

Marshall Electronics

VS-104D-3GSDI

HD H.264 Decoder



User Manual

Firmware Version v1.0

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Safety Precaution

**We appreciate your video decoder purchase.
Before installing the product, please read the following with care.**

- ✧ Make sure to turn off the power before installing video decoder.
- ✧ Do not install under direct sunlight or in dusty areas.
- ✧ Make sure to use the product within the temperature and humidity specified.
- ✧ Do not operate the product in 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.
- ✧ Make sure to leave a space of at least 10 cm from the ventilation hole in order to prevent overheating.
- ✧ Check voltage and current requirements before connecting a power supply.

1. Introduction	4
1.1 About this Manual	4
1.2 Features	4
1.3 Product and Accessories	5
1.4 System Connections.....	6
2. Installation	9
2.1 Check If It Works	9
3. System Operation	10
3.1 Remote Video Monitoring	10
3.2 Initialization of IP Address.....	12
4. Remote Configuration	13
4.1 System Configuration	13
4.2 Video & Audio Configuration.....	13
4.3 Network Configuration	16
4.4 Event Configuration	23
4.5 Device Configuration	25
4.6 PTZ Configuration	26
4.7 User Configuration.....	27
4.8 System Configuration	29
5. VS Manager	34
6. Data Sheet	35
7. Appendix	37

1. Introduction

1.1 About this Manual

This User Manual provides information on installation setup, operation of the video decoder, as well as troubleshooting tips.

1.2 Features

Video Decoder is a video and audio transmission system that provides broadcast quality audio and video, based on IP network through LAN and ADSL/VDSL.

Video

- Up to 1920x1080 @ 60fps
- Highly Efficient Compression Algorithm; H.264 & MJPEG support
- Wide range of Transmission Rates: 32kbps ~ 16mbps
- Various Transmission Modes: CBR or VBR
- Motion Detection

Audio

- Multi-Transmission Mode: Uni-Directional Mode (IP Encoder to Client PC or Decoder/ Client PC or Decoder to IP Encoder), Bi-Directional Mode

Network

- Fixed IP & Dynamic IP (DHCP) support
- 1:1, 1:N support
- Multicasting
- Automatic Transmit Rate Control according to network conditions
- OnVIF, PSIA compliant

Serial Data

- RS-485 support
- Data Pass-Through Mode: Serial Data Communication between Encoder-Decoder

USB

- Connection to internal or external USB storage for remote access, recording and playback

User Interface

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

High Reliability

- Reliable Embedded System
- System Recovery by Dual Watch-Dog Functions

1. Introduction

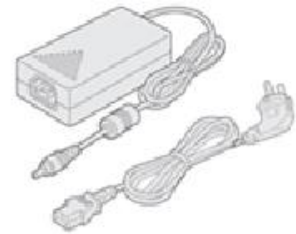
1.3 Products and Accessories



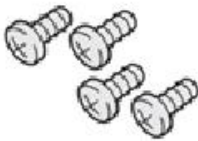
Video Decoder



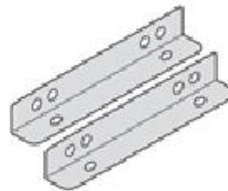
User Manual



Power Adapter & Cable



Screws



Brackets

1. Introduction

1.4 System Connections

Video Decoder operates as one mode; **Decoder**. Video Decoder Systems can be connected in either **1-to-1** where one encoder is connected to one decoder or **1-to-multiple** where one encoder connected to many decoders.

The following chart shows status of video, audio and serial data on each mode:

System Mode	Video	Audio	Serial Data
Decoder	Receive	Transmit/Receive	Transmit/Receive

The system mode is defined by the video communication and this system mode is capable of single directional transmission of audio and/or bi-directional serial data.

Topology

Generally, the Decoder is connected in 1-to-1 mode. To support this specific situation, 1-to-multiple connection is also supported.

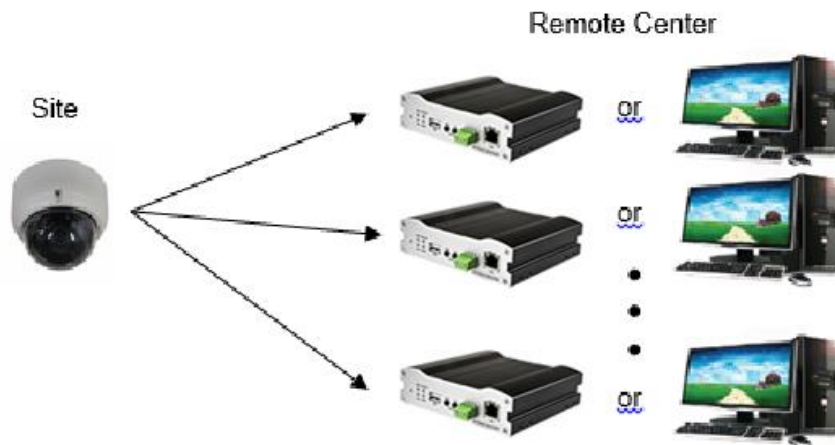
- **1:1 Connection (Unidirectional Transmission)**



The most commonly used configuration is 1-to-1 connection. An Encoder is installed at a site where video images can be transmitted and a Decoder is installed at a center location to receive and view the video images on monitors. Audio and Serial data are transferred in either direction. An Encoder and Decoder can be connected by setting the Encoder's Address for the Decoder's Remote IP.

1. Introduction

- **1:N Connection (Uni-Directional Transmission)**



In this configuration, a site can be monitored from many remote center locations. Maximum connections would be limited by the network bandwidth.

Functionally, the VMS (Video Management System) software can replace the decoder.

Multicast Mode

In the Network Supporting Multicast Mode, if **Multicast** is setup as a system protocol, you can use bandwidth efficiently regardless of the number of decoders. In the 1:N connection, a large number of decoders can receive audio and video data from an encoder by using a single streaming transmission.

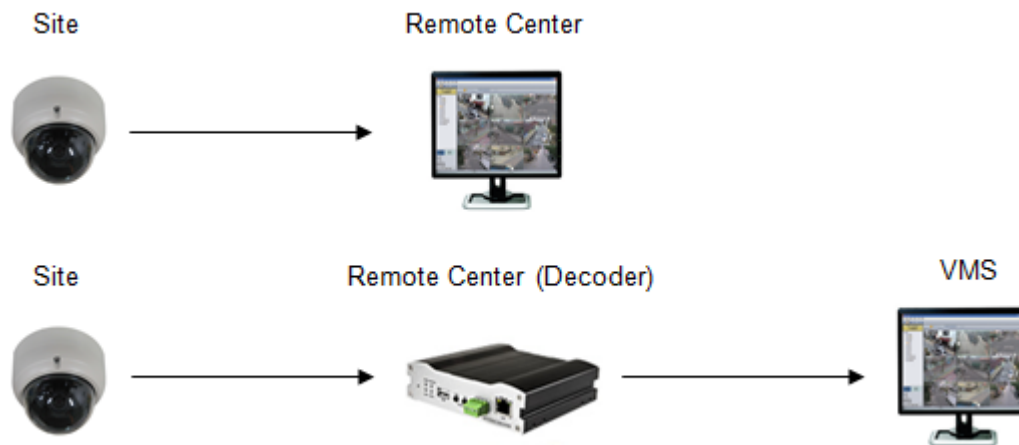
- **Relaying**



In this arrangement, video and audio can be re-transmitted from one center to another center. The arrangement is useful when the network bandwidth at the site is limited while there is more than one center wanting to monitor the site.

1. Introduction

- **VMS (Video Management System)**



VMS (Video Management System) is a Windows based remote monitoring program to access multiple encoders for real-time monitoring or control of the encoders and connected cameras. Please refer to the VMS User Manual for more information on VMS.

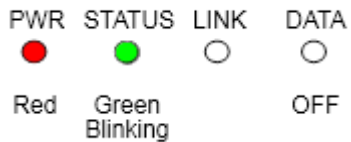
2. Installation

2.1 Check If It Works

Once the power is supplied to the camera, it will start booting. The system will boot up to operation mode after approximately 40-60 seconds. The green LED on the Ethernet Port will flash indicating the system is ready.

Software provided on the disc called **VS Manager** allows you to check the IP address and other network details of the camera. Please refer to the VS Manager manual for instructions on how to find the IP address of the camera and to make necessary changes.

- **Decoder LED Display**



These LED's above show that the **Decoder has started without connecting to an Encoder**. Once an Encoder is connected, the color of "LINK" LED Display will turn green and the "DATA" LED will blink as video or audio data transmissions occur.

- **Description of LED**

System Status can be monitored with the LED Display:

LED	State	Description
PWR	OFF	Power OFF
	Red	Power ON
STATUS	Green Blinking	Normal Operation
	Red	System Failure: Needs Diagnostics
LINK	OFF	No Connection to Remote System
	Green	Connected to a Remote System
	Red Blinking	Decoder Only: Trying to connect to an Encoder
	Orange	Illegal Connection (unsupported combination of system modes)
DATA	Green	Data Transmission in Progress
	Red	Data Loss
	OFF	No Data Transmission

3. System Operation

3.1 Remote Video Monitoring

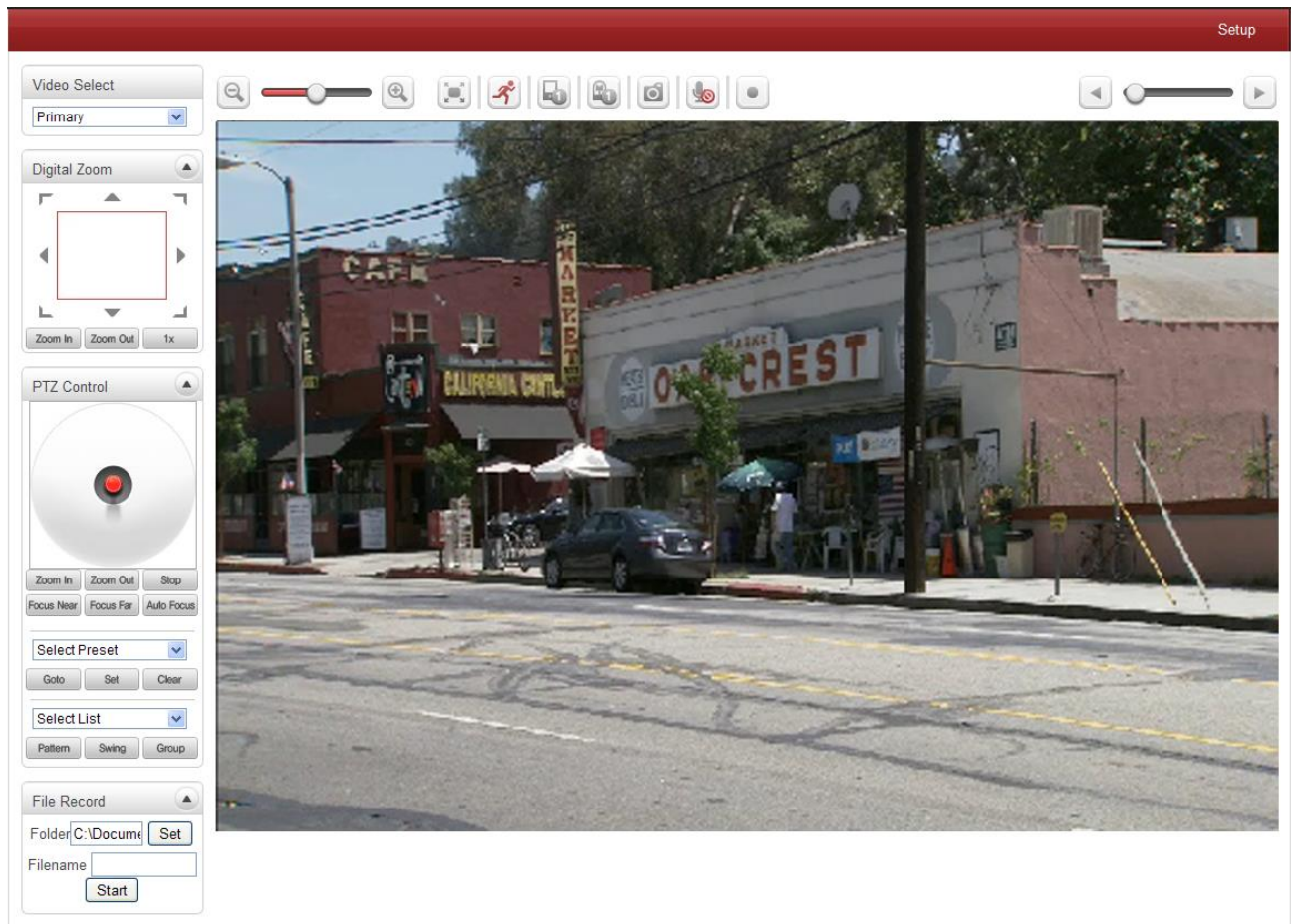
There are two ways to monitor video when the VMS (Video Management System) and IP Camera are connected. In order for a proper operation, an IP Address must be set accordingly. Please refer to the **VS Manager Manual** enclosed with product for further details.

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

Video Monitoring using Internet Explorer

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

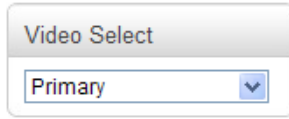
Default IP Address : http://192.168.10.100



3. System Operation

- **Video Select**

Select the Video Stream to be viewed: **Primary, Secondary, Tertiary** or **Quartic Streaming**
This camera is capable of **Dual Streaming**; Primary Streaming and Secondary Streaming. Video will be displayed according to the resolution set on video configuration. If Dual Streaming (“**Use Dual Encode**” Menu in Video page) is not activated, Secondary Videos are not available.

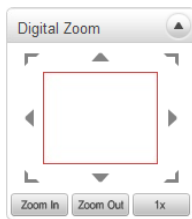


- **View Size**

Adjust the Screen Size. Screen size is initially adjusted according to the **Compression Resolution**. If you click 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 control panel is. Position of the image can be changed by moving position of the square. If you press “**1x**”, the screen will return to the normal size.

- **PTZ Control (Optical Zoom & Digital Zoom Built-In Camera)**

PTZ Control Panel is used for controlling External PTZ devices when the External PTZ devices are connected through a special Serial Port. It is possible to control zooming by using the **Zoom In/Out** buttons of PTZ Control Panel. In order to use Digital Zoom, select **Digital Zoom “ON”** in the **Camera Tab**)

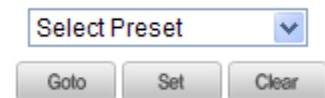


- “**Stop**”
Stop on-going PTZ action.
- “**Focus Near**”, “**Focus Far**”, “**Auto Focus**”
Adjust the focus of the lens.


- **Select Preset**

Set preset position and move to the specific preset position.

- GoTo**: After set up, move to the selected preset entry.
- Set**: Set the current position to the selected preset entry.
- Clear**: Delete the selected preset entry.



- **Sensor Input and Alarm Input**

 Displays 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. 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.

3. System Operation

- **Snapshot**

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



- **Talk**

Transfer audio from the PC 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 the web browser is running.

1. Press “**Set**” button to select folder or create a new folder.

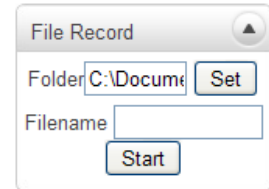
Enter the file name on Filename field.

2. Press “**Start**” button to start recording.

3. Press “**Stop**” button to end recording.

4. 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 specified 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 values result in smoother video by sacrificing the latency. A setting of 10 ~ 15 frames can be generally used for most situations.

Video Monitoring with Decoder System

When the camera’s IP Address is set in the Remote IP Address section of the Decoder, the Decoder System will connect to the camera and start receiving the video images.

Normally, a monitor connected to the decoder will display video images.

3.2 Initialization of IP address

If a System IP Address is lost, the system can be reset to the System Default IP Address using the Reset Button to the left of the LED lights.

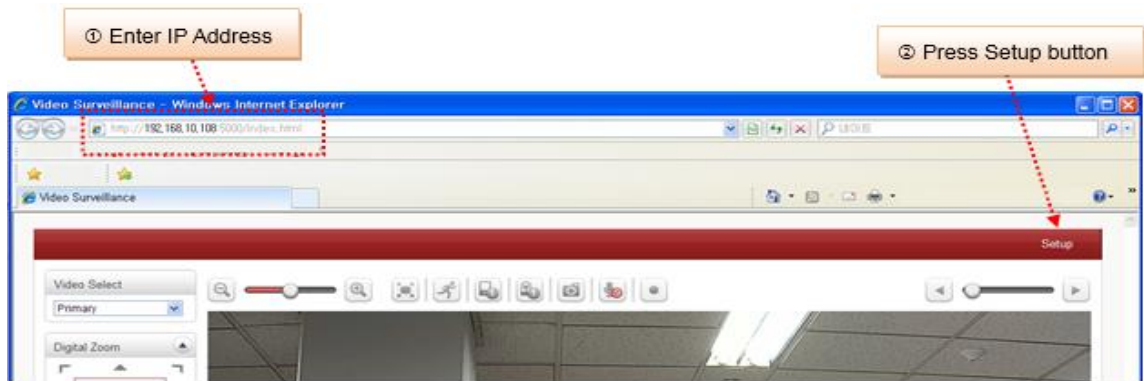
1. While system is in operation, press the reset button for more than 5 seconds.
2. The system will reboot automatically.
3. Once the system reboots, IP Address will be set to the System Default as below:

• 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 System Configuration

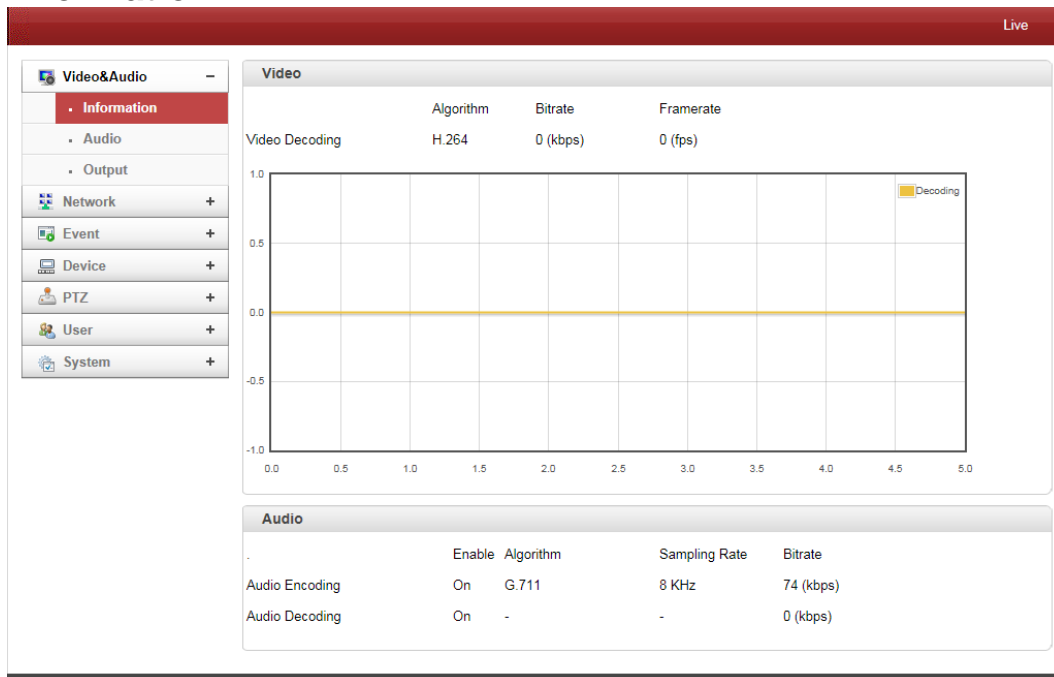
Remote Setting is available by using web browser. Enter IP Address of the IP Camera and a Live View screen appears (see below). Press the **Setup** button located in the upper right area of the monitoring screen for the server setup. For Remote Setting, the user should have manager-level authority or higher.



The configurations are grouped into 9 categories: **Video & Audio, Image, Network, Event, Record, Device, PTZ, System, and User**. To save configuration changes, click **Apply**. Leaving the page without clicking **Apply** will discard any new changes.

4.2 Video & Audio Configuration

Information



The information provides current information for Video and Audio Settings.

4. Remote Configuration

Audio

The screenshot shows a web-based configuration interface for audio settings. On the left is a sidebar with a tree view containing 'Video&Audio' (expanded), 'Information', 'Audio' (selected), 'Output', 'Network', 'Event', 'Device', 'PTZ', 'User', and 'System'. The main content area is titled 'Audio' and contains two sections. The top section, 'Audio', has four dropdown menus: 'Audio Source' set to 'Analog Stereo', 'Algorithm' set to 'G.711', 'Bitrate' set to '64kbps', and 'Mode' set to 'Tx & Rx'. An 'Apply' button is located to the right of these dropdowns. The bottom section, 'Input Gain', features a horizontal slider labeled 'Input Gain' with a value of 25.

- **Audio Source**

Select the Audio Source: **Analog Stereo**.

- **Algorithm**

Select the Audio Algorithm: **G.711** or **AAC**. G.711 and AAC from client to server direction are supported. Thus, bi-directional audio communication is supported.

- **Sample Rate**

The Sample Rate defines the number of samples per unit of time taken from a continuous signal to make a discrete signal.

- **Bitrate**

Bitrate ranges between 64Kbps and 128kbps when AAC is selected. The sample rate is fixed to 8KHz and 32KHz for G.711 and AAC respectively. Note: when the camera is connected to a decoder, the decoder's audio algorithm should be set identically to transmit the audio properly.

- **Mode**

Select the Audio Operation Mode:

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

- **Input Gain**

Audio Input Gain ranges from 0 to 31.

4. Remote Configuration

Output

Live

Video&Audio -

- Information
- Audio
- Output**
- Network +
- Event +
- Device +
- PTZ +
- User +
- System +

Video

Output Format: 1080PsF23.98 (1920x1080)

Buffering: 1

Output Mode: Stretch Crop

Apply

Audio

Audio Output: Decoded Audio Loopback

Apply

- **Output Format**

Select the output when Enable Preview is selected.

- **Buffering**

Select the number of video frames to be buffered. A larger value results in smoother video by sacrificing the latency. A setting of 10-15 frames is generally used for most situations.

4. Remote Configuration

4.3 Network Configuration

IP & Port

Live

- Video&Audio +
- Network -
 - IP&Port**
 - QoS
 - Remote
 - Discovery
 - SNMP
 - DDNS
 - IP filtering
 - Connecting
 - Decode List
- Event +
- Device +
- PTZ +
- User +
- System +

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)

Audio Receive Port: (1025~65535)

MTU Size

MTU Size: (default:1500)

Multicast

Multicast IP: (224.0.0.0 ~ 239.255.255.255)

TTL: (1~255)

- Local**

Select the IP Mode: **Fixed IP** or **DHCP**

Depending on the selected mode, the following configuration applies:

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

Contact your ISP provider or network manager for IP address information.

4. Remote Configuration

- **DNS**

- **Obtain DNS Encoder Address automatically**

Find DNS Encoder Address automatically when IP Mode is set to DHCP.

- **Use the following DNS Encoder Address**

Enter the DNS Encoder IP Address: **Primary** or **Secondary DNS Encoder**

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, on the web, 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 for the Ipv6 subnet.

- **IPv6 Default Gateway:** Enter the designated Ipv6 gateway.

- **IPv6 Link Local:** Display the Ipv6 link local.

- **Port**

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

- Enter the Base Port Number: Network Base Port is used for communication with remote clients. In order for the video encoder and remote systems to be connected, the port number must be identically configured for the camera side and client side.

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

- Enter the HTTP port used for a web-based connection.

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

- Enter the HTTPS port used for a secured HTTP connection.

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

- Enter the RTSP port used for RTSP-based connection. The default TRSP port is 554.

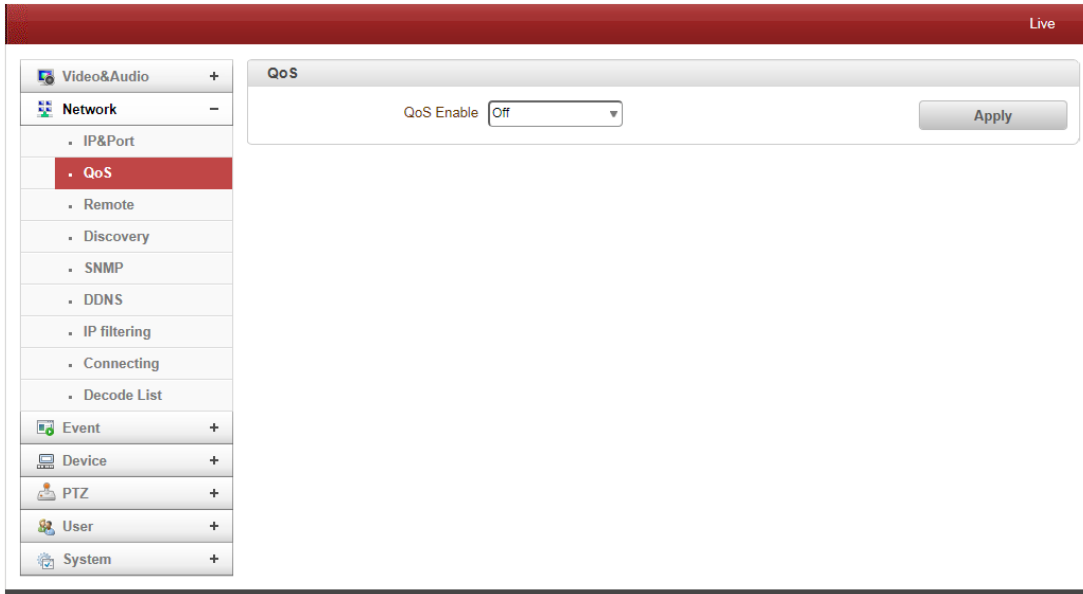
RTSP (Real Time Streaming Protocol) is a standard for media streaming between encoder and client.

- **Multicast**

The Multicast menu is used for configuring the Multicast IP Address where the media stream is delivered when a Decoder, VMS or NVR software is connected in the 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 the media protocol is set to Multicast.

4. Remote Configuration

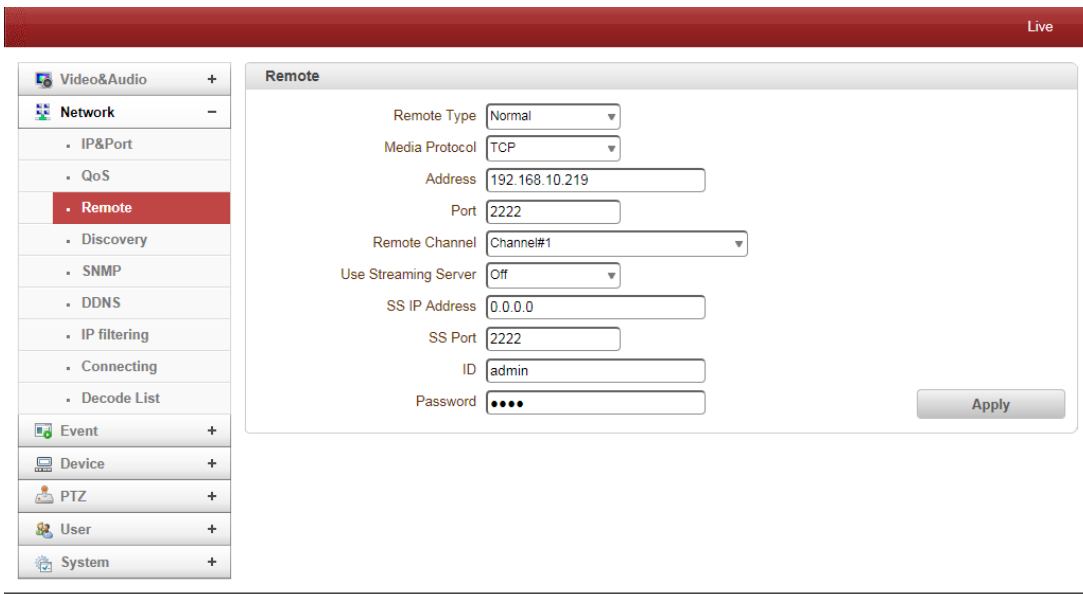
QoS



- **QoS**

When QoS (Quality of Service) is enabled, better overall performance will be seen by the network users.

Remote



- **Remote Type**

- **Normal:** Normal connection with VS Manager Encoder via Base Port.
- **RTSP:** RTSP connection with RTSP stream via RTSP Port.
- **RTMP:** RTMP connection with RTMP stream via RTMP Port.
- **MPEG-TS:** Decode Mpeg-TS steam via specific port defined by user.
- **ONVIF:** Decode steaming from ONVIF Device. User can access profile list from ONVIF device.

4. Remote Configuration

Discovery

Discovery

UPnP Off On

Zeroconf Off On

WS Discovery Off On

Apply

- **UPNP**

When **UPNP** is ON, it allows the discovery of the client according to UPNP (Universal Plug and Play) Protocol.

- **Zeroconf**

When **Zeroconf** is ON, it allows the discovery of the client according to Zeroconf Protocol.

- **WS Discovery**

Discovery function based on web service is enabled. It allows the discovery by the client SW which is supporting Onvif.

SNMP

SNMP

SNMP Listen Port (0, 161, 1025-65535)

SNMP Trap Destination IP

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

Apply

4. Remote Configuration

SNMP (Simple Network Management Protocol) is 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 an external device as an SNMP client. SNMP is not used when the 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 the value is 0.

Simple Network Management Protocol (SNMP) is used by Network Management Systems to communicate with network elements. SNMP lets TCP/IP-Based Network Management clients use a TCP/IP-Based internetwork 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.

DDNS

The screenshot shows a web-based configuration interface for DDNS. On the left is a sidebar with a tree view of settings categories: Video&Audio, Network, IP&Port, QoS, Remote, Discovery, SNMP, **DDNS** (highlighted), IP filtering, Connecting, Decode List, Event, Device, PTZ, User, and System. The main content area is titled 'DDNS' and contains a 'DDNS Server' dropdown menu currently set to 'None', an unchecked checkbox labeled 'Check IP Disable', and an 'Apply' button.

Select DDNS (Dynamic DNS) Encoder to use. One of the two can be selected.

4. Remote Configuration

- **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 Current Domain entry of the Network page. Email setting is not mandatory.

- **Check IP Disable**

If “Check IP Disable” is selected, it will skip to check it’s own IP. In **Fixed IP Mode**, the set IP will be registered on the DDNS Encoder. In **DHCP Mode**, a dynamically assigned IP will be registered on the DDNS Encoder. Normally Check IP Disable should be unchecked in order to obtain the public IP in the network.

IP Filtering

Live

Video&Audio +

Network -

- . IP&Port
- . QoS
- . Remote
- . Discovery
- . SNMP
- . DDNS
- . IP filtering**
- . Connecting
- . Decode List

Event +

Device +

PTZ +

User +

System +

IP Filtering

Basic Policy: Allow all

Access from IPs in the following list will not be allowed.

No.	From	To	Enable
1	0.0.0.0	0.0.0.0	<input type="checkbox"/>
2	0.0.0.0	0.0.0.0	<input type="checkbox"/>
3	0.0.0.0	0.0.0.0	<input type="checkbox"/>
4	0.0.0.0	0.0.0.0	<input type="checkbox"/>
5	0.0.0.0	0.0.0.0	<input type="checkbox"/>
6	0.0.0.0	0.0.0.0	<input type="checkbox"/>
7	0.0.0.0	0.0.0.0	<input type="checkbox"/>
8	0.0.0.0	0.0.0.0	<input type="checkbox"/>
9	0.0.0.0	0.0.0.0	<input type="checkbox"/>
10	0.0.0.0	0.0.0.0	<input type="checkbox"/>
11	0.0.0.0	0.0.0.0	<input type="checkbox"/>
12	0.0.0.0	0.0.0.0	<input type="checkbox"/>
13	0.0.0.0	0.0.0.0	<input type="checkbox"/>
14	0.0.0.0	0.0.0.0	<input type="checkbox"/>
15	0.0.0.0	0.0.0.0	<input type="checkbox"/>
16	0.0.0.0	0.0.0.0	<input type="checkbox"/>
17	0.0.0.0	0.0.0.0	<input type="checkbox"/>
18	0.0.0.0	0.0.0.0	<input type="checkbox"/>
19	0.0.0.0	0.0.0.0	<input type="checkbox"/>
20	0.0.0.0	0.0.0.0	<input type="checkbox"/>

Apply

IP Filtering is simply a mechanism that decides which types of IP datagrams will be processed normally and which will be discarded.

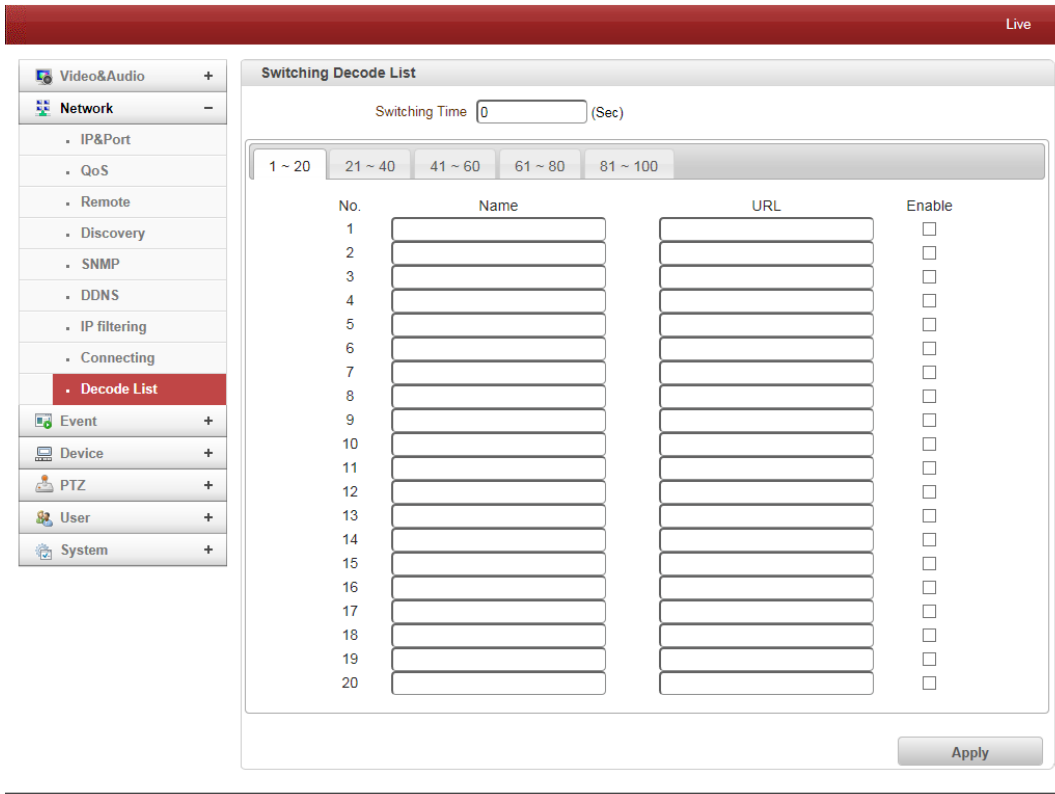
4. Remote Configuration

Connecting



IP Addresses that are currently connected are listed here.

Decode List



No.	Name	URL	Enable
1			<input type="checkbox"/>
2			<input type="checkbox"/>
3			<input type="checkbox"/>
4			<input type="checkbox"/>
5			<input type="checkbox"/>
6			<input type="checkbox"/>
7			<input type="checkbox"/>
8			<input type="checkbox"/>
9			<input type="checkbox"/>
10			<input type="checkbox"/>
11			<input type="checkbox"/>
12			<input type="checkbox"/>
13			<input type="checkbox"/>
14			<input type="checkbox"/>
15			<input type="checkbox"/>
16			<input type="checkbox"/>
17			<input type="checkbox"/>
18			<input type="checkbox"/>
19			<input type="checkbox"/>
20			<input type="checkbox"/>

Decoder will change RTSP URL automatically. User can automatically stream from several encoders.

4. Remote Configuration

4.4 Event Configuration

Remote			
Sensor 1	Beep	<input checked="" type="checkbox"/> Alarm1	Alarm2
Sensor 2	Beep	Alarm1	<input checked="" type="checkbox"/> Alarm2
Sensor 3	Beep	Alarm1	Alarm2
Sensor 4	Beep	Alarm1	Alarm2
On Video Loss	Beep	Alarm1	Alarm2
On Motion	Beep	Alarm1	Alarm2

On Disconnect			
On Disconnect	Beep	Alarm1	Alarm2

Apply

- **Local**

When a Decoder is connected to a Video Encoder, one system becomes a Local System and the other a Remote System (generally a system which is being used by the user is called as Local System). Event Actions can be configured from the Remote System as well as the Local System. For Example: it is possible to turn on an alarm device in the Local (center) Decoder System when a sensor device in Remote (site) Video Encoder is triggered. The Local section configures the actions for the events from the Local (self) System and the configuration activates the local devices and the Remote sections configure the actions for events from Remote (peer) System.

The following table lists the possible actions for the events:

Action	Description
Beep	Triggers beep port.
Alarm out	Triggers alarm (relay) port.

- **On Video Loss**

Configure the actions when video input signal is lost. 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. This event happens when the last client which has been receiving video from the video encoder loses the connection.

4. Remote Configuration

Alarm

The screenshot shows a web management console interface. On the left is a sidebar menu with categories: Video&Audio (+), Network (+), Event (-), Notification (expanded), Alarm (selected), Device (+), PTZ (+), User (+), and System (+). The main content area is titled "Alarm" and contains three dropdown menus: "Beep Duration" set to "1 sec", "Alarm1 Duration" set to "1 sec", and "Alarm2 Duration" set to "1 sec". An "Apply" button is located to the right of these settings. A "Live" status indicator is visible in the top right corner of the main area.

Set the duration of the Alarm or Beep Activation in case of an event. If **Continuous** is selected, the alarm will be in an active state until the operator resets it manually.

4. Remote Configuration

4.7 Serial Device Configuration

Information

Device Information		
COM1	Tx=0 (bps)	Rx=0 (bps)
COM2	Tx=0 (bps)	Rx=0 (bps)

This information provides current serial communication status.

Serial Setup

COM1 (RS-232 Port)

- Protocol: RS-232
- Bitrate: 9600 bps
- Data Bit: 8 Bits
- Parity: None
- Stop Bit: 1 Bits

COM2 (RS-422/485 Port)

- Protocol: RS-485
- Bitrate: 2400 bps
- Data Bit: 8 Bits
- Parity: None
- Stop Bit: 1 Bits
- 485 Terminating Resistors: Off

Apply

- **Serial Protocol:**

Choose Video Encoder Serial Port: **RS-232** or **RS-422/485**; Select RS-422 or RS-485 for the RS-422/485 port.

- **Serial Port Configuration:**

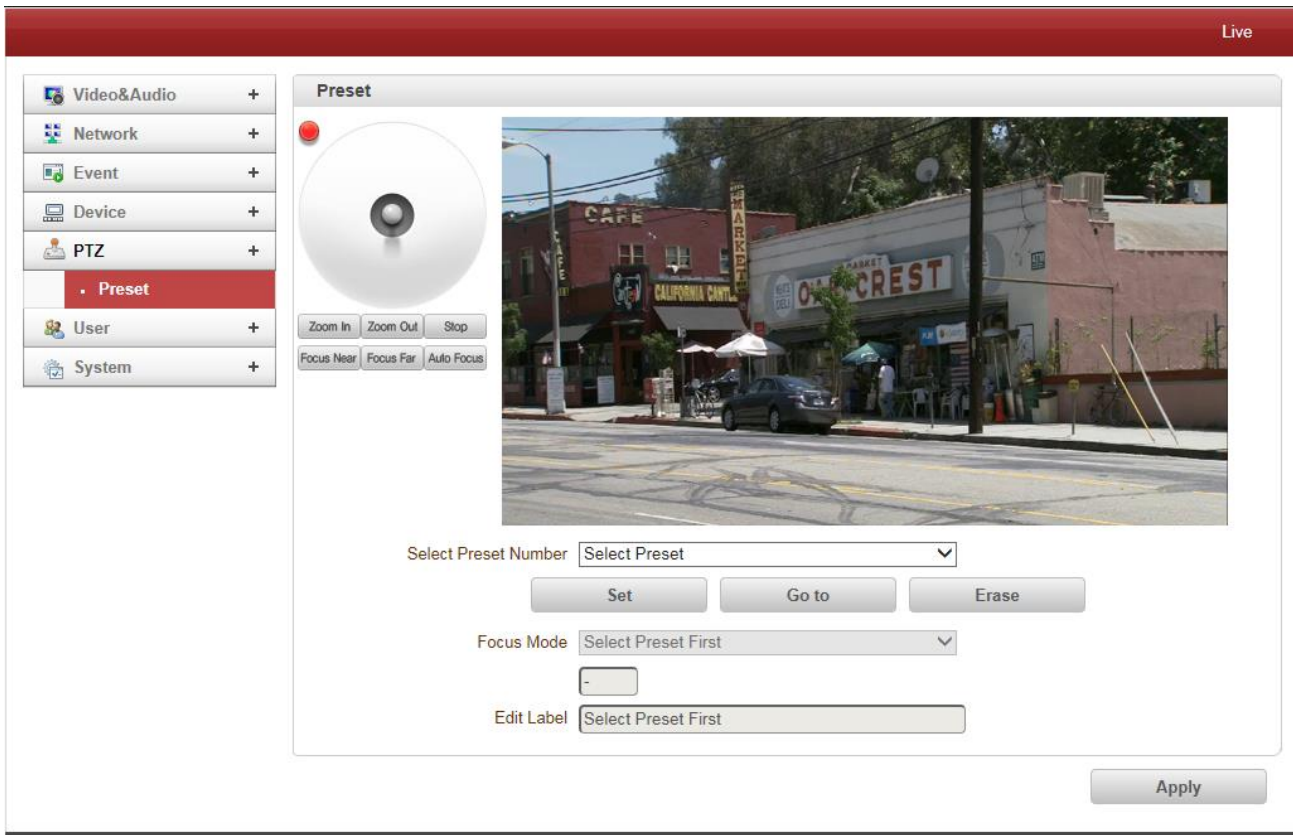
The Serial Port configuration is as follows (must be same as the connecting device):

Mode	Selection
Bitrate	2400, 4800, 9600, 19200, 38400, 57600, 115200 bps
Data Bits	5, 6, 7, 8 bits
Parity	NONE, EVEN, ODD bit
Stop Bit	1, 2 bit

4. Remote Configuration

4.6 PTZ Configuration

Preset



128 Preset Positions max can be defined.

- **Select Preset Number:** Select entry to be assigned to the current encoder position.
- **Focus Mode:** Select the Focus Mode after Preset Go To is selected.
 - **Do Not Change:** The current Focus Mode is not changed.
 - **Focus Auto:** Auto-focusing is selected after the Preset is moved.
 - **Focus Manual:** The current Focus Position is saved when Preset is set.
- **Event Holding Time:** Set the time to stay at the Preset Position when the Preset is moved by the Event. **If it is set to 0, the Encoder doesn't return to the original position after moving to the Preset Position by Event.**
- **Edit Label:** Assign a Label to the Preset Position. Only the first 15 Preset Entries can have Assigned Labels (Preset-1 - Preset-15).

4. Remote Configuration

4.7 User Configuration

User List

ID	Privilege Level
admin	Admin

User can be registered and privilege level of a user can be specified. User configuration is allowed only to admin user. Max 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 for user configuration	
User	Live viewing and PTZ control	
Guest	Live viewing only	

- **Add User**

Press **Add** button. The following window will appear.

Add User

ID

Password

Confirm Password

Privilege Level

Add **Cancel**

Enter User ID and password (Up to 15 characters) and select **Privilege Level**.

- **Delete User**

Select the User to be deleted and press **Delete** button.

4. Remote Configuration

- **Change Password**

Press **Modify Password** button. The following window will appear.

The 'Modify Password' dialog box has a title bar with a close button. It contains the following fields and controls:

- ID:
- Current Password:
- New Password:
- Confirm Password:
- Buttons: **Modify** and **Cancel**

Enter the current password and then set a new password.

- **Modify Privilege Level**

Press **Modify Privilege** button to change User level. It is not allowed to change the privilege level of admin user.

The 'Modify Privilege Level' dialog box has a title bar with a close button. It contains the following fields and controls:

- ID:
- Privilege Level:
- Buttons: **Modify** and **Cancel**

Login Policy

The 'Login Policy' configuration page has a sidebar on the left with the following items:

- Video&Audio +
- Network +
- Event +
- Device +
- PTZ +
- User -
 - User List
 - Login Policy**
- System +

The main configuration area is titled 'Login Policy' and contains the following settings:

- Skip Login: Off On
- Privilege Level After Login Skipped: **Apply**

The 'Authentication' section contains the following settings:

- RTSP Authentication: Off On
- HTTPAPI Authentication: Off On **Apply**

- **Login Policy**

Skip Login provides for convenient access to the encoder when authentication is not required. When Skip Login is set to **Enable**, login step is skipped. The privilege level after login in this way is determined by the setting of **Privilege Level After Login Skipped**.

- **Authentication**

HTTP authentication based on RFC 2617(HTTP Authentication: Basic and Digest Access Authentication) is supported.

4. Remote Configuration

4.8 System Configuration

Information

Live

System Information	
Model	ANT-36000 (3003)
Version	V4.508R01_T913
MAC Address	00:1C:69:AA:06:99
Current IP	192.168.40.200
Current Domain	Not RegisteredB

- **System information**

This following Network Information is displayed (Read Only):

- **Model**

Display the model name.

- **Version**

Display the current firmware version.

- **Mac Address**

Display the MAC address of the encoder. In case the video encoder is registered at DDNS Encoder, the MAC address is used in DDNS registration.

- **Set Current Time**

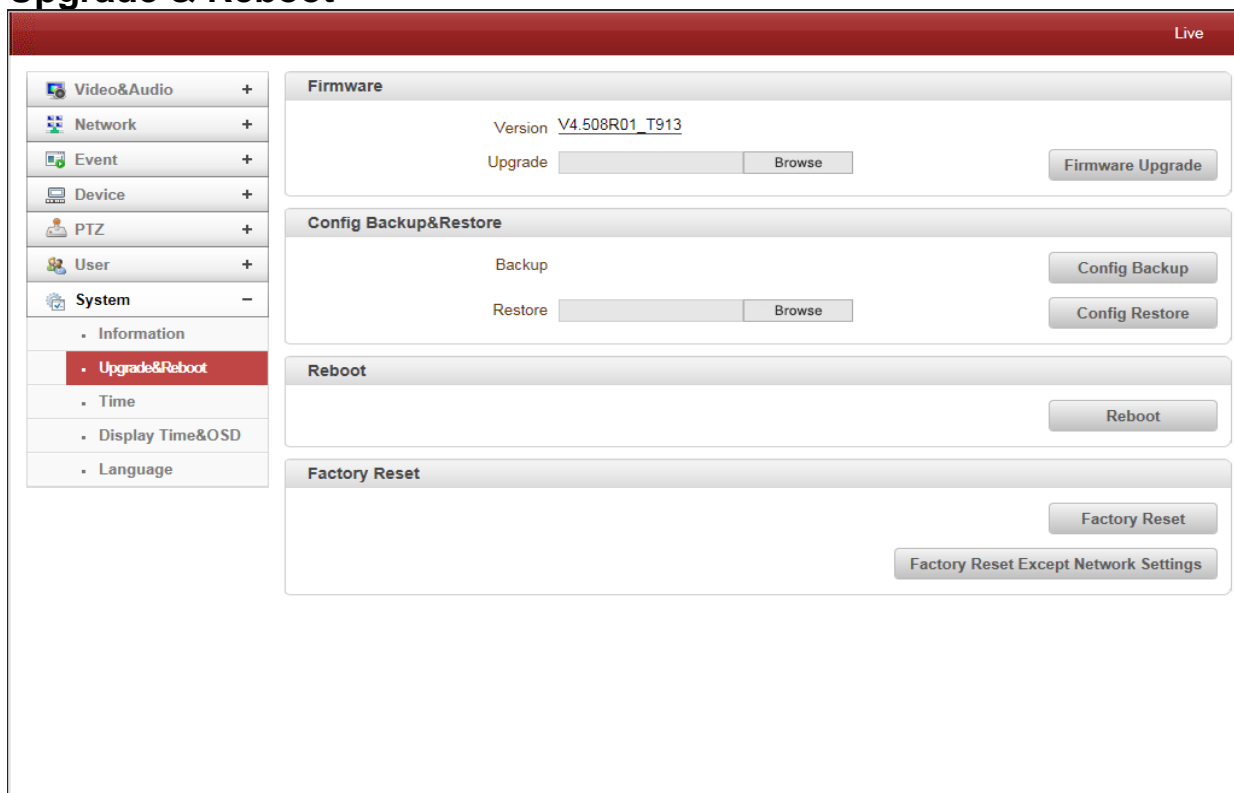
Display Current Date and Time

- **Current Domain**

In case the encoder is registered at DDNS Encoder, the registered domain name is displayed.

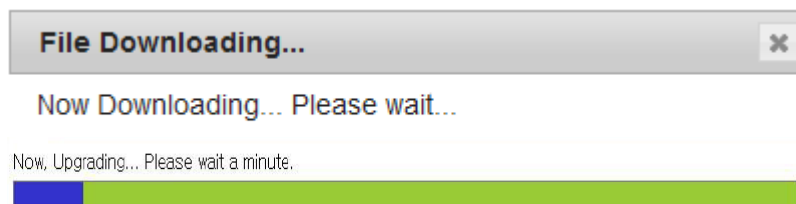
4. Remote Configuration

Upgrade & Reboot



- **Firmware**
 - **Version:** Displays the current firmware version.
 - **Upgrade:** Complete the following to upgrade the firmware:
 1. Press **Browse** button to select a firmware file from PC.
 2. Press **Firmware Upgrade** button to start upgrading.
 3. A message for showing status (downloading / upgrading) will be displayed.
 4. The video encoder will reboot automatically after completing upgrade.

Do not turn off the encoder during upgrading.



- **Config Backup & Restore**
 - **Backup:** All the setting of configuration can be stored.
 - **Restore:** Stored configuration can be browsed and restored. The encoder is rebooted once the **Config Restore** button is selected.
- **Reboot**
 - **Reboot Encoder:** Do not press Reboot button unless the encoder needs a reboot.

4. Remote Configuration

- **Factory Reset**
All settings including user accounts and logs are cleared.
- **Factory Reset Except Network Settings**
All settings except for current network settings are changed to the default values.

Time

The screenshot shows a web interface for configuring the time. On the left is a sidebar with menu items: Video&Audio, Network, Event, Device, PTZ, User, System, Information, Upgrade&Reboot, Time (highlighted), Display Time&OSD, and Language. The main content area is titled 'Time' and contains the following fields and controls:

- Start Time: 2015/09/16 9:49:23
- Current Time: 2015/09/16 13:48:31
- Set Time: 2015/09/16 13 : 48 : 30 (with dropdown arrows for each field)
- Set Current Time button
- Time Format: YYYY/MM/DD hh:mm:ss (dropdown menu)
- Time Zone: (PST +08.00) Los Angeles (dropdown menu)
- Automatically synchronize with NTP server
- NTP Server: pool.ntp.org
- Apply button

- **Start Time**
The latest encoder's booting date and time.
- **Current Time**
Current date and time.
Enter a new date and time then press **Set Current Time** button to update date & time.
- **Time Format**
Change the time format. The selectable time formats are as below;
 1. YYYY/MM/DD hh:mm:ss (Ex: 2012/10.30 12:30:45)
 2. DD/MM/YYYY hh:mm:ss (Ex: 10/30/2012 12:30:45)
 3. MM/DD/YYYY hh:mm:ss (Ex: 30/10/2012 12:30:45)
- **Time Zone**
Select time zone of where the encoder is installed. Depending on the time zone, Daylight Saving Time will work automatically.

A **Time Zone** is a region of the earth that has 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

4. Remote Configuration

- **Automatic Synchronize with NTP Encoder**

Synchronize the encoder time with an NTP Encoder using NTP (Network Time Protocol). Name of the NTP Encoder should be registered on NTP Encoder 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.

System ID

The screenshot shows a web-based configuration interface. The top bar is red and labeled 'Live'. A sidebar on the left lists various system settings, with 'Display Time&OSD' highlighted in red. The main panel is titled 'System ID' and features a text input field containing the value '1500'. Below this, the 'Information Display' section allows users to toggle 'System ID', 'Time', and 'Position' (Bottom/Top) on or off. An 'Apply' button is located at the bottom right of the configuration area.

- System ID

Enter System ID that is used as a video encoder title.

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

- Information Display

System ID and/or Video Encoder time can be display over the video window in Internet Explorer. Each item can be turn on or off separately, and position also can be configured. This information is displayed **after the video is decompressed**.

- Burn In OSD

Insert system ID and date/time **in the compressed video**. System ID and time respectively can be turned on or off in the video. Position and Font size can be configured also. System ID for BurnIn OSD exists independently from normal System ID.

Note: Size of 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. The following table describes the rule for BurnIn OSD display.

4. Remote Configuration

Resolution	Small (8x8)	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.

- User Defined OSD

You can enter any text you like independent.

- **X-Coordinate** or **Y-Coordinate**

For example, if you enter 500, 500 values, OSD is placed in center of images.

Language

Live

- Video&Audio +
- Network +
- Event +
- Device +
- PTZ +
- User +
- System -
- Information
- Upgrade&Reboot
- Time
- Display Time&OSD
- Language

Language

Language Apply

- Language

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

5. VS Manager

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

- Finding Encoders 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.

VS Manager Software Download:

<http://www.lcdracks.com/servers-cameras/software/software.php>

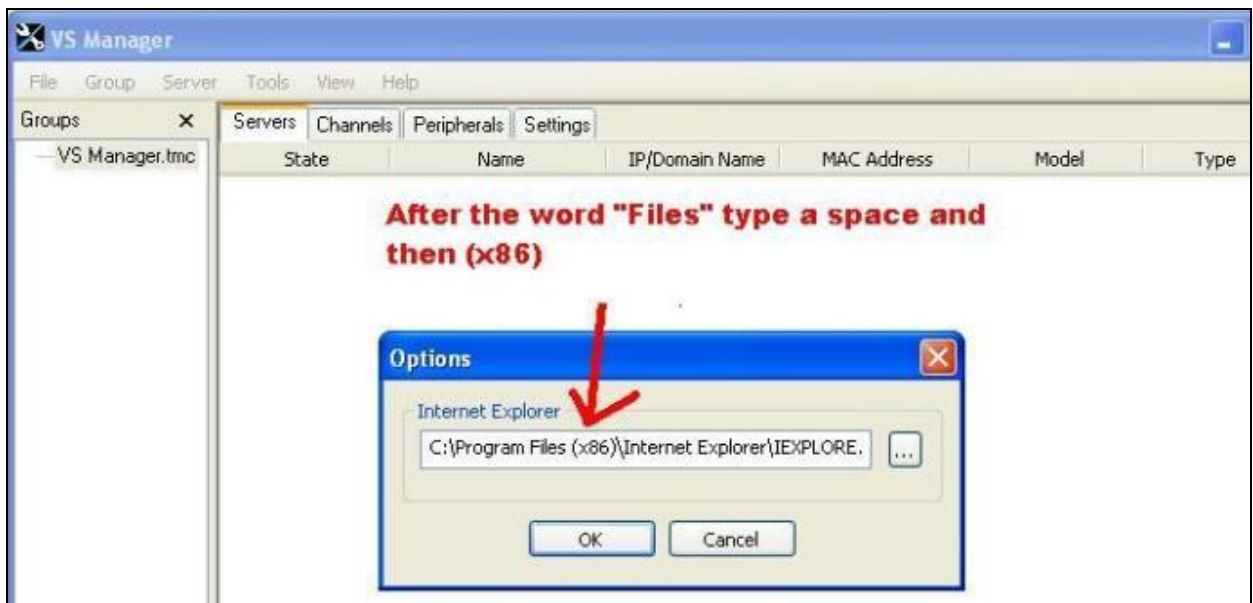
1. Create a folder on your 'C' drive and download the file into that folder using the link above.
2. Copy and paste the link above into an Internet Explorer address window.
3. Right mouse click on the file and make a shortcut on your desktop (using "send to command")
4. Launch the application by double clicking on the desktop icon.
5. Login = admin, Password = 1234.

For Windows 7, 64 bit **ONLY**:

Once VS Manager installed, select IP Discovery, create servers.

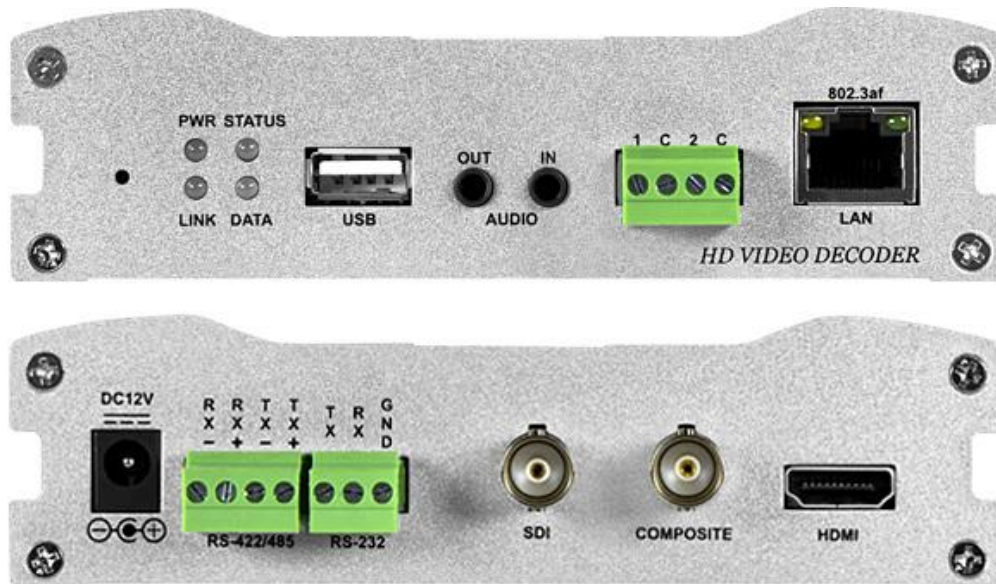
On main page go to Tools, Options and change to this path below.

In the address window, after the word "Files" type a space then (x86).



6. Data Sheet

VS-104D-3GSDI 1080p60 Full HD Decoder



- Max. 60fps at 1920 x 1080
 - 3GSDI, HDSDI, HDMI and CVBS Outputs
 - H.264 / MJPEG
 - Over 35 types of PTZ protocol
 - USB recording
 - Embedded Stereo and Analog Audio
 - Dual Power (DC/PoE)
 - RTSP / RTP / Onvif
-



INCLUDES POWER SUPPLY*

**required for applications not utilizing PoE*

6. Data Sheet

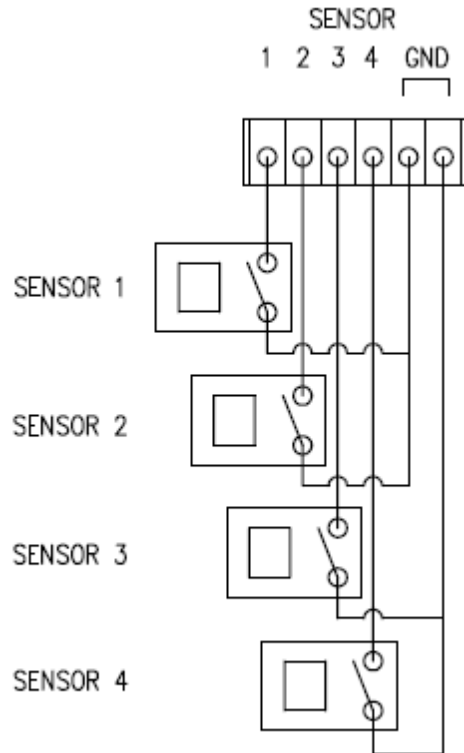
VS-104D-3GSDI Specifications		
System	System Mode	Decoder
Video	Compression	H.264, MJPEG
	Framerate	Max 60fps @ 1920x1080
	Bitrate	Primary: 32Kbps – 16Mbps
	Resolution	352x240 – 1920x1080
	Streaming	H.264/MJPEG
	Burn-in OSD	Multi-lingual
	Output	1 x CVBS (BNC) 1 x HDMI (Type A) 1 x HDSDI/3GSDI (BNC)
Network	Interface	Ethernet 10/100/1000base-T (RJ-45)
	Protocol	IPv4/v6, TCP, UDP, IGMP(Multicast), ICMP, DHCP, HTTP, HTTPS, RTP, RTSP, FTP, SNMP, SMTP, UPnP, WS-Discovery, Zero Configuration, NTP,
	Security	Password protection, IP address filtering, HTTPS encryption
	Application Programming Interface	MEI Protocol/SDK, ONVIF, PSIA, MPEG-TS
Audio	Compression	G.711 / AAC
	Sample rate	G.711: 8KHz, AAC: 32/44.1/48KHz
	Bitrate	G.711: 64Kbps, AAC: 64Kbps/128Kbps
	Streaming	Full duplex
	Input	1 x Line-In (Stereo, 3.5mm)
	Output	1x Line-Out (Stereo, 3.5mm) + Embedded
Event and Alarm	Event sources	Motion, Sensor input, video loss, Client disconnection
	Event actions	Notification (E-mail), FTP, PTZ preset, Alarm control, Recording
General	Housing	Aluminum
	Certifications	CE, FCC, KC, ROHS
	External devices	2 x Sensor-In (dry contact, NO/NC) 2 x Alarm-Out (dry contact, NO)
	Edge storage	1 x USB 2.0 port
	Power Supply	Min DC12V/TBD, PoE (Power over Ethernet): 802.3af
	Power Consumption	DC12V/PoE: Max 7.2W
	Operating Temp.	-10°C – 50°C (14°F – 122°F) / 20% – 80% RH
	Dimension	134.08(W) X 125.5(D) X 36.87(H)mm
	Weight	480g

7. Appendix

Appendix A: Sensor and Alarm Port

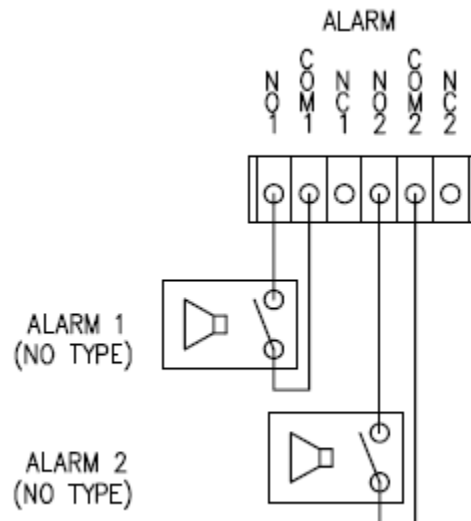
Sensor Port

- **Terminal Type**
 - Voltage Rating: 150VAC
 - Current Rating : 2A
 - Color : Red
- **Sensor Signal Input Type**
 - NO Contact Signals
- **Connection to External Device**



Alarm Port

- **Terminal Type**
 - Voltage Rating: 150VAC
 - Current Rating : 2A
- **Relay Type**
 - Contact Rating : 1A 30VDC
 - Switching Power : Max 30W 62.5VA
 - Switching Voltage : Max 60VDC
- **Alarm Signal Output Type**
 - NO/NC Contact Signals
- **Connection to External Device**

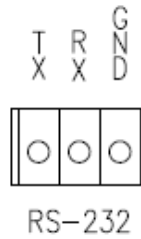


7. Appendix

Appendix B: Serial Port

RS-232 Port

- **Terminal Type**
- 3 PIN
- Pin Arrangement



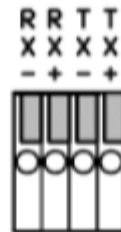
Pin Description:

Pin NO	Pin Name	Description
1	TX	RS232 TX(Transmit)
2	RX	RS232 RX(Receive)
3	GND	Ground

RS-422/485 Port

- **Port Type**
- 4 PIN
- Pin Diagram

RS-422/485 TERMINALS



Pin Description:

Pin No.	Pin Name	Description
1	RX-	RS422 RX-
2	RX+	RS422 RX+
3	TX-	RS422 TX- or RS485 TRX- It is selectable by S/W Setup
4	TX+	RS422 TX+ or RS485 TRX+ It is selectable by S/W Setup

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