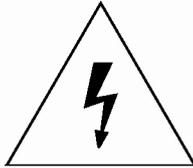


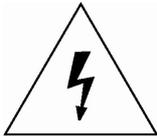
INSTRUCTION MANUAL Ver 1.4

CCD IP BOX CAMERA | MPEG4 Series

Firmware Ver. 1.2.1a

**CAUTION****RISK OF ELECTRIC
SHOCK DO NOT OPEN**

CAUTION : TO REDUCE THE RISK OF ELECTRICAL SHOCK, DO NOT OPEN COVERS.
NO USER SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONAL.



This lightning flash with arrowhead symbol is intended to alert the user to the presence of un-insulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



This exclamation point symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING : TO PREVENT THE RISK OF FIRE OR ELECTRIC SHOCK HAZARD, DO NOT EXPOSE THIS CAMERA TO RAIN OR MOISTURE.

Thank you purchasing a CCD IP BOX CAMERA! Before using this camera, please read this operation manual carefully to obtain the best result and keep this manual for future reference.



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Important Safeguard

1. Read Instructions

Read all of the safety and operating instructions before using the product.

2. Retain Instructions

Save these instructions for future reference.

3. Cleaning

Warning - Disconnect this appliance's power before cleaning! Do not use liquid cleaners or aerosol cleaners. Use a soft cloth for cleaning.

4. Attachments / Accessories

Do not use attachments or accessories unless recommended by the appliance manufacturer as they may cause hazards, damage product and void warranty.

5. Water and Moisture

Do not use this product near water or moisture. (For example, near a bathtub, washbowl, kitchen sink, laundry tub, wet basement, near a swimming pool, etc.)

6. Installation

Do not place or mount this product in or on an unstable or improperly supported location. Improperly installed product may fall, causing serious injury to a child or adult, and damage to the product. Use only with a cart or stand recommended by the manufacturer, or sold with the product. To insure proper mounting, follow the manufacturer's instructions and use only mounting accessories recommended by manufacturer.

7. Moving

Product and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the product and cart combination to overturn.

8. Ventilation

Slots and openings in the cabinet and the back or bottom are provided for ventilation and to insure reliable operation of the product and to protect it from overheating. These openings should never be blocked or covered. The openings should never be blocked by placing the product on a bed, sofa, rug, or other similar surface. This product should not be placed in an enclosed area such as a bookcase unless proper ventilation is provided.

9. Power source

This product should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supplied to your home, consult your dealer or local power company.

 **Precautions**

- ❑ **Operating**
 - Before using, make sure power supply and others are properly connected.
 - While operating, if any abnormal condition or malfunction is observed, stop using the camera immediately and then contact your local dealer.

- ❑ **Handling**
 - Do not disassemble or tamper with parts inside the camera.
 - Do not drop or subject the camera to shock and vibration as this can damage camera.
 - When attaching or removing the lens, handle with care to prevent moisture and dust from entering the camera.
 - Do not point camera at any source of bright light. If the object contains very bright areas, bright vertical or horizontal lines may appear on the screen. This is called "smear", a phenomenon, which often occurs with solid-state pickups, and is not a malfunction.

- ❑ **Installation and Storage**
 - Do not point the camera at the sun. This could damage the camera whether it is operating or not.
 - Do not install the camera in areas of extreme temperature, which exceed the allowable range.
 - Be sure the ambient temperature is below 104°F(40°C), for long-term continuous operation.
 - Avoid installing in humid or dusty places.
 - Avoid installing in places where radiation is present. This could damage CCD and other components and cause malfunction.
 - Avoid installing in places where there are strong magnetic fields and electric signals.
 - Avoid installing in places where the camera would be subject to strong vibrations.
 - Never expose the camera to rain and water.

- ❑ **Cleaning**
 - Turn the power off and wipe off dirt with dry soft cloths. If it is extremely dirty, use furniture-cleaning wipes. Do not use alcohols, petroleum distillates, liquid cleaners or sprays.

 **Owner's Record**

Please record the model No. and the serial No. in the spaces provided below. Keep this manual for future reference.

Model No. _____ Serial No. _____



Features

❑ Network Video Interface

- High frame rate using Hardware MPEG4 Compression.
- Web Browser based Viewer & i-Pro Multi Viewer supported.
- Remote control for Pan/Tilt & Sensor I/O

❑ High Sensitivity

- 1/3" 410,000 pixels CCD with on-chip micro lenses and low-noise, digital signal processing circuit provides high sensitivity down to 0.8 lux (F1.2).

❑ High Quality Image

- High quality image is obtained by digital signal processing with optimization of control program and image correction algorithm.

❑ Back Light Compression

- When strong light entering the scene background; such as from a spotlight or window, the back light compensation function automatically adjust the video level so as to preserve visibility in important sections of the image.

❑ Auto Gain Control

- At the AGC on setting, camera's sensitivity is automatically increased when the level of ambient light drops.
- AGC function automatically controls signal gain in the range of maximum 34dB.

❑ Iris Function

- Provide a drive output for VIDEO type lens and DC type lens. Also built-in electronic shutter to allow shutter speeds up to 1/100,000 sec. CCD iris function automatically set the brightness of the picture by changing the shutter speed of the camera according to lighting situation when using a manual iris lens.

About Network Function

- This product is only compatible with current versions of the Microsoft Windows OS.
- This product operates with Microsoft's Internet Explorer only.
- You must have ActiveX controls enabled on your browser, found in the Options menu.
- Some pop-up blockers may block legitimate configuration screens, please disable these blockers when configuring the IP Camera.
- Some hardware manufacturers include a cable/DSL modem, router/firewall, and Ethernet switch in one device.
- If you have no available ports on your router (with integrated switch) you can purchase a 10/100 Ethernet switch to "expand" your Local Area Network
- The crossover cable is not wired as a typical straight-through network cable. This cable (or any crossover) should be used for initial setup of the IP Camera via a PC/laptop.
- Please temporarily disconnect any proxy servers associated with Internet Explorer while configuring the IP Camera.

❑ Modification and Development

The Linux-based operating system and flash memory file system enable advanced users and application developers to customize the IP Camera. An SDK developer kit is available for users to interface ActiveX controls and other applications.

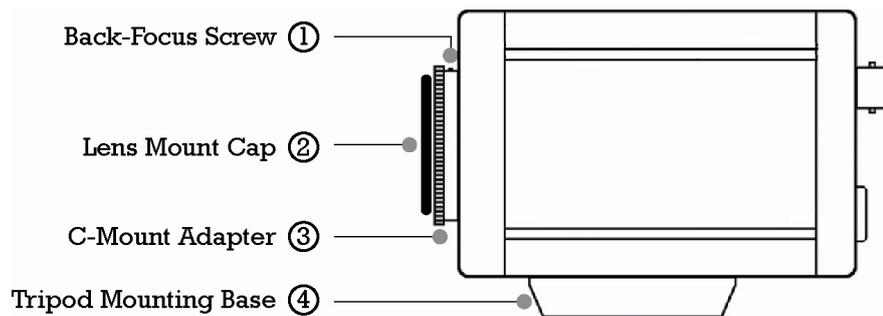
Attempts to modify the IP Camera will void all warranties and will not be supported by manufacturer or its seller. Further development tools and documentation for assistance may be accessible in future releases. We strongly recommend that inexperienced users DO NOT modify the firmware of IP Camera.

The manufacturer or its seller will not be held accountable in a user's attempt to modify the IP Camera that renders the unit inoperable or otherwise.

① **This document is for Network firmware version 1.2.1a**

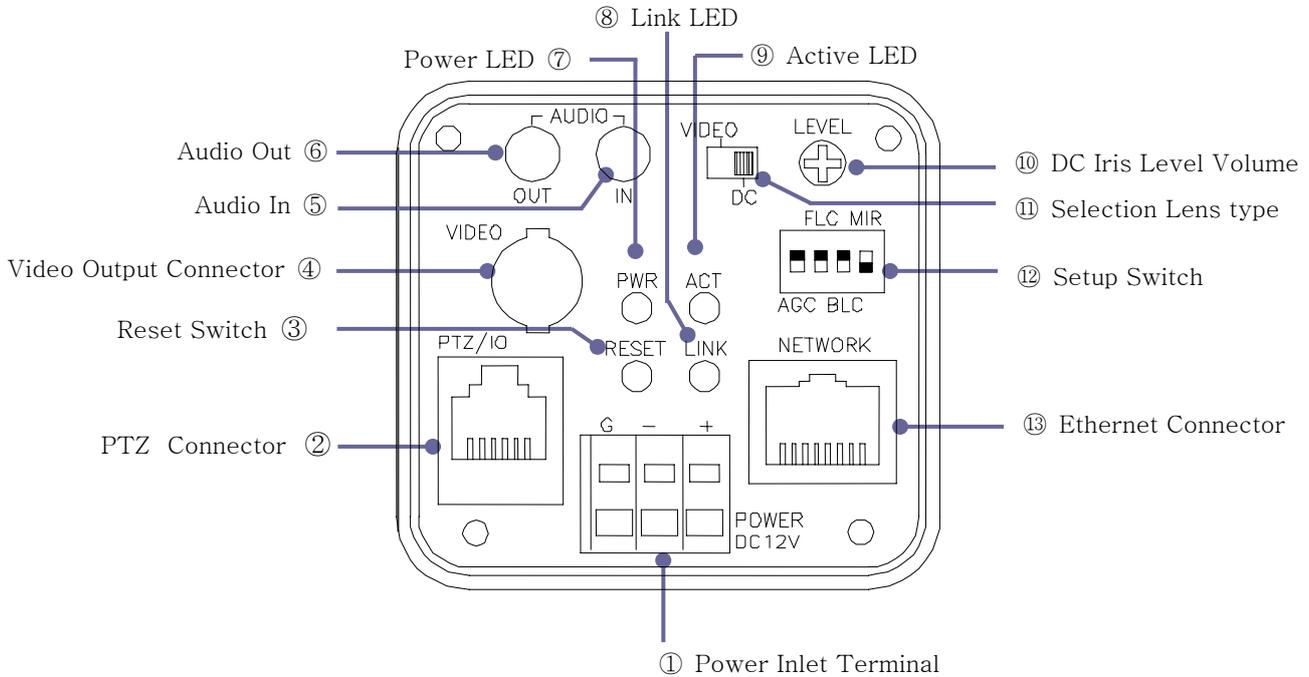
Product Components

□ Main Body



- | | |
|-------------------------------|--|
| ① Back-Focus Screw | A screw is provided to fix the lens mount. |
| ② Lens Mount Cap | Be sure to cap the lens mount when the lens is not mounted |
| ③ C-Mount Adapter | To mount a C-mount lens. Remove to mount a CS-mount lens.
Turn counterclockwise to remove it. |
| ④ Tripod Mounting Base | Mounting base for installing the camera. |

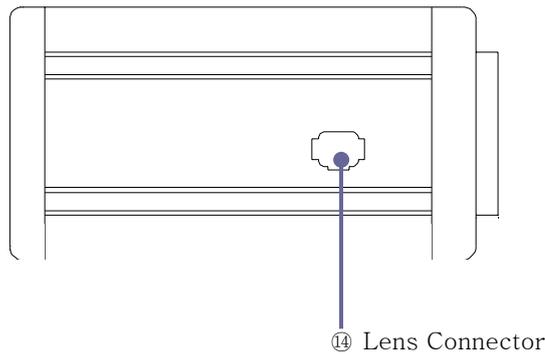
❑ Rear Panel



- ① **Power Inlet Terminal** Connect to a DC12V power source. When operating with as DC12V power supply, use only an isolated power source. (Be sure not to connect the power source until all other connections are completed.)
- ② **PTZ /IO Connector** PTZ Connector is used to control Pan/Tilt of camera with RS-485 I/O Connector is used to control Alarm In/Out Module with RS-232 communication.
- ③ **Reset Switch** Used to re-set to factory default network configuration. Press it for a second.
- ④ **Video Output Connector** BNC Connector that outputs a composite video signal.
- ⑤ **Audio In** Audio IN is monaural 3.5mm mini socket for audio input (to be connected to Amplified Microphone).
- ⑥ **Audio Out** Audio OUT is monaural 3.5mm mini socket for audio output (to be connected amplified speaker).
- ⑦ **Power Indicator** Lights up when the camera is powered.
- ⑧ **Link Indicator** This indicator should be flashing or glowing during normal operation. During a reboot or power cycling, it may take up to 30 seconds to initialize, negotiate your network speed, and begin operation at 10Mbps. If this light is not lit after 30 seconds of operation, check the network cable to ensure a proper connection.

- When a proper connection is met, the green indicator should immediately glow.
- ⑨ **Active Indicator** When in use, this indicator should always be flashing or flickering. During reboots or power cycling, it may take several seconds for the unit to initialize and illuminate the indicator.
 - ⑩ **DC Iris Level Volume** Adjusting the brightness of picture when using the DC type auto iris lens.
 - ⑪ **Selection Lens Type** Set up the right lens type when using Auto-Iris Lens.
 - ⑫ **Setup Switch** Switch for camera setup according to the operating circumstances.
 - ⑬ **Ethernet Connector** IP Camera is designed to operate on a 10 Mbps Ethernet network.

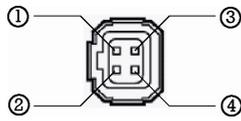
□ Side Panel



- ⑭ **Lens Connector** When using as auto iris lens, connect the lens cable to this connector.

Parts Description

□ Lens Connector



When using an auto iris lens, install the lens plug as follows.

• Video Type Lens

Set lens switch to VIDEO.

Connect the lens cable of the video type lens. If the plug on the cable is of a different type, replace it with the provided 4-pin iris plug.

• DC Iris Lens

Set lens switch to DC.

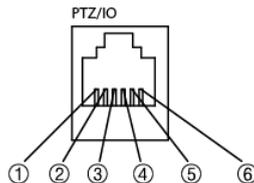
Connect the lens cable of the galvanometric type lens. If the plug on the cable is of a different type, replace it with the provided 4-pin iris plug.

• Pin description of connector

Pin	Video Type Lens	DC Iris Lens
1	+12V	Damping Coil(-)
2	Not Used	Damping Coil(+)
3	Video Input	Drive Coil(-)
4	Ground	Drive Coil(+)

① When using the Auto iris lenses, set ESC switch to 'OFF' position on the rear panel. Auto iris lens doesn't work at the ESC switch ON position.

□ PTZ/I/O



PTZ connector is used to connect the Pan/Tilt unit and I/O connector is used to connect Sensor I/O module. Sensor I/O module is provided as optional.

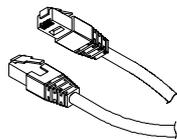
• PTZ : RS-485 communication

Pin	Signals	Remark
1	D+	Input/Output
2	D-	Input/Output

• IO : RS-485 communication

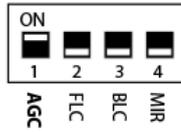
Pin	Signals	Remark
3	RX	Input
4	TX	Output
5	GND	Power
6	+12V	Power Output

□ Crossover Cable



The crossover cable is not wired as a typical straight-through network cable. This cable (or any crossover) should be used for initial setup of the IP Camera via a PC/laptop. After initial setup of IP Camera, use straight-through cable in normal operation.

□ Setup Switch



• **AGC (Automatic Gain Control)**

When AGC is set to ON, camera's sensitivity is automatically increased when the level of ambient light drops. AGC function automatically controls signal gain in the range of maximum 34dB.



• **FLC (Flickerless)**

If the camera is used with 50Hz fluorescent lighting, there is a flicker on the screen. In this case, the F.L switch should be set to On position. However the F.L function should be set to Off in 60Hz power source situations. The Flickerless mode helps overcome flickering on the screen in cases where the AC power frequency is different from the vertical sync frequency of the camera.



• **BLC(Back Light Compensation)**

Strong light, such as a spotlight, entering the scene background can causes the lens iris to close, thereby possibly obscuring a desired portion of the scene. The Backlight compensation function automatically adjusts the video level so as to preserve visibility in important section of the scene.



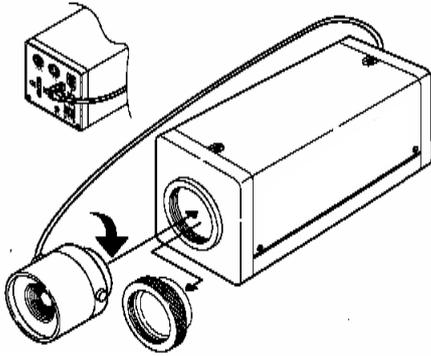
Camera has 6 BLC sensing zones on the screen. In BLC operation, The BLC sensing zone is used upper two zones on the screen like figure. At the BLC On setting, an object is distinguished more clearly in unfavorable light conditions by automatically controlling the video level.



• **MIR (MIRROR)**

Mirror mode ON / OFF

Lens Installation

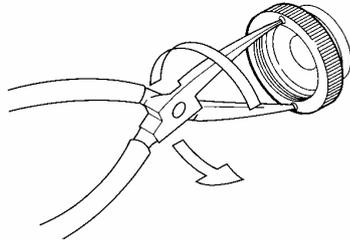


Video Camera Lens

- Please attach a lens cable when using the DC type lens or VIDEO type lens.
- ESC switch on the rear panel should be set to ON position when using the manual lens.
- When using the VIDEO type lens, adjust brightness of image by volume control on lens.
- When using the DC type lens, please adjust the brightness of image with DC level volume on the rear panel.

□ Mounting a Lens

- ① Remove the lens mount cap from the camera.
- ② Attach or remove the C-mount adapter depending on the lens to be used.



- If the adapter is attached so tightly that is difficult to remove, use long-nosed pliers to remove it. Insert the tips of the pliers into the holes with no threads, and turn to remove. A screwdriver can also be used. By inserting 3M screws into the holes so that the screwdriver has something to grip. (Store the C-mount adapter for possible future use.)

- ③ Attach the lens to the lens mount. Secure it so that it does not become loose.
- ④ If the lens has an auto-iris mechanism, connect the lens cable to the lens connector.
 - When installing a video-iris lens, lens switch should be set to VIDEO position.
 - When installing a galvanometric-iris lens, lens switch should be set to DC position.

❑ Adjusting Auto-Iris Lenses

Make this adjustment after connecting the camera to a power source and a monitor.

- ① Set AGC mode to off.
- ② When using a Video type lens.
 - Adjust the level on the lens to produce minimum smear and optimum picture.
- ③ When using a DC type lens.
 - Adjust the level on the main menu to produce minimum smear and optimum picture.
- ④ Set AGC mode to on. It is recommended that the AGC be used in the "on" mode after adjusting the video level.

❑ Back-Focus Adjustment

When a lens is mounted, adjustment of the back-focus may sometimes be required. Adjust with the lens focus ring when the correct focus cannot be obtained.

● With a Fixed-Focus Lens

- ① Fully open the aperture and set the focus ring to "∞" (infinity). In the case of an auto iris lens only, shoot a comparatively dark object so that the aperture is fully open.
- ② Loosen the two back-focus screw with a hex wrench, and turn the lens mount to focus.
- ③ After adjusting the back-focus, tighten the back-focus screw.

● With a Zoom Lens

- ① Fully open the aperture and set the lens to the maximum tele-photo position. Then turn the focus ring to focus. In the case of an auto-lens only, shoot a comparatively dark object so that aperture is fully open.
- ② Set the lens to its maximum wide-angle position.
- ③ Loosen the two back-focus screw with a hex wrench, and turn the lens mount to focus. After adjusting the back-focus, tighten the back-focus screw.
- ④ Repeat step ①~③ until the difference between focusing position "Tele" and "Wide" becomes smallest.

❑ Lenses that can be used

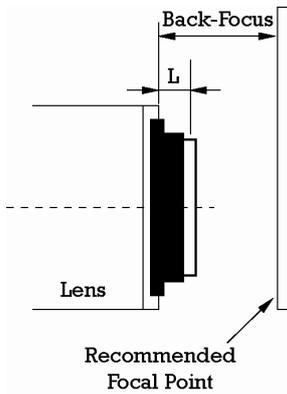
The camera can use C-mount lenses when the C-mount adapter (standard accessory) is installed. When removed, CS-mount lenses can also be used.

Use a suitable lens for the required area of view. The area of view for different focal length can be obtained using the following formula.

Lens	1/2" Lens	1/3" Lens
A	4.8	3.6
B	6.4	4.8

$$\text{Height of the area of view(m)} = \frac{A \times \text{Distance between camera and object(m)}}{\text{Focal length of lens(mm)}}$$

$$\text{Width of the area of view(m)} = \frac{B \times \text{Distance between camera and object(m)}}{\text{Focal length of lens(mm)}}$$



Lens	Back-Focus	Clearance "L"
C-Mount Lens *	17.53 mm	Less than 9 mm
CS-Mount Lens **	12.5 mm	Less than 4 mm

- * White the C-Mount adapter attached
- ** White the C-Mount adapter removed

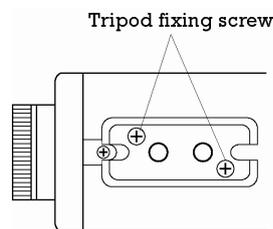
- ① "L" in the illustration above should be as shown in the table. If "L" exceeds the value in the table, it may damage the inside of the camera and correct mounting may be impossible.
- ① Be sure not to attach the C-mount adapter when using a CS-mount lens.
- ① Lenses designed for color video cameras are recommended. Lenses designed for B/W cameras may have inferior color reproduction and picture quality. In particular, they are not suitable for use outdoors or in very bright conditions.

Camera Body Installation

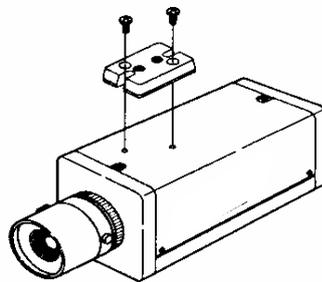
Camera can be installed on a tripod or attached by the upper plate or the the bottom plate by using the camera fixing holes (1/4", 20UNC) on the tripod mounting base. The tripod mounting base has been installed on the bottom plate when shipped from factory. Switch the tripod mounting base to upper side when installing the camera from the upper plate.

There are two camera-fixing holes on the tripod mounting base. Use the two holes to adjust when installing the camera specially.

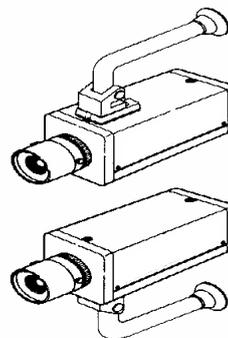
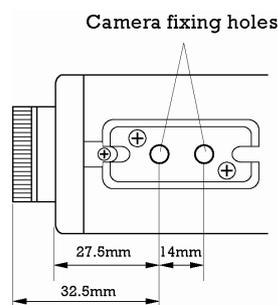
- ① Remove the tripod fixing screw to remove the tripod mounting base.



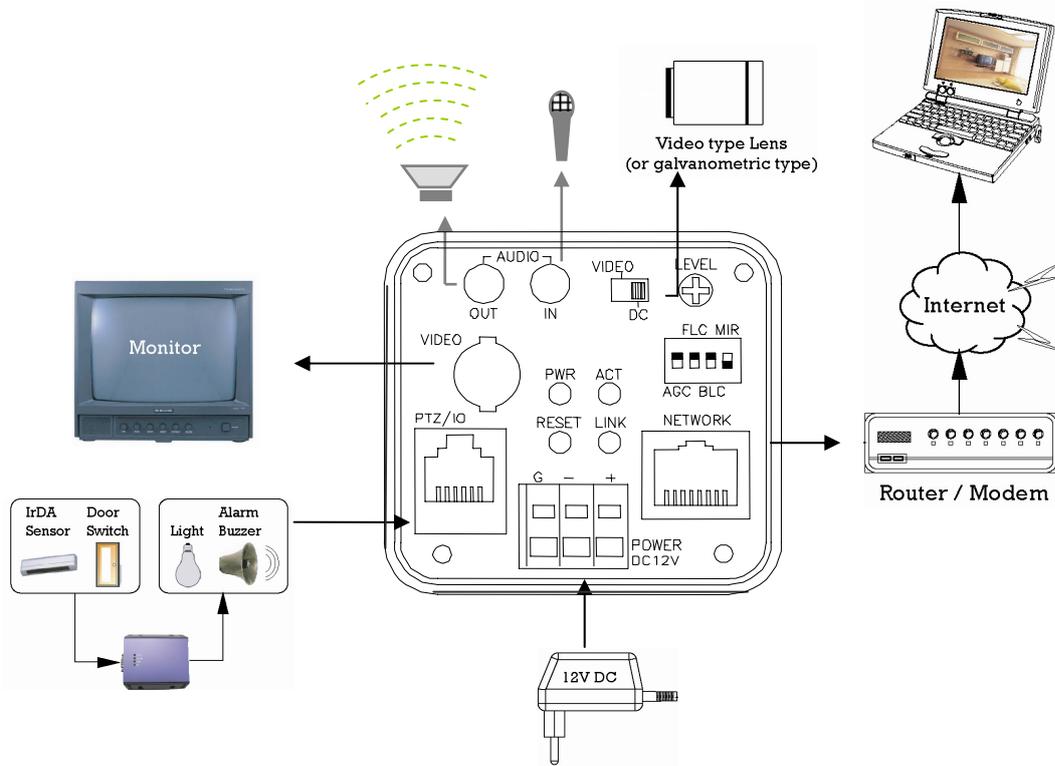
- ② Attach the tripod mounting base on the upper plate of the camera with the tripod fixing screw.



- ③ Attach the camera using the camera fixing holes.



Camera Connections



Connect the video output of the camera to the video input of a monitor or other equipment. When using a "loop through" connection of two or more monitors, set the 75Ω switch of only the final monitor to 'On'. Determine the type of cable according to the distance of the connected equipment.

Quick Start of Network Connection

Please follow the steps below to complete the initial setup of the Network Function.

- ① Please do not power on the IP Camera until instructed.
 - ① Temporarily disable any proxy servers configured in Internet Explorer
 - ① If connecting the IP Camera directly to a modem, power down and reset the modem. Leave the modem powered down until configurations are finalized with the IP Camera and the IP Camera has been correctly connected to the modem.
- ① You will need to access a PC/laptop and should configure that PC in order to communicate with the IP Camera. Record the current TCP/IP properties of that PC (IP address, subnet mask, gateway, DNS, etc)
- ① If your PC obtains its IP address automatically, then there is no need to record any information.
- ② Change the IP address of that host PC to 192.168.1.11 and subnet mask to 255.255.255.0 (leave all other entries blank)
- ③ Connect the IP Camera to your PC's Ethernet port via the supplied crossover cable (it does not matter what end is used for the PC)
- ④ Power on the IP Camera.
- ⑤ After 30 seconds of power, verify a solid PWR indicator, a flashing ACT indicator, and a flashing or solid LINK indicator. After the corresponding indicator lights are properly displayed, open Internet Explorer.
- ⑥ Type - `http://192.168.1.80` (the default IP of the IP Camera) into your address bar.
- ⑦ Default ID/Password to access camera are both the word: admin
- ⑧ Familiarize yourself with the Viewer Interface Screen.
- ⑨ Locate the TCP/IP configuration under Administration Tools. Supply the same ID and Password to enter Administration Tools (admin:admin)
- ⑩ Under "Network Type" select STATIC. You will only select Dynamic or PPPoE if you are connecting the IP Camera directly to your cable/DSL/Broadband modem and your Internet Service Provider is supplying you a dynamic or PPPoE address.
- ① If you have a network with other devices (such as PC/laptop, etc.) or a router, you will NEVER select Dynamic or PPPoE.

- ⑪ Configure the IP Camera's TCP/IP settings as you would any other PC on your network, providing a proper IP address, subnet mask, default gateway, and DNS server.

① If this is standalone unit with a direct connection to a cable/DSL/Broadband modem then input the addresses you have received from your ISP. If you received no IP address from your ISP, please select Dynamic or PPPoE and choose the proper settings.

- ⑫ The IP Camera utilizes five TCP ports - a Web Server Port for utilizing Internet Explorer, a Video Server Port, a Control Server Port, Audio Ports. A Web Server Port is for utilizing Internet Explorer, a Video Server port is to support the streaming video, and a Control Server Port is to transmit to control command. Also Audio Port are to transmit and to receive Audio data. If this IP Camera will be directly attached to a cable/DSL/Broadband modem or has been assigned a static IP from your ISP, then leave the default port settings. If you are installing the IP Camera on a network, you must define a Web Server Port other than 80. The other ports, a Video Server Port, a Control server Port, Audio Ports can remain unchanged.
- ⑬ If the IP Camera is connected to a network which utilizes a router, you must have Port Forwarding configured on your personal router to forward both the Web Server Port and Video Server Port to the IP address you have assigned the IP Camera.
- ⑭ After configuring Port Forwarding on your router (if necessary), you may then access your IP Camera on your local network by opening Internet Explorer and specifying the IP address and Web Server Port that you have assigned to the IP Camera.

① Examples: <http://192.168.0.200:8888> or <http://24.106.88.123>

① If you left your Web Server Port set to 80, then you don't need to specify the port in the Address Bar when accessing the IP Camera.

- ⑮ Access your IP Camera via the Internet :
- ❑ If you used a static IP address assigned by your ISP
 - i) Open Internet Explorer and type the IP of the IP Camera.
 - ii) If you use a router, type the routers' static IP and the web port number of the IP Camera.
 - ❑ If you have a dynamic address provided by your ISP
 - i) Open Internet Explorer and visit the DDNS website.
 - ii) Register the IP Camera.
 - iii) Reboot the IP Camera.
 - iv) Give the DDNS server 2 minutes to locate your IP Camera's IP information.
 - v) Click the refresh button in the Internet Explore.
 - vi) After your camera is connected, select your camera.



Initial Setup via a Crossover Cable

This section provides a guide on how to connect the IP Camera to your PC/laptop for initial setup.

Please follow the instructions in the order they appear, without skipping steps. Do not supply power to the IP Camera, until instructed.

In order to access the IP Camera’s firmware you will need to connect the IP Camera directly to a PC or laptop computer via the supplied crossover cable.

- ① Before you begin, you must determine the current network/INTERNET (TCP/IP) settings on the PC or laptop you plan to setup the IP Camera. Jot down your entries below for quick reference.

① For information on how to determine your currents settings, see Appendix A

Current TCP/IP Settings	
IP Address	
Subnet Mask	
Default Gateway	
Primary DNS Server	
Secondary DNS Server (Option)	

- ② In order for the IP Camera to communicate with your PC, you have to change your PC’s IP address and subnet mask

① We recommend that you change your IP address to 192.168.1.11 and change the subnet mask to 255.255.255.0

Leave all other entries (Default Gateway, DNS Servers, etc.) blank.

① For information on how to change your IP address and subnet mask, see Appendix B

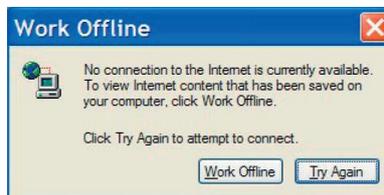
- ③ After you have made the changes to your IP address and subnet mask, you may then attach the IP Camera to your PC via the supplied crossover cable. Plug-in either end of the crossover cable into the PC’s network card and the other end into your IP Camera.
- ④ After connecting the PC and IP Camera using the crossover cable, power on the IP Camera.
- ⑤ No longer than 1 minute after powering on the IP Camera, verify that the PWR indicator light is solid, the ACT indicator light is flashing, and the LINK indicator light is flickering or solid. If they are not, please read the FAQ.

Now you will be able to access the viewer software within the IP Camera.

- ① Open Internet Explorer and type the IP address of 192.168.1.80 (default IP of the IP Camera from the factory) into the Address Bar of the web browser (as seen below). Press Enter.



- ① If a message appears after pressing “Enter” similar to the image depicted below, choose “Try Again”. This message will vary depending on the operating system.



- ⑥ Now you will be able to see the login screen for the IP Camera.



- ① The 3 authorities are available : Administrator, Operator and Viewer. The authority setup is available in Admin. Tools.

- Viewer Only monitoring is allowed.
- Operator Monitoring, PTZ Control and Digital In/Out Control are allowed.
- Administrator All functions are allowed.

- ⑦ The default ID and Password are both the word “admin” (without the “”)
- ⑧ If at any time you are prompted to download ActiveX controls, you must click ‘Yes’, all content is safe.

- ① You will have to click “Yes” twice to two individual prompts. This allows your video to be displayed in Internet Explorer.

DDNS Registration

If you have DYNAMIC IP service from your Internet Service Provider (ISP), you can't tell what current IP address of IP Camera is. To solve this problem, you have to register to our DDNS service.

At first, we recommend, you have to check if you are using dynamic addressing. If so, please, register your IP Camera on our DDNS website before you configure, setup, or install the IP Camera.

Even though your IP is not dynamic, you will get a benefit if you register to DDNS. In this case, you just remember "alex.net4c.net/gate1" instead of complicated series of number like http://201.23.4.76:8078.

For more detail information, please contact our Support Center.

※ To register IP Camera to DDNS, you should know the Serial No of your IP Camera. The Serial No can be found in "IP Status" menu of Admin Tool.

※ To use a public DDNS called DtDNS, you can find detail information on how to use this service. (Please, visit its web site : <http://www.dtdns.com>)



Guide to Network Environment

Please configure the IP Camera at the location of its installation. You must determine your network scenario in order to configure the IP Camera with the proper TCP/IP settings. This tutorial will guide you through the process. Before actually configuring the IP Camera, determine what settings you will apply. Record those settings that you will use to configure your IP Camera for reference.

When configuring your IP Camera, treat the IP Camera as another PC on your network. You will assign it several addresses and other TCP/IP properties to match your current network.

This step-by-step tutorial will teach what IP addresses and network configurations you should assign your IP Camera based upon your network scenario.

- ① Before you begin, you will need to locate any information and settings that you have received from your Internet Service Provider (ISP). You may need to refer to these IP addresses at a later time during the configuration.

- ① If you were not given any IP addresses or the ISP was responsible for the setup and installation of your Internet connection on your PC or network, then please go to step ②
- ① If you are not using a router on your network, your “Current TCP/IP Settings” (from the previous section) and “Assigned IP Addresses from My ISP” will be exactly the same

Assigned IP Address	
IP Address	
Subnet Mask	
Default Gateway	
Primary DNS Server	
Secondary DNS Server (Option)	

Static

Dynamic

PPPoE

- ② You must determine whether the IP address that you were assigned from the ISP is STATIC, DYNAMIC, or using PPPoE. At this moment, you are only concerned about the ISP. Did they provide you with a STATIC, DYNAMIC, or PPPoE address? If you are unsure, please contact your ISP.
- ③ Configure your IP Camera’s TCP/IP settings for network connectivity by selecting Administration Tools from the main interface and selecting TCP/IP located on the left of the Administration Tools screen.
- ④ If prompted for an ID and Password, use “admin” for both entries.

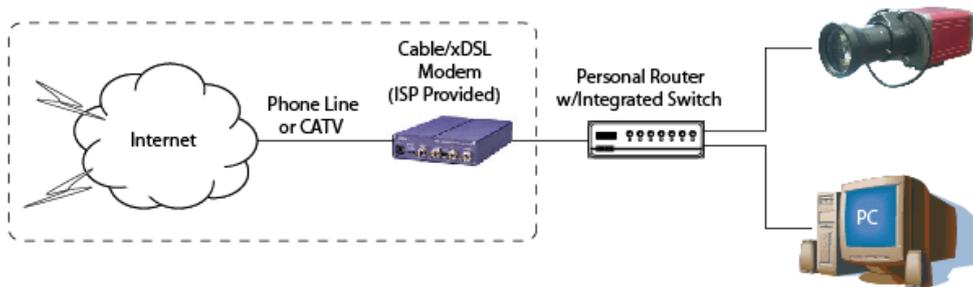
The default web port number is 80. If your ISP blocks port 80 you must use a value between 1025-30000. Please consult your ISP and determine if they block TCP port 80.

- ⑤ Depicted below are several basic network scenarios. Determine which scenario describes your network. If your network does not match one of the scenarios below and are unsure how to setup your IP Camera, please contact your network administrator, then call our Support Center.

①

Dash line box signifies areas of your network that you can't control. Only the ISP has access to these devices.

Case A : Dynamic IP or PPPoE + Personal Router [Most SOHO]



Configure your IP Camera 's TCP/IP properties as follows :

- Network Type
 - STATIC (even though you have Dynamic IP, use STATIC on the IP Camera)

- Internet Address
 - A private IP address such as 192.168.0.200 [Example]

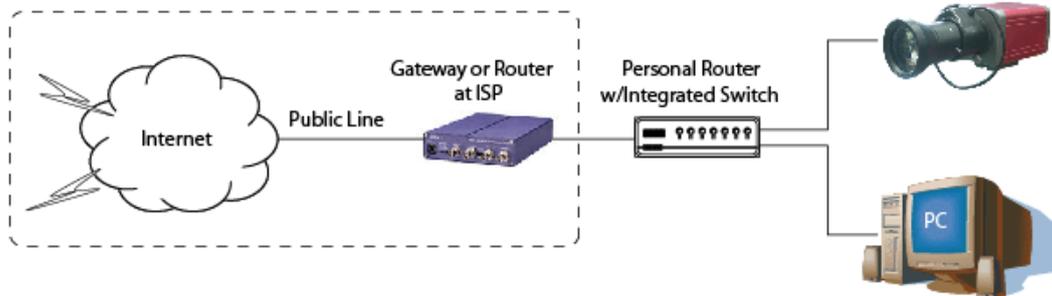
- ① You need to assign the IP Camera an IP address, just as you would assign a PC.
 - ① The IP address you assign must be unique to your network as well as match your network. For information how to choose a unique IP and match your network please read the FAQ.
 - ① The IP address you assign the IP Camera must be a private IP. For information on how to chose a private IP please read the FAQ.

- Subnet Mask
 - 255.255.255.0 [Example]

- ① You must use the same subnet mask as the one you noted under “Current TCP/IP Settings”

- Default Gateway
- 192.168.0.1 [Example]
- ① This IP address must be the IP address of your router (private or LAN side)
- ① Use the same Default Gateway you noted under “Current TCP/IP Settings”
- Primary DNS Server
- Use the 1st DNS Server from “Assigned IP Address from My ISP”
- ① If you did not receive any IP addresses from your ISP, please contact them and acquire the IP address of their DNS server.
- DDNS Server
- Use the DDNS server
- ① This is the same site you will register with later to accommodate dynamic IP from your ISP.
- Web Server Port
- 8888
- ① Do NOT use the default port 80, you must change this number.
- ① You may select any number between 1025 ~ 30000.
- Control Server Port
- 7777
- ① You may select any number between 1025 ~ 30000.
- Video Server Port
- 7778
- ① You may select any number between 1025 ~ 30000.
- Audio Transmit Server Port
- 7779
- ① You may select any number between 1025 ~ 30000.
- Audio Receive Server Port
- 7780
- ① You may select any number between 1025 ~ 30000.

Case B : Static(Fixed) IP + Personal Router [Efficient]



Configure your IP Camera's TCP/IP properties as follows :

- Network Type

 - STATIC
- Internet Address

 - A private IP address such as 192.168.0.200 [Example]

- ① You need to assign the IP Camera an IP address, just as you would assign a PC.
 - ① The IP address you assign must be unique to your network as well as match your network. For information how to choose a unique IP and match your network please read the FAQ.
 - ① The IP address you assign the IP Camera must be a private IP. For information on how to chose a private IP please read the FAQ
- Subnet Mask

 - 255.255.255.0 [Example]

- ① You must use the same subnet mask as the one you noted under “Current TCP/IP Settings”
- Default Gateway

 - 192.168.0.1 [Example]

- ① This IP address must be the IP address of your router (private or LAN side)
 - ① Use the same Default Gateway you noted under “Current TCP/IP Settings”
- Primary DNS Server

 - Use the 1st DNS Server from “Assigned IP Address from My ISP”

- ① If you did not receive any IP addresses from your ISP, please contact them and acquire the IP address of their DNS server.

DDNS Server

- Use the DDNS server

① This is the same site you will register with later to accommodate dynamic IP from your ISP.

 Web Server Port

- 8888

① Do NOT use the default port 80, you must change this number.

① You may select any number between 1025 ~ 30000.

 Control Server Port

- 7777

① You may select any number between 1025 ~ 30000.

 Video Server Port

- 7778

① You may select any number between 1025 ~ 30000.

 Audio Transmit Server Port

- 7779

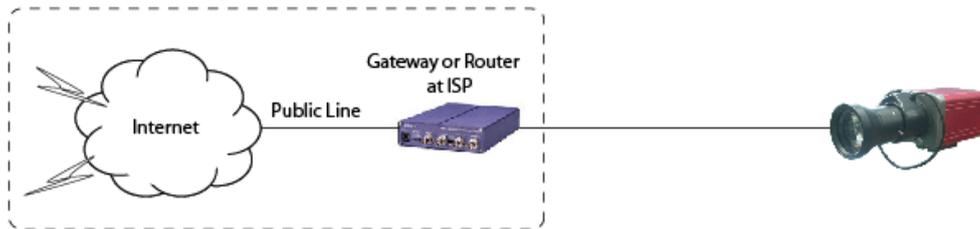
① You may select any number between 1025 ~ 30000.

 Audio Receive Server Port

- 7780

① You may select any number between 1025 ~ 30000.

Case C : Static(Fixed) IP [Dedicated line directly to the IP Camera



Configure your IP Camera's TCP/IP properties as follows :

- Network Type
 - STATIC
- Internet Address
 - A static IP address received from your ISP, such as 24.107.88.125 [Example]
 - ① You need to assign the IP Camera an IP address, just as you would assign a PC.
- Subnet Mask
 - Subnet mask assigned from your ISP, such as 255.255.255.240 [Example]
- Default Gateway
 - 24.107.88.113 [Example]
 - ① Use the assigned default gateway from your ISP
- Primary DNS Server
 - Use the 1st DNS Server from “Assigned IP Addresses from My ISP”
 - ① If you did not receive any IP addresses from your ISP, please contact them and acquire the IP address of their DNS server.
- DDNS Server
 - Use the DDNS server
 - ① This is the same site you will register with later to utilize our DDNS service.
- Web Server Port
 - 80 [default]
 - ① You may select any number between 1025 ~ 30000.
- Control Server Port
 - 7777
 - ① You may select any number between 1025 ~ 30000.

❑ Video Server Port • 7778

① You may select any number between 1025 ~ 30000.

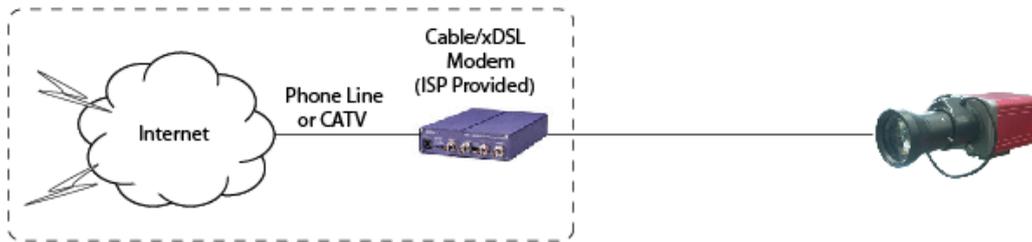
❑ Audio Transmit Server Port • 7779

① You may select any number between 1025 ~ 30000.

❑ Audio Receive Server Port • 7780

① You may select any number between 1025 ~ 30000.

Case D : Dynamic IP + DSL/Cable Modem [Connected directly to the IP Camera



Configure your IP Camera's TCP/IP properties as follows :

Network Type • DYNAMIC

DDNS Server • Use the DDNS server

① This is the same site you will register with later to accommodate dynamic IP from your ISP.

Web Server Port • 80 [default]

① You may select any number between 1025 ~ 30000.

Control Server Port • 7777

① You may select any number between 1025 ~ 30000.

Video Server Port • 7778

① You may select any number between 1025 ~ 30000.

Audio Transmit Server Port • 7779

① You may select any number between 1025 ~ 30000.

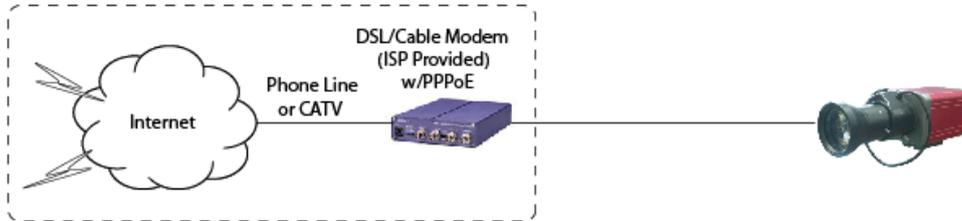
Audio Receive Server Port • 7780

① You may select any number between 1025 ~ 30000.

① When connecting the IP Camera directly to a modem, power down and reset the modem. Leave the modem powered down until configurations are finalized with the IP Camera and the IP Camera has been correctly connected to the modem. Then power on the modem, followed by the IP Camera.



Case E : PPPoE + DSL Modem [Connected directly to the IP Camera]



Configure your IP Camera's TCP/IP properties as follows :

- Network Type
 - PPPoE
- User ID
 - Use the User ID or Username you received from your ISP for this direct connection
- User Password
 - Use the Password you received from your ISP for this direct connection
- DDNS Server
 - Use the DDNS server
 - This is the same site you will register with later to utilize our DDNS service
- Web Server Port
 - 80 [default]
 - You may select any number between 1025 ~ 30000.
- Control Server Port
 - 7777
 - You may select any number between 1025 ~ 30000.
- Video Server Port
 - 7778
 - You may select any number between 1025 ~ 30000.
- Audio Transmit Server Port
 - 7779
 - You may select any number between 1025 ~ 30000.
- Audio Receive Server Port
 - 7780
 - You may select any number between 1025 ~ 30000.



Port Forwarding

After entering the correct TCP/IP settings you will be ready for “Port Forwarding” (Cases A, B).

- ❑ Please record the TCP/IP settings of your IP Camera for future reference. You may need this information to access your IP Camera and to configure “Port Forwarding”.

IP Camera TCP/IP Settings	
IP Address	
Subnet Mask	
Default Gateway	
Primary DNS Server	
DDNS Server	
Web Server Port	
Control Server Port	
Video Server Port	
Audio Transmit Server Port	
Audio Receive Server Port	

- ❑ **After clicking “Apply” the system will prompt for a reboot. Please allow the system 30 seconds to reboot and accept the changes. After 50 seconds, close the configuration screen. The view will display “Trying to Reconnect”. If the ACT light on the IP Camera has gone off and is now back on again flashing, then the IP Camera has rebooted. After the system reboots completely, remove the power supply from the unit and close Internet Explorer.**
- ❑ Return your PC/Laptop TCP/IP properties to their original settings.
- ❑ Before installing the IP Camera, you must use “Port Forwarding” on your personal router (Cases A, B). You will need to forward 5 ports:
 - Web Server Port you assigned to the IP Camera.
 - Control Server Port you assigned to the IP Camera.
 - Video Server Port you assigned to the IP Camera.
 - Audio Transmit Server Port you assigned to the IP Camera.
 - Audio Receive Server Port you assigned to the IP Camera.

Both of these ports will be forwarded to the IP address you assigned to the IP Camera. In the example above, you would forward:

- 8888 → 192.168.0.200
- 7777 → 192.168.0.200
- 7778 → 192.168.0.200
- 7779 → 192.168.0.200
- 7780 → 192.168.0.200

① For information on how to use “Port Forwarding” please read Appendix C

Starting IP Camera

After correctly forwarding the Web Server Port , Video Server Port, Control Server Port and two Audio Ports through your router (if applicable), you may then install the IP Camera in a proper location.

- ① Locate the serial number of the IP Camera, you will need this for DDNS registration.
- ② Connect the IP Camera to your router or cable/DSL modem (per your network scenario) via a Cat5/5e UTP Ethernet network cable.
- ③ Supply power to the IP Camera.
- ④ After 30 seconds, verify the IP Camera indicators:

• PWR	Solid
• ACT	Flashing
• LINK	Flickering/Solid
- ⑤ After configuring Port Forwarding on your router (if necessary), you may then access your IP Camera on your local network by opening Internet Explorer and specifying the IP address and Web Server Port that you have assigned to the IP Camera.

① Examples: <http://192.168.0.200:8888> or <http://24.106.88.123>

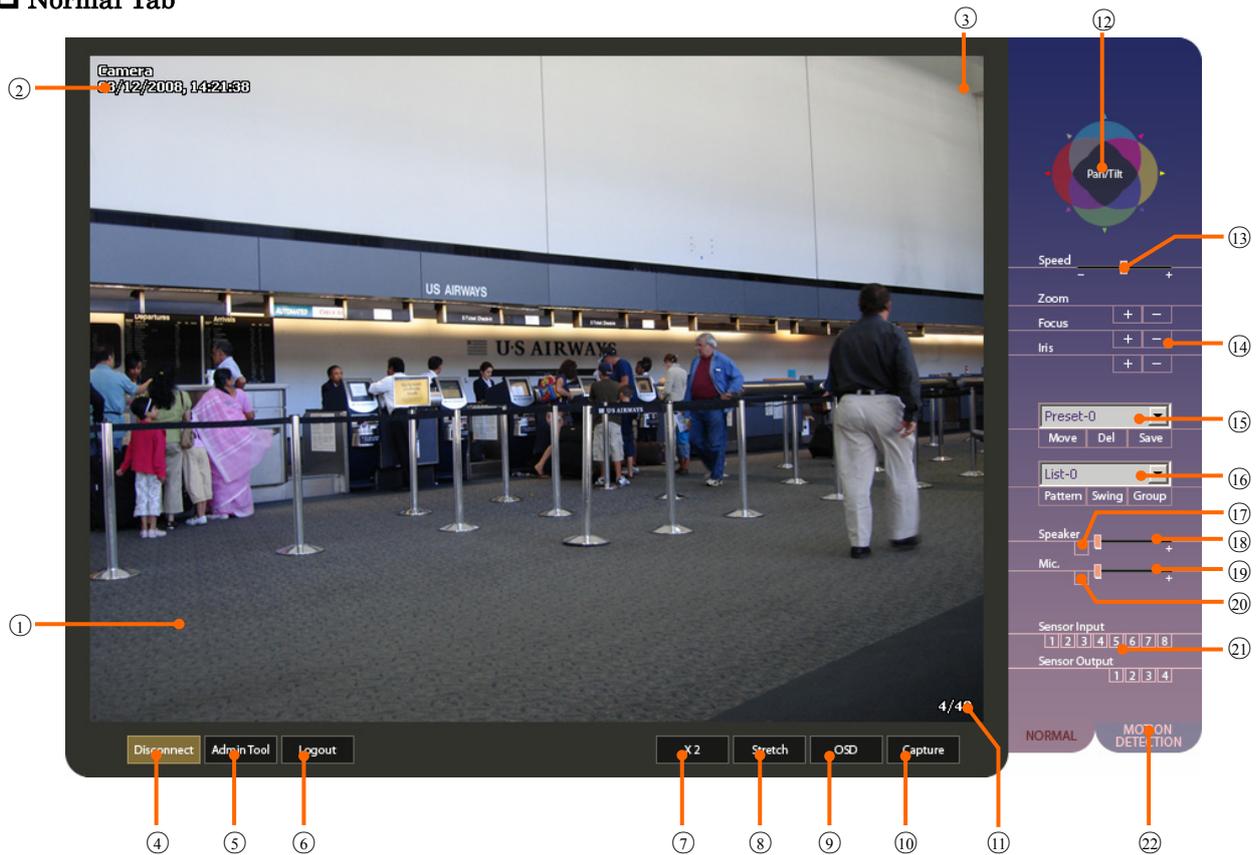
① if you left your Web Server Port set to 80, then you don't need to specify the port in the Address Bar when accessing the IP Camera.

- ⑥ Access your IP Camera via the Internet:
 - ❑ If you use Case B or C
 - i) Open Internet Explorer.
 - ii) Type the IP of the IP Camera.
 - ❑ If you use Case A, D, E
 - i) Open Internet Explorer.
 - ii) Visit the DDNS website.
 - iii) Register the IP Camera.
 - iv) Give the DDNS server 10 minutes (MAX) to locate your IP Camera's IP information. You may reboot the IP Camera to send an immediate request to our DDNS server.
 - v) After your camera is connected, select your camera.

Web Viewer Screen

In this section, the main GUI of the IP Camera will be explained.

Normal Tab

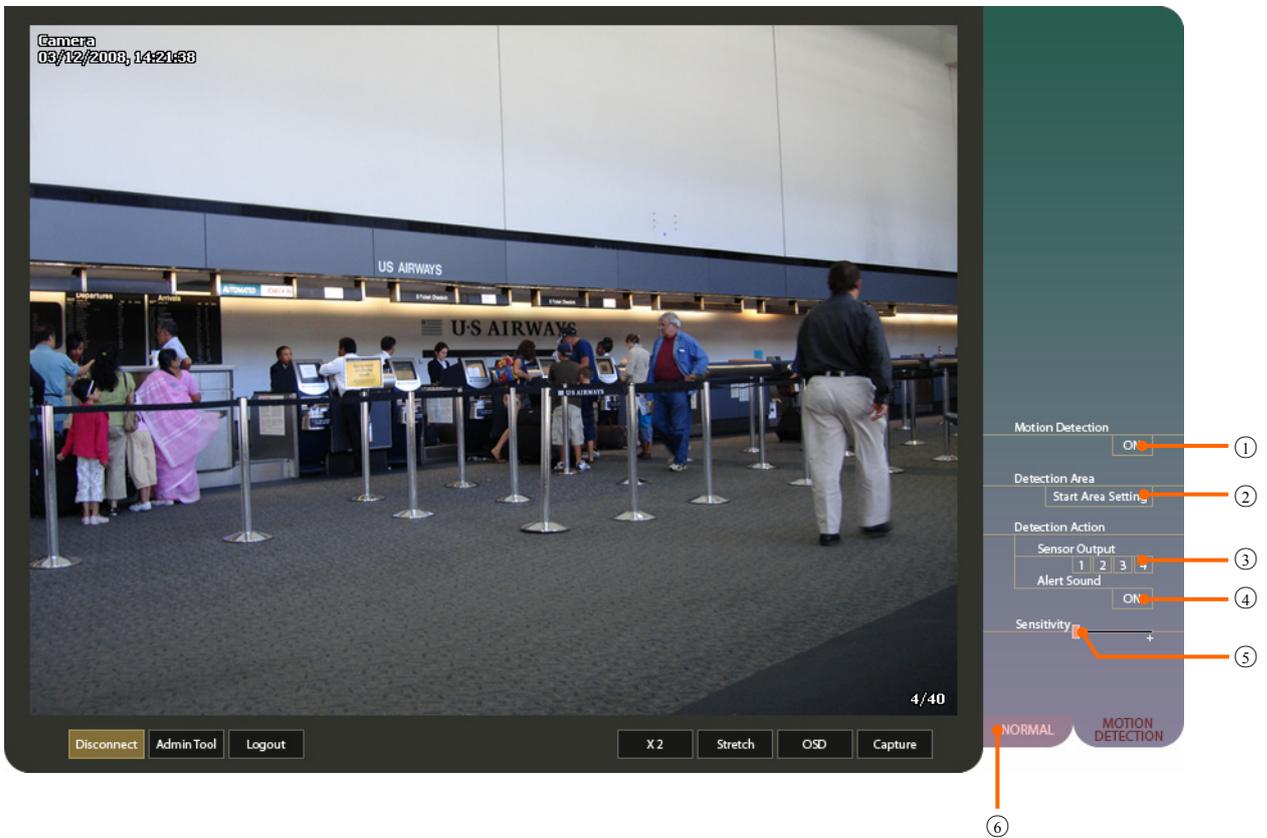


- ① Camera Image Display
- ② OSD - Camera Name / Date / Time
- ③ OSD - This indicator displayed represents the function caption when a specific user logs on.
 - G = Guest User : Video monitoring only
- ④ Click this icon to disconnect or connect from the server.
- ⑤ Click this icon to enter Administration Tools.
- ⑥ Click this icon to logout.
- ⑦ 2× Digital Zoom

- ⑧ Stretch will fit the video to the viewer window regardless of resolution. In essence this provides:
- 720×480 resolution : 2× digital zoom effect
 - 352×240 resolution : no change
- ⑨ OSD (On Screen Display) : Click this icon to display the captions.
- ⑩ Click this icon to save an image.
- ⑪ Shows current number of users connected as:
[Current number of users connected / maximum number of users connected].
- ⑫ Use these arrows to control a PTZ device.
- ⑬ Speed option for IP Camera or PTZ devices.
- ⑭ Zoom, Focus, and Iris functions for PTZ devices that support the listed functions.
- ⑮ Presets used by some PTZ devices that support preset directions and zoom.
- ⑯ Pattern, Swing and Group functions for the Pan/Tilt camera that support the listed functions.
- ⑰ This button enables to listen Audio stream from IP CAMERA.
- ⑱ Volume control for speaker out of your computer.
- ⑲ Volume control for MIC in your computer.
- ⑳ This button enables to send Audio stream to IP CAMERA from your MIC.
- ㉑ Digital Inputs status and Digital Outputs control.
- ㉒ Motion Detection Tab to open motion detection setup.

As explained before, there are three kinds of user authority level i.e. guest, operator and administrator and. It is noted that since the OSD display and Digital Zoom functions do not affect other users view but only affect the current view, these functions can be changed to all user levels. However, since all other functions affect to settings of the video server and accordingly video of all users connected, the user with administrator level can change those functions.

❑ Motion Detection Tab

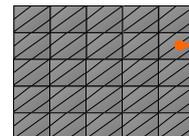


① This button activates or stops motion detection. “Detection Area setting” bellow must be done in advance.

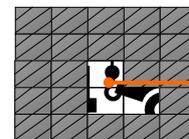
② This button activates or stops motion detection target area setup mode.

[How to Setup]

- (a) By clicking or dragging of mouse in the main view, you can create or erase the masks on the main view.
- (b) Motion detection is effective in the **Unmasked Area**.
- (c) Stop and save setting by clicking [Start Area Setting] button.



Masked Area
No detection



Unmasked Area
Effective detection

③ These buttons assign counter action of alarm sensor output if motion is detected. For example, if you assign [2] button and a buzzer is connected to corresponding output relay of alarm module, buzzer will be turned on for a while when motion is detected at the designated area of interested.

④ This activates the alert sound function. If you send your own wave file to your video server, it will play back the wave file though the audio out socket when motion is detected.

⑤ This define up the sensitivity of motion detect. Move small box toward the + direction

⑥ Return to Normal mode i.e. exit from motion detection setup and return to PTZ control tab.

This section is provided to familiarize the user with the administration tools. Intuitive options are not explained in detail.

All the changes on Administration Tools take effect immediately. These settings will be global, affecting the view of all users currently logged on. However, OSD items selections are effective only after you refresh the viewer windows or restart the internet Explorer.

All settings are always saved in the video server even when you close the viewer program or you turn off the Power of the video server. If you lost your password, you must press the reset button to return all setting to its factory defaults.

Video Tool

Camera

Camera Name :

OSD : Camera Name Date & Time Function Online Users Frame Rate

* These OSD settings are effective after the viewer window is refreshed or reloaded.

Appearance

Resolution :

Frame Rate : FPS

Camera Flip : Normal Flip

P/T Direction : Normal Reverse

Encoding Parameters

Video Compression : Motion JPEG MPEG-4

Quality & BandWidth

Advanced Setting : Simplified Setting Advanced Setting

Encoding Video Mode : Quality Basis BandWidth Basis

Quality :

Bit Rate :

- Camera Name For easy identify the cameras, you can freely assign a name to the device or camera connected to the IP CAMERA. This will change the camera name on OSD. (Maximum 15 characters available)
- OSD Select OSD items displayed on the screen. This will effect only after refresh site or restart your internet explorer.
- Resolution Select the resolution (or video size) of the viewer screen.
- Frame Rate Maximum frame rate of video to limit the traffic occupied.

- Camera Flip Flip the video orientation. (i.e. Turn the video upside down.)
- P/T Direction Define the direction of Pan/Tilt motion.
- Video Compression Choose the video compression method form Motion JPEG and MPEG-4 formats.
- Simplified Setting and Setting In fact, these two has same concepts. However, the **Simplified Setting** is described in terms of simple and easy expressions to help nonprofessional users. If you are professional and want to set delicately, choose **Advanced Setting**.
- Encoding Video Mode In **Quality Basis mode**, you can select video encoding and streaming in the viewpoint of video quality rather than bandwidth occupied. In this case, Bandwidth can be traded off to meet your video quality requirement under some network environments. (This mode is same as VBR mode in Advanced setting)
In **Bandwidth Basis mode**, you can select video encoding and streaming in the viewpoint of Bandwidth rather than video quality displayed. In this case, quality can be traded off to meet your bandwidth requirement under some network environments. (This mode is same as CBR mode in Advanced setting)
- Quality This setting is available only Quality Basis mode. The quality level can be selected from 5 grades “A”, “AA”, “AAA”, “AAAA”, “AAAAA”. It is noted that if you select Advanced Setting mode, you can define more grades (1 ~ 31).
- Bit Rate This setting is available only Bandwidth Basis mode. The bandwidth can be select one of 10 values between 30Kbps to 5100Kbps. It is noted that you can select from more than 170 steps in Advanced Setting.

Control Tool

Serial Port Protocol

Com1 Devices : [PTZ Control]

Com2 Devices : [Auxiliary Device]

Com1 Port Setup

PTZ Camera ID : [0 ~ 255]

Baud Rate : Data Bit :

Stop Bit : Parity :

Use Advanced Communication Setting

Camera Pan Direction

Direction : CCW CW

- Com1 For PTZ devices only. Select the PTZ control protocol.
- Com2 For Digital I/O module only. Select the module type.
- PTZ Camera ID For PTZ Device Address Setup. 0 ~ 255 are available.
- Baudrate, Data Bit This setup is only for the non-standard protocols. Sometimes, PTZ protocol of
Stop Bit, Parity some manufacturers requires communication settings different from those of the
Bit standard. To meet these special settings, click the check box of “**Use Advanced
Communication Setting**” bellow.
- Use Advanced Used to adjust Baud Rate, Data Bit, Stop Bit, Parity Bit of the selected protocol.
Communication Do not use if the select protocol is standard.
Setting
- Camera Pan When the direction of camera pan is increasing clockwise, choose “CW.
Direction Other wise, choose “CCW”.

Motion Detection Tool

Detection Action

Alert Sound

Out 1 Out 2 Out 3 Out 4

- Detection Action** Set up the reaction of IP Camera when motion detected.
- Alert Sound : Audio Out through the Audio out jack of IP Camera.
- Out 1 ~ 4 : Select output relay numbers in the Sensor Alarm I/O module connected with IP Camera.

TCP/IP Tool

Network Type	
<input checked="" type="radio"/>	Static
<input type="radio"/>	Dynamic
<input type="radio"/>	PPPoE
IP Setup	
IP Address :	<input type="text" value="192.168.1.80"/>
Subnet Mask :	<input type="text" value="255.255.255.0"/>
Default Gateway :	<input type="text" value="192.168.1.1"/>
Preferred DNS Server :	<input type="text" value="168.126.63.1"/>
Web Server Port :	<input type="text" value="80"/> [Default : 80 Available Range : 1025 ~ 30000]
Control Server Port :	<input type="text" value="7777"/> [Default : 7777 Available Range : 1025 ~ 30000]
Video Server Port :	<input type="text" value="7778"/> [Default : 7778 Available Range : 1025 ~ 30000]
Audio Transmit Server Port :	<input type="text" value="7779"/> [Default : 7779 Available Range : 1025 ~ 30000]
Audio Receive Server Port :	<input type="text" value="7780"/> [Default : 7780 Available Range : 1025 ~ 30000]

- | | |
|---|--|
| <input type="checkbox"/> Network Type | Select a Static or Dynamic address scheme that is used by the Internet Service Provider (not the addressing scheme used by a personal router). |
| <input type="checkbox"/> Internet Address | Input a value to assign an IP address to the IP CAMERA. |
| <input type="checkbox"/> Subnet Mask | Input a value to assign a subnet mask to the IP CAMERA. |
| <input type="checkbox"/> Default Gateway | Input the IP address of the default gateway. |
| <input type="checkbox"/> Primary DNS Server | Input the IP address of an ISP's DNS server. |
| <input type="checkbox"/> Web Server Port | Assign a TCP port number to assign a Web Interface port number to the IP CAMERA. This port is used for transmitting ActiveX program to web browser based viewer. |
| <input type="checkbox"/> Video Server Port | Assign a TCP port number to assign a Video Server port number to the IP CAMERA. |
| <input type="checkbox"/> Control Server Port | Assign a port number for control server. This port is used for camera control. |
| <input type="checkbox"/> Audio Transmit Server Port | Assign Audio data send server port number. |
| <input type="checkbox"/> Audio Receive Server Port | Assign Audio data receive server port number. |

DDNS Tool

DDNS Setup

Use DDNS

Primary DDNS Address :

Secondary DDNS Provider :

Host Name :

User Name :

User Password :

- Use DDNS If you check this box, **DDNS** updating is enabled. (primary and secondary)
- Primary DDNS Address Assign DDNS address. (default. **www.net4c.net**)
- Secondary DDNS Provider Select DDNS Provider. Currently, **DtDNS** is available.
- Host Name Type the host name registered in DDNS service (i.e. Host name in **DtDNS**)
- User Name Type user name used for DDNS service (i.e. User Name(ID) registered in **DtDNS**)

SMTP Tool

This function is used to email the specified email recipient and notify that individual of the IP address / web port number used to access the IP CAMERA. This email function is only activates on power-on reset time of IP CAMERA.

E.Mail Server

SMTP Server :

User Name :

User Password :

Setting : Send E-Mail box SMTP Requires authentication

E.Mail Address

From :

To :

- SMTP Server Enter an SMTP server to send email.
- User Name Input user name used for SMTP authentication to access the mail server.
- User Password Input the password used for SMTP authentication to access the mail server.
- Send E-Mail box If this check box is set to on, email function is enabled.
- SMTP requires auth. Check this box if the mail server requires SMTP authentication.
- From Input the email address of sender. The email address should be admitted to the SMPT sever.
- To Input the email address of receiver.

Date & Time Tool

The screenshot displays the 'Date & Time Tool' interface. It is divided into two main sections: 'Current camera date & time' and 'New camera date & time'. The 'Current camera date & time' section shows the current date as 11/01/2007 and the current time as 14:41:52. The 'New camera date & time' section offers three options for setting the date and time: 'Synchronize with my computer time', 'Set up manually', and 'Synchronize with time server'. The 'Synchronize with time server' option is selected. Under this option, the 'Time Zone' is set to '(GMT+09:00) Seoul, Tokyo' and the 'Time Server' is set to 'time.bora.net'. The 'Set up manually' option includes input fields for 'Date' (format [mm/dd/yyyy]) and 'Time' (format [hh:mm:ss]).

- Current Date/Time** It shows the current Date/Time setting of IP CAMERA.
- New Date/Time** Select the method of Date/Time setting. Date/Time can be set by local computer or time server or manual.

Users Tool

The screenshot shows the 'Users Tool' interface. It is divided into two main sections: 'System Manger' and 'General Users'.

System Manger: A table with columns: ID, Password, Verify, and Auto Login. The first row contains 'master', a masked password, a masked verification password, and an unchecked 'Auto Login' checkbox.

General Users: A table with columns: NO, ID, Authority, and Auto Login. It contains two rows:

NO	ID	Authority	Auto Login
1	guest	Viewer	
2	admin	Operator	U

Below the 'General Users' table is a form for adding a new user with columns: ID, Password, Verify, Authority (a dropdown menu), and Auto Login (checkbox). At the bottom right are buttons for 'Add', 'Edit', 'Delete', and 'Clear'.

- ❑ **System Manager** Specify an ID and Password for the System Administrator of the IP CAMERA. The System Administrator will have all rights and privileges to manage the system.
- ❑ **General Manager** Give access privileges up to 40 separate user accounts.

① Only 40 users may be logged on simultaneously, regardless of what user identities are logged on.
- ❑ **To add a user** Input an ID and Password, verify Password, select Authority, click ADD.
- ❑ **To edit a user** Select the user from the list of users, make necessary changes, click EDIT.
- ❑ **To delete a user** Select the user from the list of users, click DELETE.
- ❑ **Operator Authority** This privilege gives the user rights to operate the PTZ controls.
- ❑ **Viewer Authority** This privilege gives the user rights to operate only the icons associated with digital 2× zoom, stretch, OSD, and video capture. These options only affect that current user. The changes made there will have no effect on the other users logged on.
- ❑ **Auto Login** Only one user/administrator may have Auto Login enabled. When the video server is accessed, it will bypass the login screen and logon automatically.

Firmware Update Tool

Version

Firmware Version : SD-1.2.0-E

Notice

1. Closing browser or Clicking menu bars during update may cause critical problems.
2. Network Camera reboots automatically after update.

Update Status

Firmware Filename :

- ❑ Version Shows the current firmware version.
- ❑ How to upgrade Click [Browse...] button and select the latest version of the firmware. Its file name should be *****.bin**.

Click [Update Start] button. It will start upgrading its firmware. IP CAMERA will re-boot automatically as soon as it finish the upgrade process.

- ① **After upgrade, its system configuration should be set to factory default.**
- ① **Connect IP CAMERA to a computer directly with a crossover Ethernet cable.**
Do not use internet to upgrade. There may be unexpected disconnection on internet during upgrade and it may cause fatal system damage.
- ① **Do not close browser or click menu during update. It may cause fatal system damage.**

Default Set Tool

Reset its system configuration to the factory defaults.

Note) After initializing, all information should be deleted. Please re-consider before initializing.



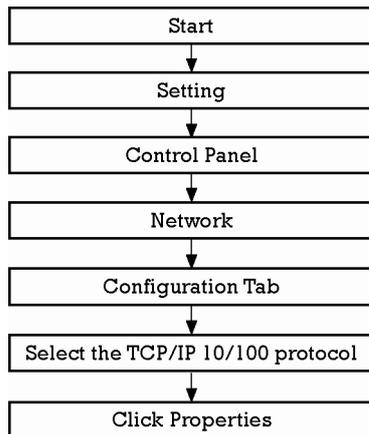
Rebooting Tool

Re-boots IP CAMERA.



A : Current TCP/IP Settings

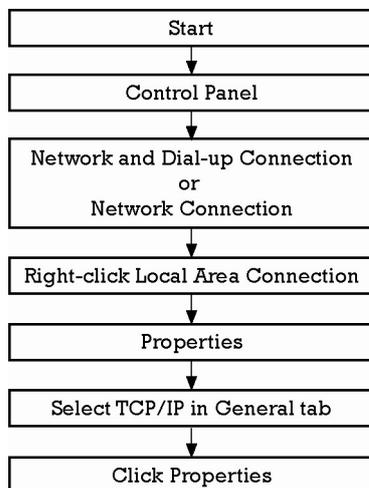
❑ For Windows 98 / ME Users



- Note the settings under the IP Address, DNS Configuration, and Gateway tabs

① If your IP settings are obtained automatically, you could use the MS-DOS prompt (or Command Prompt) to determine your IP address. For information on how to do this, please read the FAQ.

❑ For Windows 2000 or Windows XP

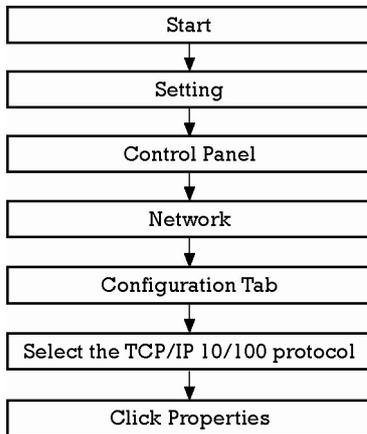


- Under the “General” tab of the TCP/IP Properties you will see your IP address information.

① If your IP settings are obtained automatically, you could use the MS-DOS prompt (or Command Prompt) to determine your IP address. For information on how to do this, please read the FAQ.

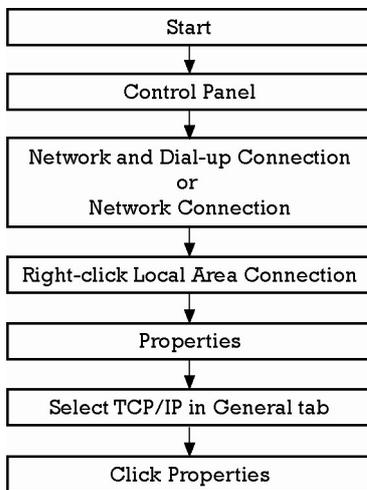
B : Changing your computer's IP address and subnet mask

❑ For Windows 98 / ME Users



- Select 'Use the following IP address' and change the IP address and Subnet Mask.

❑ For Windows 2000 or Windows XP



- Select 'Use the following IP address'

C : Port Forwarding

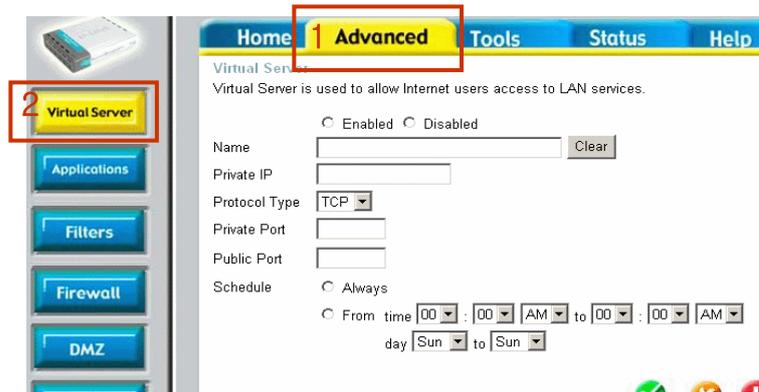
After assigning the IP CAMERA a web server port and video server port you must use Port Forwarding (for cases A, B)

Please consult your router's user guide on how to correctly configure Port Forwarding.

For your convenience, we have provided two example configurations.

❑ For D-Link DI-604 broadband routers:

- ① Open a web browser and type `http://192.168.0.1` into your Address bar. (the default IP address to access the router)
- ② You will have to supply your User Name and Password to log onto the router. Default from factory. (User Name: admin Password: [leave blank])
- ③ Select the advance tab and click "Virtual Server" menu.



- ④ Click "Apply" button after inputting proper values. The example is as below

Enabled Disabled

Name:

Private IP:

Protocol Type:

Private Port:

Public Port:

Schedule: Always

From time : AM to : AM
 day to

- Enabled / Disabled Select “Enabled”.
- Name Input IVS name.
- Private IP Input IVS address.
- Protocol Type Select “TCP” .
- Private Port / Public Port Input IVS Web Server Port.
- Schedule Select “Always”

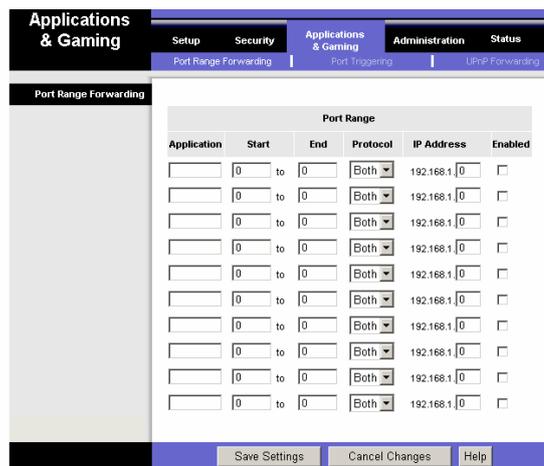
- ⑤ If 'Setting Saved' shows, click [Continue] button.
- ⑥ With the same method as above, add Video Server Port.
- ⑦ The Web Server Port, Video Server Port and 2 Audio Ports shows in "Virtual Server List" as below.

Virtual Servers List

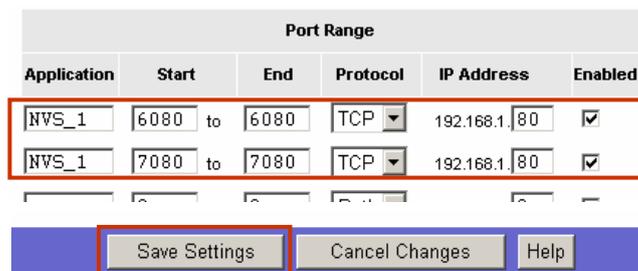
	Name	Private IP	Protocol	Schedule	
<input checked="" type="checkbox"/>	NVS_2	192.168.0.80	TCP 8080/8080	always	 
<input checked="" type="checkbox"/>	NVS_2	192.168.0.80	TCP 7777/7777	always	 
<input checked="" type="checkbox"/>	NVS_2	192.168.0.80	TCP 7778/7778	always	 
<input checked="" type="checkbox"/>	NVS_2	192.168.0.80	TCP 7779/7779	always	 
<input checked="" type="checkbox"/>	NVS_2	192.168.0.80	TCP 7780/7780	always	 

❑ For Linksys BEFSR41 Cable/DSL routers:

- ① Open a web browser and type http://192.168.1.1 into your Address bar (the default IP address to access the router)
- ② You will have to supply your User Name and Password to log onto the router. Default from factory (User Name:[leave blank] Password: admin)
- ③ Select Applications & Gaming from the menu bar.



- ④ Input port numbers in "Port Range" as below and click [Save Setting] button. Both of Web Server Port and Video Server Port should be added. The example is as below.



- Application Input IP CAMERA name.
- Start / End Input IP CAMERA Web Server Port and Video Server Port.
Start should be same as End.
Both of Web Server Port and Video Server Port should be added.
- Protocol Select "TCP" in Protocol option.
- IP Address Input IP CAMERA IP Address.
- Enabled Check the square.

❑ For Netgear RP614 routers

- ① Input <http://192.168.0.1> in address bar of web browser. <http://192.168.0.1> is the default IP address.
- ② If it asks ID and password, input admin as ID and password as password.
- ③ Click "Port Forwarding" in "Advanced".
- ④ Click "Add Custom Service" button in Port Forwarding page.

Port Forwarding

Service Name: SERVICES | Server IP Address: 192.168.0.1 | Add

#	Enable	Service Name	Start Port	End Port	Server IP Address
	<input type="checkbox"/>				

Add Custom Service | Edit Service | Delete Service

Apply | Cancel

- ⑤ Input proper values in "Ports - Custom Services" page as below.

Ports - Custom Services

Enable

Service Name:

Starting Port: (1~65535)

Ending Port: (1~65535)

Server IP Address: 192.168.0.1

Add | Cancel

- Enable Check it.
- Service Name Input IP CAMERA name.
- Starting/Ending Port Input IP CAMERA Web Server port. Starting Port should be same as Ending Port.
- Server IP Address Input IP CAMERA IP Address.

- ⑥ Click "Add" button.
- ⑦ With the same method as above, add Video Server Port.
- ⑧ Click "Apply" button to finish Port Forwarding.

❑ I can't connect!!

In the case of a connection failure.

Modem Reboot > Modem Reboot Finished > Router Reboot > Router Reboot Finished > IP CAMERA Reboot > IP CAMERA Reboot Finish > Verify DDNS and IP CAMERA connection, if applicable.

❑ How do I choose a unique IP address that matches my network?

For your home or small office, ensure that all devices on your network are running. PING an IP address that you plan to assign to the IP CAMERA. If you receive a "Request timed out", then you may use that IP address. To ensure the IP address that you will assign the IP CAMERA matches your network, review your "Current TCP/IP Settings" that you had recorded earlier. See some examples below:

- If your "IP Address" entry in "Current TCP/IP Settings" was 192.168.0.y, and your "Subnet Mask" was 255.255.255.0 then use 192.168.0.x for your IP CAMERA's IP Address ("x" meaning any number between 2-254 that you wish, as long as it passes the "PING" test).
- If your "IP Address" entry is not a 192.168.z.y address with a "Subnet Mask" of 255.255.255.0 then please contact our Support Center.
- If your "IP Address" entry is not a 192.168.z.y address, please contact our Support Center.

❑ How do I open an MS-DOS or Command Prompt?

- Windows 98 / ME Users : Start → Programs → Accessories → MS-DOS prompt
- Windows 2000 / XP Users : Start → (All) Programs → Accessories → Command Prompt

❑ How do I "PING" an IP address?

- ① Open an MS-DOS (or Command) prompt
- ② At the prompt type - "ping xxx.xxx.xxx.xxx" (without the quotes and replace the "x"s with an IP address)
- ③ Press Enter

❑ How do I enable or check ActiveX on my browser

Open Internet Explorer → Tools on the menu bar → Internet Options → Security Tab → Custom Level → Scroll down and verify that you are prompted or have enabled ActiveX controls and plug-ins to be downloaded and executed. → click OK → restart browser

❑ How do I find out my IP address information if my settings were automatically detected?

- Windows 98 / ME Users
 - ① Open an MS-DOS Prompt
 - ② At the prompt type: “winipcfg” (without the quotation marks)
 - ③ Use the drop down list to select your 10/100 Ethernet Adapter (not a PPP adapter)
 - ④ Now you will see your IP Address, Subnet Mask, and Default Gateway information
 - ⑤ For DNS information contact your Internet Service Provider
- Windows 2000 / XP Users
 - ① Open a Command Prompt
 - ② At the prompt type - “ipconfig /all” (without the quotes)
 - ③ Near the end of the information supplied, should be your current IP address, subnet mask, default gateway and DNS servers

❑ How do I choose a private IP address:

Assign your IP CAMERA a private IP address that matches your current network. Below lists the ranges for private addresses:

- Private Class A address space : 192.168.0.0 - 192.168.255.255
- Private Class B address space : 172.16.0.0 - 172.31.255.255
- Private Class C address space : 10.0.0.0 - 10.255.255.255

❑ My POWER light is not on?

Power is not being supplied to the unit. Please use the power supply shipped with the unit and verify that a power source is active from the attached power outlet used to connect the adapter. You can test this by plugging in any other electrical device and verify its operation. After using the power supply shipped with the product, checking the power source, and reinserting the power connector into the IP CAMERA, please call our Support Center. The power supply may be defective.

❑ My ACTIVE light is not flashing?

Verify the power supply to the unit. Power off the unit and back on again, wait 1 minute, if the ACTIVE light still does not begin to flash, you will have to set the unit to its factory default (THIS WILL DELETE ANY CONFIGURATION AND SET THE UNIT TO THE FACTORY DEFAULTS). Power on the unit and insert the end of a paper clip into the small recessed opening on the back of the unit. Use the clip to press the button located within that opening.

❑ **My LINK light is not flashing or solid?**

Verify the cable connection. 99% of the time the cable's connection to the unit is causing this problem. Try using a different network cable or crossover cable (for PC connection only). Try reinserting the cable, if this still doesn't solve the problem call our Support Center.

❑ **I want to prevent users from viewing my camera.**

- ① Go into Administration Tools of the IP CAMERA.
- ② Click on Users
- ③ Delete the user or all users by deleting the ID and password associated with that user.

❑ **Can I record the video?**

Yes you can record, but you will need to purchase a separate software program to allow PC-based recording. This software is available by contacting your distributor or our Customer Service Center. The software named "I-PRO" will connect up to 16 separate 1-channel video servers for remote viewing, remote controlling, and remote recording without the loss of quality or size (up to 640×480 resolution).

❑ **I can access the video server on my LAN, but not from the Internet.**

Verify that your router (if applicable) has port forwarding properly configured. If accessing from our DDNS service, verify correct serial number. Firewall issues may prevent user access.

❑ **How do I reset the unit to factory defaults?**

On the underside of the unit you will find a recessed opening located near the top-left side of the label. Power ON the unit and use a paper clip to push the reset button within that opening. You should then see the ACTIVE light turn off and after a few seconds the ACTIVE light will begin to flash, signifying a successful reboot. If the ACTIVE light does not turn off after depressing the reset button, please try holding the button in for a few seconds and releasing. **YOU WILL LOSE ALL DATA THAT HAD BEEN ENTERED PREVIOUSLY AND THE IP CAMERA WILL BE SET TO ITS FACTORY RESETS.**

❑ Can I use the Network Video Server on my dial-up Internet connection?

No, we recommend a high-speed broadband connection of at least 128Kb/sec.

❑ I'm accessing my video server remotely over the Internet and the video stream is choppy, is this normal?

Yes. The frames per second received remotely are determined by your bandwidth capabilities both at your site where the IP CAMERA is installed and your remote location. The lower of the two sites will determine how fast your video stream is received. It is recommended to have at least a 256Kb/sec upstream connection from the site where the IP CAMERA is installed. Lower speeds will operate properly, but provide poor remote performance. The Faster the Internet connection at both ends, the faster the video stream.

Specifications

Model		CCD IP BOX CAMERA
Hardware	CPU	32Bit RISC Processor
	OS	Embedded Linux
Viewer		Web Browser based Monitoring
Network	Protocol	TCP/IP
	Interface	10/100 base-T Ethernet (RJ-45)
Compression	Algorithm	MPEG-4
	Rate	NTSC : 720 x 480 @ 30 Hz PAL : 720 x 576 @ 25 Hz
Camera	Image Device	1/3" Super HAD CCD
	TV System	NTSC/PAL
	Effective Pixel	771(H)×492(V)
	White Balance	AWC
	Backlight Compensation	On/Off Selectable
	Minimum Illumination	0.8 Lux × at F1.2(50 IRE, AGC On)
Lens	Mount	C/CS Mount
	AUTO Iris	Video/DC
Video	Size	720 x 480, 352 x 240
	Frame Rate	30 frame/sec (720 x 480)
Audio	Input / Output	Bidirectional
	Compression	ADPCM
Pan/Tilt Control	Communication	RS-485
	Protocol	Pelco-D etc.
Sensor I/O (option)	Communication	RS-485
	I/O	8 Inputs / 4 Outputs
Power		DC12V / 800mA
Operating Temperature		0°C ~ 40°C
Dimension		110(W) × 110(H) × 27(L) mm including bracket
Weight		Approx. 150g

* Specification & design are subject to change without notice

• Web Browser Viewer



• I-PRO Multi-Viewer

