usage log of IP camera here.



Log

System Log

Item	Date and Time	Event
1.	09/16/2012 23:28:15	admin login on 192.168.0.64
2.	09/16/2012 22:35:35	admin login on 192.168.0.64
3.	09/16/2012 22:05:33	admin login on 192.168.0.64
4.	09/16/2012 21:42:42	[RTSP SERVER]:Start one session<192.168.0.66>
5.	09/16/2012 21:42:37	[RTSP SERVER]:Stop one session<192.168.0.66>
6.	09/16/2012 21:35:31	admin login on 192.168.0.64
7.	09/16/2012 19:29:53	Sync with NTP server: [2012/09/16 19:29:53]
8.	09/16/2012 13:29:50	Sync with NTP server: [2012/09/16 13:29:50]
9.	09/16/2012 07:29:48	Sync with NTP server: [2012/09/16 07:29:48]
10.	09/16/2012 01:29:45	Sync with NTP server: [2012/09/16 01:29:45]
11.	09/15/2012 19:29:42	Sync with NTP server: [2012/09/15 19:29:42]
12.	09/15/2012 13:29:39	Sync with NTP server: [2012/09/15 13:29:39]
13.	09/15/2012 07:29:37	Sync with NTP server: [2012/09/15 07:29:37]
14.	09/15/2012 01:29:34	Sync with NTP server: [2012/09/15 01:29:34]
15.	09/14/2012 19:29:32	Sync with NTP server: [2012/09/14 19:29:32]
16.	09/14/2012 13:29:29	Sync with NTP server: [2012/09/14 13:29:29]
17.	09/14/2012 07:29:27	Sync with NTP server: [2012/09/14 07:29:27]
18.	09/14/2012 02:44:45	admin login on 192.168.0.64
19.	09/14/2012 02:11:39	admin login on 192.168.0.64
20.	09/14/2012 01:29:24	Sync with NTP server: [2012/09/14 01:29:24]

First page Previous Next Final page

Remove

In this page, you can click:

1. First page / Final page: Jump to first / final page of log.
2. Previous / Next: Jump to previous or next page of log.
3. Remove: Clear log. You'll be prompted for confirmation.

4.12 Device info

You can check the information and network settings of this IP camera. This information is very useful when you need to repair or fix the problem of this IP camera.

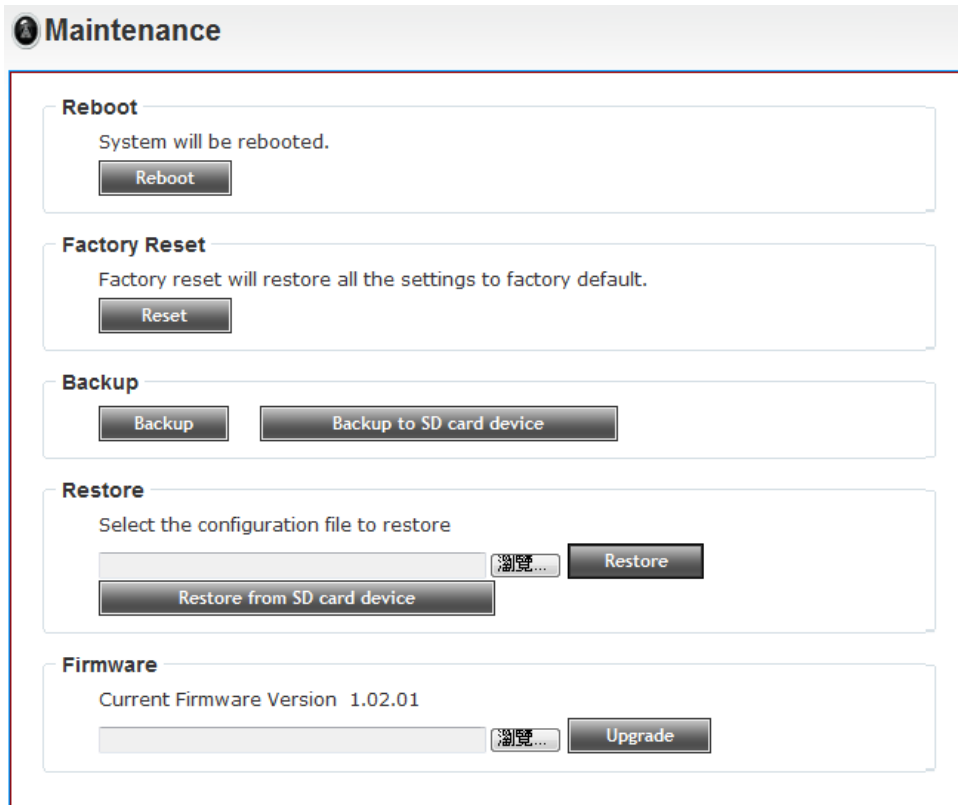
An example of device info page looks like below:

Device info

Basic	
Camera Name	BU-3025
Firmware version	1.02.01
MAC	d4:a4:25:00:22:54
Camera Date and Time	09/16/2012 23:35:18
H.264	
Video Resolution	1920x1080 (1080P)
Video Quality	Very High
Frame Rate	30 fps
Audio	
Microphone In	Disable
Microphone Gain	0 dB
Speaker Out	Disable
Mobile View	
3GPP Enable	Disable
Network	
IP MODE	DHCP IPv4/IPv6
IP Address(IPv4)	192.168.0.66
IP Address(IPv6)	
Subnet Mask	255.255.255.0
Gateway	192.168.0.254
Primary DNS	192.168.0.254
Secondary DNS	0.0.0.0

4.13 Maintenance

You can do some maintenance about this IP camera here.



Maintenance

Reboot
System will be rebooted.

Factory Reset
Factory reset will restore all the settings to factory default.

Backup

Restore
Select the configuration file to restore

Firmware
Current Firmware Version 1.02.01

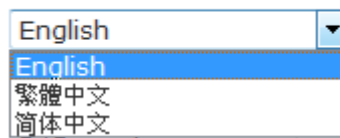
- **Reboot:**
Click this button to reboot the IP camera. This function is useful when you find IP camera is not working properly.
- **Reset:**
Clear all settings of IP camera and reset to factory default setting.
- **Backup:**
Backup IP camera's setting and save it on your computer.
- **Backup to SD card device:**
Backup IP camera's setting and save it on SD card. A SD card must be inserted into SD card slot when you click this button, or you'll receive an error message.
- **Restore:**
Restore a previous-saved configuration file in your computer. Click 'Browse' button to select a file on your computer first, then click 'Restore' button.

- Restore from SD card device:
Restore IP camera's configuration which is previous-saved in SD card.
- Upgrade:
Upgrade IP camera's firmware. Click 'Browse' button to select a firmware image file on your computer first, then click 'Upgrade' button.

4.14 Language

You can change the display language of web interface. Click 'Language' button and select one language. More languages may available in latest firmware file.

Language



5

Appendix

Appendix A: Alarm I/O Connector

Some features of the Camera can be activated by the external sensor that senses physical changes in the area Camera is monitoring. These changes can include intrusion detection or certain physical change in the monitored area. For examples, the external sensor can be a door switch or an infrared motion detector. These devices are customer provided, and are available from dealers who carry surveillance and security products. Electrically, they must be able to provide a momentary contact closure.

This Camera provides wires for general I/O terminal and RS485 interface as below:

Cable for I/O connectors:

Name	Cable Color	Function
Sensor IN	Blue	Digital signal input
Alarm OUT	Green	Digital signal output
GND	Black	GND
RS485 +	Orange	RS485 data +
RS485 -	Yellow	RS485 data -

Appendix B: Troubleshooting & Frequently Asked Questions

Question	Answer or Resolution
Features	
The video and audio codec is adopted in the device.	The device utilizes H.264, MPEG4 and JPEG triple compression to providing high quality images. Where H.264 and MPEG4 are standards for video compression and JPEG is a standard for image compression. The audio codec is defined as AMR for 3GPP and G.711/G.726 for RTSP streaming.
The maximum number of users accesses the device simultaneously.	However, it also depends on the total bandwidth accessed to this device from clients. The maximum data throughput of the device is around 20~25Mbps for UDP mode and 10Mbps for HTTP mode. Therefore, the actual number of connected clients is varying by streaming mode, settings of resolution, codec type, frame rate and bandwidth. Obviously, the performance of the each connected client will slow down when many users are logged on.
The device can be used outdoors or not.	The device is not weatherproof. It needs to be equipped with a weatherproof case for outdoors using. However, equipped with a weatherproof case might disable the audio function of the device.
Install this device	
Status LED does not light up.	<ul style="list-style-type: none"> • Check and confirm that the DC power adaptor, included in packaged, is used. Secure the power connector and re-power it on again. • If the problem is not solved, the device might be faulty. Contact your dealer for further help.
The network cabling is required for the device.	The device uses Category 5 UTP cable allowing 10 and/or 100 Base-T networking.
The device will be installed and work if a firewall exists on the network.	If a firewall exists on the network, port 80 is open for ordinary data communication. The HTTP port and RTSP port need to be opened on the firewall or NAT router.

<p>The username and password for the first time or after factory default reset</p>	<p>Username = admin and Password = airlive. Note that it's all case sensitivity.</p>
<p>Forgot the username and password</p>	<p>To restore factory default, please follow the steps:</p> <ol style="list-style-type: none"> 1. Unplug the power jack to turn off the power of the camera. 2. Insert a pin into the reset hole as circled with red in the below figures. Sense a button and keep it pressed until instructed to release. 3. Plug in the power jack to turn on device, and the status LED will be quick flashing after a few minutes. 4. Release the button (remove the pin from the reset hole). The camera should now be back to factory default. 5. Default IP address is 192.168.1.100. Username/Password is admin/airlive.
<p>Forgot the IP address of the device.</p>	<p>Check IP address of device by using the IP Wizard II program or by UPnP discovery.</p>
<p>IP Wizard II program cannot find the device.</p>	<ul style="list-style-type: none"> • Re-power the device if cannot find the unit within 1 minutes. • Do not connect device over a router. IP Wizard II program cannot detect device over a router. • If IP address is not assigned to the PC which running IP Wizard II program, then IP Wizard II program cannot find device. Make sure that IP address is assigned to the PC properly. • Antivirus software on the PC might interfere with the setup program. Disable the firewall of the antivirus software during setting up this device. • Check the firewall setting of your PC or Notebook.
<p>Internet Explorer does not seem to work well with the device</p>	<p>Make sure that your Internet Explorer is version 6.0 or later. If you are experiencing problems, try upgrading to the latest version of Microsoft's Internet Explorer from the Microsoft webpage.</p>
<p>IP Wizard II program fails to save the network parameters.</p>	<p>Network may have trouble. Confirm the parameters and connections of the device.</p>

UPnP NAT Traversal	
Can not work with NAT router	<ul style="list-style-type: none"> • Maybe NAT router does not support UPnP function. Please check user's manual of router and turn on UPnP function. • Maybe UPnP function of NAT router is not compatible to the IP camera. Please contact your dealer to get the approval routers list.
Some IP cameras are working but others are failed	Maybe too many IP cameras have been installed on the LAN, and then NAT router is out of resource to support more cameras. You could turn off and on NAT router to clear out of date information inside router.
Access this device	
Cannot access the login page and other web pages of the Network Camera from Internet Explorer	<ul style="list-style-type: none"> • Maybe the IP Address of the Network Camera is already being used by another device or computer. To confirm this possible problem, disconnect the Network Camera from the network first, and then run the PING utility to check it out. • Maybe due to the network cable. Try correcting your network cable and configuration. Test the network interface by connecting a local computer to the Network Camera via a crossover cable. • Make sure the Internet connection and setting is ok. • Make sure enter the IP address of Internet Explorer is correct. If the Network Camera has a dynamic address, it may have changed since you last checked it. • Network congestion may prevent the web page appearing quickly. Wait for a while. <p>The IP address and Subnet Mask of the PC and Network Camera must be in the same class of the private IP address on the LAN.</p> <ul style="list-style-type: none"> • Make sure the http port used by the Network Camera, default=80, is forward to the Network Camera's private IP address. • The port number assigned in your Network Camera might not be available via Internet. Check your ISP for available port. • The proxy server may prevent you from connecting directly to the Network Camera, set up not to use the proxy server.

	<ul style="list-style-type: none"> • Confirm that Default Gateway address is correct. • The router needs Port Forwarding feature. Refer to your router's manual for details. • Packet Filtering of the router may prohibit access from an external network. Refer to your router's manual for details. • Access the Network Camera from the Internet with the global IP address of the router and port number of Network Camera. • Some routers reject the global IP address to access the Network Camera on the same LAN. Access with the private IP address and correct port number of Network Camera. • When you use DDNS, you need to set Default Gateway and DNS server address. • If it's not working after above procedure, reset Network Camera to default setting and installed it again. • If the problem is not solved, the Network Camera might be faulty. Contact your dealer for further help.
<p>Image or video does not appear in the main page.</p>	<ul style="list-style-type: none"> • The first time the PC connects to Network Camera, a pop-up Security Warning window will appear to download ActiveX Controls. When using Windows XP, or Vista, log on with an appropriate account that is authorized to install applications. • Network congestion may prevent the Image screen from appearing quickly. You may choose lower resolution to reduce the required bandwidth.
<p>Check the device's ActiveX is installed on your computer</p>	<p>Go to C:\Windows\Downloaded Program Files and check to see if there is an entry for the file "IP Camera Control". The status column should show "Installed". If the file is not listed, make sure your Security Settings in Internet Explorer are configured properly and then try reloading the device's home page. Most likely, the ActiveX control did not download and install correctly. Check your Internet Explorer security settings and then close and restart Internet Explorer. Try to browse and log in again.</p>

<p>Internet Explorer displays the following message: “Your current security settings prohibit downloading ActiveX controls”.</p>	<p>Setup the IE security settings or configure the individual settings to allow downloading and scripting of ActiveX controls.</p>
<p>The device work locally but not externally.</p>	<ul style="list-style-type: none"> • Might be caused from the firewall protection. Check the Internet firewall with your system or network administrator. The firewall may need to have some settings changed in order for the device to be accessible outside your LAN. • Make sure that the device isn’t conflicting with any other web server running on your LAN. • Check the configuration of the router settings allow the device to be accessed outside your local LAN. • Check the bandwidth of Internet connection. If the Internet bandwidth is lower than target bit rate, the video streaming will not work correctly.
<p>The unreadable characters are displayed.</p>	<p>Use the operating system of the selected language. Set the Encoding or the Character Set of the selected language on the Internet Explorer.</p>
<p>Frame rate is slower than the setting.</p>	<ul style="list-style-type: none"> • The traffic of the network and the object of the image affect the frame rate. The network congestion causes frame rate slower than the setting. • Check the bandwidth of Internet connection. If the Internet bandwidth is lower than target bit rate, the video streaming will not work correctly. • Ethernet switching hub can smooth the frame rate.
<p>Blank screen or very slow video when audio is enabled.</p>	<ul style="list-style-type: none"> • Your connection to the device does not have enough bandwidth to support a higher frame rate for the streamed image size. Try reducing the video streaming size to 160x120 or 320x240 and/or disabling audio. • Audio will consume 32 kbps. Disable audio to improve video. Your Internet connection may not have enough bandwidth to support streaming audio from the device.
<p>Image Transfer on e-mail or FTP does not</p>	<ul style="list-style-type: none"> • Default Gateway and DNS server address should be set up correctly.

work.	<ul style="list-style-type: none"> • If FTP does not work properly, ask your ISP or network administrator about the transferring mode of FTP server.
Pan/Tilt does not work. (including Click to Center and Preset Positioning)	<ul style="list-style-type: none"> • Click [Refresh] on the Internet Explorer when the communication stops with the device. The image will refresh. • Other clients may be operating Pan/Tilt. • Pan/Tilt operation has reached the end of corner.
Pan/Tilt does not work smoothly.	There may be a slight delay when you are using the Pan/Tilt feature in conjunction with streaming audio and video. If you find that there is a significant delay while panning or tilting the camera, try disabling the audio streaming and/or reducing the video streaming size.
Video quality of the device	
The focus on the Camera is bad.	<ul style="list-style-type: none"> • The lens is dirty or dust is attached. Fingerprints, dust, stain, etc. on the lens can degrade the image quality.
The color of the image is poor or strange.	<ul style="list-style-type: none"> • Adjust White Balance. • To insure the images you are viewing are the best they can be, set the Display property setting (color quality) to 16bit at least and 24 bit or higher if possible within your computer. • The configuration on the device image display is incorrect. You need to adjust the image related parameters such as brightness, contrast, hue and sharpness properly.
Image flickers.	<ul style="list-style-type: none"> • Wrong power line frequency makes images flicker. Make sure the 50 or 60Hz format of your device. • If the object is dark, the image will flicker. Make the condition around the Camera brighter.
Noisy images occur.	The video images might be noisy if the device is located in a very low light environment. Make the condition around the camera brighter or turn the White-light LED on.
Miscellaneous	
Can not play the recorded ASF file	Have installed Microsoft®'s DirectX 9.0 or later and use the Windows Media Player 11.0 or later to play the AVI filed recorded by the Device.

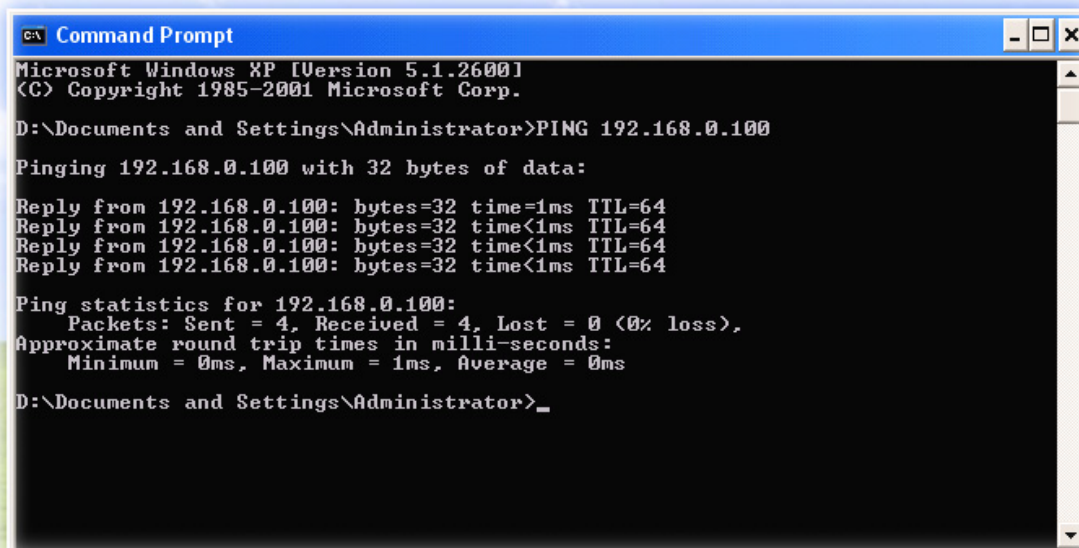
Appendix C: PING IP Address

The PING (stands for Packet Internet Groper) command is used to detect whether a specific IP address is accessible by sending a packet to the specific address and waiting for a reply. It's also a very useful tool to confirm the device installed or if the IP address conflicts with any other devices over the network.

If you want to make sure the IP address of the device, utilize the PING command as follows:

- Start a DOS window.
- Type ping x.x.x.x, where x.x.x.x is the IP address of the device.

The replies, as illustrated below, will provide an explanation to the problem.



```
Command Prompt
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

D:\Documents and Settings\Administrator>PING 192.168.0.100

Pinging 192.168.0.100 with 32 bytes of data:

Reply from 192.168.0.100: bytes=32 time=1ms TTL=64
Reply from 192.168.0.100: bytes=32 time<1ms TTL=64
Reply from 192.168.0.100: bytes=32 time<1ms TTL=64
Reply from 192.168.0.100: bytes=32 time<1ms TTL=64

Ping statistics for 192.168.0.100:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

D:\Documents and Settings\Administrator>_
```

If you want to detect any other devices conflicts with the IP address of Network Camera, also can utilize the PING command but you must disconnect the device from the network first.

Appendix D: Bandwidth Estimation

The frame rate of video transmitted from the device depends on connection bandwidth between client and server, video resolution, codec type, and quality setting of server. Here is a guideline to help you roughly estimate the bandwidth requirements form your device.

The required bandwidth depends on content of video source. The slow motion video will produce smaller bit rate generally and fast motion will produce higher bit rate vice versa. Actual results generated by the device may be varying.

Image Resolution	Average range of data sizes for JPEG mode	Average bit rate for MPEG4 mode	Average bit rate for H.264 mode
160 x 120 (QQVGA)	3 ~ 6k byte per frame	64kbps~256kbps @ 30fps	32kbps~192kbps @ 30fps
320 x 240 (QVGA)	8 ~ 20k byte per frame	256kbps~768kbps @ 30fps	192kbps~512kbps @ 30fps
640 x 480 (VGA)	20 ~ 50K byte per frame	512kbps~2048kbps @ 30fps	384kbps~1536kbps @ 30fps
1280x1024 (SXGA)	100 ~ 200k byte per frame	NA	512kbps~3076kbps @ 15fps

Note: Audio streaming also takes bandwidth around 32kbps. Some xDSL/Cable modem upload speeds could not even reach up to 128 kbps. Thus, you may not be able to receive good quality video while also streaming audio on a 128 kbps or lower connection. Even though the upload speed is more than 128kbps, for optimal video performance, disabling audio streaming will get better video performance.

Appendix E: Specifications

Camera	
Model Name	BU-3025
Image Device	3 Mega-pixel image sensor
Effective Pixels	2592 x 1920 pixels
Lens	Board Lens Focal Length: 4.3 mm/ F2.0
Viewing Angle	D90.0°, H79.0°, V43.0°
IP Module	
Video	
Video Encoder	H.264, MPEG4 and Motion JPEG
Frame Rate	20FPS@2048 x 1536; 30FPS@1920 x 1080
Image Setting	Brightness, Sharpness, Saturation, Exposure, White balance control
Streaming	HTTP, TCP/IP, IPv4, UDP, SMTP, FTP, DHCP, DDNS, NTP, DNS, ARP, RTSP, RTP, Samba Clinet, UPnP
Audio	
Audio Encoder	RTSP: G.711 64kbps
Audio Streaming	One-way or Two-way
Microphone	External Microphone
Audio Output	External Speaker
Network	
Supported Protocols	HTTP, TCP/IP, IPv4, UDP, SMTP, FTP, DHCP, DDNS, NTP, DNS, ARP, RTSP, RTP, Samba Clinet, UPnP
Security	Password protection, user access log
Ethernet	10/100M auto negotiation
System Integration	
Application Programming Interface	Open API for software integration SDK
Alarm Triggers	Intelligent video motion detection and external input
Motion Detection	Up to 3 motion detection areas with included or excluded options
Alarm Events	File upload via FTP ,SD Card or email Notification via email, HTTP, External output activation
General	
RAM	128MB

ROM	128MB
Power Supply	12V DC external power adapter
PoE	IEEE 802.3af
Power Consumption	8W
IP Level	None
Vandal proof	None
Connectors	1 x RJ-45 10BaseT/100BaseTX 1 x DC power jack 1 x Terminal Connector 1 x External Microphone jack and 1 x External Speaker jack 1x Micro SD Slot
Indication LED	Green and orange LEDs
Mechanical IR-cut	Yes
Operating Temperature	0°C to 50°C (32°F to 104°F)
Operating Humidity	20% ~ 80% (non-condensing)
Dimension	W 80 x H82 x L 208mm
Viewing System	
OS	Windows® XP, Vista, 7
Browser	IE 6.0 or later, Firefox 2.0 or later, Safari
Cell Phone	With 3GPP player
Video Player	VLC, Quick Time, Real Player, Core Player
Software	
Search & Installation	IP Wizard II
Bundled NVR Program	CamPro Express 64, CamPro Professional

Appendix F: Configure Port Forwarding Manually

The device can be used with a router. If the device wants to be accessed from the WAN, its IP address needs to be setup as fixed IP address, also the port forwarding or Virtual Server function of router needs to be setup. This device supports UPnP traversal function. Therefore, user could use this feature to configure port forwarding of NAT router first. However, if user needs to configure port forwarding manually, please follow the steps as below:

Manually installing the device with a router on your network is an easy 3-step procedure as following:

- (1) Assign a local/fixed IP address to your device
- (2) Access the Router with Your Web browser
- (3) Open/Configure Virtual Server Ports of Your Router

(1) Assign a local/fixed IP address to your device

The device must be assigned a local and fixed IP Address that allows it to be recognized by the router. Manually setup the device with a fixed IP address, for example, 192.168.0.100.

(2) Access the Router with Your Web browser

The following steps generally apply to any router that you have on your network. The D-Link DI-624 is used as an example to clarify the configuration process. Configure the initial settings of the router by following the steps outlined in the router's **Quick Installation Guide**.

If you have cable or DSL service, you will most likely have a dynamically assigned WAN IP Address. 'Dynamic' means that your router's WAN IP address can change from time to time depending on your ISP. A dynamic WAN IP Address identifies your router on the public network and allows it to access the Internet. To find out what your router's WAN IP Address is, go to the **Status** screen on your router and locate the WAN information for your router. As shown on the following page the WAN IP Address will be listed. This will be the address that you will need to type in your web browser to view your camera over the Internet. Be sure to uncheck the **Reset IP address at next boot** button at the top of the screen after modifying the IP address. Failure to do so will reset the IP address when you restart your computer.



The screenshot displays the 'Status' page of the Air Live WN-300R router. The page is divided into two main sections: Internet and LAN. The Internet section shows the following details:

Connection Method:	PPPoE
Connection Status:	Active
Internet IP Address:	61.229.42.196
Wan MAC Address:	00:c0:02:ff:c8:15

The LAN section shows the following details:

IP Address:	192.168.10.254
Network Mask:	255.255.255.0
DHCP Server:	On
MAC Address:	00:C0:02:FF:C8:14

A 'Connection Details' button is visible next to the Internet IP Address.

Your WAN IP Address will be listed here.

Note: Because a dynamic WAN IP can change from time to time depending on your ISP, you may want to obtain a Static IP address from your ISP. A Static IP address is a fixed IP address that will not change over time and will be more convenient for you to use to access your camera from a remote location. If you could not get a Static IP address from your ISP, the DIPS™ or DDNS is a solution alternatively. Please refer to Appendix G for more information.

(3) Open/set Virtual Server Ports to enable remote image viewing

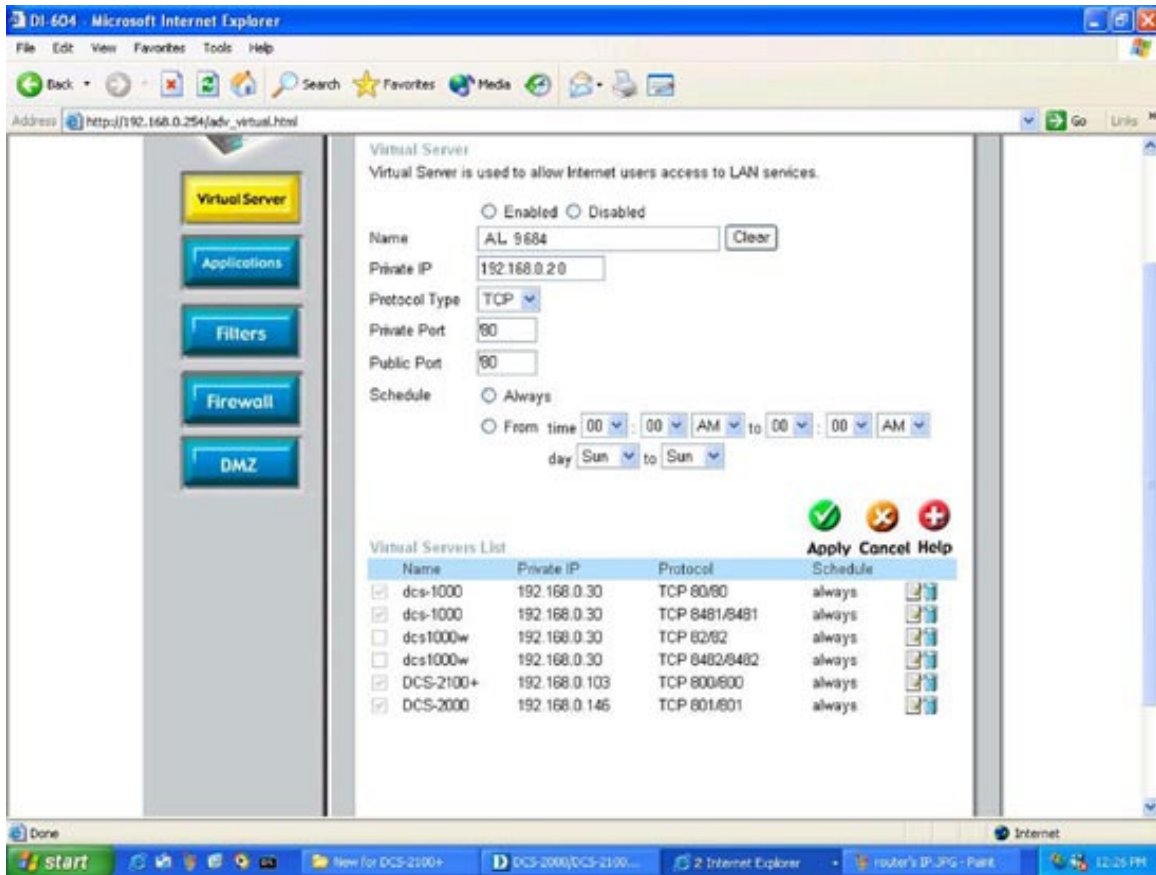
The firewall security features built into the router and most routers prevent users from accessing the video from the device over the Internet. The router connects to the Internet over a series of numbered ports. The ports normally used by the device are blocked from access over the Internet. Therefore, these ports need to be made accessible over the Internet. This is accomplished using the Virtual Server function on the router. The **Virtual Server** ports used by the camera must be opened through the router for remote access to your camera. Virtual Server is accessed by clicking on the **Advanced** tab of the router screen.

Follow these steps to configure your router's Virtual Server settings

- Click **Enabled**.
- Enter a unique name for each entry.
- Select **Both** under **Protocol Type (TCP and UDP)**
- Enter your camera's local IP Address (e.g., **192.168.0.100**, for example) in the **Private IP** field.
- If you are using the default camera port settings, enter **80** into the **Public** and **Private Port** section, click **Apply**.
- **Scheduling** should be set to **Always** so that the camera images can be accessed at any time.

A check mark appearing before the entry name will indicate that the ports are enabled.

Important: Some ISPs block access to port 80. Be sure to check with your ISP so that you can open the appropriate ports accordingly. If your ISP does not pass traffic on port 80, you will need to change the port the camera uses from 80 to something else, such as 8080. Not all routers are the same, so refer to your user manual for specific instructions on how to open ports.



Enter valid ports in the **Virtual Server** section of your router. Please make sure to check the box on this line to enable settings. Then the device can be access from WAN by the router's WAN IP Address.

By now, you have finished your entire PC configuration for this device.

Appendix G: DDNS Application

• Preface

If you have a Cable modem or xDSL, this is a great way to host your own Networked Device or other TCP/IP Service. Get your own domain like www.yourname.com, www.yourname.com.tw etc. (Note: This domain must be registered with Internic via registration authorities such as Network Solutions, DirectNIC, Register.com etc). Your domain name's dynamic IP address is automatically tracked by a DDNS server. Host your own Networked Device and much more no matter what your computer's IP address may be and even if you have dialup, DSL or cable modem internet connection where your computer's IP address changes all the time!! DDNS service supports all top level domain names including but not limited to .com, .net, .org, .to, .uk etc.

- **Ethernet Network Environment**

Normally, DDNS service is only necessary for the users that could only obtain dynamic IP addresses. As to the users that could obtain the static valid IP address, they do not usually have to apply the DDNS service. Before we decide if DDNS is necessary for the users, we have to check what kind of Ethernet network environment we have to install our Networked Device on.

(1) Environment of Fixed Valid IP Network

If users could obtain valid IP addresses, they could save the effort to apply DDNS service. Because the IP address in this environment is fixed, users could input the IP address or domain name of demo site directly in the IE browser.

(2) Environment of Dynamic IP Network

If users is under an environment of dynamic IP network (Dial-up xDSL), they have to apply a domain name in advance. Then apply DDNS service. Finally setup the necessary information of DDNS and PPPoE of the Networked Device in order to let the outside administrator be able to access through internet.

- **Application Steps—DDNS & Domain Name**

- (1). Visit the following web site: <http://www.dyndns.org/>
- (2). Click “**Account**”



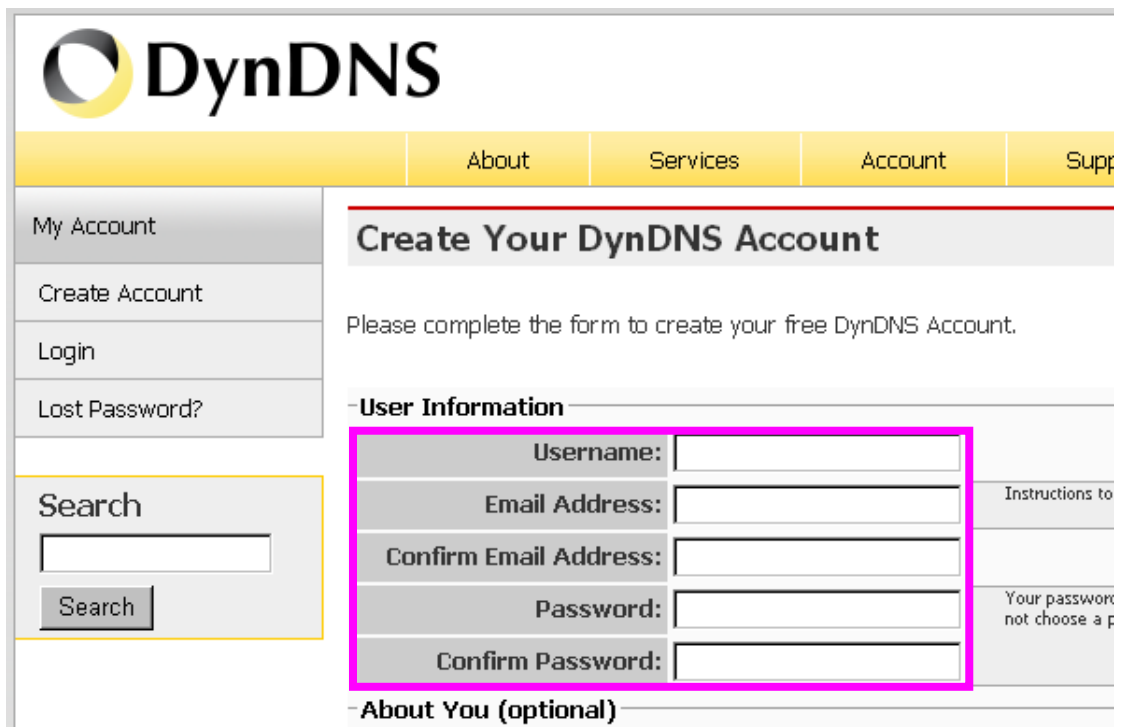
(3). After the columns show up at the left side, click “**Create Account**”.



The screenshot shows the DynDNS website interface. At the top left is the DynDNS logo. Below it is a navigation bar with 'About' and 'Services' links. On the left side, there is a 'My Account' menu with options: 'Create Account' (highlighted with a pink box), 'Login', and 'Lost Password?'. Below the menu is a search box with a 'Search' button. On the right side, there is a 'Login' section with a text input field labeled 'Account Login' and a 'Username:' label next to it.

(4). Fill the application agreement and necessary information.

- a. Username
- b. E-mail address and confirmation
- c. Password and confirmation
- d. Submit all the input information and finish creating an account



The screenshot shows the 'Create Your DynDNS Account' page. At the top left is the DynDNS logo. Below it is a navigation bar with 'About', 'Services', 'Account', and 'Support' links. On the left side, there is a 'My Account' menu with options: 'Create Account', 'Login', and 'Lost Password?'. Below the menu is a search box with a 'Search' button. The main content area is titled 'Create Your DynDNS Account' and contains the text: 'Please complete the form to create your free DynDNS Account.' Below this is a section titled '- User Information' with the following input fields: 'Username:', 'Email Address:', 'Confirm Email Address:', 'Password:', and 'Confirm Password:'. The 'Email Address', 'Confirm Email Address', 'Password', and 'Confirm Password' fields are highlighted with a pink box. To the right of these fields, there are two small text boxes: 'Instructions to' and 'Your password not choose a p'. Below the 'User Information' section is a section titled '- About You (optional)'.

Terms of Service

Please read the acceptable use policy (AUP) and accept it prior to creating your account. Also acknowledge that you may only have one (1) free account, and that creation of multiple free accounts will result in the deletion of all of your accounts.

Policy Last Modified: February 6, 2006

1. ACKNOWLEDGMENT AND ACCEPTANCE OF TERMS OF SERVICE

All services provided by Dynamic Network Services, Inc. ("DynDNS") are provided to you (the "Member") under the Terms and Conditions set forth in this Acceptable Use Policy ("AUP") and any other operating rules and policies set forth by DynDNS. The AUP comprises the entire agreement between the Member and DynDNS and supersedes all prior agreements between the parties regarding the subject matter contained herein. BY COMPLETING THE REGISTRATION PROCESS AND CLICKING THE "Accept" BUTTON, YOU ARE INDICATING YOUR AGREEMENT TO BE BOUND BY ALL OF THE TERMS AND CONDITIONS OF THE AUP.

2. DESCRIPTION OF SERVICE

I agree to the AUP:

I will only create one (1) free account:

← Click these two options

Next Step

After you click "Create Account", we will create your account and send you an e-mail to the address you provided. Please follow the instructions in that e-mail to confirm your account. You will need to confirm your account within 48 hours or we will automatically delete your account. (This helps prevent unwanted robots on our systems)

Create Account

(5). Check your e-mail mailbox. There will be an e-mail with a title "Your DynDNS Account Information". Click the hyperlink address to confirm the DDNS service that you just applied. Then DDNS you applied activated.

Your DynDNS Account 'kkkkk' has been created. You need to visit the confirmation address below within 48 hours to complete the account creation process:

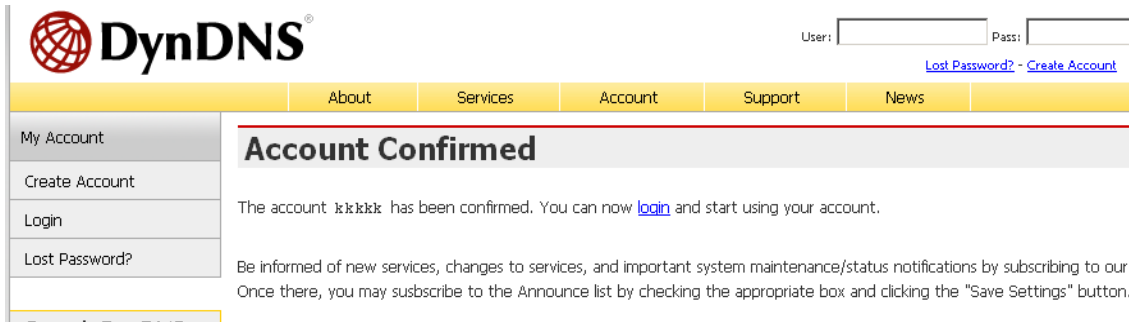
Click to confirm

https://www.dyndns.com/account/confirm/oDDGDYN75qTJk_ICGba6vQ

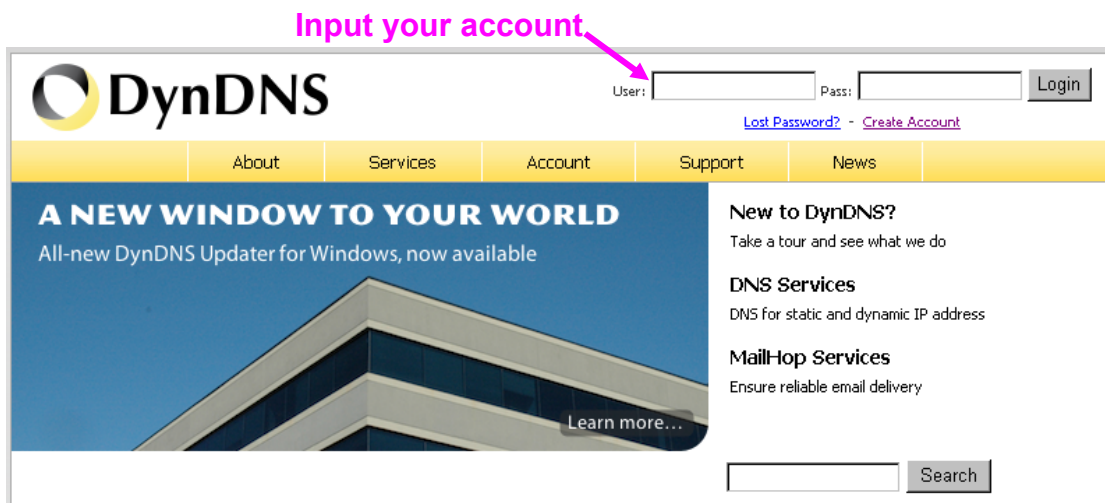
Our basic service offerings are free, but they are supported by our paid services. See <http://www.dyndns.com/services/> for a full listing of all of our available services.

If you did not sign up for this account, this will be the only communication you will receive. All non-confirmed accounts are automatically deleted after 48 hours, and no addresses are kept on file. We apologize for any inconvenience this correspondence may have caused, and we assure you that it was only sent at the request of someone visiting our site requesting an account.

Sincerely,
The DynDNS Team

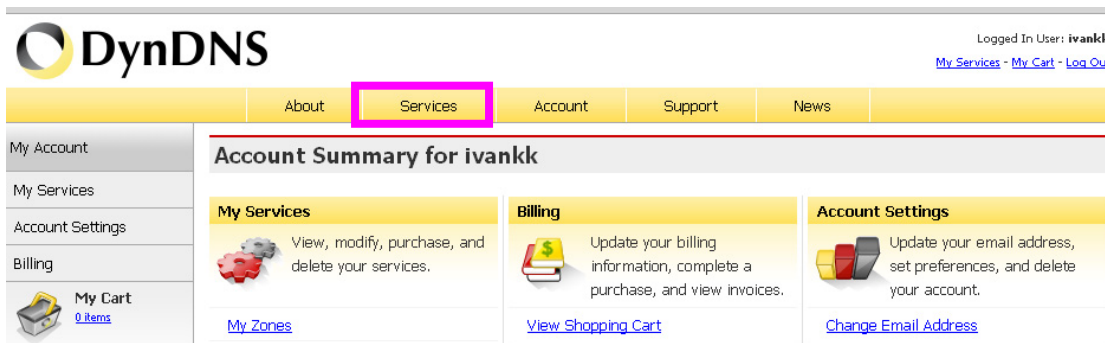


(6). Enter the web page <http://www.dyndns.org/> again. Input your username and password that you just applied to login administration interface of DDNS server.

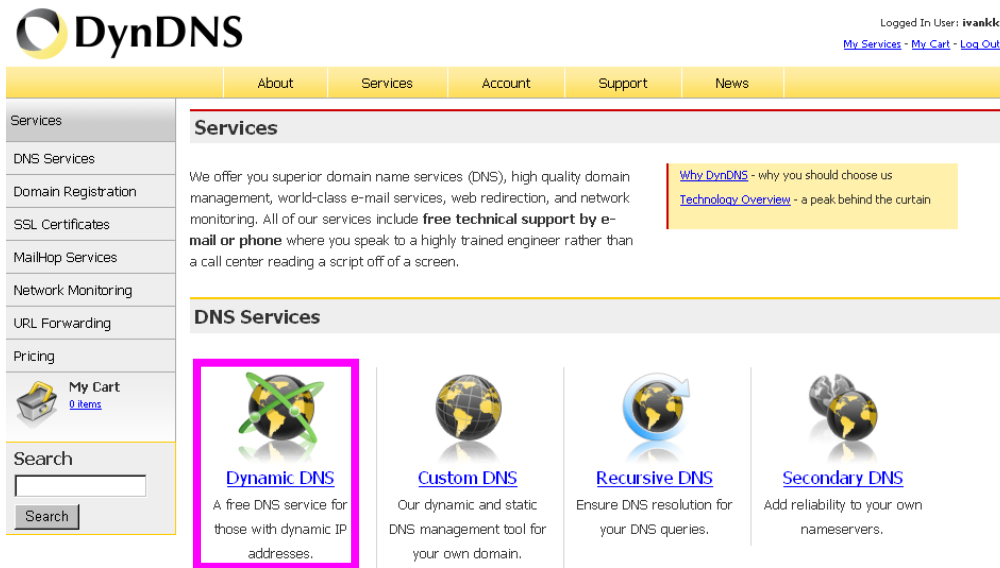


(7). If the correct username and password are input, you can see the following picture at the top-right of the login page.

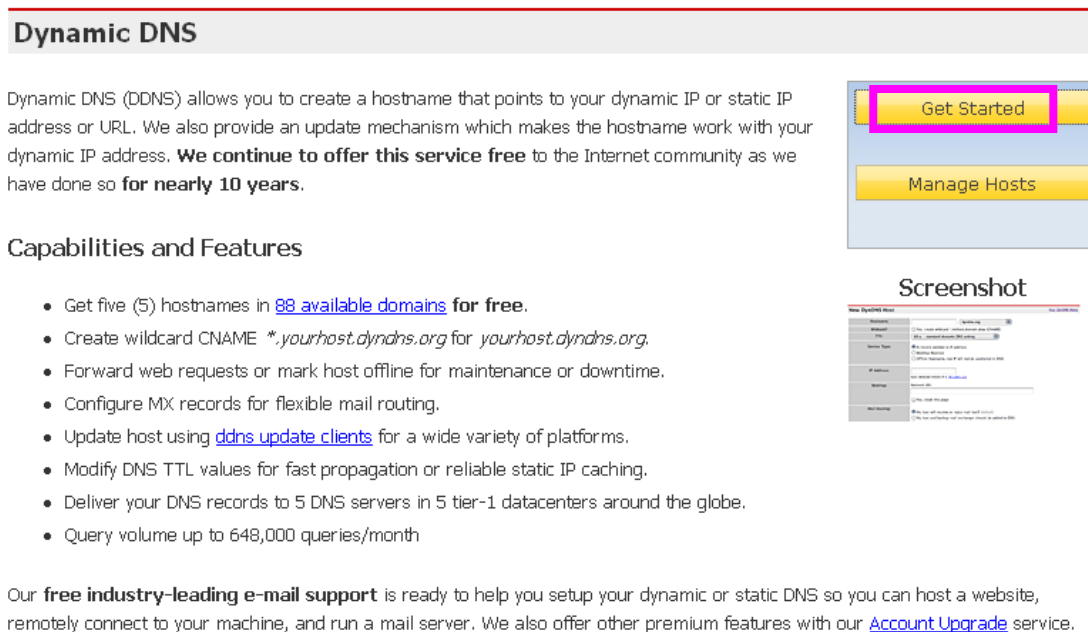
(8). Click the “Services”.



(9). Click the “Dynamic DNS”.



(10). Click the “Get Started”.



(11). We could create a domain name without any charge at this step. First, we input the host name. (Pink No.1) Then we pick a domain that is easy to remember. (Pink No.2) The 3rd step is to click “Offline Hostname” from Service Type. (Pink No.3) Finally, click the “Create Host” to submit the domain name information and finish DDNS application. (Pink No.4)

Add New Hostname

[↑ Host Services](#)

Note: You currently don't have Account Upgrades in your account. You cannot use some of our Host Service features. Please consider buying Account upgrade that make this form full-functional and will add several other features. [Learn More...](#)



1 → Hostname: . ← 2

Wildcard: Yes, alias "*" .hostname.domain" to same settings.

Service Type:

- Host with IP address
- WebHop Redirect
- Offline Hostname

3 →

IP Address:

[Use auto detected IP address 118.168.38.166.](#)

TTL value is 60 seconds. [Edit TTL.](#)

Please enter valid IP address (optional for Offline hostnames).

Mail Routing: Yes, let me configure Email routing.

4 ↓

- **Setup the DDNS and PPPoE of Networked Device**

At last, users have to enter the web page of Networked Device and setup the necessary information of DDNS and PPPoE after the application of DDNS service. Please check the user manual to access the DDNS and PPPoE pages. After saving the modification, restart the device. Then the external users could browse the Networked Device by the input of their domain name.

Appendix H: Power Line Frequency

COUNTRY	VOLTAGE	FREQUENCY	COMMENTS
Argentina	220V	50 Hz	*Neutral and line wires are reversed from that used in Australia and elsewhere.
Australia	230V*	50 Hz	*Outlets typically controlled by adjacent switch. Though nominal voltage has been officially changed to 230V, 240V is within tolerances and commonly found.
Austria	230V	50 Hz	
Brazil	110/220V*	60 Hz	*127V found in states of Bahia, Paran? (including Curitiba), Rio de Janeiro, S 綫 Paulo and Minas Gerais (though 220V may be found in some hotels). Other areas are 220V only, with the exception of Fortaleza (240V).
Canada	120V	60 Hz	
China, People's Republic of	220V	50 Hz	
Finland	230V	50 Hz	
France	230V	50 Hz	
Germany	230V	50 Hz	
Hong Kong	220V*	50 Hz	
India	230V	50 Hz	
Italy	230V	50 Hz	
Japan	100V	50/60 Hz*	*Eastern Japan 50 Hz (Tokyo, Kawasaki, Sapporo, Yokohoma, and Sendai); Western Japan 60 Hz (Osaka, Kyoto, Nagoya, Hiroshima)
Malaysia	240V	50 Hz	
Netherlands	230V	50 Hz	

Portugal	230V	50 Hz	
Spain	230V	50 Hz	
Sweden	230V	50 Hz	
Switzerland	230V	50 Hz	
Taiwan	110V	60 Hz	
Thailand	220V	50 Hz	
United Kingdom	230V*	50 Hz	*Outlets typically controlled by adjacent switch. Though nominal voltage has been officially changed to 230V, 240V is within tolerances and commonly found.
United States of America	120V	60 Hz	

Appendix I: 3GPP

To use the 3GPP function, in addition to previous section, you might need more information or configuration to make this function work.

Note that to use the 3GPP function, it strongly recommends to install the Networked Device with a public and fixed IP address without any firewall protection.

RTSP Port:

Port 554 is the default for RTSP service. However, sometimes, some service providers change this port number for some reasons. If so, user needs to change this port accordingly.

Dialing procedure:

1. Choose a verified player (PacketVideo or Realplayer currently)
2. Use the following URL to access:

Main stream => rtsp://<IP address>/stream1

Second stream => rtsp://<IP address>/stream2

Mobile stream => rtsp://<IP address>/mobile <= Need to enable "web UI /video/video setting/mobile view"

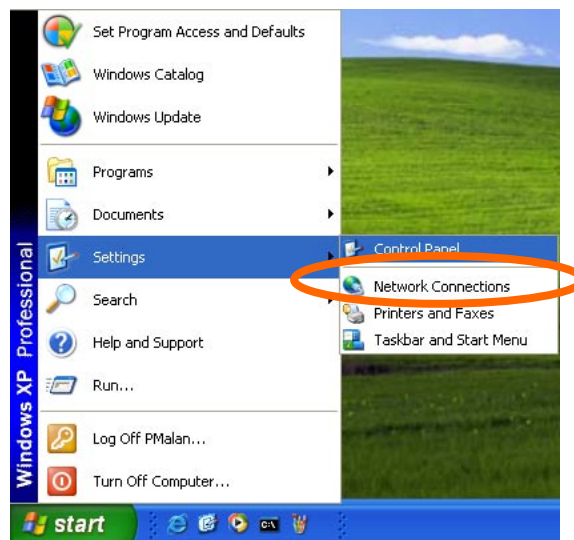
Where host is the host name or IP address of the camera.

Compatible 3G mobile phone:

Please contact your dealer to get the approved list of compatible 3G phone.

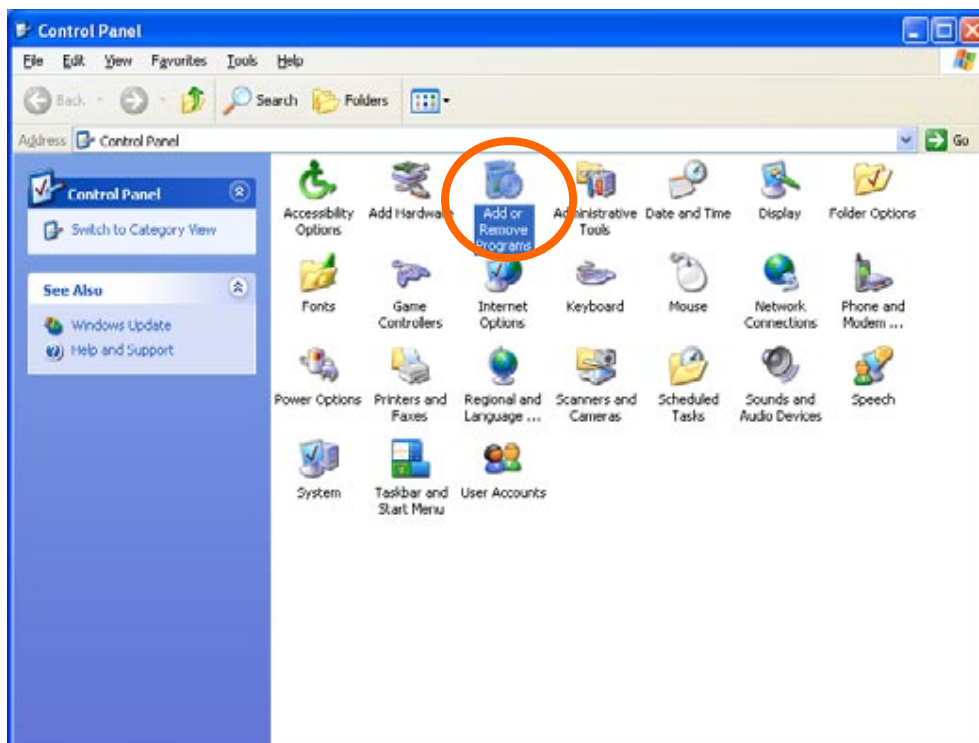
Appendix J: Enable UPnP of Windows XP

Use the following steps to enable UPnP settings only if your operating system of PC is running Windows XP.

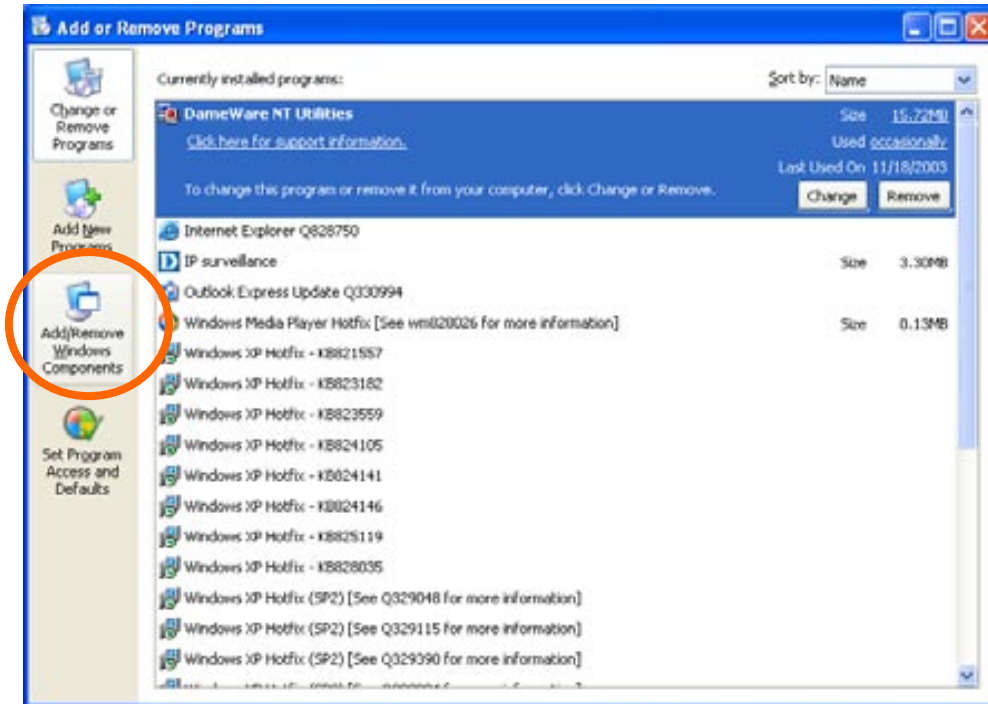


Go to **Start > Settings**.

Click Control Panel

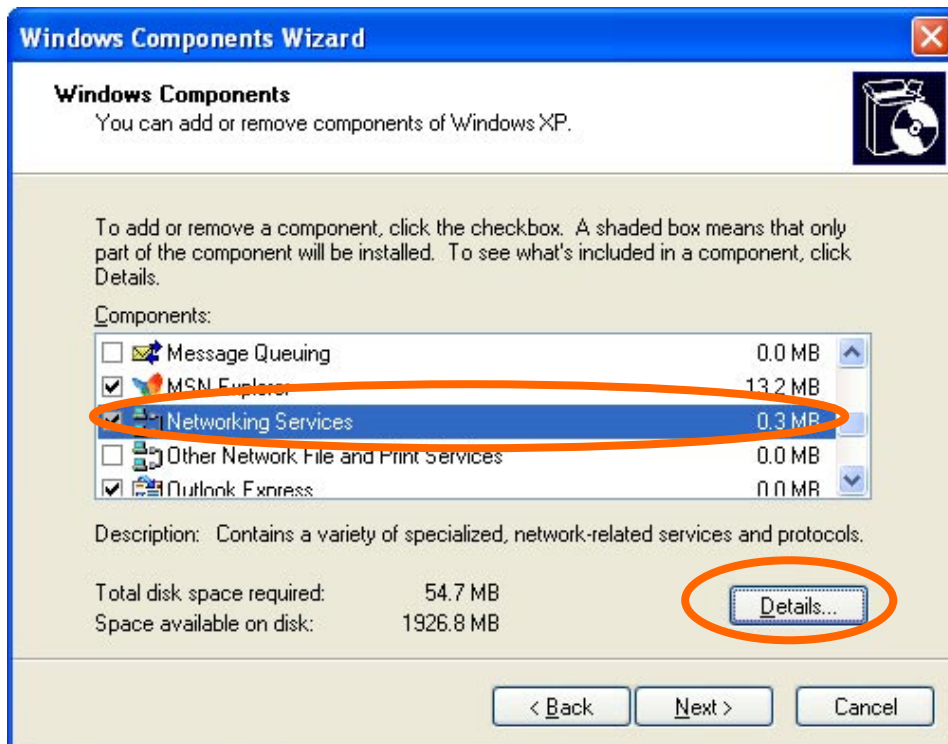


Click Add or Remove Programs



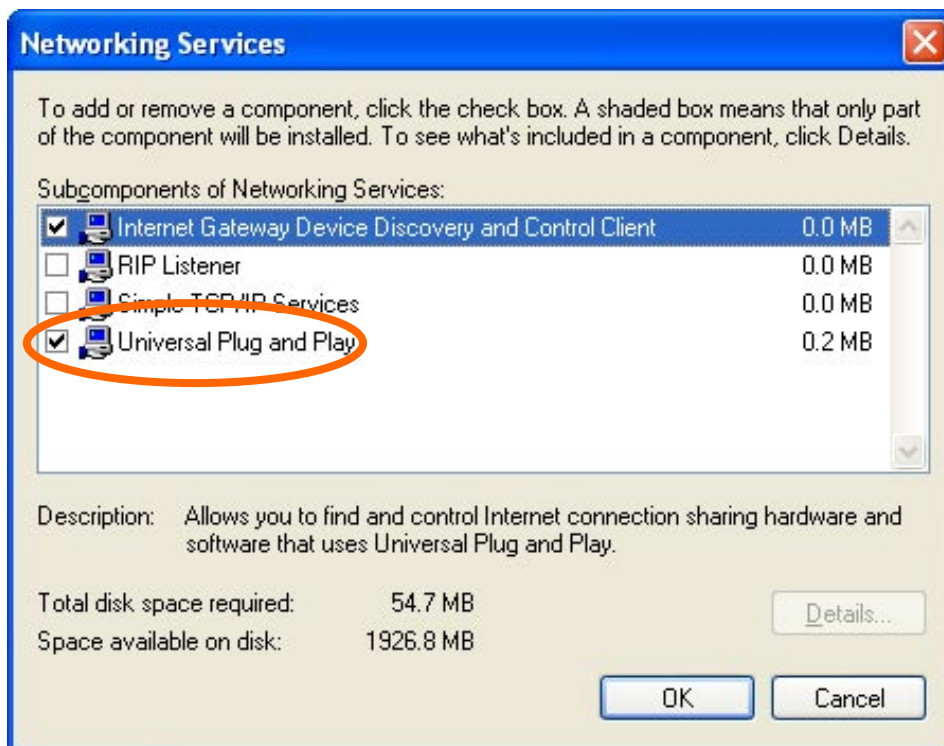
Click Add/Remove Windows Components

The following screen will appear:

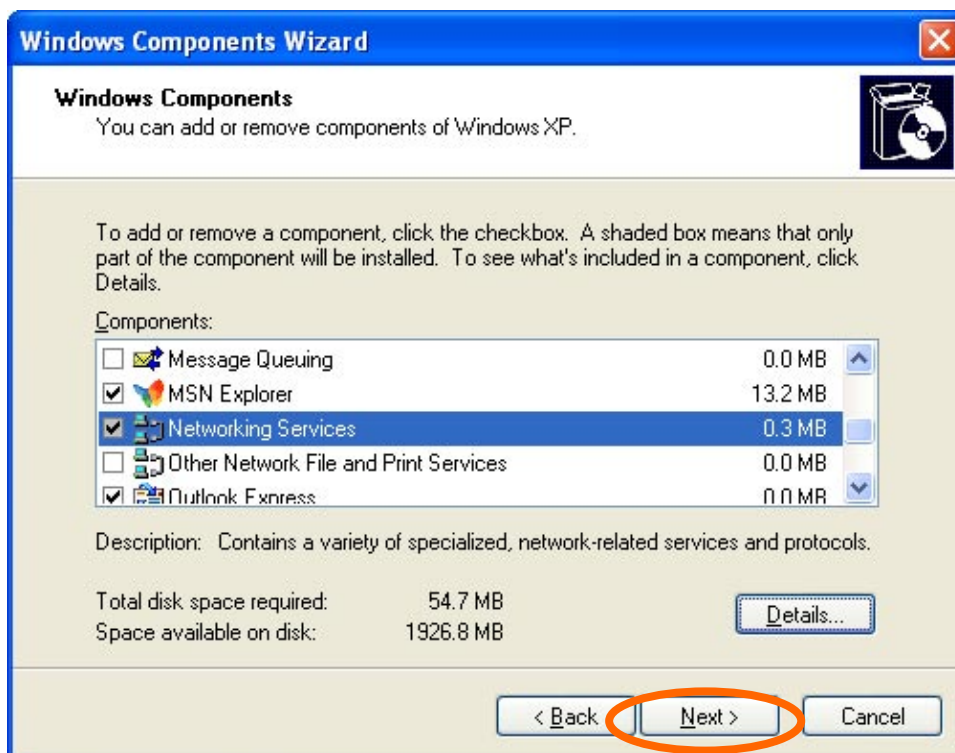


Select Networking Services

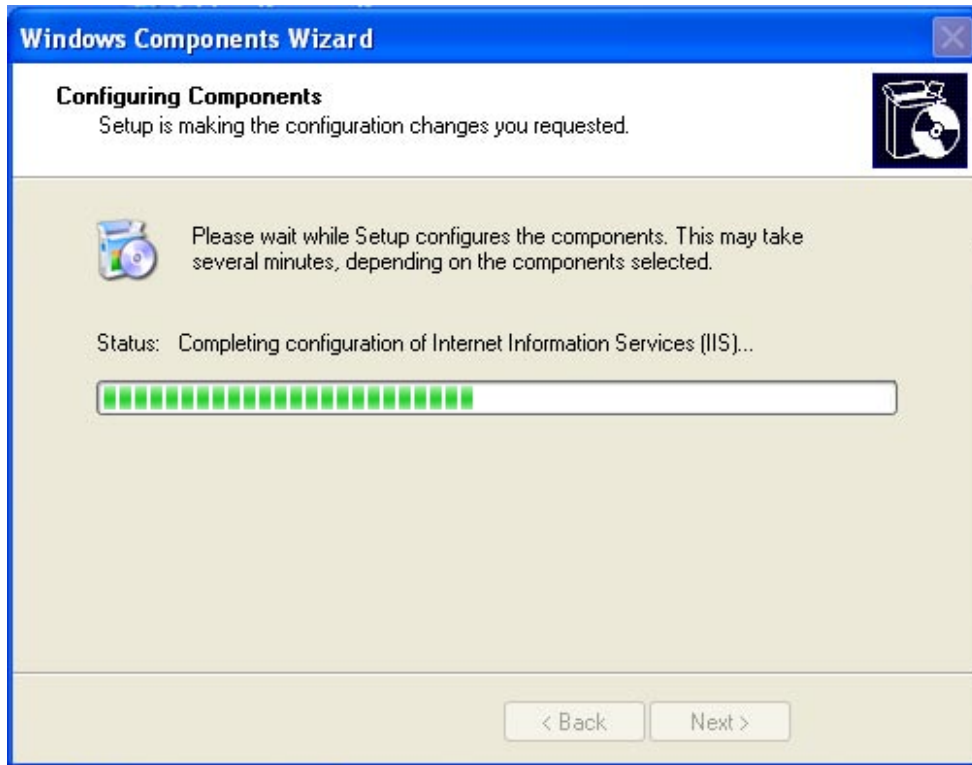
Click Details



Select Universal Plug and Play
Click Ok



Click Next



Please wait while Setup configures the components.



Click Finish