

User Manual

# NET6500 IP ENCODER 2 Series





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# Overview

## Safety Instruction

This product was tested with a UPS to satisfy EN 61000-4-11 test conditions (voltage dips and short interruptions test) under the EN 50130-4: 2011 standard.

The Company shall not have any responsibility for any accident or damage that may incur during the use of the product. For your safety, we provide a few instructions about installation, manipulation, cleaning, assembly/disassembly of the product as below. So please read carefully and comply with the instructions.

### Before installation

Comply with the following instructions to prevent a fire, explosion, system failure or electric shock.

- ~ Remove the power supply module before proceeding.
- ~ Check the input voltage (AC100V–AC240V) to the power supply module before connecting it.
- ~ Keep the product away from humidity.
- ~ Ensure that all devices connected to the product should be properly earth-grounded.

### In operation mode

Comply with the following instructions to prevent a fire, explosion, system failure or electric shock.

- ~ If you need to open the cover, consult with a service person who could help you do what you want to do.
- ~ Do not connect multiple devices to a single power socket.
- ~ Keep the product away from dust or too much combustible substances (ex: propane gas).
- ~ Do not touch it with wet hand.
- ~ Do not insert a conductor in the vent of the ventilation system.
- ~ Do not apply excessive force to unplug the power cord.

### Disassembly & Cleaning

- ~ When cleaning on the surface, use a dry cloth.
- ~ Do not wipe the product using water, paint thinner or organic solvents.
- ~ Do never dismantle, repair or modify the product by your own.

### During installation

To prevent an accident or physical injury and to operate ENCODER properly, please comply with the followings:

- ~ Secure at least 18 centimeter of distance between cooling fan and wall for a proper ventilation.
- ~ Install the product on a flat surface.
- ~ Keep it away from direct sunlight or excessive temperature.

### While in use

- ~ Do not apply force to or shake it while using it.
- ~ Do not move, throw away or put excessive force to it.

## Key Features

This product can monitor quality image data in real time after receiving audio and video inputs from the 2MP, 3MP, 4MP, 5MP, 8MP camera for up to 4/16 channels.

It also provides transferring video and audio data to the networked external devices, which allows remote monitoring environment for computers.

- ~ Up to 4/16 channels of 8MP camera video can be displayed in real time
- ~ Supports High Profile CODEC
  - H.264 - HP:(Baseline, Main, High profile),
  - H.265 - HP:(Main profile), MJPEG CODEC
- ~ Supports dual streaming for remote access service
- ~ Supports remote access using the web browser

# Overview

## What's included



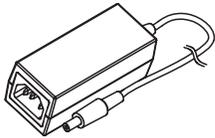
4-Channel Rack Mount



16-Channel Rack Mount



Power Cable  
(16CH)



Power adapter x1  
(4CH and 16CH)



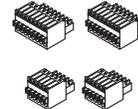
Cable Clamp (For fixing Power Cable)



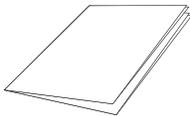
Screws (For fixing Cable Clamp)



4CH  
Terminal Block 5P (2EA)



16CH  
Terminal Block 8P (2EA), 5P (2EA)



Product Insert



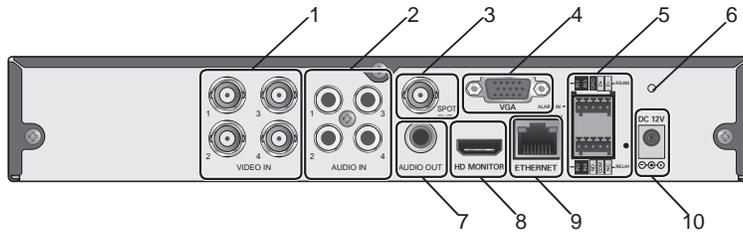
Black Rack Mount Screw (8EA)



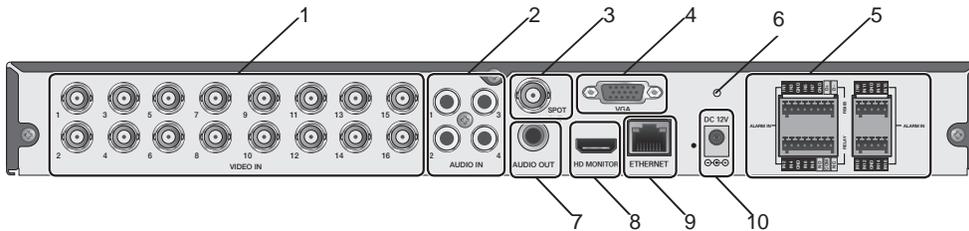
Silver Screw (4EA)

## Rear Panel

4 CH



16 CH

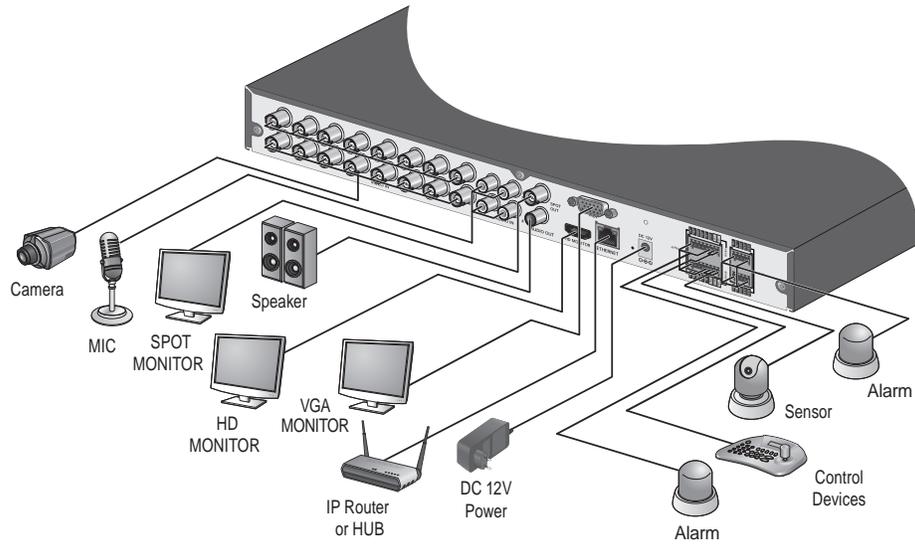


Overview

No.	Name	Description
1	VIDEO IN	Video input terminal for cameras.
2	AUDIO IN	Port for audio input.
3	SPOT OUT	Exclusive port for SPOT output only. (Connect to a TV monitor.)
4	VGA	VGA monitor video output port.
5	RS485	Ports for communication with external devices such as PTZ camera and system keyboard.
5	RELAY	Relay Terminal output port.
5	ALARM IN	Alarm input signal port.
6	CABLE CLAMP	Used to secure cables.
7	AUDIO OUT	Port for speaker connection.
8	HD MONITOR	HD monitor video output port.
9	ETHERNET	Network port for connection to the Internet, router or hub.
10	DC 12	Power input port. Connect to a 12V adaptor.

# Installation

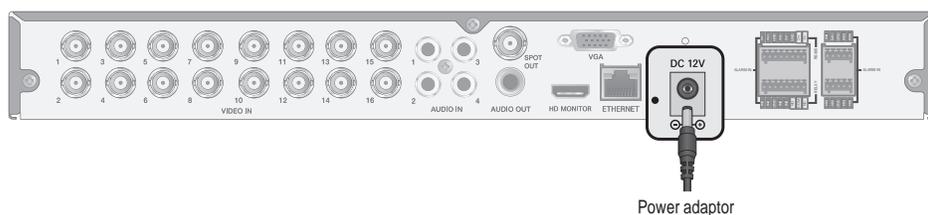
## Basic Layout



Since the cable quality may affect directly to the video quality depending on the distance between the camera and ENCODER, it is recommended to consult an authorized installer when installing the ENCODER.

### Power Connection

Plug the provided DC 12V adaptor in the rear power port of the ENCODER.



- For stable operation of the product, it is recommended to use the provided adapter (Do not use arbitrary adapters).
- Arrange up the cables and be careful not to peel off the cable coating.
- Do not place the power cord under the carpet or rug. The power cord is usually earth-grounded. However, even if it's not earth-grounded, do not modify it on your own for earth-grounding.
- Do not insert multiple devices in a single power socket. Otherwise, it may cause a power overload.
- The product is equipped with an adapter for power connection. Connect it correctly so it won't come loose.

# Installation

## Alarm I/O Connection



### To connect the alarm input signal

Connect the signal line of an alarm input device such as sensor to the rear [ALARM IN] port.

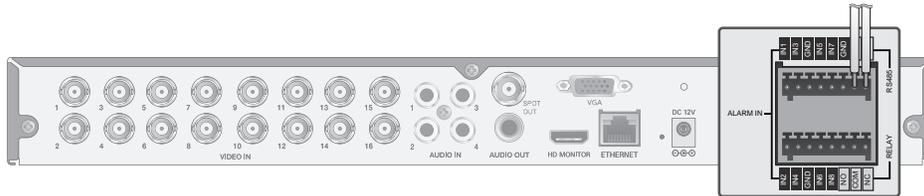
1. Insert one end of alarm signal cable through the [IN1] ~ [IN16] terminal hole below the screw hole, and then fasten the screw.
2. Push the Alarm In and [GND] terminals' bottom side with a sharp tipped tool such as screw driver.
3. While pushing, insert one end of alarm signal cable into the hole of Alarm In terminal.
4. While pushing, insert one end of ground cable into the hole of [GND] terminal.
5. To check proper insertion of cable, stop pushing and gently pull the cable and test whether it disconnects. To disconnect a cable, push the bottom side of the terminal and pull out the cable.

### To connect the alarm output signal

Connect the signal cable of the alarm output device to the [RELAY] terminal on the product's rear side.

1. Push the [NO]/[NC]/[COM] terminal's bottom side with a sharp tipped tool such as screw driver.
2. While pushing, insert one end of alarm signal cable into the desired terminal of [NO] or [NC].  
NO(Normal Open) : Normally Open but switching to Close if an alarm out occurs.  
COM : Insert the grounding wire.  
NC(Normal Close) : Normally Close but switching to Open if an alarm out occurs.
3. Insert the ground signal wire into the hole of the [COM] port (shown also below the screw), and tighten the screw.
4. To check proper insertion of cable, stop pushing and gently pull the cable and test whether it disconnects. To disconnect a cable, push the bottom side of the terminal and pull out the cable.

## Communication Port



### RS-485 Connection

Connect a PTZ Camera or Keyboard Controller.

After connecting the control device, be sure to match the connection settings between ENCODER and device.

Make communication settings in <Control Device>. (page 32)

1. Use the signal wire to make connection between [D+] of the terminal block plug and [D+] of the keyboard controller.
2. Make connection between [D-] of the terminal block plug and [D-] of the keyboard controller.
3. Make connection between [GND] of the terminal block plug and [GND] of the keyboard controller.

\* For RS-485 connection, refer to the user manual of the keyboard controller.

### Audio Device Connection

You can connect an audio output device such as speaker amplifier.

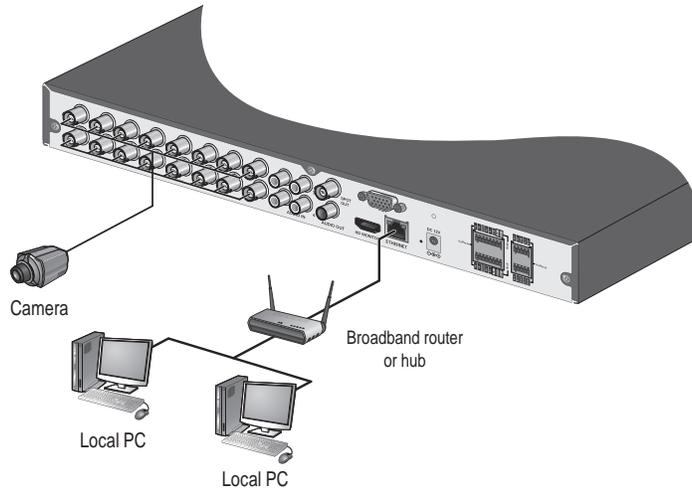
Connect the audio input device such as microphone to the rear Audio In port, connect the audio output device such as speaker amplifier to the Audio Out port.

# Installation

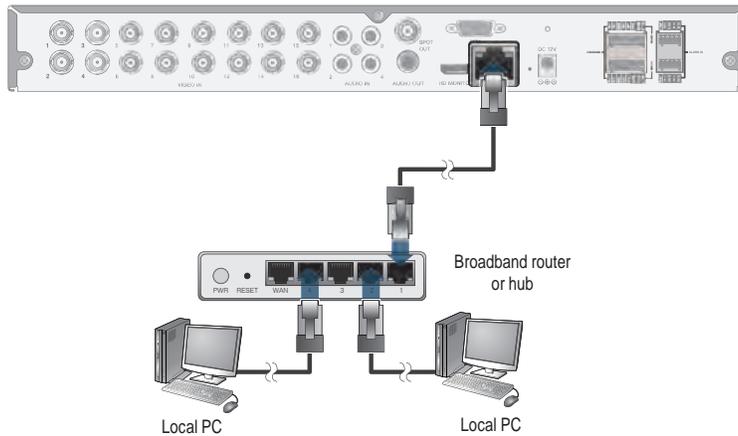
## Network Connection

PC connection in the local network

You can connect ENCODER to a PC in the same network and control or manipulate it on the PC monitor.



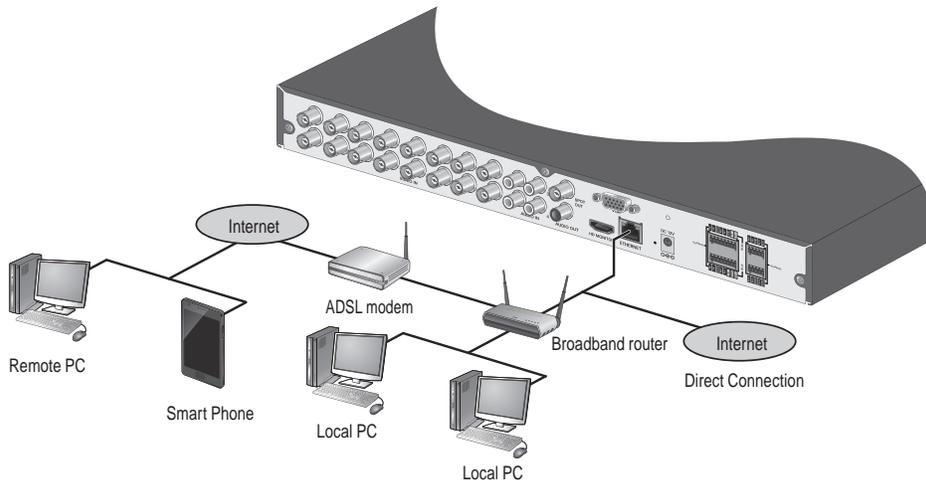
1. Connect the [ETHERNET] port in the rear panel to the router or hub.
2. Connect the local PC to the router or hub.



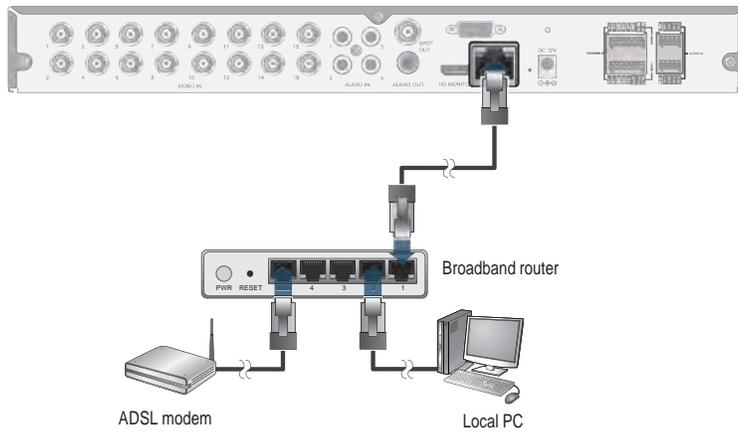
3. Enter the address in the Web browser of your PC in the format of: "http://IP address:Web service port"  
(Ex : http://192.168.0.23:80) The web service port is set to 80 by default. From the Network Setup screen, you can change the port number.  
\* If using the dedicated PC S/W, refer to the user manual of the program.
4. Enter the user ID and password before logging in. The initial administrator ID is "admin" and the password should be set when logging in for the first time. Then, you can view the monitoring screen.

### PC connection from a remote network

You can connect ENCODER to a PC in the same remote network and control or manipulate it on the monitor of the PC or mobile device.



1. Connect the [ETHERNET] port in the rear panel to the router.



2. Connect the [ETHERNET] port of the router directly to the fixed IP LAN cable, or connect it to the ADSL modem.

# Web Viewer

## What is the Web Viewer?

Web Registration Authority is a user-friendly software application that enables you to control the video data in connection with a remote ENCODER.

## System Requirements

The following is the minimum hardware and operating system requirements to run Web RA.

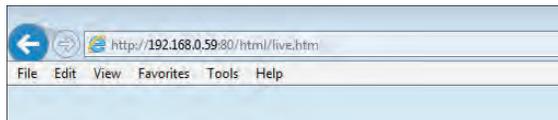
Operating System	Windows 7 or higher
Web browsers:	Microsoft Edge/Mozilla Firefox 3.6/Google Chrome 4.1/Opera 10 Some web browsers other than Microsoft Edge may not fully function.
CPU	Intel Pentium 4 / 2.0GHz or higher
Memory	512 MB
Display	16-bit 1024 x 768 High Color

## Connection

Open a browser and enter the IP address of ENCODER, or type the URL in the address bar.

To connect to the ENCODER from inside

- Check the "Network Status" and verify the <IP ADDRESS> and <WEB SERVICE PORT> of the ENCODER.
- Enter the IP address and web service port in the address bar of the browser.  
Ex) `http://192.168.1.200:80`



To connect to the ENCODER from outside

- ~ Using the IP address
- Check the "Network Status" and verify the <EXTERNAL IP ADDRESS> and <WEB SERVICE PORT> of the ENCODER.
- If using a fixed (external) IP, enter the external IP that is specified in the ENCODER in the address bar of the web browser.  
Ex) If the internal IP address is set to "`http://222.112.4.48:80`" (192.xxx.xxx.xxx), no access from outside is allowed.
- ~ Using the URL
- Check the "Network Status" and verify the <DDNS ADDRESS> and <WEB SERVICE PORT> of the ENCODER.
- Enter the DDNS address and web service port in the address bar of the browser.
- \* In a router network, you have to set the "Port Forwarding" and "DDNS Setting" to allow access from outside.
- \* For the necessary settings of the router, refer to the user manual of the router or contact the manufacturer of the router.

1. Provide the user ID and password.

\* The initial administrator ID is "admin" and the password should be set when logging in for the first time.

2. When the installation is complete, you will see the live screen.

USER ID

PASSWORD

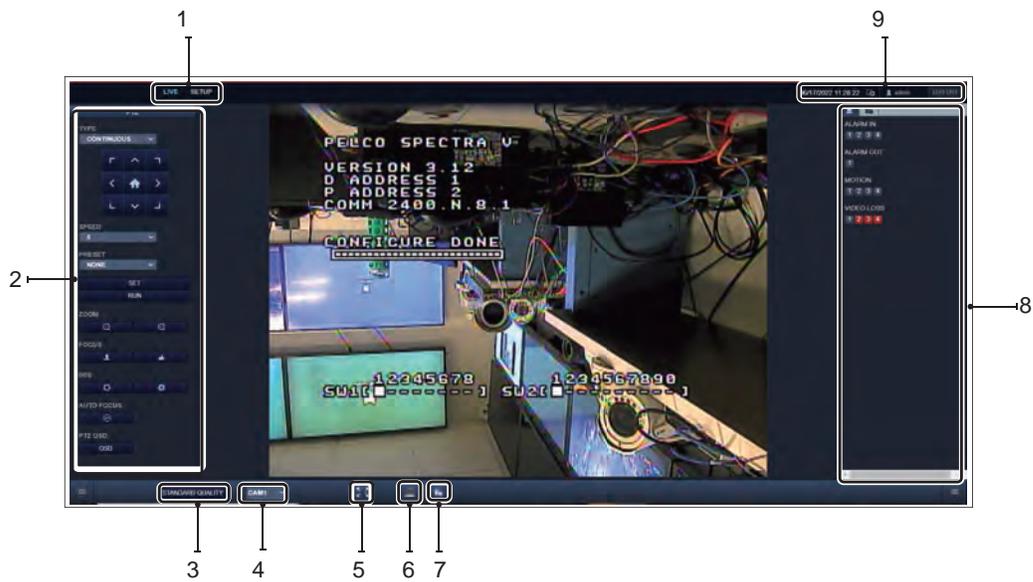
[LOG IN](#) [Forgot Password?](#)



# Web Viewer

## Live

### Live Screen At a Glance



No.	Item	Description
1	View selection tab	You can enable the live monitoring and configure the system settings.
2	PTZ	You can control PTZ cameras connected to each channel. (Only for PTZ cameras.)
3	Video Quality	Standard video quality only.
4	Channel	Select a channel listed in the screen.
5	Full Screen	Select the full screen mode.
6	Alarm Indicator	Turns on if an event occurs. It does not turn on if no reaction to the event is yet defined. Click this to check the information of the event that occurred.
7	Network Connection Status	Check if network connection is made via an external PC. Click this to view the details of the concurrent users and to check the network connection status.
8	Status Bar	Display alarm and network connection status for each channel.

No.	Item	Description
9	Date/Time	Shows the access date/time.
	Session Language	Set the Session Language.
	System Language	Set the System Language.
	LOG OUT	Performs logout process.

Web Viewer

# Web Viewer

## Pan/Tilt/Zoom (PTZ) tab

Click [  ] in bottom left area on screen.  
Select whether to display the PTZ Settings tab.  
You can control the operations of a PTZ camera.

In the PTZ window > PTZ OSD, click OSD to view menu.  
Click on the UP and DOWN arrows to navigate through the menu options. Click the IRIS open button to ENTER.

Adjust the focus, zooming and iris of the camera.

You can use the arrow buttons to control the operations of the camera. Rotate the PTZ camera up/down/left right to control pan/tilt motions.



PRESET : Move the camera in a predefined direction.

 /  : Operate the digital zoom/out function.

 /  : Set near/far focus.

 /  : Set the iris open/close.

 : Adjusts the focus automatically.

## Alarm IN/OUT tab

Click [  ] in top-right area on screen.  
You can check the alarm status of each camera.

ALARM IN : Displays the encoder alarm outputs.

ALARM OUT : Displays the encoder alarm inputs.

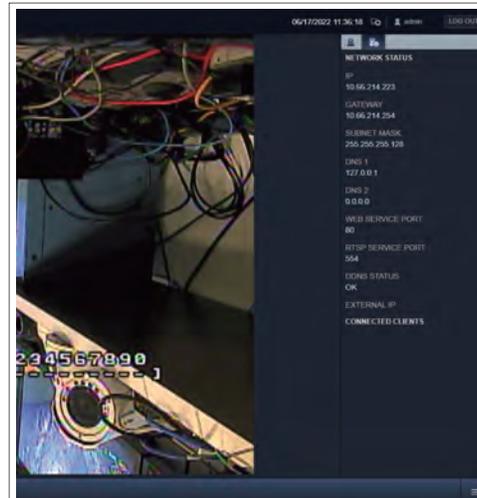
MOTION : When a motion is detected, the corresponding channel is displayed as an alarm.

VIDEO LOSS : When no video is received from the camera, the corresponding channel is displayed as an alarm.

AUDIO MAPPING FOR 4CH: Audio 1: Channel 1, Audio 2:

Channel 2, Audio 3: Channel 3, Audio 4: Channel 4

AUDIO MAPPING FOR 16CH: Audio Channel 1: Channel 1, 5, 9, 13, Audio Channel 2: Channel 2, 6, 10, 14, Audio Channel 3: Channel 3, 7, 11,15, Audio Channel 4: Channel 4, 8, 12, 16



## NETWORK STATUS tab

Click in top-right area on screen.

You can check the network connection status.



Web Viewer

# Web Viewer

## Setup

Click <SETUP> to display the setting page for the ENCODER.  
When done, click <APPLY> to apply the changes to the connected ENCODER.

\* If the ENCODER is in process of system or record setting, the remote control will be disabled.

It is recommended not to remotely change any settings of the encoder because this may cause major settings to be changed.

## Setup Viewer at a Glance



## Camera

To set the camera type

You can set the camera type for each channel.  
When done, click <APPLY> to apply the changes.

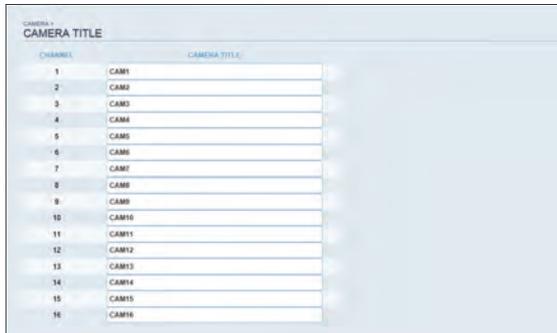
NOTE: The INPUT TYPE, SIGNAL TYPE and RESOLUTION will automatically be selected once the cameras are connected to the individual channels.



To name the camera title

You can name the camera title that is displayed on each channel screen. Select a channel to name and provide a new title. Then, click <APPLY> to apply the changes.

\* You can enter up to 16 alphanumeric characters for the camera title.



# Web Viewer

## Image Setting

You can set the image of each channel.  
When done, click <APPLY> to apply the changes.

\* If you change the default settings, the video from the ENCODER or the video color may not be displayed properly.



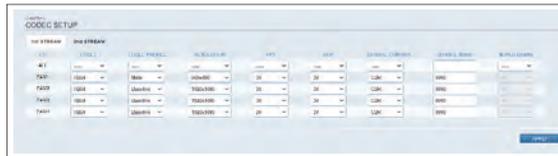
## Codec Setting

You can configure the settings for each camera such as codec, resolution, and bitrate.

From <SETUP> - <CAMERA>, select <CODEC SETUP>.

- CODEC: Specify the codecs for each video.
- CODEC PROFILE: Specify the codec profiles for each video image.
- RESOLUTION: Specify the resolutions for each video stream.
- FPS: You can set the frame (rate) for video stream.
- GOP: Specify the frame compression methods for each video stream. It is recommended to set the GOP value to be less as the image movement is faster and to be greater as the image movement is slower.
- BITRATE CONTROL: Select bitrates for each video stream. Select any of <CBR> and <VBR>.
- BITRATE (kbps): You can set up the average size of the encoding video.
- MJPEG QUALITY: When <MJPEG> is selected for Codec, you can set the image quality. As the MJPEG setting increases, the image quality and size increase. In a slow network environment, it is recommended not to set a high value.

To apply your changes, click <APPLY> button



## Motion Detection

Set the motion detection area of the camera so that it can detect a motion event.

From <SETUP> - <CAMERA>, select <MOTION DETECTION>.

- **ACTIVATION:** Turn on or off the motion sensor.
- **MOTION MARK:** Set to <ON> to display the motion detection indicator on each video tile where applicable.

To apply the change, click <APPLY> in the bottom of the screen.

**NOTE:** The motion detection sensitivity may differ depending on the characteristics of the connected camera or the installation environment.

From the <MOTION DETECTION> window, click <AREA SETUP> to display the area setup screen.

Setting the motion area may differ depending on the camera model. Below is a typical setting of the motion area.

When done, click <APPLY> to apply the changes.



# Web Viewer

## PTZ Setup

Select values for each PTZ camera such as connection method and protocol.

- **RS485:** Connect the PTZ camera directly to the RS485 port. For configuration of RS485, check the RS485 and then select the desired protocol.
- **ID:** When controlling multiple PTZ cameras with one controller, the user can assign IDs to the PTZ cameras and assign each ID to operate with the controller.
- **PROTOCOL:** Specify the protocol of the PTZ camera.
- **BAUD RATE:** Set the data transmission speed.

CHANNEL	RS485	ID	PROTOCOL	BAUD RATE
ALL	<input checked="" type="checkbox"/>	0	PELCO.D	9600
CAM1	<input checked="" type="checkbox"/>	0	PELCO.D	9600
CAM2	<input checked="" type="checkbox"/>	0	PELCO.D	9600
CAM3	<input checked="" type="checkbox"/>	0	PELCO.D	9600
CAM4	<input checked="" type="checkbox"/>	0	PELCO.D	9600

Refer to user's manual of the camera or consult with the camera installation service provider for further details on setting the PTZ camera, such as camera address, protocol and baud rate.

To apply changes, click the <APPLY> button.

NOTE: When RS485 is checked, the PTZ cameras will show up as a PTZ icon in the VMS..

## Privacy Mask

For privacy purposes, you can specify masking area for a selected camera's video.

From <SETUP> - <CAMERA>, select <PRIVACY MASK>

- **ACTIVATION:** Turns on or off the motion detection sensor in the specified privacy area.
- **MASK COLOR:** Select the color of the masked area, which will be displayed on the LIVE page.

To apply the change, click <APPLY> in the bottom of the screen.

You can specify the privacy masking area.

Click on the <AREA SETUP> tab to display the area setup page.

Select the AREA 1-4 depending on how many areas need to be masked.

Select the area to be masked on the grid. When done, click <APPLY> to apply the changes.

To delete the privacy mask, simply click DELETE.

When done, click <APPLY> to apply the changes.



CHANNEL	ACTIVATION	MASK COLOR
ALL	---	---
CAM1	ON	BLACK
CAM2	ON	BLACK
CAM3	ON	BLACK
CAM4	ON	BLACK



# Web Viewer

## Display

### OSD Setting

You can set Camera Name, Icon, Status Bar, Border line, User Name and Language.

From <SETUP> - <DISPLAY>, select <OSD>.

- CAMERA TITLE: Specify the display of the camera title on the screen.
- SYSTEM STATUS ICON: Set whether to display the system status icon.
- STATUS BAR ON FULL SCREEN MODE: Select to show or hide the status bar in full screen mode.

AUTO HIDE: place the cursor in the lower area of the screen to display the status bar. If moving the cursor up, the status bar will disappear.

ALWAYS ON: The status bar will be displayed at all times.

5 SEC ~1 MIN: If no mouse movement is detected for from 5 seconds to 1 minute, the status bar will disappear.

- BORDER LINE: Specify the display of the cross-border between channels in a split mode.
- BORDER COLOR: Select a color for the border.
- USER NAME: Specify the display of the currently logged-in users on the status bar.
- LANGUAGE: Displays current language selected.

To apply the change, click <APPLY> in the bottom of the screen.



## Audio

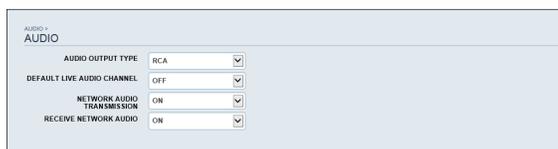
### Audio/Buzzer

Choose whether to receive the live sound source and select an audio channel.

From <SETUP> - <AUDIO>, select <AUDIO>.

- AUDIO OUTPUT TYPE: You can select and use the conventional RCA audio output.
- DEFAULT LIVE AUDIO CHANNEL: select an audio channel to monitor on the live screen.
- NETWORK AUDIO TRANSMISSION: decide if ENCODER transfers the audio signal to the remote client.
- ENCODER -> PC (Remote Client) > RECEIVE NETWORK AUDIO: decide if ENCODER receives the audio signal from the remote client. PC (Remote Client) -> ENCODER

To apply the change, click <APPLY> in the bottom of the screen..



## User

### User Management

You can add a user account and change the password.

\* For details about each displayed item, refer to "User Setting".

To add a user, click <Add> and provide the user information.  
 If you want to delete the user click <  > next to it.  
 When done, click <APPLY> to apply the change.

Enter password to confirm the changes.



**ADD**

USER ID

NEW PASSWORD

GROUP

### Group Permission Setting

You can grant different user groups different permissions to a specific menu.

Mark the checkboxes of the menu items accessible by the user group.

When done, click <APPLY> to apply the changes.

	MANAGER	USER
SYSTEM SETUP	<input checked="" type="checkbox"/>	<input type="checkbox"/>
EVENT ACTION CONTROL	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
LISTEN TO AUDIO	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
REMOTE LOG IN	<input type="checkbox"/>	<input type="checkbox"/>
SHUTDOWN	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

# Web Viewer

## Network

### IP Setting

You can check the network connection status and change the stream bandwidth

IPv4 ADDRESS : Indicates the internal IP address of the ENCODER.

IPv6 ADDRESS : Indicates the IPv6 IP address of the ENCODER.

Change the maximum transfer rate and click <APPLY> to apply it.

The screenshot shows the 'IPv4' tab of the 'IP SETUP' configuration page. It includes fields for DHCP (unchecked), IP ADDRESS (172.30.1.20), GATEWAY (172.30.1.100), SUBNET MASK (255.255.255.0), 1ST DNS SERVER (168.126.85.1), and 2ND DNS SERVER (0.0.0.0). There are also sections for 'AUTO PORT UPDATE' (ON), 'AUTO PORT STATUS' (Port conflict), 'RTSP SERVICE PORT' (554), 'WEB SERVICE PORT' (80), and 'MAX TX SPEED' (MAX). Buttons for 'CONFIRM CONFLICT', 'DELETE PORT', and 'RENEW' are visible.

The screenshot shows the 'IPv6' tab of the 'IP SETUP' configuration page. It features a 'LINK-LOCAL ADDRESS' section with four 'IPv6 ADDRESS' fields and a 'GATEWAY' field. Below these are '1ST DNS SERVER' and '2ND DNS SERVER' fields. At the top, there are radio buttons for 'OFF', 'ON(MANUAL)', and 'ON(AUTO)', along with a 'RENEW' button. 'APPLY' and 'CANCEL' buttons are located at the bottom right.

## Security Setting

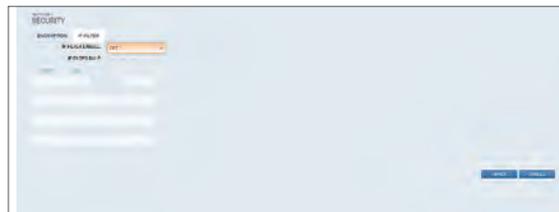
For security purposes, you can set whether to use encryption and its method.

ENCRYPTION Tab:

- **RTSP ENCRYPTION ENABLE:** Set whether to apply RTSP encryption or not.
- **RTSP ENCRYPTION METHOD:** Select the encryption method.
- **HTTPS ENABLE:** Set whether to use HTTPS encryption or not.
- **HTTP AUTHENTICATION METHOD:** Select the authentication method for encrypted communication.



The screenshot shows the 'ENCRYPTION' tab of the 'SECURITY' settings. It features two sections: 'RTSP SERVICE PORT' and 'WEB SERVICE PORT'. Under 'RTSP SERVICE PORT', there is a dropdown for 'RTSP ENCRYPTION ENABLE' set to 'OFF' and a 'SELECT Y/N' button for 'RTSP ENCRYPTION METHOD'. Under 'WEB SERVICE PORT', there is a dropdown for 'HTTPS ENABLE' set to 'OFF' and a dropdown for 'HTTP AUTHENTICATION METHOD' set to 'BASIC'.



The screenshot shows the 'IP FILTER' tab of the 'SECURITY' settings. It displays a table with columns for 'IP FILTER RULE', 'TYPE', and 'LIST'. Below the table, there are buttons for 'ADD', 'EDIT', and 'DELETE'. At the bottom right, there are 'APPLY' and 'CANCEL' buttons.

IP FILTER Tab:

- **IP FILTER ENABLE:** Select whether to use IP filter.
- **IP FILTER RULE:** Select the IP filter rule(s) to be registered. Choose between allow/deny lists.
- **TYPE:** The registered IP filter type is displayed.
- **LIST:** Registered IP addresses are displayed.
- **ADD:** Add IP filter.
- **EDIT:** Edit registered IP address.
- **DELETE:** Delete the registered IP address.

Change the system network settings and click <APPLY> to apply the changes.

# Web Viewer

## Real-time Transport Protocol (RTP)

You can configure RTP port and multicast settings.  
For more information, refer to "RTP"

### RTP

- PORT RANGE : Set the range of port number for RTP UDP transfer, which will be dynamically allocated.
- MODE : Set the port allocation method for "RTP Audio back channel".
- Set to <Auto> for automatic allocation, or to <Manual> to use specified port in the PORT attribute.
- RTP is a protocol designed to transport real-time data such as sound, video, etc. under unicast or multicast condition.

The screenshot shows the 'RTP' configuration page. It has two tabs: 'RTP' and 'MULTICAST'. Under the 'RTP' tab, there are two sections: 'UDP' and 'AUDIO BACK CHANNEL'. The 'UDP' section has a 'PORT RANGE' field with '40000' and '40999' entered. The 'AUDIO BACK CHANNEL' section has a 'MODE' dropdown menu set to 'AUTO' and a 'PORT' field with '1025' and '1030' entered.

The screenshot shows the 'MULTICAST' configuration page. It features a table with columns for 'CHANNEL', 'MULTICAST IP', 'VIDEO PORT', 'AUDIO PORT', 'TTL', 'VIDEO TTL', and 'AUDIO TTL'. There are four rows of data, each representing a different channel configuration. The table is partially obscured by a semi-transparent overlay.

### MULTICAST

- Multicast allows efficient network bandwidth utilization if multiple clients are receiving monitoring video on a local area network.
- Set the Multicast IP Address, Video/Audio Ports and TTL for each channel's First/Second Stream.
- Note that the network must support multicast communication. In general, multicast in WAN environment is not supported.
- Multicast is a method to send the same data to multiple specific receivers simultaneously in a network. This method cuts down on network waste, gets rid of unnecessary burden, and is generally used in unrestricted network (intranet).

## System

### Date/Time Setting

Specify the current date and time.

From <SETUP> - <SYSTEM>, select <DATE/TIME>.

Use the mouse to change the time or set the options as necessary.

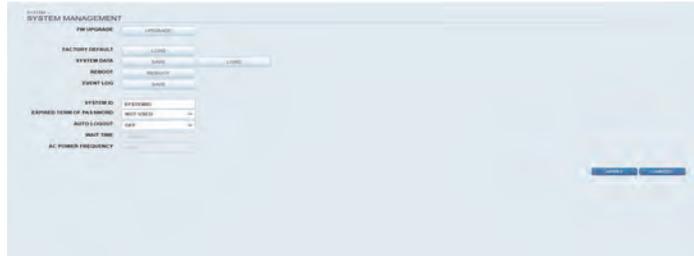
- DATE/TIME: Set the current time and date. Select the on the clock icon and click on the up/down arrows to adjust the time manually.
- DATE FORMAT: specify the date format.
- TIME FORMAT: specify the time format.
- TIME SERVER: obtain the current time from the time server. Click < > to get the current time.
- AUTO TIME SYNC: automatically synchronize the time with the time server at a specific time.
- SYNC CYCLE: Set up the cycle, which will be synchronized with the time server.
- SYNC AT: Set the time to sync with the time server.
- TIMEZONE: specify the GMT standard time for your local area.
- DST: You can set up or release the DST (Daylight Saving Time).
- Both <TIME SERVER> and <AUTO TIME SYNC> will be enabled only if the ENCODER is connected to the Internet.

Click <APPLY> to save the changes.

# Web Viewer

## System Management

You can check, update or reset the system information. From <SETUP> - <SYSTEM>, select <SYSTEM MANAGEMENT>. Use the mouse to set each option of the system management.



- **FW UPDATE:** User can update the current firmware with the latest version via webUI only. The update should take about 5 minutes. After the firmware update is complete, the webUI will prompt the user to log back in.  
NOTE: After the firmware upgrade, please delete the browser's cookies and cache for webUI feature updates..
- **FACTORY DEFAULT:** Return the ENCODER settings to the factory default.
- **SYSTEM DATA:** Encoder setting value. It is possible to export the settings that you have changed.
- **REBOOT SYSTEM:** Restart the ENCODER system.
- **EVENT LOG:** download and view events.
- **SYSTEM ID:** Assign an ID to the ENCODER to distinguish it out from others when there are multiple ENCODER used. The default value is "SYSTEM ID".
- **EXPIRED TERM OF PASSWORD:** User will be prompted to change the current password after a certain period of time.
- **AUTO LOGOUT:** automatically log out user after indicated time.
- **WAIT TIME:** logout the user after the selected time.
- **AC POWER FREQUENCY:** Set to the actual AC power's frequency (50Hz / 60Hz) applied to ENCODER to avoid flickering.

## System Information

You can check information of system firmware version and network settings, as well as the status information of network connection and alarm I/O.



## Control Device Setting

Configure the settings of the keyboard controller.

This function is provided for controlling individual ENCODER separately using a control device or remote control, in case the site has multiple ENCODERS of the same model.

- From <SETUP> - <SYSTEM>, select <CONTROL DEVICE>.
- **SYSTEM ID:** Set the ID of the ENCODER so that the



keyboard controller can identify the device.

- **PROTOCOL:** Set up the protocol of the keyboard controller.
- **BAUD RATE:** Specify the RS485 communication speed.

Click <APPLY> to save the changes.

## Security Setting

For security, you can set to apply reinforced password policy (to system, search/backup) and control accessing snapshot.

From <SETUP> - <SYSTEM>, select <SECURITY>. Use the mouse to set each option for security.



- **SNAPSHOT SUPPORT:** Set whether or not to use the screen capture. With <OFF>, the capture feature cannot be used. Note that changing the setting from <OFF> to <ON> initializes snapshot related settings. Hence, reconfiguration is required after enabling.
- **ID INPUT METHOD:** Set an ID input method upon log-in. By selecting "SELECTION METHOD", you can select an ID by clicking the arrow button on the input screen. By selecting "DIRECT INPUT METHOD", you can log in by typing in your ID directly.
- **ENHANCED USER ID RULE:** Set whether to use Enhanced User ID Policy or not. When this is set to <ON>, the following rules will be applied. NOTE: ID must be between 5 and 10 characters. IDs created with only one character (e.g. aaaaa, 11111, etc.) cannot be used.
- **ENHANCED PASSWORD RULE :** Sets whether to apply strong password policy, which prevents using too easy password. When this is set to <ON>, the following rules will be applied. NOTE: Password must be 16 characters or less. It must contain uppercase / lowercase letters, special characters, and numbers.

The same character cannot be used 3 consecutive times. Sequential strings (e.g. abcde, 12345) are not allowed. The password cannot contain the same string as the ID.

Click <APPLY> to save the changes.

## Event

### Alarm Output

From <SETUP> - <EVENT>, select <ALARM OUT>.

Use the mouse to select <ALARM OUT> and configure the related settings.



- **NAME:** You can rename the alarm.
- **OPERATION:** Set the alarm output mode.
  - N/O (Normal Open): It normally stays Open. However, if an event occurs, it will switch to Close.
  - N/C (Normal Close): It normally stays Close. However, if an event occurs, it will switch to Open.
- **DURATION:** Specify the duration of the alarm output.
  - TRANSPARENT: Keep the alarm out for as much time as the event lasts.
  - UNTIL KEY: Keep the alarm out until a mouse or remote control button is pressed.
  - 5 ~ 300 SEC: Keep the alarm out for as long as specified.

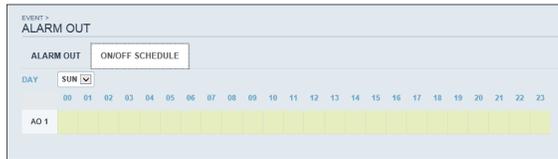
Click <APPLY> to save the changes.

# Web Viewer

From <SETUP> - <EVENT>, select <ON/OFF SCHEDULE>.

You can activate or turn off the alarm output as scheduled.

Use the mouse to select a <DAY> for the schedule. Drag the mouse to select the cell(s). Select a desired alarm output mode.



- ON: The alarm output is always turned on.
- OFF: The alarm output is always turned off.
- EVENT: Trigger the alarm output in sync with the event.

Click <APPLY> to save the changes.

## Event Notification

You can set desired event actions triggered by an event, such as <BUZZER> and <DISPLAY> notification.

**BUZZER:**

You can notify the user of the event using the buzzer.

**DURATION:**

- TRANSPARENT: Keep the buzzer out for as much time as the event lasts.
- UNTIL KEY: Keep the buzzer out until user acknowledges the event.
- 5 ~ 300 SEC: Keep the buzzer out for as long as specified.



**DISPLAY:**

If an event occurs, you can display the video screen or a popup message to notify the user of the event.

- VIDEO POPUP: Display the video channel that is synchronized with the event on a single split screen.
- Set the DURATION of the single split screen.



TRANSPARENT: Keep the video popup displayed for as much time as the event lasts.

UNTIL KEY: Keep the video popup displayed until user acknowledges the event.

5 ~ 300 SEC: Keep the video popup displayed for as long as specified.

If multiple events occur at the same time, or if multiple event-related video channels exist, the video popup will be displayed in the maximum split screen mode rather than the single split screen mode.

- OSD POPUP: This will notify the user of the event with a popup message if an OSD popup event occurs. You can adjust the duration of the popup message.

UNTIL KEY: Keep the OSD popup displayed until user acknowledges the event.

5 ~ 300 SEC: Keep the OSD popup displayed for as long as specified.

## FTP

Upon events, uploads event notification onto the added FTP server.

- **FTP SERVER:** Enter the FTP server address for event transfer.
- **DIRECTORY:** Select or manually enter the destination folder of the FTP for event transfer.
- **FILE NAME:** Select the uploading event file's format or manually set the file name.
- **MINIMUM FREQUENCY:** Sets the minimum recurrence delay for uploading event notification onto the FTP server. For example, when the minimum recurrence is set to 1 minute, the next FTP event notification will be uploaded after 1 minute from the last event, even if another event is detected within 1 minute from the last one.
- **INCLUDE WEBRA LINK:** Select whether to include WEBRA link address of the event generating ENCODER, which can be accessed with web browser. Check to play back the event footage.
- **INCLUDE SNAPSHOT IMAGE:** Set whether to include snapshot (still image) or not.

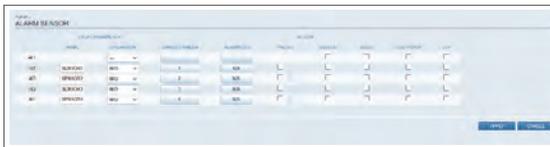


Set the dwell time for buzzer or pop-up display, or FTP destination settings and then click <APPLY> to save your changes.

## Alarm Sensor

You can configure the settings of the alarm sensor and specify the operation of the sensor if an event occurs.

From <SETUP> - <EVENT>, select <ALARM SENSOR>.



Use the mouse to specify the sensor input method and operation.

- **NAME:** You can specify the name of the alarm sensor.
- **OPERATION:** You can specify the type of the alarm sensor.
  - N/O (Normal Open): Normally the sensor is left Open. If the sensor switches to Close, an event will be triggered.
  - N/C (Normal Close): Normally the sensor is left Close. If the sensor switches to Open, an event will be triggered.
- **LINKED CAMERA:** Set the camera to sync with the alarm sensor if it is triggered. If you have set the alarm recording and the sensor detects the recording, all synchronized cameras will start alarm recording.
- **ALARM OUT:** Specify the alarm output channel if it is detected by the alarm sensor. The alarm will be output to the specified channel.
- **PRESET:** Move camera based on the preset criteria if an alarm is detected by the alarm sensor.
- **BUZZER:** Specify the output of the buzzer if an alarm is detected by the alarm sensor.
- **VIDEO:** Select to display the video popup if an alarm is detected by the alarm sensor. If there exist multiple <LINKED CAMERA>, the video popup will be displayed in the maximum split mode.
- **OSD POPUP:** Select to display the OSD popup message if it is detected by the alarm sensor.
- **FTP:** Select whether to upload event notification onto the FTP upon detected alarm event.

Click <APPLY> to save the changes..

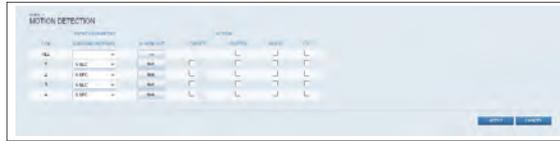
# Web Viewer

## Motion Detection

You can set an action to execute when a motion is detected.

From <SETUP> - <EVENT>, select <MOTION DETECTION>.

Use the mouse to specify the ignorance interval and the following operations.



- **IGNORING INTERVAL:** Specify the minimum interval of the motion event occurrence. For example, even if you have set the minimum frequency to 5 seconds and another motion event occurs in less than 5 seconds after the last motion event occurred, the new event will be ignored. If too many motion events occur, adjust to shorten the interval. Motion recording will be triggered immediately after the motion occurred regardless of the above settings.
- **ALARM OUT:** Specify the alarm output channel if a motion is detected by the motion sensor.
- **PRESET:** Move camera based on the preset criteria if a motion is detected by the motion sensor.
- **BUZZER:** Specify the output of the buzzer if a motion is detected by the motion sensor.
- **VIDEO:** Select to display the video popup if a motion is detected by the motion sensor.
- **FTP:** Select whether to upload event notification onto the FTP upon detected motion event.

Click <APPLY> to save the changes.

## Video Loss

You can specify a reaction to the case where no video is received from the camera. From <SETUP> - <EVENT>, select <VIDEO LOSS>. Use the mouse to specify the reaction to a video loss.



- **IGNORING INTERVAL:** Specify the minimum interval of the video loss event occurrence.
- **ALARM OUT:** Specify the alarm output channel if a video loss occurs.
- **PRESET:** Move camera based on the preset criteria if a video loss occurs.
- **BUZZER:** Specify the output of the buzzer if a video loss occurs.
- **FTP:** Select whether to upload event notification onto the FTP upon detected video loss event.

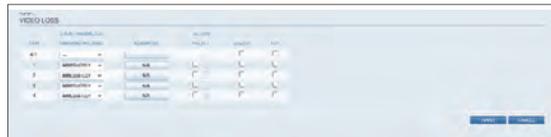
Click <APPLY> to save the changes.

## System Event

You can set any action to a system event or network. Like the other events, you may notify the event to the user using the alarm/buzzer output, OSD pop-up, or FTP server.

From <SETUP> - <EVENT>, select <SYSTEM EVENT>. Use the mouse to specify the reaction to each event.

- **BOOTING EVENT:** This event occurs when the ENCODER is booting.
- **LOGIN FAIL EVENT:** This event occurs when the ENCODER fails to log in. You can select the amount of retries a user can have by selecting the options from the dropdown menu.
- **ALARM OUT:** Specify alarm output signal through the terminal block.
- **BUZZER:** Specify the output of the buzzer if a system event is detected.
- **OSD POPUP:** N/A
- **FTP:** Select whether to upload event notification onto the FTP upon system event detected.



## Network

**TROUBLE IN INTERNET CONNECTION:** Occurs if the Internet connection to the ENCODER fails. If you do not want to connect the ENCODER to the network, leave the <ACTION> item blank.

**FAIL IN REMOTE LOGIN :** This event occurs if a remote client fails to log in due to an invalid ID or password. You can specify how many times the user fails to remote in before an event occurs.

**FAIL IN DDNS UPDATE :** This event occurs if the ENCODER tried to update the DDNS address but failed. If the DDNS address fails to be updated, the ENCODER may not connect to a remote client. If this is the case, enter the IP address from the client side to allow access from the ENCODER. This is just a temporary measure.

For the IP address, move to and check <EXTERNAL IP ADDRESS> from the <NETWORK> window. Note that the <EXTERNAL IP ADDRESS> is subject to change if the ENCODER does not use the static IP.

**IP CONFLICT EVENT :** This event occurs when the IP address of the ENCODER and the IP address of the connected network camera conflict.

Note that the <EXTERNAL IP ADDRESS> can change at any time in a dynamic IP environment.

# Appendix

## Troubleshooting (FAQ)

Problem	Action
The system does not operate at all with no active LED in the front panel.	<ul style="list-style-type: none"> <li>~ Make sure that the system gets supplied with power properly.</li> <li>~ Check the input voltage.</li> </ul>
The unit continuously reboots.	<ul style="list-style-type: none"> <li>~ Check if the system fan in a side panel of the unit or the CPU fan inside the unit works properly. If it fails, contact the retailer or the service center.</li> <li>~ Disconnect the HDD cable and try to boot the system again. If the system reboots successfully, install a new HDD and check if the system make recording normally.</li> </ul>
The front LED is lit, but nothing is displayed on the screen yet.	<ul style="list-style-type: none"> <li>~ Check if your monitor supports the 1080p 60Hz HDMI, VGA input.</li> <li>~ Ensure that the input source settings of the monitor match with the output source settings of the ENCODER.</li> <li>~ If using the HDMI-to-DVI cable for the connection, ensure that the input source is set to DVI.</li> <li>~ Make sure that the system gets supplied with power properly.</li> <li>~ Check the input voltage.</li> </ul>
The sides of the video image are displayed incomplete.	<ul style="list-style-type: none"> <li>~ If the monitor is over-scanning the video, the sides can be hidden. If this is the case, switch the display mode of the monitor to the 1:1 pixel matching mode. Then, you will view the video in full screen.</li> <li>~ The 1:1 pixel matching is referred to differently depending on the monitor manufacturer (for example, "JUST SCAN" for Samsung, "ZERO OVERSCAN" for LG). For details, refer to the user manual of the monitor.</li> </ul>
The camera is connected but no image is displayed.	<ul style="list-style-type: none"> <li>~ Make sure that the camera is compatible with the ENCODER. For the compatibility of the cameras, contact the retailer.</li> <li>~ Ensure that the output settings of the camera match with the camera type settings of the ENCODER.</li> </ul>
It fails to connect to the web or mobile application.	<ul style="list-style-type: none"> <li>~ Check if the network cable is properly connected to the WAN(UP Link) port of the unit.</li> <li>~ You must have set the port forwarding if using a router.</li> <li>~ If you cannot get access with the DDNS address, use the IP address of the ENCODER instead. If the ENCODER is connected to the router, use the IP address of the ENCODER. You can check the IP address of the router in &lt;NETWORK STATUS&gt; - &lt;EXTERNAL IP ADDRESS&gt;.</li> </ul>
I can access the web or mobile application but still no video image is displayed.	<ul style="list-style-type: none"> <li>~ You must have set the port forwarding if using a router.</li> <li>~ This may happen when the communications provider or network administrator has blocked the service port of the ENCODER. Change the RTSP port and HTTP port numbers to different ones and set the port forwarding again.</li> <li>~ Try to access the web or mobile application using the new port numbers.</li> </ul>

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