

DN9231

H.264/MPEG4/MJPEG Video
Video/Audio/Data Decoder



Installation and Operations Manual

Model Number: DN9231-4

Description: H.264/MPEG4/MJPEG Decoder

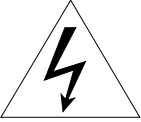
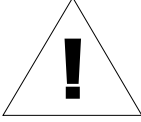
Dual Configurable Video Streams
with duplex Audio, Data, Alarms

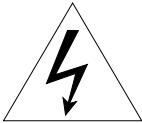
Table of Contents

1. PACKAGE CONTENTS	5
2. INTRODUCTION	6
2.1. Main Features	6
2.2. Hardware Overview	7
2.2.1. Front Panel	7
2.2.2. Rear Panel	8
3. Installation	9
3.1. Video Output Configuration Switch	9
3.2. Cabling	10
3.3. Wall-Mounting	14
4. Basic Setup	15
4.1. Network Setup	15
4.2. System Configuration on Web Page	16
4.3. Video Display	17
4.4. Reset	18
4.5. Factory Default	18
5. How to Use OSD Menu	19
5.1. Menu Configuration	19
5.2. Display Mode	20
5.2.1. Quad View	20
5.2.2. Single View	20
5.2.3. PIP View	20
5.3. Audio Mode	21
5.4. Quick Menu	21
5.4.1. Changing connection mode	21
5.4.2. Checking device and channel information	22
5.4.3. Rebooting device	22
6. How to Use Web Page	23
6.1. Recommended PC specification	23
6.2. Basic Configuration	24
6.2.1. User management	24
6.2.3. Setting date and time of device	28
6.3. Encoder Setting	30

6.4. Decoder Setting.....	32
6.4.1.View	32
6.4.2. OSD	33
6.4.3. Audio.....	34
6.5. Event Configuration.....	34
6.5.1. How to configure each event server.....	35
6.5.2. Assigning event rule to event publishers	37
6.6. SYSTEM OPTION	39
6.6.1. TCP/IP (DHCP, Static IP, DNS setup) setup.....	39
6.6.2. NTP server setup	40
6.6.3. UPnP setup	41
6.6.4. mDNS (Multicast DNS) setup.....	42
6.6.5. SMTP setup	43
6.6.6. LED Setup	45
6.6.7. DDNS (Dynamic DNS).....	46
6.6.8. SNMP	47
6.7. IO CONFIGURATION	48
6.7.1. DI/DO control	48
6.7.2. UART setting for serial device	50
6.8. MAINTENANCE.....	53
6.8.1. Firmware update port setup	53
6.8.2. Getting system Log	53
6.9. ABOUT	54
6.9.1. Version	54
6.9.2. Licenses	54
APPENDIX (A): SPECIFICATIONS	55
Summary	55
Electrical Characteristics	55
Environment Condition	56
Mechanical Condition	56
APPENDIX (B): POWER OVER ETHERNET.....	57
PoE compatibility	57
Power classification.....	57
APPENDIX (C): DIMENSIONS.....	58
REVISION HISTORY	59

INFORMATION TO USER

	<table border="1"><tr><td>CAUTION</td></tr><tr><td>RISK OF ELECTRIC SHOCK, DO NOT OPEN</td></tr></table>	CAUTION	RISK OF ELECTRIC SHOCK, DO NOT OPEN	
CAUTION				
RISK OF ELECTRIC SHOCK, DO NOT OPEN				
<p>CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SEERIVCE PERSONEL.</p>				



This symbol is intended to alert the user to the presence of un-insulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

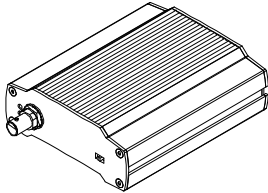


This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

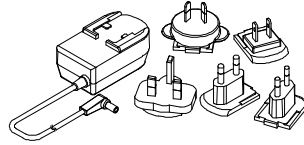
1. PACKAGE CONTENTS

Unpack carefully and handle the equipment with care. The packaging contains:

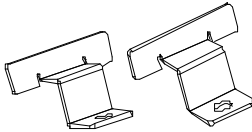
Decoder



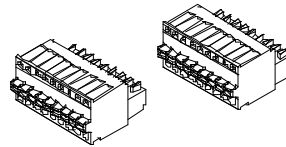
DC power adaptor



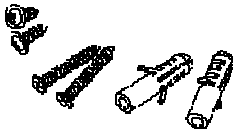
Mounting brackets



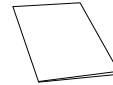
9-pin terminal blocks



Screws and anchor blocks



Quick installation guide



Note

The above contents are subject to change without prior notice.

2. INTRODUCTION

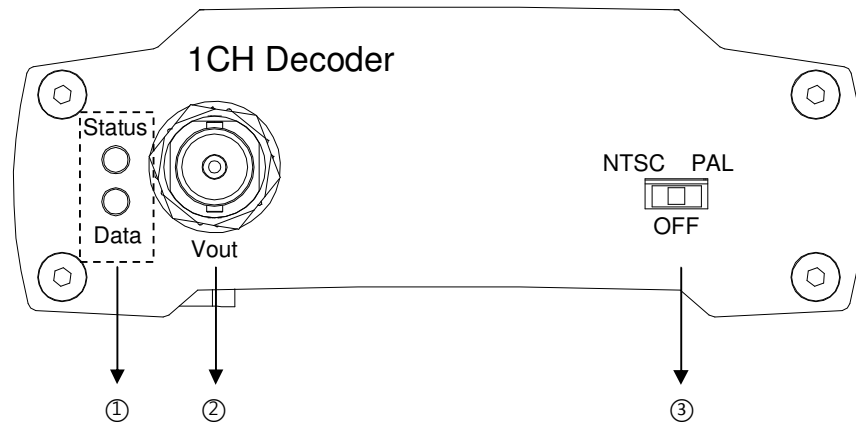
2.1. Main Features

The Network Video Decoder enables decoding of H.264, MPEG4, and MJPEG streams from IP devices and displaying decoded images on a monitor. For its main features, refer to the following summary.

- 1-channel H.264 30fps@CIF decompression
- Decompress H.264, MPEG-4, and MJPEG streams
- Audio compression and decompression: G.711
- System configuration on a webpage

2.2. Hardware Overview

2.2.1. Front Panel



① System status LEDs

The LEDs are located on the left side of the front panel and they indicate certain system information.

Status This LED lights up as orange and turns green when the decoder is powered on.

Data This LED lights up when the host system is turned on with a connection is made.
(The color of LEDs is subject to change according to the firmware version)

② Loop out BNC connector

As a loop out connector, connect to a device such as a monitor.

③ Output setting switch

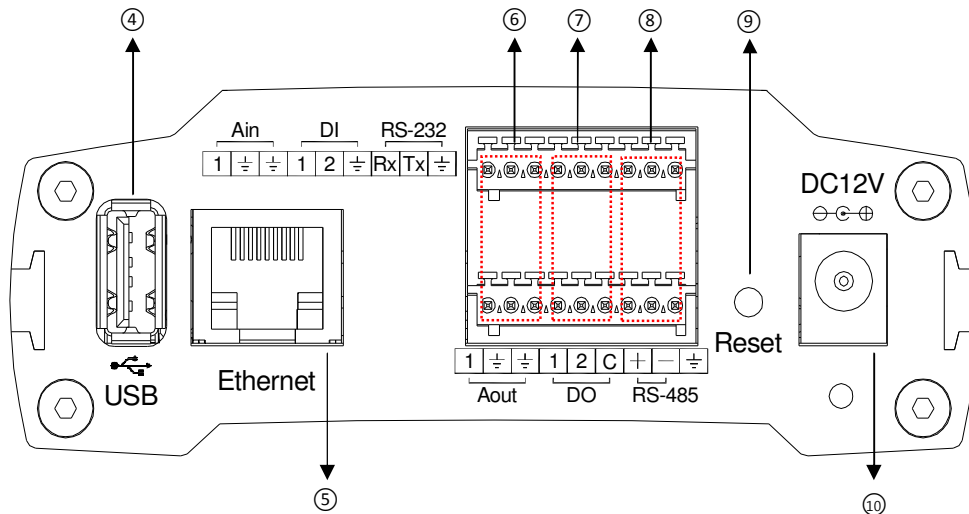
This button enables to turn the video output on or off on a monitor. If you set this switch to Off, no image will be displayed on the monitor. To turn the video output on, set this button to NTSC or PAL according to the IP device's video format *before you connect the power cable*.



Note

The video output configuration must be set before you connect the power cable. Changing the setting after the device is turned on will not affect on the configuration.

2.3.2. Rear Panel



④ USB 2.0 port

Use this port to connect a USB mouse. A USB mouse is required to control the device on a monitor. The PS/2 mouse is not supported.

⑤ LAN connector

Use this RJ45 LAN connector for connecting the device to network or supplying PoE power.

⑥ Audio IN/OUT

The decoder has one channel mono audio input/output. It supports bi-directional audio communication between an H.264 encoder and the decoder. Since the output power for the audio is low, an amplifier speaker is needed.

⑦ DI/DO

The encoder supports two channels for each of DI and DO. Refer to the section 3.2. *Cabling* for more specific information.

⑧ RS-232/RS-485

RS-232C Terminal Block is used for some devices such as POS terminal block. RS-485 is used for PTZ controls.

⑨ Reset

Reboot the device system or reset the device to its Factory default settings. Refer to the section 4.4 *Reset* for more specific information.

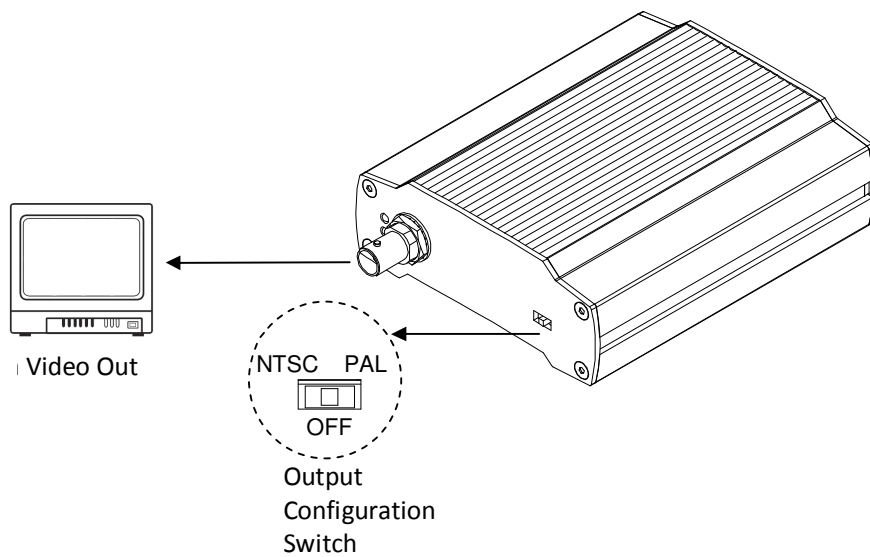
⑩ Power connector

Connect the power adaptor for power supply. DC 12V 1A adaptor is needed.

3. Installation

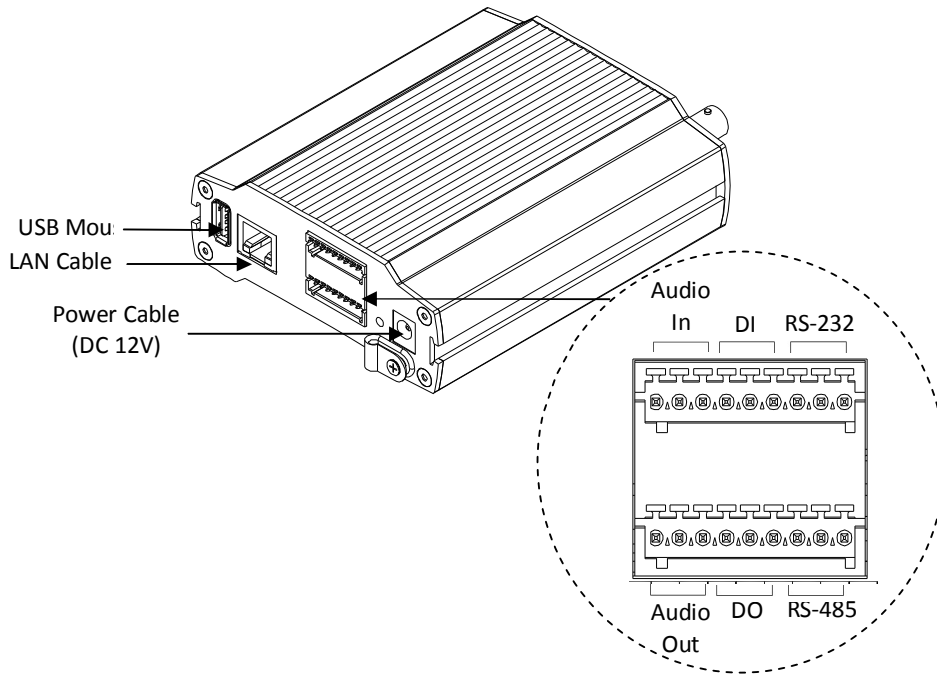
3.1. Video Output Configuration Switch

The video output configuration switch enables to turn the video output on or off on a monitor. If you set this switch to Off, no image will be displayed on the monitor but a black screen. To turn the video output on, set this switch to NTSC or PAL according to the video standard *before you connect the power cable*. If you want to change its output configuration after the power cable is connected, put the switch to the desired position and reboot the system. To learn how to reset your device, refer to **4.4. Reset**.



The video output configuration must be set before you turn on the device. Changing the setting after the device is turned on will not affect on the configuration.

3.2. Cabling



Power Connection

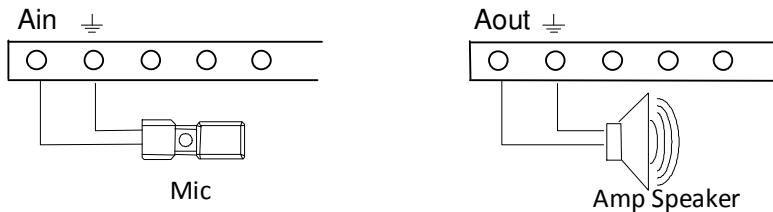
DC 12V cable is required for this device. Make sure the polarity is correct before you connect the power cable. Incorrect connection may cause malfunction or damage to the IP device.

Video connection

Connect a LAN cable to the *LAN connector* of the device to retrieve the IP devices. Connect a display device (such as monitor) to the *Video output connector* on the back panel of the device using 75 ohm video coaxial cables with a BNC connector.

Audio connection

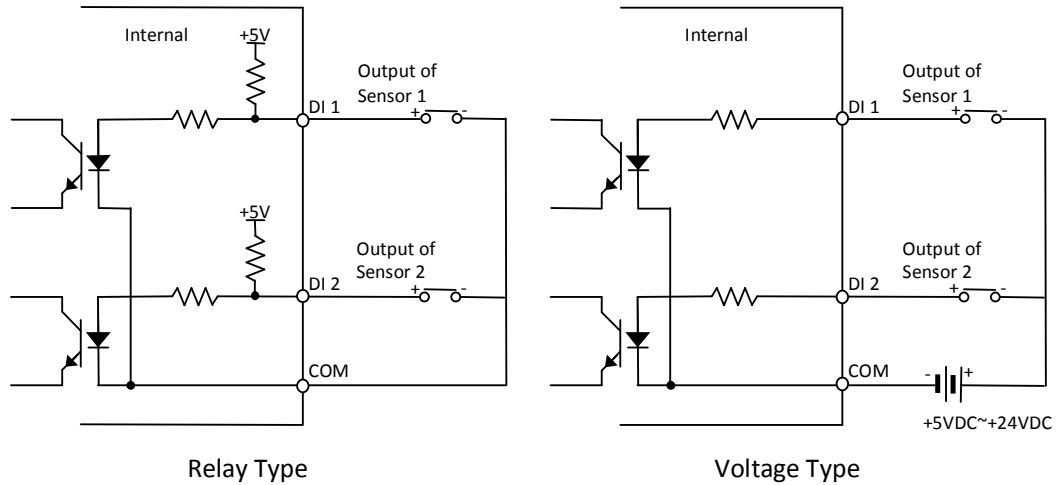
The device supports two way mono audio for H.264 encoder only. Since the output power for the audio is low, an amplifier speaker is needed for a clearer sound.



Audio input range: 0.01/3.3 (Min/Max)

Sensor Input (D/I)

There are two sensor interface types – Voltage Type and Relay Type. The interface type can be controlled by the software. Before connecting sensors, check driving voltage and output signal type of the sensor. Be aware that the connection is different according to sensor type before connecting cables.



Input voltage range: 0 VDC minimum to 24 VDC maximum
 Input voltage threshold: 1 V

Signal	Description
COM	Connect (-) cable of electronic power source for sensors to this port as shown in the circuit above.
D1~D2	Connect output of sensors for each port as shown in the circuit above.



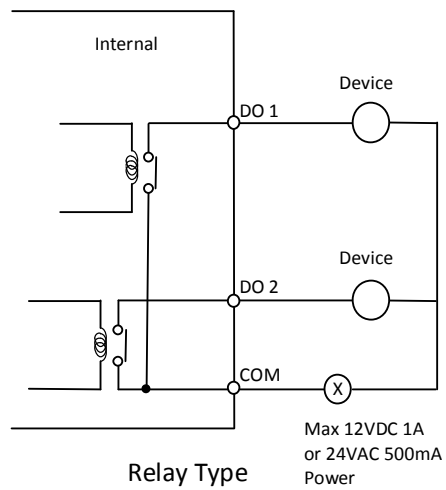
Do not exceed the maximum input voltage or relay rate.
 Do not use voltage and relay type sensor together.

Alarm Output (D/O)

Only the relay type is supported.
Relay Rating: Max 24VAC 500mA or 12VDC 1A

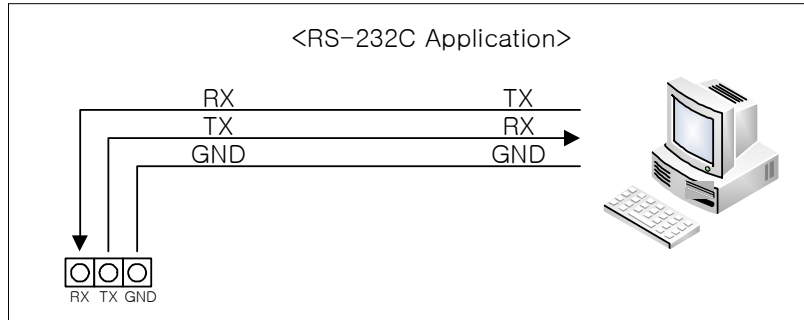


Do not exceed the maximum relay rating.



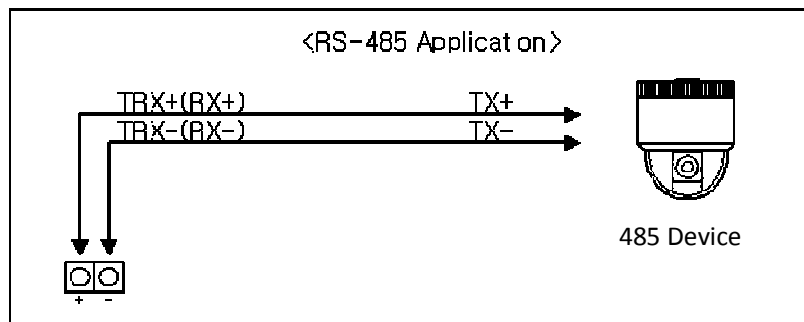
RS-232C Connection

RS-232C Terminal Block is used for some devices such as POS terminal block.



RS-485 Connection

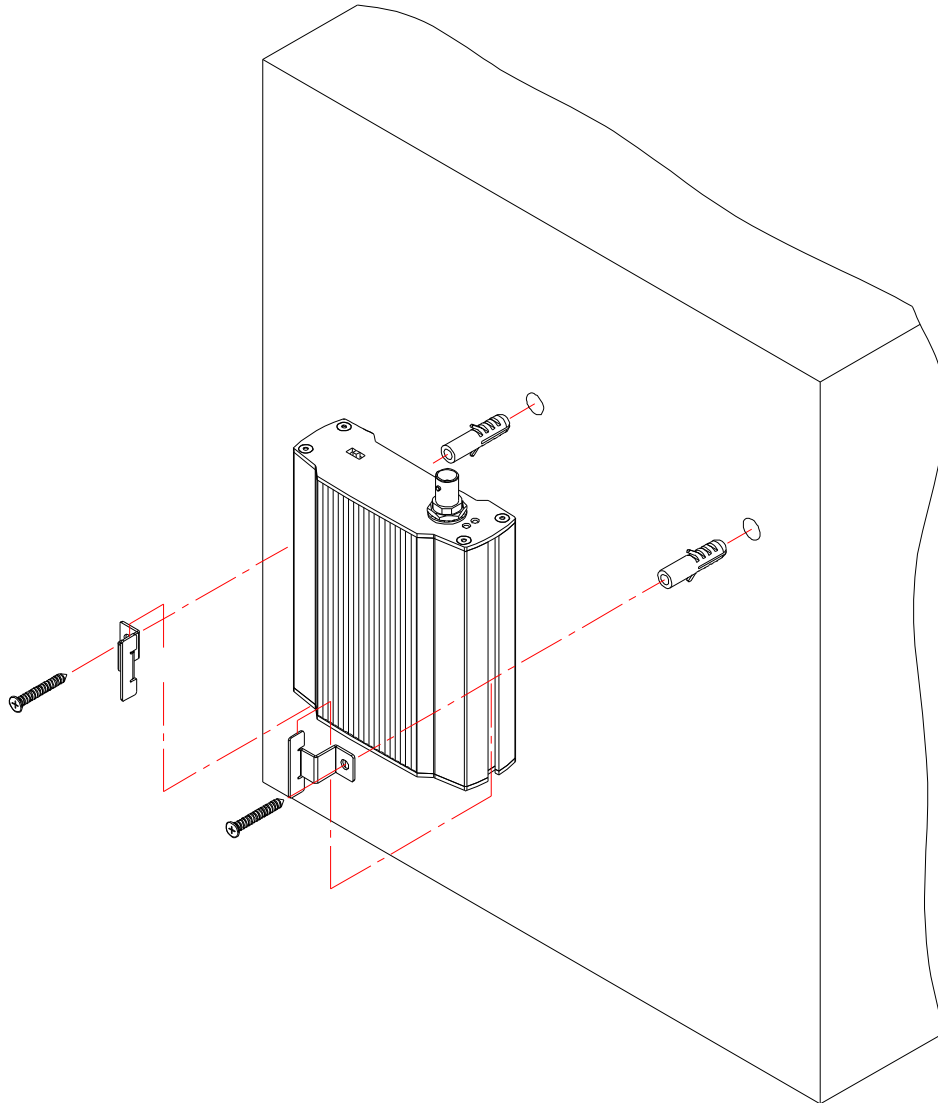
The RS-485 serial port consists of TRX+(RX+) and TRX-(RX-) as following.



3.3. Wall-Mounting

To wall mount your device, follow the instructions below.

- 1) Drill two holes on the wall and insert anchor blocks into the holes.
- 2) Put the mounting brackets to the mounting hole on each side of the device.
- 3) Fasten the device with screws.
- 4) Make sure the device is firmly installed.



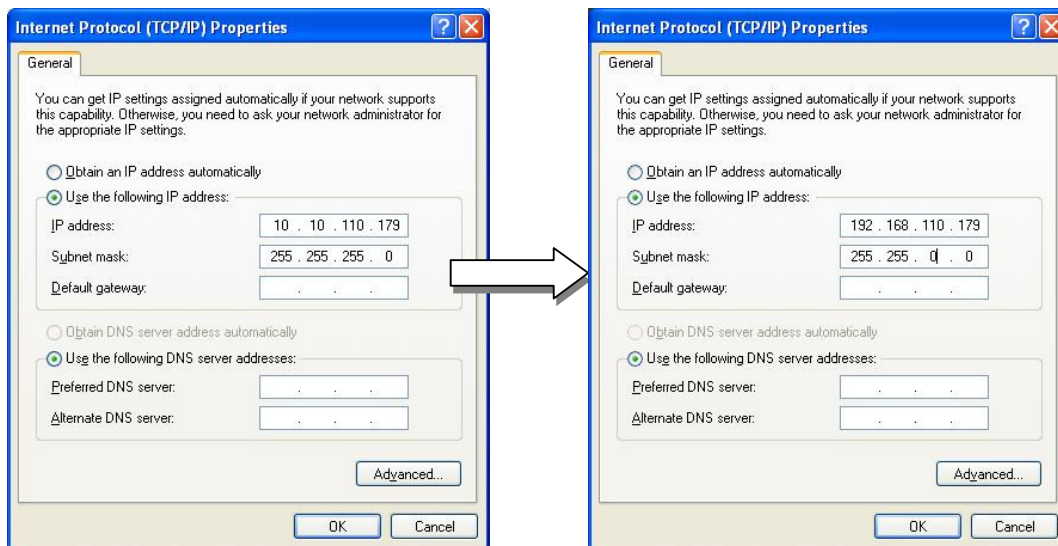
4. Basic Setup

4.1. Network Setup

The default IP address of your IP device is 192.168.XXX.XXX. You can find the available IP address from the MAC address of your device. Please make sure the device and your PC are on the same network segment before the installation. If the network segment of your PC is different from the device, change your PC's IP setting as below.

IP address : **192.168.xxx.xxx**

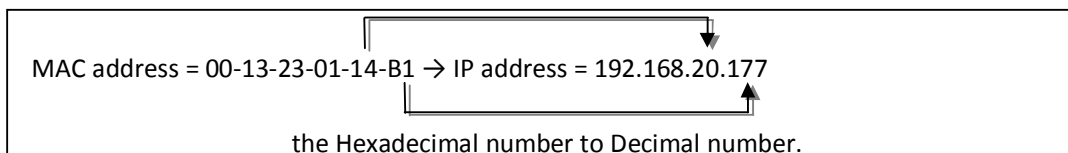
Subnet mask: **255.255.0.0**



4.2. System Configuration on Web Page

You can set up the system configuration on a web page of your device. Follow the directions below to use its web page for the system configuration.

- 1) Convert a MAC address to an IP address or check the IP address on the IPAdminTool.
(The MAC address is attached on the side or bottom of the device.)



- 2) Open a web browser and enter the IP address of the device. You also can right click on the device on the IPAdminTool and select **Web view**.
- 3) Enter the default user name (root) and password (pass) and click the *OK* button.
- 4) When the Setup page appears, click **System Options** on the left and then select **TCP/IP** from the drop-down menu.
- 5) Input the data for the IP address configuration, and click the *Apply* button on the bottom of the page. To change the IP address, please make sure to check and have the correct Subnet mask and Gateway ready. To use DHCP, select *Obtain an IP address via DHCP*.
- 6) Set up the necessary system configuration on the web page. Refer to **Chapter 6. How to Use Web Page** for details.

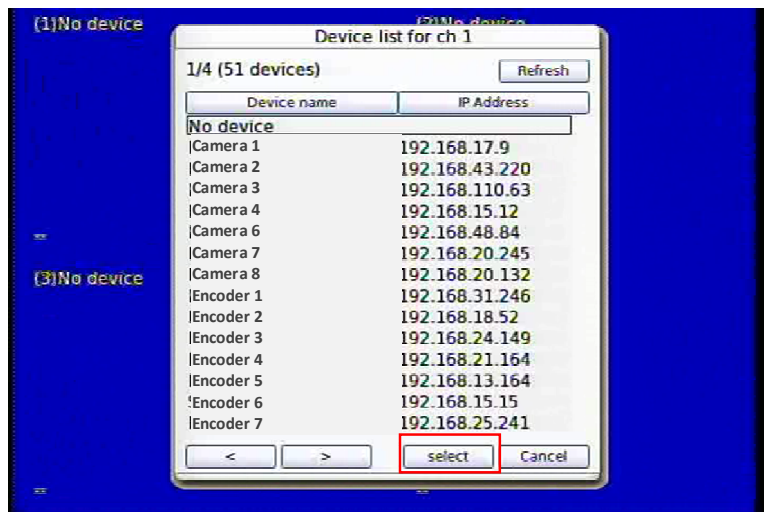
IPAdminTool automatically searches all activated network encoders and IP cameras and shows product name, IP address, MAC address, etc. To search your device and use its web page more easily, use IPAdminTool that is provided with SDK at the following SDK path.

```
{SDK root}\BIN\TOOLS\AdminTool\
```

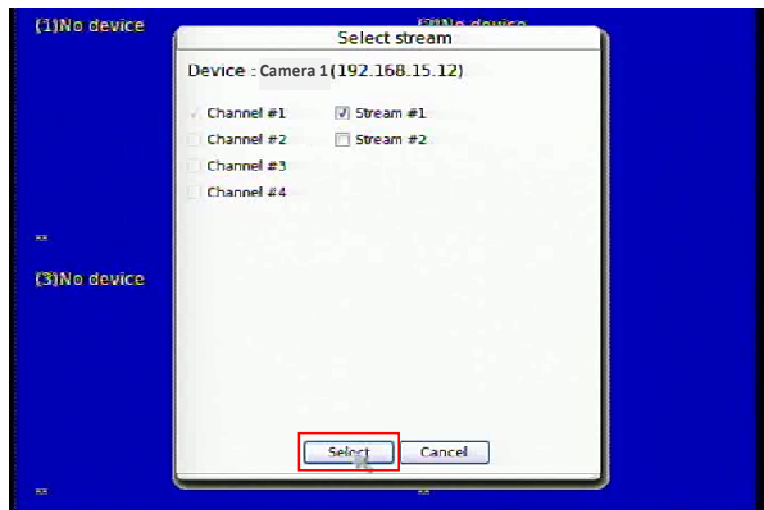

4.3. Video Display

To display the decoded images on the screen, follow the steps below.

- 1) Move the video output configuration switch to *NTSC* or *PAL* according to the IP device's video format. If you put the switch to *OFF* no image will be displayed on the monitor but black screen.
- 2) Make sure all the cables are connected to the device properly.
- 3) Check if the 4 split-view appears on the connected monitor.
- 4) Click on *No device* on the upper left corner of each split view to open the dialog box which list available devices.
- 5) On the *Device list* window, select the device to connect and click the *Select* button. Then the *Select stream* window appears.



- 6) On the *Select stream* window, Select the channel and stream to decode and click the *Select* button.



- 7) Check if the streaming video of selected IP device is displayed on the screen.



The video output configuration must be set before you turn on the device. Changing the setting after the device is turned on will not affect on the configuration.

Video transport performance

The videos displayed on the 4 channels in a view may not have satisfactory quality due to limitation of DSP resource. To configure the channels with a relevant level, refer to the following test table for video transport performance.

Codec	Resolution	GoP (Quality)	Bit rate	FPS (1ch)	FPS (4ch)
H.264	D1	29	1M	15	60
MPEG-4		29	1M	26	104
MJPEG		50	4M	18	72
H.264	CIF	29	1M	30	120
MPEG-4		29	3.5M	30	120
MJPEG		50	4M	30	120

If you want to keep one of the four channels to have the best image quality without interference of other three channels, you can use the Priority Channel Configuration option on the web page of your device. Refer to the Quad Mode Setting on **6.4.1. View** for more details.

4.4. Reset

Perform the following procedures to reset your device:

1. While the device is in use, press and hold the Reset button.
2. Release the Reset button after 3 seconds.
3. Wait for the system to reboot.

4.5. Factory Default

If you reset your device to the factory default setting, all parameters including the IP address will be initialized.

For the Factory Default reset:

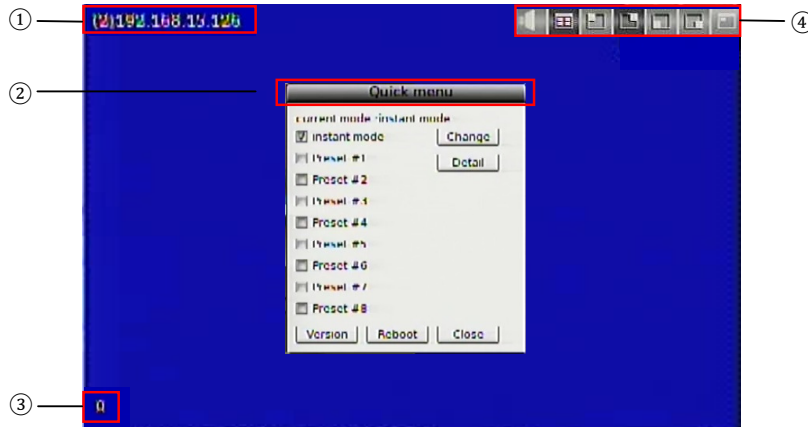
1. Disconnect the power supply from the device.
2. Connect the power to the device with the Reset button pressed and held.
3. Release the Reset button after 5 seconds.
4. Wait for the system to reboot.

5. How to Use OSD Menu

5.1. Menu Configuration

On the display monitor that is connected to the device, you can use several menus.

When you move your mouse on a view channel, OSD appears as following figure. For its feature refer to the descriptions below.



① IP address

It displays the IP address of the connected encoder. If you click on this, the *Device List* menu appears. On the *Device List* menu, select the desired device you want to connect. For more information about how to display a video of an encoder, refer to **4.3. Video Display**.

② Quick menu

It appears when you right-click on the monitor. With this menu, you can change the current display with a preset display that is pre-defined by a user. Thus, it supports to check the device version or channel configuration and reboot the device. Refer to **5.5.Quick Menu** for more details.

③ FPS

It displays the frame rate of a channel.

④ Shortcut Icons

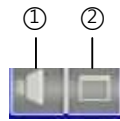
With the shortcut icons, you can enable audio or change the display mode. Refer to **5.2. Display Mode** and **5.3. Audio Mode** for more details.

5.2. Display Mode

The device supports quad view, single view, and PIP view. The default view mode is quad view.

5.2.1. Quad View

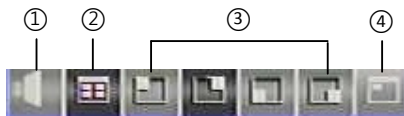
In the Quad View mode, the evenly split four-windows appear on the screen. On the quad view mode, you can change the view to the single view mode only. To change the display mode on this default view mode, move your mouse point to the right top of the desired channel. Then image icons appear as shown below. If you click the *Display Mode* icon, the selected split view is displayed in a single view.



- ① Enable audio
- ② Enable single view

5.2.2. Single View

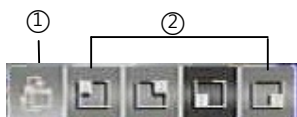
In the Single View mode, only one video is displayed on the screen. You can change the view either to a different channel or to different splits. To change the display mode to different views, move your mouse point to the right top of the view. Then image icons appear as shown below. Select the desired view mod.



- ① Enable audio
- ② Enable quad view
- ③ Switch the channel
- ④ Enable PIP mode

5.2.3. PIP View

In the PIP View mode, you can see one other video with a small split in a full single view. You can switch the full image with the small inset image or change the view with different splits. To switch the image that is displayed in the sub-window with the full screen image, click ① below. To switch the channel in the sub-window to a different channel, click the desired channel from ②. If you want to change the view mode from PIP to a different one, move your mouse point to the right top of the full image view, and then select the desired view by referring to the icons described on **5.2.2. Single View**.



- ① Switch full-window with sub-window
- ② Switch the channel of sub-window

5.3. Audio Mode

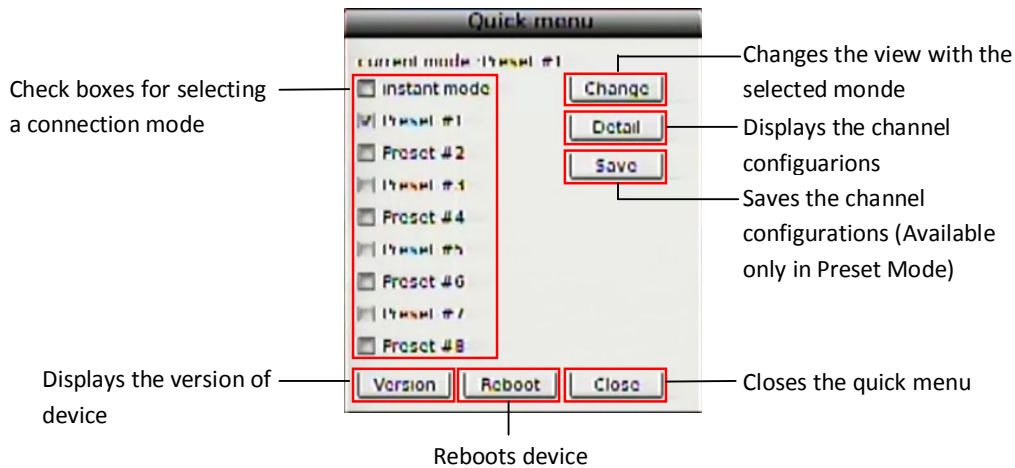
If you click the Enable Audio button from the shortcut icons, you can hear the output sound. When the audio output is enabled, the icon will be changed as the following figure.



To hear the output sound, make sure that the audio input/output cable is properly connected with a microphone and speaker. To learn how to connect audio cables, refer to 3.2. Cabling.

5.4. Quick Menu

If you right-click on a view, the Quick Menu appears as below. This menu helps you to change connection mode, reboot the device, or check its version.



5.4.1. Changing connection mode

The decoder supports two different connection modes: Instant Mode and Preset Mode. The instant mode enables you to immediately change the video channels and display them on the screen. The preset mode is useful to save the channels you want to view and display them just by clicking the configured preset view. The preset mode is supported with up to 8 different configurations.

To configure desired channels on a preset mode,

- 1) Right-click on a view to display the quick menu.
- 2) Select the desired number of preset mode.
- 3) Select the encoders you want to display by referring to **4.3. Video Display**.
- 4) Right-click on a view to display the quick menu.

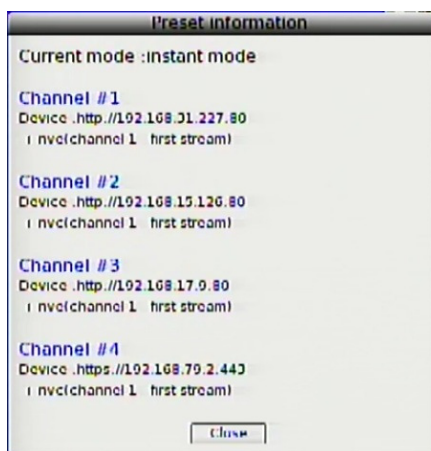
- 5) Click the Save button. Then, the quick menu disappears and the view of the saved preset mode is displayed.

To change the connection mode,

- 1) Right-click on a view to display the quick menu.
- 2) Select the desired connection mode from the list. (e.g. Preset #2)
- 3) Click the Change button then the view is changed to the selected connection mode.

5.4.2. Checking device and channel information

You can check the device information and the channel configuration with the quick menu. If you click the **Version** button, the device name and its OSD version will be displayed on a pop-up window. For the channel configurations of the selected connection mode, click the **Detail** button on the quick menu. Then, following pop-up window appears on the screen.



On the pop-up windows, you can check its connection mode and the IP address, encoder channel number, and stream number for each channel.

5.4.3. Rebooting device

You can reboot your device by using the quick menu. To reboot your device, right-click on a view to display the quick menu and click the **Reboot** button. While rebooting the device, no image will be appeared on the screen. It takes more than a minute to restart the device. To reboot your device with the Reset button on the device, refer to **4.4. Reset**.



If you click the Reboot button, the device immediately starts rebooting without an alarm message. Check if the device reboot is really required before you click this button.

6. How to Use Web Page

On the web page of this device, you can configure required settings. The following summarizes the supported features of the web page.

- Basic configuration
- Encoder connection mode setting
- Decoder setting
- Event configuration
- System option setting
- System maintenance
- Device information query



Note

To learn how to access to the web page, refer to **4.2. System Configuration on Web Page.**

6.1. Recommended PC specification

The following table describes the minimum and recommended requirement of the PC system to use a Web browser with our products.

Item	Minimal	Recommended
Mainboard/Chipset	Intel 865	Intel 945P
CPU	P4 3.0GHz	Intel Core2Duo E4300
RAM	512MB	1GB
VGA	D3D support	D3D support
	Nvidia, ATI, Intel built-in graphic	ATI Radeon Series, Nvidia Geforce Series
	Memory : 64 MB	Memory : 128 MB
OS	Win 98, ME, XP, Vista	Windows XP SP2 or higher
Direct X	9.0	9.0

6.2. Basic Configuration

6.2.1. User management

The menus allowed to access may vary depending on your user group. The root user (ID: root, PW: pass) is authorized to all menus on the Setup page, and this default user is not removable. Beside the root user, you can add a user group. The user group is divided into two different levels: Operator and Administrator. Refer to the table below for details about accessible menus of each account.

User Group	Accessible Menu
Operator	Encoder Configuration Decoder Configuration Event Configuration
Administrator	All menus

Limitation on user name

A user name can contain from 1 to 14 characters with a combination of alphabet and numbers. Maximum of 32 accounts are available per an account group.

Character range: All upper or lower case letters and the number from 0 to 9

Limitation on password

A password can contain from 1 to 8 characters with a combination of alphabet and numbers.

Character range: All upper or lower case letters and the number from 0 to 9

To have an authentication step before a user logs in,

1. Go to **Setup > Basic Configuration > Users**.
2. Select **Enable**.
3. Check the option box to allow all anonymous users for accessing the web page. If you want to request to enter ID and password even for entering the web page, skip to step

User Authentication

Enable

Enable anonymous viewer login (no user name or password required)

Disable

Apply Reset

4. Uncheck the option box and click the Apply button to save the changes.

To skip an authentication step before a user logs in to the Setup page,

1. Go to **Setup > Basic Configuration > Users**.
2. Select **Disable**.
3. Click the Apply button to save the changes.



Note

For an enhanced security, selecting the **Enable** option is recommended.

How to add a user

To add a user for the webpage,

1. Go to **Setup > Basic Configuration > Users**.
2. Click the Add button below the User List.
3. When the pop-up window appears, type a user name and password.

Add User

User name:

Password:

Confirm password:

User group:

Viewer

Operator

Administrator

4. Select the desired account level from Operator and Administrator. **The Viewer account is not available.**
5. Click the OK button to save the changes.
6. Check if the user name is added to the list.

User List

User Name	User Group
root	Administrator
Operator	Operator

How to modify a user

To change your password or user group,

1. Go to **Setup > Basic Configuration > Users**.
2. On the User List, select the user name for changing the setting.
3. Click the Modify button below the User List.
4. When the pop-up window appears, type a new password. If you want to change your user group only, skip to step 6.
5. Type the same password again on the text box of Confirm password.
6. Select the desired user group.
7. Click the OK button to save the changes.



Note

The user name is not allowed to be changed. If you want to modify the current user's name, just remove it and add a new user.

How to remove a user

To remove a user name from the User List,

1. Go **Setup > Basic Configuration > Users**.
2. Select the user name to remove on the User List.

3. Click the **Remove** button below the User List.
4. When the dialog box appears to confirm your request, click the **OK** button.
5. Check if the user name is removed from the list on the page.

6.2.2. Configuration of HTTP and HTTPS

To set the protocol for the product web server, go the Web Server page by clicking **Setup > Basic Configuration > Web Server**.

Web Server

HTTP(S) Settings

HTTPS(OpenSSL v2 / v3)

Redirect HTTP to HTTPS
(HTTPS Port '80' is not allowed for redirecting HTTP to HTTPS)

HTTP

Port Settings

TCP/IP port number of HTTP or HTTPS : (1...65535)

Cache Control

Enable content expiration (Default off)

If the content expiration mode is enabled, specific resources will be retrieved from client cache for one day. Once the mode is enabled, the resources in the cache are valid for one day even if you disable this mode.

The default web server setting the device is HTTP. If you want to change its setting to HTTPS to enhance its access security, select the HTTPS option.

What is SSL?

SSL is the abbreviation of Secure Socket Layer. SSL protects web server and makes it easy for users to trust the contents. When you use HTTPS for communication with server, the SSL certificate is required for the web server and the certificate enables encryption of video and audio data during online transactions. OpenSSL is one of the data security protocols for Linux system, which is used for the product.

Setting the port number of web server

To communicate with server by HTTP or HTTPS with TCP, the port number can be fixed between 1 and 65535. The factory default is set as 443.

Redirecting HTTP to HTTPS:

Even if a user tries to access the server with http, you can enable the server to be redirected to HTTPS. In this case, do not set '80' for port number because it can cause a conflict with HTTP port.

Cache Control

To save the webpage loading time, you can use the cache control setting. If the content expiration mode is enabled, specific pages and images will be stored in client cache and be retrieved from it for one day. Once the mode is enabled, the resources in the cache are valid for one day even if you disable this feature. It is because the content expiration time is basically set to one day. Therefore, to avoid retrieving the resources from the cache, you should manually empty your cache. If the content expiration mode is not enabled, the cache

control may perform depending on the client PC environment, specifically your Internet Explorer option setting.

6.2.3. Setting date and time of device

Time setting is very significant for all parts of the product server because it affects the log of streaming and burnt-in text of video. To set the time, go to **Setup > Basic Configuration > Date & Time**. Every time you change the setting, the web server program of the product will be restarted internally. It may take more than a minute to restart.

Date & Time Setting

Current Server Time	
1970-01-19 18:49:06 UTC	
New Server Time	
Time Zone:	Universal Time
<input checked="" type="checkbox"/> Automatically adjust for daylight saving time changes	
Method:	
<input checked="" type="radio"/> Synchronize with computer time	
Date:	2010-08-31
Time:	14:14:20
<input type="radio"/> Synchronize with NTP server	
NTP Server : ntp1.usv.ro	
<input type="radio"/> Set manually	
Date:	1970-01-19
Time:	18:43:50
Time Synchronize	
Sync source:	<input type="radio"/> NTP server
	<input checked="" type="radio"/> Real Time Clock on system
Interval:	<input type="checkbox"/> Everyday - 00:00

* When the system gets started, the system time is synchronized with NTP server. But if you do not have your DNS or not available to access the internet, the system time synchronizes with RTC.

Display of current server time

It shows the current server time with real time update.

Selecting time zone

You can choose your own time zone from the drop-down box. If you check the 'Automatically adjust for daylight saving time changes,' it allows the daylight saving time to be applied according to your zone setting.

Setting current time of server

Select one of 3 options:

- Synchronize the server with your PC time
- Synchronize the server with NTP server via internet
- Set the server time manually by user

Periodical time synchronization

NTP server – Server time is synchronized with NTP server. You can configure available NTP servers at **Setup > System Options > NTP**. Totally 4 of NTP servers can be added and the first one is set as the default server (ntp1.usv.ro).

Real Time Clock on system – Server time is synchronized with Real-time clock in the server. The clock is attached to the board of the product internally and the clock is recharged automatically when the server is started.

Interval of synchronization

Everyday 00:00 - Synchronizes at every midnight

Disabled – Synchronizes only when the decoder is rebooted (factory default)

6.3. Encoder Setting

To configure encoder channels on a display monitor that is connected to a decoder, go the **Setup > Encoder Configuration > Connection**. The channel connection mode is divided into two types: Instant and Preset. If you click on **Instant** or **Preset#1~8**, a pop up window appears to configure channels of an encoder to display. To configure video channels, refer to the following details about setting options.

Preset name setup

Unlike in the Instant mode setting window, the **Friendly name** option is added in the Preset mode. Since 8 different preset modes are supported, defining a certain preset mode with a promptly noticeable name would be helpful for users. Input the desired name on the text box of **preset name** for an easier recognition of the preset mode.

Friendly name	
preset name :	1st floor

Selecting a channel for configuration

Select the tab of the desired channel number to configure. To display the channel, select the Enable check box. If you unselect the check box, the channel will not be displayed on the screen.

Encoder Information

Set the encoder information including the encoder type, session type, URL, and HTTP port. The encoder type includes three types as described on the table below.

Type	Description
TYPE0	H.264 encoder
TYPE1	MPEG4 encoder
RTSP	Connect via RTSP standard

The RTSP type is generally for connecting a third party product. If you want to connect the standard encoders, that can be categorized by TYPE0 or TYPE1, with the RTSP type, make sure to check the encoder URL has been input correctly according to its session type (rtsp://hostname or ipaddress:[port]/[session name]). The HTTP port number is required only for the configuration of TYPE0 and TYPE1.

Encoder Information	
Encoder Type :	TYPE0 ▾
Session Type :	UNICAST/TCP ▾
Encoder URL :	192.168.83.38
	(hostname or ip address)
<input type="checkbox"/>	Enable encrypted connection (SSL)
HTTP Port :	0 [1..65535]



The audio out stream from the decoder to an encoder is only available when you select TYPE0 (H.264 encoder) for **Encoder Type**. TYPE1 or RTSP is not supported.

Login Information

Enter the login information for the webpage of the encoder to connect.

Logon Information	
User name :	<input type="text" value="root"/>
Password :	<input type="password" value="••••••••"/>

Encoder Channel & Stream

Select the channel number of the encoder and its stream number.

After the setup, click the *Apply* button on the bottom of the **Encoder Setting** window. And then go to the **Connection Mode Setting** page, select the mode to apply changes, and click the *Apply* button on the bottom.

6.4. Decoder Setting

6.4.1.View

To set up how to display videos on the screen, go to **Setup > Decoder Configuration > Decoder**. In this page, you can configure video display mode, screen margin, channel specification in display modes, etc. Refer to the following for more details.

Checking video out format

On the top of the page, you can check the current video out standard format. A user cannot change the format on the web page, but only by using the video output configuration switch on the decoder.

Video Out Standard Format	
<input checked="" type="radio"/> NTSC	<input type="radio"/> PAL

Selecting display mode

To specify how to display the video image on the default screen, select the desired mode on the View Mode option. In the Spot View mode, only one video is displayed on the screen. In the Quad View mode, the evenly split four-windows appear on the screen.

View Mode	
<input checked="" type="radio"/> Spot	<input type="radio"/> Quad

Spot mode setting

Selecting the Spot mode will display the configuration options on the spot mode as below. Select the channel you want to display in a single view. If you want to enable PIP, then select the channel for PIP and defined its resolution and position. Afterward, check the Enable PIP box and click the Apply button on the bottom of the page. The Switch PIP button is activated only when the PIP mode is enabled. To switch the image that is displayed in the sub-window with the full screen image, click the Switch PIP button.

Spot Configuration	
Spot channel :	<input checked="" type="radio"/> CH#1 <input type="radio"/> CH#2 <input type="radio"/> CH#3 <input type="radio"/> CH#4
PIP Configuration	
<input type="checkbox"/> Enable PIP	
PIP channel :	<input checked="" type="radio"/> CH#1 <input type="radio"/> CH#2 <input type="radio"/> CH#3 <input type="radio"/> CH#4
PIP Resolution:	Predefined : QCIF ▾
PIP Position :	Predefined : right-bottom ▾
<input type="button" value="Switch PIP"/>	

Quad mode setting

Displaying all of the 4 channels in a view with high bitrate may be resulted in low quality images. If you want to keep the best quality for a specific channel while having too much DSP interference, give a priority on the channel by selecting its channel number on the following option. This option will be enabled only when you select the Quad mode.

Priority Channel Configuration				
<input type="checkbox"/> Enable Priority				
Priority channel :	<input checked="" type="radio"/> CH#1	<input type="radio"/> CH#2	<input type="radio"/> CH#3	<input type="radio"/> CH#4

Adjusting image margin

The image margin can be adjusted on the web page. The adjusted margin will be displayed in black on the screen.

Adjust				
left margin :	<input type="text" value="0"/>	[0 ... 128, step 16]		
right margin :	<input type="text" value="0"/>	[0 ... 128, step 16]		
top margin :	<input type="text" value="0"/>	[0 ... 64, step 4]		
bottom margin :	<input type="text" value="0"/>	[0 ... 64, step 4]		

Margin	Supported value
Left and right	Multiplies of 16 up to 128
Top and bottom	Multiplies of 4 up to 64

6.4.2. OSD

To configure how to display OSD menus on the screen, go to **Setup > Decoder Configuration > OSD**. The configurable OSD includes the IP address of connected encoder, shortcut icon, and FPS.

Setting time to hide OSD

You can set the time that OSD remains on the screen after stopping operations. If you set the OSD auto hide time to 3 seconds, the OSD will be disappeared on the screen 3 seconds after operation done. Setting this time to 0 will display the OSD all the time.

Configuration	
OSD auto hide time :	<input type="text" value="3"/> sec (0 ... 600) (0 : all ready show)

Setting time for mouse cursor operation

For the mouse cursor on the screen, you can set its time for being remained after operation done and its movement speed. If you set the auto hide time to 0, the cursor will be displayed on the screen all the time even though there is no movement of the cursor. For the best operation of your mouse on the screen, test its cursor movement speed and apply a suitable value. To test the cursor acceleration more clearly, jump the cursor to travel long distances.

Cursor	
Cursor auto hide time :	<input type="text" value="2"/> sec (0 ... 600) (0 : all ready show)
Cursor Acceleration :	<input type="text" value="30"/> [0 ... 255]
Cursor Speed :	<input type="text" value="50"/> [0 ... 255]

Setting the position of OSD

The default position of OSD, which is IP address on left-top, FPS on left-bottom, and shortcut icon on right-top, can be changed according your configuration. You can apply a different

setting for each channel and each view mode. If you want to put the OSD at a customized position other than the corners of screen, select *normalized X,Y* for the **Predefined** option and input the normalization value on the text box of X/Y. The normalization range of X and Y is from 0 to 9999.

IP address :	Predefined :	left-top ▾	X, Y :	<input type="text"/>	<input type="text"/>
FPS :	Predefined :	left-bottom ▾	X, Y :	<input type="text"/>	<input type="text"/>
Shortcut icon :	Predefined :	right-top ▾	X, Y :	<input type="text"/>	<input type="text"/>


6.4.3. Audio

The decoder supports two-way mono audio. On the web page, you can configure the audio input volume and output channel or volume.

Audio Output

The compressed audio stream can be sent to H.264 encoder only. To enable the audio output from the decoder, select the Talk to the speakers of encoder channel check box and configure the desired volume level. If you connect a microphone on the device and prepare an encoder with a speaker, you can hear the input sound volume.

Audio Input

You to set the volume of capturing analogue audio generated at the camera installed site. After the configuration of **Listen**, you can listen to the sound with a speaker connected to the device. To listen to the captured sound, click the speaker () icon on the screen. If you uncheck the box of 'Enable capture and compression audio,' it will disable the server to capture the sound.



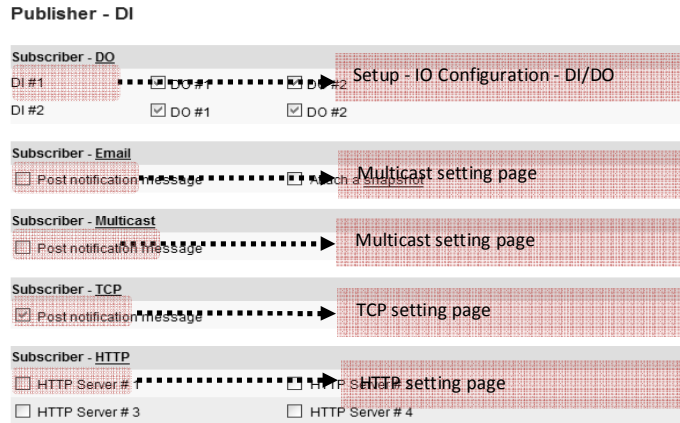
The audio out stream from the decoder to an encoder is only available when you select TYPE0 (H.264 encoder) for **Encoder Type**. TYPE1 or RTSP is not supported.

6.5. Event Configuration

The products are equipped with the event server program internally and it enables you to configure the event publishers and subscribers. For instance, DI, DO, Network loss, and health of network server can publish the event message when an event is generated.

How to move to each subscriber setting page

Go to **Setup > Event Configuration > DI**, then the Publisher – DI page appears as below. Click each subscriber name such as DO and you can find that they are linked to the related setting pages. Refer to the figures of below for more specific information.



6.5.1. How to configure each event server

1. Email server

You can use Email server to get the event notification from the device and send them to the client application by email. This page helps you to configure the Email server. Attaching a snapshot in an e-mail is not supported.

Automatically configured according to the setting page of [System Options – SMTP(email)].

Type the mail receivers, subject and contents of email

Email Setting

Configuration

From:

To:

Cc:

Bcc:

Subject:

Contents:

2. Multicast server

You can use Multicast server to get the event notification from the device and send them to the client application. This page helps you to configure the Multicast server.

Multicast Setting

Configuration

Enable Multicast Event

Name:

Address:

Port: (1 ~ 65535)

TTL: (1 ~ 255 count) (1:limit to subnet, 255:unlimited)

Type a message name to show on event message program

Type Address, port, and TTL according to your system setting. Factory default is 2555.

3. TCP server

You can use TCP server to get the event notification from the device and send them to the client application. This page helps you to configure the TCP server.

TCP Setting

Configuration

Enable TCP Event

Name :

Listen Port: (1 ~ 65535)

Type a message name to show on event message program
 Type port number according you will use for TCP message. Factory default is 2555.

4. HTTP server

You can use HTTP server to get the event notification from the device and send them to the client application. This page helps you to configure the HTTP server.

HTTP Server Setting

HTTP Server #1	HTTP Server #2	HTTP Server #3	HTTP Server #4
Configuration			
Name : <input type="text" value="Http Event"/>			
Address : <input type="text" value="http://192.168.0.160"/> <input type="text" value="7272"/> (1 ~ 65535)			
Syntax Format : <input type="text" value="default"/>			
Message : <input type="text" value="/cgi-bin/test.cgi?action=query&type=%s&info=%s"/>			
<input checked="" type="checkbox"/> Enable Option(type=%s, info=%s)			
Timeout : <input type="text" value="1"/> (0 ~ 255)			
<input type="button" value="OK"/> <input type="button" value="Cancel"/>			

*default: Original message format is shown (no parsed data)
 *customer0: You can customize the message format by configuring it with HTTP CGI and parameters.

Type a message name to show.
 Type IP address and port of HTTP server

Type the desired waiting time from HTTP server until the response is arrived.

6.5.2. Assigning event rule to event publishers

Supported subscribers per each publisher:

Publishers	Subscribers
DI	DO, Email, Multicast, TCP, HTTP
DO	Email, Multicast, TCP, HTTP
Network	Email, Multicast, TCP
Health	Multicast, TCP

The below is an example page of DI event configuration. For each event server setting, refer to the section **6.4.1. How to configure each event server**.

Publisher - DI

Subscriber - DO

DI #1 DO #1 DO #2

DI #2 DO #1 DO #2

Subscriber - Email

Post notification message Attach a snapshot

Subscriber - Multicast

Post notification message

Subscriber - TCP

Post notification message

Subscriber - HTTP

HTTP Server # 1 HTTP Server # 2

HTTP Server # 3 HTTP Server # 4

When you set DI as a publisher, DO, Email, Multicast, TCP, and HTTP server can be the subscriber of DI triggering.

Subscriber – DO

Check the DO box you want to trigger and click Apply button. For example, if you check off the DO #1 of DI #2 => when DI #1 is detected, DO#2 will be activated.

Subscriber – Email

If you check 'Post notification message,' and click Apply button, the server will send the notification message by e-mail to the client when DI detection is occurred. [System Option - SMTP] and email account must be configured to activate this function. *Attaching a snapshot on an email is not available.*

Subscriber – Multicast

If you check 'Post notification message' and click Apply button, the server will send the notification message via Multicast server when DI detection is occurred. Multicast server must be configured to activate this function by clicking the link button ([Multicast](#)).

Subscriber - TCP

If you check 'Post notification message' and click Apply button, the server will send the notification message via TCP server when DI detection is occurred. TCP server must be configured to activate this function by clicking the link button ([TCP](#)).

Subscriber - HTTP

If you check 'Post notification message' and click Apply button, the server will send the notification message via HTTP server when DI detection is occurred. HTTP server must be configured to activate this function by clicking the link button ([HTTP](#)).

If you have finished to configure the event server and required subscribers, click Apply button for the application.

6.6. SYSTEM OPTION

6.6.1. TCP/IP (DHCP, Static IP, DNS setup) setup

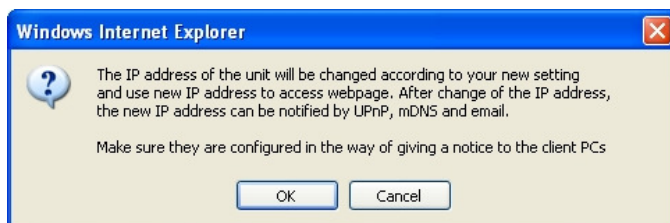
To change the TCP/IP setting, go to **Setup > System Options > TCP/IP**.

IP Address Configuration	
<input type="radio"/> Obtain an IP address via DHCP :	
IP address :	<input type="text"/>
Subnet mask :	<input type="text"/>
Gateway address :	<input type="text"/>
Broadcast address :	<input type="text"/>
<input checked="" type="radio"/> Use the following IP address :	
IP address :	<input type="text" value="192.168.19.153"/> <input type="button" value="test"/>
Subnet mask :	<input type="text" value="255.255.0.0"/>
Gateway address :	<input type="text" value="192.168.0.1"/>
Broadcast address :	<input type="text" value="192.168.255.255"/>
DNS Configuration	
Primary DNS Server :	<input type="text" value="0.0.0.0"/> (IP address) <input type="button" value="test"/>
Secondary DNS Server :	<input type="text" value="0.0.0.0"/> (IP address) <input type="button" value="test"/>
<input type="button" value="Apply"/> <input type="button" value="Reset"/>	

IP Address Configuration

Obtain IP address via DHCP

If you want to get your IP from DHCP server automatically, check this option and click the Apply button. You may find the message box of below is popped up. It explains that the DHCP server in your router device may cause a problem and fail to lease new IP address. In that case, the latest static IP address will be applied instead. Click OK button to accept the notification.



Use the static IP address

If you want to use your device with the static IP, enable the 'Use the following IP addresses' and click the Apply button.

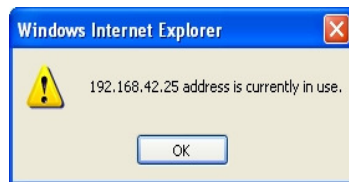
IP address: The IP address of your device

Subnet mask: The address of subnet mask of your device.

Gateway address: The gateway address of your device.

Broadcast address: It is automatically fixed by the subnet mask and IP address of your own. For example, if you use B class (255.255.0.0) of mask, the broadcast address will be 192.168.255.255.

The test button shows if the typed IP address is occupied or not. You may find the popup windows as below according to the availability of typed IP address.



Occupied IP



Available IP

DNS Configuration

Type the IP address of DNS server you use. The test button for checking the IP address availability is also supported for DNS configuration. Refer to the explanation for the test button above for details.

6.6.2. NTP server setup

To change the NTP service setting, go to **Setup > System Options > NTP**.

NTP Setting

NTP Server Lists		
NTP Server 1st:	<input type="text" value="ntp1.usv.ro"/>	<input type="button" value="test"/>
NTP Server 2nd:	<input type="text" value="clock.isc.org"/>	<input type="button" value="test"/>
NTP Server 3rd:	<input type="text" value="ntp.shoa.cl"/>	<input type="button" value="test"/>
NTP Server 4th:	<input type="text" value="time.bora.net"/>	<input type="button" value="test"/>

Local SNTP Server Setup
 I am SNTP Server (It will take about 3 ~ 4 minutes until it works)

NTP Server Lists

You can set up to 4 NTP servers as you can see at the example of above. To enable the NTP servers, DNS server setting should be done in advance in the menu of TCP/IP page and please check out if the DNS configuration is accurate.

I am SNTP Server

It is also called 'Squid server.' When you have multiple servers for the device, it helps to reduce the network load because only the one with 'I am SNTP Server' checked will get the time information from the NTP servers and other servers for the device are synchronized with this Squid server.

How to use:

1. Enable **I am SNTP server** of squid server and click Apply.
2. Access the webpage of the device which is supposed to be the client device of the squid server. Go to **System Options > NTP** and type the IP address of squid server on the 'NTP Server 1's't. (Format example : 192.168.11.4)
3. Click the **Test** button to find out if it works fine.



Note

It will take about 3~4 minutes until the squid server response.

4. Go to **Setup > Basic Configuration > Date & Time** and choose the 'Synchronize with NTP server' for the method of New Server Time menu. Make sure if the 'NTP Server' displays the designated squid server's IP correctly with red characters.
5. Click 'Apply' button and it will be restarted.

6.6.3. UPnP setup

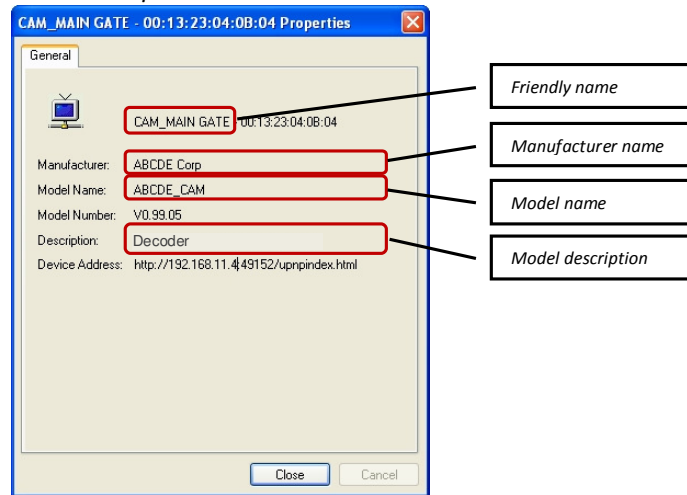
To change the Universal Plug & Play configuration, go to **Setup > System Options > UPnP**.

Configuration	
<input checked="" type="checkbox"/> Enable	
Friendly name :	<input type="text" value="Decoder"/>
Manufacturer Description	
Name :	<input type="text" value="CAP"/>
URL :	<input type="text" value="http://www."/>
Model Description	
Name :	<input type="text" value="Decoder"/>
Description :	<input type="text" value="Network Video Decoder"/>
URL :	<input type="text" value="http://www."/>

UPnP allows IP devices to connect seamlessly, and to simplify the implementation of networks in remote PC environments.

Refer to the example of UPnP of Windows XP so that you can check out how the customized settings are being applied. Find this information on your PC [Start - My network places]. Find your device, right-click the mouse and go to [property].

e.g. Customized UPnP name and description



Configuration

If you want to enable UPnP to search your device, check the box of 'Enable UPnP'.

Friendly Name: Type any friendly name to be shown by the UPnP program. You can test it easily with Windows as well (Start - My network Places displays the devices by UPnP).

Customize Manufacturer Description

If you want to have your own manufacturer's name for the device to be shown on the UPnP program, type name and URL. Then, The UPnP program will show the modified name and URL.

Customize Model Description

If you want to have your own model name for the device to be shown on the UPnP program, type name, description and URL of them. Then, The UPnP program will show the modified name, description and URL.

6.6.4. mDNS (Multicast DNS) setup

For the multicast DNS setting, go to **Setup > System Options > mDNS**.

Configuration	
<input checked="" type="checkbox"/> Enable	
Friendly name :	Decoder
Manufacturer Description	
Name :	CAP
URL :	http://www.
Model Description	
Name :	Decoder
Description :	Decoder
URL :	http://www.

If you have your own program or device which is required to use the mDNS, this page helps you to customize the name of model and manufacturer instead of factory default.

Configuration

If you check the box of 'Enable,' mDNS is activated. You can type the Friendly Name to be shown on the application program.

Customize Manufacturer Description

You can type the manufacturer's name and home URL of your device. The given company name is typed as a default for the name but it is adjustable as you want.

Customize Model Description

You can type the model name, description of the model and URL of your device. 'ENC' is typed as a default for the name but it is adjustable as you want.

6.6.5. SMTP setup

To change the SMTP setting, go to **Setup > System Options > SMTP(email)**.

SMTP(email) Setting

User Information	
Unit Name :	ENC
From email address :	event@test.com
Server Information	
Mail server :	smtp.test.com (hostname or ip address)
Mail server port :	25 [1..65535]
<input type="checkbox"/> Enable encrypted connection (SSL)	
Logon Information	
User name :	tester
Password :	••••••••
Test	
Send test mail to :	<input type="text"/> <input type="button" value="test"/>

You can set the user's mail account and server to apply this SMTP for event or any other SMTP required purpose.

Configuring user information

Unit Name

Type the friendly name for the product server to show on e-mail and it helps you to distinguish the devices from other devices when you use multiple network video servers.

Input range: 40 characters limit

From email address

Type the e-mail address of a sender.

Input range: 128 characters limit

Configuring server information

Mail server

In order to send the e-mail message, the product needs the information of user's mail server. Type the Mail server with the host name or IP Address. If you use the host name, it requires the DNS registration in advance. Check the DNS setting on **System Options > TCP/IP** tab.

Input range: 128 characters limit

Mail server port

Type the mail server's port number with the range from 0 to 65535.



Note

If your email server requires encryption process of SSL and TLS, select the **Enable encrypted connection (SSL)** check box. TLS (Transport Layer Security) and SSL (Secure Sockets Layer) algorithm can be required for the security of communication over networks. It depends on your email server and you should check out the communication protocol of SMTP server.

Logon Information

User name

Input range: 128 characters limit

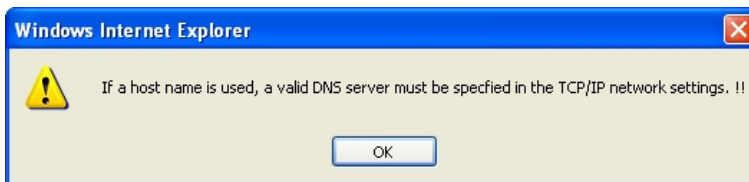
Password

Input range: 32 characters limit

8 asterisks cannot be used for the password.

Test with current configuration

You can check if the e-mail account is available or not with the **test** button. Type the e-mail address and click the test button. If you have seen the message below, you should set the DNS first at **System Option > TCP/IP** menu.



If you have seen the message below, the entered mail account is valid.



6.6.6. LED Setup

To change the LED setting, go to **Setup > System Options > LED**.

LED Setting

Configuration

Enable LED

Location	Event Publisher	Operation	Time Out
<input checked="" type="checkbox"/> Top Yellow	heartbeat	<input checked="" type="radio"/> Blink <input type="radio"/> On	permanent
<input checked="" type="checkbox"/> Bottom Green	vsignal	<input checked="" type="radio"/> Blink <input type="radio"/> On	permanent

Option

Set the dspload limits to :

under % [0..100, default 90]

Set the temperature limits to :

Under (Celsius)[-40, default 0]

Min ~ Max ~ (Celsius)[-40..100, default 0~65]

Over (Celsius)[100, default 65]

Turn on the LED of vsignal :

When video signal loss is detected

When video signal is normal

Turn on the LED of heartbeat :

When heartbeat status is watchdog

When heartbeat status is normal

You can customize the LED operation according to your system requirement. Please refer to the example scenario first.

Example of configuration

Scenario :

“When the video signal loss is detected, let top LED blink for every 5 seconds”

Setting :

Top Yellow - Ticked

Event Publisher - vsignal

Operation - Blink

Time Out – 5

Option – Turn on the LED of vsignal : Select ‘When video signal loss is detected.’

Basic configuration

1. Select the **Enable LED** check box to enables the LED function.
2. Select the event publisher you want to apply for the LEDs.
3. Select the operation type of each LED; Blink or On mode.
4. Select the time out value. 1 to 5 sec and permanent alarming are supported.



Refer to 2.2.1 Front Panel for the location of LEDs on the device.

If you are configuring DSP load, temperate, and video signal loss?

The option page provides the configuration of DSP load, temperature change, and video loss.

(1) Set the dspload limits to

E.g. Setting the value as 90% - While the DSP load keeps lower than 90%, the LED will operate as you configured at Location tab.

(2) Set the temperature limits to

E.g. Setting the min 0 and max 65 - While the temperature is between 0 and 65, the LED will operate as you configured at Location tab.

(3) Turn on the LED of Vsignal

Select one of the options between 'When video signal loss is detected' and 'When video signal is normal'. Then, the selected LED will operate when the selected condition is satisfied.

(4) Turn on the LED of Heartbeat

Select one of the options between 'When heartbeat status is watchdog' and 'When heartbeat status is normal'. Then, the selected LED will operate when the selected condition is satisfied.

6.6.7. DDNS (Dynamic DNS)

To change the Dynamic DNS setting, go to **Setup > System Options > DDNS** and follow the procedures below.

Configuration	
<input type="checkbox"/>	Enable DDNS
DDNS Protocol Type	
Type :	DynDNS
DDNS Setting	
Domain name :	<input type="text"/>
Update time :	600 second(s) [1...86400(10days)]
Email address :	username@example.com
MAC address :	0013230422a8
Logon Information	
User name :	<input type="text"/>
Password :	*****

1. Check the 'Enable DDNS' box.
2. Select the protocol type you want.



Note

DynDNS and Custom07 are installed on the device only.

3. Type the domain name you want to use for the product.
4. Type the update time. The factory default is 600 seconds and it enables the product notify the DDNS of the current domain name.
5. Type the user name and password of your DDNS account. Note that 8 asterisks cannot be used for the password.
6. Click the **Apply** button.

6.6.8. SNMP

To enable the remote management of IP devices, go to **Setup > System Options > SNMP**. The Simple Network Management Protocol (SNMP) is literally the protocol for managing network. By retrieving the system information, it allows to manage network architecture, performance, device, and security. To enable SNMP, select the Enable check box. The encoder supports SNMP version 2c and 3.

SNMP Setting

Configuration	
<input type="checkbox"/>	Enable

SNMP information

Input your SNMP information on the following section. For the Read Community, input the community name, which is the authorized ID for reading SNMP data. The factory default value is 'public.'

SNMP Description	
Location :	<input type="text" value="New York"/>
Contact :	<input type="text" value="tester@test.com"/>
Read Community :	<input type="text" value="public"/>

Trap setting

The Trap can be considered as sending an event message from an event publisher such as DIO and VCA. Choose the SNMP Trap version to receive Trap event, and input the IP address and community on the text box.

Trap Setting	
Trap Ver1.0 :	<input type="text"/>
Trap Ver2.0 :	<input type="text"/>

One white space must be inserted between ip address and community at trap parameter.
(192.168.0.1 public)



Note

For the details about SNMP MIB information, please contact our support team.

6.7. IO CONFIGURATION

6.7.1. DI/DO control

To set up DI/DO and UART, go to **Setup > IO Configuration > DI/DO**. In case of using additional device such as alarm system or sensor system, you can configure the DI (Digital Input) and DO (Digital Out) in this page.

Digital Sensor(DI) and Alarm(DO)

DI Resource type	
<input checked="" type="radio"/> RELAY	<input type="radio"/> VOLTAGE (max.5V)
DIDOstatus	
	#1 #2
DI	OPEN OPEN
DO	OFF OFF
DO Control	
DO1	OFF ON
DO2	OFF ON
Friendly name	
DI 1	DI1_NAME
DI 2	DI2_NAME
DO 1	DO1_NAME
DO 2	DO2_NAME
DI Trigger type	
DI 1	<input checked="" type="radio"/> Normal Open <input type="radio"/> Normal Close
DI 2	<input checked="" type="radio"/> Normal Open <input type="radio"/> Normal Close
DI Re-arm period	
DI 1	0 second (0 ~ 999) (0 : trigger for every detection)
DI 2	0 second (0 ~ 999) (0 : trigger for every detection)
DO Hold period	
DO 1	0 second (0 ~ 99999) (0 : infinite)
DO 2	0 second (0 ~ 99999) (0 : infinite)

DI Resource Type

You can choose the DI resource type, RELAY or VOLTAGE (The maximum is 5V).

DI & DO Status

It reflects the current states of actual DI and DO. 2 of DI and DO are supported on the device. To understand DI/DO status options, refer to the following scenario.

Scenario

When it's assumed that DI#1 and DO#1 are coupled by event system. The DI#1 trigger type is Normal Open. Suddenly DI#1 is triggered by any kind of event.

Expected Response – The status of DO#1 will be changed from OFF to ON, if the default setting is OFF. The status of DI#1 will be changed from OPEN to CLOSE.

DO Control

If you want to test DO operation manually on the webpage, click the soft buttons of OFF and ON. Then, you can see that how DO works. These commands also affects the 'DO status' because the 'DO status' shows the current status of DO.

Friendly Name

You can type any friendly name for DI and DO. This setting helps you to identify which DI or DO is activated especially when you have multiple product servers on your application program.

DI Trigger Type

You can select the trigger type between normal open (NO) and normal close (NC).

DI Re-arm Period

Use this option to set up detection time interval for event publishers. For example, if you input '0,' it generates events all the time whenever DI is detected. But if you input '10,' only 1 event will be triggered for 10 seconds even if multiple DIs are detected for this 10 seconds.

DO Hold period

The *DO Hold Period* indicates for how long does the DO works. For example, if you input '0,' a DO device keeps working until a user turns it off manually. If you input '10,' a DO device will work for 10 seconds and finish the operation. However, if you turn a DO device on manually by using the DO Control button, it will be activated without being affected by the DO hold period unless you click the OFF button.

6.7.2. UART setting for serial device

For the USRT setting, go to **Setup > IO Configuration > UART**.

UART1	UART2			
Type				
<input checked="" type="radio"/> Internal : RS485-PTZ				
<input type="radio"/> External : RS485-AUX				
SerialOverIP				
Mode : <input checked="" type="radio"/> UDP <input type="radio"/> TCP Client <input type="radio"/> TCP Server				
IP address : <input type="text"/>				
Port : <input type="text" value="7002"/>				
Timeout : <input type="text" value="n/a"/> (0:unlimited, 1~9999 seconds)				
Status : <input type="text" value="fail"/>				
PTZ Protocol				
PTZ Name : <input type="text" value="pelco-d.ptzs"/>				
PTZ Address : <input type="text" value="1"/>				
Serial port Setup				
Baud Rate : <input type="text" value="9600"/>				
Data : <input type="radio"/> 5 bit <input type="radio"/> 6 bit <input type="radio"/> 7 bit <input checked="" type="radio"/> 8 bit				
Parity : <input type="radio"/> even <input type="radio"/> odd <input checked="" type="radio"/> none				
Stop : <input checked="" type="radio"/> 1 bit <input type="radio"/> 2 bit				
Flow Control : <input checked="" type="radio"/> none				

The UART setup is supported with two different pages: UART1 and UART2. *For the RS485 port, use the UART1 setup page. For the RS232C port, use the UART2 setup page.*

UART type

Internal

PTZ: Used when you connect a PTZ camera to an encoder. RS485 is for UART1 and RS232 is for UART2.

AUX: Used when you connect an auxiliary device that requires serial communication to an encoder. RS485 is for UART1 and RS232 is for UART2.

SerialOverIP: Used to enable the communication for the devices connected to the serial ports of an encoder

Why distinguish between PTZ and AUX?

When the PTZ type is selected, the required PTZ protocol and the control daemon are run and assigned to the serial communication internally.

External

When 3rd party program is added to the server side of the encoder and this add-on program needs to control the attached serial devices, you should select the external option. So, if you do not use any serial control program, you can ignore this option.

SerialOverIP

This section is enabled only when you select *SerialOverIP* for the UART type. Select the desired communication mode: UDP, TCP Client, or TCP Server. And type the IP address of client and port number on the text box of SerialOverIP section.

If you select the TCP Client or TCP Server mode, you can set the time to automatically end the connection when there is no data come from a client PC to the encoder in a specified time. Input the desired time on the timeout text box.

The Status box indicates the connection status in the TCP Client or TCP Server mode. Refer to the following table and check how the message appears according to a connection status.

Status	Message for TCP Client	Message for TCP Server
Not Connected	Connecting	Disconnected
Connected	Connected	Connected



The Timeout and Status option are available only in the TCP Client and TCP Server mode.

You can check the communication status from the client PC by using a related freeware. If you run the program and connect to a device via its IP address and port number, you can see that the data transferred from the port has been received at UART1.



You must distinguish this option from the general concept of SerialOverIP, which allows controlling the devices connected to a serial port of the IP device, by using HTTP API commands. For the information of this commands, refer to NVD HTTP API Manual.pdf.

PTZ Protocol

PTZ Name : You need to set the UART type as RS485-PTZ before selecting the PTZ protocol. If you click the drop down box of PTZ name, the available protocols are listed. Choose the required protocol to communicate with your camera.

PTZ Address : Type the PTZ address as you have set on your PTZ camera. You may find the dip switch at the bottom of the PTZ camera which enables the cameras to have their own address. Refer to your PTZ camera hardware manual for the PTZ address setting.

Serial port setup

These settings are necessary when you want your serial device to be communicated with the encoder or IP camera. The default values of web page are set for the RS485 PTZ device but you can set the values according to your own device requirement.

6.8. MAINTENANCE

6.8.1. Firmware update port setup

Firmware Update

Configuration

Enable Firmware Update

TCP/IP listen port number of server : (1...65535)

Firmware update is allowed only by the IPAdminTool.exe, which is provided in the SDK (\BIN\TOOLS\AdminTool vX.X.X.X). Refer to the *IPAdminTool User's Manual.pdf* to find out how to update the firmware on your devices.

Before you upload the firmware with IPAdminTool.exe, go to **Setup > Maintenance > Firmware Update**. Then, select the *Enable Firmware Update* check box and set the port number. If you remove the check from this box, updating the firmware is not allowed.

6.8.2. Getting system Log

In order to get the system log of the product, please follow the steps of below.

1. Go to **Setup > Maintenance > System Log**.
2. Check the *Enable System Log* box.
3. Type max size of file between 32KB and 200KB. Then, the log files will be created according to the fixed size (Up to 5 files are created and the oldest file will be replaced by the latest file).
4. Click the *Apply* button and then the log file will be created.

If you want to see the log list, click the *LOG LIST* button.

Name : The log files are named automatically. It's not allowed for user to name it manually.

Size : Log file size is updated in real time.

Latest access time : Latest time when the product accessed the internal system to get the log.

LOG LIST

Displays the files created

Name	Size(Byte)	Latest access time
messages	12566	Thu Feb 5 06:13:28 2009
messages_0	65609	Thu Feb 5 06:11:36 2009
messages_1	65557	Thu Jan 29 01:22:33 2009
messages_2	65562	Wed Jan 28 08:48:37 2009
messages_3	65617	Sun Jan 18 03:33:15 1970
messages_4	65572	Sat Jan 17 20:55:21 1970

6.9. ABOUT

To find the product information including the hardware specification and software version, go to the About page by selecting **Setup > About**. This menu is configured with two sub menus: Version and Licenses.

6.9.1. Version

On the **Version** page, you can find the information about the current firmware version on the top of the page. Other detailed information for its hardware and software configuration is found in this page as well. Refer to the following list for the provided information.

- Hardware
- MAC address
- Microprocessor
- Bootloader
- Kernel
- Root filesystem
- APP filesystem
- Webpage
- ActiveX
- SSSDK
- HTTP-API
- VCA Tracker
- ufs
- Language
- Video-in
- Video-out
- Audio-in
- Audio-out
- DI/DO
- UART#1
- UART#2
- USB
- PoE
- SD slot
- Day & Night
- Rack information

6.9.2. Licenses

On the Licenses page, the information for the third party software license that has been used on the development of the device is displayed.

APPENDIX (A): SPECIFICATIONS

Summary

Video	
Input	N/A
Output	1 analog output
Supported encoder device	NVC/IPE, NVE/IPC only
Decompression Format	H.264, MPEG-4, MJPEG
Resolution	TBD
Compression FPS	25/30 fps@D1 (PAL/NTSC) Megapixel is not supported
OSD	Support
Video Output Configuration Switch	Support
Audio	
Input/output	1/1 channel
Compression Format	G.711
Function	
Digital Input/output	2/2 channel
RS-485	Support
RS-232	Support
Network	100 Base-T
Power over Ethernet	Support
Protocol	TCP/IP, UDP/IP, HTTP, RTSP, RTCP, RTP/UDP, RTP/TCP, SNTP, mDNS, UPnP, SMTP, SOCK, IGMP, DHCP, DDNS, SSL v2/v3, IEEE 802.1X, SSH (TBD)
USB 2.0	Support for USB mouse
SD Memory	N/A
Dimensions	103(W) x 38(H) x 141(D) mm

Electrical Characteristics

Video Input	1Vp-p, 75Ω
Video Output	1Vp-p, 75Ω
Audio Input	Linein, 1.43Vp-p (Min 1.35Vp-p, max 1.49 Vp-p), 39 KΩ
Audio Output	Lineout, 46mW Power, 16 Ω
Sensor(D/I)	TTL level 4.5V threshold, Max 50mA
Alarm(D/O)	Max 500mA@24VAC or 1A@12VDC
Power Source(Approx)	DC 12V / PoE IEEE802.3af (Class 0)
Power Consumption	3W (DC12V) / 3.84W (PoE)

(With mouse connected)	
------------------------	--

Environment Condition

Operating Temperature	0 °C ~ 60 °C (32 °F ~ 140 °F)
Operating Humidity	Up to 85% RH

Mechanical Condition

Color	Black
Dimension	103(W) x 38(H) x 141(D) mm
Weight (Approx)	385g

APPENDIX (B): POWER OVER ETHERNET

The Power over Ethernet (PoE) is designed to extract power from a conventional twisted pair Category 5 Ethernet cable, conforming to the IEEE 802.3af Power-over-Ethernet (PoE) standard. IEEE 802.3af allows for two power options for Category 5 cables.

The PoE module signature and control circuit provides the PoE compatibility signature and power classification required by the Power Sourcing Equipment (PSE) before applying up to 15W power to the port.

The high efficiency DC/DC converter operates over a wide input voltage range and provides a regulated low ripple and low noise output. The DC/DC converter also has built-in overload and short-circuit output protection.

Note: For proper activation of 12V PoE, the Category 5 cable must be shorter than 140m and conform the PoE standard.

PoE compatibility

With non Power Sourcing Equipment (PSE)

When it is connected with non PSE, the power adaptor should be connected.

With power adaptor

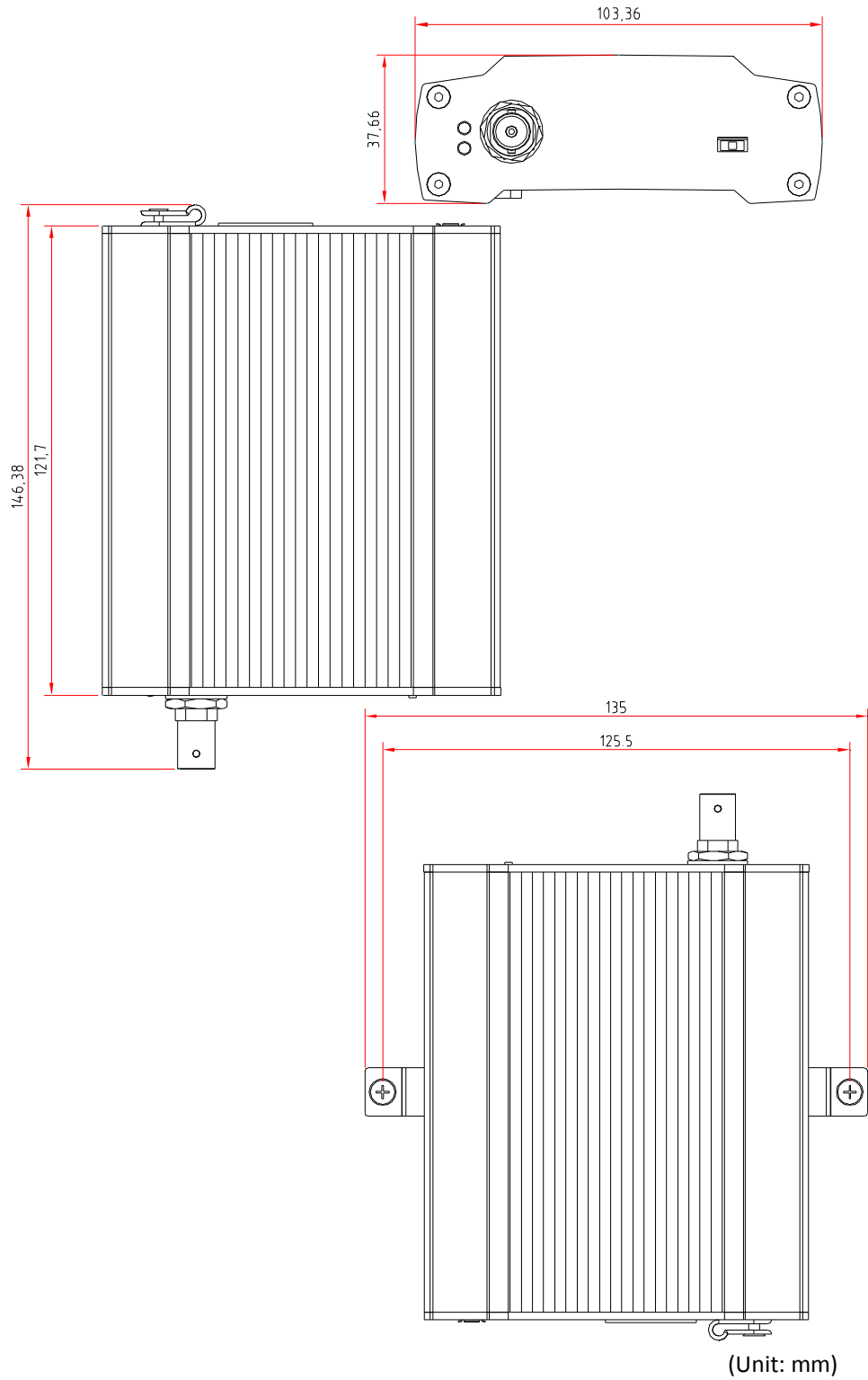
Connecting both PSE and power adaptor does not do any harm to the products. Disconnecting power adaptor while it is operating does not stop operation. The product continues to work without rebooting.

Power classification

The PoE Power Class supported by the IP device is Class 0.

Class	Usage	Minimum Power Levels Output at the PSE	Maximum Power Levels at the Powered Device
0	Default	15.4W	0.44 to 12.95W

APPENDIX (C): DIMENSIONS



REVISION HISTORY

MANUAL#	DATE (M/D/Y)	COMMENTS
D1A.00	05/28/2010	Created
D1A.00	09/03/2010	Preliminary version for DP sample
01A.00	11/24/2010	Initial version
01A.01	12/21/2010	Modified explanation about Serial over IP
01A.02	02/09/2011	Changed the incorrect reference for the priority channel configuration
01A.03	04/14/2011	Corrected the subscriber per event publisher table