Video Server

# SVR711

User's Manual
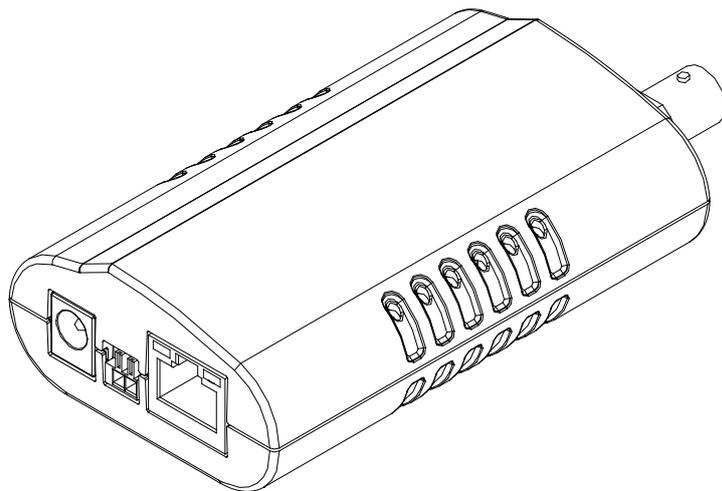
TABLE OF CONTENTS

1 Overview

This video encoder encodes and transmits real time images with at a resolution of 720 x 480 pixels (D1) with the latest compression technology of H.264 / MJPEG Dual Streaming.

It provides unique characteristics, such as proper utilization, analog to digital conversion, Pan/Tilt/Zoom device support, Micro SD card local storage, and many other features, for which adds extra value to your analog video encoder.
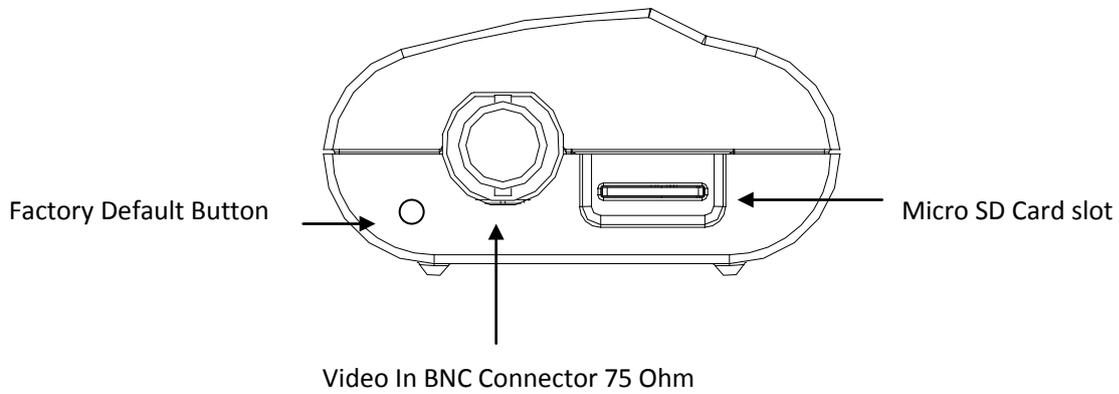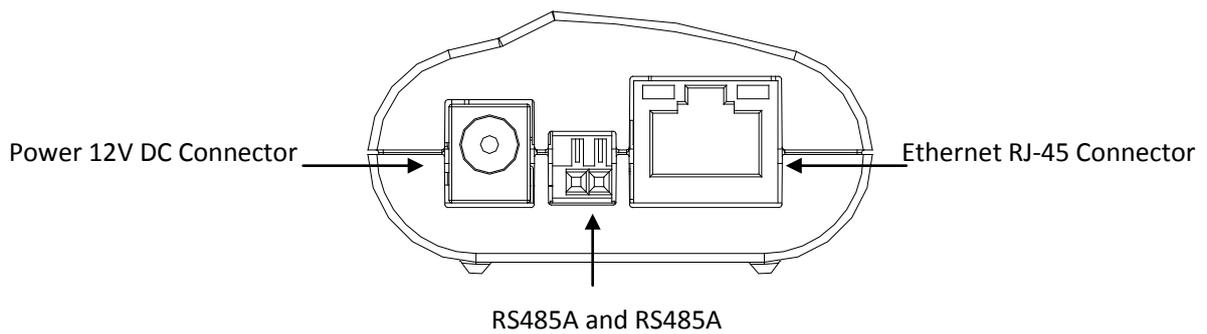
2 Product Description
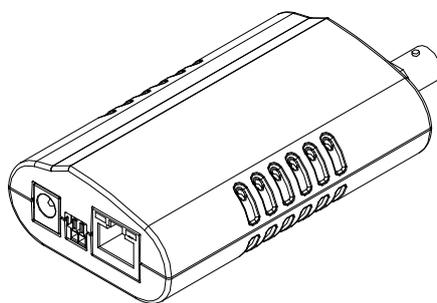
Key features

1. **H.264 High Profile / MJPEG Dual Compression:**

   Offers the user the option to select H.264 or MJPEG compression.

2. **Compact Size for Easy Installation and Maneuvering:**

   Small and light weighted, for areas that are limited in space.

3. **ONVIF ® Compliant for Easy Integration & Fast Deployment:**

   Web services built-in with international standard protocols, integration cycles have been reduced and deployment has become easier. (Contact your distributor for documentation).

4. **Multiple video profiles simultaneously for streaming:**

   Streams up to 6 independent streams with multiple profiles.

   Different configurations can be set according to the bandwidth that is available from the network.

5. **Micro SD Card Slot for Local Storage**

   For saving snapshots that can be later checked by the user, upon events occurred during motion detection.

6. **RS485 Connector for PTZ Support**

   Placing the Video encoder into a Pan Tilt device, control the Pan& Tilt device smoothly.

7. **Power-over-Ethernet IEEE 802.3 af for simplified connection (Optional)**

   Make installations simple with connecting only one cable without additional powering sources.

2.1 Hardware Description

Front Panel View

Factory Default Button

Micro SD Card slot

Video In BNC Connector 75 Ohm

Back Panel View

Power 12V DC Connector

Ethernet RJ-45 Connector

RS485A and RS485A

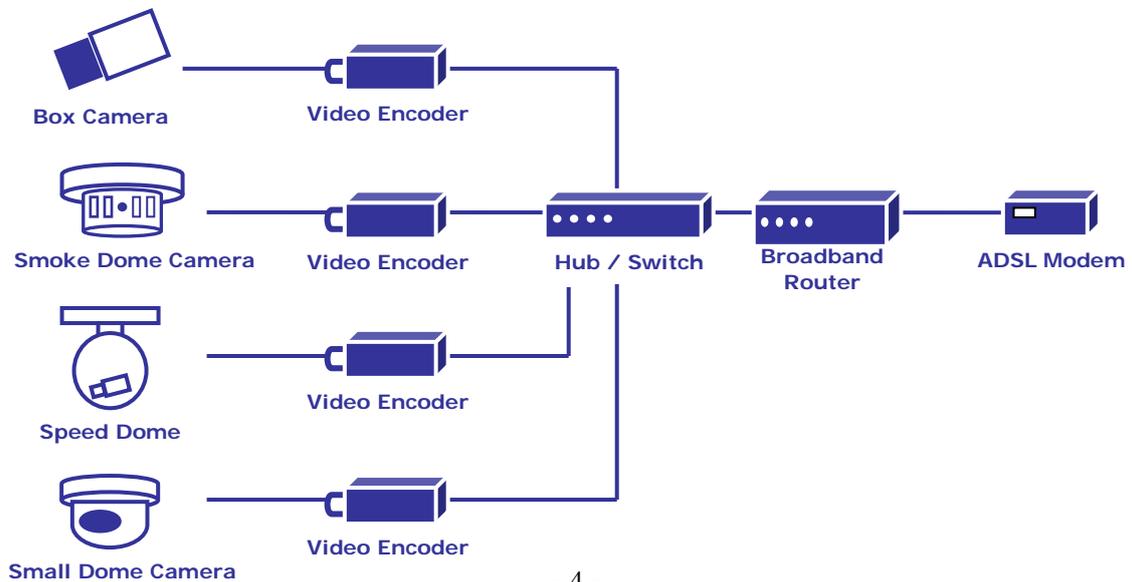## 2.2 Video Encoder usage methods

This video encoder can be connected to analog cameras such as Box Cameras, Smoke Domes, Speed Dome (mostly known as Pan/Tilt/Zoom Cameras) or Small Domes. Below a basic reference how it can be used.

Box Camera

Video Encoder

Smoke Dome Camera

Video Encoder

Hub / Switch

Broadband Router

ADSL Modem

Speed Dome

Video Encoder

Small Dome Camera

Video Encoder

3 Setting up the Video Encoder

3.1 Read Before Use

The use of surveillance devices may be prohibited by law in your country. The Video encoder is not only a high-performance analog-to-digital converter but can also be part of a flexible surveillance system. It is the user's responsibility to ensure that the operation of such devices is legal before installing this unit for its intended use.

It is important to first verify that all contents received are complete. Take note of the warnings in the Quick Installation Guide before the Video encoder is installed; then carefully read and follow the instructions in the Installation chapter to avoid damage due to faulty assembly and installation. This also ensures the product is used properly as intended. It is designed for various applications including video sharing, general security/surveillance, etc.

3.2 Hardware Installation Steps

After unpacking the package and identifying its parts, assemble the video encoder to run the device for the first time.

It is recommended set up the video encoder before installing it to the intended location.

The following instructions will consist of basic steps that will help you through the hardware preparation.

Other required devices before powering up the Video encoder:

1. Analog Camera
2. Personal Computer or Laptop; and
3. Network Hub or Switch and 2 (two) pieces of Ethernet Cable; or
4. 1(one) piece of Crossover Ethernet Cable

STEPS:

1. Plug the Video-Out connector from the analog camera to the Video-In Connector of the Video Encoder
2. Connect the Ethernet Plug to the Network Connector RJ-45 from the device
3. Plug the Power Jack to the Power Connector (For Video Encoders that are Power-over-Ethernet supported, the Power Adapter is not necessary). After the Power Connector is plugged in, the Network Video encoder will boot up.
4. Wait a few seconds for the Network Video encoder to startup
5. Refer to the section of "Using the Network Video encoder for the first time" in the next page
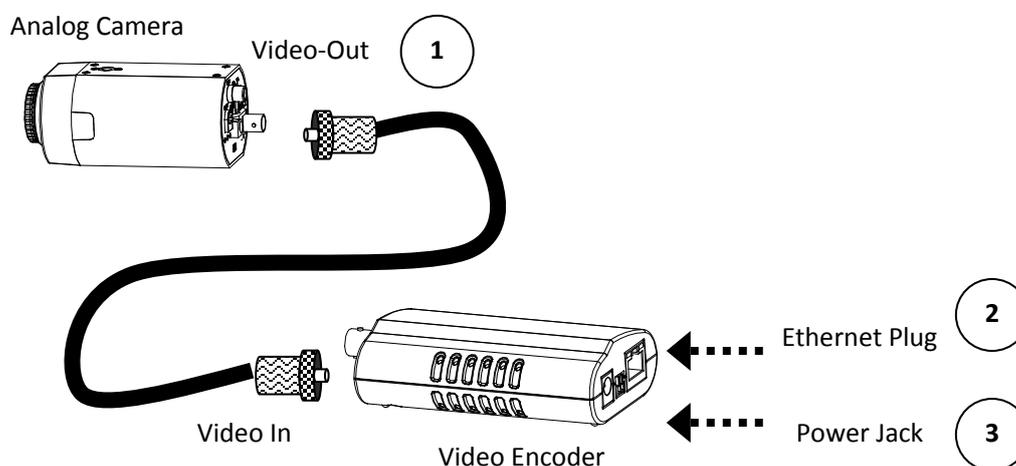
3.3 Using the Terminal Block

The video encoder comes with a RS485 connector that allows the attachment of Pan/Tilt/Zoom devices such as Analog Speed domes.
The RS485 connector supports Pelco D and P protocol

Pin 1	RS485A
Pin 2	RS485B

1   2

Pin 1 ~ 2: For connecting Pan Tilt and Zoom devices. The network camera can be placed with Pan / Tilt device to control the pan left/right, or tilt up/down. It may also be possible to use motorized zoom cameras, in order to zoom in/out at convenience.

3.4 Using the Micro SD Card

The network camera comes with a Micro SD card slot to allow users insert a Micro SD card to save snapshots and videos into it. Refer to **Chapter 5) Configuring the camera, Storage Settings and Event Settings**.

Note: the device does not support hot-swapping for Micro SD card. Please turn it off before you take the card out.

Note: this unit supports min 2GB and max 32GB Micro SD/SDHC card and Class 6 or higher for smooth operation.


Micro SD Card Slot
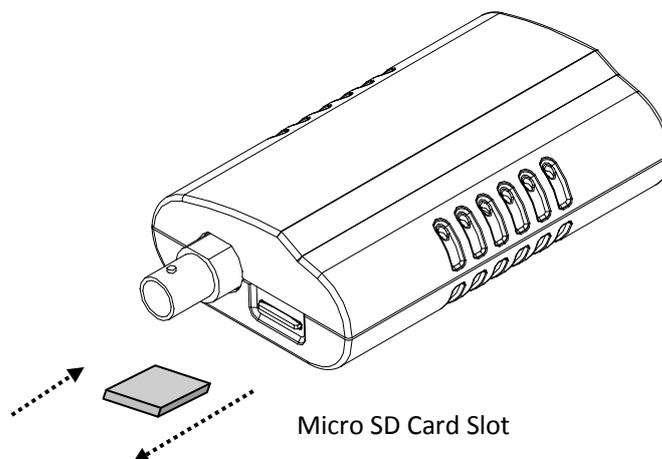
3.5 Power-over-Ethernet supported Video Encoders

The Video Encoder comes as an optional model which supports Power-over-Ethernet (PoE).

Using Power-over-Ethernet as power supplying mode, takes advantage of having a simple connection, with only one Ethernet Cable to act like Data and Power transmission. And it is not necessary to use any Power Adapter since the powering will be done directly through the Ethernet Connector.

Below a comparison between a Regular Ethernet connection and a connection using Video Encoder with built-in Power-over-Ethernet.

Note: For safety precautions, when using a PoE Video Encoder, ensure that the standard Power Connector has been Deleted before plugging the Ethernet cable (which is attached on the other end to a PoE Hub / Switch).
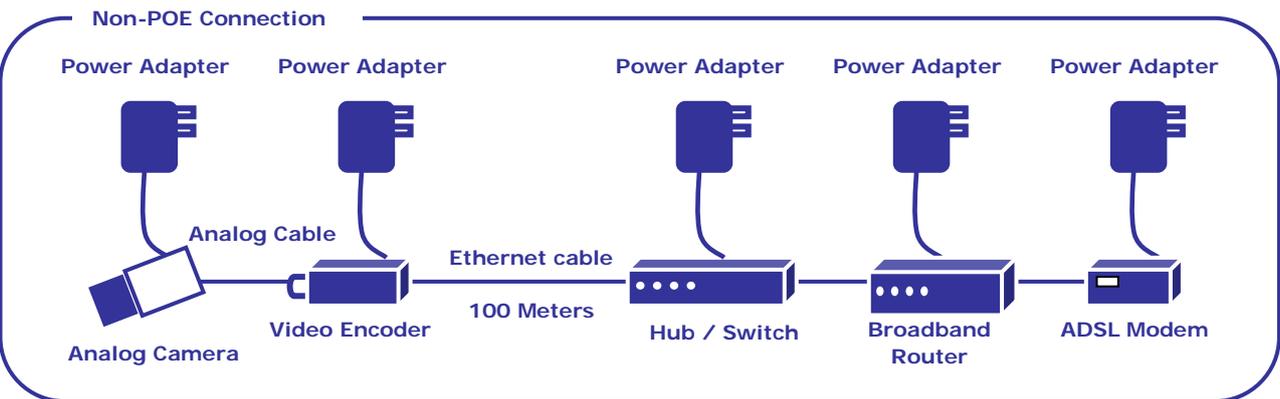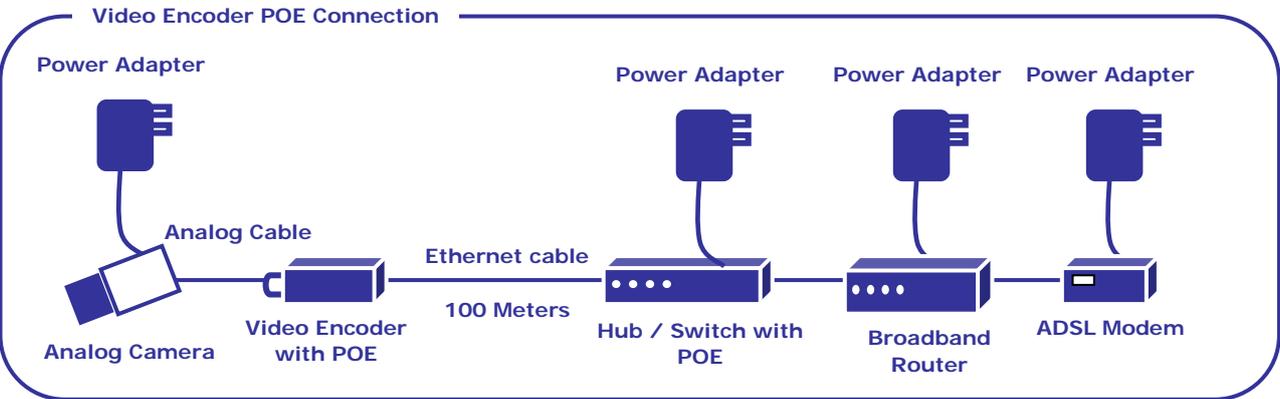
3.6 Using the Video encoder for the first time

The Video encoder is a network device and its use should be straightforward for those who have basic networking knowledge. Making the initial steps for setting up the video encoder will be based on a simple network connection.

Option 1

Connect the video encoder to a HUB / Switch which is connected to a PC

Option 2

Connect the video encoder directly to a PC with a crossover cable.

After the video encoder have its activity lights on, use the PC for setting up the IP Address of the Video encoder. Refer to the section of "**Accessing the Video encoder**" at the next page for detailed instructions.

Hints: Possible Network Configurations in your network infrastructure

1. Configuration 1

Internet Access: ADSL or Cable Modem

IP address: One real IP or one dynamic IP

Connection Type: Only the Network Video encoder connects to the internet

For fixed real IP, set up the IP into the Network video encoder. For dynamic IP, start PPPoE.

2. Configuration 2

Internet Access: ADSL or Cable Modem

IP address: More than one real IP or one dynamic IP

Connection Type: The Network Video encoder and PC connect to the internet

Device needed: Switch Hub

For fixed real IP, set up the IP into the Network video encoder and PC. For dynamic IP, start PPPoE.

3. Configuration 3

Internet Access: ADSL or Cable Modem

IP address: one real IP or one dynamic IP

Connection Type: The Network Video encoder and PC connect to the internet

Device needed: IP sharing such as Hub / Switch and a Router

Use virtual IP, set up port forwarding in IP sharing.

(Suggestion: Refer to your Network Administrator if necessary for more information)

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4   Accessing the Video encoder

Before getting access to the Network Camera from user's PC, it's necessary to properly configure its network setting. This camera uses 192.168.1.200 as the default IP address. If you would like to assign a new static IP address, please install "CAM7 Series Device Search" from the CD-ROM, and then use this program to do that.

4.1   Find Camera

1. Once installed on the PC, click on [**Start** Menu >> **All Programs** >> **Asoni** >> **Search Tooling** >> **Asoni CAM7 Series Device Search**] to open the software.
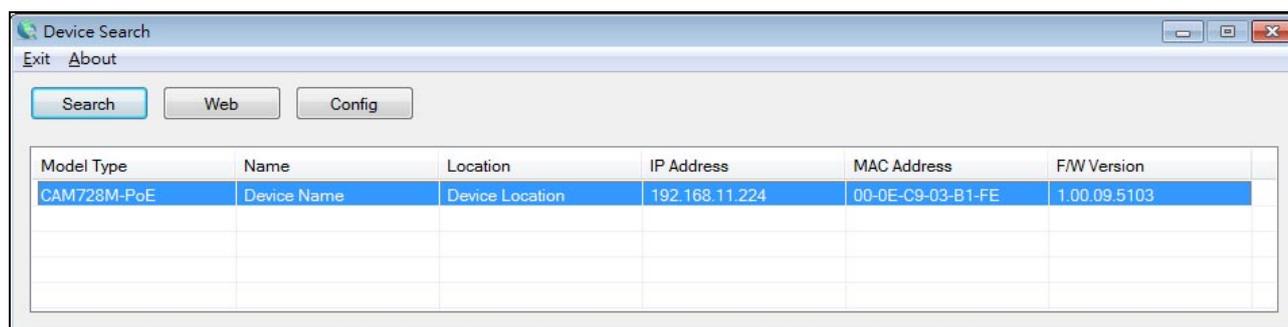
2. The software automatically (or by clicking on "**Search**" button) displays cameras on the network. Identify your camera by its MAC Address that is shown on the label of the camera.

3. Click on "**Web**" button or double-click on the identified camera item on the list to launch live viewing (it is assumed that the network cable you've connected to your camera has provided a set of useable IP address/subnet mask/Gateway), or click on "**Config**" button to configuring IP information.

4.2   Before Assigning an IP Address

Before assigning an IP address, make sure the Network Camera is powered on and correctly connected to the network.

Obtain a LAN IP address not yet used and its related configuration from your network administrator.

The following will be required:

      1. IP Address

      2. Subnet Mask

      3. Gateway

MAC Address: Each Network Camera has a unique Ethernet address (MAC address) shown on the label of the Network Camera.

<u>Hints:</u> **When assigning an IP Address**

User can find necessary IP information by checking the current IP information of user's host PC via Windows command "ipconfig":

- Click on Windows screen: the **Start** Menu >> **All Programs** >> **Accessories** >> **Command Prompt**.

- Type "**ipconfig**" at the command prompt to show the current IP information of user's host PC.

For example,

```
C:\ >ipconfig
Windows IP Configuration
Ethernet adapter Local Area Connections:
        Connection-specific DNS Suffix    . : king-tech.com
        IP Address. . . . . . . . . . . . : 192.168.1.102
        Subnet Mask . . . . . . . . . . . : 255.255.255.0
        Default Gateway . . . . . . . . . : 192.168.1.254
C:\ >
```

Then, use other IP address 192.168.1.xxx (1-253, except IP address of host PC 192.168.1.102), the same subnet mask 255.255.255.0 and default gateway 192.168.1.254 for the network camera.

4.3   Assigning the IP address to the network camera

Select a Network Camera and click on "**Setup**". Then, start to configure network settings, such as the following fields:

        IP Address / Subnet Mask / Gateway / DNS
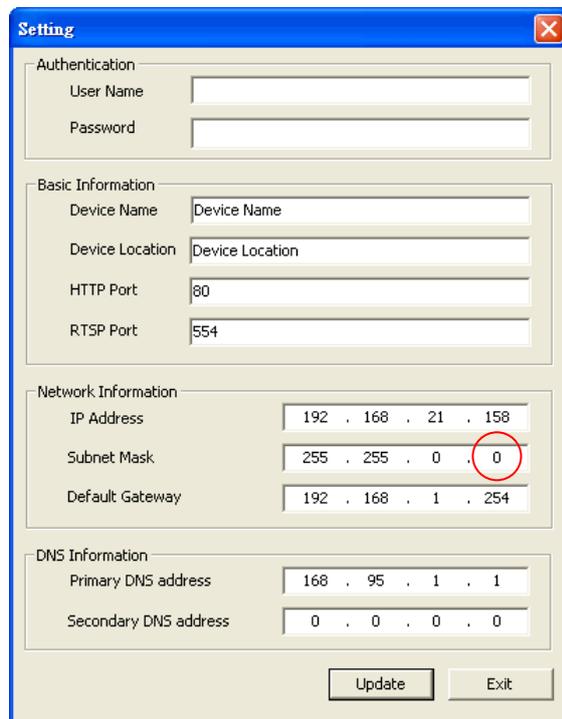
* Remember to input a different value for the last digits of IP address from the "ipconfig", ranging from 1 to 255.

Make sure you enter the same values for Subnet Mask and Default Gateway shown on your "ipconfig" screen.

Click on "**Update**" to apply the changes only by using administrator's privilege (default user/password = admin/admin).

To open the main page of the network camera, select your camera and click on "**Web**".

4.4 Access the camera from the browser

Start the IE browser, type the IP address of the network camera in the address field:

     http://<IP of camera>

If the "HTTP Port" has been changed from "80", type the URL as:

     http://<IP of camera>:<HTTP Port>

Once the Network Camera is accessed, the Network Camera will request a Username and Password. The default Username and Password is "admin" and "admin".


Note: If "anonymous login" (see 5.6.2) is enabled, the Live View page will be shown without restriction. Or please enter "admin/admin (default account/password)" to pass the authentication.

> **Hints: Changing the root password**
>
> To avoid security breaches, it is recommended changing the Username and Password once the device is set up to work. Refer to Chapter 5, Configuring the Camera, System Settings.

When the Network Camera is accessed via Internet Explorer, it will ask you to install the ActiveX component.
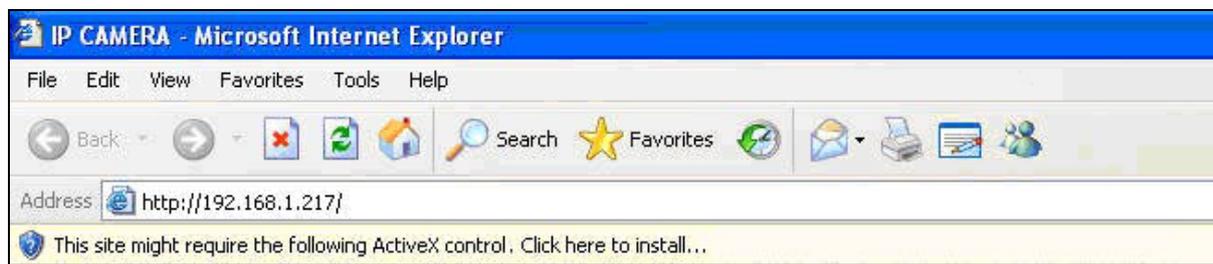
Note: during the webpage loading, you may be asked to allow the installation of Active X elements. Please allow it to proceed.

Once get accessed, follow the instructions in the manual for the camera operation.

If the ActiveX installation doesn't start automatically, please follow below procedures to change security level settings of your Internet Explorer browser.

Kindly note that if you didn't install ActiveX and you will not be able to see the Live view image. Please make sure to install it first.

To adjust the Security Options of Internet Explorer follow the below instructions:

Internet Explorer > Tools > Internet Options > Security Tab > Custom Level > Security Settings > Download unsigned ActiveX controls > Select "Enable" or Prompt.
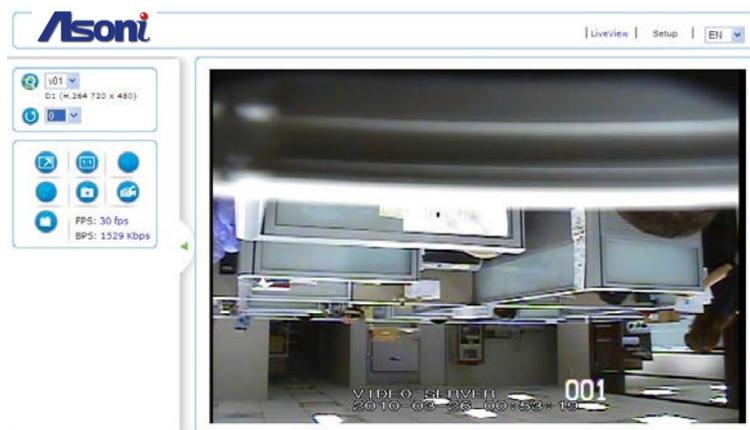
Internet Explorer > Tools > Internet Options > Security Tab > Custom Level > Initialize and script ActiveX controls not marked as safe > Select "Enable" or Prompt.
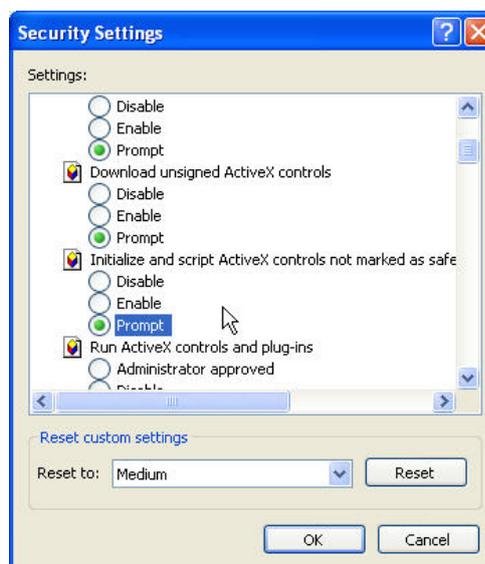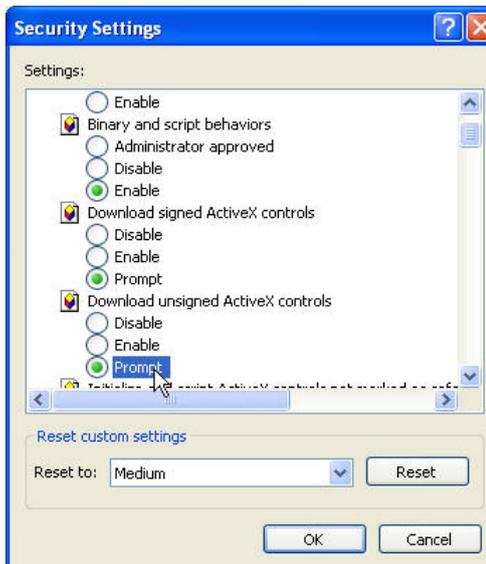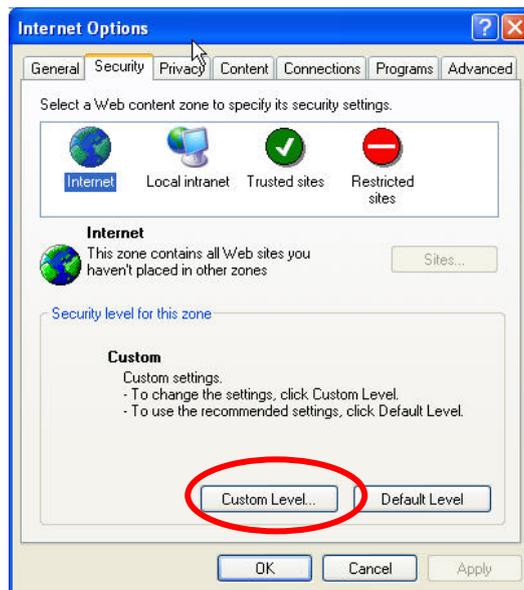
When popup the following dialogue box, click "Yes"
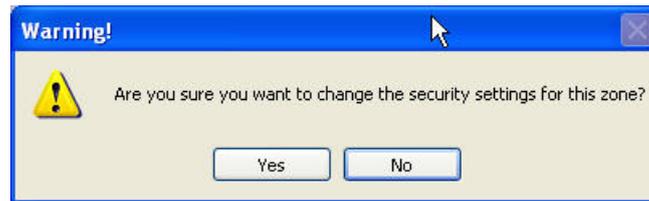
Then, the Live View page will be opened. Click on the "Setup" link of the Live View page to change the configurations of the video server.

Video Source:

The Stream Profile drop-down list allows you to select a customized or pre-programmed stream profile on the Live View page. Refer to Streaming Settings of this chapter for more references.
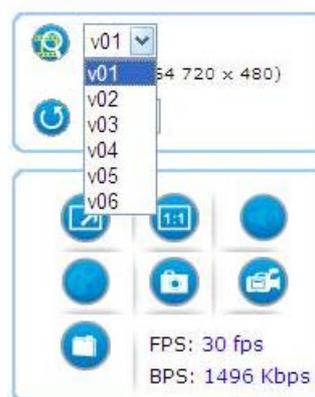
Rotation: allows the rotation of the video to be viewed in an angle of 0 (current), 90, 180 or 270 degrees at a clockwise direction.

Full Screen: Maximizes the video to be displayed at a full screen size.

Real Size: Displays the real size of the video; (the initial video size will be adjusted to fit your monitor, while the real size could be bigger than it is being shown in the monitor).

Listen: allows the user from the PC listen the location where the camera is set.

Talk: allows the user from the PC talk remotely to the camera, for which the speaker will emit the voice.

Manual Record: Once pressed, it records and saves the currently viewed video the indicated path below. To stop the recording, press back the Recording button.

Snapshot: once clicked, it will take a snapshot and save it to the indicated path below.

Path Button: Sets the location where the video and snapshot are saved to. To change the location, click on the button and select the desired path.

FPS   **Frames per Seconds:** Indicates the quantity of frames displayed in the current view.

BPS   **Bit per second:** Indicates the bandwidth allocated for the streaming of the live video.

Note: The "Listen" and "Talk" functions for the Video Encoder products are programmed to be disabled

Click on the "**Setup**" link of the Live View page to change the configurations of the network camera. The Network Camera will request a Username and Password. The default Username and Password is "admin" and "admin".

4.5 iPhone Camera Viewer

The network camera provides "iPhone Camera Viewer" for user to monitor via iPhone.

Once LAN or internet settings are completed on iPhone, as below, user can monitor via iPhone web browser by just entering the IP address (or domain name) of the network camera.

1). Go to "Settings" to complete network settings, such as WiFi, network (DCHP, BootP, or Static IP).

2). Go to "Safari" and enter the IP address (or domain name) of the network camera, which is followed by an authentication procedure (user/password = admin/admin). Then, Live video page "iPhone Camera Viewer" can be seen.

5 Configuring the camera

Video	Main features and advanced configurations of video streaming.
Camera	Image adjustments such as brightness, white balance and more.
Storage	Displays information of the files located in the Micro SD card (if any).
Event	Smart features for event settings to send emails, snapshots and more.
Network	Network configuration for the network camera and Event features.
System	Firmware version information and upgrade, User access management, and system information.

5.1 Video Settings

The video settings page contains setting for the streaming

5.1.1 General Settings

Video General Setting:

The Network Camera has in total 6 independent and simultaneous streams which can be used.

Your requirements and the properties of your network will determine the type you use.

The Live View page in the network camera provides access to a list of streams which are set in this page.

They can either be H.264 or Motion JPEG video streams that are configured according to each user's need.

Other applications and clients can also access these video streams/images directly, without going via the

Live View page.

Stream Types: Stream 1, 3, 5 and 7: H.264

Stream 2, 4, 6 and 8: MJPEG

URL ID: Sets the name for the streaming; input an appropriate name to indicate the stream type

which is being used.

Video Mode: CBR：256 Kbps ~ 2Mbps – Increase CBR to increase the picture quality; or vice versa

VBR：The network camera will adjust itself automatically to fit the best picture quality

through the bandwidth provided by the network. The balance between VBR and network

bandwidth will affect picture quality.

Quality Level: There are three levels to adjust: Best, Good and Standard

The higher the quality is, the more bandwidth it will use for streaming the video.

Resolution: You can set up a different video resolution for different viewing devices.

Note that a larger frame size takes up more bandwidth.

GOP: GOP stands for "Group of Pictures". The GOP is a group of successive pictures

within a coded video stream.

Frame Rate: This limits the maximum refresh frame rate per second. Set the frame rate higher for

smoother video quality.

5.1.2 Advanced Settings
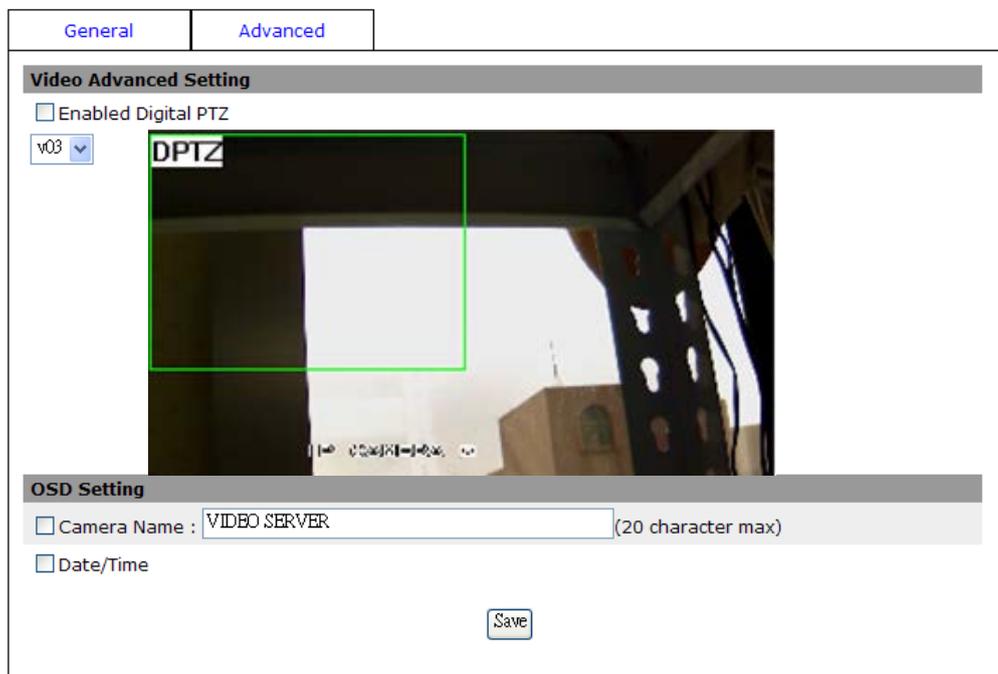
Digital PTZ: The Digital PTZ feature allows you pan, tilt and zoom electronically around the image without having moving parts at the device. Once enabled, it will display a frame which will let you slide it through different areas and automatically zoom the area being focused on, to have a bigger and more detailed image for your viewing.

The streams for using Digital PTZ are streams 3/4. Stream 3&4 will be enabled respectively when choosing v03. The naming of the streams by default is v03/04. Such naming can be changed in this same section of Video, going to the page of General settings.
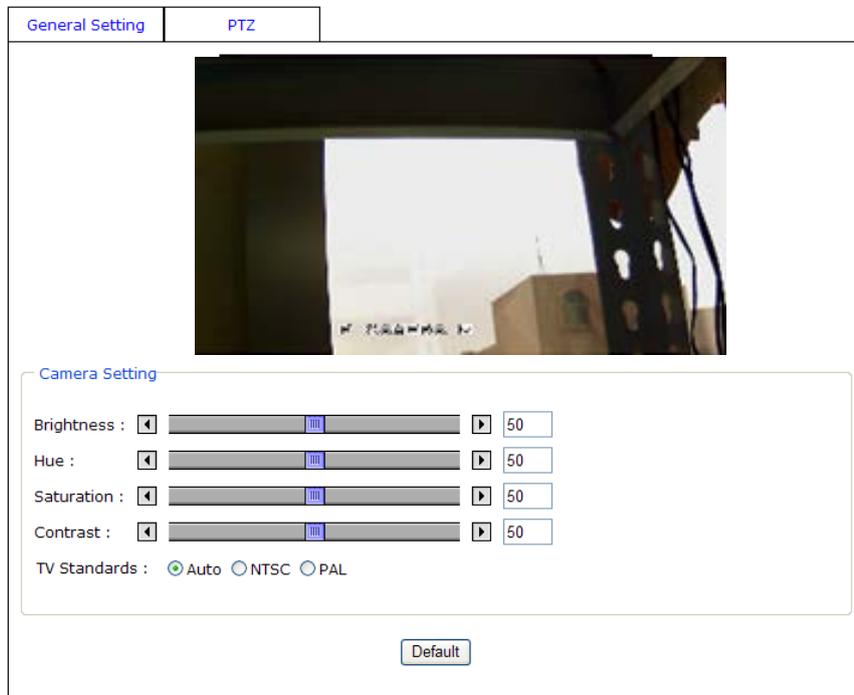
OSD Setting:

Camera Name: To display the OSD, type a text on the box with a maximum of 20 characters.

Date / Time: Displays the date and time on the video which is streamed from the Network Camera.

Save: Once the options have been selected, click on Save to make the changes permanent for the device.

5.2   Camera Settings

5.2.1 Camera General Settings

Brightness: The image brightness can be adjusted in the range 0-100, where a higher value produces a brighter image.

Hue: The image hue can be adjusted in the range 0-100, where a higher value produces more stimulus on the image.

Saturation: The image saturation can be adjusted in the range 0-100, where a higher value produces more neutral image.

Contrast: The image contrast can be adjusted in the range 0-100, where a higher value produces more difference in brightness between adjacent areas.

TV Standards

Auto: Select for system to automatically detect input video signal.

NTSC/PAL: Select for system to assign input video signal "NTSC" or "PAL".

<u>**Note:**</u>

1. When configuring "NTSC" or "PAL" as input video signal, be sure that the input signal matches the configuration to prevent from any problem.

2. If any wrong connection, just Delete the connection and re-confgure on the GUI.

5.2.2 PTZ Settings

Enable PTZ   To enable PTZ control on the connected analog camera. Once the video encoder is appropriately configured, the Live View page will display the control panel for the installed PTZ device.

Protocol: Select one from the list of protocols, such as Pelco D, Pelco P, Li-Lin, and Dynacolor.

ID: Select ID of the analog camera that the video encoder intends to control.

Speed: Select the PTZ speed (1 – 10).

Baud rate / Data bit / Stop bit / Parity / Flow control: Depending on protocol used, the values are assigned accordingly.

5.3 Storage Settings

5.3.1 Disk Information

Disk Information	
Total Size :	0 Mbytes
Free Size :	0 Mbytes
Used Size :	0 Mbytes
Disk Status :	no SD card

Displays information on the Micro SD Card inserted in the network camera that the user is working with, which will be useful for saving live videos and snapshots, lately used in the built-in live recording Schedule feature of this same section.

Below, a graphic representation of the page when a disk is inserted, with files store inside.

Disk Information	File List
Total Size :	1872 Mbytes
Free Size :	1872 Mbytes
Used Size :	0 Mbytes
Disk Status :	Ready
Disk Format :	Format
Record Format :	mp4 ⦿ file ○ (mp4: for download only; file: for play-online only)
Record Stream :	v01 (D1) ▼

Click on "Format" to format the inserted Micro SD card. Reminder for first time users, please do it first before you try to read or write into your SD card or update/back up your data.

Record Format:

Mp4   select to make .mp4 file for playing after download.

File   select to make file for playing online.

Warning: when removing the SD card out of the slot, remember to disable the event recording first.

5.3.2 File list

Displays the list of files which are stored in the Micro SD Card. User can find the needed files by configuring the duration (between **Start** time and **End** time) and clicking on "**Search**".
A checkbox is shown to allow the deletion of the file if necessary.

The network camera supports 2 ways to play the recorded video files:

*.file   click on the file to play the record video file online. There will be a pop-out window, as below, playing the recorded video.
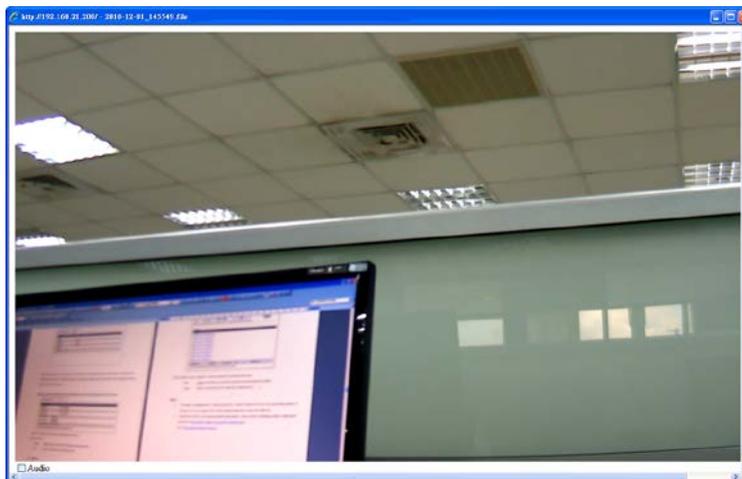
*.mp4:   click on the .mp4 file to download.

The .mp4 file is encoded with H.264. The used media player on the host PC has to support the H.264-encoded video file to play the video file.

<u>Note</u>:

There are some recommended media players, as below, that support H.264-encoded video file. Please refer to following webs to download and install.

QuickTime: http://www.apple.com/quicktime/download/

VLC: http://www.videolan.org/vlc/

KMPlayer: http://kmplayer.en.softonic.com/

5.3.3 Event Configuration

Event Type List

Add: In order to turn on the capability of setting an Event, go to the Event Configuration page and click on Add to see the available options. *Note: the maximum number of events are limited to 10 (ten).*

Delete: In order to Delete any existing event, click on the name of the Event and click on Delete.

Event Type Setup

Name: Input a name to identify the Event that will perform the action upon some event occurrence.

Trigger by: (Condition)

**Schedule:** it will perform an action during a time defined by the user.

Motion Detection: it will perform an action upon a motion detected set in some are defined by the user.

By Boot: it will perform an action when the camera is booted or restarted. This feature is useful to detect reconnections that are not anticipated or expected.

Respond to Trigger (Activated Time)

Always: always keep the Network Camera alert to wait for some condition to happen.

Only during time frame: it will perform the action only for the time frame set. This is different from the Schedule condition, since the Schedule condition sets the time as the main reason to start doing something, while the "time frame" sets the duration of the action.
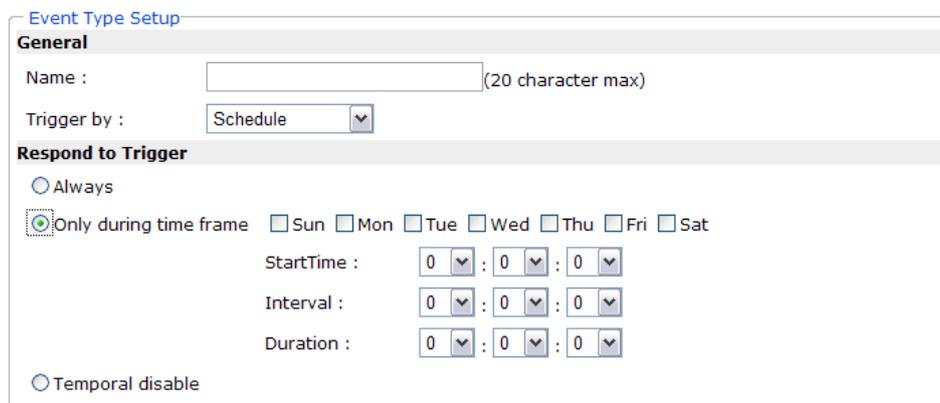
Check the corresponding days to execute the triggering time.

Start Time: indicates that time that the trigger will be start executing

Interval: indicates the interval between each action.

Duration: indicates the duration of the trigger from the Start Time.

Temporal Disable: don't do anything while activated. In other words, even if the condition has happened the Network Camera shall not do anything. This option is useful to pre-set conditions that will probably be used in the future by desire, but that hasn't to be activated now.

When Triggered…(Do some action with a result)
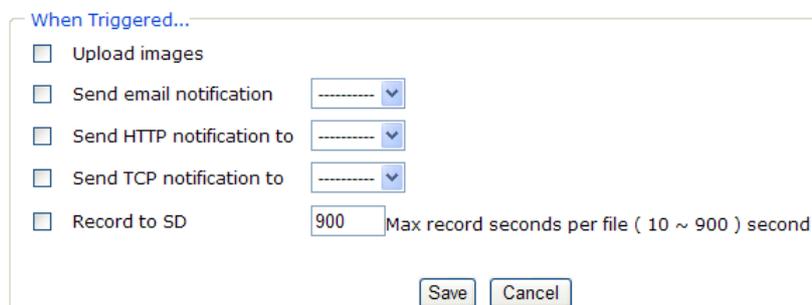
Upload Images: sends the images to an FTP server.

> ☑ Upload images
>
> ◉ FTP   [ftp ▾]
>
> File Type :   ◉ JPEG
>
> Interval :   [1] . [0]   second

     Interval: Set the time between each two notifications.

Send Email notification: Send an email message to a predefined email address set in the Network Configuration.

> ☑ Send email notification   [---------- ▾]
>
> Interval :   [1] . [0]   Second
>
> To :   [   ] (80 character max)
>
> Subject :   [   ] (80 character max)
>
> Message :   [   ] (80 character max)
>
> ☐ Attach file
>
> File Type :   ◉ JPEG

     Interval: Set the time between each two notifications.

Sent HTTP notification: Send a text message as a parameter to an HTTP port that should be expecting a text message or a command.

> ☑ Send HTTP notification to   [---------- ▾]
>
> Interval :   [1] . [0]   Second
>
> Message :   [   ] (80 character max)

Send TCP notification: Send a text message to an TCP port that should be expecting a text message

> ☑ Send TCP notification to   [---------- ▾]
>
> Interval :   [1] . [0]   Second
>
> Message :   [   ] (80 character max)

     Interval: Set the time between each two notifications.

For configuring the FTP, Email, and TCP settings, refer to the Network Configuration, on Event Server.

Record to SD: Record video image to SD card.

5.3.4 Motion Detection

Video motion detection is used to generate an alarm whenever movement occurs (or stops) in the video image.

A total of 3 Include and/or Exclude windows can be configured.

Once configured, the video motion detection windows appear in the list of available triggers, for triggering events.

Note:

1. *Using the motion detection feature may decrease the camera's overall performance*
2. *Don't set Date & Time of OSD (On-Screen Display) included in the detected area.*

Motion Detection List

Add: 3 areas can be set for which they will be identified in 3 colors each, Red, Green or Blue.

Once clicked, according to the color selected, a squared block can be drawn on top of the video displayed using the mouse.

Press the left click of the mouse to start drawing the box, and drag it upon the video to mark the desired area. Once finished, release the left click of the mouse, and the box will be drawn as intended.

Delete: In case any of the area is not required, click on the name of the Area Name from the Motion Detection List, and click on Delete.

OSD On/Off: Select "OSD On" to present in screen that Motion Detection is working**.**

Windows Area Name: Descriptive name of your choice

Sensitivity: values run from 0 to 100; for which the higher the number, the more sensitive is the motion area.

Color: 3 colors can be chosen among the areas set for the motion detection; Red, Blue or Green.

Save: Once the process has been completed click on "Save" to make the changes permanent.

Cancel: in case for any reason, the selection was not properly configured, click on Reset to clear up the values for each feature.

5.3.5 Event Server

Event Servers are used to receive uploaded image files and/or notification messages. To set up Event

Server connections in your camera, go to Setup > Event Configuration > Event Servers and enter the required information for the required server type.

Add FTP: adds an FTP to be used as a recipient for the images

AddHTTP: adds an HTTP server to receive text messages.

AddTCP: adds a TCP port to received text messages.

AddSMTP: adds an Email server/address to receive email messages

Delete: to delete any existing Event Server, select a Name from the Event Server List and click on delete.

Upon clicking on any button to add FTP, HTTP, TCP or SMTP server a box will show up for filling the required information.

FTP Server

Receives uploaded images

Name: Descriptive name of your choice

Network address (IP address or host name)

User Name and Password: Enter the Username and Password for allowing the upload of the images.

Note: Consult your Network Administrator for the correct Username and Password applied to the folder. Make sure that the Username applied in this folder does have Write and Delete permissions to it. In case Write and Delete permissions are not applicable, the intended files to be stored will not take into effect

HTTP Server

Receives notification messages

Name: Descriptive name of your choice

URL: URL (IP address or host name)

Username and Password: Enter the Username and Password for allowing the reception of messages.

Note: Consult your Network Administrator for the correct Username and Password applied to the HTTP and Proxy Server. Make sure that the Username applied in the HTTP and Proxy does have Write and Delete permissions to it. In case Write and Delete permissions are not applicable, the intended messages to be delivered will not take into effect

TCP Server

Receives notification messages

Name: Descriptive name of your choice

Network Address: IP address or host name

Port number: Enter the port number of the TCP service that is expecting to receive the message.

Note: Consult your Network Administrator for the availability of the TCP service and Port number to be used.

SMTP Server

To send email messages

Name: Descriptive name of your choice

Email Address: enter sender's (the network camera) email address

Mail Server: URL of mail server (IP address or host name)

Username and Password: Enter the Username and Password for authentication if necessary.

5.4   Network Settings

The Network Settings page allows the user to change and add more sophisticated configurations based on the network infrastructure where the Network Camera is installed.

As for the IP Discovery Tool is useful for initial boot up and straight network configuration, the Network Settings page offers a flexible way to fully utilize the network capabilities.

General: Basic IP configuration settings.

Advanced: Page for network settings that include Time Server, Hostname and Port for services.

DDNS: Service for accessing the Network Camera through domain names rather than IP addresses.

PPPoE: Configuration page for connecting directly to ADSL internet services.

Event Server: Sets up the servers utilized in the Event feature page, such as FTP, HTTP, SMTP and TCP.

> *Note: Consult your Network Administrator for the availability of the services and the values for the configuration to be used.*

5.4.1 General

DHCP: Obtain IP address via DHCP

Dynamic Host Configuration Protocol (DHCP) is a protocol that lets network administrators centrally manage and automate the assignment of IP addresses on a network. Although a DHCP server is mostly used to set an IP address dynamically, it is also possible to use it to set a static, known IP address for a particular MAC address.

Advise to set IPCHANGE for dynamic IP mode while DHCP service is activated.

Static IP Address

    IP address: Specify a unique IP address for your network camera.

    Subnet mask: Specify the mask for the subnet the network camera.

    Gateway: Specify the IP address for the Gateway

    DNS1: Specify the IP address for the first group of DNS

    DNS2: Specify the IP address for the second group of DNS

PPPoE

The PPPoE feature enables the user to connect the Network Camera directly to the ADSL Modem having direct access to Internet. Click on the PPPoE Enable box to activate the feature, and enter the Username and respective Password.

The Username and Password, as well as the internet service that goes with the ADSL Modem are provided by an Internet Service Provider (ISP) such as your local telephone company.

Contact your ISP for more information on how to acquire such service.

Advise to set IPCHANGE for dynamic IP mode while PPPoE is enabled.

5.4.2 Advanced
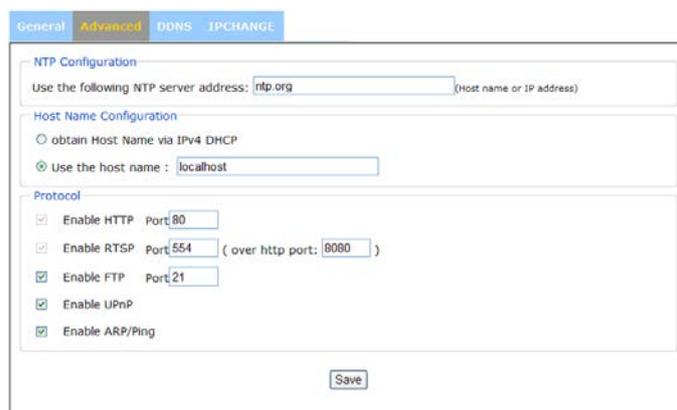
NTP Configuration

> **Obtain NTP server address via DHCP** - check this radio button to automatically look up and use the NTP server settings as provided by DHCP. Click the View button to see the current settings.
>
> **Use the following NTP server address** - to create manual settings, check this radio button and enter the host name or IP address of the NTP server.

Host Name Configuration

The network cameras can be accessed using a host name, instead of an IP address.

> **Obtain Host Name server address via ipV4 DHCP** - automatically use the DNS server settings provided by the DHCP server. Click the View button to see the current settings.
>
> **Use the Host Name** - enter the desired DNS server by specifying the following:
>
> Domain name - enter the domain(s). Multiple domains can be separated by semicolons (;). The host name is always the first part of a Fully Qualified Domain Name, for example, myserver is the host name in the Fully Qualified Domain Name myserver.mycompany.com where mycompany.com is the Domain name.

HTTP

The default HTTP port number 80 can be changed according to the user's need. This is useful for simple security port mapping.

Note: if you enter a different value other than 80 for your HTTP port, you can not return to the Live View screen. In order to return to the Live View screen, please launch IP Discovery tool again and select your network camera.

RTSP

The RTSP protocol allows a connecting client to start an H.264/MJPEG stream. Check the box to enable the server and enter the RTSP port number to use. The default setting is 554. Note that H.264/MJPEG video streams will not be available if this service is not enabled.

FTP

The FTP server running in the network cameras enables the upload of new firmware, and user applications. Check the box to enable the service.

UPnP Setting

First, tick the box "Enable UPnP" (actually, it's ticked in factory default).
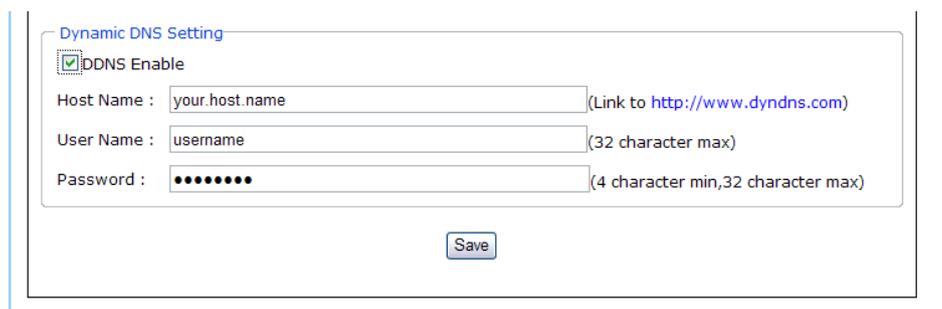

Arp / Ping

Enabling Arp / Ping will offer an additional tool to the user in order to detect the status of the Network Camera. For related commands to ARP/Ping, refer to your Network Administrator.

5.4.3 DDNS

The DDNS (Dynamic Domain Name Service) feature allows users to access the Network Camera without the need of remembering the IP address, but rather using a name.

For example: http://www.mycamera.com

To be able to use the DDNS feature, a domain name must be registered first in a domain name service from a 3rd party service provider, such as DynDNS (www.dyndns.org).

The DDNS feature only forwards the information between the Host Name server and the Network Camera, therefore the Username and Password must be obtained from the 3rd party service provider before using the feature.

Note: Refer to your Domain Name Service Provider for more information on setting up a domain name. Some Domain Name Service providers charge a fee for the registration, while some offer the service as free of charge. It will be in the user's decision which service to acquire.

In order to use the DDNS feature, it is assumed that the Network Camera already has direct access to Internet. For more information on how to allow the Network Camera to access the Internet, consult with your Network Administrator and you can also refer to the Port Forwarding Section in this manual for a basic guide line and a better understanding of the topic in matter.

5.4.4 IPCHANGE Settings

This setting triggers an email sending to notify the latest IP address when the IP address of this network camera is changed. Please configure SMTP Server information (Network -> Event Server) first.

IPCHANGE: Disable or Enabled

SMTP Server: Select one on the list of configured Email servers

Mail To: Set the destination (e.g. 0001@abc.com) which the alerting email is sent to.

Click on "**Save**" to apply the change.

5.5　System Settings

5.5.1　Information

The System Settings page displays information about the current status of the Network Camera.
Such information is useful to have references when direct information is required without going through
the different pages of configuration of the Network Camera.

5.5.2　User

The user configuration page allows the Network Camera to have multiple users and profiles to access the Network Camera.

Enable anonymous login:

To allow the access to the Network Camera without restrictions, select the box of Enable anonymous login and click on "Save" to make the changes permanent.

Such change will allow anyone to access the Network Camera without a username or password.

Note: it is in the user's discretion whether or not to allow authorized and unauthorized to access the Network Camera.

Adding a user

In order to add a new user, click on the "Add "button and fill the information which is required.

After filling the information, click on "Save" to make changes permanent to the device.

Administrator: Permission to view and change the configuration of the Network Camera.

Operator: Has permission as Administrator, but not for Network and System.

Viewer: Has only permission to view the Network Camera.

Note: follow the instructions displayed on the User's page while selecting of a Username and Password.

Deleting a user

To delete user, click on a Name from the Users list and click on "Delete", then click on "Save" to make the changes permanent.

5.5.3 Date & Time
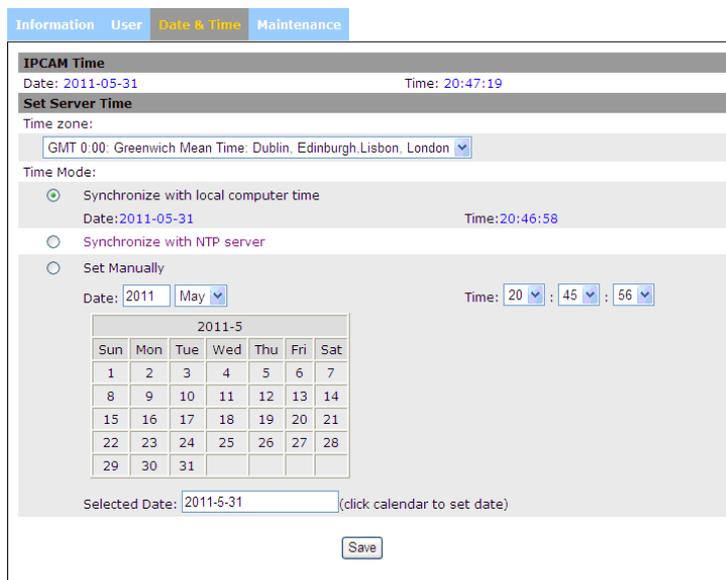
Displays the date and time (24 hours clock) of the Network Camera.

Set Server Time

Select the Automatically adjust for **daylight saving** time changes if necessary.

From the **Time Mode** section, select the preferred method to use for setting the time:

Synchronize with computer time - sets the time from the clock on your computer.

Synchronize with NTP Server - the camera will obtain the time from an NTP server every 60 minutes.

Set manually - this option allows you to manually set the time and date.

Note: If using a host name for the NTP server, a DNS server must be configured under Network Settings.

Click on **"Save"** to make the changes permanent.

In case there was error during the selection, click on **"Reset"** and restart the process.

5.5.4 Maintenance
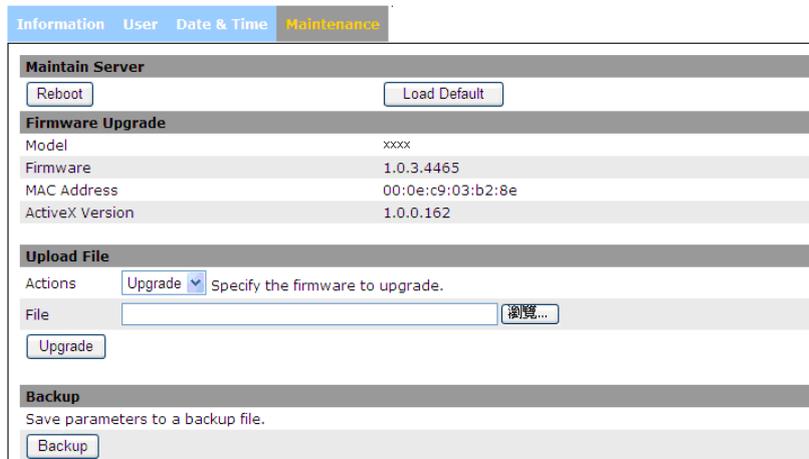
The Server Maintenance page allows the user to make changes in the Network Camera, such as:

Reboot: restarts the Network Camera

Load Default: sets the Network Camera back to the default parameters from factory.

Upload File: Upgrades the Network Camera to a new released firmware. Look up for the file and select it. Click on "Upgrade" to proceed with the upgrading of the firmware.

Notes: if you plan to upload older firmware versions, please keep in mind there could be possible risks that some functions might not work properly.

Restore: Look up for the file that restores a previous configuration of the Network Camera. Click on "Upload" to begin the process.

Backup: click on "Backup" to save the current parameters of the Network Camera to a file.

> ***Note:***
> 1. ***Please do not restore previous configuration file into camera which has been upgraded with new firmware version. It may lead to malfunction.***
> 2. *Before making any changes to the system of the Network Camera, make sure it is what is required while all alternatives have been considered and executed.*

6 Troubleshooting

6.1 Factory Default
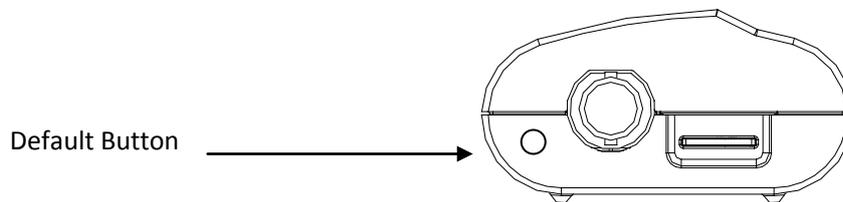
Default Button ⟶

To execute the Factory Default, proceed as follows:

1. Delete the power adapter from the socket power of the network camera
2. With a pin thin enough to go through the Default Button hole, push inside gently
3. Plug back the socket power
4. The Power LED will flash
5. Release the pin
6. The network camera enters into the process of getting back to factory defaults

Or when the device has finished system booting, press the reset button until the Power LED starts flashing. The device is back to factory default. All settings will be erased from the device, and the assigned IP will be back to 192.168.1.200 and Subnet mask to 255.255.0.0.

6.2 Viewing the video encoder from a remote location

The below guideline shows you how to setup the Video encoder for viewing it from a remote location.
The network infrastructure demonstration is just for your reference only. Each network infrastructure may vary upon the needs of the organization.

Note: Consult your Network Administrator for a better understanding of networking concepts and related topics.

6.2.1 Standard connection
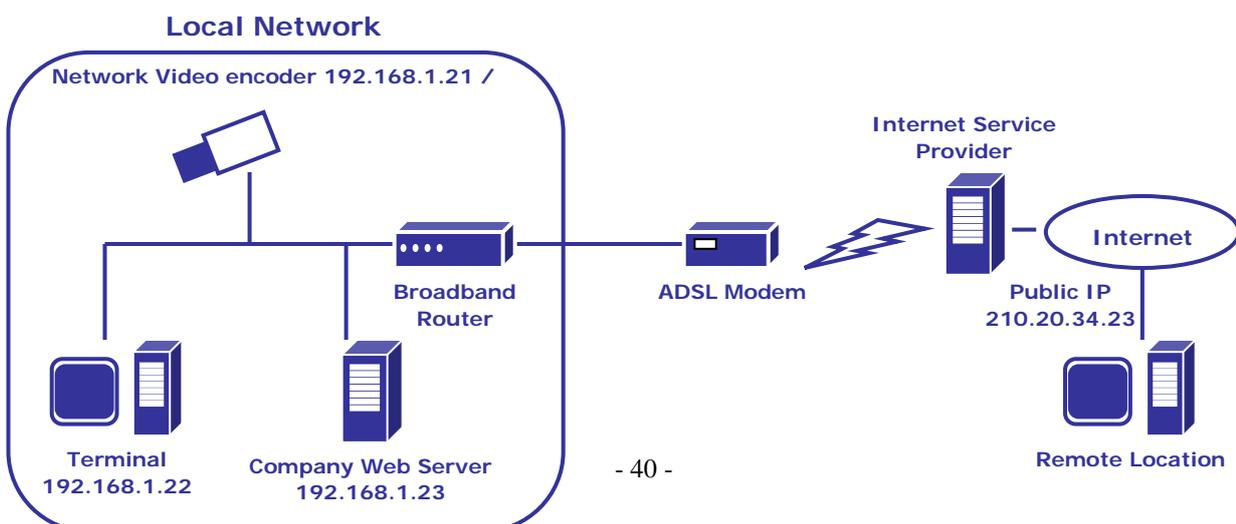
In this case what we have here is:

Public IP Address 210.20.34.23, assigned by the Internet Service Provider (ISP)

Video encoder, with a local IP of 192.168.1.22

Broadband router

Since we are sharing only one single Internet connection through our Local Network, the Port Forwarding configuration in our Broadband Router for the video encoder will be as follows:

Private IP	Private Port	Type	Public Port
192.168.1.22	80	● TCP ○ UDP	80
192.168.1.22	554	● TCP ○ UDP	554

Notice that the Port 80 is the default port for any Web-Server, but this also can be changed. Since Port 80 is the default, when we type our IP address at the Address bar, there won't be any need to type the port number.

The default port for streaming an H.264 video is port 554, being the same as the port 80, it can also be changed.

Once the broadband router's configurations are set, we can open the Internet Explorer and type in the Address bar the Public IP address.

Once the broadband router's configurations are set, we can open the Internet Explorer and type in the address bar the Public IP address.

http://210.20.34.23/

6.2.2 Assigning Ports Manually
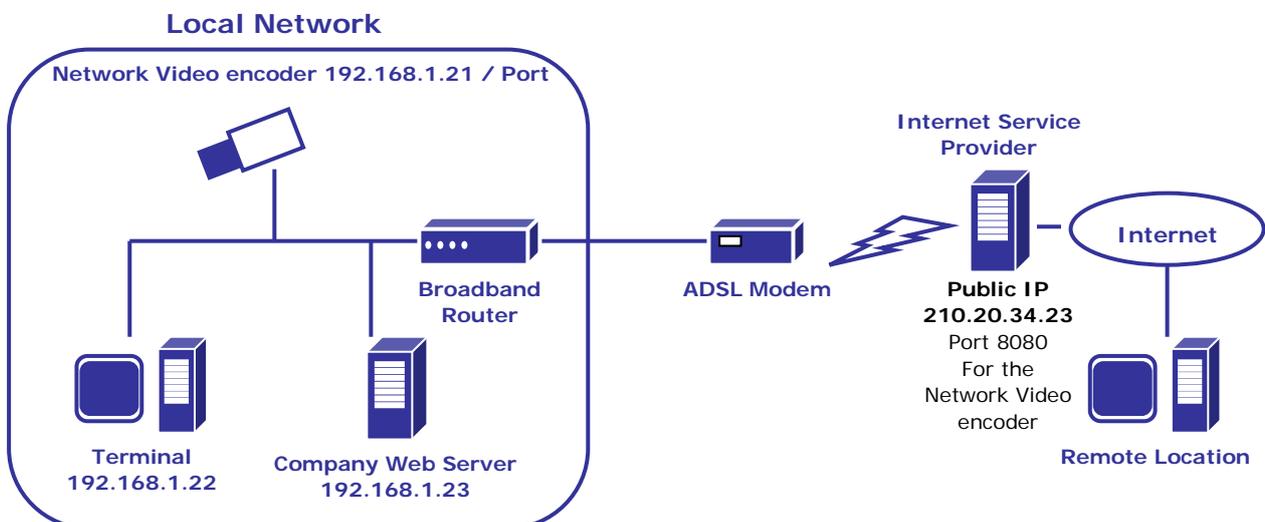
In this case what we have here is:

Public IP Address 210.20.34.23, assigned by the Internet Service Provider (ISP), but we will be using Port 9999 for accessing the video encoder from the Internet.

The Video encoder, with a local IP of 192.168.1.22, using port 8080 to get access to the video encoder through the Local Network.

Broadband router

Since we are sharing only one single Internet connection through our Local Network, the Port Forwarding configuration in our Broadband Router for the video encoder will be as follows:

Private IP	Private Port	Type	Public Port
192.168.1.22	8080	● TCP ○ UDP	8080
192.168.1.22	554	● TCP ○ UDP	554

In this case we are using Port 8080 for the Video encoder at 192.168.1.22, and using Port 8080 for the Internet access at 210.20.34.23.

When we are in a remote location, in order to access our video encoder through Internet, we have to specify the Public Port when typing the Public IP Address as the figure below

http://210.20.34.23:8080/

6.2.3 Using two ore more public IPs

The following figure is just an illustration on how the video encoder can be connected when 2 or more Public IPs are involved in a network infrastructure
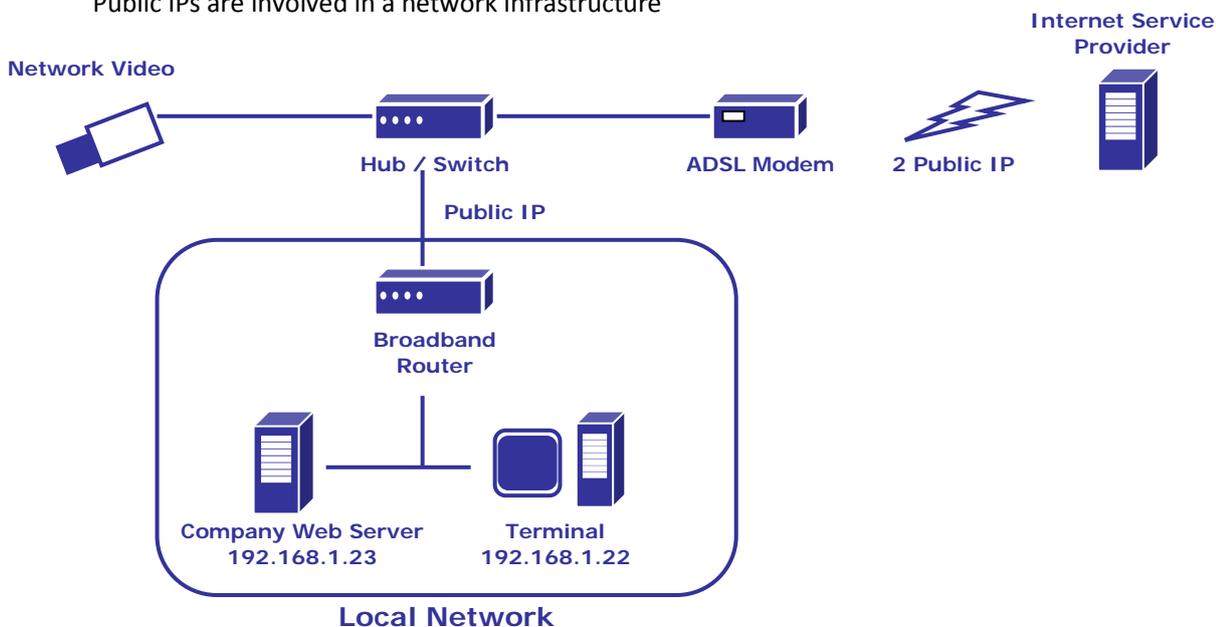
7   Frequently Asked Questions

Symptoms, Possible Causes, and Remedial Action

Problems setting the IP address

The video encoder is located on a different subnet

> If the IP address intended for the video encoder and the IP address of your computer are located on different subnets, you will not be able to set the IP address. Contact your network administrator to obtain an appropriate IP address.

The IP address is being used by another device

> Disconnect the video encoder from the network. Run the Ping command. (In a Command/DOS window, type ping and the IP address of the unit).
> If you receive: Reply from <IP address>: bytes = 32; time = 10 ms..... - this means that the IP address may already be in use by another device on your network. You must obtain a new IP address and reinstall the unit.
> If you see: Request timed out - this means that the IP address is available for use with your video encoder. In this case, check all cabling and reinstall the unit.

Possible IP address conflict with another device on the same subnet

> The static IP address in the video encoder is used before the DHCP server sets a dynamic address. This means that if the same default static IP address is also used by another device, there may be problems accessing the video encoder. To avoid this, set the static IP address
> to 0.0.0.0.

The video encoder cannot be accessed from a browser

The IP address has been changed by DHCP

> If the video encoder and client are on the same network, run the IP Discovery Utility to locate the video encoder.
> Identify the video encoder using its model or serial number
> Alternatively:
> 1) Move the video encoder to an isolated network or to one with no DHCP or BOOTP server. Set the IP address again, using the IP Discovery Utility (see the Installation Guide) or the ARP/Ping commands.
> 2) Access the unit and disable DHCP in the TCP/IP settings. Return the unit to the main network. The unit now has a fixed IP address that will not change.
> 3) As an alternative to 2), if dynamic IP address via DHCP or BOOTP is required, select the required service and then configure IP address change notification from the network settings.
> Return the unit to the main network. The unit now has a dynamic IP address, but will notify you if the address changes.

Other networking problems

> Test the network cable by connecting it to another network device, then Ping that device from your workstation. See instructions above.

Video encoder is accessible locally, but not externally

Broadband router configuration

> To configure your broadband router to allow incoming data traffic to the video encoder, enable the NAT port forwarding feature which will configures the router to allow access to the video encoder.

Firewall protection

> Check the Internet firewall with your system administrator.

Default routers required

> Check if you need to configure the default router settings.

Problems with the H.264/MJPEG format

No H.264/MJPEG displayed in the client

> Check with your network administrator to see if there is a firewall preventing viewing.

Poor rendering of H.264/MPEG-4 images

> Color depth set incorrectly on clients. Set to 16-bit or 32-bit color.
> Ensure that your graphics card is using the latest device driver. The latest drivers can usually be downloaded from the manufacturer's web site.

Color saturation is different in H.264 and Motion JPEG
Modify the settings for your graphics adapter. Please see the adapter's documentation for more information.

Lower frame rate than expected
Reduce number of applications running on the client computer.
Limit the number of simultaneous viewers.
Check with the system administrator that there is enough bandwidth available. See also the online help.
Lower the image resolution.

No images displayed on web page
Installation of additional ActiveX component restricted
Configure your Internet Explorer to allow the installation of ActiveX by lowering temporally the Internet Explorer security settings.

Video/Image problems, general
Image too dark or too light
Check the video image settings.

Missing images in uploads
This can occur when trying to use a larger image buffer than is actually available. Try lowering the frame rate or the upload period.

Slow image update
Configuring pre-buffers, motion detection, high-resolution images, or high frame rates, will affect the performance of the video encoder.

Poor performance
Poor performance may be caused by heavy network traffic, multiple users accessing the unit, low performance clients, use of features such as Motion Detection, Event handling.

Poor quality snapshot images
Screen incorrectly configured on your workstation
In Display Properties, configure your screen to show at least 65000 colors, that is, at least 16-bit. Using only 16 or 256 colors will produce dithering artifacts in the image.

Audio volume too low/high
Volume settings incorrect
The volume of the microphone is either too high or too low. Change the volume for the microphone in the toolbar on the Live View page.

Poor audio quality
CPU overloaded
Reduce the number of listeners and viewers and decrease the image resolution and compression.

Unsynchronized audio and video
It is recommended that the video encoder's time setting is synchronized with an NTP Server. This is enabled under System Options > Date & Time.

Distorted audio
Select Microphone for the internal microphone or for a connected external microphone.
Select Line for a connected line in source.