HOME AUTOMATION, INC.

Model 87A00-1

Camera Server
Installation and User Guide

Document Number 87I00-1 Rev. A
July, 2008

DISCLAIMER

- While every effort has been made to ensure that the information contained in this guide is accurate and complete, no liability can be accepted for any errors or omissions.
- HAI reserves the right to change the specifications of the hardware and software described herein at any time without prior notice.
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- HAI makes no warranties for damages resulting from corrupted or lost data due to mistaken operation or malfunction of the Camera Server recording functions, the software, personal computers, peripheral devices, or unapproved/unsupported devices.

SAFETY PRECAUTIONS

Users are strongly advised to adhere to the directions and recommendations offered in this manual. Failure to do so may result in problems during operation.

- Make sure the correct voltage is being supplied before turning the power on.
- Do not install with the power turned on. Doing so may cause an electric shock.
- Do not install in a very humid environment. Doing so may cause an electric shock.
- Do not install in an area exposed to sunlight or heat. Doing so may cause deformation or damage.
- Do not remove the product cover. Doing so may expose you to a hazard like electric shock.
- Do not use in areas containing flammable materials like propane gas and gasoline or in areas that generate dust. Doing so may cause an explosion or fire.
- Do not dismantle, repair, or modify the product. Doing so may cause damage or an electric shock. Refer all servicing to qualified personnel.
- Do not use water, thinner, or organic solvent for cleaning the product exterior. Doing so may cause damage or an electric shock. Use a dry cloth instead and turn off the power before cleaning.

FCC NOTICE

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions;

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for Class B digital devices, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experience radio/TV technician for help.

Do not make any changes or modifications to the equipment unless otherwise specified in the manual. If such changes or modifications should be made, you could be required to stop operation of the equipment.

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Tel: (504) 736-9810

The Privacy act of 1974 (5 U.S.C. § 552a)

Please note that the HAI Camera Server is intended for monitoring and surveillance use and should never be used in a manner that invades other people's privacy or contravenes international or domestic privacy act and its regulations. Please be advised that in certain cases the recording of individuals, private properties, or commercial properties by means of camera or other devices may contravene legal rights of such individuals even if the images were recorded for personal use.

Table of Contents

1. Introduction 1

1.1. Model 87A00-1 Camera Server 1
1.1.1. About the Camera Server 1
1.1.2. Main Features 1
1.2. Package Contents 2
1.3. Factory Default Settings 2

2. Operation 3

2.1. Front Panel 3
2.2. Rear Panel 4

3. Web Interface 9

3.1. Accessing the Web Interface 9
User Login 9
3.2. ActiveX Installation 11

4. Main Page Configuration 12

4.1. Single View 12
4.2. Multi View 14
4.3. Setup 14

5. Setup Configuration 15

5.1. Video Setup 16
5.1.1. Video Settings 16
5.1.2. OSD Settings 18
5.1.3. Advanced 20
5.2. Audio Setup 21
5.2.1. Audio Input Settings 21
5.2.2. Audio Output Settings 22
5.3. Network Setup 23
5.3.1. General Settings 23
5.3.2. QoS Settings 24
5.3.3. Multicast Settings 25
5.3.4. DDNS Settings 26
5.3.5. Advanced Settings 27
5.4. Event Setup 28
5.4.1. Event Server Settings 28
5.4.1.1. SMTP Server Settings 29
5.4.1.2. FTP Server Settings 30
5.4.1.3. TCP Server Settings 31
5.4.2. Motion Detection Settings 32
5.4.3. Event Settings 33

5.5. Record Setup ····· 37
5.5.1. Recording on USB Flash Drive ····· *37*
5.5.2. Recording on FTP server ····· *40*
5.5.3. Playback the recoded data on the USB device ····· *41*
5.6. System Setup ····· 42
5.6.1. System Date ····· *42*
5.6.2. System Update ····· *43*
5.6.3. User Management ····· *44*
5.6.4. PTZ Protocol ····· *45*
5.6.5. System Information ····· *46*
5.6.6. Reboot ····· *47*
5.7. IO Setup ····· 48
5.7.1. Serial Port Setting ····· *48*
5.7.2. DI/DO Setting ····· *49*
5.7.3. PTZ ····· *50*
5.7.4. External Video out Setting ····· *51*
6. Resetting the Camera Server ····· 52
6.1. Rebooting ····· 52
6.2. Reset to Factory Default ····· 52

1. Introduction

1.1. Model 87A00-1 Camera Server

The 87A00-1 Camera Server is a device that transmits video and audio data via network in real-time. The server converts the analog video signals and audio signals into digital data and compresses them for on-line transmission. Cameras can then be viewed at home or over the Internet on a PC, OmniTouch 5.7e, OmniTouch 10p, or handheld mobile device, such as PDA, Smartphone, or other device running Windows® Mobile operating system, using HAI Snap-Link Mobile (1120M) or HAI WL3 (1112). Additionally, these cameras can be viewed on an iPhone™ when HAI WL3 is used.

Since the server has a built-in web server and network interface, it may not require additional hardware, software, or programming (besides configuring IP address) to view live video transmissions. After connecting all the cameras to the Camera Server and configuring its IP address, the Camera Server can be accessed from anywhere with an Internet connection.

1.1.1. About the Camera Server

The 87A00-1 Camera Server is a 4-channel Camera Server that transmits video in high resolution with bi-directional audio in real-time via the network. The 87A00-1 supports various network environments such as high-speed Internet, cable, DSL, LAN, or WAN.

The 87A00-1 Camera Server provides high quality MJPEG encoding at D1 in real time and de-interlacing by the hardware.

The 87A00-1 Camera Server provides the high-performance interactive two-way audio.

1.1.2. Main Features

The 87A00-1 is designed for various applications, such as viewing cameras on an OmniTouch 5.7e, OmniTouch 10p, or handheld mobile device, remote monitoring, and Internet broadcasting with the user friendly interface.

Interface to External Equipment

The 87A00-1 Camera Server supports pan/tilt/zoom camera devices, alarm sensors, as well as other security equipment to customize the monitoring system.

Interactive Audio

In addition to the real-time motion picture and audio transmission, the 87A00-1 provides an interactive audio transmission function. To provide more precise information at the location, the 87A00-1 Camera Server allows users to hear audio and to watch video images simultaneously from the remote location where the 87A00-1 server is installed.

1.2. Package Contents

Before installing the Camera Server, please make sure that the following items are included in the box:

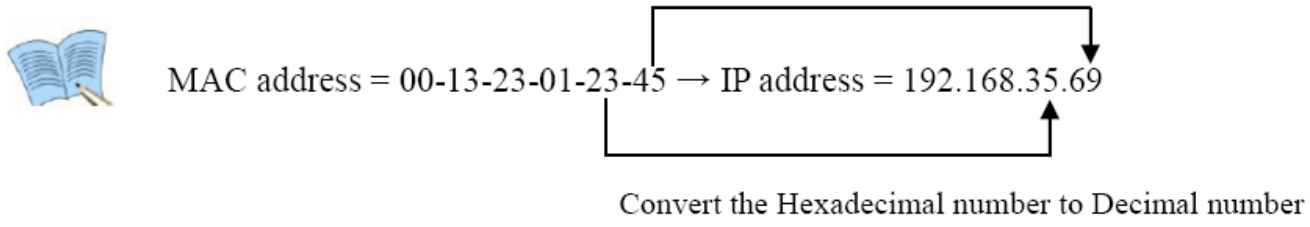
1. Camera Server
2. 12VDC Power Adapter with Power Cord
3. 2 Terminal Block
4. 2 Audio Cables
5. Mounting Hardware
6. Software Utility and Manual CD

1.3. Factory Default Settings

Factory default settings are as follows:

IP address: 192.168.xx.yy
Mask: 255.255.0.0
Gateway: 192.168.0.1
User ID: root
Password: pass

The last two bytes of the MAC address represents the “xx” and “yy” for the default IP address of the Camera Server. The last two bytes must be converted from hexadecimal to a decimal number.

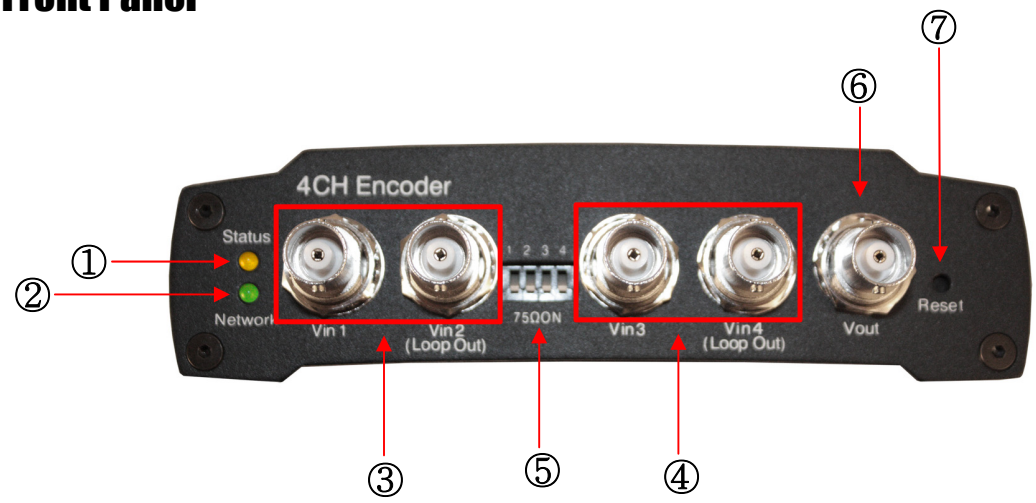


After installation, the default IP address can be changed using one of the following methods:

- Using the built-in web interface.
- Using the “IPAdminTool” Software Utility included on the Software Utilities and Manual CD.

2. Operation

2.4. Front Panel



① **Status LED**
② **Network LED**

Status (Orange) and Network (Green) LED indicators display the following system information:

	Status (Orange)	Network (Green)
Power Off	Off	Off
Booting in progress	On	Off
Successful Network Connection	On	Blinking
Failed Network Connection	On	Off
Data Transmission in Progress	Blinking (Slow)	Blinking (Fast)

1. System initialization and booting

When power is supplied to Camera Server, it is initialized for approximately 1 second. During this time, the orange Status LED is turned on. After completion of booting, for a successful network connection, the green Network LED blinks indicating that data is being transmitted. If network connection fails, please verify that the LAN cable is connected or restart Camera Server.

2. Video streaming service

When an application runs, the Status LED blinks once per second. The Network LED blinks at a rate proportional to the amount of data being transmitted.

③ and ④ **Video Input BNC Connectors (Vin 1, Vin 2, Vin 3 and Vin 4)**

Used for video inputs. Video input type: NTSC or PAL

⑤ **Termination Resistor DIP Switch (75Ω ON)**

A switch to turn On/Off a 75Ω termination resistor is provided for each video input. Factory default setting is ON.

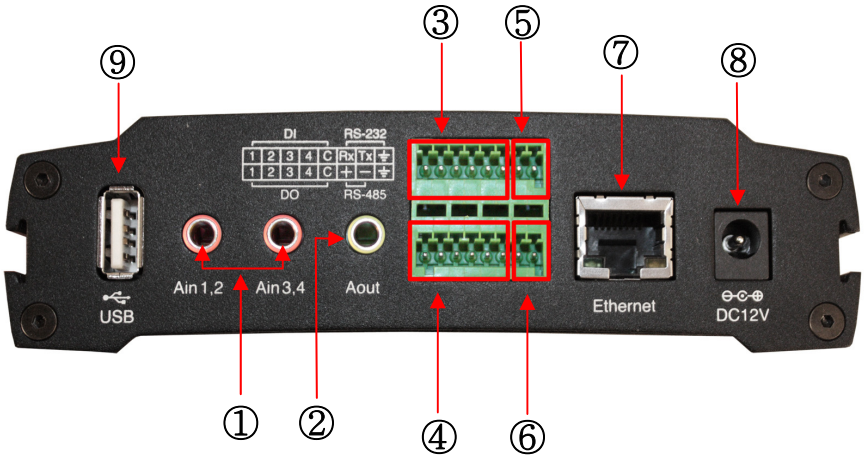
⑥ **Video Output BNC Connector**

Vout is used to display quad or single channel composite output to an external monitor.

⑦ **Reset Switch (Reset)**

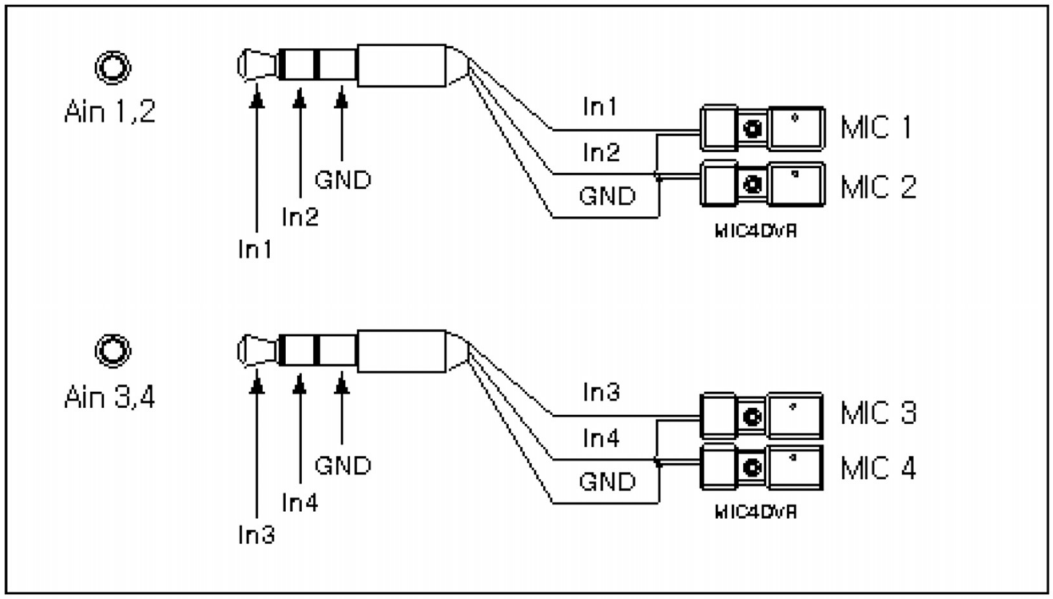
The Reset Switch is used for restarting the Camera Server or resetting the Camera Server to Factory Default (FD). Refer to ***Factory Default Settings*** for detailed procedures.

2.5. Rear Panel



① **Audio Input Jack (Ain 1,2 and Ain 3,4)**

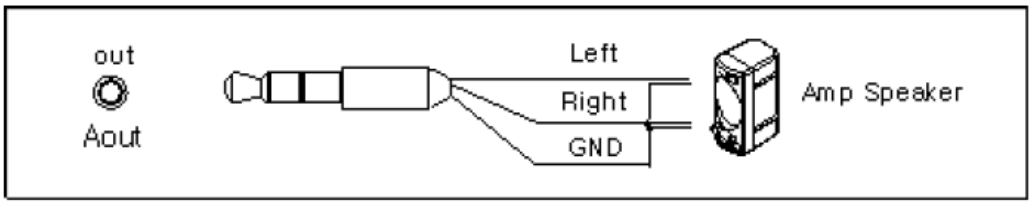
The Camera Server has mono audio input channels using stereo audio sockets. Therefore, a special cable is needed to connect audio devices. See the ***Audio Input Connector*** diagram.



Audio Input Connector

② **Audio Output Jack (Aout)**

The Camera Server has one mono audio output using the stereo socket. Even if a stereo speaker is connected, both sides will have the same sound (mono output). The Camera Server audio output is very low-wattage, therefore it requires amplified speakers (do not use headphone/earphone directly).

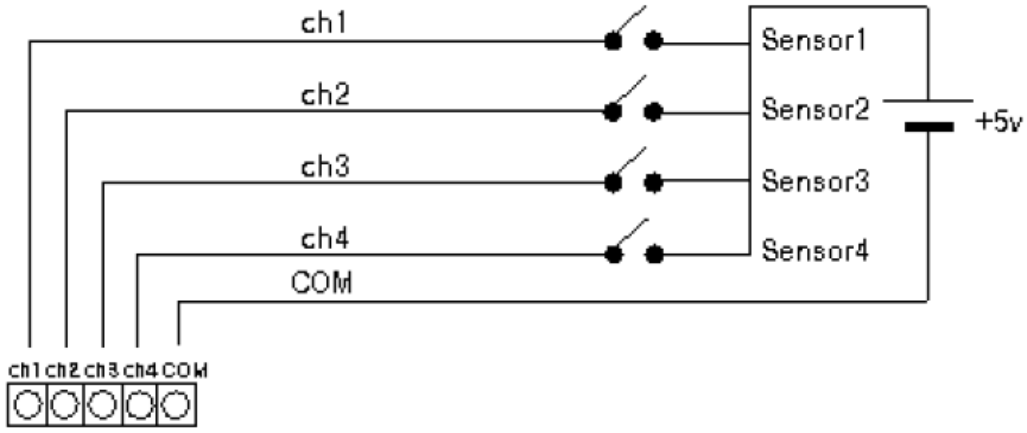


Audio Output Connector

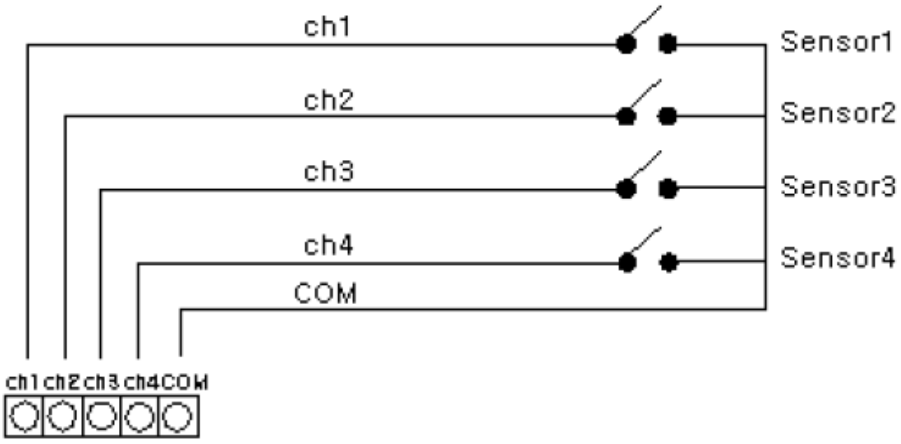
③ **Digital Input (DI 1-4)**

The Camera Server has 4 Digital Inputs as shown. Each input can be connected either a voltage type sensor or relay type sensor (dry contact).

Do not use voltage and relay type sensors together.



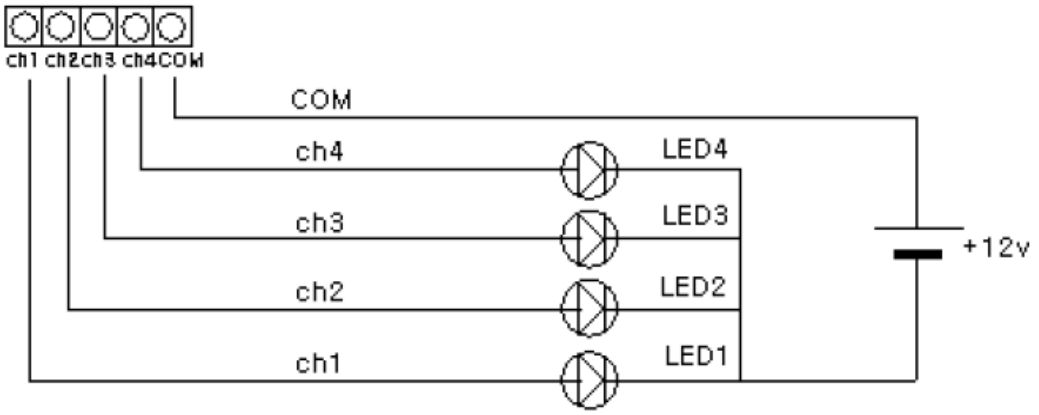
Voltage Type Digital Input Connections



Relay Type Digital Input Connections

④ **Digital Output (DO 1-4)**

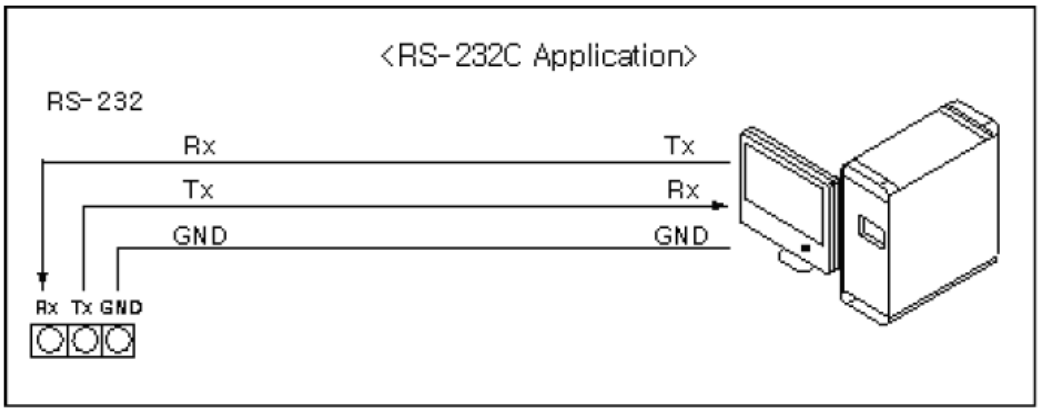
The Camera Server has 4 12VDC Digital Outputs. The Digital Outputs can be connected as shown:



Digital Output Connections

⑤ **RS-232C Terminal Blocks (RS-232C)**

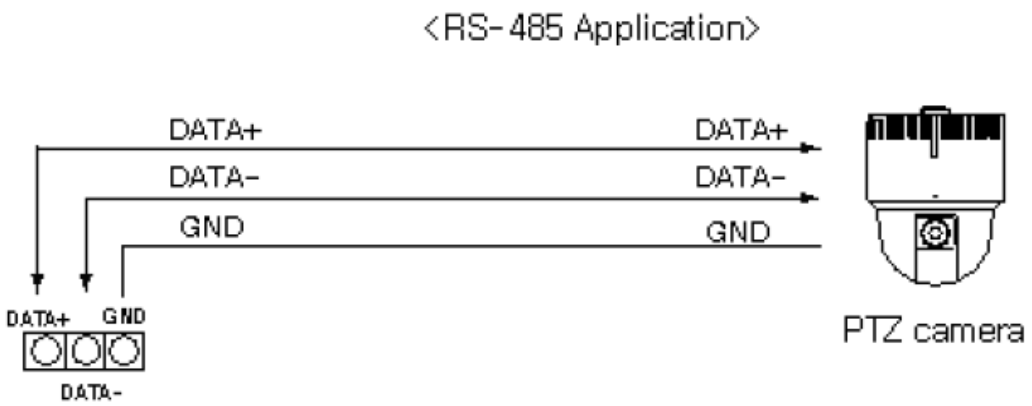
The RS-232C Terminal Blocks are used to connect an RS-232 serial device. The RS-232C serial port consists of Transmit (Tx), Receive (Rx), and GND.



RS-232C Connection

⑥ **RS-485 Terminal Blocks (RS-485)**

The RS-485 Terminal Blocks are used to connect RS-485 serial devices such as PTZ cameras. The RS-485 serial port consists of DATA+, DATA-, and GND.



RS-485 Connection

⑦ **LAN Connector (Ethernet)**

This is a RJ45 LAN connector for 10/100 Base-T Ethernet.

⑧ **Power Adaptor Connector (DC 12V)**

Power connector input for the 12VDC, 3A power supply.

⑨ **USB Port**

This USB port is used for recording images to a USB storage device such as a USB flash drive.

3. Web Interface

3.1. Accessing the Web Interface

To access the web interface of the HAI Camera Server, open Internet Explorer and enter the IP address of the 87A00-1 into the address bar.

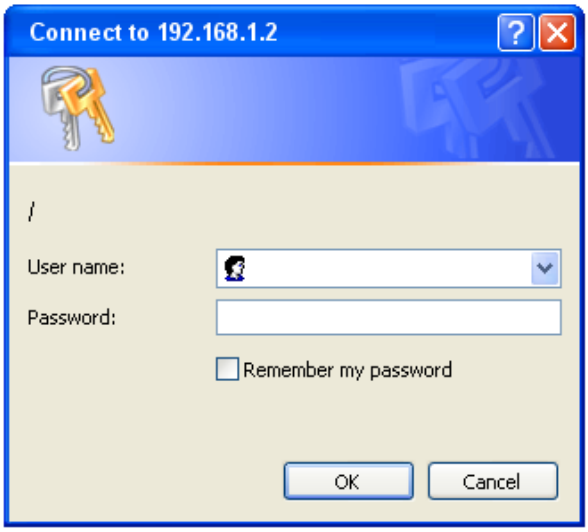
Enter the IP address in the address bar of the browser as shown below:

http://(IP address)

For example:
http://192.168.1.2

User Login

The 87A00-1 user's log in page will be displayed.

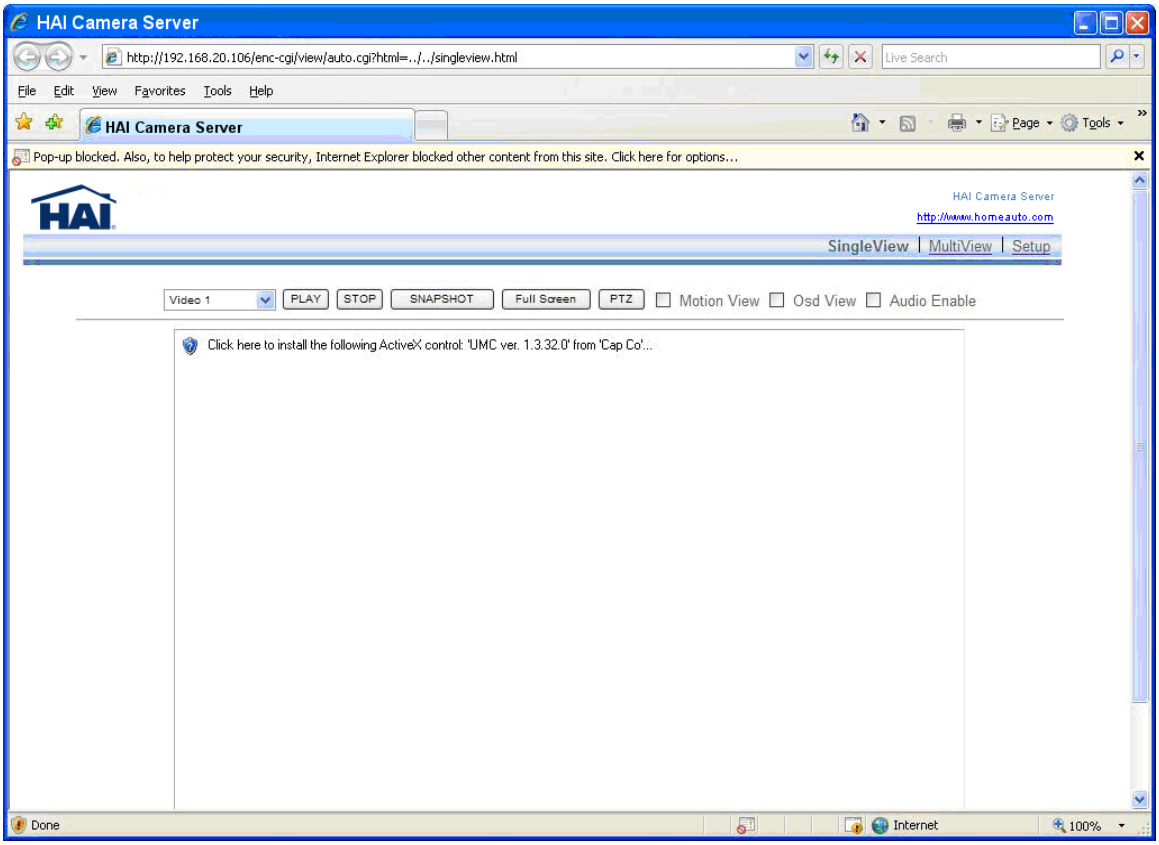


The default login credentials are as follows:

User name: root
Password: pass

When initially accessing the 87A00-1 web interface, the client viewer software is automatically downloaded and installed.

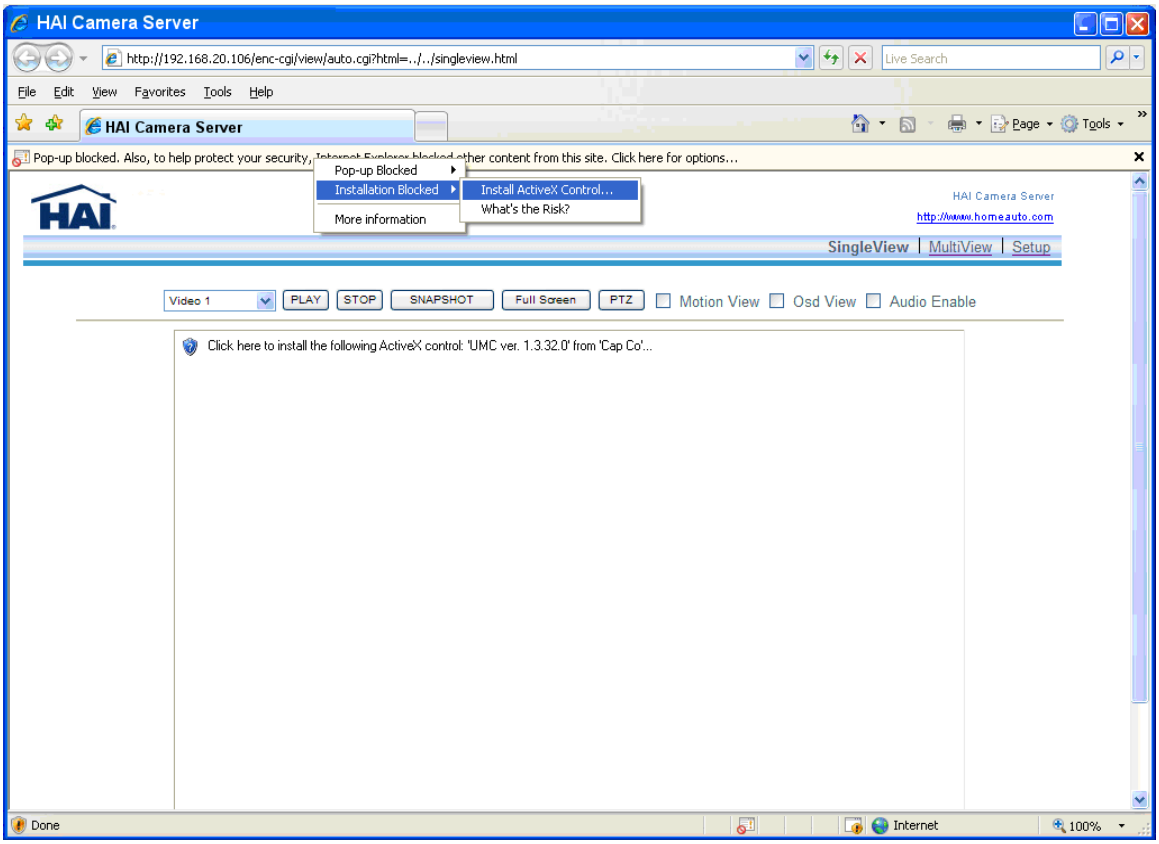
The first time you access the web interface, the Active-X Control Plug-In must be installed. If the Active-X Control is not currently installed or if you are accessing the web interface for the first, following prompt will appear.



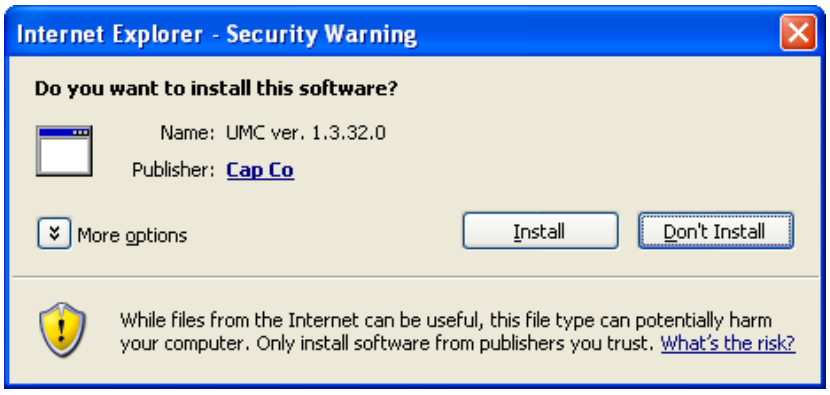
NOTE: The 87A00-1 browser interface requires the Active-X Control Plug-In for Internet Explorer. If the Active-X Control Plug-In is not installed, you will be prompted to install the plug-in before the 87A00-1 interface is launched. You must answer "YES" to the questions about installation of the plug-in. After installation, the 87A00-1 browser web interface should be displayed.

3.2. ActiveX Installation

You will need to install ActiveX for displaying images. Click “Pop-up Blocked” and then “Install Active X Control” as shown below.



At the Security Warning, click the “Install” button.



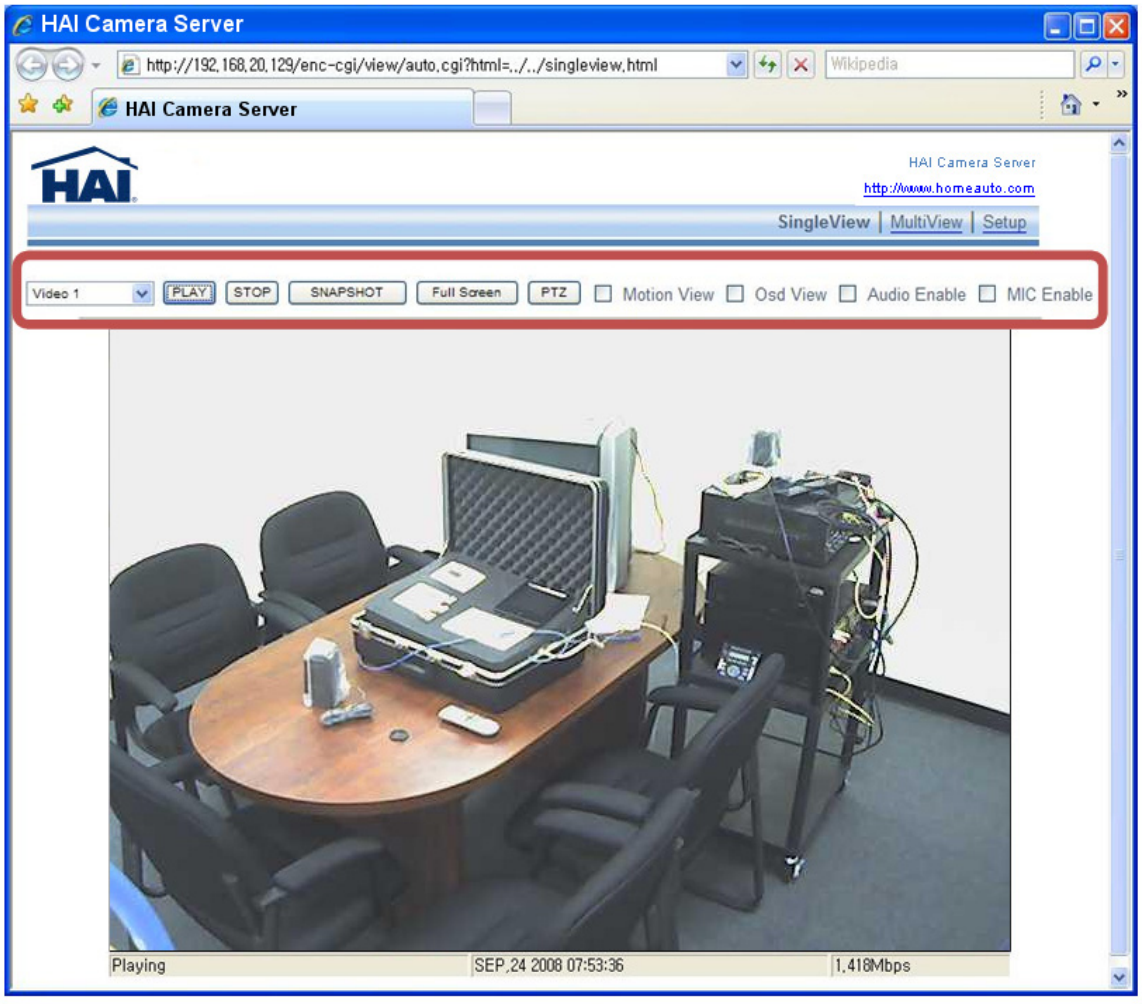
4. Main Page Configuration

4.1. Single View

When the installation of the client program is complete and your login is accepted, the 87A00-1 Viewer is automatically connected and begins displaying video.

SingleView shows only one camera on a page.

Video 1 is set as the default channel and other channels are chosen from the drop-down combo box.



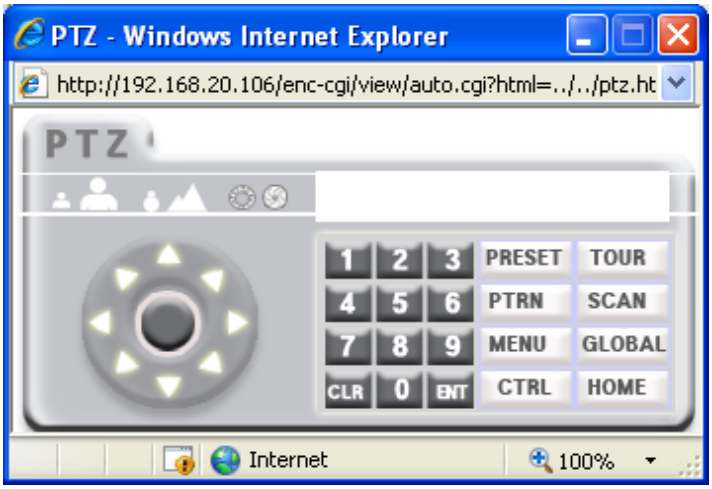
- **PLAY:** Play the current camera.
- **STOP:** Stop the current camera.

- **SNAPSHOT**: Save a snapshot of current video image.

  Note: The file is saved in ***\My Documents\Snapshot*** folder

- **Full Screen**: Stretches the camera image to fill the full screen.

- **PTZ:** Virtual PTZ control keyboard is displayed. This is used to control PTZ cameras.



- **Motion View**: When motion detection is set on the Event menu, you can see the detection status on the current image screen.

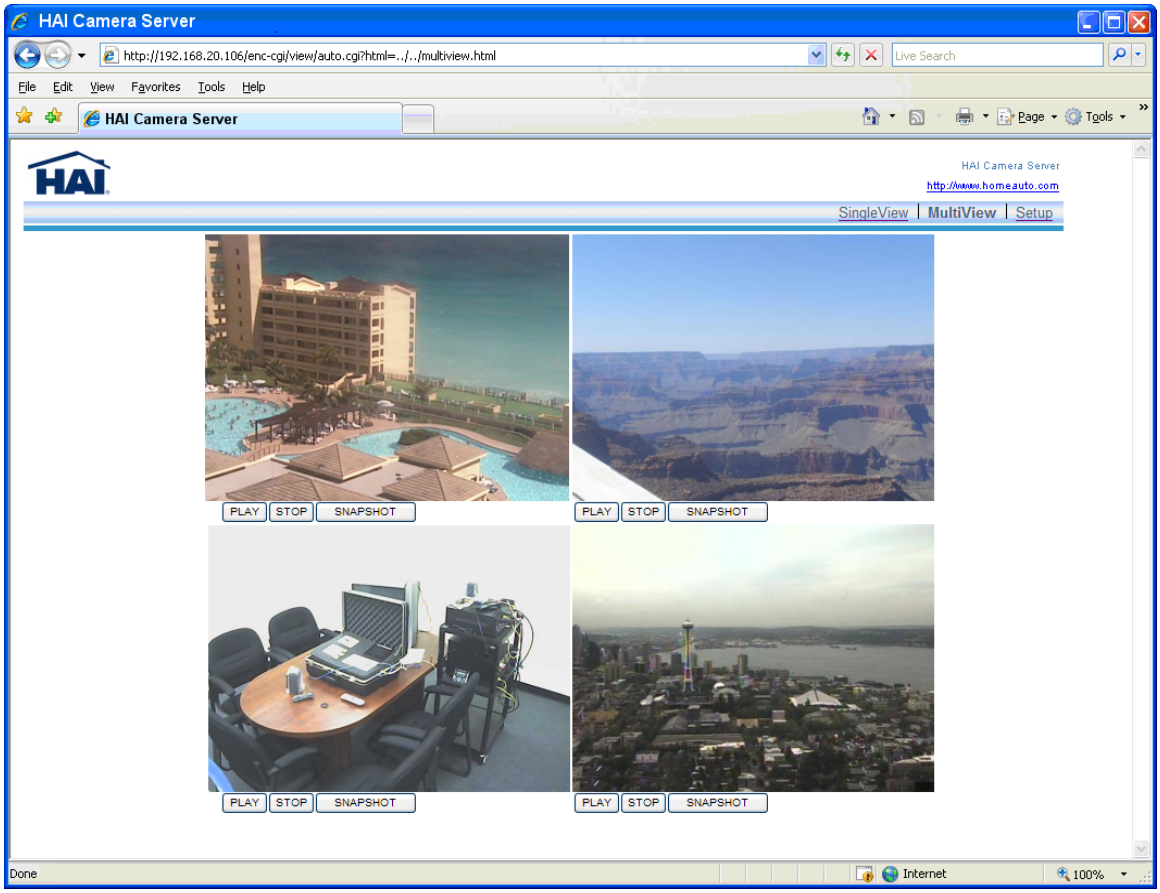
- **OSD View**: Shows the current image information, RTSP address, Channel number, FPS, Frame type, Frame Size, and Date and time on the image view screen.

- **Audio Enable** – Allows you to listen to the audio sound. To enable this function, the audio connection cable should be connected to IP Products from the video source.

- **MIC Enable** – Allows you to send the audio through a microphone from your PC to the site where the camera is installed. The audio input from the microphone will be transmitted via network.

4.2. Multi View

MultiView displays all 4 cameras on one page. Individual **Play, Stop,** and **Snapshot** button are available for each camera in MultiView mode.



4.3. Setup

Setup allows users to completely configure the Camera Server. See
5. Setup Configuration for an explanation of each option and how to set and change the values.

5. Setup Configuration

The Setup Configuration pages allow you to completely configure the Camera Server.

Click **Setup** on the main page of web interface. On the left side of the main page, you can see the following categories:

Video
- Video Setting
- OSD Setting
- Advanced

Audio
- Audio Input
- Audio Output

Network
- General
- QOS Setting
- Multicast
- DDNS
- Advanced

Event
- Motion
- Event
- Event Server

Record
- Record
- USB Data

System
- System Data
- System Update
- User Management
- PTZ control
- System Information
- Reboot

IO
- Serial Prot Setting
- DI/DO
- PTZ
- External Video Out

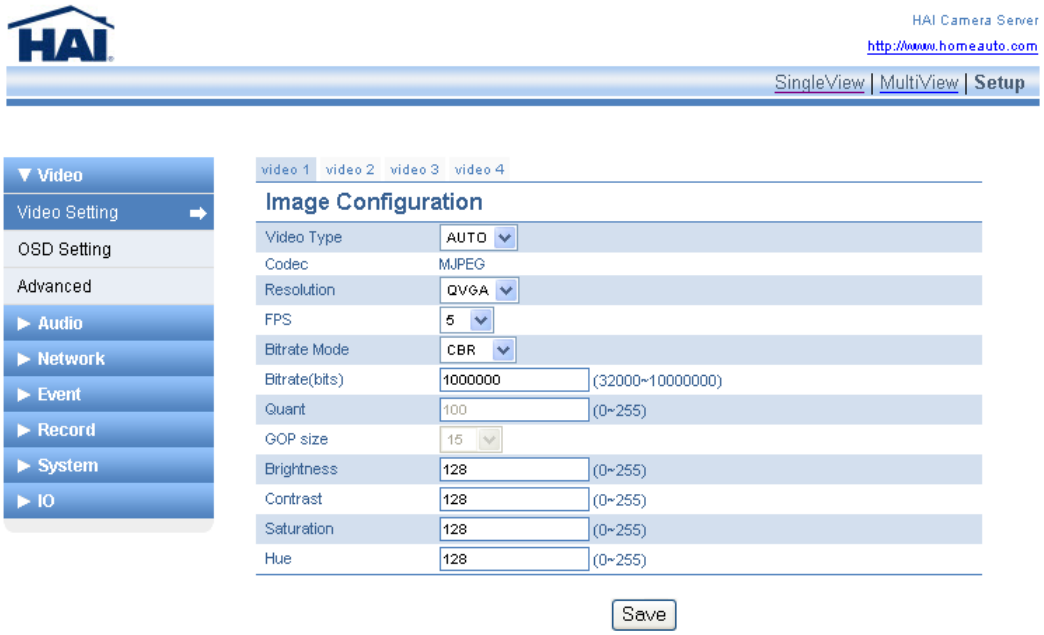
5.1. Video Setup

5.1.1. Video Settings

Select **Video Settings** from the **Video** menu to select the Video Type, Codec, Resolution, FPS, Bitrate Mode, Bitrate, Quant, GOP size, Brightness, Contrast, Saturation, and Hue.

Note

Whenever a camera is viewed on an OmniTouch 5.7e or OmniTouch 10p, the Resolution, FPS, Bitrate Mode, and Bitrate of the camera on the Camera Server will automatically change based on the settings of the camera in the OmniTouch touchscreen.



Video Type

Select the video type from the Video Type box. The video format is detected automatically when the device boots up. If you change the video type manually to a certain type, it will only affect the FPS.

Video Codec

The video codec in the Camera Server is MJPEG.

Resolution

Select the desired resolution from the Resolution box. Refer to the table below.

	NTSC	PAL
D1	720x480	720x576
VGA	640x480	640x480
QVGA	320x240	320x240
4CIF	704x480	704x576
2CIF	704x240	704x288
CIF	352x240	352x288
QCIF	176x112	176x144

FPS (Frames per Second)

Select the desired FPS from the FPS box. This value represents the number of encoded frames you want to get per 1 second.

Video Format	Available frame rate
NTSC	30, 15, 7.5, 10, 6, 3.75, 2, 1
PAL	25, 12.5, 8, 6.25, 5, 4, 3, 1

Bitrate Mode

Select the desired bitrate mode from the Bitrate Mode box.

The following bitrates are supported: *CBR*, *VBR* and *HVBR*. The default mode is CBR. If you set as *HVBR*, both *Bitrate* and *Quant* values can be set.

Bitrate

Enter a bitrate in the Bitrate box. The default value 1.5Mbps. Bitrate is only adjustable when the bitrate mode is CBR or HVBR. The range is from 32 Kbps to 10Mbps.

Note

Since the maximum bitrate is 10Mbps, you should distribute the bitrate between the number of installed cameras within 10 Mbps.

Quant

Enter a quant value in the Quant box. The default value is 128. Quant is only available when the Bitrate mode is VBR. The range is from 0 to 255. The Quant value is related to the image quality of VBR setting. The lower value makes high quality images.

GOP Size

Select the desired GOP size from the GOP box. GOP is an abbreviation for “Group of Pictures”. The GOP number represents a frame interval.

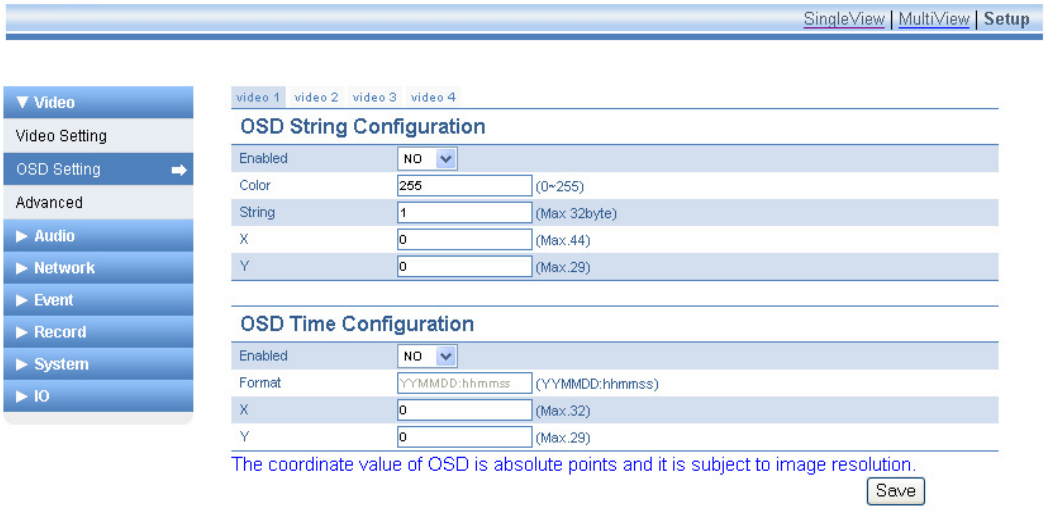
If the GOP size is 1, only I frame is generated in 1 second. If the GOP is set to 15, 15 frames are captured per 1 second.

The GOP can be a number from 1 to 255. The default value is 15.

Brightness/Saturation/Contrast/Hue

The range of each value is 0 to 255. The default value for each is 128.

5.1.2. OSD Settings



NOTE: The coordinate value of OSD is absolute points and it is subject to image resolution. If your OSD setting position is not as you expected, you may need to adjust the image resolution.

OSD String Configuration

Enable

Select **Yes** in the Enabled box to enable the OSD (On Screen Display).

Color

The color is in grayscale from 0 to 255. This value applies to OSD Time as well.
“0” is black and “255" is white.

String

Enter the maximum length of OSD text (ASCII character string).

X/Y

Type the location of the string by entering the X and Y coordinates.

For example, if the coordinates are (***0, 0***), the time stamp will be shown on the top left of image.

Input range of coordinate value:

X: 0 - 44
Y: 0 - 29

OSD Time configuration

Note

The OSD time setting is available only on the 1st camera and the other cameras do not support the Time OSD setting.

The OSD time is refreshed every 1 second.

Enable

Select **Yes** in the Enabled box to enable the Time OSD.

Format

The time information is synchronized with a NTP server (this can be configured under **System** in the **System Data** menu). Even though the box is open, it's not available to correct the time manually.

X/Y

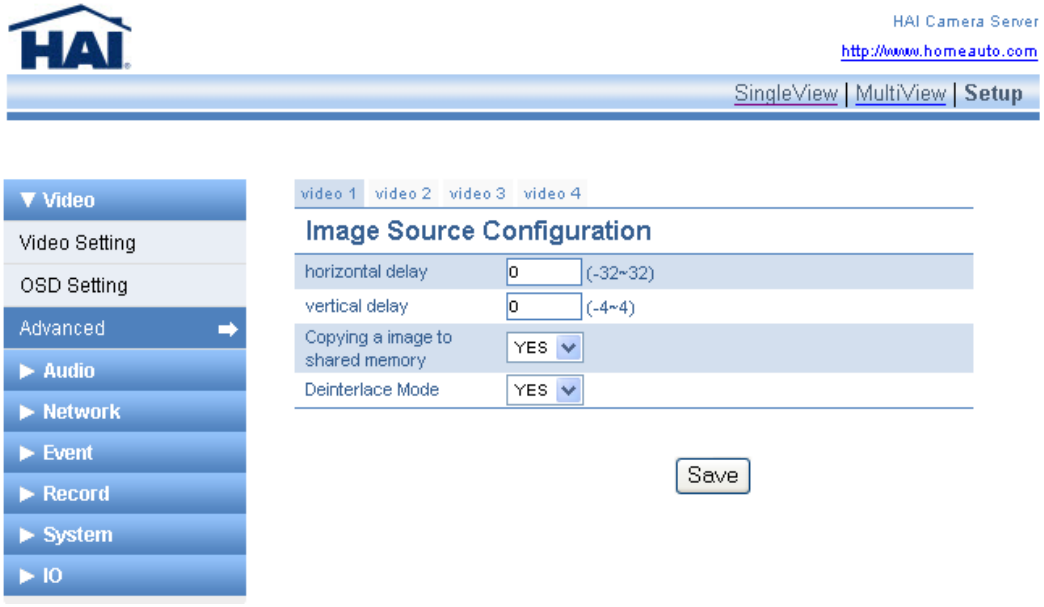
Type the location of the string by entering the X and Y coordinates.

For example, if the coordinates are (***0, 0***), the time stamp will be shown on the top left of image.

Input range of coordinate value:

X: 0 - 32
Y: 0 - 29

5.1.3. Advanced



Horizontal delay

A higher setting moves the image towards the left. The setting ranges from 32 to -32

Vertical delay

A higher setting moves the image towards the top. The setting ranges from 4 to -4

Copying an image to shared memory

This setting allows the Camera Server make the best use of the source.

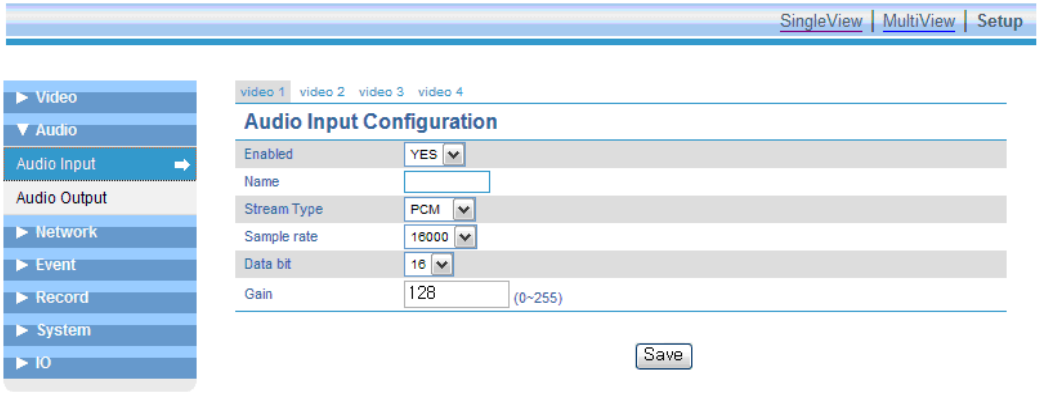
De-interlace Mode

Select **Yes** to enable de-interlacing. Select **No** to disable de-interlacing.

5.2. Audio Setup

The Audio Setup page provides the options for the audio input and the audio output.

5.2.1. Audio Input Settings



The Audio Input Configuration settings are required to listen to the sound from the location where the camera is installed. In order to test and use this feature, the microphone should be connected to the audio port of 87A00-1 Camera Server.

Enable

Enables or disables the audio input.

Name

Enter a nickname for the audio input.

Stream Type

Select an audio input format. Supported formats are: PCM, uLaw, and aLaw.

Sample Rate

Select sampling frequency. Supported frequencies are: 16 KHz. and 8 KHz.

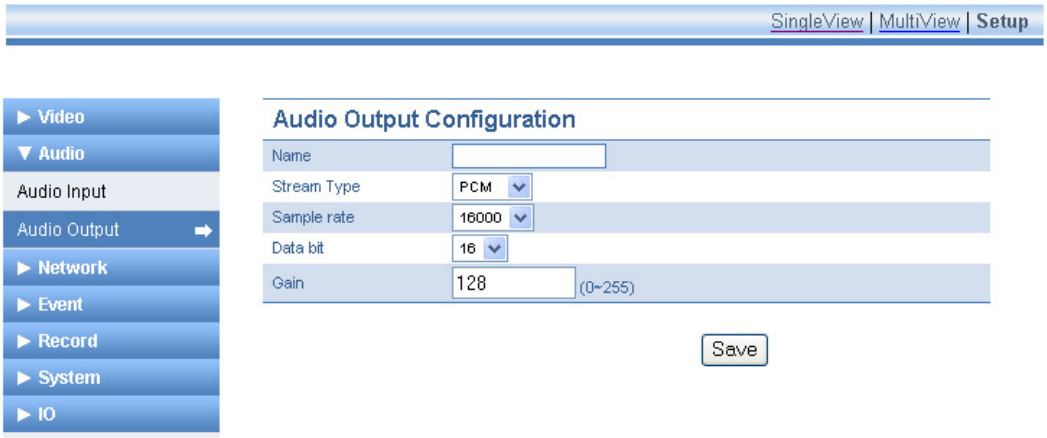
Data bit

Select the number of data bits per sample. If the stream type is PCM, 8bit and 16bit is available. If the stream type is aLaw or uLaw, only 8bit is available.

Gain

Gain ranges from 0 to 255. The default value is 128.

5.2.2. Audio Output Settings



The Audio Output Configuration settings are required to talk to people at the location where the camera is installed. Configure the values and click the Save button. This feature enables your PC to send audio to the speakers on the Camera Server. In order to test and use this feature, the microphone should be connected to the audio port of your PC. Likewise, the speakers should be connected to the 87A00-1 Camera Server.

Name

Type a nickname for the audio output.

Stream Type

Select an audio input format. Supported formats are: PCM, uLaw, and aLaw.

Sample Rate

Select sampling frequency. Supported frequencies are: 16 KHz. and 8 KHz.

Data bit

Select the number of data bits per sample. If the stream type is PCM, 8bit and 16bit is available. If the stream type is aLaw or uLaw, only 8bit is available.

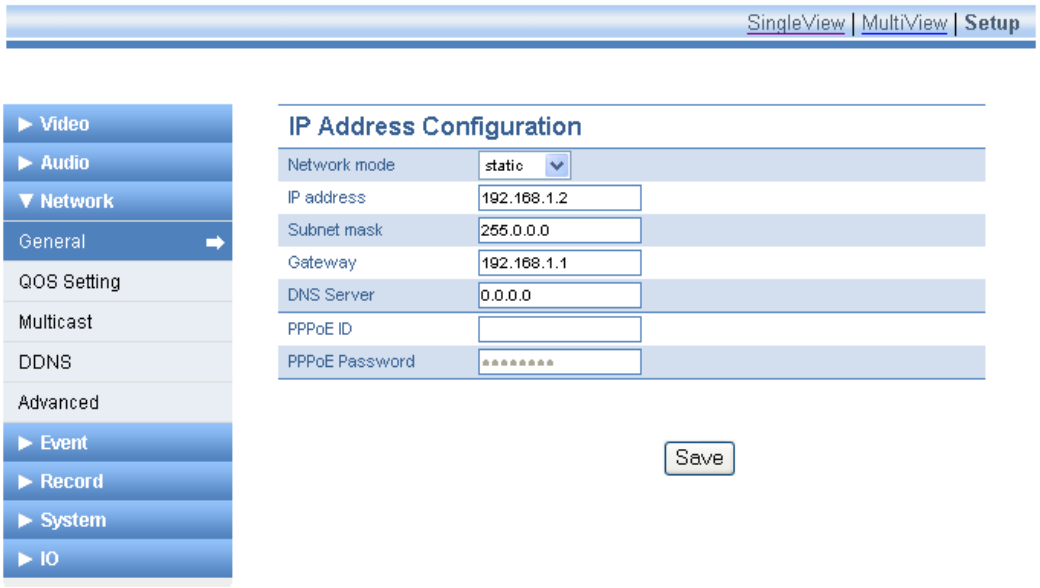
Gain

Gain ranges from 0 to 255. The default value is 128.

5.3. Network Setup

The Network Setup page is used to configure various network and operational settings of the 87A00-1 Camera Server.

5.3.1. General Settings



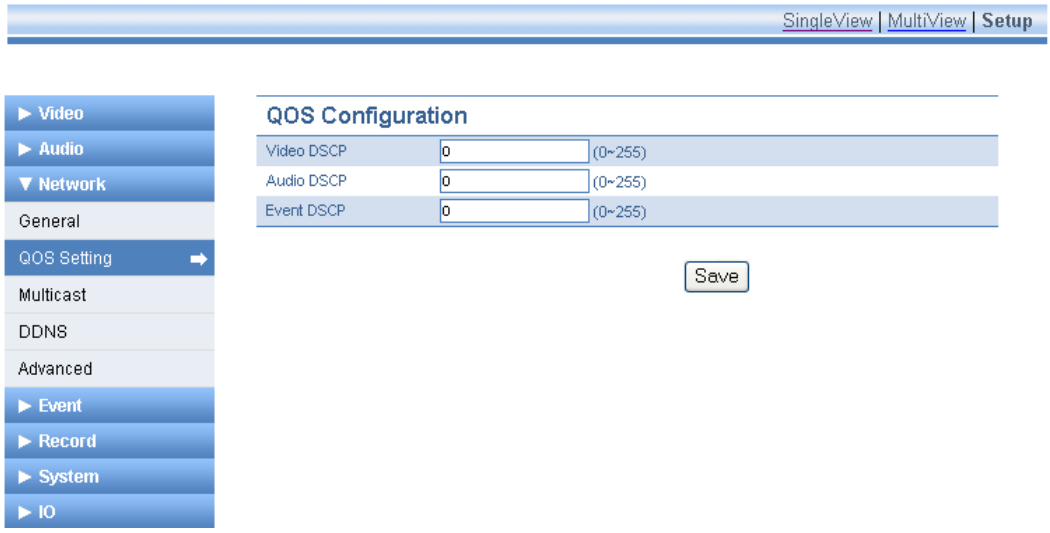
IP Address Configuration

If the Network mode is set to DHCP, the IP address, Subnet mask, Gateway and DNS Server settings will be received from a DHCP server. If Network mode is set to Static, the IP address, Subnet mask, Gateway, and DNS Server settings must be manually configured.

The PPPoE feature can be used by entering the PPPoE ID and password provided by your Internet Service Provider.

Note: You can obtain and modify the default network settings of the 87A00-1 Camera Server using the **IPAdminTool** Software Utility (IPAdminTool.exe) included on the Software Utilities and Manual CD.

5.3.2. QoS Settings



The 87A00-1 Camera Server uses a DSCP model for implementing QoS. Additionally, video, audio, and event classes are available for that.

What is DSCP?

It is short for Differential Services Code Point, which is a field in the header of IP Packets for packet classification purposes.

Video DSCP:

DSCP of video packet

Audio DSCP:

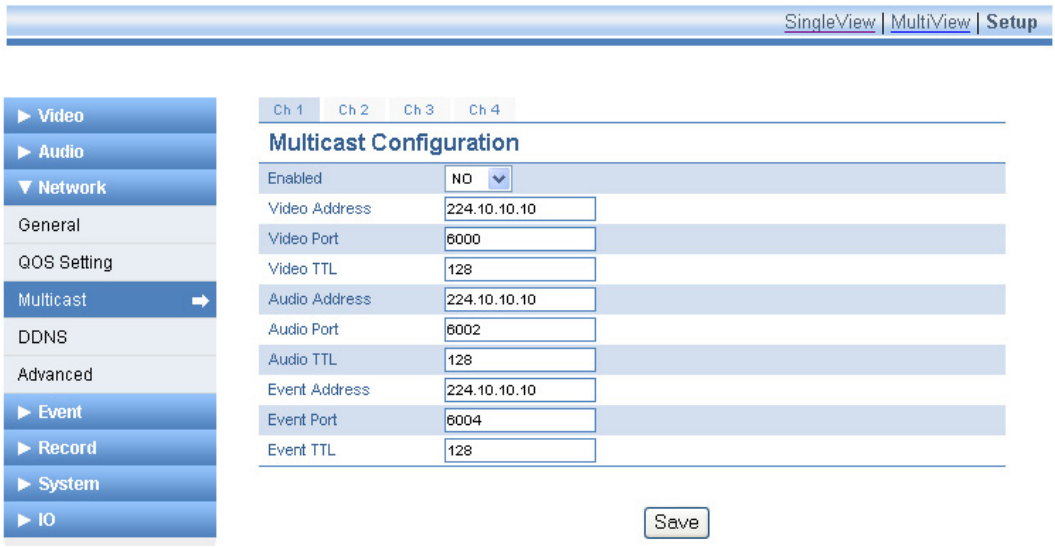
DSCP of audio packet

Event DSCP:

DSCP of event packet

DHCP values should be specified in a decimal number converted from original 6 bit binary digit. The default value is “0”, which means 000000 for DSCP value. To set the device available of supporting Expedited Forwarding, the recommended value for DSCP is 46 (101110).

5.3.3. Multicast Settings

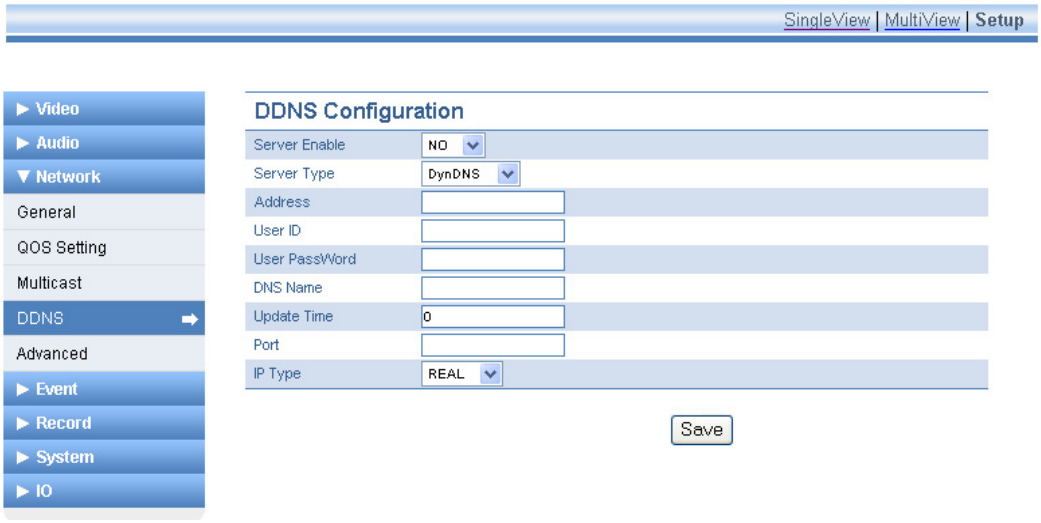


This page provides the multicast configuration of each channel. The addresses are a group of address which is required to receive data from the router.

The values in the boxes are default. You can set the values according to your network requirement.

The Camera Server supports only RTSP multicast (UDP/RTP Multicast is not supported).

5.3.4. DDNS Settings



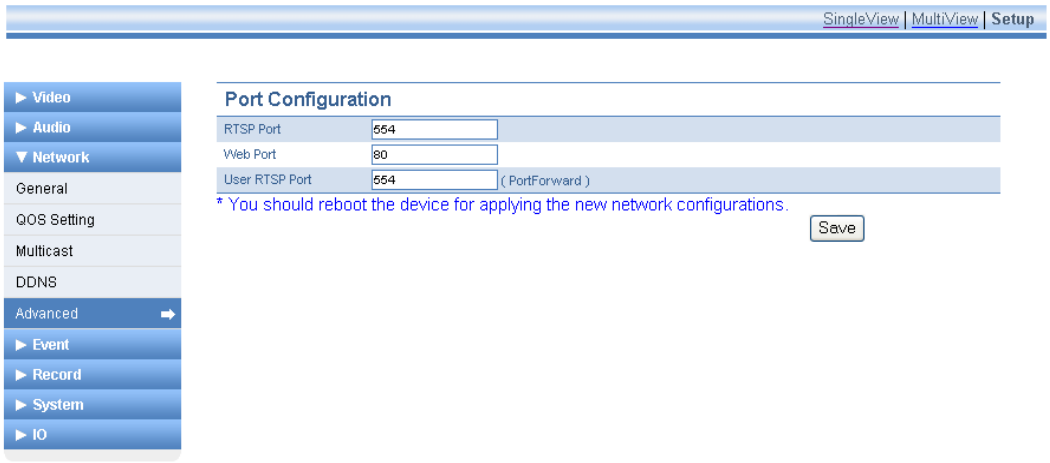
For DDNS configuration setup, you must first create a DDNS account with dyndns.com.

- Server Enable: Select YES to use DDNS.
- Server Type : DynDNS (no other settings allowed at this time).
- Address: www.dyndns.com (no other servers allowed at this time).
- User ID: your user ID created at the Dyndns.com.
- User PW: your password registered at the Dyndns.com (case-sensitive).
- DNS name: your dynamic domain host server name.
- Update time: Specify how often the dynamic domain server is updated (unit: minutes).
- Port: Default value is -1. This means the DDNS feature is disabled as a default. If you use DDNS, you can type the required port number for DDNS.
- IP Type (Real/Local):
  Real represent the device's public IP seen by DDNS server.
  Local represents the private IP address of device.

Note

Note: Only one dynamic host name is saved.

5.3.5. Advanced Settings



RTSP Port

This is the port number for first channel for RTSP. If a device has more than one channel, the port number of next channel succeeds the port number of the first channel.

For example, if the port number of first channel is 554, the second channel would be 555.

Web Port

This is the port number for HTTP.

User RTST Port

This setting is required ONLY when you have set 'port forwarding' on router device. If your network does not require port forwarding, just leave the "User RTSP Port" value empty or set it to the same value as the RTSP Port.

When "port forwarding" is done on a network router, the ActiveX viewer on the client side can't find the port number and ActiveX image may not be seen. Because ActiveX is operated only on a client and not able to get the network setting values.

5.4. Event Setup

This manual assumes that Motion Detection is an event action trigger. So, consider this carefully and follow the setting step as the order below. If your event factor is not Motion Detection, you can just skip **Step2**: **Motion setting**.

Step 1: Event Server setting
Step 2: Motion setting
Step 3: Event setting (related to the event setting and motion detection setting you configure)

The event server supports SMTP, TCP, and FTP servers.

Select **Motion** from the **Event** menu. Select the **Event Server** tab.

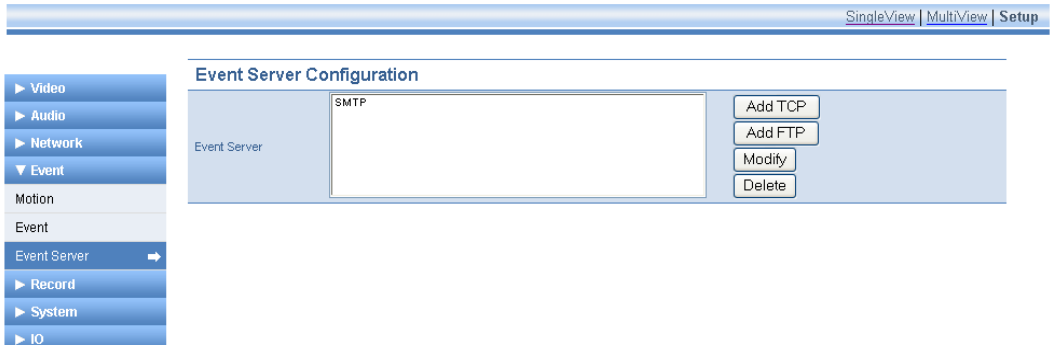
To apply this event function**,** configure the Event server first, and then enter the Motion settings.

Caution

Before configuring the event server, the following should be configured first:

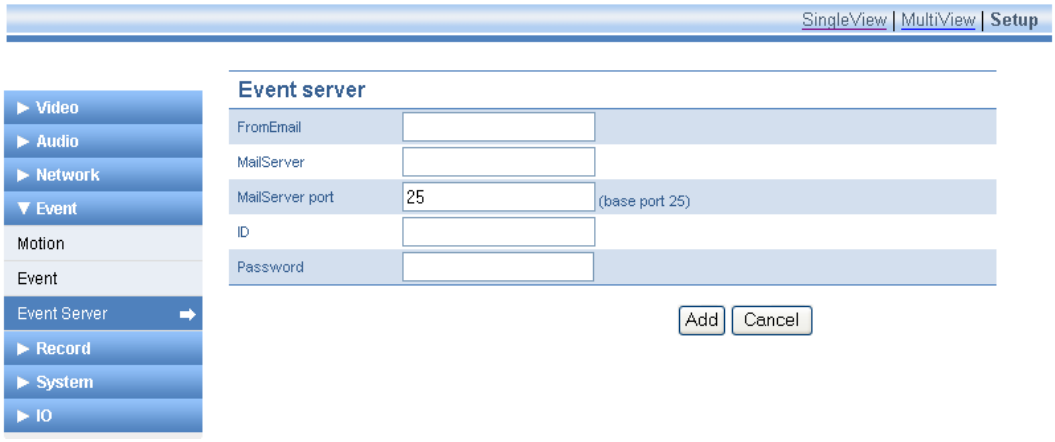
- Go to the **Video -> Advanced** menu on the left of this page and turn on **Copying a image to shared memory** by setting it to **Yes**

5.4.1. Event Server Settings



5.4.1.1. SMTP Server Settings

To register **the** SMTP server**,** click on the **SMTP** in the box and press the **Modify** button on the right.



FromEmail

Enter the email address of a sender.

MailServer1

Enter the SMTP server address.

MailServer1 Port

Enter the SMTP server port number (default port number 25).

ID

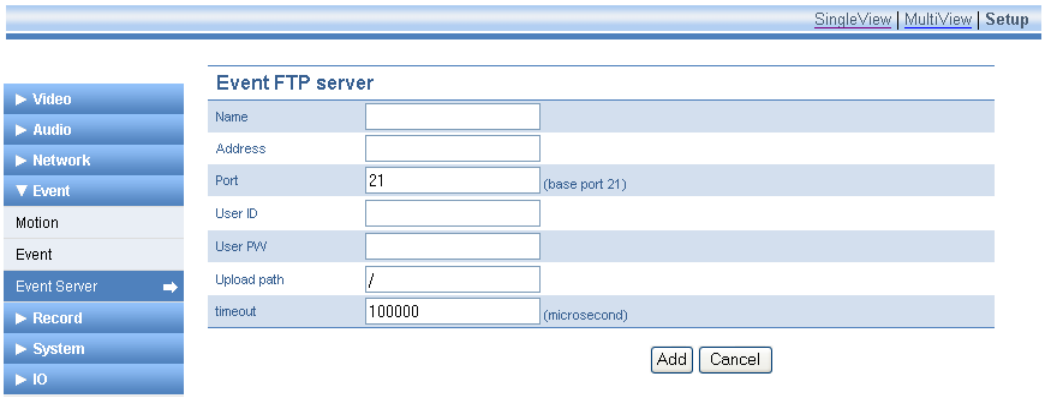
Enter the ID of the sender's email account.

Password

Enter the password of the sender's mail account (case-sensitive).

5.4.1.2. FTP Server Settings

To register the FTP server, press the **Add FTP** button.



Name

Enter a descriptive name for the FTP server.

Address

Enter the IP address or domain name of FTP server

NOTE: To use domain name of FTP server, make sure if the DNS setting is enabled.

Port

Enter the port number of FTP server (0 – 65535).

User ID / User PW

Enter the FTP Server log-in ID and Password (case-sensitive).

Upload path

Type the path of uploaded files

For example: /home/

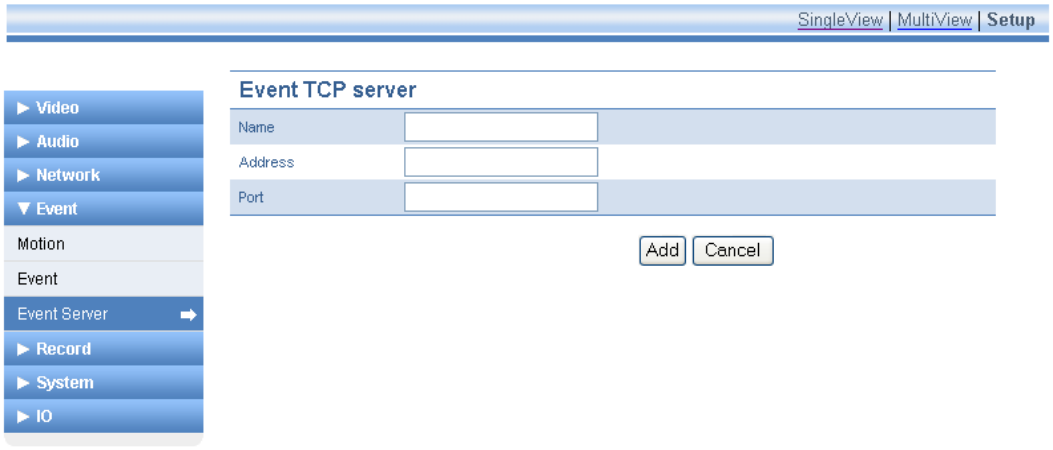
Timeout

Enter the timeout value for FTP connection and data transfer (Unit: μs).

The default value is set as 100000 (0.1 sec).

5.4.1.3. TCP Server Settings

To add a TCP server, press **Add TCP** button.



Name

Enter a descriptive name for the TCP server.

Address

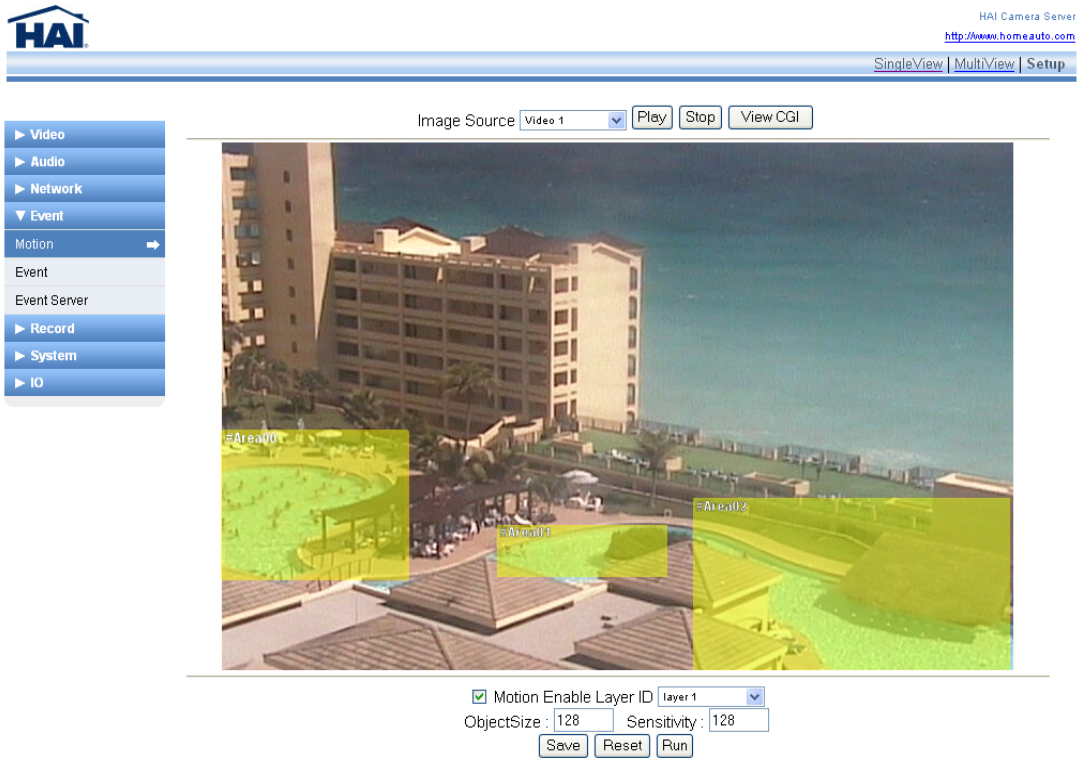
Enter the IP address of TCP server.

Port

Enter the port number of TCP server (0 – 65535).

5.4.2. Motion Detection Settings

After all of the settings have been entered for the **Event Server**, select the **Motion** tab to enter the settings for the motion detection functions.



How to register Motion Detection

Step 1: Select a camera from the **Image Source** combo box and then press **Play** button.
Step 2: Select a layer from the **Layer ID** combo box.
Step 3: Check the **Motion Enable** checkbox.
Step 3: Right-click anywhere on the camera display to make an **Area** rectangle.
Step 4: Adjust the size of the **Area** rectangle by dragging the edges.
Step 5: Press **SAVE** and then **RUN** to test the motion detection settings.

You can set up to 3 **layers**. Each layer can have up to 8 **areas**.

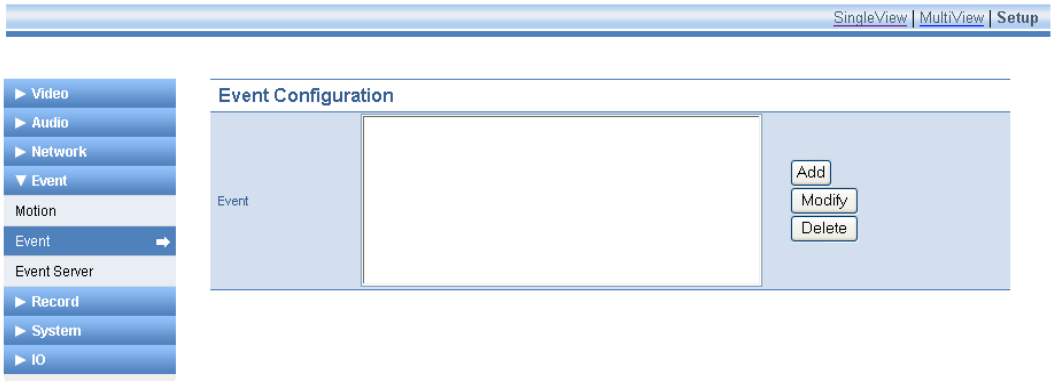
The **Object size** and **Sensitivity** values of each **Layer** applies to all of the **Areas** on that **Layer**.

- **Sensitivity** – sensitivity of each macro block (16 x 16 pixels).
- **ObjectSize** – proportion of the exceeded **Sensitivity** of macro block in the respective **Area**.

Sensitivity and **ObjectSize** range from 1 to 255. A lower value means the higher sensitivity.

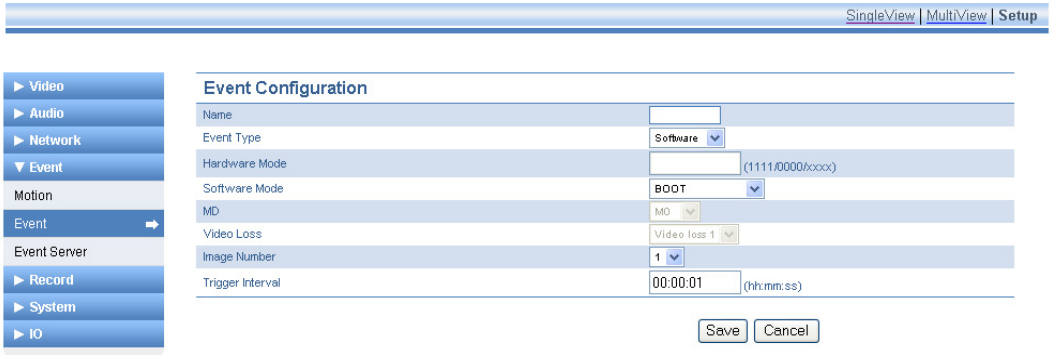
5.4.3. Event Settings

To register an **Event,** follow Steps 1-3 below.



Step 1

1. Click **Add** to create an **Event**.



Name

Enter a descriptive name for the event

Event Type

- Software – device boots, motion detection, video losses, etc.
- Hardware – Digital Input activation (such as sensor).

Hardware Mode

If the event type is a Hardware type, use the following convention: Nnnn = where n = {x, 1}
x = do not trigger
1 = trigger on activation

For example: "1xxx" means to trigger when first Digital Input is activated.
"1xx1" means to trigger when the first and fourth Digital Input are activated.

Software Mode

Select one of the following event modes: **Motion Detection**, **Video Loss**, and **Boot**.

Motion Detection: Event occurs when the motion is detected.

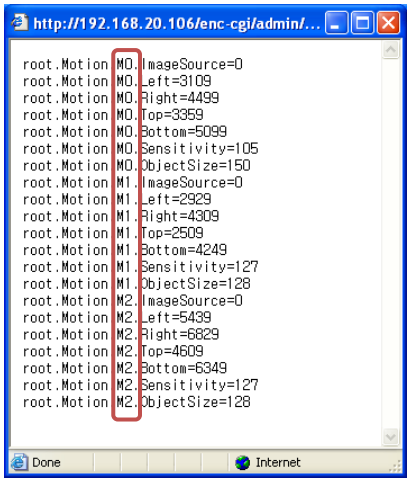
Video Loss: Event occurs when there is loss of video (disconnected or connected).

BOOT: Event occurs when the Camera Server is rebooted.

MD

Enable only if software mode is set to **Motion Detection**.

To set the MD value, press the **View CGI** button on the **Motion** setting page to see the **MD** values.



For example, if **MD** is set to “M0,” it means motion detection is triggered from Layer1. In the same manner, M1 means Layer 2 and M2 means Layer 3.

Video Loss

Enter camera number for triggering the event.

Image Number

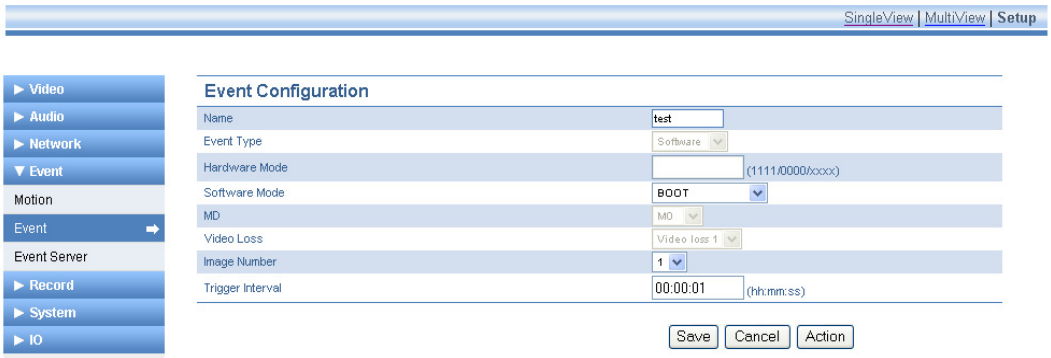
Enter camera number to connect with event

Trigger Interval

1 second (’00:00:01’) is set as the default value. Assuming the value is ’00:00:05,’ even if the event happens several times for 5 sec, the Camera Server will trigger only once per 5 seconds.

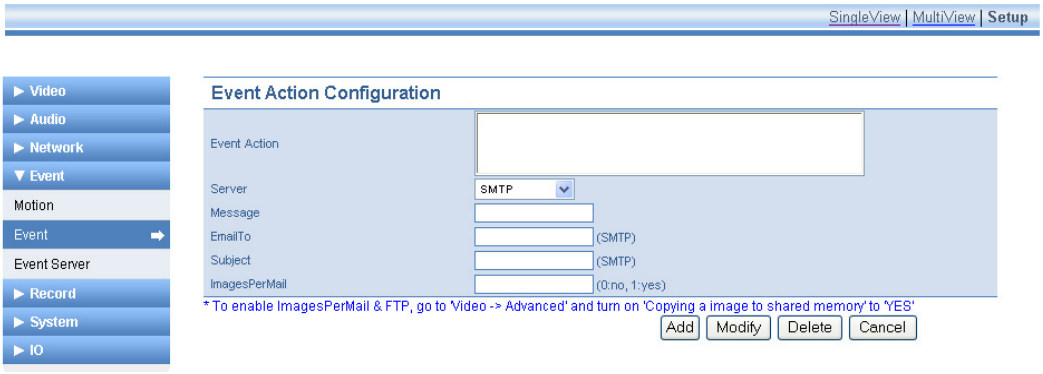
Step 2

1. Click on the **Event** tab on the left menu and then select the event that you created in the box.
2. Click the **Modify** button.
3. Click the **Action** button.



Step 3

1. Select the proper server from the **Server** list and set the respective values.



Event Action

The actions that are created are listed. Select an **Event Action** from the list.

Server

Select the appropriate server from the list.

TCP, SMTP, FTP, DO and USB recording server are available. If the desired server is not shown in this list, registration of the server was not successful. Go back to the **Event Server Setting** section and follow the instruction for adding a server.

Message

Enter an email message that will be sent.

EmailTo

Enter an email address of the recipient.

Subject

Enter the subject of the email.

ImagePerMail

Enter “1” to send a captured image with the email message. Otherwise, enter “0” for no image.

When you set the values on the **Event Action Configuration** page, depending on the **Server**, the required values may be different.

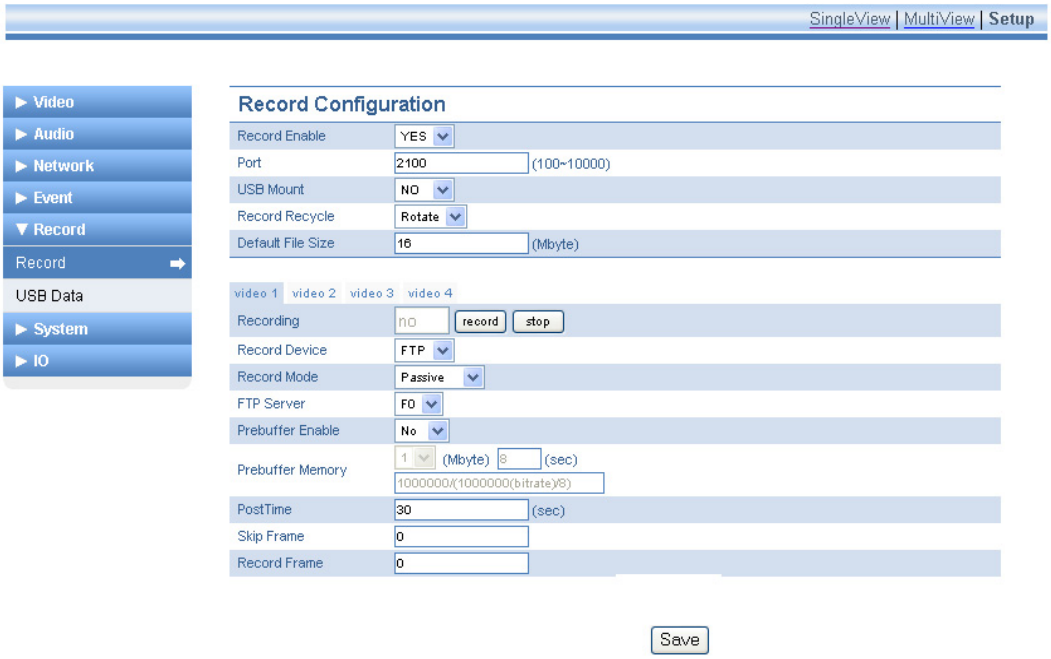
- SMTP: Set all of the values
- FTP: Only **Server** and **Message** are required
- TCP: Only **Server** and **Message** are required
- DO: No values are required
- USB recording: No values are required

5.5. Record Setup

5.5.1. Recording on USB Flash Drive

Caution

Before removing the USB flash drive from the Camera Server after recording…change the **USB Mount** value to **No** first. Otherwise, the recording may not work properly.



Preparation before recording

Step 1: Insert the USB flash drive into the USB port on the Camera Server.

Step 2: Click **Record** from the **Record** menu and set the value of **USB Mount** to **YES** as above.

Step 3: Select **USB** for the value of **Record Device**.

Select which recording mode you want between **Passive** mode and **Schedule** mode.

For details, refer to the following explanations.

How to record video NOW (Passive mode)

Step 1: Set the **Record Enable** as **YES**

Step 2: Set the **Record Mode** as **Passive**

Step 3: Enter the **Port Number** and **Record Recycle**

- *Port number*: Used for playback. **2100** is set as the default.
- *Record Recycle*: **Rotate** lets the new files overwrite existing files when USB memory is full. **None** lets the recording stop if the USB memory is full.

Step 4: PostTime is set in seconds. If you want to record for 30 minutes, type 1800 for the value of **PostTime.** The recording will continue for 30 minutes on when the **Record** button is presses.

Step 5: Set the **Skip Frame** and **Record Frame** as described below:

- *Skip Frame:*

  This is the number of frames to skip between **Record Frame**. Refer to the examples below.

- *Record Frame*

  This is the number of recorded frames. For example, if the value is 0, only 1 frame is recorded after skipping the number of **Skip Frame** set above.

  For example:

  If "149" is set for **Skip Frame,** "0" for **Record Frame**, and "30" for **FPS**, you will get 1 frame every 5 seconds.

  If "5" is set for **Skip Frame** and "1" for **Record Frame**, you will get the frames as below.

F#	0	1	2	3	4	5	6	7	8	9	10	11	12	13

Recording Frame

Skip Frame

Step 6: Click the **Record** button to start the recording.

How to record on SCHEDULE (Schedule mode)

If you want to record the video according to the specific date and time, follow the instructions below.

Step 1: Follow the same steps of ***How to record Video NOW*** except for Step 2.

Step 2: Set the **Record Mode** to **Schedule**.

Step 3: Set **Record Weekdays**, **Start Time** and **End Time** as described below:

- *Record Weekdays*

  Assign days for recording. The first digit corresponds to Sunday and last digit corresponds to Saturday. For example, if **0111110** is set, the recording runs only from Monday to Friday.

- *Start Time*

  Enter the time to start recording (time format - 00:00).

- *End Time*

  Enter the time to end recording (time format - 00:00).

Step 4: Click the **Record** button to start the recording.

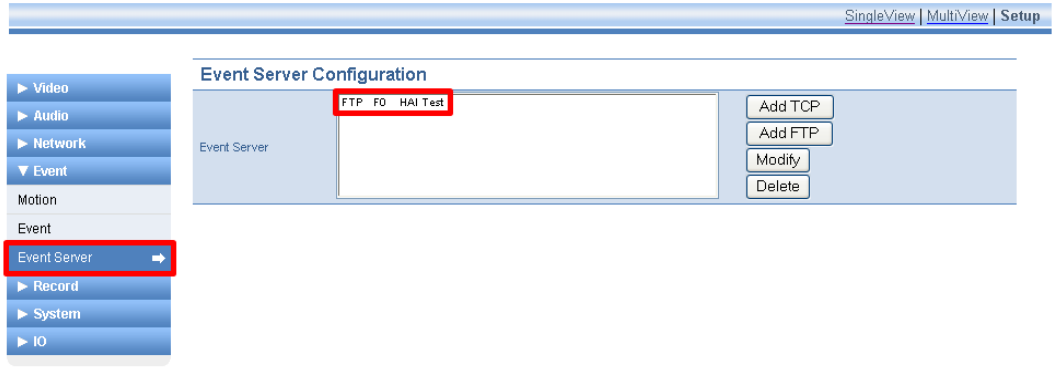
5.5.2. Recording on FTP server

Step 1: In order to record the video on an FTP server, the FTP server must be added in advance. Refer to section ***5.4.1.2 FTP Server Settings***.

Step 2: Set **Record Device** as **FTP**.

Step 3: Set **Record Mode** as desired. Refer to section ***4.5.1 Recording on USB flash drive***.

Step 4: Set the **FTP Server Number**. This is available only after Step 1 has been completed.



Step 5: PostTime is set in seconds. If you want to record for 30 minutes, type 1800 for the value of **PostTime.** The recording will continue for 30 minutes on when the **Record** button is presses.

Step 6: Set the **Skip Frame** and **Record Frame** as described below:

- *Skip Frame:*

  This is the number of frames to skip between **Record Frame**. Refer to the examples below.

- *Record Frame*

  This is the number of recorded frames. For example, if the value is 0, only 1 frame is recorded after skipping the number of **Skip Frame** set above.

  For example:

  If "149" is set for **Skip Frame,** "0" for **Record Frame**, and "30" for **FPS**, you will get 1 frame every 5 seconds.

  If "5" is set for **Skip Frame** and "1" for **Record Frame**, you will get the frames as below.

F#	0	1	2	3	4	5	6	7	8	9	10	11	12	13

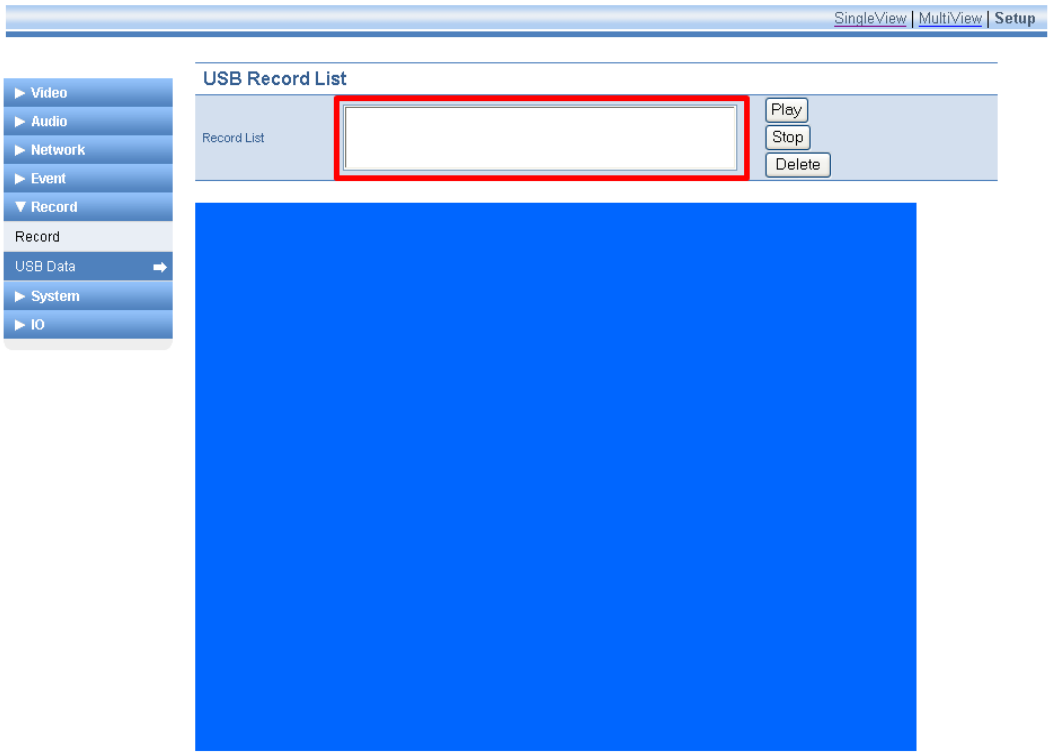
Recording Frame

Skip Frame

5.5.3. Playback the recoded data on the USB device

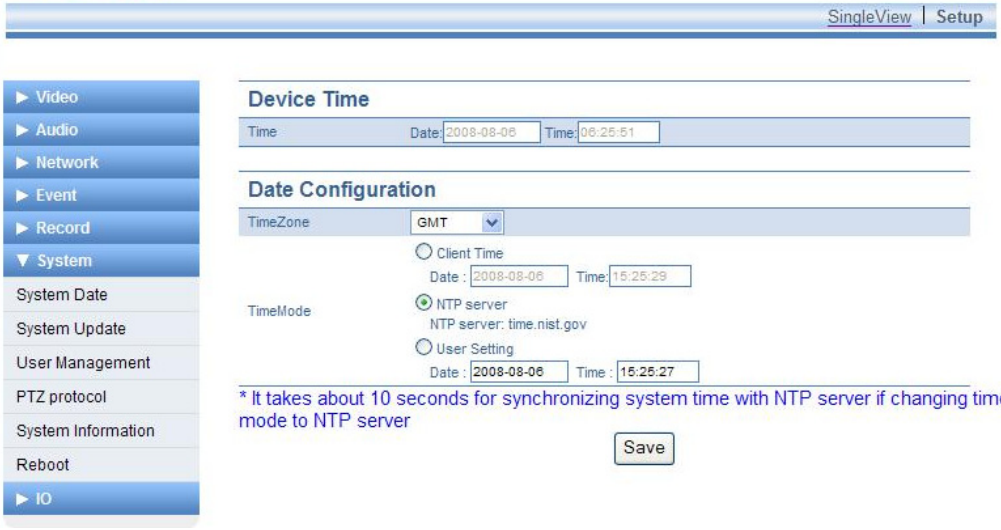
If the USB recording steps have been completed, the recording status can be viewed on the **USB Record List** page.

- **Record List**: Show the created recording files
- **Play/Stop**: Select a file from the **Record List** and click **Play** or **Stop** to display the control
- **Delete**: Select the file to be removed and then click the **Delete** button



5.6. System Setup

5.6.1. System Date



Device Time

Displays the date and time of Caners Server

Time Zone

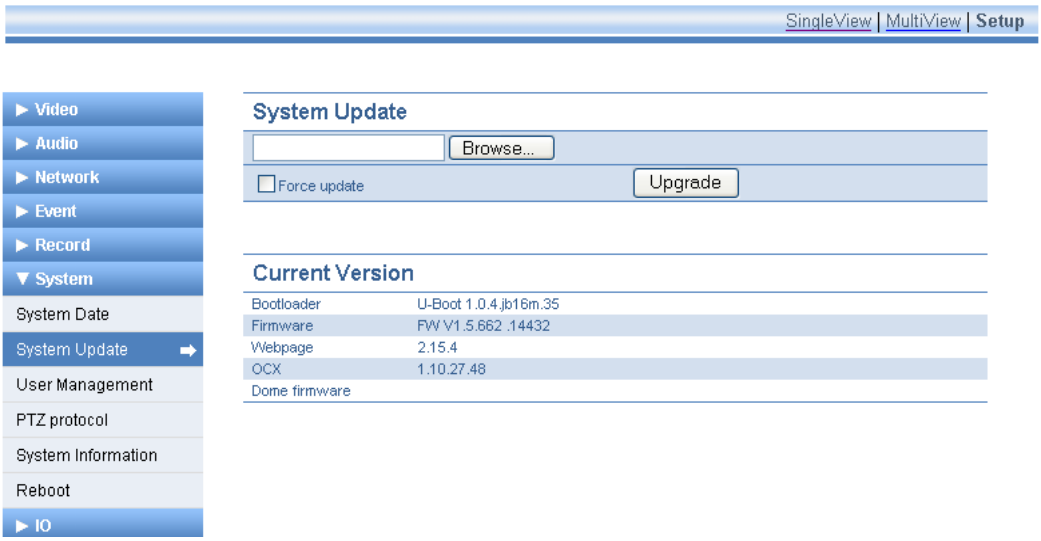
Select your time zone

Time Mode

You can select a time mode with 3 options.

- **Client Time**: Synchronized with your current PC time.
- **NTP Server**: Synchronized with a NTP server. By default **'time.nist.gov'** is the selected server; however any NTP server can be selected from the list or one can be manually entered.
- **User Setting**: The time and date will be manually entered.

5.6.2. System Update



This page is used to update of the software in the Camera Server and to display the current version for various software modules.

System Update

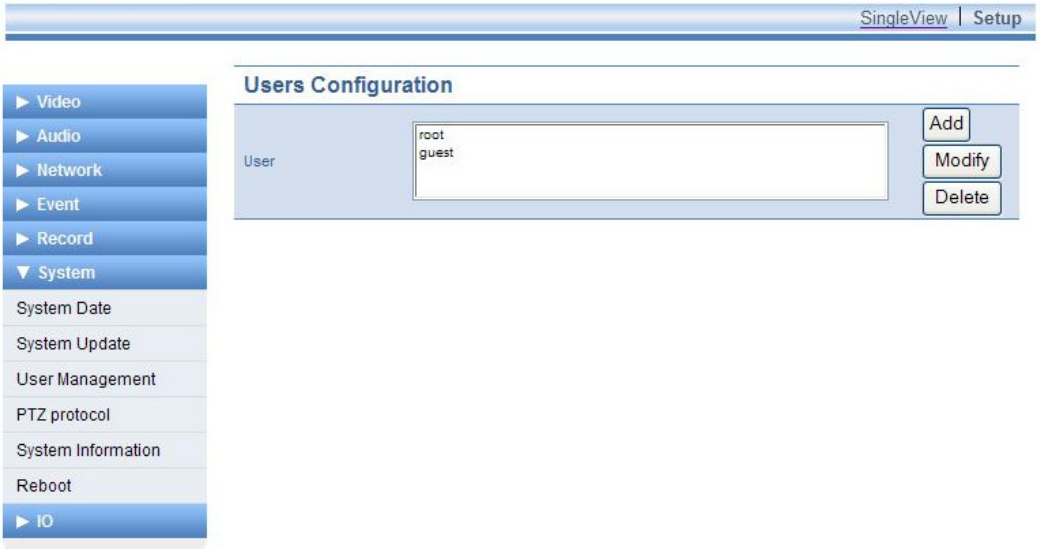
You can upload firmware files and update your Camera Server. Click the **Search** button and choose the file you want to upload. Then click the **Upgrade** button.

Current Version

- **Bootloader**: Current bootloader version
- **Firmware**: Current FW version
- **Webpage**: Current Webpgae version
- **OCX**: Current ActiveX version

5.6.3. User Management

User Management is used to add user login accounts to the Camera Server.



There are two user types provided by default:

User	Password	Security Level
root	pass	Admin
guest	guest	Guest

Accounts can be created up to 10 including two default users.

- **ID**: Up to 32 characters with the combination of alphabets and digits. First character must be an alphabet (case-sensitive).
- **Password**: From 3 to 8 characters with the combination of alphabets and digits (case-sensitive).

How to add a user

1. Click ***Add***.
2. Type **User** & **Password** and select **Security Level** on “User add” dialog.
3. Select **Add** button on the “User add” dialog.
4. Click **Close** on the “User add” dialog.

How to delete a user

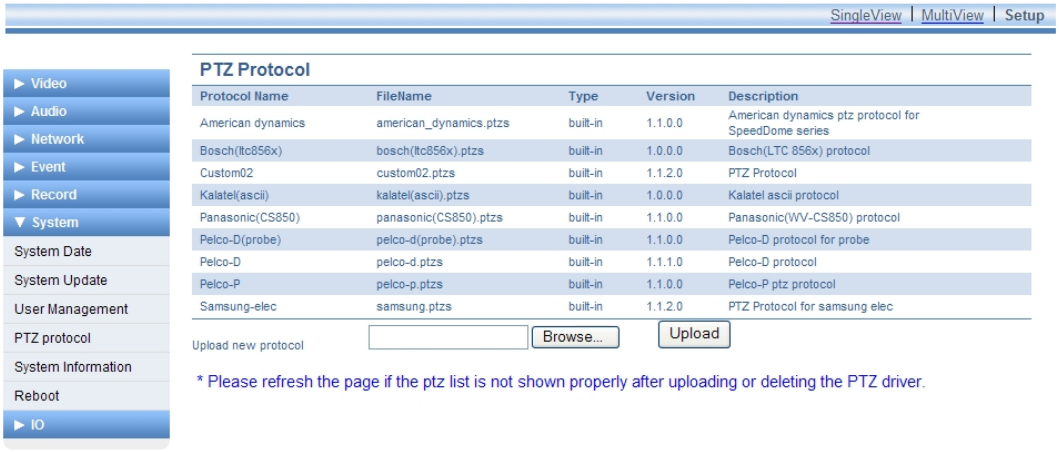
1. Select a user to delete from the **User List**.
2. Click **Delete**.
3. Click **OK** on confirmation dialog.
4. Click **Close** on the “Remove user” dialog.

How to modify a user

1. Select a user to modify from the **User List**
2. Click **Modify**.
2. Modify the password or security level.
3. Select **Modify** on the “User Modify” dialog.
4. Click **Close** on the “User Modify” dialog.

5.6.4. PTZ Protocol

This page shows the list of current PTZ protocols built-in the Camera Server and also allows you to upload a new PTZ protocol.



How to add PTZ protocol manually

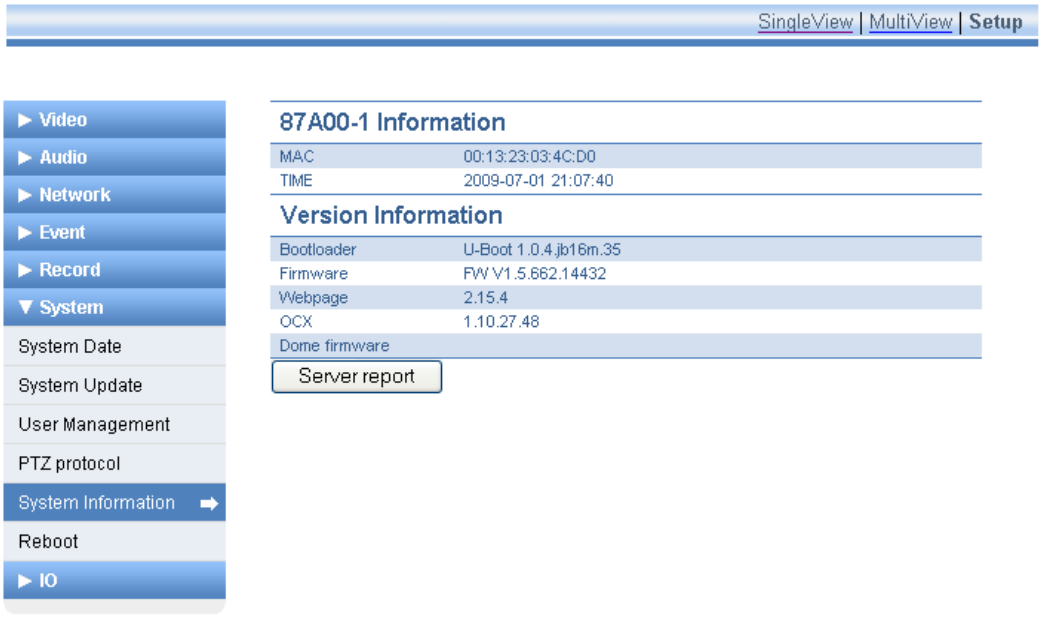
1. Click the **Browse** button.
2. Choose the required file and click the **Upload** button.
3. The protocol will be added to the list

Click **PTZ** from the **IO** menu to choose the PTZ protocol.

Refer to section ***4.7.3 PTZ*** to learn how to apply the newly added protocol to the Camera Server.

5.6.5. System Information

This page shows the system information as described below:



87A00-1 Information

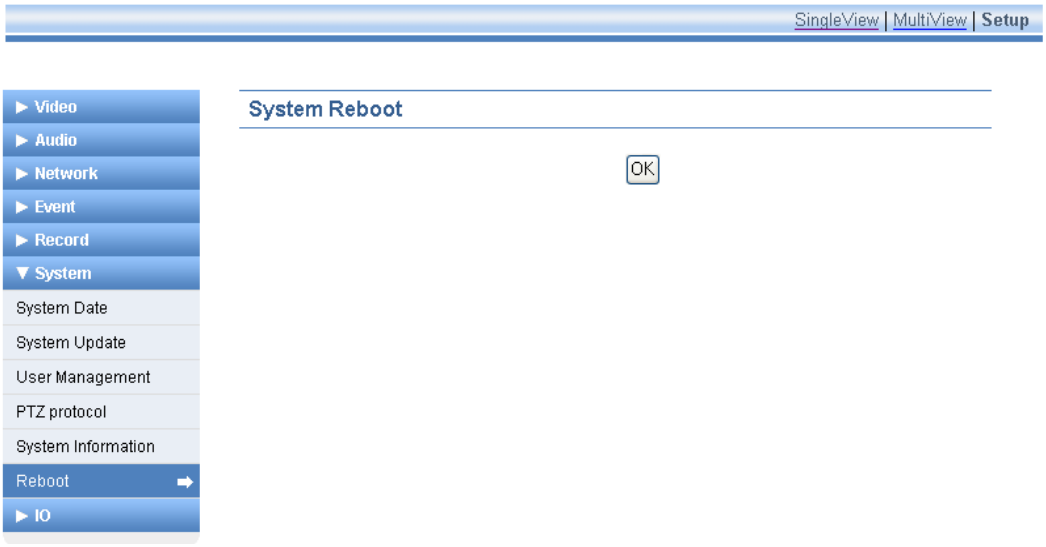
- **MAC**: MAC Address
- **TIME**: Date and time information on the Camera Server
-

Version Information

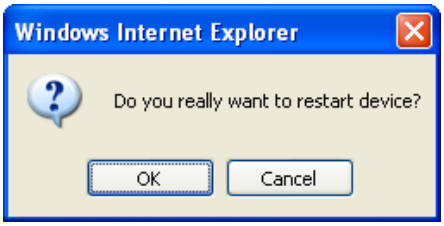
- **Bootloader**: Bootloader version.
- **Firmware**: Current firmware version
- **Webpage**: Current web page version
- **OCX**: Current ActiveX version

5.6.6. Reboot

The Camera Server can be rebooted from the web interface without physically touching the device.



Click the **OK** button. As confirmation dialog is displayed.



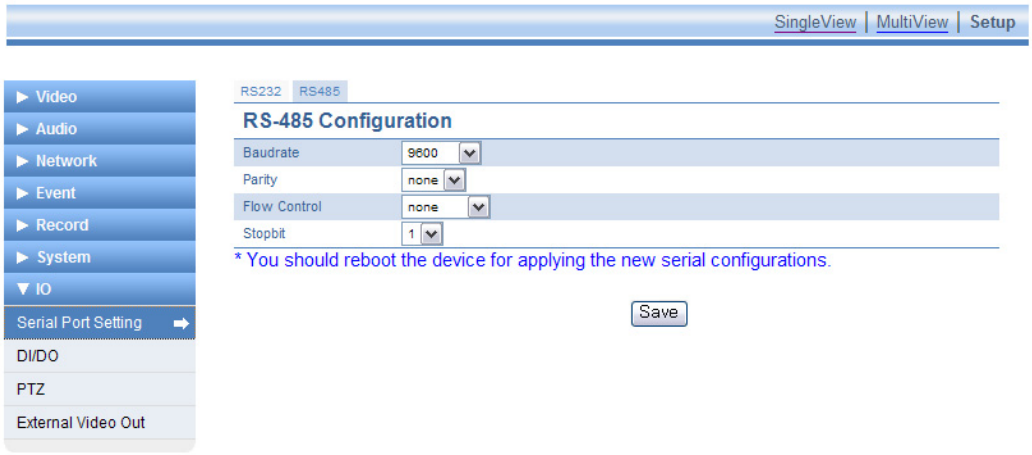
Select **OK** to reboot the Camera Server.

It will take about 1-2 minutes to complete the rebooting process.

5.7. IO Setup

5.7.1. Serial Port Setting

This page provides the configuration of **RS-232C** and **RS485**.



- **Baudrate**: 9600
- **Parity**: none
- **Flow Control**: none
- **Stopbit**: 1

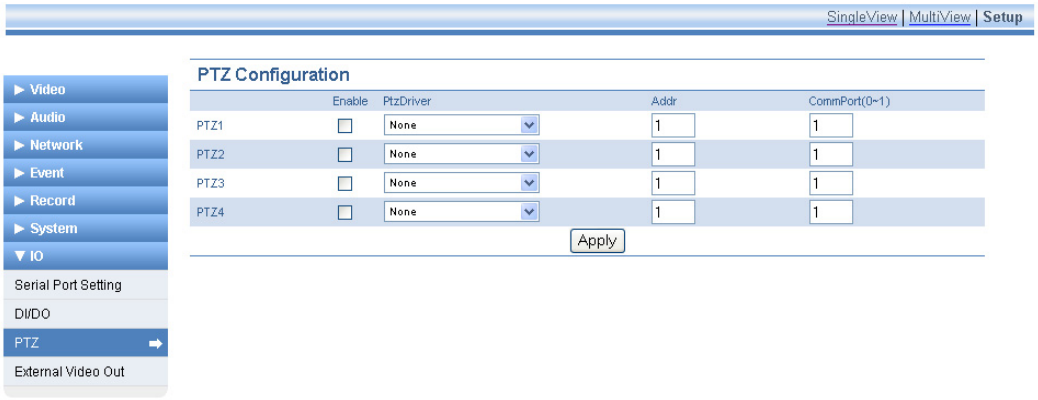
5.7.2. DI/DO Setting

This page is used to see the status of the Digital Inputs (DI) and Digital Outputs (DO) on the Camera Server. It also allows you to control the state of the Digital Outputs.

This page is refreshed every 3 seconds to update the status of each Digital Input and Digital Output.

5.7.3. PTZ

This page allows you to select the PTZ Protocol for each camera.



PTZ protocol options are shown in the drop down combo box.

You can choose a protocol for each camera.

1. Check **Enable** in the check box and choose the desired protocol.
2. Set the **Addr** and **CommPort** foe each camera input.
3. Click the **Apply** button.

PtzDriver

Select the desired protocol from the list.

Addr

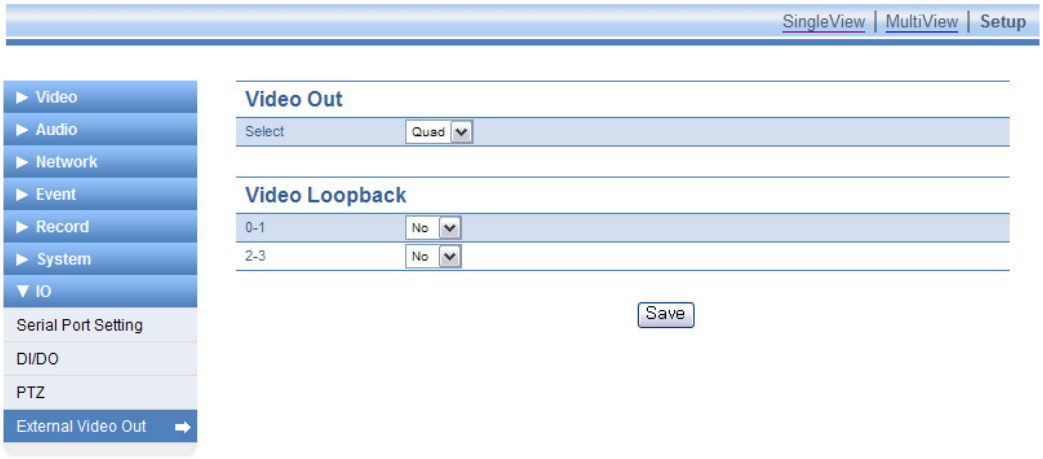
Set the **Addr** value according to the ID set by dip switch on the PTZ camera.

CommPort(0-1)

0 = RS232C
1 = RS485C

5.7.4. External Video out Setting

This page provides the external video output settings and video loopback function settings.



Video Out

You can choose either single view or multi-view for the stream on the external output. **Quad** displays 4 channels as a quad multi-view on the external video out.

Video Loopback

Video Loopback is not currently implemented on the 87A00-1 Camera Server.

6. Resetting the Camera Server

6.1. Rebooting

The camera server can be rebooted as follows:

1. Press the **Reset** button for 1 second.
   - The **Status LED** and **Network LED** will blink together, twice. Stop pressing the **Reset** button.
2. When the reset function has been completed, The **Status LED** and **Network LED** will stop blinking.

6.2. Reset to Factory Default

The camera server can be initialized to factory default settings as follows:

1. If the Camera Server is powered-up, disconnect the power removing the power input.
2. Apply power to the Camera Server.
3. When the **Status LED** starts blinking rapidly, press the **Reset** button.
4. When the **Status LED** starts blinking slowly (about 5 seconds after booting), release the **Reset** button.