

MPEG-4

Video Server / IP Camera

User's Manual

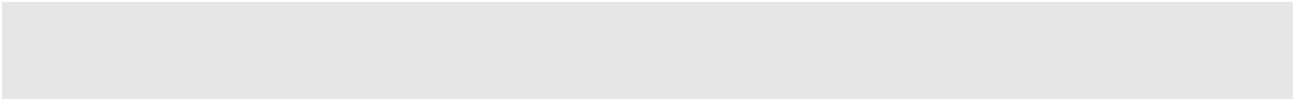
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1. Introduction

1.1. What is the MPEG-4 Video Server?

The MPEG-4 Video Server (MVS) is an Internet-based digital video surveillance device with a built-in Web server. It uses TCP/IP to distribute compressed live video over a Local Area Network (LAN) and/or the Internet through an Ethernet connection.

The MVS is configured and manipulated using the Web-based User Interface (Web UI) in Microsoft Internet Explorer™.

The MVS contains an MPEG-4 image compression chipset capable of delivering streaming, constant or variable bit rate MPEG-4 video over the network in real-time.

1.2. Advanced Features

- ◆ Built-in HTTP Web Server.
- ◆ IP address assignment via IP Installer Software or Web UI.
- ◆ ActiveX control for Microsoft Internet Explorer™ providing maximum performance.
- ◆ Provide Video conference function.
- ◆ Provide recording functions on remote host or storage devices.
- ◆ Support Wireless communication standard. **(Optional Wireless Model)**
- ◆ Support some models of PTZ control protocols.
- ◆ DDNS support for dynamic IP application.
- ◆ Multi-tiered access control.
- ◆ Remotely upgradeable firmware and Web UI.
- ◆ Control of server operations through CGI based scripts for easy integration.
- ◆ Provide Motion detection, E-Mail / FTP settings and Alert for management.
- ◆ Low power, fan-less device with hardware watchdog support providing a robust system for critical environments.
- ◆ MPEG-4 and MJPEG video compression formats.
- ◆ 30/25 fps @ Full D1 (720 x 480 / 720 x 576) resolution.
- ◆ Video stream supported by many media players including Quicktime™.

2. Physical Characteristics

– Front Panel & Rear Panel

◆ MPEG-4 Video Server



◆ MPEG-4 IP Camera



3. Installation

3.1. Installation Preview

There are 3 main steps required to perform a successful installation:

- ◆ Hardware installation
- ◆ Software installation
- ◆ Network configuration

Hardware installation consists of connecting cables to the MVS including network, video, and power cables.

Software installation consists of the installation of software that is necessary to properly view the video from the MVS or to configure the MVS itself.

The software includes:

- ◆ **IP Installer** - A utility for locating devices and configuring network settings on a LAN.
- ◆ **Component Installer** - installs all ActiveX components used by devices for things such as video display and configuration.
- ◆ **Adobe Flash Player** - necessary for displaying some components of the Web UI.

The following are not necessary, but may be used for added convenience:

- ◆ **16-Channel Recording Software** - for displaying and recording up to 16 channels simultaneously. Both MPEG-4 and MJPEG devices are supported.
Note: the MPEG-4 device can only display and record up to 4 channels.
- ◆ **XVID** - A MPEG-4 codec. If no other MPEG-4 codecs (i.e. DivX, 3ivX, ffdshow, etc.) are installed on your computer, the Component installer will install this for you.
- ◆ **QuickTime or VLC** - though not necessary, this can be used for viewing the MPEG-4 stream without a Web browser.

Network configuration consists of modifying the network settings for the MVS in order to successfully connect to the device.

3.2. Hardware Installation

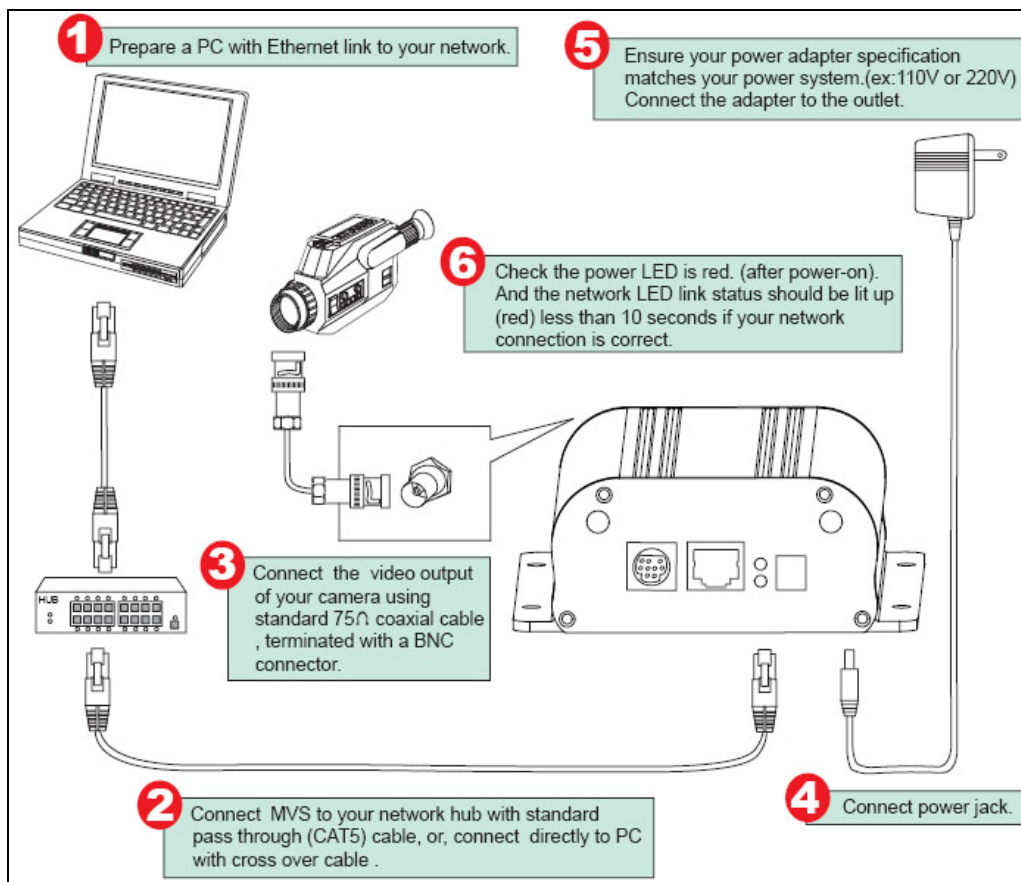
– Hardware Connection

- ◆ Ensure the MVS is powered off.
- ◆ Connect the MVS to your network using twisted pair (CAT 5) cable terminated with a standard RJ-45 connector.

If it is connected to a hub/switch, use a pass-through cable.

If it is connected directly to a PC, use a crossover cable.

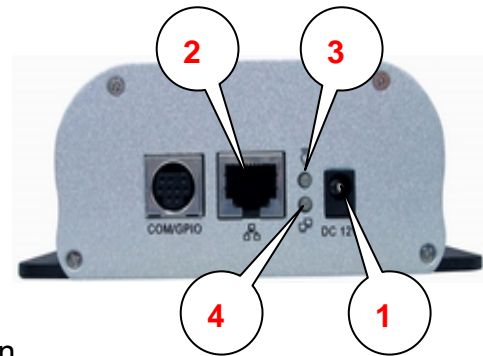
- ◆ Connect the video output from the camera using standard 75 ohm (Ω) coaxial cable terminated with a BNC connector. (If connecting to a TV, VCR, etc. switch the corresponding DIP Switch to the off position.)
- ◆ After ensuring that the power supply adapter specifications (Input AC 110V or 220V, Output DC 12V 1A) match the power source, connect the power supply to the MVS.
- ◆ Verify that the power LED is a constant red and that the network LED is amber.



– Description of the Connections

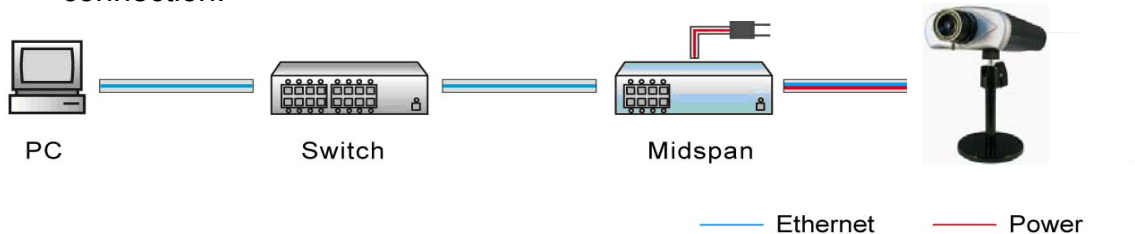
1. Power In Jack

- **Non PoE model:** Connects to the AC adapter.
- **PoE model:** The AC adapter is not necessary. The camera will get the power from the Ethernet cable. Please follow the below figure for the connection



2. Ethernet Connector

Standard 10 /100 Base-T port connects to a CAT5 cable with RJ-45 connector. If you are using the camera with built-in PoE, please follow the below figure for the connection.



3. Power/Status LED

Power status indicator, Constant red when power is on.

4. Network LED

- Network Link (connected): Constant red.
- Networks have activities: Blink red.
- Data sent out from server: Blink green.
- Network disconnected: Constant slow blinking green.

3.3. Software Installation

With the exception of the Adobe Flash Player all the software that is necessary for the proper display and use of the MVS is available on the included CD or from the Web site. For the following installation procedures it is assumed that all installation media will be taken from the CD.

– IP Installer

The IP Installer is used to locate and configure network cameras and video servers on the LAN. This utility is useful for conveniently configuring the network settings of the MVS, or for finding a device once the network settings have been modified.

To install the IP Installer, from the installation CD UI, select IP Installer, then follow the on screen instructions.

– Component Installer

This will install all ActiveX components used by devices for video display and device configuration.

– Adobe Flash Player

Please visit the Adobe Web site at <http://www.adobe.com> to download and install the Flash Player.

3.4. Network Configuration

IP Installer is a utility that provides an easier, more efficient way to configure the IP address and network settings of the MVS. It even provides a convenient way to set the network settings for multiple devices simultaneously using the batch setting function. Moreover, IP Installer can save the network settings for all devices as a backup and restore them when necessary.

– Preparation before IP Assignment

- ◆ Always consult your network administrator before assigning an IP address to your server in order to avoid using a previously assigned IP address
- ◆ Ensure the MVS is powered on and correctly connected to the network
- ◆ MAC Address: Each MVS has a unique Ethernet address (MAC address) shown on the bottom of the MVS as the serial number (S/N) with 12 digits (e.g. 000429-XXXXXX).



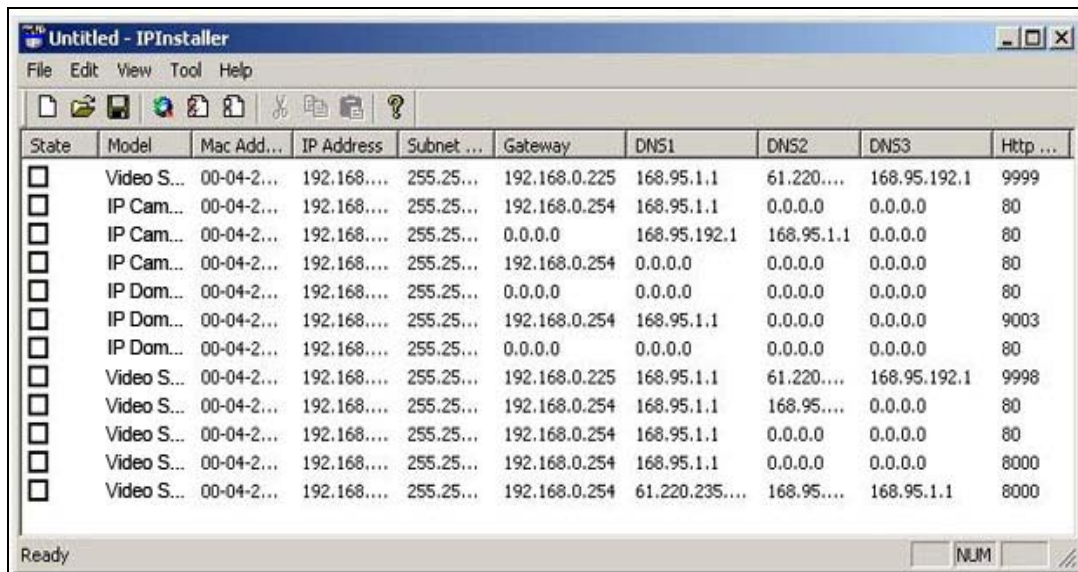
- ◆ One final note, although the IP Installer is able to find and configure any MVS on the LAN (except those that are behind a router), it is a good idea to set the host PC to the same subnet. In order to connect to the Web UI of the MVS the host PC must be in the same subnet. For more information about subnets, please consult your network administrator.

– Starting IP Installer

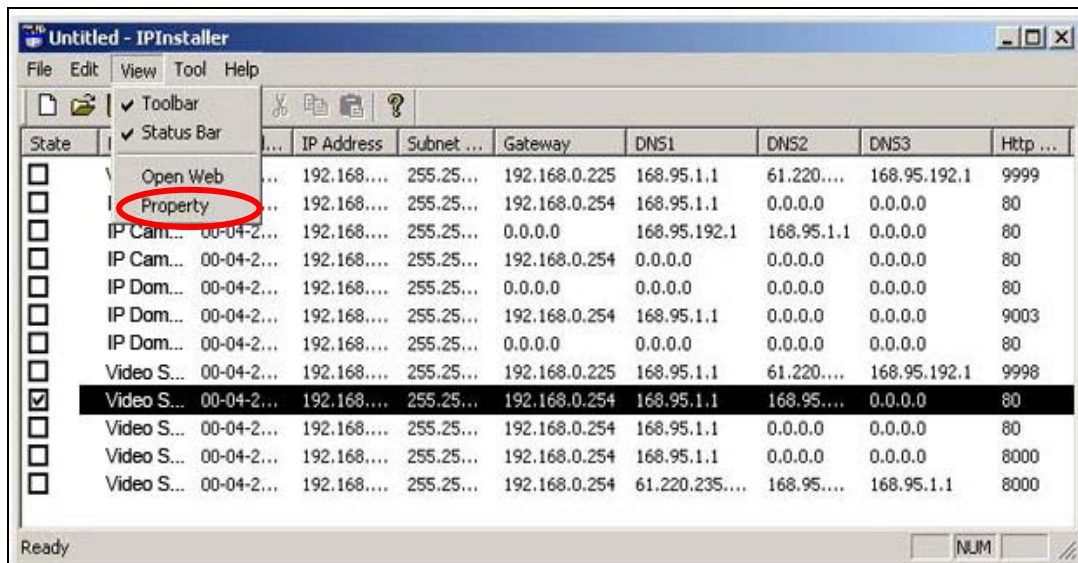
- ◆ Once IP Installer has been successfully installed on the computer, double click the IP Installer icon on the desktop, or select it from **Start > Programs > IP Installer**.



- ◆ The IP Installer window is displayed below. Click **Tool > Search Network Device**, the available devices will be listed as below.



- ◆ Using IP Installer



1. From the list, select the device with the MAC Address that corresponds to the device that is to be configured. The MAC Address is identical to the unit's S/N (Serial Number).
2. Double click the item to open the Property Page dialog box for the selected device or click the menu bar **View > Property**.

Property Page

Video Server

Mac Addr
00-04-29-01-08-10

Property

IP Address: 192.168.0.9

Subnet Mask: 255.255.255.0

Gateway: 192.168.0.254

DNS1: 61.220.235.170

DNS2: 168.95.192.1

DNS3: 168.95.1.1

Http Port: 80

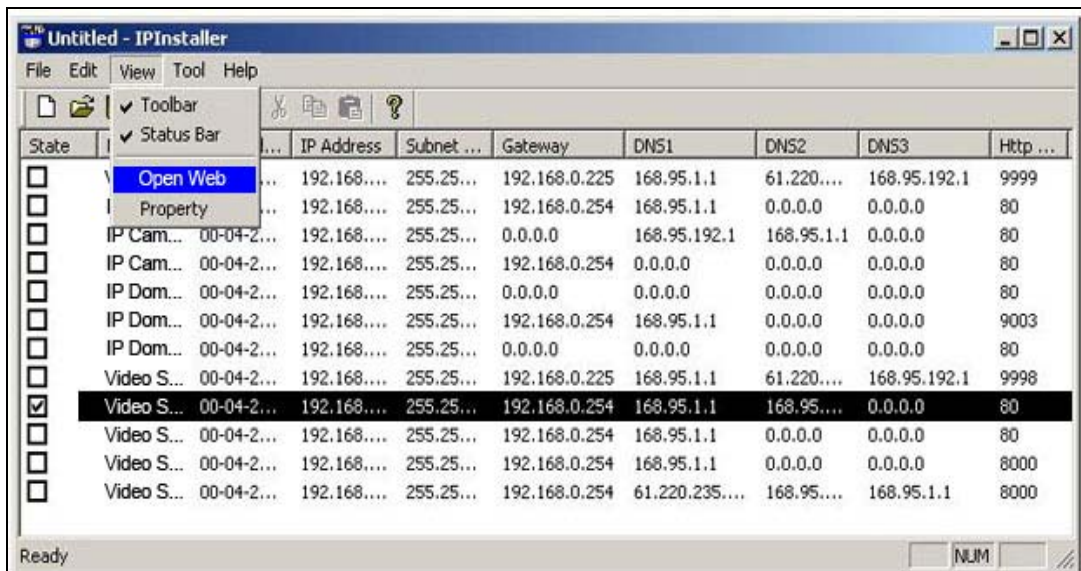
OK
Cancel
Synchronize

3. After filling in the properties, click [**Synchronize**] button to complete the configuration settings and save in the network camera and PC immediately.
4. If click [**OK**] button, the configuration is only be saved in the PC.

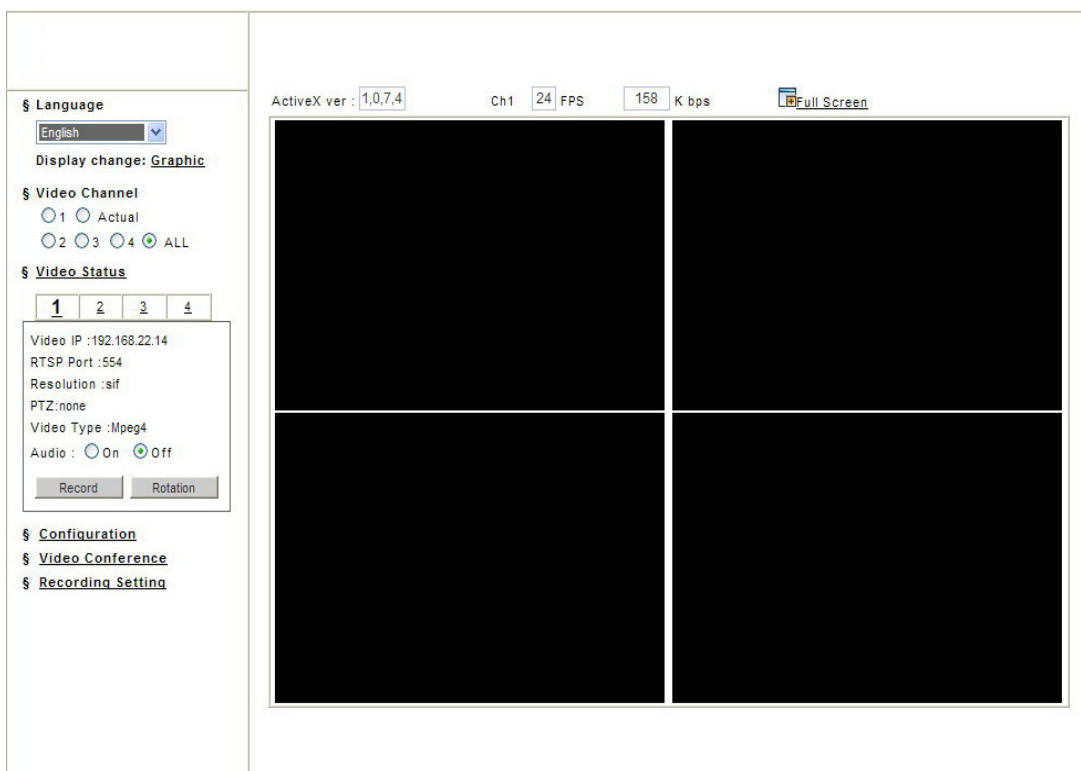
◆ Opening the Web UI

To access the Web UI of the selected unit, right-click on an item in the list and select Open Web, or click **View > Open Web** on the menu bar.

If the device has been configured correctly, the default Web browser will open to the MVS home page of the selected device.



If the QuickTime Player has been properly installed, and the video input has been properly connected, then the MVS Web UI will display a live video stream.



The MVS supports video display using either QuickTime (default) or ActiveX. The ActiveX control is only supported in Microsoft Internet Explorer for Windows operating systems.

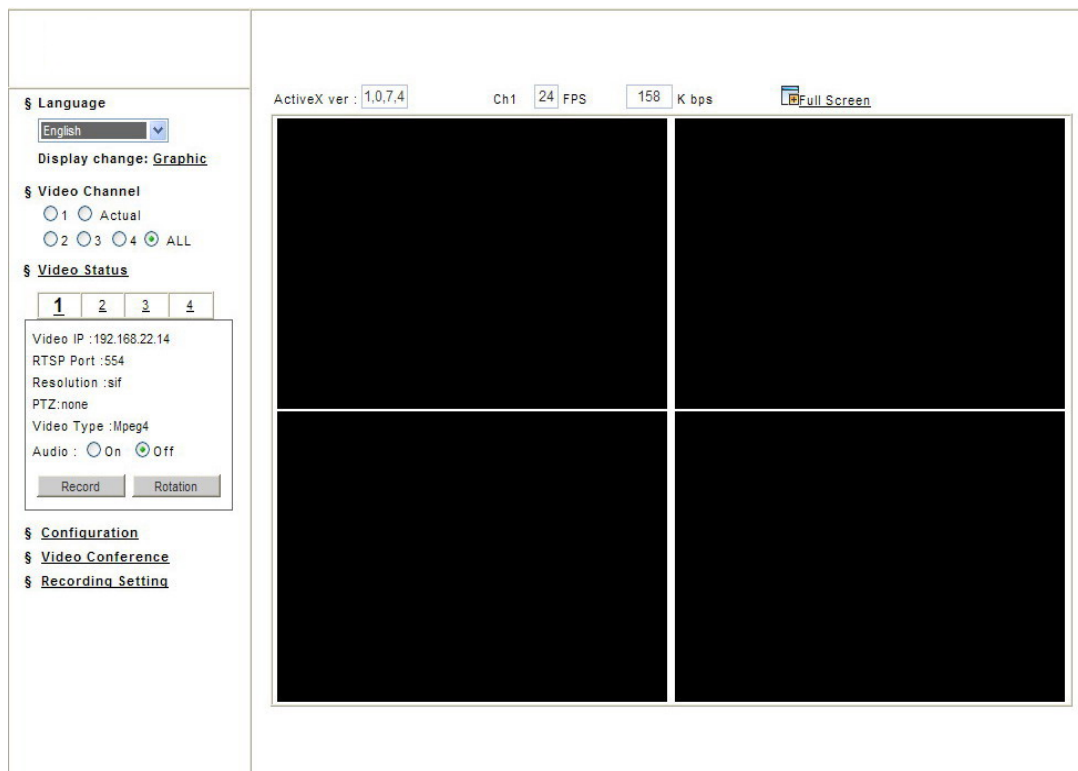
If the device has been configured to display the video using the ActiveX control, when the Web UI opens for the first time through Internet Explorer, the Internet Security settings must be lowered to perform a one-time-only installation of the ActiveX component.

– The procedure of the ActiveX is as follows

- ◆ Before connecting to the MVS Web UI, from the Tools menu, select Internet Options.
- ◆ Click the Security tab and take note of your current security settings.
- ◆ Set the security level to Low and click OK.
- ◆ Type the URL or IP address of the MVS into the Address field.
- ◆ A dialog box will pop up asking if the ActiveX control should be installed.
- ◆ Click **“Yes”** to start the installation.
- ◆ Once the ActiveX installation is complete, return the security settings to their original value, as noted above.

4. Getting to Know the MVS WEB UI

The MVS Web UI is basically divided into display and configuration. The home page is the video display page which can be seen below.



– Main Menu

◆ Menu Language Selection

Click a language name to change the language display for the complete Web UI.

There are three kinds of languages can be selected, they are English, Traditional Chinese and Simplified Chinese.

◆ Video Channel

Displays either a single video source (from 1 to 4), or all 4 channels

Select "**Actual**" to display the video stream at the real resolution

Select "**All**" to display the local video stream as well as 3 external video sources. It is only available for the video server.

§ Video Status

<u>1</u>	2	3	4
Video IP :192.168.22.14			
RTSP Port :554			
Resolution :sif			
PTZ:none			
Video Type :Mpeg4			
Audio : <input type="radio"/> On <input checked="" type="radio"/> Off			
Record		Rotation	

◆ Video Status

Display the status for the selected channel on the tab: Video IP, RTSP Port, Resolution, PTZ, Video Type (Mpeg4 or Mjpeg) and Audio.

● Audio

➤ Audio ON

Voice is currently **ON**; select which channel should be the one for broadcasting the audio.

➤ Audio OFF

Voice is currently **OFF**, click on the icon to turn off the voice feature.

● Record Button

Start Recording / Stop Recording

Click on the “**Record**” button to start or stop recording.

Note: This option saves a video streaming into the local computer as an AVI file, and it will be named under **Locals_Rec_-YYYYMMDD-HHMMSS.avi**.

For “**YYYYMMDD**” stand for year, month and date respectively

For “**HHMMSS**” stand for hour, minutes, seconds respectively.

The path to save the recorded files is listed under **Recording Setting**.

The device will create the folder automatically.

● Rotation Button

Turn the image for 90, 180 and 270 degrees. It's clockwise direction.

◆ Configuration

Click Configuration to open the configuration pages.

This part of detailed contents will be introduced in the “**Ch5 MVS Configuration**”.

◆ Video Conference

Click “**Configuration**” to open the configuration pages.

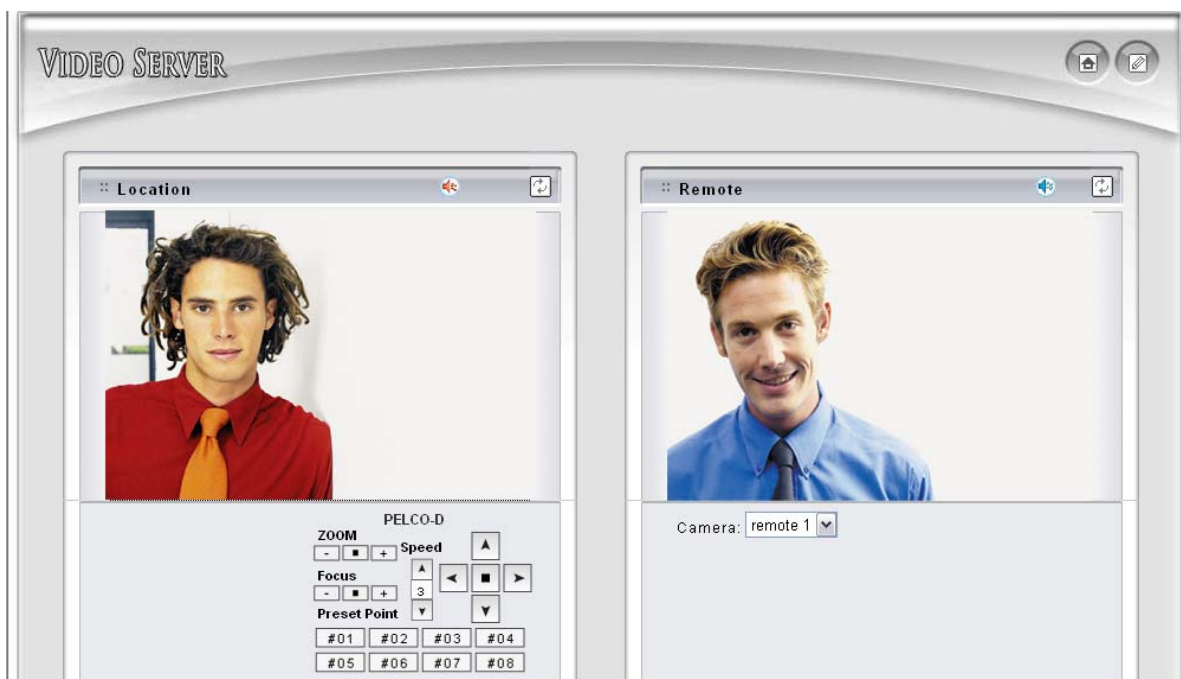
- Location

Define the settings for the local device.

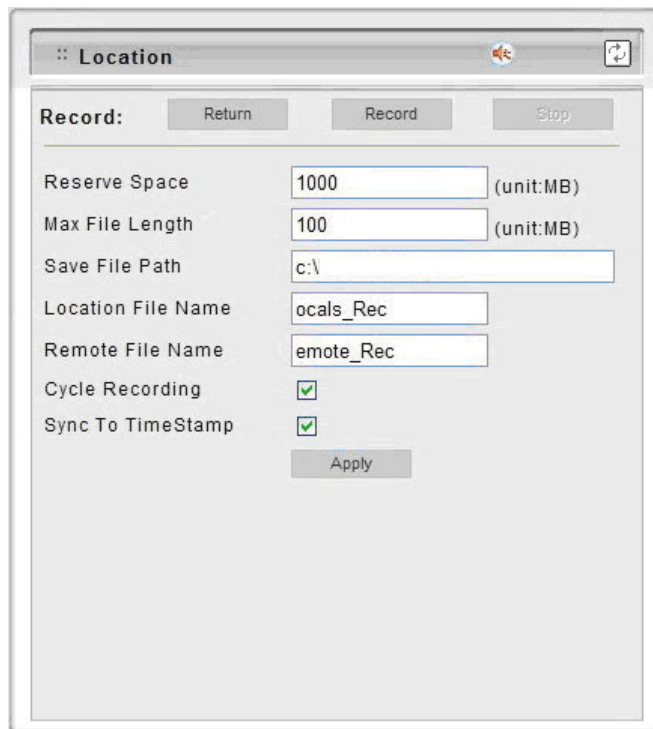
- Remote

Define the settings for the remote device, either IP Camera or Video Server.

The screenshot displays two configuration panels side-by-side. The left panel, titled 'Location', includes a 'Record' section with 'Return', 'Record', and 'Stop' buttons. Below are input fields for 'Reserve Space' (1000 unit:MB), 'Max File Length' (100 unit:MB), 'Save File Path' (c:\), 'Location File Name' (ocals_Rec), and 'Remote File Name' (emote_Rec). There are also checkboxes for 'Cycle Recording' and 'Sync To TimeStamp', both of which are checked, and an 'Apply' button. The right panel, titled 'Remote', has a 'Return' button at the top. It contains fields for 'IP address' (0.0.0.0), 'Http Port' (80), 'User Name' (root), 'Password' (masked with dots), 'Video channel' (1), 'Video Type' (Mpeg4), 'Rotation' (0), 'RTSP Port' (554), 'Name' (manual), 'PTZ model' (none), and 'Product Type' (3:P1400/1401). It also features 'Test' and 'Apply' buttons.

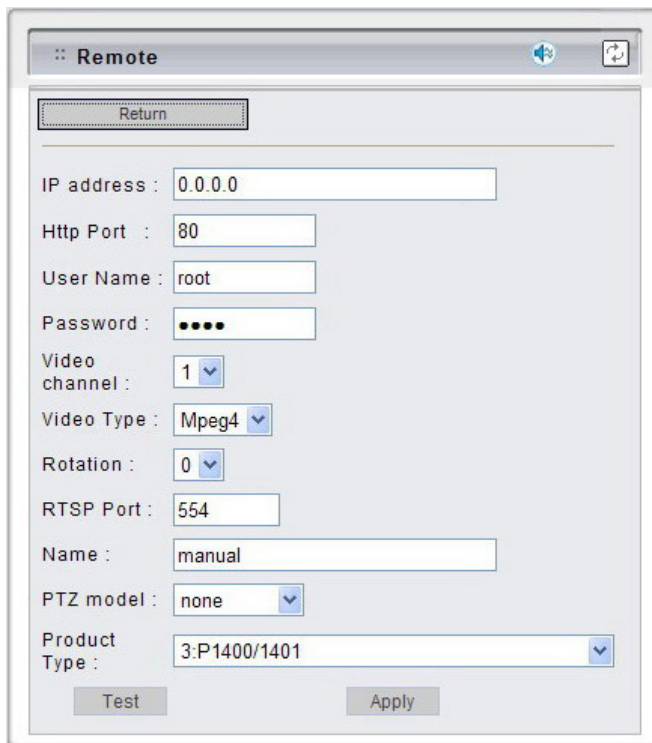


- Record Setting Video Conference



- Reserve Space:
Set the total file space for the recording. The unit is in MB.
- Max File Length:
Set the file space that a single will be using. The unit is in MB.
- Save File Path:
Indicate which folder should be the file saved to.
- Local File Name:
Input the name for the local file.
- Remote File Name:
Input the name for the remote file.
- Cycle Recording:
This feature indicates if the old space should be used or not for the recording. Make a checkmark in order to enable this function. If you enable this feature, old files will be deleted.
- Sync to TimeStamp:
This feature enables the file to be saved according to the time. When the video file is displayed, the video will make a match between the frames and the time.

- Record Setting Video Conference



- IP Address:

Enter a valid IP address from a remote IP Camera or Video Server.

- HTTP Port:

Enter the port number used for the remote IP address to display the video.

- User Name / Password:

Enter the respective Username and Password if applicable. If no user has been set for the device, the default value should be "root" and "pass" respectively.

- Video Channel 1~4:

Video channels from 2 to 4 are applicable for Video Servers

- Video Type:

Select from MJPEG or MPEG4 Video Servers or IP Cameras.

Please refer to the original document of the device for a better description.

- Rotation:

Rotation degrees run from 0 to 270 degrees for a permanent digital position.

- RTSP Port:

Enter a RTSP Port used for streaming in case the external source is an MPEG4 device.

➤ Name:

Enter a name for the remote device.

➤ PTZ Model:

Support some kinds of PTZ models to control remote devices.

Note: If your PTZ devices don't support these models on the menu list, please contact with your distributor.

➤ Product Type:

Select from MJPEG or MPEG4 Video Servers or IP Cameras. Please refer to the original document of the device for a better description.

\$ **Recording Setting**

Location of Recorded Files:

Local Source File Name:

External Source File Name:

◆ **Recording Setting**

Click Recording Setting to open the configuration pages.

● **Location of Recorded Files:**

Indicates the folder path in which the files will be recorded.

● **Local Source file name:**

Enter a name for the recorded video

● **External Source File Name:**

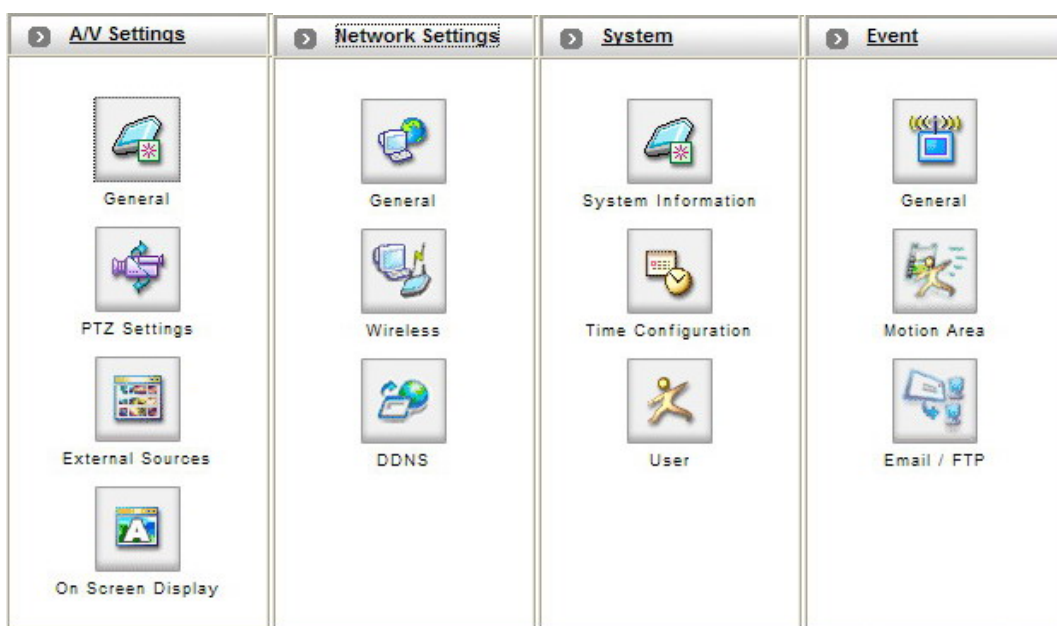
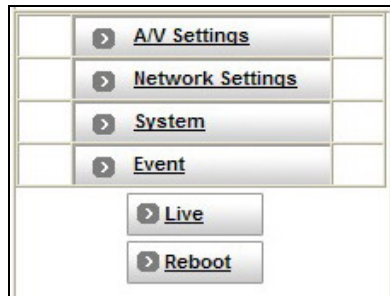
Enter a different name from the local source file name.

◆ **Full Screen**

Maximizes to view the selected channels into full screen

5. MVS Configuration

The MVS Configuration is currently divided into 4 sections, “Live” and “Reboot”:



– A/V Settings

Set A/V settings and they include “**General**”, “**PTZ Setting**”, “**External Source**” and “**On Screen Display**”.

– Network Settings

Set the network settings and they include “**General**”, “**Wireless**” and “**DDNS**”.

Note: “**Wireless**” is available for the wireless model.

– System

Set the system settings and they include “**System Information**”, “**Time Configuration**” and “**Users**”.

– Event

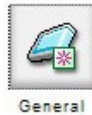
Set the event setting and they include “**General**”, “**Motion Area**” and “**E-Mail / FTP**”.

– “**Live**”: Returns to the Live Video display.

– “**Reboot**”: Closes the Web browser window and reboots the device.

5.1. A/V Settings

– General



◆ Basic:

▶ Basic	
Audio	<input checked="" type="radio"/> OFF <input type="radio"/> ON
Resolution	SIF - 352x240(NTSC)/352x288(PAL) ▼
Frame Rate	25 FPS ▼
Encoder Format	MPEG4 (ISO/IEC 14496) ▼ <input checked="" type="radio"/> CBR(Bitrate) <input type="radio"/> VBR(Quality)
Bitrate	2Mbps (Cable, T1, Frame-Relay, 10Mbit) ▼
<input checked="" type="checkbox"/> Auto adjust the frame rate under high-traffic (Suggestion: Turn off audio will improve the performance)	
▶ Advanced	
Apply	
▶ Image Adjustment	

● Audio

Enables and Disables the Audio stream.

● Resolution

There are 3 different resolutions to choose from:

- D1: 720x480 NTSC/720x576 PAL
- SIF: 352x240 NTSC/352x288 PAL
- QSIF: 176x112 NTSC/176x144 PAL

● Frame Rate

The frame rate can be set between 1-30fps.

● Encoder Format

Format can be selected for MPEG4 or MJPEG.

● Bitrate

There are 12 different constant bitrates to choose from between 64Kbps and 4Mbps, and 4 variable bitrates between Low and High quality.

If you are planning on using the device on an Internet connection It is recommended that you select a constant bitrate that corresponds to your actual upload speed. It is also recommended that you modify the frame rate and resolution as well, otherwise the video stream may become blocky or otherwise distorted.

The recommended values are as follows:

64Kbps: <=10 fps QSIF

128Kbps: <=15 fps QSIF

256Kbps: <=10 fps SIF

512Kbps: <=15 fps SIF

768Kbps: <=10 fps D1

1Mbps: <=15 fps D1

1.5Mbps: Broadband-cable, T1, Frame-Relay

2Mbps: Cable, T1, Frame-Relay, 10Mbit

2.5Mbps: Cable, T1, Frame-Relay, 10Mbit

3Mbps: Cable, T1, Frame-Relay, 10Mbit

3.5Mbps: Cable, T1, Frame-Relay, 10Mbit

4Mbps: 10/100Mbit

For higher frame rate use a variable bitrate instead. However, this is not recommended for Internet use.

For Good Quality, full resolution (D1), and full frame rate (30/25 fps) it is recommended that not more than 4 users connect simultaneously.

For High Quality, full resolution (D1), and full frame rate (30/25 fps) it is recommended that not more than 2 users connect simultaneously.

- **Auto adjust the frame rate under high-traffic icon:**

After enable this option, the frame rate will be automatic adjusted to improve the video quality when the network is heavy-loaded.

Note: Turn off audio will improve the video quality.

- **Apply**

Saves the changes made.

◆ Advanced:

▶ Basic	
▶ Advanced	
Interlacing	Interlaced mode ▼
TV Standard	NTSC ▼
Advanced MPEG-4 Settings	
Sequence mode	I-Frame and P-Frame mode ▼
GOP Size	60 (1 ~ 90)
Peak Bitrate	2400 (64 ~ 6000)
Apply	
▶ Image Adjustment	

● Interlacing

There are two modes available: **Interlaced** or **Progressive**.

Interlaced mode is a storage mode. An interlaced video stream contains fields rather than frames, with each field containing half of the lines of a frame.

A progressive video stream consists of only full frames.

Interlaced video streams can bring a lower bitrate but may cause lower quality.

● TV Standard

This is the manual setting; users have to select the TV standard mode of **NTSC** or **PAL**.

Note: If you do the factory default procedure, the TV standard setting will go back to **NTSC** mode.

● Sequence Mode

There are 2 different modes available: **I-frames only** or **I-frames and P-frames**.

P-frames, or predictive frames, are predicted based on prior P or I-frames plus some additional data. They have a much higher compression ratio than I-frames.

- **I-frame only** mode has very little compression resulting in large file sizes.
- **I-frame and P-frame** mode offers relatively good compression with medium file sizes. Although this requires more work on the host PC to decode the video.

- **GOP Size**

GOP stands for Group of Pictures. It defines the number of frames from one I-frame to the next. Since an I-frame uses very little compression, while P/B frames use much higher compression, a larger GOP size, results in smaller file sizes. For more information about I/P/B-frames, see below.

For MPEG-4 there is no maximum GOP size defined. It can be as low as 1 V just an I-frame - or into the thousands. However, as the GOP size increases, the compression increases, and therefore the more likelihood of errors. A higher GOP size also results in higher buffering times.

For DVDs the GOP size is 15. The default on the MVS is set to 60, which offers fair compression with a low likelihood of errors.

- **Peak Bitrate**


This is used to set a maximum bitrate that can be achieved. This is useful for setting bitrates between the values that are available from the Video Encoder bitrate list.

- **Apply**

Saves the changes made.

◆ Image Adjustment:

Basic
Advanced

Image Adjustment	
Contrast	0 default : 0
Brightness	0 default : 0
Hue	0 default : 0
Saturation	0 default : 0
Rotation :	0
Save Load Default	
	

- **Contrast, Brightness, Hue and Saturation** can be adjusted.
Values run from -100 through 100.
- **Rotation**
Select the Digital Rotation for the camera: **0** – 0 or 360 Degrees; **1**- 90 Degrees; **2**- 180 Degrees; **3**- 270 Degrees.
- **Save**
Save the update settings.
- **Load Default**
Set the image adjustments back to factory default.

Note for MPEG-4 IP camera: When using Lens with DC-Driver Auto IRIS capabilities in low light conditions, you should disable AES to get optimal lens performance. In strong light conditions it should be enabled to prevent color loss.

– PTZ Settings



PTZ Settings

▶ PTZ Settings			
PTZ model :	none ▼	Camera ID:	1 ▼
Serial mode :	RS485 ▼	COM port :	COM 2
Serial databits :	8 ▼	Serial baud rate :	115200 ▼
Serial stopbits :	1 ▼	Serial parity :	Disable ▼
<input type="button" value="Apply"/> <input type="button" value="Test"/>			

- **PTZ Model:**

Support some kinds of PTZ models to control remote devices.

Note: If your PTZ devices don't support these models on the menu list, please contact with your distributor.

- **Camera ID:**

Define camera ID to connect video servers when using multi PTZ devices.

- **Serial Mode:**

Select the serial mode to RS232 or RS485.

- **COM port:**

This the read-only information and it will auto detect the COM port.

- **Serial databits, Serial baud rate, Serial stopbits and Serial Parity:**

Every PTZ device has independent PTZ control protocol; please refer the PTZ product manual to check these settings.

– External Sources



External Sources

External Sources			
Video select : <input checked="" type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4			
IP address :	<input type="text" value="0.0.0.0"/>	Video channel :	<input type="text" value="1"/>
Http Port :	<input type="text" value="80"/>	User Name :	<input type="text" value="root"/>
Video Type :	<input type="text" value="Mpeg4"/>	Password :	<input type="text" value="....."/>
Rotation :	<input type="text" value="0"/>	PTZ model :	<input type="text" value="none"/>
Name :	<input type="text" value="remote 1"/>	RTSP Port :	<input type="text" value="554"/> (Default:554)
Product Type :	<input type="text" value="3:P1400/1401"/>		
<input type="button" value="Apply"/> <input type="button" value="Test"/>			

The “External Sources” feature allows user to set additional network cameras for the device.

◆ Video select:

MVS support four sources to do video control and monitor; the first one is internal source for analog camera connection, so the “Video select” is from 2 to 4.

● IP Address:

Enter a valid IP address from an IP Camera or Video Server.

● Video Channel:

Assign the number of the video channel to identify the video source when use multi channels management software.

● HTTP Port:

Enter the port number used for the IP address to display the video.

● User Name & Password:

Enter the user name and password of the device, if no user has been set for the device, the default value should be “**root**” and “**pass**” respectively.

● Video Type: Select the MJPEG or MPEG4 mode.

● Rotation: Rotation degrees run from 0 to 270 degrees for a permanent digital position.

- **PTZ Model:** Select the PTZ model if it is an IP speed dome.
- **Name:** Enter the name for the device.
- **RTSP Port:** Enter the port for the streaming.
- **Product Type:** Select the product type.

– On Screen Display



On Screen Display

On Screen Display	
<input type="checkbox"/> On Screen Display	0:Disable ▾
<input type="checkbox"/> OSD Text	Station-1
<input type="checkbox"/> OSD Coordinate X	1 ▾ (FULL:44,VGA:39,SIF:21,QSIF:10)
<input type="checkbox"/> OSD Coordinate Y	1 ▾ (FULL:28,VGA:28,SIF:13,QSIF:5)
<input type="checkbox"/> Display Font Grey Level	255 (0~255)
<input type="button" value="Apply"/>	

Display a text on top of the video

1. Select “0: Disable” or “1: Enable” on screen display item.
2. Enter into the OSD text that should be displayed.
3. Select Coordinates X, Y for the location of the text.
4. Enter the Display Font Gray Levels.

5.2. Network Settings

– General

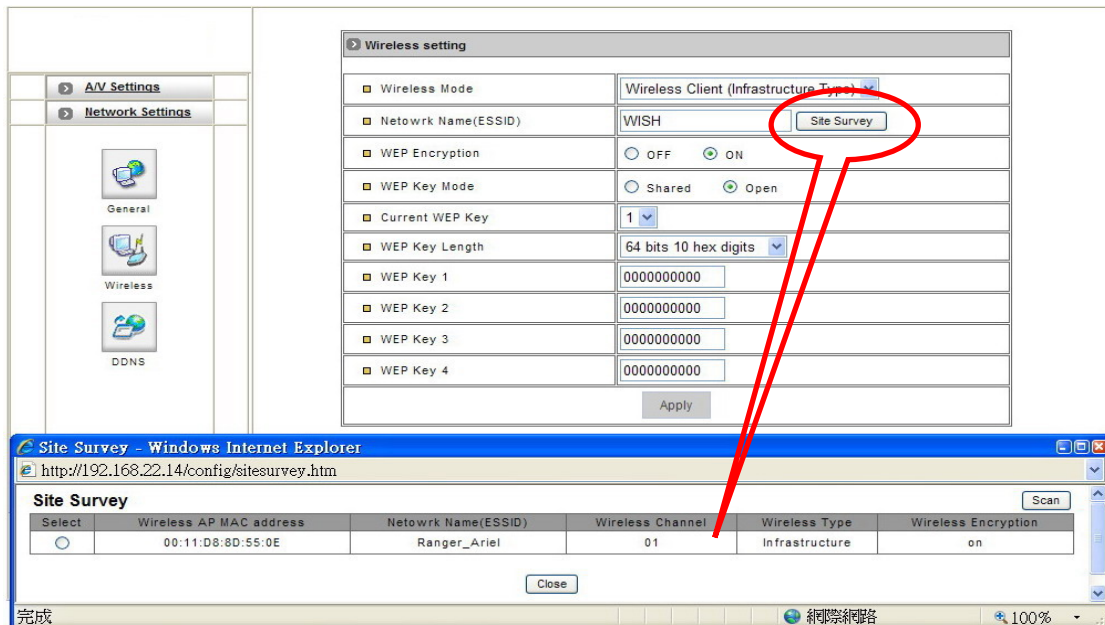


General

Network Settings	
<input type="checkbox"/> Please select the appropriate option to connect.	
MAC Address	00:04:29:09:23:91
IP address	<input type="text" value="192.168.22.14"/> (ex:192.168.0.200)
Subnet mask	<input type="text" value="255.255.255.0"/> (ex:255.255.255.0)
Device Name	<input type="text" value="mp4vs"/> (ex:ipc7007sb)
Gateway Address	<input type="text" value="192.168.22.1"/> (ex:192.168.0.254)
DNS Address 1	<input type="text" value="168.95.1.1"/> (ex:168.95.1.1)
DNS Address 2	<input type="text" value="0.0.0.0"/>
DNS Address 3	<input type="text" value="0.0.0.0"/>
IP Setting Mode	Static <input type="button" value="v"/>
Http Port	<input type="text" value="80"/> (ex:80)
RTSP Port :	<input type="text" value="554"/> (Default:554)
<input type="button" value="Apply"/>	

- ◆ Please select the appropriate option to connect.
 - **MAC Address:** It's read-only to displays the MAC address of the device.
 - **IP Address:** Enter the IP address of the device.
 - **Subnet Mask:** The subnet mask for the network segment to which the device is connected.
 - **Device Name:** Input a name for the device
 - **Gateway Address:** The gateway IP address for the network segment to which the device is connected.
 - **DNS Address 1~3:** Enter the DNS server IP address used for resolving domain names to IP addresses and others are optional when necessary.
 - **IP Setting Mode:**
 - Static IP: Manually assigned IP address.
 - DHCP: Automatically get IP address from DHCP server.
 - **HTTP Port:** The port on which the device will receive HTTP requests.
 - **RTSP Port:** The port on which the device will receive RTSP (streaming video) requests. Static.
 - **Apply:** Saves the changes made

– **Wireless (Only for wireless models)**



◆ **Wireless Setting:** This is the optional function for the particular MVS models.

● **Wireless Mode:**

- **Disabled:** Disable wireless function to use physical Ethernet cable to connect to network.
- **Wireless Client:** Select this item to enable wireless function and this device is a client under wireless infrastructure.

● **Network Name (ESSID):** When user would like to use wireless function and must assign a wireless access point (AP) to connect to wireless network.

The ESSID is the AP name and user may use “**Site Survey**” button to select AP.

● **WEP Encryption:** This is a kind of encryption for wireless translation in AP. When AP enables this function and this item must be set “**On**”.

Note: We advise to select “**OFF**” for it to avoid the security checked error.

● **WEP Key Mode:** Use the Shared or Open Mode.

● **Current WEP Key:** Select which Key to be used. You can choose among 4 keys to be used.

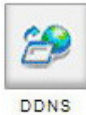
● **WEP Key Length:** Choose between 64 bits or 128 bits for the key length.

● **WEP Key 1~4:** Enter the key.

● **Apply:** Saves the changes made.

Note: About more settings of the wireless AP devices, please refer the AP user’s manuals or wireless configurations.

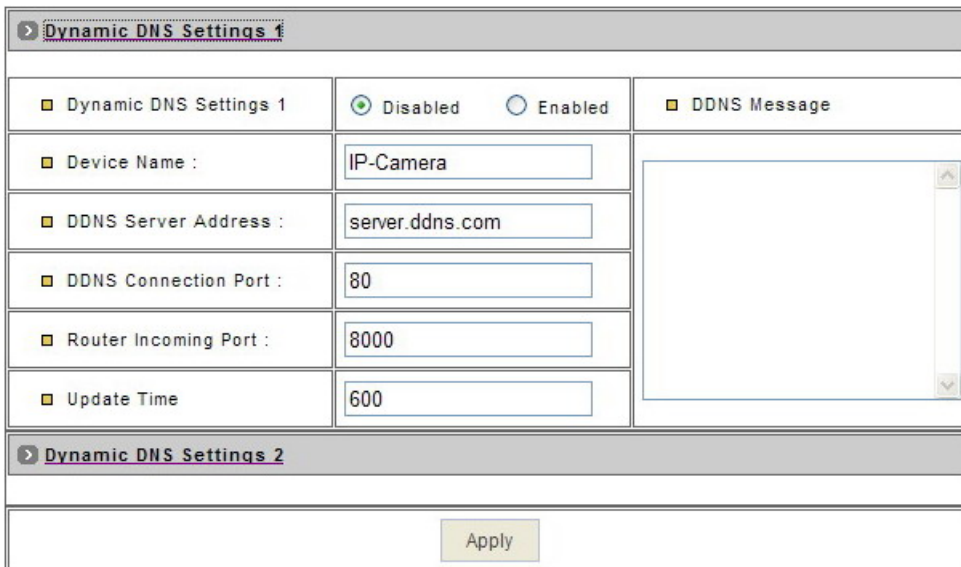
– DDNS



The DDNS (Dynamic Domain Name Service) is used when users want to access MVS with an easy memorized name such as “**http://demo.ddns.com**” instead of “**http://MVS’s IP Address**”.

This service could be useful when MVS is located behind Dial-up ADSL or IP sharing devices, which does not have fix IP address, then it's impossible to reach MVS from Internet.

- ◆ **DDNS Settings:** System provides two different kinds of settings for DDNS function and users can use both at same time.



- **DDNS Settings 1:** This is a public DDNS server that it provides DDNS service without registering any information.
 - **DDNS Settings 1: “Enable” or “Disable”** the DDNS function.
 - **Device Name:** Enter the name of the device. I.E: If the device name is “**ip-camera**” and the accessed DDNS server name is “**demo.ddns.com**”. This device DDNS name is “**ip-camera.demo.ddns.com**”.
 - **DDNS Server Address:** Enter the DDNS server address or domain name.
 - **DDNS Connect Port:** Specify DDNS server listen port, and the default is “**80**”.
 - **Router Incoming Port:** Specify your router listen port for DDNS server to redirect. The router may configure the different port for incoming (Internet request) and outgoing (Intranet request), e.g. it may configure to redirect Internet HTTP (port 80) request to Intranet port 8000, then, in this case, we must configure the “Router Incoming Port” to 80, and inside the MVS Network settings should set HTTP port with 8000.

- **Update Time:** Specify the MVS updated frequency in seconds, and the default is 600 (10 minutes), this is interval that MVS will automatically send an updated packet to DDNS server.
- **Apply:** Saves the changes made.

Dynamic DNS Settings 1		
Dynamic DNS Settings 2		
Dynamic DNS Settings 2	<input checked="" type="radio"/> Disabled <input type="radio"/> Enabled	DDNS Message
DDNS Host Name	<input type="text" value="test.dyndns.org"/> (Link to http://www.dyndns.org)	<input type="text"/>
Account ID	<input type="text" value="test"/>	
Password	<input type="text" value="test"/>	
<input type="button" value="Apply"/>		

- **DDNS Settings 2:** This is not a full public DDNS server that it provides DDNS service and must register some information in the server.
 - **DDNS Settings 2: “Enable” or “Disable”** the DDNS function.
 - **DDNS Host Name:** Specific the DDNS server host name.
 - **Account ID:**
Specify your account ID that you registered in the DDNS server.
 - **Password:**
Specify your password that you registered in the DDNS server.
 - **Apply:** Saves the changes made.
- **DDNS Message:** Return messages from remote DDNS server, and some hints may help to diagnostic the reason if register fails..
 - **DDNSaddr CGI Fail:** It means that MVS can't communicate with Internet world. Make sure your Network Configuration has correct subnet mask and default gateway, and DNS1 setting is correct and reachable.
 - **Already Registered:** Another user had registered this name; please change your register name by changing server name.

5.3. System

– System Information



System Information

System Information	
MAC address:	00:04:29:09:23:91
Language:	English
Description:	IP-Camera
Location:	
Model:	
Firmware Version:	version:v 2.30R24 .01.PX
<input type="button" value="Apply"/> <input type="button" value="Load Default"/>	

- ◆ **MAC Address:** This is the read-only information to Display the device's MAC address.
- ◆ **Language:** Select the language to be used. English, Traditional and Simplified Chinese can be chosen.
- ◆ **Description:** Useful as an administrative identifier.
It does not affect the operation of the device.
- ◆ **Location:** Useful for identifying the position of the device.
It does not affect the operation of the device.
- ◆ **Model:** Displays the model number for the device.
- ◆ **Firmware Version:** Displays the firmware version to easily compare firmware version when user upgrade firmware.
- ◆ **Apply:** Saves the changes made.
- ◆ **Load Default:** If select this button, system would be reset to factory default, but not include "Network Settings".

– Time Configuration



Time Configuration

Time Configuration	
<input type="checkbox"/> Server Time Setting	
<input type="checkbox"/> Server Time	Sun, 21 Jan 2007 13:25:55
<input type="checkbox"/> Time Mode	<input checked="" type="radio"/> Synchronize with NTP server <input type="radio"/> Set manually
<input type="checkbox"/> Time zone	(GMT)Greenwich Mean Time : Dublin, Edinburgh, Lisbon, London
<input type="checkbox"/> Ntp server 1	198.123.30.132 (ex:198.123.30.132)
<input type="checkbox"/> Ntp server 2	192.43.244.18 (ex:192.43.244.18)
<input type="checkbox"/> Ntp server 3	133.100.9.2 (ex:133.100.9.2)
<input type="button" value="Apply"/>	

Time Configuration	
<input type="checkbox"/> Server Time Setting	
<input type="checkbox"/> Server Time	Mon, 29 Jan 2007 09:22:9
<input type="checkbox"/> Time Mode	<input type="radio"/> Synchronize with NTP server <input checked="" type="radio"/> Set manually
<input type="checkbox"/> Set manually	<input type="button" value="Synchronize with computer time"/> Time: 0 : 0 : 0 (hr:min:sec) Date: 2006 / 1 / 1 (year/mon/date)
<input type="button" value="Apply"/>	

- ◆ **Server Time Setting:** The MVS provide two kinds of time settings.
 - **Server Time:** This is read-only information to display MVS system time.
 - **Time Mode:**
 - **Synchronize with NTP server:** Auto synchronizes the time with NTP server by the time zone and the NTP server 1~3 settings.
 - **Set Manually:** Manually enter the system date and time or synchronize with computer time.
 - **Apply:** Saves the changes made.

– User



User

User Setting

users has been selected Total 2 users

User Name	Password	Group	Enable Function	CH 1	CH 2	CH 3	CH 4
admin	*****	Administrator	Full	Full	Full	Full	Full
users	*****	General	None	None	Video	Video , PTZ	Video

Group:

User Name: Password:

Channel1: Channel2:

Channel3: Channel4:

Important:

1. All user names and passwords must comprise at least one, but not more than seven characters.
2. User names and Passwords must not contain colons or commas.
3. The first user must have administrative right, and must be the last one to be removed.
4. Max. Users:10.

Note: The first added user must have administrative right, and must be the last one to be removed.

- ◆ To add a user, first enter the user name and password in the respective fields, and then click on “**Add User**”.
- ◆ To remove a user, first select the user from the list, and then click “**Delete User**”.
- ◆ **User Name:** The user name must be between 1 and 16 characters and cannot include the following characters: , : &
- ◆ **Password:** The password must be between 1 and 16 characters and cannot include the following characters: , : &
- ◆ **Channel 1~4 Permission Settings:** To set up the permissions for the general users which channels could be accessed.
These settings must have administrator permissions.

5.4. Event

– General



Trigger	
<input checked="" type="checkbox"/> GPIN	GPIO Input Status : OFF
<input checked="" type="checkbox"/> Motion Detection	
Action	
<input type="checkbox"/> FTP Image	
<input checked="" type="checkbox"/> Mail Image	
<input checked="" type="checkbox"/> GPOUT	Relay Out : <input checked="" type="radio"/> OFF <input type="radio"/> ON
Alert Message Status : <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 Note:Alert Message can be set by listen AP (CGI ex:http://192.168.1.200/alertcfg?action=apply&alert1_enable=1&alert1_ip=192.168.2.172&alert1_port=2203&alert1_msg=oct03)	
<input type="button" value="Apply"/>	

- ◆ **Trigger:** System provides “**GPIN**” and “**Motion Detection**” to trigger events.
 - **GPIN & GPIO Input Status:** They are auto detected to display the status.
 - **Motion Detection:** When Users would like to use “**Motion Area**” function and this icon must be enabled.
- ◆ **Action:** Use some functions to record events.
 - **FTP Image:** When Users would like to use “**FTP Setting**” function and this icon must be enabled.
 - **Mail Image:** When Users would like to use “**E-Mail Setting**” function and this icon must be enabled.
 - **GPOUT:** It is auto detected to display the status.
 - **Relay Out:** Turn “**Off**” or “**ON**” for relay out setting.
 - **Alert Message Status:** They are auto detected to display the status with the recording application software.
 - **Apply:** Saves the changes made.

– Motion Area



Motion Area

Motion Area

SERVER:	177.183
ret=200&md_enable=1&mRecordDuration	352X288

Set Motion Detection Area

1. Use mouse to drag out a detection area on the video
2. Left-click the area and then drag the corner to change the size
3. Right-click the area and then select 'Property'
4. Check 'Enable', click 'OK', and then click 'Apply'

Note: Green blocks indicate this area is enabled for detection. Red blocks indicate this area is not enabled for detection

Apply

Box Property

{25,54,244,231} W=219 H=177

Enable

Motion vector threshold (0~5000)

4000

SAD threshold (0~200)

50

Sensitivity (1~100)

60

OK
Cancel

◆ **Motion Area:**

The “**Motion Detection**” icon (**Configuration>Event>General>Trigger**) must be enabled when use this function.

- Use Mouse to drag out a detection area on the video.
- Left-click the area and drag the corner to change the size.
- Right-click the area and select “**Property**”.
- Check “**Enable**”, click “**OK**” and click “**Apply**”.

Note: Green blocks indicate this area is enabled for detection.

Red blocks indicate this area is not enabled for detection.

◆ **Box Property:**

- **Motion vector threshold** (default value: 4000):

Motion vectors are typically used to compress video by storing the changes to an image from one frame to the next. We use these vectors creatively to detect and track motion and to find an alternative to traditional video decoding using phase shifting.

- **SAD (Sum of Absolute Differences) threshold** (default value:50):

SAD number value that the difference of movements of the image drew, will be started and made video recording when there are differences in SAD number value before and after comparing.

- **Sensitivity** (default value:60):

This number value is the sensitivity of setting up Motion Detect Recording; the higher number value will start Motion Detect Recording function.

– E-Mail / FTP



Email / FTP

▶ Email Setting	
■ Mail FROM	Sender Mail Address
■ Receipt TO	Receiver Mail Address
■ Mail Server	Sending Mail Server Name or IP Address
■ Authorization	<input type="radio"/> OFF <input checked="" type="radio"/> ON
■ Account ID	Sender ID
■ Password	
▶ FTP Setting	
■ Host Name	FTP Server IP Address
■ User Name	FTP User Name
■ Password	
<input type="button" value="Apply"/>	

◆ E-mail Setting:

The “E-Mail Image” icon (**Configuration>Event>General>Active**) must be enabled when use this function.

- **Mail From:** Enter the mail address of the mail sender.
- **Receipt To:** Enter the mail address of the mail receiver.
- **Mail Server:** Enter the mail server name or IP address.
- **Authorization:** Disable or enable the security for mail authorization.
- **Account ID & Password:** Enter the user name and password for the mail sender.

◆ FTP Setting:

The “FTP Image” icon (**Configuration>Event>General>Active**) must be enabled when use this function.

- **Host Name:** Enter the IP address of the FTP server.
- **User Name & Password:** Enter the user name and password for the FTP server.
- **Apply:** Saves the changes made.

6. Broadband Connections Q&A

– How can I configure my Video Server with my ADSL connection?

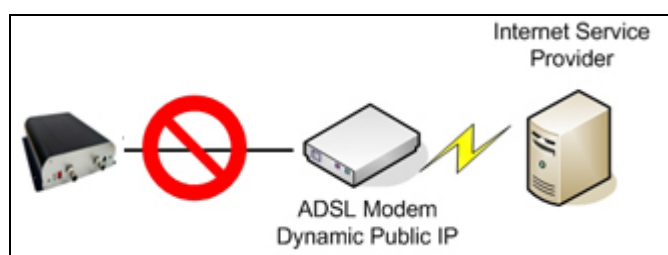
When using an ADSL connection you have to know if your ISP assigned you a Static Public IP or Dynamic Public IP. Consult with your ISP for more information.

– What is the difference between Static Public IP and Dynamic Public IP?

When using a Static Public IP, every time you get connected to the ISP, you will be using the same IP; when using a Dynamic Public IP, every time you get connected to your ISP, you will be using a different IP.

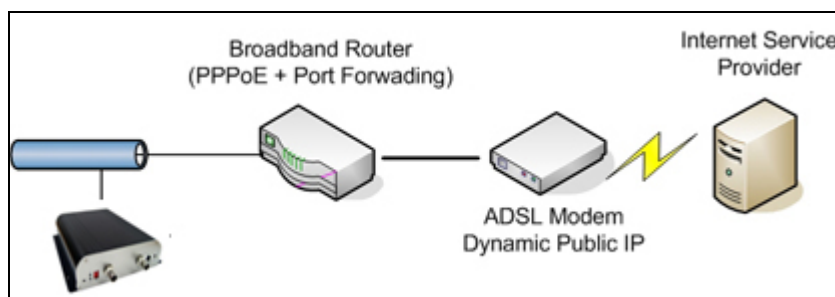
– Can I plug my Video Server directly into the ADSL Modem?

No, the main reason is that presently, the Video Server doesn't have the PPPoE feature, even if you plugged it in, there must be a feature present that dials to the ISP.



– I only have an ADSL connection and don't plan on getting a static Public IP. What can I do in order to make this work?

You can buy a Router which needs to have PPPoE and port forwarding capabilities. In the market, mostly all routers come with these features and they aren't expensive. Please consult with your provider regarding this matter. Refer to the next section for Port Forwarding settings.



– **Once I set this up, how can I view my camera through a remote location?**

You can register your camera or video server at our DDNS Service, and even if your Public IP changes, you can access it from a remote location. Refer to Video Server Manual at Network Configurations, DDNS settings in order to set it up.

– **How can I view my camera from a remote location through Internet when running the camera through my Local Network?**

This will require some configuration on your broadband router.

– **Useful terms:**

◆ **Broadband Router:**

A broadband router allows users to share a single Internet connection.

◆ **TCP/IP:**

TCP/IP is the protocol that computers use to communicate on the Internet.

◆ **TCP/IP Ports:**

Each service you use on the Internet communicates using one or more specific port numbers; your e-mail program uses port number 25 to send e-mail, and port 110 to receive e-mail from your e-mail server.

When you browse the Internet, port number 80 is used as default to send and receive Web pages.

◆ **IP Address:**

Everything that is connected to a TCP/IP network needs a unique address, an IP address. This is what happens when you browse the Internet with requests to view Web pages.

◆ **Public IP Address:**

A Public IP Address is the only IP address that is recognized on the Internet, where the term Internet refers to the global network, the World Wide Web.

◆ **Local IP Address:**

A local IP address can only be used internally, on a local network. A computer with a local IP address cannot access the Internet itself. It can however, access the Internet via another computing device, e.g. a broadband router.

◆ **Port Forwarding :**

Port forwarding, is essentially a method for a broadband router to forward data traffic aimed for one port on its public network interface to a computer or network camera on the local network. Ports run from 0 to 65535. Note that ports 0 to 1024 are well known ports, which means that those ports are already assigned to specific services. So when you consider choosing your own ports,

select those starting from 1025 to 65535.

– Configuration Examples:

You are a user with a network camera who wants to access it from a remote location through the Internet. The following equipment is available:

E 1 Network Camera Sever.

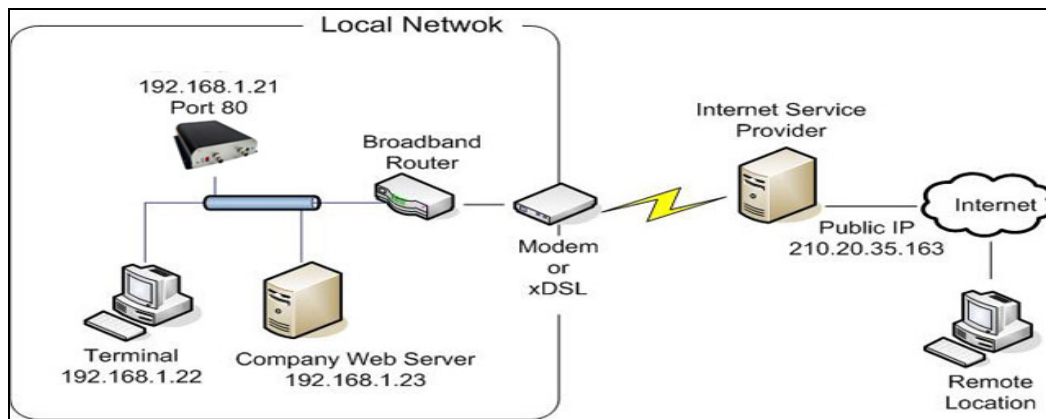
E 1 PC running Windows.

E 1 Broadband Router.

We need to direct all incoming requests that reach port 80 the public network interface of the broadband router, so that these are forwarded to the cameras IP address on the local network. Consult your broadband routers manual for information on how to configure port forwarding. Depending on the router, it could be denominated as Port Forwarding/NAT/Virtual Server. Usually it will look like this:

Private IP	Private Port	Type	Public Port
		<input checked="" type="radio"/> TCP <input type="radio"/> UDP	

6.1. Case 1 Using default settings



In this case what we have here is:

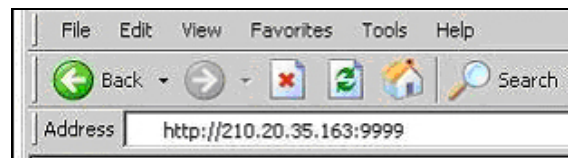
- ◆ 1 Public IP Address 210.20.35.163, assigned by the Internet Service Provider (ISP).
- ◆ 1 Camera Server, with a local IP of 192.168.1.21.
- ◆ 1 Broadband router.

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

Private IP	Private Port	Type	Public Port
192.168.1.21	80	<input checked="" type="radio"/> TCP <input type="radio"/> UDP	80

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.

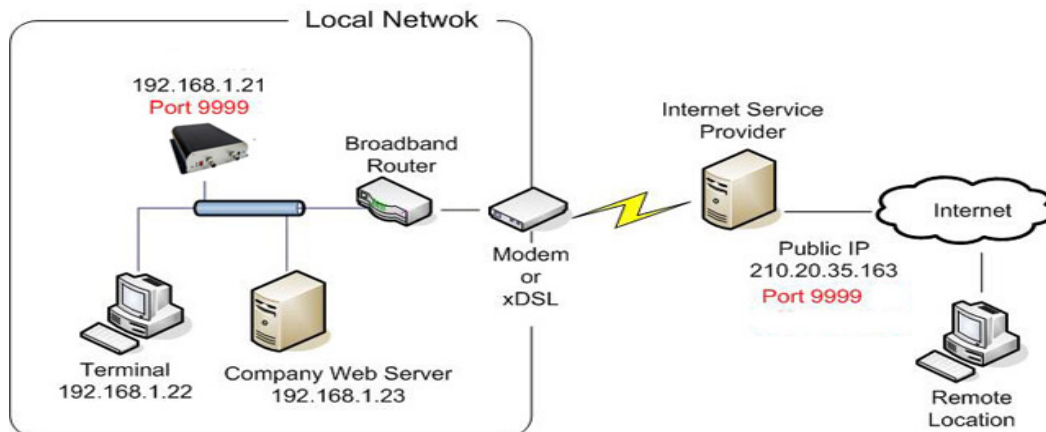
Once the broadband routers configurations are set, we can open the Internet Explorer and type in the Address bar the Public IP address.



- ◆ Can I use DHCP from my router to assign an IP to my camera?

We don't suggest it, if you do this, every time you reboot your camera, a new IP will be assigned and you will have to configure again your router in your Port Forwarding configuration.

6.2. Assigning ports manually



In this case what we have here is:

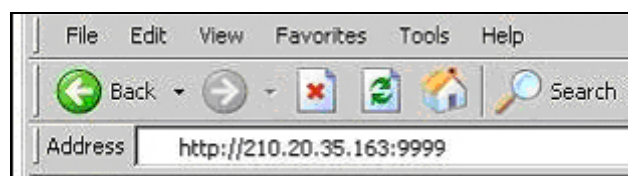
- ◆ 1 Public IP Address 210.20.35.163, assigned by the Internet Service Provider (ISP), but we will be using Port 9999 for accessing the camera from the Internet.
- ◆ 1 Video Server, with a local IP of 192.168.1.21, using port 9999 to get access to the camera through the Local Network
- ◆ 1 Broadband router

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

Private IP	Private Port	Type	Public Port
192.168.1.21	9999	<input checked="" type="radio"/> TCP <input type="radio"/> UDP	9999

In this case we are using Port 9999 for the camera server at 192.168.1.21, and using Port 9999 for the Internet access at 210.20.35.163.

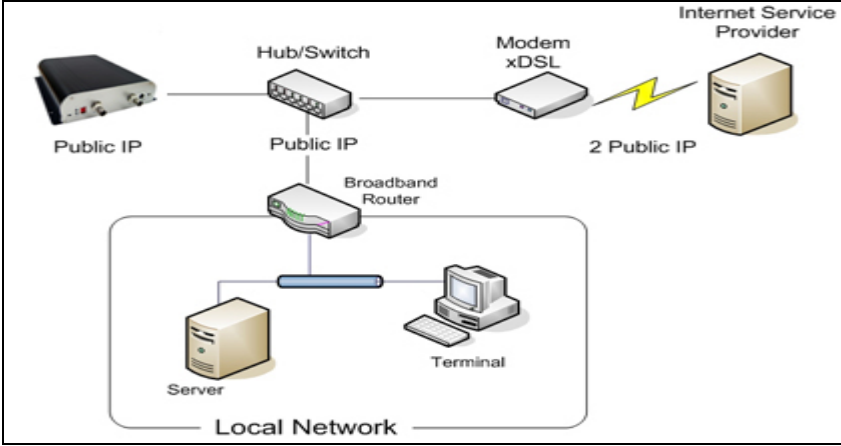
When we are in a remote location, in order to access our camera through Internet, we have to specify the Public Port when typing the Public IP Address as the figure below:



Note that if changes are made to the port assignment, some configurations at the MVS also have to be changed, such as Network and DDNS settings.

6.3. Using 2 or more Public IPs

The following figure is just an illustration on how the camera can be connected when 2 or more Public IPs are involved in a network infrastructure.



In this case, the network configurations for the camera such as IP address, Gateway, DNS will be assigned by the ISP.

7. Troubleshooting

◆ **Symptom:**

The MVS can not be accessed from a Web Browser.

Possible Causes	Remedial Actions
The IP address is already used by another device.	<p>Disconnect your MVS from the network.</p> <p>Run the PING utility and follow the appropriate recommendations.</p> <p>Note: The assigned IP number can be assumed valid if the PING utility returns "request timed out" - in which case you should set the IP address again, power on the MVS and then try accessing the unit again.</p>
The IP address is located within a different subnet.	<p>Run the PING utility, If the utility returns "no response" or similar, the diagnosis is probably correct. Then, you should proceed as follows: In Windows 95/98 or Windows NT, check that the IP address for your MVS is within the same subnet as your workstation:</p> <p>Click "Start", "Settings", "Control Panel" and "Network".</p> <p>Specify the TCP/IP adapter and click on Properties. Then, click "IP Address" in Properties.</p> <p>Check that the first 3 numbers within the IP address of your MVS matches the first 3 ones of your workstation. If not, your MVS may be on a different subnet and the IP address cannot be set from this workstation. You must set the IP address for the MVS from a workstation on the same subnet.</p>

In Windows 95/98, the ARP table was empty when you tried to set the IP address.	In Windows 95/98, the ARP command can't be used if you have an empty ARP table. Type arp Va to view the ARP table. If it is empty, you must ping an existing unit on your network before you can download the IP address to the MVS.
A programming script locks the unit.	Restore the unit to the factory default settings.

8. Upgrading the Firmware

MVS software is contained in Flash Memory, a silicon chip allowed to be erased and re-written. It provides an easy way to update the software without change any parts; just simply load the newest software from network.

8.1. The following procedures are for updating the software:

– Check software version

Enter URL "**http://<IP address>/ver**" in your web browser, which will show you the software version.

Example:

enter "**http://192.168.0.200/ver**" in Microsoft IE6 above URL location, you will see the software version--" Software Version=1.11 Revision 0905.1641 ", which indicates the currently software version is 1.11.

– Obtain the software (flash.bin)

The latest version of the MVS software is free of charge from your local distributor. Also you can obtain this software over the Internet.

– Upgrade procedure via FTP

1. Download the newest firmware and unzip it into your local drive, for example "**C:\temp**". Then, confirm the "**flash.bin**" file exists in this folder.
2. Restart the network camera by clicking on the **<Reboot>** button on Configuration page.

Caution: You must reboot the network camera before doing the following procedures; otherwise, some occasional internal conflicts may endanger the Flash devices.

3. Start the FTP session and log in to the network camera.

For example, in our case for Windows XP:

Enter DOS by **Start > All Programs > Command Prompt**.

Change to the folder where the latest flash.bin exists.

Start ftp session by enter "**ftp <Network camera's IP Address>**"

Enter "**root**" as USERNAME, "**pass**" as PASSWORD if no user in User List record .In case any user list exists, you will have to use your administrator's USERNAME and PASSWORD to login.

4. Set FTP to binary mode using the command "**bin**".
In FTP session window, enter "**bin**"
5. Upload the firmware into the network camera by FTP "**put**" command.
In FTP session window, enter "**put flash.bin**"
In FTP session window, enter "**bye**" to quit FTP session.
6. FTP session may freeze for around 1 minute to transfer and automatically upgrade the firmware. During that time, ping the network camera until get constant reply, which means system had completed upgrading and rebooting, then open browser to verify the firmware version been updated.

Note: If FTP session quits immediately after issued by command, you should continue pinging the network camera instantly. If the network camera replies to the ping command right after pinging, it means the network camera may not enter the self-programming stage to update the firmware. If not updated, then you should reboot the network camera and back to step 3 to try again.

For example, the MVS IP address is 192.168.0.200, then

```
C:\Documents and Settings\Administrator>cd \temp
C:\temp>ftp 192.168.0.200
Connected to 192.168.0.200.
220 192.168.0.200    Network camera FTP server ready.
User (192.168.0.200:(none)): root
331 Password required for root.
Password:
230 User root logged in.
ftp> bin
200 Type set to I.
ftp> put flash.bin
200 PORT command successful.
150 Opening BINARY mode data connection for flash.bin
226 Transfer complete.
ftp: 2097152 bytes sent in 10.11Seconds 207.43Kbytes/sec.
ftp> bye
221 Goodbye.      <=Quit ftp session immediately
                  <=if the window is frozen, please open another dos session
C:\temp>ping -t 192.168.0.200
Pinging 192.168.0.200 with 32 bytes of data:

Request timed out.
Request timed out.
Reply from 192.168.0.200: bytes=32 time=2ms TTL=255
Reply from 192.168.0.200: bytes=32 time=1ms TTL=255
Reply from 192.168.0.200: bytes=32 time<10ms TTL=255

Ping statistics for 192.168.0.200:
    Packets: Sent = 13, Received = 5, Lost = 8 (61% loss),
Approximate round trip times in milliseconds:
    Minimum = 0ms, Maximum =  2ms, Average =  0ms
Control-C
^C
C:\temp>
```

Key in the path stores the "flash.bin"

Key in this command, change the IP to yours

Input the account, default is "root"

Input the password, default is "pass"

Key in this command

Key in this command

Key in this command

Key in this command and wait the upgrade is complete.

These messages mean the upgrade are finished.

Press Ctrl+C to terminate the detection.

Note: Flash products can become damaged if the updating operation is not performed correctly. So please follow up above procedures carefully.

9. Restore Factory Default

To restore the factory default for MVS, please follow the steps:

1. Plug out the power jack to turn off the MVS.
2. Use a needle about 5cm long insert into the "Factory Default Hole" and push the button in the hole, keeping push it and don't release.



Factory Default Hole

3. Plug in the power jack to turn on the MVS.
4. Notice at the Power LED, when power on the LED is red, wait for few seconds, the LED becomes to orange, wait for the orange LED flash four times, it will back to red, at the moment, release the button in the hole and the MVS will be restored to factory defaults.



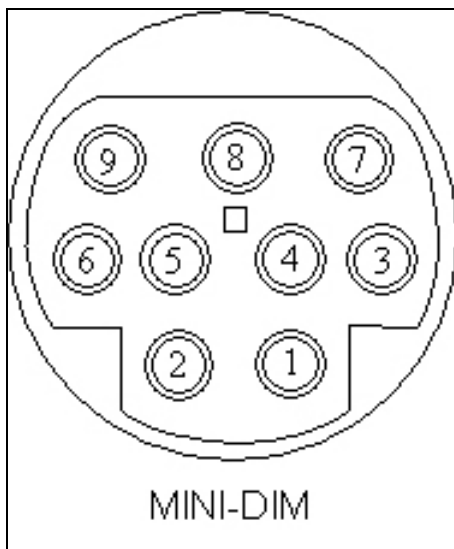
Power LED

10. I/O & COM Port Connectors

The GPIO & COM provides control signal input and output, which including one GPIO input, GPIO output as Relay connection and one RS-485 port multiplex with COM port.

The GPIO & COM port provide connection of PTZ devices and external console to control the device.

– See following picture indicate the Pin direction:



COM / GPIO MINI-DIN	
PIN	NAME
1	GPIN
2	RXD (Receive Data)
3	TXD (Transmit Data)
4	RS-485A
5	GND (System Ground)
6	GPOUT-Automatic Relay
7	GPOUT-Automatic Relay
8	RS-485B
9	Video Out

◆ GPIN:

Input high when opening the connection; input low when sinking more than 10mA or shorting to pin 5 (GND).

◆ RXD (COM Port Receive Data)

◆ TXD (COM Port Transmit Data)

◆ RS485A / RS485B:

To connect with external PTZ devices, please contact your dealer/distributor to get the information of the supported PTZ models.

◆ GND (System Ground):

System Ground is also connected to chassis as frame ground.

◆ GPOUT-Automatic Relay:

Trigger	
<input checked="" type="checkbox"/> GPIN	GPIO Input Status : OFF
<input checked="" type="checkbox"/> Motion Detection	
Action	
<input type="checkbox"/> FTP Image	
<input checked="" type="checkbox"/> Mail Image	
<input checked="" type="checkbox"/> GPOUT	Relay Out : <input type="radio"/> OFF <input checked="" type="radio"/> ON
Alert Message Status : <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 Note:Alert Message can be set by listen AP (CGI ex:http://192.168.1.200/alertcfg?action=apply&alert1_enable=1&alert1_ip=192.168.2.172&alert1_port=2203&alert1_msg=oct03)	
Apply	

When enable to use the GPIN or motion detection to trigger some alarm devices, the “Relay Out” must be turned on.

◆ Video Out:

Use the especial cable in the product package to connect this pin that it can output the video to the monitor.

– Specifications of the Solid state Relay:

◆ Features:

- Normally Open, Single Pole Single Throw
- Control 350VAC or DC Voltage
- Switch 130mA Loads
- LED control Current, 5mA
- Low ON-Resistance
- dv/dt , >500 V/ms
- Isolation Test Voltage, 3750VACrms Ω

◆ Absolute Maximum Ratings: (TA=25°C)

Emitter (Input)	Detector (Output)
Reverse Voltage: 5.0V	Output Breakdown Voltage: $\pm 350V$
Continuous Forward Current: 50mA	Continuous Load Current: $\pm 130mA$
Peak Forward Current: 1A	Power Dissipation: 500mW
Power Dissipation: 100mW	
Derate Linearly from 25°C: 1.3mW/°C	
General Characteristics	
Isolation Test Voltage: 3750VACrms	Storage Temperature Range: -40°C to +125°C
Isolation Resistance: Vio=500V, TA=25°C, $\geq 10^{10} \Omega$	Operating Temperature Range: -30°C to +85°C
	Junction Temperature: 100°C
Total Power Dissipation: 550mW	Soldering Temperature,
Derate Linearly from 25°C: 2.5mW/°C	2mm from case, 10 sec: 260°C

11. Specifications

Hardware
System CPU: 32-Bit RISC Processor ROM: 4MB Flash ROM RAM 32MB SDRAM Watchdog: Chip to monitor system voltage tolerance and abnormal program execution
Connectors One RJ-45 connector for Ethernet (built-in Power-over-Ethernet (PoE) for optional model) One mini-DIN for RS-485/RS-232/GPIO/Video out -- RS-485: for external Pan/Tilt (PT) device control -- RS-232: for console connection -- GPIO: for one fully opto-isolated alarm input -- Video out: for connecting to CCTV monitors, DVR, etc. One audio input 3.5mm jack One 12VDC jack One BNC video input, and one BNC loopback video output Two LEDs to indicate network and power/system status Two wireless network antenna connectors (Only available on the wireless model)
Network
Network Interface 10/100 Base-T Ethernet IEEE 802.11g wireless LAN (Optional)
Resolutions Full D1 (4SIF): NTSC = 720x480; PAL = 720x576 SIF: NTSC = 352x240; PAL = 352x288 QSIF: NTSC = 176x112; PAL = 176x144
Video Bitrate 16K ~ 4M bits/sec (CBR/VBR configurable (high quality VBR settings for MJPEG can reach up to 10Mbps)

Management
Installation IP Installer (Win32 Application)
Firmware Upgrade Remote upgrade via FTP Customized Web UI is upgradeable via FTP and Telnet
Client PC Requirements Pentium 4 2.0GHz or equivalent 512MB RAM Microsoft Windows 98se/Me/2000/XP Microsoft Internet Explorer 5.x or above Microsoft DirectX 9.0c Macromedia Flash 6 Xvid MPEG-4 Codec
Security Multi-tiered access control for configuration
Recording Directly from Web UI while viewing the live video stream Ware Recording Software – free 16-channel surveillance and configuration software
Operating Environment
Operating Temperature 5°C ~50°C (40°F ~ 125°F)
Operating Humidity 20%~80% RHG
Input Voltage DC 12V, 1A
Power Consumption <8 watts
Mechanical Design
Dimension 135(L) X 85(W) X 40(H) mm
Net Weight 0.57 kg (excluding power adapter)
Approvals CE/ FCC