

Marshall Electronics

VS-541-HDSDI / HDI

2.0 Megapixel IP Zoom Camera
X20 Zoom CMOS



User Manual

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Safety Precaution

**We appreciate your IP Camera Purchase.
Before installing the product, please read the following with care.**

- ✧ Make sure to turn off the power before installing the system.
- ✧ Do not install under the direct sunlight or in dusty areas.
- ✧ Make sure to use the product within the temperature and humidity specified.
- ✧ Do not operate the product in the presence of vibrations or strong magnetic fields.
- ✧ Do not put electrically conducting materials in the ventilation hole.
- ✧ Do not open the top cover of the products. It may cause a failure or electric shock on the components.
- ✧ To prevent from overheating, make sure to keep the distance at least 10 cm from the ventilation hole.
- ✧ Make sure proper voltage before connecting the power.

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1- Introduction

1.1 About this Manual

This User Manual provides information on operating and managing this premium network camera. It includes instructions for installation, operation and configuration, as well as troubleshooting tips.

1.2 Features

This IP Camera is a network-based system with remote live monitoring, audio monitoring and control via an IP network such as LAN, ADSL/VDSL, and Wireless LAN.

Camera

- 1/3" CMOS Image Sensor
- X20 Optical Zoom, X12 Digital Zoom
- True Day & Night (ICR)
- VS-541 = CVBS & IP
- VS-541-HDSDI = HDSDI & IP

Video

- Highly Efficient Compression Algorithm, H.264 & MJPEG Support
- Resolutions: CIF (352x240) – Full HD (1920x1080)
- Wide Range of Transmission Rates: 32kbps ~ 8mbps
- Various Transmission Modes: CBR, VBR
- Motion Detection

Audio

- Multi-Transmission Mode: Simplex (Megapixel IP Camera → Client PC or Decoder, Client PC or Decoder → Megapixel IP Camera), Full Duplex

Network

- Fixed IP & Dynamic IP (DHCP) Support
- 1:1, 1:N Support
- Multicasting
- Various Protocol Support Types: TCP/IP, UDP, Multicast, DHCP, SMTP, HTTP, SNMP, RTP, RTSP

1- Introduction

Serial Data

- RS-485 Support
- Data Pass-Through Mode: Serial Data Communication between IP Camera and Decoder

Sensor and Alarm

- Event Alarm Notification
- 1 Alarm Sensor Input and 1 Alarm Output Relay are available

User Interface

- Diagnose and upgrade through dedicated program called VS Manager
- System Configuration using Internet Explorer

High Reliability

- Reliable Embedded System

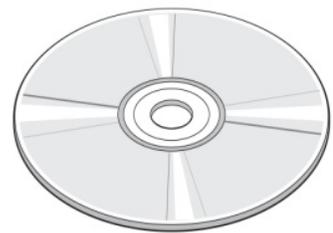
1.3 Products and Accessories



**2.0 Megapixel IP
Zoom Camera**



Quick Guide



SW and User Manual CD

1- Introduction

Part Names and Functions

Rear View



Connector	Function
1. Ethernet/802.3af	Ethernet Port/802.3af LED: Booting and System Check
2. RESET Button	Initialization of Network Setting
3. AUDIO IN	Audio Input
4. AUDIO OUT	Audio Output
5. POWER IN	DC 12V
6. SENSOR/ALARM	Sensor Input/ Alarm Output
7. RS-485	RS-485 Port
8. VIDEO OUT	Composite / HD-SDI / HDMI Video Output (Depending on Models)
9. SD CARD	SD Memory Card Slot

1- Introduction

1.4 System Connections

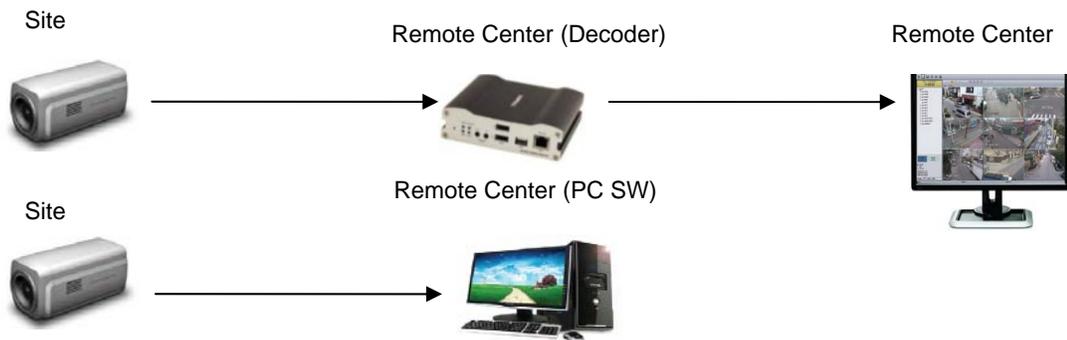
The IP Camera can be connected in one of two ways:

1) 1 to 1 connection where one camera is connected to one PC client or a decoder system, or 2) 1 to many connections where one system can be connected to several PCs and decoder systems (the video server can work as a video decoder which takes the data from a video server or IP camera, decodes and outputs analog video).

Topology

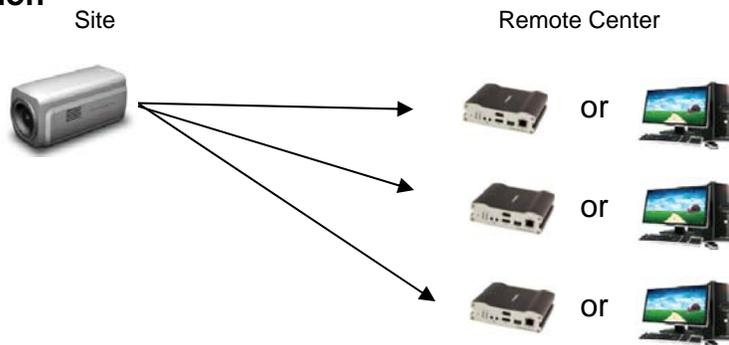
Generally, the IP Camera and PC or a Decoder is connected in a 1-to-1 mode or a 1-to many configuration:

● 1:1 Connection



One camera is installed at a site where video images are transmitted. A PC or a decoder is installed at a central location to receive and view the video images on an analog monitor. Audio and serial data are transferred in either direction.

● 1:N Connection



In this configuration, a site can be monitored from many remote central locations. Maximum connections would be limited by network bandwidth connection. Functionally, the VMS (Video Management System) software provided can replace the decoder.

1- Introduction

Multicast Mode

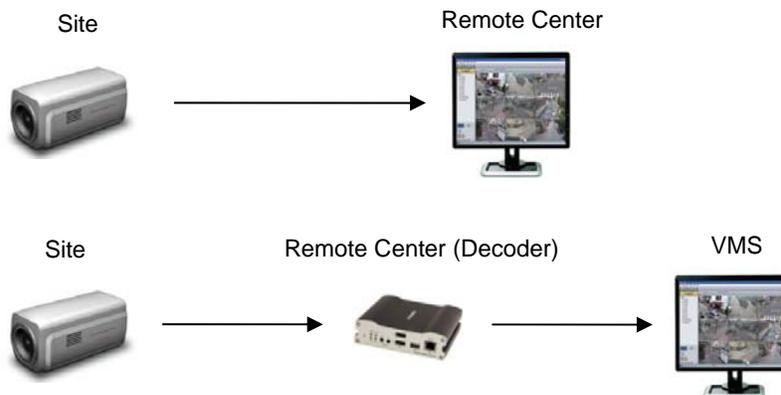
If the network supports multicasting, a large number of decoders can be used to receive video effectively from a camera using a single streaming of video and audio. However, Multicast Mode is possible only when the network environment supports multicast.

Relay



Video and Audio Data can be retransmitted from one center to another center. The arrangement is useful when the limited network bandwidth can allow more than one center to monitor this site.

VMS (Video Management System)



VMS (Video Management System) is a Window-Based Remote Monitoring Program in used to monitor or control video, audio, and events in real time from several IP cameras or video servers. Please refer to the VMS User Manual for more details.

2- Installation

2.1 Connecting Network (LAN)

- Connect the Power Adaptor to IP Camera
- Connect Network Cable to Ethernet Port
- To display video through Composite Port, after connecting each port to a monitor, set **preview** option “ON” on the web-viewer page.

2.2 Connecting Audio

Audio is Full-Duplex. It is possible to set the mode as Tx-Only, Rx-Only or Tx-Rx.

- Connect Audio Input and Output Ports to audio devices accordingly.
- The Audio Signal required is Line Level, so audio equipment with an amp, mixer or other amplifier should be used.

2.3 Connecting Serial Ports

RS-485 on the IP camera can be connected to external equipment such as a PT Receiver, etc. PC client can send PT commands to the external equipment via the serial port. When a decoder system, instead of PC client, is connected to the IP camera, the serial port and decoder system works in pass-through mode; data from one port is delivered to the other port and vice versa.

2.4 Connecting Sensor and Alarm

Connect Sensor and Alarm Devices to corresponding terminals accordingly.

2.5 Connecting Power

After confirming the Power Source, connect power adaptor and connect the 12VDC connector to the IP camera.

2.6 Check if it Works

Once the power is supplied to the IP camera, it will start booting. The IP camera will boot up to an operating mode after approximately 40-60 seconds. The green LED on the Ethernet Port will flash indicating the IP camera is ready. Software provided on the disc called VS Manager, allows you to check the IP address and other network details of the IP camera. Please refer to the VS Manager manual for instructions on how to find the camera's IP address and details to modify if necessary.

3-System Operation

3.1 Remote Video Monitoring

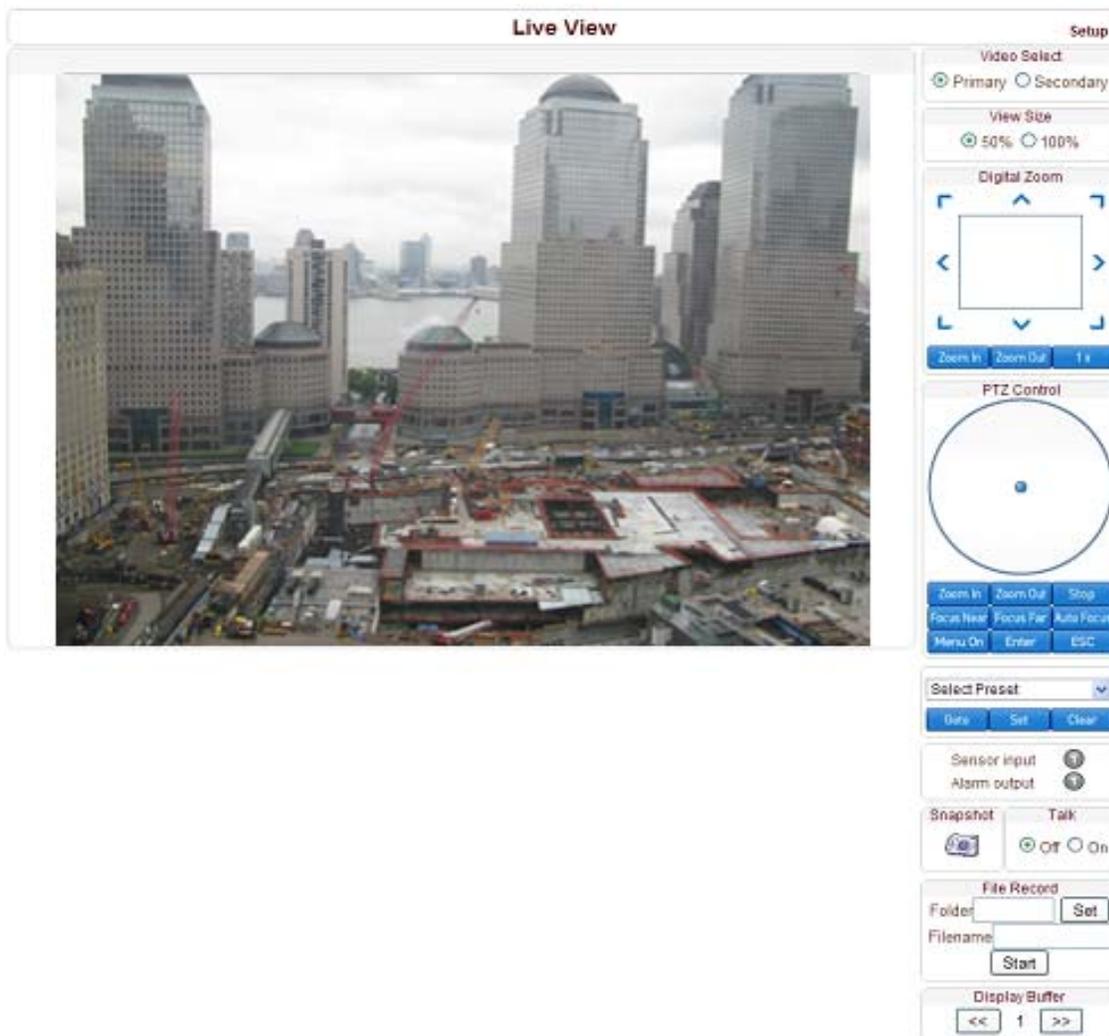
There are two ways to monitor video when the center system and IP camera are connected. In order for a proper operation, an IP address must be set accordingly. Please refer to the **VS Manager Manual enclosed with product** for further details.

Default ID : admin	Default Password : 1234
---------------------------	--------------------------------

Video Monitoring using Internet Explorer

Open Internet Explorer and enter camera's IP address. The system will ask for confirmation to install Active-X control. Once authorized, the Internet Explorer will start to display video images from camera as shown below:

Default IP Address : http://192.168.10.100



3-System Operation

- **Video Select**

Select the Video Stream to be Viewed: Primary or Secondary

This camera is capable of **Dual Streaming** (Select “**Use Dual Encode**” on Video Menu); primary streaming and secondary streaming. Video will be displayed according to the resolution set on video configuration. If dual streaming is not activated, secondary video is not available.

- **View Size**

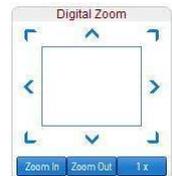
Adjust the Screen Size

Screen size is initially adjusted according to the compression resolution. If you click the 50% icon, the whole screen size will be reduced to half size.

- **Digital Zoom**

Control the Digital Zoom on the Screen

The more the camera zooms in, the smaller the square of the control panel. Position of the image can be changed by moving the position of the square. If you press **x1**, the screen will return to the normal size.



- **PTZ Control (Optical Zoom & Digital Zoom built-in the Camera)**

Control PTZ and PTZ Control Panel is used for controlling external PTZ devices when the external PTZ devices are connected through serial port. It is possible to make zooming control by **Zoom In/Out** buttons of PTZ control Panel. To use digital zoom, select **Digital Zoom ON** in the **Camera** tab.



- **Stop:** Stop on-going PTZ action.
- **Focus Near, Focus Far, Auto Focus:** Adjust the focus of the lens.

- **Select Preset**

Set preset position and move to that specific position.

- **Goto:** Move to the selected preset entry if the preset entry is set.
- **Set:** Set the current position to the selected preset entry.
- **Clear:** Delete the selected preset entry.

- **Sensor Input**

Display the Status of the Sensor in Real Time

This camera supports one sensor input. When the sensor of the camera is working, the sensor light turns red.

3-System Operation

- **Alarm Output**

Operate the Alarm Device by Pressing the Number Icon

This camera supports one alarm output. A number icon indicates the status of the alarm device.

- **Snapshot**

Capture video images and store them as BMP or JPEG files.

- **Talk**

Transfer audio from the PC's microphone to the camera.

- **File Record**

Recording to an AVI file on Live View page is available. AVI files are generated in the specified folder or in specified file name on the PC where web browser is running.

1. Press **“Set”** button to select folder or create a new folder. Enter the file name in the Filename field.
2. Press **“Start”** button to start the recording.
3. Press **“Stop”** button to end the recording.
4. The AVI file named **“IP address_hh_mm_ss”** or **“File name_IP address_hh_mm_ss”** will be generated in the specified folder depending on whether the path is specified to a folder or a prefix of the file name.



- **Display Buffer**

Set the number of video frames to be buffered before being displayed on web browser. Larger value results in smoother video by sacrificing the latency. A setting of 10 ~ 15 frames generally is used for most situations.

Video Monitoring with Decoder System

Once the camera's IP address is set in the remote IP address section of the decoder, the decoder system will connect to camera and start receiving the video images. Normally, a monitor connected to the decoder will display video images.

3-System Operation

3.2 Initialization of IP Address

If a System IP Address is lost, the system can be reset to the Default IP Address using the reset button on the back side of the system.

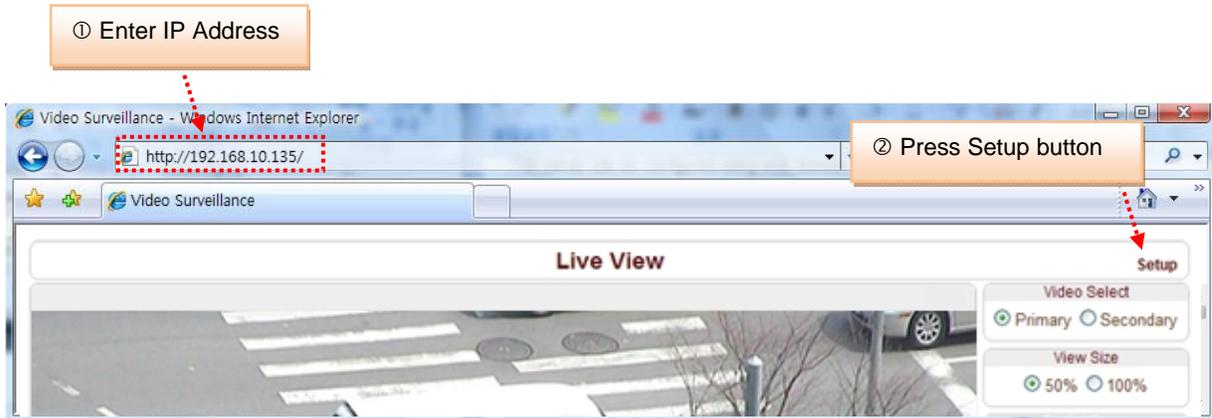
1. While in operation, press the system reset button for more than 5 seconds.
2. The system will reboot automatically.
3. Once the system reboots, the IP Address will be reset to the system default as shown below:

• IP Mode	Fixed IP	• IP Address	192.168.10.100
• Subnet Mask	255.255.255.0	• Gateway	192.168.10.1
• Base Port	2222	• HTTP Port	80

4- Remote Configuration

4.1 Using The Web Browser

Remote setting is available by using a web browser. Enter the IP address of the camera and a live view screen appears as shown below. Press the **Setup** button located in the upper right area of the monitoring screen to go to the server setup. For Remote Setting, the user needs to be authorized higher than a manager level user.



The configurations are grouped into 10 categories: **System, Video, Audio, Network, Serial, Event, PTZ, Record, User and Camera**. Any configuration changes are not applied until **Apply** button is pressed. Leaving the page without pressing **Apply** button, any changes in the page will be discarded.

4- Remote Configuration

4.2 System Configuration

Live View**Setup**

SystemVideoAudioNetworkSerialEventPresetRecordUserCamera

System

General

System ID

BurnIn OSD System ID (alphanumeric characters only)

Language ▼

Firmware

Version

Board ID

Upgrade

Config Backup&Restore

Backup

Restore

Time

Start Time

Current Time

Time Format ▼

Time Zone ▼

Automatically synchronize with NTP server

NTP Server Name

Reboot

Factory Reset

4- Remote Configuration

General

- **System ID**

Enter System ID for the Camera Title

The set System ID is displayed with video image on Web browser. The System ID is also transferred to remote software, such as VMS, and displayed on it.

- **BurnIn OSD System ID**

BurnIn OSD System ID specifies the string to be inserted into video image before encoding. Only alphanumeric and blank characters are allowed. Position and size can be configured on **BurnIn OSD** section of the video page.

- **Language**

Select the Language to be used for Web-Based Configuration.

Firmware

- **Firmware Version**

Display the current Firmware Version.

- **Board ID**

Display the Network Board ID of the camera recognized by system.

- **Upgrade**

Upgrade Firmware

1. Press **Browse** button to select a firmware file from PC.
2. Press **Firmware Upgrade** button to start to upgrade.
3. Messages for showing status (downloading / upgrading) will be displayed.
4. The camera will reboot automatically after completing upgrade. **Do not turn off the camera during upgrading.**



Now, Upgrading... Please wait a minute.

Config Backup & Restore

- **Backup**

All the configuration settings can be saved and stored.

- **Restore**

Stored configuration can be browsed and restored. The server is rebooted when the **Config Restore** button is pressed.

4- Remote Configuration

Time

● **Start Time**

The most recent camera booting date and time is the Start Time.

● **Current Time**

Set Current Date & Time

Enter a new date and time and press **Set Current Time** button to update.

● **Time Format**

Selectable time formats are shown below:

- YYYY/MM/DD hh:mm:ss (Ex. 2010- 4-11 18:18:42)
- DD/MM/YYYY hh:mm:ss (Ex. 11- 4-2010 18:18:42)
- MM/DD/YYYY hh:mm:ss (Ex. 4-11-2010 18:18:42)

● **Time Zone**

Select Time Zone of Camera

This is the Time Zone where camera is installed. Daylight Savings Time should take effect automatically.

A **Time Zone** is a region of the earth that has a uniform standard time, usually referred to as the **Local Time**. By convention, time zones compute their local time as an offset from UTC (Coordinated Universal Time). In casual use, GMT (Greenwich Mean Time) can be considered equivalent to UTC. Local time is UTC plus the current time zone offset for the considered location

● **Automatically Synchronize with NTP Server**

Synchronize the camera time with an NTP server using NTP (Network Time Protocol). The name of the NTP Server should be registered as the NTP Server Name.

The **Network Time Protocol (NTP)** is a protocol for synchronizing the clocks of computer systems over packet-switched, variable-latency data networks. It is designed particularly to resist the effects of variable latency by using a jitter buffer.

Reboot

● **Reboot the Camera**

If the server needs to be restarted, press the **Reboot Button**.

Factory Reset

- All settings including user accounts and logs will be reset to the default values.

Factory Reset Except Network Settings

- All the settings will be reset to the default values except for current network settings.

4- Remote Configuration

4.3 Video Configuration

Setup Live View

System Video Audio Network Serial Event Preset Record User Camera

Video Apply

Encode

Input Format: Composite NTSC

Input deinterlace: Off On

Resolution: 720x480

Framerate: 30

Preference: Bitrate

Quality: Economy

Bitrate: 2000 kbps (32 ~ 10240)

I-Frame Interval: 30

H.264 Profile: High Profile

Dual Encode

Use Dual Encode: Off On

Dual Encode Algorithm: H.264 MJPEG

Resolution: 720x480

Framerate: 30

Preference: Bitrate

Bitrate: 1024 kbps (32 ~ 1024)

I-Frame Interval: 30

H.264 Profile: High Profile

Motion Detection

Use Motion Detection: Off On



Edit: Enable Disable

Mode: Set Erase Apply Edited Area

Sensitivity(0 for most sensitive): 5

Information Display

SystemID: Off On

Time: Off On

Position: Bottom Top

BumIn OSD

SystemID: Off On

Time: Off On

Position: Bottom Top

Font Size: Small (8x8) Middle (16x16) Large (32x32)

Color

Brightness: 50

Contrast: 50

Hue: 50

Saturation: 50

4- Remote Configuration

Encode

● **Enable Preview**

① Select **ON** to enable the display video on the monitor that is connected to the composite or HD-SDI video port.

② Select the **Output Format** at the end of the video page.

Note that when **Enable Preview is ON**, dual streaming is not available. When the video is transmitted directly to the monitor through BNC cable, the video does not go through the network and encoding. Therefore, there is less delay and no effect from network limitation.

● **Input Deinterlace**

Deinterlace Function is activated when **ON** is selected.

● **Resolution**

Select Video Encoding Resolution

Scaling option is used when encoding resolution is different from input resolution. Without 'Scaling', input video will be cut according to encoding resolution. If 'Scaling' is selected, input video will be adjusted according to encoding resolution.

● **Frame Rate**

Determine the Maximum Number of Frames per Second for the Video Stream

1,2,3,4,5,6,8,10,15,20,25 and 30 frame rate can be selected. The actual frame rate of video can be less than the maximum frame rate set due to the network bandwidth limitation.

● **Preference**

Select Encoding Mode to Control Video Quality or Bit Rate: Quality (VBR) or Bit Rate (CBR). If 'Bit Rate' is selected, the video encoding will be effected by the Bit Rate value entered. Therefore, Bit Rate mode corresponds to CBR (Constant Bit Rate) encoding. If 'Quality' is selected, the video encoding will be effected by the quality of image selected. Therefore, 'Quality' mode corresponds to VBR (Variable Bit Rate) encoding.

● **Quality**

Select Video Quality: 7 levels of quality are available

Quality Mode (VBR encoding) tries to encode every frame in a constant quality. Therefore, resulting bit rate depend on the complexity or activity changes in the input video. It is preferred when constant video quality is required and network bandwidth is enough for delivering the stream of highly varying bit rate.

● **Bit Rate**

Determine Bit Rate Value Between 32 ~ 10240kbps.

Bit Rate Mode (CBR encoding) allows you to set a fixed target bit rate that consumes a predictable amount of bandwidth. In order to keep the bit rate limit, video quality is controlled dynamically according to the complexity or activity changes in the input video.

4- Remote Configuration

- **I-Frame Interval**

Determine I-Frame Interval between 1 and 255.

- **H.264 Profile**

Select H.264 Profile: **High Profile** or **Baseline Profile**

The standard defines various sets of capabilities, which are referred to as profiles, targeting specific classes of applications.

- **High Profile (HiP)**

The primary profile for broadcast and disc storage applications, particularly for high-definition television applications (For Example: this is the profile adopted by the Blu-Ray Disc storage format and the DVB HDTV broadcast service).

- **Baseline Profile (BP)**

Primarily for low-cost applications that require additional data loss robustness, this profile is used in some videoconferencing and mobile applications. This profile includes all features that are supported in the Constrained Baseline Profile, plus three additional features that can be used for loss robustness (or for other purposes such as low-delay multi-point video stream compositing).

Dual Encode

- **Use Dual Encode**

① Select **OFF** button on the **Enable Preview** to disable Dual Encode.

② Select **ON** to enable Dual Encoding.

The secondary video can be viewed on **Live View** window by selecting **Secondary** on the **Video Selection**.

- **Dual Encode Algorithm**

Select **H.264** or **MJPEG** for the **Secondary Streaming**

Bit Rate Mode or Quality Mode can be selected for **H.264** Preference Mode.

MJPEG Preference Mode supports Quality Mode only.

Motion Detection

- **Motion Detection Area Editing**

Configure regions for motion detection. Regions of arbitrary shape can be configured by the following steps:

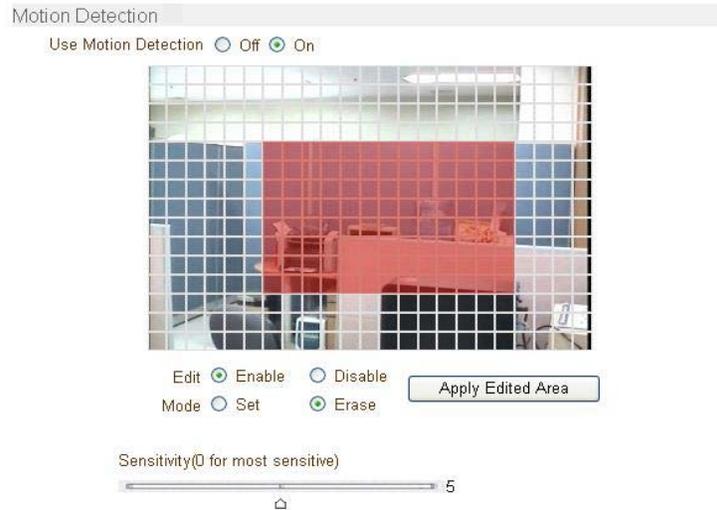
① Select **Enable** to edit.

② Editing Mode: **Set** is for including cells in motion detection region and **Erase** is for excluding.

③ Select cells using the right button of the mouse. Multiple cells can be selected conveniently by pressing and dragging.

④ Press **Apply Edited Area** to save the editing.

4- Remote Configuration



- **Sensitivity**

Sensitivity is the Condition to Trigger an Event of Motion Detection

The value determines the sensitivity of the motion detection within a block; the smaller number, the more sensitive it becomes. It is selectable from 0 to 10.

Information Display

System ID and/or Server Time can be display over the video window in Internet Explorer. Each item can be turned on or off separately and position can be configured. This information is displayed **after the video is decompressed.**

BurnIn OSD

Insert System ID and Date/Time in the **Compressed Video**. System ID and Time can be turned ON or OFF in the video. Position and Font Size can be configured as well. System ID for BurnIn OSD exists independently from the Normal System ID.

Note: the size of the BurnIn OSD display varies according to the encoding resolution setting. This is inevitable because BurnIn OSD is inserted to the frames before encoding is performed.

4- Remote Configuration

The following table describes the rule for BurnIn OSD display:

Resolution	Small (8 x8)	Middle (16x16)	Large (32x32)
352x480 / 352x240 / 352x576 / 352x288	2	1	0
720x480 / 720x240 / 720x576 / 720x288 / 640x480 / 800x600	2	2	1
1024 x 768 / 1280x720 / 1280 x 960 / 1280x1024 / 1440x900 / 1600x900 / 1680x1050 / 1920x1056 / 1920x1080 / 2048x1536 / 2560x1600 / 2592x1936	2	2	2

2: Both System ID and Time are displayed.

1: Either System ID or Time can be displayed. When both are enabled, System ID is displayed.

0: No items are displayed. This is because video area is too small to display OSD text in large text.

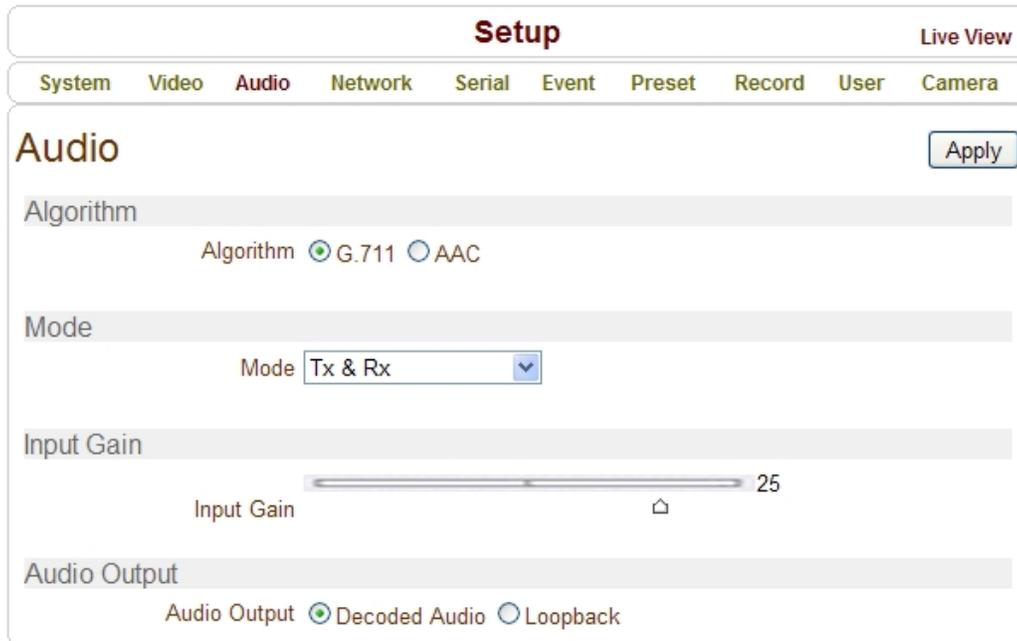
Output Format

Output Format Menu appears only when Enable Preview is ON

Select the Output Format for the Monitor Preview according to the Video Output and Monitor Specification.

4- Remote Configuration

4.4 Audio Configuration



Algorithm

- **Algorithm**

- Select the Audio Algorithm: G.711 or AAC**

- G.711 and AAC from client to server direction are supported. Thus, bidirectional audio communication is supported.

- **Bit Rate**

- Select the Bit Rate between 64Kbps and 128kbps when AAC is selected**

- The sampling rate is fixed to 8KHz and 32KHz for G.711 and AAC respectively.

Note: when camera is connected to a decoder, the decoder's audio algorithm should be set identically to transmit audio properly.

4- Remote Configuration

Mode

Select Audio Operation Mode:

Mode	Action
Off	No operation
Tx-Only	Transmit only
Rx-Only	Receive only
Tx & Rx	Transmit and Receive

Input Gain

Set Audio Input Gain from 0 to 31

Audio Output

Configure the Audio Source to be Played on Audio Output Port

- **Decoded Audio:** Audio Stream from client is played.
- **Loopback:** Audio Data from audio input port is loop-backed to the audio output port.

4-Remote Configuration

4.5 Network Configuration

Setup [Live View](#)

SystemVideoAudioNetworkSerialEventPresetRecordUserCamera

Network Apply

Local

IP Mode

Local IP

Local Gateway

Local Subnet

DNS

Obtain DNS server address automatically

Use the following DNS server addresses

Primary DNS Server

Secondary DNS Server

IPv6

IPv6 Address

IPv6 Subnet Prefix Length

IPv6 Default Gateway

IPv6 LinkLocal

Port

Base Port (1025~65535)

HTTP Port (80, 1025~65535)

HTTPS Port (443, 1025~65535)

RTSP Port (554, 1025~65535)

Discovery

UPNP Off On

Zeroconf Off On

WS Discovery Off On

Authentication

RTSP Authentication Off On

HTTPAPI Authentication Off On

One-way Streaming

Mode

SNMP

SNMP Listen port (0, 161, 1025~65535)

SNMP Trap Destination IP

SNMP Trap Destination Port (0, 162, 1025~65535)

Multicast

Multicast IP (224.0.0.0 ~ 239.255.255.255)

DDNS

DDNS Server None TrueDNS DynDNS Vdyn

Check IP Disable

Bitrate Control

Flow Control Mode

IP Filtering Setup

IP Filtering Setup

Address Information

Current IP

Current Domain

MAC Address

Connecting

4- Remote Configuration

Local

● IP Mode

Select the IP Mode: **Fixed IP** or **DHCP** (Dynamic Host Configuration Protocol)
Depending on the selected mode, further configuration items are as follows:

IP Mode	Selection	Description
Fixed IP	Local IP	Fixed IP Address
	Local Gateway	Gateway IP Address
	Local Subnet	Subnet Mask
DHCP	N/A	

IP Address Information can be obtained from ISP Provider or Network Manager.

DNS

● Obtain DNS Server Address Automatically

Get DNS Server Address automatically when IP Mode is **DHCP**.

● Enter the following DNS Server Address:

- Primary DNS Server
- Secondary DNS Server

The screenshot shows a configuration interface with the following sections:

- DDNS**:
 - DDNS Server: None TrueDNS DynDNS
 - Check IP Disable
 - ID:
 - Password:
 - Domain Name:
- Bitrate Control**:
 - Flow Control Mode: Frame Drop Mode Suppression Mode
- Address Information**:
 - Current IP: 192.168.10.105
 - Current Domain: demo3.truecam.net
 - MAC Address: 00:1C:63:AA:01:65
 - Connecting

4- Remote Configuration

Domain Name System (DNS) is a database system that translates a computer's fully qualified domain name into an IP address. Networked computers use IP addresses to locate and connect to each other, but IP addresses can be difficult for people to remember. For Example: It's much easier to remember the domain name `www.amazon.com` than it is to remember its corresponding IP address (207.171.166.48). Each organization that maintains a computer network will have at least one server handling DNS queries. That server, called a name server, will hold a list of all the IP addresses within its network, plus a cache of IP addresses for recently accessed computers outside the network.

Ipv6

- **Ipv6 Address**

Enter the designated Ipv6 Address.

- **Ipv6 Subnet Prefix Length**

Enter the bit number of Ipv6 Subnet.

- **Ipv6 Default Gateway**

Enter the designated Ipv6 Gateway.

- **Ipv6 Link Local**

Display Ipv6 Link Local.

Port

- **Base Port (1025 ~ 65535)**

Enter the Base Port Number. Network Base Port is use for communication with remote clients. In order for camera and remote systems (decoder or VMS and NVR software) to be connected, the port number must be configured identically in both the camera side and client side.

- **HTTP Port (80, 1025 ~ 65535)**

Enter HTTP Port is used for Web-Based Connection.

- **HTTPS Port (443, 1025 ~ 65535)**

Enter HTTPS Port is used for Secured HTTP Connection.

- **RTSP Port (554, 1025 ~ 65535)**

Enter RTSP Port is used for RTSP-Based Connection.

The Default RTSP Port is 554 **RTSP** (Real Time Streaming Protocol); which is the standard for media streaming between server and client.

Discovery

- **UPNP**

By selecting **ON**, it allows UPNP (Universal Plug and Play) Protocol on the client side discovery.

4- Remote Configuration

- **Zeroconf**

By selecting **ON**, it allows Zeroconf Protocol on the client side discovery.

- **WS Discovery**

The Discovery Function is based on Web Service being enabled. It allows SW Client discovery that supports ONVIF.

Authentication

- **RTSP Authentication**

If RTSP Authentication is **ON**, the client side user is asked to enter User ID and Password.

- **HTTP API Authentication**

By selecting **ON**, HTTP Authentication is used for all clients with HTTP API.

One-Way Streaming

This IP Camera provides two kinds of one-way (unidirectional) streaming based on UDP to clients: **RTP** and **MPEG-TS**. Both are a kind of broadcasting where traffic from client to server is not generated at all.

- **RTP (Real-Time Transport Protocol)** is an Internet protocol used for transmitting single real-time multimedia data such as audio and video to a select group of connected clients. Normally, RTSP uses **RTP** to format packets of multimedia content. The RTP menu is used when the RTP is streaming without RTSP connection. RTP stream will be transmitted to the destination set. The **SDP** (Session Description Protocol) file can be found on the server and a client can retrieve it using an http connection.

Related Settings are as follows:

- **Destination IP:** Set the IP Address of the Destination System which will receive the RTP stream. If the system is a decoder, RTSP authentication information can be entered in the middle of the RTSP URL as follows:
<rtsp://admin:1234@192.168.10.100:554/video1>
- **Destination Port:** Set the Destination System Port that will receive the RTP Stream.
- **User Name:** Enter the name that will be used as the User Name for the SDP File.
- **File Name:** Enter the name that will be used as the SDP File Name. It can be accessed through <http://ServerAddress/filename>

Mode	<input type="text" value="RTP"/>	<input type="button" value="v"/>
Destination IP	<input type="text" value="192.168.10.14"/>	
Destination Port	<input type="text" value="1026"/>	(0, 1026~65534, Even number only)
User Name	<input type="text" value="Office"/>	
File Name	ch0.sdp	

4- Remote Configuration

- **MPEG-TS** is a standard format for transmission and storage of audio, video, and data and is used in broadcast systems such as DVB and ATSC. Transport Stream is specified in MPEG-2 Part 1, Systems (formally known as ISO/IEC standard 13818-1 or ITU-T Rec. H.222.0). Transport Stream specifies a container format encapsulating packetized elementary streams, with error correction and stream synchronization with features for maintaining transmission integrity when the signal is degraded.

As MPEG-TS itself supports AAC as the audio algorithm, only video is streamed when audio algorithm is set to G.711.

Related Settings are as follows:

- **Destination IP:** Set the IP Address of the Destination System that will receive the MPEG-TS Stream.
- **Destination Port:** Set the Destination System Port that will receive the MPEG-TS Stream.

Mode	MPEG-TS	
Destination IP	192.168.10.14	
Destination Port	1026	(0, 1026~65534, Even number only)

SNMP

Setup for SNMP (Simple Network Management Protocol)

Compatible with both SNMPv1 and SNMPvec. Settings for using SNMP are as follows:

- **SNMP Listen Port (0, 161, 1025 ~ 65535):** This port is for connecting external devices when system operates as a SNMP client. SNMP is not used when value is 0.
- **SNMP Trap Destination IP:** Set the SNMP Trap Destination IP.
- **SNMP Trap Destination Port (0, 162, 1025 ~ 65535):** Set the SNMP Trap Destination Port. SNMP is not used when value is 0.

Simple Network Management Protocol (SNMP) is used by network management systems to communicate with network elements. SNMP allows TCP/IP-based network management clients use a TCP/IP-based internet work to exchange information about the configuration and status of nodes. SNMP can also generate trap messages used to report significant TCP/IP events asynchronously to interested clients. For Example: A router could send a message if one of its redundant power supplies fails or a printer could send an SNMP trap when it is out of paper.

4- Remote Configuration

Multicast

● **Multicast IP**

The Multicast Menu is used for configuring the Multicast IP Address to which media stream is delivered when a client, such as Decoder, VMS or NVR software, is connected in Multicast Mode. The Multicast IP Address selection range is between 224.0.0.0 and 239.255.255.255. The selection can be used only when media protocol is set to Multicast.

DDNS

Select the DDNS (Dynamic DNS) Server to use. Select from one of the two servers:

● **True DNS:** TrueDNS Service is used in this mode. Systems can be registered on the website for TrueDNS service: <http://ns1.truecam.net>. System will have a domain name of xxx.truecam.net style. Please refer to user guide document for True DNS service.

● **DynDNS:** DynDNS Service is used in this mode. Refer to www.dyndns.org for details. ID, Password and Domain name are needed when DynDNS is set.

Dynamic DNS is a method, protocol, or network service that provides the capability for a networked device, such as a router or computer system using the Internet Protocol Suite, to notify a domain name server to change, in real time (ad-hoc) the active DNS configuration of its configured hostnames, addresses or other information stored in DNS.

● **Vdyn:** Vdyn is a DDNS Service provided by Visionica (<http://visionica.com>). No further configuration is required for using this service. It internally uses the MAC address for the registration. When it succeeds, the domain name of the form 001C63A607EC.visionica.info is displayed on the Current Domain entry of Network page. E-mail setting is not mandatory.

● **Check IP Disable:** If 'Check IP Disable' is selected, it will skip to check its own IP Address. In Fixed IP Mode, the set IP will be registered on the DDNS Server. In DHCP Mode, dynamically assigned IP will be registered on the DDNS server. Normally, 'Check IP Disable' should be **unchecked** in order to obtain the Public IP in the network.

Bit Rate Control

When one or more clients are connected to the same camera, due to bandwidth differences, some clients do not have enough bandwidth to receive the encoded stream completely. In this case, it is possible to select the way video streaming is received:

- **Frame Drop Mode:** Encoding is performed strictly according to video settings. When a client is connected through a network with less bandwidth, it may not receive all the frames. Frames are dropped on the sending module if the network is bottlenecked.
- **Suppression Mode:** Encoding bit rate and frame rate are adjusted not to drop any frames when the network bandwidths are limited to some clients. In this case, all clients can be affected by the averaged bit rate and frame rate.

4- Remote Configuration

Address Information

Followed Network Information is Displayed (Read Only):

- **IP Address:** The Camera's own IP Address. This information is useful when the Camera's IP Mode is set to DHCP.
- **Domain Name:** If the Camera is registered to the DDNS Server, the Registered Domain Name is displayed.
- **MAC Address:** If the Camera is registered to the DDNS Server, the MAC Address is used for the DDNS Registration.
- **Connecting:** Current Client IP Addresses that are connected to system are listed when connected.

4- Remote Configuration

4.6 Serial Configuration

Setup Live View

System Video Audio Network Serial Event Preset Record User Camera

Serial

Apply

COM2 (RS-485 Port)

Protocol RS-485

Bitrate 2400bps

Data Bit 8Bits

Parity None

Stop Bit 1Bits

PTZ

PTZ Type Pelco-D

PTZ ID 1

PTZ Port COM2

Sensor Type

Sensor 1 Off N/O N/C

Sensor Schedule

Select Sensor Off Sensor On

Sensor 1

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
SUN	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
MON	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
TUE	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
WED	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
THU	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
FRI	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
SAT	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■

Serial Port Configuration

● Serial Port Information

This camera supports one RS-485 serial port. By default, Pelco-D protocol is used with 2400bps baud rate.

Sensor Type

● There is one sensor input port on this Megapixel IP Camera. The sensor port can be configured to the following:

4- Remote Configuration

Function	Operation
OFF	Not used
NO (Normally Open)	The port is normally open and activated when closed.
NC (Normally Closed)	The port is normally closed and activated when opened.

The function of the sensor port is set based on the type of the sensor connected.

Sensor Schedule

● Choose **Sensor OFF** or **Sensor ON** and click below to activate the Sensor Schedule according to day of week and hour.

- Click desired "Cell" to set schedule.

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
SUN																									
MON																									
TUE							█																		
WED																									
THU																									
FRI																									
SAT																									

- Click desired "Time Line" or "Date Line" to set schedule.

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
SUN																█									
MON																									
TUE							█																		
WED																									
THU	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
FRI																									
SAT																█									

- To set all cells in the schedule, click "Empty Cell" below.

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
SUN	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
MON	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
TUE	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
WED	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
THU	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
FRI	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
SAT	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█

4- Remote Configuration

4.7 Event Configuration

Setup Live View

SystemVideoAudioNetworkSerialEventPresetRecordUserCamera

Event

Apply

Local
Sensor Alarm E-mail FTP No Preset v
On Video Loss Alarm E-mail FTP No Preset v
On Motion Alarm E-mail FTP No Preset v

Remote
Sensor1 Alarm E-mail FTP No Preset v
Sensor2 Alarm E-mail FTP No Preset v
Sensor3 Alarm E-mail FTP No Preset v
Sensor4 Alarm E-mail FTP No Preset v

On Disconnect
On Disconnect Alarm E-mail FTP No Preset v

Duration
Alarm 1sec v

E-mail Notification
Server Address
Port 25 (25, 465, 1025~65535)
Sender Address
Authentication on SMTP server Off On
ID
Password
SSL Disable Enable
Destination Address
Video Clip Attaching Off Primary Video Secondary Video JPEG Capture
Number of Frame 1 (1 ~ 10)
E-mail Test

FTP Upload
Server Address
Port 21 (21, 1025~65535)
ID
Password
FTP Filename
FTP Base Directory
Upload Video Primary Video Secondary Video JPEG Capture
Number of Frame 1 (1 ~ 10)
Continuous Upload Off On
Upload Duration 10 sec (Max 300)
Upload Interval 300 sec (Max 3600)
FTP Test

4-Remote Configuration

When a Decoder is connected to an IP Camera instead of a PC Client, one system becomes a **Local System** and the other a **Remote System** (generally the system being used by the user is called the Local System). Actions can be configured for **Remote System Events** as well as **Local System Events**. For Example: It is possible to turn on an alarm device in a local (center) decoder system when a sensor device in remote (site) IP camera is triggered. Local section configures the actions for events from local (self) system and this configuration activates local devices. Remote sections configure the actions for events from a remote (peer) system.

The following table shows the possible **Event Actions**:

Action	Description
Alarm Out	Triggers Alarm (Relay) Port.
Email	Sends Email to the Specified Address. AVI File can be attached.
FTP	Upload AVI File to a Specified FTP Server
Preset	Move to the Preset Position

Local & Remote Event Configuration

- **Sensor**

Configure the actions when the Sensor is activated. Multiple actions can be set for a single event.

- **On Video Loss**

Configure the actions when Video Input Signal is lost. Multiple actions can be set for a single event.

- **On Motion**

Configure the actions when motion is detected. Multiple actions can be set for a single event.

On Disconnect

Configure the actions when the Link (connection) with Peer System is disconnected. Multiple actions can be set for a single event.

Duration

Set the duration of an Alarm or Beep Activation in case of an Event. If set to continuous, it will be active until an operator manually resets.

E-mail Notification

Specify the information to send when Email is selected as an Event Action.

- **Server Address**

Enter an Address of the Mail (SMTP) Server.

4- Remote Configuration

- **Port**

Specify a Port for SMTP Operation (**Port 25 is the Default Port in SMTP Operation**. If a different port is configured in the SMTP Server, this port needs to be changed accordingly).

- **Sender Address**

Enter an Account Registered in the SMTP Server.

- **Authentication on SMTP Server**

This function is applicable when the Email Server requires authentication for sending Emails.

- **ID & Password**

In this case, the Email Server requires an ID and Password to use an Email Account.

- **SSL**

This function is applicable when the Email Server requires encryption for sending Emails.

- **Destination Address**

Destination Addresses can have a maximum of 63 characters. More than one address can be entered with delimiting commas (,) or semi-colons (;).

- **Video Clip Attaching**

A Video Clip stored at the moment of the Event can be attached as an AVI or JPEG File. When dual encoding is enabled, **Primary video**, **Secondary video** (H.264 only) or **JPEG Capture** can be selected. The duration of video clip can be configured with **Pre-Event Time** and **Post-Event Time** in the **Event Record** section.

- **Number of Frames**

The number of JPEG Frames is configured. This setting is applicable only when **JPEG Capture** is selected.

- **Email Test**

Email sending can be tested with this button. Before using the Email Test Function, save the Configured Settings by clicking the '**Apply**' button. One of these messages will appear as a result of the Email Test:

4- Remote Configuration

Message	Description
Email Sent Successfully	Test Email has been sent successfully. Client reception can be checked.
Failed to Connect to SMTP Server	Connection to the SMTP Server failed. It is necessary to check if the server is reachable and server address and port are correct.
Authentication Failed	The Server is reachable but authentication failed. ID and/or Password need to be checked.
SMTP Server Rejected the Email	The Server is reachable but emailing failed due to a reason other than authentication. This error happens often when the server authenticates according to its own rule. For Example: IP Addresses of a specific range or specific suffix are allowed.

FTP Upload

Specify the Event Information to be uploaded when FTP is selected as an Event Action:

- **Server Address**

The FTP Server Address should be entered to receive Video Files.

- **Port**

Specify a Port for FTP Operation (**Port 21 is the Default Port in FTP Operation**. If a different port is configured in the FTP Server, this port needs to be changed accordingly).

- **ID & Password**

Enter ID and Password for accessing the FTP Server.

- **FTP File Name**

The names of the files uploaded by FTP can be specified by the user. If a fixed name is specified, the file is overwritten repeatedly. The file name maximum length is 60 characters. If the name is left blank, file name is determined according to the internal rule implemented in the firmware. The following macros are supported to form variable parts of file names. The strings are case-sensitive.

%YYYY: year

%MM: month

%DD: day

%hh: hour

%mm: minute

%ss: second

%EVENT: event type (Sensor1, Motion, ...)

%ADDR: address of the server (Domain name when DDNS is used. Otherwise IP Address is used.)

4- Remote Configuration

“.avi” or “.jpg” will be added automatically at the end of the filename depending on the type of Video File.

- **FTP Base Directory**

Specify the name of the directory to be created on the FTP Server. It is valid only when **Use Record** is set to **Use FTP on Record Session**.

- **Upload Video**

Primary Video and **Secondary Video** (H.264 only), **JPEG Capture** can be selected for uploading. The duration of video clip can be configured with **Pre-Event Time** and **Post-Event Time** in the **Event Record** section.

- **Number of Frames**

Enter Frame Number of JPEG Capture (from 1 to 10).

- **Continuous Upload**

When Continuous Upload is 'ON', this allows video clips to be transmitted regularly, regardless of Event Occurrences. FTP Upload by Events is suppressed in this mode.

- **Upload Duration**

Specify the Recording Duration of a Video Clip to be transmitted (maximum of 300 sec).

- **Upload Interval**

Specify the Transmission Interval (maximum of 3600 sec). Upload Duration is not included in Upload Interval. For Example: If Upload Interval is 60 seconds and Upload Duration is 20 seconds, a video clip for 20 seconds is transmitted every 80 seconds.

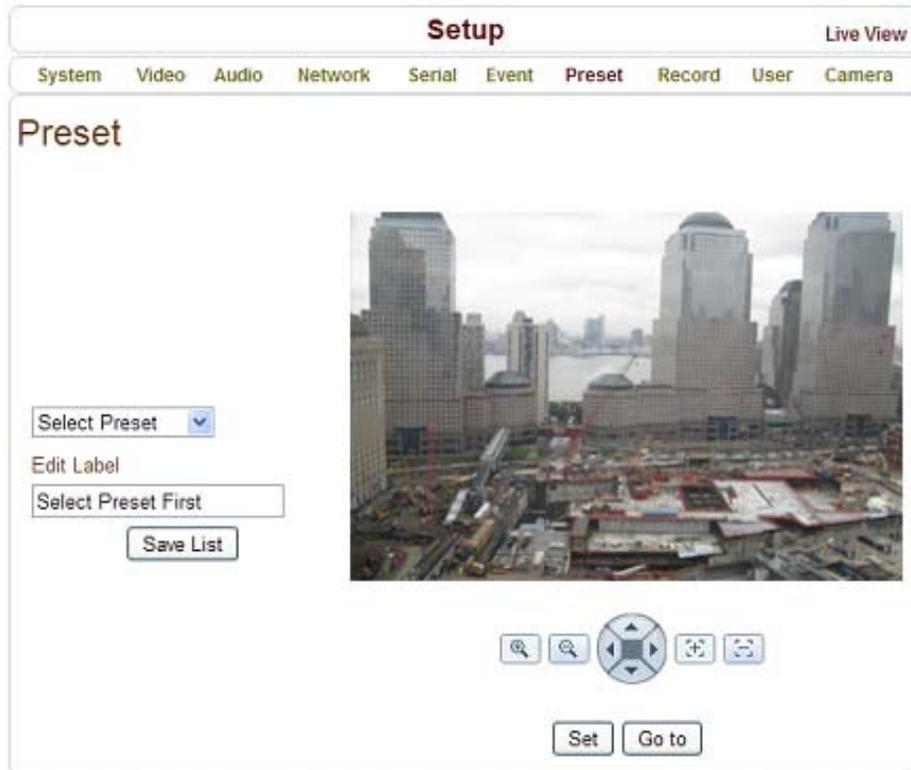
- **FTP Test**

FTP Upload Function can be tested with this button. Please note that configured settings should be saved first by clicking the 'Apply' button before using the FTP Test Function. One of the following messages will come as a result of the test.

Message	Description
FTP Connection Successfully Tested	The connection to the FTP Server is successful.
Failed to Connect to FTP Server	The connection to the FTP server Failed. It is necessary to check if the server is reachable and server address and port are correct.
Authentication Failed	The server is reachable but authentication failed. ID and/or password need to be checked.
Failed to Upload File	File upload failed. The user of the ID is not allowed for writing into the directory or FTP server can be full.
Failed to Erase File	Failed to delete the test file. The user of the ID doesn't have the privilege for file deletion.

4- Remote Configuration

4.8 Preset Configuration



Preset

- Select Preset # and insert the Preset Name.
- Set Camera Position for the Preset and press **Save List** button.

4- Remote Configuration

4.9 Record Configuration

Live View
Setup

System
Video
Audio
Network
Serial
Event
Preset
Record
User
Camera

Record
Apply
Search Page

Disk Information

No disk

Disk size : ---

Free space : ---

Refresh

General

Use Record Off Use Disk Use FTP

Select Video Primary Video Secondary Video

Manual Record Off On

Overwrite Off On

Max File Size

Max File Length

Automatically Backup to FTP Off On

Erase after Backup Off On

Start Time of Backup Data

Event Type

Event Type 1 Sensor1 Sensor2 Motion Video Loss

Event Type 2 Sensor1 Sensor2 Motion Video Loss

Event Type 3 Sensor1 Sensor2 Motion Video Loss

Event Type 4 Sensor1 Sensor2 Motion Video Loss

Pre-event Time

Post-event Time

Schedule Table

Record Off Continuous Disconnect

Select Event Type 1 Event Type 2

Event Type 3 Event Type 4

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
SUN																								
MON																								
TUE																								
WED																								
THU																								
FRI																								
SAT																								

4- Remote Configuration

DISK

SD Memory can be used and at least 1GB size is recommended. A disk with either an EXT3 or FAT32 File System can be read in Linux PC. However, only a disk with a FAT32 File System can be read in Windows PC.

Less than 4Mbps of Video Bit Rate is recommended when you record and monitor video simultaneously since frame dropping may happen due to performance limitation.

Disk Information

Be sure to restart the system after connecting an SD card. During booting, the system reads status of disk and initializes it. Once the initialization of a disk is finished, the disk status is shown on the **Record** page of the web-based setup.



Refer to the Chart for Disk Status:

Disk Status	Description
Disk Error Detected	Error.
No Disk	Disk is not connected to the system.
Searching Disk Information	Checking the status of disk. Refresh the page and wait until the status has changed.
Mounting and Recovering Disk	Performing recovery process when disk damage is found. It takes from seconds to minutes for recovery.
Disk Format Needed	Disk is attached but the type of the file system is unknown or damaged.
Unknown Disk Type Detected	
USB Disk Available	Available to be used for recording.
Disk Removed Or Abnormal State	Disk is detached during operation or there is damage on the file system. If it happens while disk is connected, it is recommended to format the disk.

4- Remote Configuration

General

- **Use Record**

- **OFF**: Recording function will not be used when '**OFF**' is selected.
- **Use Disk**: Recording will be enabled and data will be written to a disk.
- **Use FTP**: Recording will be enabled and data will be uploaded to an FTP Server. In this mode FTP upload by event is automatically disabled.

- **Select Video**

Select Video Stream to Record.

- **Manual Record**

When '**ON**' is selected, Record is operated regardless of the schedule.

- **Overwrite**

When the disk becomes full, the oldest data files are deleted automatically. It is valid only when **Use Record** is set to **Use Disk**.

- **Max File Size/Max File Length**

Max File Size option is for limiting the size of the AVI file. If small file size is set, files of small size will be generated but numbers of the files will be increased. **Max File Length** option is for limiting the time length of AVI file. If the size of a file becomes a **Max File Size** or the duration of the recording reaches **Max File Length**, a new file is created.

- **Automatically Backup to FTP**

Data recorded can be uploaded to an FTP Server automatically for Backup. FTP Server is configured on the Event page. It is valid only when **Use Record** is set to **Use Disk**.

- **Erase After Backup**

Data files are deleted on the disk automatically after being uploaded to the FTP Server. It is valid only when **Automatically Backup to FTP** is used.

- **Start Time of Backup Data**

Specify the time that the FTP Disk Backup should be performed. This time is changed automatically when the Backup is performed to the FTP Server. It is useful to check current backup status. This is valid only when **Automatically Backup to FTP** is used.

- **FTP Base Directory**

Specify the name of the directory to be created on the FTP Server. It is valid only when **Use Record** is set to **Use FTP**.

4- Remote Configuration

Event Type

Three recording modes are supported: **Continuous**, **Event**, **Disconnect**. In case of event recording, event types can be selected among several events. Selected event type is used for configuring the schedule table. Up to 4 event types can be configured and each event type can be a combination of sensor, video loss and motion event.

- **Pre-Event Time**

Specify the duration of recording before an event happens.

- **Post-Event Time**

Specify the duration after the event is cleared.

Schedule Table

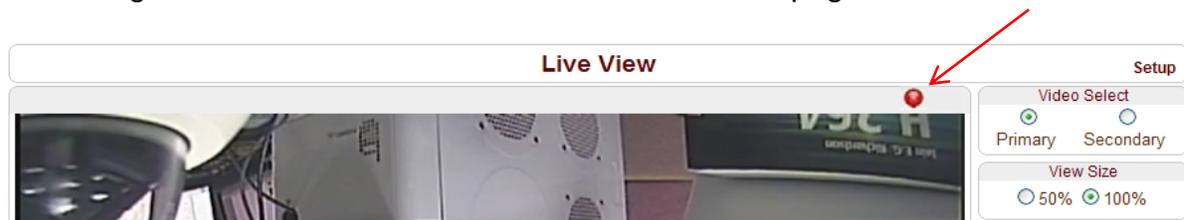
Actual recording mode is determined by **Schedule Table** where recording mode is configured by day (of the week) and hour.

Each Recording Mode configures the recording operation as shown below:

- **Record Off**: No recording.
- **Continuous**: Records continuously.
- **Disconnect**: Recording is started when the system loses the connection to its last client (Decoder, VMS/NVR, etc). When there are multiple clients and one of the clients is disconnected, this doesn't happen.
- **Event Type**: Records when an event configured in the **Event Type** setting happens.

Checking Recording Status

Recording status can be viewed on the main **Live View** page.



Search and Playback

Recorded video and audio data can be saved as AVI format on the disk. In general, one AVI file is created for an event-based recording. However, it is possible that recorded data in a series of continuous events can be merged to a single AVI file depending on the pre/post event time setting. The size of this continuous recording file is limited to 10 ~ 200MB or 10 minutes.

- **Search**

Actual recorded data doesn't appear until it is completed. With continuous recordings, a file will be shown after 10 minutes from the start of recording; a new file is generated every 10 minutes.

4- Remote Configuration

1. Press **Search Page** button on the **Record Setup** page. All Recorded Data from a specified date will be displayed on this page.
2. To begin, choose Date of the Search and an AVI File list will be shown.

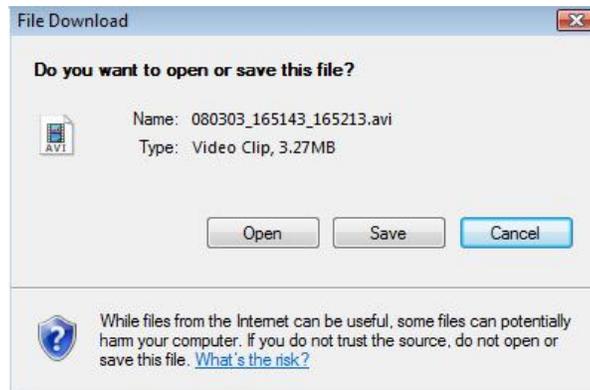


3. The File Name will contain the Date and Time: "**Date Begin Time End Time.avi**".
4. Press **Root** to move back to the Date List Page.



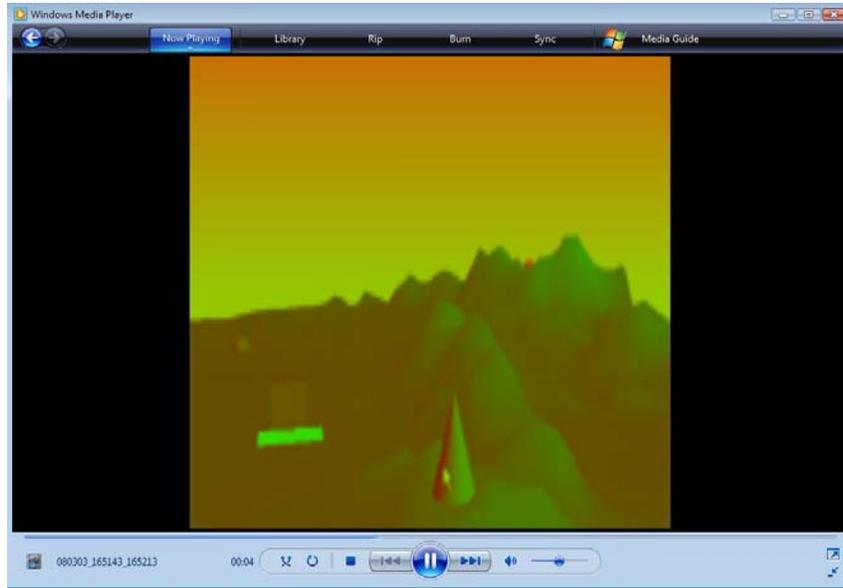
● Playback

1. Selecting an AVI File will show a dialog for opening or saving the file.



2. Click the **Save** button to save and store the file in the PC.
3. Click **Open** to play. The AVI File will be downloaded and played automatically in Windows Media Player.

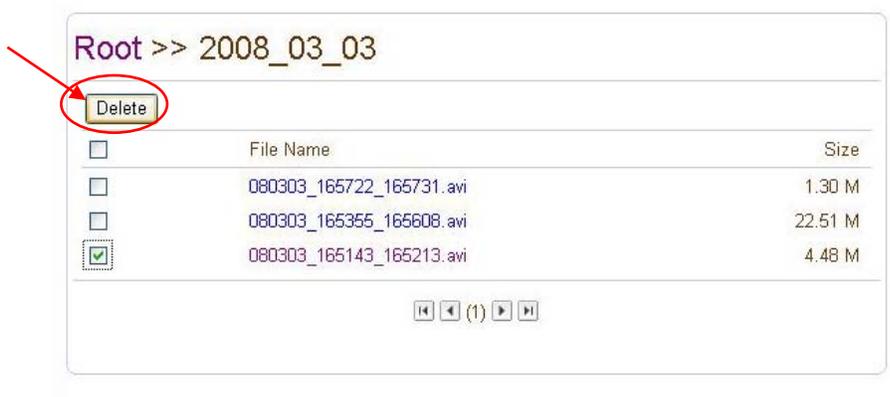
4- Remote Configuration



- 4. The Web Connection is disabled during downloading. Also, two AVI Files can not be downloaded at the same time.

- **Data Deletion**

- 1. If you want to delete recorded files, select the files by checking the item box in front of each file and click the **Delete** button.



- 2. It is possible to delete multiple files at once.

4- Remote Configuration

4.10 User Configuration

User List

- Users can be registered and user privilege levels can be specified. User configuration can be edited and saved by Admin User only. Maximum of 16 users can be registered and each user can have one of four privileges:

Privilege	Allowed Operations	Remarks
Admin	All Operations	User ID = Admin
Manager	All Operations Except User Configuration	
User	Live Viewing and PTZ Control	
Guest	Live Viewing Only	

- **Add User**

Press the **Add** button to add more users. Enter the User ID and password (up to 15 characters) and select **Privilege Level**.

4- Remote Configuration

- **Delete User**

Select the User to be deleted and click the **Delete** button to remove.

- **Change Password**

Click the **Modify Password** button to change the current password. Enter the current password and then set a new password.

The screenshot shows the 'Setup' interface with the 'User' tab selected. The 'Modify Password' section contains a table with the following fields:

ID	admin
Current Password	
New Password	
Confirm Password	

Below the table are two buttons: 'Modify' and 'Cancel'.

- **Modify Privilege Level**

Click the **Modify Privilege** button to change the User Access Level. Only an Admin User can change the privilege level; however, the Admin User Level can not be modified.

The screenshot shows the 'Setup' interface with the 'User' tab selected. The 'Modify Privilege Level' section contains a table with the following fields:

ID	chris
Privilege Level	Manager

Below the table are two buttons: 'Modify' and 'Cancel'.

Login Policy

- **Authentication Type**

HTTP Authentication for RFC 2617 (HTTP Authentication: Basic and Digest Access Authentication) is supported.

- **Skip Login** provides convenient access to the server when authentication is not required. When Skip Login is set to **Enable**, the Login is not required. The privilege level for Skip Login can be modified in **Privilege Level After Login Skipped**.

4- Remote Configuration

4.11 Camera Configuration

Setup Live View

System Video Audio Network Serial Event PTZ Record User Camera

Camera

Default Apply

Config Set#1 Config Set#2 Config Set#3 Config Set#4

Auto Exposure

AE Mode Program AER+1 (DSS) [IR Remove-1]

DSS Limit 1/4

WDR Off On

BLC Off On

White Balance

WB Mode Auto Normal Manual Auto Sodium Auto Mercury

Auto Focus

AF OnePush Mode Off On

AF Search Type Off Type A Type A&B Type C

Minimum Focus Length 150 cm

Y-Knee

Y-Knee

127

ETC

Zoom Proportional Jog Off On

Auto Flip Off On

Max Jog Speed 120 degree/sec

Max Zoom Speed 5

Display PTZ Action Off Auto On

Power Up Action Off On

Schedule

Select Config Set#1 Config Set#2 Config Set#3 Config Set#4

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
SUN																								
MON																								
TUE																								
WED																								
THU																								
FRI																								
SAT																								

4- Remote Configuration

Auto Exposure

- **AE Mode**

Refer to the AE Mode Table for Auto Exposure Options:

Program AE Mode / Function	DSS	IR Remove	WDR
Program AE	X	O [manual]	O [on/off]
Program AER1 [IR Remove – 1]	X	O [auto] : Hi Sensitivity	O [on/off]
Program AER2 [IR Remove – 2]	X	O [auto] : Mid Sensitivity	O [on/off]
Program AE + (DSS)	O [auto]	O [manual]	O [on/off]
Program AER+1 (DSS) [IR Remove -1]	O [auto]	O [auto] : Hi Sensitivity	O [on/off]
Program AER+2 (DSS) [IR Remove -2]	O [auto]	O [auto] : Mid Sensitivity	O [on/off]
Program AER+3 (DSS) [IR Remove -3]	O [auto]	O [auto] : Lo Sensitivity	O [on/off]
Shutter Priority	O [manual]	O [manual]	X
Exposure Priority	X	O [manual]	X
AGC priority	X	O [manual]	X

- **DSS Limit**

DSS Limit can be selected in the range of 1/30 sec to 1 sec. For Example: When 1/6 sec is selected, the image sensor is exposed for 1/6 sec and a maximum of 6 frames can be obtained for one second.

- **WDR (Wide Dynamic Range):** WDR combines two fields with high shutter speed exposure in bright areas and low shutter exposure in dark areas into one composite image. This creates clear images from dark areas of the image without saturation from the bright area.

- **BLC (Back Light Compensation):** BLC allows the camera to balance the lighting in a scene with an extremely bright background such as sunlight. This obtains the finest light contrast to get a clear image.

White Balance

Refer to White Balance Mode Table for Lighting Options:

4- Remote Configuration

White Balance Mode	Lighting	Note
Auto Normal	Daylight, Fluorescent Light (2800k~8000k)	Default
Manual	Not specified	Set WB Red & Blue Offset Manually
Auto Sodium	Sodium Vapor Light	
Auto Mercury	Mercury Vapor Light	

Auto Focus

● **AF OnePush Mode**

Set Manual Focus Automatically with this function.

1. AF OnePush Mode is turned **ON**.
2. Press the Auto Focus Button on Live View page; adjust focus during 6 seconds automatically then changes to manual mode.



● **AF Search Type**

Improve Auto Focus performance; the following functions are supported:

- **OFF**

AF Search Type is not used.

- **Type A**

Type A focus works by recognition of the point light sources. The camera repeats the recognition process automatically depending upon the object and lighting conditions; can sometimes take a long time. With no point light sources, the focus works the same as the Normal AF.

- **Type A&B**

Type A&B is effective for bright light to low light conditions. This setting is recommended.

- **Type C**

Type C focus speed will be faster than others; minimum focus distance is 3 meters.

● **Minimum Focus Length**

Set Minimum Focus Length.

Y-Knee

The Luminance Output Level changes more than the maximum rating. The level can be set up by changing the inclination (Y-knee) of output level.

ETC

● **Digital Zoom**

Digital Zoom (12x) is supported by the camera lens.
x10 Optical Zoom and x12 Digital Zoom Lens (f=5.1 ~ 5.1mm).

4- Remote Configuration

- **Aperture Level**

Aperture Level ranges from 0 to 15.

Aperture Control is a function which adjusts the enhancement of the edges of objects in the picture. There are 16 levels of adjustment, beginning with “no enhancement.” When shooting text, this control may help by making the text sharper.

- **WDR**

Select **On** to enable WDR (Wide Dynamic Range) function.

- **Image Flip**

Select **On** to enable image to be shown flipped.

- **Mirror**

Select **On** to enable image to be shown mirrored.

- **Noise Reduction**

Select proper level of step from drop down menu for noise reduction.

- **Max Zoom Speed**

Set maximum speed of zoom operation (8 steps).

Scheduling Configurations

This feature defines and schedules different camera configurations according to time of a day.

- **Configuration Set**

4 different configuration sets can be set by opening the page with **Config Set#** buttons. For Example: Config Set#1 can be configured for day mode, and Config Set#2 can be configured for night mode.

- **Scheduling Configurations**

Cells in the weekly/hourly schedule table can be set to the appropriate configurations by clicking a specific cell; hour cell or day of the week cell.

Schedule

Select Config Set#1 Config Set#2 Config Set#3 Config Set#4

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
SUN	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
MON	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
TUE	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
WED	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
THU	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
FRI	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
SAT	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■

VS Manager is a program used for basic configuration, diagnostics and firmware upgrade of video servers or IP cameras. **VS Manager** provides the following features:

- Finding Servers on the LAN and assigning IP Addresses.
- Monitoring Server Status: Encoding/Decoding, Serial, Sensor, etc.
- Diagnostic Function: PING, Network Bandwidth Measurement, Video/Audio Output, Port Check, Serial Port Check.
- Firmware Upgrade.

Marshall Electronics, Inc.

1910 East Maple Ave. El Segundo, CA 90245
Tel: (800) 800-6608 / (310) 333-0606 • Fax (310) 333-0688
www.LCDRacks.com • sales@lcdracks.com