# NVE Web Page V2 User's Manual



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## 1. Introduction

This manual explains how to interface with the NVE/IPC series using a standard Web browser (for example Microsoft Internet Explorer). The Web Page of the NVE/IPC series is implemented with the HTTP API, RTP/RTSP and Active X program.

#### NOTE:

Please be notified that this manual should be applied to all of the NVE/IPC series but some parts of UI are described on the basis of NVE4000, 4 channel network encoder model. And for more detailed specification of your model, refer to the hardware manual or specification sheet.

#### NVE series List

NVE 100 NVE 1000A NVE 2000A NVE 4000A NVE 12K NVE 40K

#### **IPC series List**

IPC 1100 series IPC 3100 series IPC 3500 series IPC 4100 series IPC 4500 series IPC 5100 series

## 2. Connection

## 2.1. Access to web page

How to find the IP address of your products

1) MAC address : you can find out the default IP address of your product from MAC address if you do not change IP address. For the detailed instruction for this, please refer to **NVE Series Hardware Manual-eng.pdf**.

How to connect to NVE/IP web page

With Typing: Type IP address of the product you want to connect in the address bar at Internet Explorer directly. Then you can see the log-in message pop up and a window.

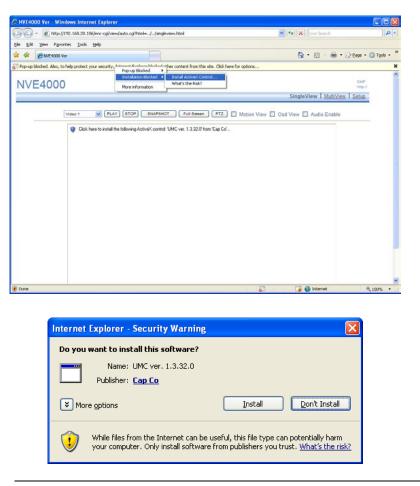
With Utility: **IPAdminTool** is provided for IP searching and management. For the detailed instruction for this, please refer to **IPAdminTool User's Manual-Eng.pdf** 

If you connect to the web page and log in for the first, you can see the window below.

() * // http://192.160.20.106/enc-cg/view/auto.cg?htmi=//singleview.html	Vie Starth	ρ.
Ele Edit Yew Fgyorites Iools Help		
🚖 🕸 🍘 MKE4000 Ver	🕼 • 🖾 · 👼 • 🔂 e	aga - 🌀 Tgols - '
👼 Pop-up blocked. Also, to help protect your security, Internet Explorer blocked other content from this site. Click here i	for options	,
NVE4000		CAP High
	SingleView   MultiView   S	etup
Click here to install the following ActiveK control: UMC ver. 1.3.32 (7 from Cap Co		
	🖉 🕡 🚱 Ireanat	

## 2.2. ActiveX installation (UMC.cab)

You need to install ActiveX for displaying images. Click "pop-up blocked" and install the Active X control as below.



If you have failed to install ActiveX, follow the next step



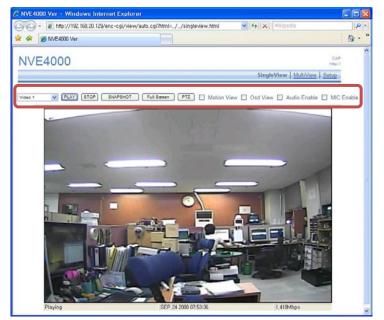
Delete "**AxNVE**" in "C:\WINDOWS\Downloaded Program Files" and connect again to Web Page so that Active X installer can be downloaded.

Or you can upload ActiveX (UMC.cab) manually with IPAdminTool, the IP management utility. Refer to **IPAdminTool user's manual.pdf**.

## 3. Main page Configuration

## 3.1. Single View

**Single View** shows only one channel on a page. *Video 1* is set as the default channel and other channels are chosen from the drop-down combo box.



- PLAY and STOP button Play or stop current channel view.
- **SNAP SHOT button** Save the snap shot of current video image. The file is saved in \*My Documents*\*Snapshot* folder.



Snapshot is available only when the codec type is set to MJPEG format.

- Full Screen button Shown with full screen
- **PTZ button** Virtual PTZ control keyboard pops up. This is used to control PTZ IP camera products only.

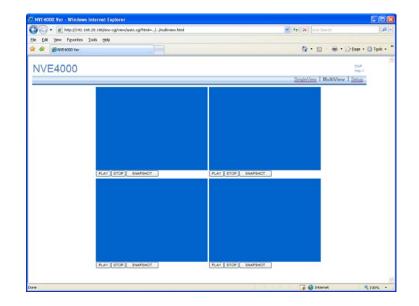


- Motion View When the motion detection is set on Event menu, you can see the detection status on the current image screen.
- **OSD View** Shows the current image information, RTSP address, Channel number, FPS, Frame type, Frame Size, Date and time on the image view screen.
- Audio Enable To enable this function, the audio connection cable should be connected to IP Products from the video source. And then you can listen to the audio sound.
- **MIC Enable** When you want to send the audio through a microphone from your PC to the camera installed site, you can enable this. And then the audio input from the microphone will be transferred via network.

NOTE : If your NVE/IPC model doesn't support audio output, 'MIC Enable' check box will be disabled with gray. Please check out the specification of DI/DO of your model.

## **3.2. Multi View**

**Multi View** shows all channelson one page. For example, **NVE4000** displays 4 channels and NVE2000 shows 2 channels. **Play, Stop** and **Snap** button work equally as in the Single view.



## **3.3. Setup**

This page lets users set all of the values for controlling NVE/IPC series and update the files. See the next section "

4. Setup Configuration" to understand how to set and change the values.

## 4. Setup Configuration

In Setup page, you can set or change the values of IPC/NVE series, click Setup on the main page of Web Page and you can see the categories as below on the left side of the main page.

#### Video

- ✓ Video Setting
- ✓ OSD Setting
- ✓ Advanced

#### Audio

- ✓ Audio Input
- ✓ Audio Output

#### Network

- ✓ General✓ QOS Setting
- ✓ Multicast
- ✓ DDNS
- ✓ Advanced

#### Event

- ✓ Motion
- ✓ Event
- ✓ Event Server

#### Record

- ✓ Record
- ✓ USB Data

#### System

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

#### ΙΟ

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

## 4.1. Video Setup

## 4.1.1. Video Settings

NVE4000			CA htt
			SingleView   MultiView   Setu
▼ Video	video 1 video 2 v	rideo 3 video 4	
Video Setting 🛛 🔿	Image Confi	guration	
OSD Setting	Video Type	AUTO 🔽	
	Codec	MJPEG 🔽	
Advanced	Resolution	4CIF 🗸	
► Audio	FPS	2 💙	
Network	Bitrate Mode	CBR 🗸	
Event	Bitrate(bits)	1250000	(32000~1000000)
Record	Quant	125	(0~255)
	GOP size	15 🗸	
System	Brightness	128	(0~255)
▶ 10	Contrast	128	(0~255)
	Saturation	128	(0~255)
	Hue	128	(0~255)
			Save

#### Video Type

Select a type in the Video Type box.

The video format is detected automatically when the device boots up.If you change the video type manually to a certain type, it will only affect FPS. For example, if PAL is set, FPS will be changed to 25 fps based one.

#### Video Codec

Select a codec format in the Codec box MPEG-4 and MJPEG are supported and the default value is MPEG4.

#### Resolution

Select a resolution you want in the Resolution box. Refer to the table below.

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

#### FPS (Frames Per Second)

Select FPS you want to get in the FPS box.

This value represents the number of encoded frames you want to get per 1 second.

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

#### Bit rate mode

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

#### Bit rate

Type a bitrate in the Bitrate box. The default value 1.5Mbps. Only when the bitrate mode is CBR or HVBR, it's adjustable. The range is from 32 Kbps to 10Mbps.



Since the maximum bitrate is 10Mbps, in case of multi-channel device such as NVE4000, you should distribute the bitrate within 10 Mbps.

#### Quant

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

#### GOP Size

Select a GOP size in the GOP box

GOP is an abbreviation of Group of Pictures and its number means I frame interval. If GOP size is 1, totally only I frame is generated in 1 second and if 15 is set, 15 frames are captured per 1 second. Users can select a number from 1 to 255 and the default is 15.

#### Brightness/Saturation/Contrast/Hue

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



#### Hue adjustment limitation!

If your item is one of the IPC series or NVE100 with PAL video format, **Hue** value adjustment doesn't work at all. This is because of the characteristic of the decoder chip built in IPC series and NVE100. If your video format is NTSC, it has no problem in hue value adjustment.

## 4.1.2. OSD Settings

			SingleView   MultiView   Set
▼ Video	video 1 video 2	video 3 video 4	
Video Setting	OSD String	Configuration	
OSD Setting	Enabled	NO 💌	
-	Color	255	(0~255)
Advanced	String	osd	(Max 32byte)
► Audio	х	0	(Max.44)
Network	Y	1	(Max.29)
Event			
► Record	OSD Time (	Configuration	
System	Enabled	YES 💌	
	Format	MM/DD/YYYY h	h:mm:ss 🔽
► I0	x	0	(Max.32)
	Y	0	(Max.29)
	The coordinate	e value of OSD is a	absolute points and it is subject to image resolution.
			Save

As the OSD function is processed in burnt-in Text method, the text is integrated in raw video data before compression.

NOTE : The coordinate value of OSD is absolute points and it is subject to image resolution. Because of this reason, if your OSD setting position is not different as you expected, adjust the image resolution.

#### **OSD String Configuration**

#### Enable

If you want to enable string OSD, select Yes in the Enabled box. Or select No.

#### Color

Grey scale color from 0 to 255. 255 means white and 0 means black. This value applies to OSD Time as well.

#### String

ASCII character string. The maximum length of OSD text must be less than 256byte.

#### X/Y

Type the location of string by number (Coordinates of string.) For example, if you set as 0,0, the time stamp will be shown on the top left of image.

Input range of coordinate value: X : 0 ~ 44 Y : 0 ~ 29

#### **OSD** Time configuration



If your models are NVE 2000, NVE 4000 or any multi channel encoding models, OSD time setting is available only on the 1st channel and the other channels do not support the Time OSD setting for the systematical reason of multi channel models of NVE.

OSD time is refreshed per 1 second and synchronized with NTP server (you can set this *System – System Data* menu).

#### Enable

If you want to enable time OSD, select Yes in the Enabled box or select No.

#### Format

Select one of the formats you want from the drop-down box.

#### X/Y

Type the location of string by number (Coordinates of string.) For example, if you type 0,0, the time stamp will be shown on the top left of image.

Input range of coordinate value:

 $X: 0 \sim 32$ Y: 0 ~ 29

## **4.1.3. Advanced**

NVE4000		CAP http://
		SingleView Setup
▼ Video	video 1 video 2 video 3 video 4	
Video Setting	Image Source Configuration	
OSD Setting	horizontal delay 0 (-32~32)	
Advanced	vertical delay 0 (-4~4)	
	Copying a image to shared memory	
► Audio	Deinterlace Mode NO V	
Network		
► Event	Save	
► Record		
► System		
▶ 10		

#### Horizontal delay

Higher figure setting moves the image to the left direction. It ranges from 32 to -32

#### Vertical delay

Higher figure setting moves the image to the upside direction. It ranges from 4 to -4

#### Copying an image to shared memory

Let the NVE/IP memory make the best use of the source. When NVE works with the data from camera like a recording or FTP upload, the data copied on the shared memory is used for this. When you don't need a recording or FTP upload etc, just disable this feature and the image copying process is omitted and it helps to reduce the load.

#### **Deinterlace Mode**

You can enable or disable the deinterlacing mode by selecting YES or NO in the box.

## 4.2. Audio Setup

The audio setting page provides the options for the audio input and the audio output.

## 4.2.1. Audio Input Settings

NVE4000		CAP http://
		SingleView   MultiView   Setup
► Video	video 1 video 2 v	
▼ Audio	Audio Input	Configuration
Audio Input 🛛 🔿	Enabled	YES
Audio Output	Name	
	Stream Type	PCM V
Network	Sample rate	16000 🗸
► Event	Data bit	16 🗸
► Record	Gain	128 (0~255)
► System		
▶ 10		Save

NOTE : If your NVE/IPC model doesn't support audio input, this configuration part is disabled with gray. Please check out the specification of audio of your model.

Audio Input Setting is required when you want to listen to the sound from the camera site. In order to test this feature, the microphone should be connected to the audio port of NVE/IPC unit. Refer to the hardware manual for the connection.

#### Enable

Enable or disable audio input.

#### Name

Type a nickname for the audio input.

#### Stream Type

Select audio input format. PCM, uLaw and aLaw are supported.

#### Sample Rate

Select sampling frequency. 16KHz, 8KHz are supported.

#### Data bit

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

#### Gain

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

## 4.2.2. Audio Output Settings

NVE4000					SingleView	MultiView	http
					Ongioview	Multi View 1	Setup
► Video	Audio Outpu	t Configuration	1				_
▼ Audio	Name						
Audio Input	Stream Type	PCM 💌					
Audio Output	Sample rate	16000 🗸					
	Data bit	16 😽					
Network	Gain	128	(0~255)				
Event		1					_
Record				Save			
> System							
> 10							

NOTE : If your NVE/IPC model doesn't support audio output, this configuration part is disabled with gray. Please check out the specification of audio of your model.

Audio Output Setting is required when you want to talk to people near the camera. Configure the values and click the Save button and it enables your PC to send the voice to the speakers of server. In order to test this feature, the microphone should be connected to the audio port of your PC so that you can talk to. Likewise, the speakers should be connected to the NVE/IPE series. Refer to the hardware manual for the connection.

#### Name

Type a nickname for the audio output.

#### Stream Type

Select audio output format. PCM, uLaw and aLaw are supported.

#### Sample Rate

Select sampling Frequency. 16KHz, 8KHz are supported.

#### Data bit

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

#### Gain

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

## 4.3. Network Setup

## 4.3.1. General Settings

C http://192.168.20.17	7/setup.html - Windows	s Internet Explorer		
💽 🗸 🙋 http://192.	168.20.177/setup.html		🖌 🛃 🗙 Live Search	
<u>File E</u> dit <u>V</u> iew F <u>a</u> vorites	<u>I</u> ools <u>H</u> elp			<b>S</b> -
😭 🏘 🏈 http://192.168.	.20.177/setup.html		🔓 • 📾 - 🖨 • 🖻	Page • () Tools • $\sim$
NVE4000				CAP http://
			SingleView   MultiView	112.00
► Video	IP Address Co	onfiguration		
<ul> <li>Audio</li> </ul>	Network mode	static V		
V Network	Paddress	192,168,20,177		
and the second se	Subnet mask	255.255.0.0		
General	Gateway	192.168.123.254		
QOS Setting	DNS Server	0.0.0.0		
Multicast	PPPoE ID			
DDNS	PPPoE Password			
Advanced				
► Event				
► Record			Save	
► System				
► 10				
Done			🚱 Internet	🔍 100% 🔹 🚊

### **IP Address Configuration**

If IP configuration is DHCP, IP address, Subnet mask, gateway and DNS are received from a DHCP server. If IP configuration is STATIC, you have to input the IP address, Subnet mask, gateway and DNS manually as IPv4 format (e.g. 192.168.18.96).

If you want to use PPPoE feature, type the PPPoE ID and password you got from the service provider.

Note: You can find the default network status of NVE/IPC using "IPAdminTool.exe" or MAC address .Refer to *IPAdminTool user's manual* or *NVE/IPC Hardware manual* for detailed information.

## 4.3.2. QoS Settings

NVE4000				CAP http://
				SingleView   MultiView   Setup
► Video	QOS Config	uration		
► Audio	Video DSCP	0	(0~255)	
Vetwork	Audio DSCP	0	(0~255)	
General	Event DSCP	0	(0~255)	
QOS Setting 🗕			Save	
Multicast				
DDNS				
Advanced				
► Event				
► Record				
► System				
▶ 10				

NVE/IPE uses DSCP model for implementing QoS. Video, audio and event classes are available for that.

#### What is DSCP?

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

**Video DSCP** DSCP of video packet

Audio DSCP: DSCP of audio packet

#### Event DSCP

DSCP of event packet

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

### 4.3.3. Multicast Settings

NVE4000							CAP http://
					SingleView	MultiView	Setup
► Video	Ch 1 Ch 2 C	h 3 Ch 4					
► Audio	Multicast Cor	figuration					
V Network	Enabled	NO 🔽					
General	Video Address	224.10.10.10					
	Video Port	6000					
QOS Setting	Video TTL	128					
Multicast 🔿	Audio Address	224.10.10.10					
DDNS	Audio Port	6002					
Advanced	Audio TTL	128					
	Event Address	224.10.10.10					
Event	Event Port	6004					
Record	Event TTL	128					
► System							
▶ 10			Sav	е			

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

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

How to see the video with RTSP multicast via VLC media player

File	Disc	Network	DirectShow	
Ou	DP/RTP		Port	1234 Force IPv6
Ou	DP/RTP Mu	Ilticast	Addres	ss Port 1234
~				
Он	TTP/HTTPS	6/FTP/MMS	URL	
⊙r	TSP		URL URL	rtsp://192.168.20.106:multicast
⊙ R		ifting		rtsp://192.168.20.106:multicast
⊙ R □ Al Advar	TSP low timesh	ifting IS		rtsp://192.168.20.106:multicast

We support only RTSP multicast (UDP/RTP Multicast is not supported in NVE)

- 1. Enable the *Multicast configuration* on the NVE Webpage.
- 2. Open the VLC media player and go to *File -> Open Network stream* then you can see the window above.
- 3. Tick on RTSP tab, set the URL of NVE address as the example above.
- 4. You can see the view with RTSP multicast

If you want to view channel 2, 3 or 4, enter *rtsp://[NVE\_IP]:[port number]/multicast*. The default port number of RTSP is 554 and it doesn't matter to skip the default port number(554) to view the 1st stream. But for other channels, add the port number at the end of address like

examples below. To view  $2^{st}$  stream – rtsp://192.168.29.23:555/multicast To view  $3^{rd}$  stream – rtsp://192.168.29.23:556/multicast To view  $4^{th}$  stream – rtsp://192.168.29.23:557/multicast

### 4.3.4. DDNS Settings

NVE4000		CAP
		SingleView   MultiView   Setup
► Video	DDNS Config	juration
► Audio	Server Enable	NO 💌
▼ Network	Server Type	DynDNS 💌
General	Address	
QOS Setting	User ID	
-	User PassWord	
Multicast	DNS Name	
DDNS 🔿	Update Time	0
Advanced	Port	-1
Event	IP Туре	REAL 🕶
Record		Save
System		
▶ 10		

For DDNS configuration setup, you must visit dyndns.com ahead and make an account for DDNS service.

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



Note : Only one dynamic host name is saved.

## 4.3.5. Advanced Settings

NVE4000						CAP http://
				Si	ngleView Multi	iView Setup
► Video	Port Configu	ration				
► Audio	RTSP Port	554				
V Network	Web Port	80				
General	User RTSP Port	554	( PortForward )			
QOS Setting	* You should reb	boot the device for a	pplying the new net Save		rations.	
Multicast						
DDNS						
Advanced 🔿						
► Event						
► Record						
► System						
▶ 10						

#### **RTSP Port**

This is the port number of first channel for RTSP. If a device has more than one channel, the port number of next channel succeeds the port number of the first channel. For example, if the port number of first channel is 554, the second channel would be 555.

#### Web Port

This is the port number for HTTP.

#### **User RTST Port**

This setting is required ONLY when you have set 'port forwarding' on router device. So, if your network is not related to port forwarding, just leave this "User RTSP Port" value empty or set same value with RTSP Port as the value means nothing. To be more detail about this: when "port forwarding" is done on a network router, ActiveX viewer on the client side can't find the port number and ActiveX image may not be seen. Because ActiveX is operated only on a client and not able to get the network setting values of NVE or IPC.

## 4.4. Event Setup

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

Step 1. Event Server setting

Step 2. Motion setting

Step 3. Event setting(relate the event setting and motion detection setting you set)

NVE series support SMTP, TCP and FTP server as an event server. Seeing the left menu of Event, you can find the *Motion*, *Event* and *Event Server* tabs. To apply this event function on *NVE*, it is recommended to set Event server first and move to Motion setting.



Ahead of event server setting, the setting as below should come first.

Go to the *Video -> Advanced* menu on the left of this page and turn on *Copying a image to shared memory* to *Yes* and change the codec value as *MJPEG* at *Video Codec* menu

## 4.4.1. Event Server Settings



## 4.4.1.1. SMTP Server Settings

How to register SMTP server

Step 1. Click on the written character SMTP in the box and press Modify button on the right.

- Step 2. Then, you can see the screen below.
- Step 3. After filling the blanks as below, press Add button and "Ok" is popped up.

Step 4. Adding SMTP server is completed.

				SingleView MultiView	Cotup
				Single view 1 Wall view 1	Setup
	Event server				
<ul> <li>Video</li> <li>Audio</li> </ul>	FromEmail	test@udptechnology.co			
<ul> <li>Audio</li> <li>Network</li> </ul>	MailServer	mail.udptechnology.con			
▼ Event	MailServer port	25	(base port 25)		
Motion	D	test			
Event	Password	•••••			
Event Server	-				
Record			Add Cancel		
System					
▶ 10					

#### FromEmail

E-mail address of a sender

#### MailServer1

SMTP server address

#### **MailServer1 Port**

SMTP server port number (default port number 25)

#### ID

Type the ID of the sender's mail account

#### Password

Type the password of the sender's mail account (Case-sensitive).

### 4.4.1.2. FTP Server Settings

How to resister FTP server

Step 1. Press *Add FTP* button.
Step 2. Then, you can see the screen below.
Step 3. After filling in the blanks, press *Add* button and "*Ok*" is popped up
Step 4. Adding *FTP* server is completed

NVE4000			CAP http://
			SingleView   MultiView   Setup
► Video	Event FTP se	rver	
► Audio	Name		
Network	Address		
▼ Event	Port	21	(base port 21)
Motion	User ID		
Event	User PW		
Event Server	Upload path	1	
► Record	timeout	100000	(microsecond)
▶ System			
▶ 10			Add Cancel

#### Name

Random name for FTP server

#### Address

IP address or domain name of FTP server **NOTE** : Domain name is supported at firmware K641.13410 or higher. Make sure if the DNS setting is enabled to use domain name of FTP server.

#### Port

Port number of FTP server between 0 and 65535

## User ID / User PW

FTP Server log-in ID and Password (Case-sensitive)

#### Upload path

Type the path of uploaded files For example: /home/

#### Timeout

Timeout value for FTP connection and data transfer (Unit: $\mu$ s) Default value is set as 100000 (= 0.1 sec) but you can change it as you want.

## 4.4.1.3. TCP Server Settings

#### How to resister TCP server

Step 1. Press Add TCP button.

- Step 2. You can see the screen below.
- Step 3. After filling in the blanks like above, press *Add* button and "*Ok*" is popped up.

Step 4. Adding *TCP* server is completed.

NVE4000							AP ttp://
				<u>Sin</u>	gleView	MultiView Setu	р
► Video	Event TCP	server					_
<ul> <li>Audio</li> </ul>	Name						
Network	Address						
▼ Event	Port						
Motion			Add Canc	el 🛛			
Event							
Event Server							
► Record							
System							
▶ 10							

#### Name

Random name for TCP server

#### Address

IP address of TCP server as Ipv4

#### Port

Port number of TCP server between 0 and 65535

## 4.4.2. Motion Detection Settings

If you completed setting *Event Server*, move to the *Motion* tab on the left for setting the motion detection function.



How to register Motion Detection

- Step 1. Select a video channel from the combo box of *Image Source* and press *Play* button.
- Step 2. Select *Layer* from the combo box of *Motion Enable Layer ID*.
- Step 3. Tick the checkbox of Motion Enable Layer ID.
- **Step 3.** Right-click anywhere on the screen to make a #Area.
- **Step 4.** Adjust the size of #Areas by dragging in and out of the edge.
- Step 5. Put *Threshold* value and *Activity* value between 0 and 255.
- Step 6. Press SAVE and RUN button for testing the motion detection.

You can set *Layer* up to 3 and each layer can have up to 8 *areas*.

The *Object size* and *Sensitivity* values of each *Layer* applies to all of the *areas* in one *Layer*. Terminology of *ObjectSize* and *Sensitivity* are as follows

- Sensitivity sensitivity of each macro block (16 x 16 pixels).
- Objectsize proportion of the exceeded *Sensitivity* of macro block in the #Area.
- The Value of *Sensitivity* and *Objectsize* ranges from 1 to 255 and a lower figure means the higher sensitivity.



In case of Kernel16Xnnn, it supports only one #*Area*, even if you set several "#*Areas*.

## 4.4.3. Event Settings

How to register Event : Please refer to the step 1, 2 and 3.

NVE4000		CAI
		SingleView   MultiView   Setup
► Video	Event Configura	ation
► Audio		
Network		
▼ Event		Add
Motion	Event	Modify Delete
Event 🔿		Delete
Event Server		
► Record		
► System		
► IO		

#### Step 1

- 1. Click *Add* button to create an event.
- 2. Then, you can see the screen below and fill the information in the blanks.
- 3 Click Add and if you see Ok sign, it shows event is completely added.

NVE4000	)	CAP http://
		SingleView   MultiView   Setup
► Video	Event Configuration	
► Audio	Name	
Network	Event Type	Software 💌
▼ Event	Hardware Mode	(1111/0000/xxxxx)
Motion	Software Mode	воот
Event	MD	MO 💌
	Video Loss	Video loss 1 🗸
Event Server	Image Number	1 💌
Record	Trigger Interval	00:00:01 (hh:mm:ss)
System		
▶ 10		Save

#### Name

Type random name of the event

#### **Event Type**

- Software signal of device boots, motion detection and video losses, etc.
- Hardware signal of D/I activation, such as Sensor.

#### Hardware Mode

If the event type is a hardware type, this control is enabled. Nnnn = where n =  $\{x, 1\}$ x = do not trigger 1 = trigger on activation

For example, "1xxx" means to trigger when first D/I is activated. "1xx1" means to trigger when the first and fourth D/I are activated.

#### Software Mode

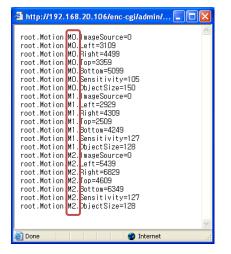
Select an event mode among motion detection, video loss and boot.

Motion Detection: Event is signaled when the motion is detected. Video Loss: Event is signaled when the video loss is disconnected or connected. BOOT : Event is signaled when the system is rebooted.

#### MD

Enable only if software mode is *Motion* detection.

To set the MD value, press **View CGI** button on **Motion** setting page and then you can see the window as below.



For example, if you set MD as "M0," it means triggering motion is from Layer1. In the same manner, M1 means Layer 2, M2 means Layer 3.

#### Video Loss

Channel numbers for triggering.

#### Image Number

Channel numbers to connect with event

#### **Trigger Interval**

'00:00:01' is set as the default value.

Assume the value is '00:00:05,' and it means even if the event happens several times for 5 sec, the NVE will trigger only once per 5 sec.

CAP http://

CAP http://

SingleView MultiView Setup

SingleView | MultiView | Setup

#### Step 2

- 1. Go back to the *Event* tab on the left menu and select the event you created in the box.
- 2. Click *Modify* button.
- 3. Press the *Action* button that is created.

## NVE4000

ideo	Event Configuration	
Audio	Name	Test1
Network	Event Type	Software 💙
Event	Hardware Mode	(1111/0000/xxxx)
otion	Software Mode	Motion Detection 💌
/ent	MD	M0 (M#)
ent Server	Video Loss	Video loss 1 🗸
	Image Number	1 💌
Record	Trigger Interval	00:00:05 (blumming)
System		00.00.05 (hh:mm:ss)
ю		Save Cancel Action

### Step 3

- 1. The screen as below is displayed. Select the proper server on the *Server* list and set the values in the blanks.
- 2. Click *Add* and if you see *Ok* sign, it shows it's completely added.

### NVE4000

► Video	Event Action Configura	ation
► Audio		
► Network	Event Action	
▼ Event	Server	SMTP test@udptech.co.kr 🗸
Motion	Message	Testing!
Event	EmailTo	Receiver@udptech.co (SMTP)
Event Server	Subject	Testing! (SMTP)
► Record	ImagesPerMail	1 (0:no, 1:yes)
► System	Codec to 'MJPEG'	P, go to Video -> Advanced' and turn on 'Copying a image to shared memory' to 'YES' and change Vide
▶ 10		Add Modify Delete Cancel

#### **Event Action**

The actions you created are listed. You can select one of those from the list.

#### Server

Select the server you want.

We provide the TCP, SMTP, FTP, DO and USB recording server. If the server you want is not shown in this list, that means the registration of the server was not successful. Go back to the *4.4.1 Event Server Setting* section and follow the instruction for server addition.

#### Message

Type an e-mail message you want to send as the example above.

#### EmailTo

Type an e-mail address of receiver as the example above.

#### Subject

Type the subject of e-mail as the example above.

#### ImagePerMail

If you want a captured image with the e-mail message, type I or just insert  $\theta$ .

When you set the values on the page of *event action configuration*, the must-set values are different.

- SMTP : Set all of the blinks
- FTP : Only server and message are required(message can be any words)
- TCP : Only server and message are required(message can be any words)
- DO : No need to fill in.
- USB recording : No need to fill in.

## 4.5. Record Setup

## 4.5.1. Recording on USB memory stick

When you remove the USB memory stick from IPC/NVE series after recording.



Before you remove the USB memory stick, change the *USB Mount* value to No first. Or, the recording may not work properly even if you inset the memory again when you need to record.

If you have a problem as, mentioned above, please reboot the IPC/NVE series and then try recording again then it will work fine.

		SingleView   MultiView   Setu
		Single view   Multi view   Setu
► Video	Decard Conf	
	Record Conf	
Audio	Record Enable	YES 💟
Network	Port	2100 (100~10000)
Event	USB Mount	YES 🐱
	Record Recycle	Rotate 🗸
▼ Record	Default File Size	16 (Mbyte)
Record		
USB Data	video 1 video 2 vid	deo 3 video 4
<ul> <li>System</li> </ul>	Recording	yes record stop
▶ 10	Record Device	USB 😽
	Record Mode	Passive 💙
	FTP Server	
	PostTime	1200 (sec)
	Skip Frame	0
	and a state of the second	

#### **Preparation before recording**

Step 1. Insert the USB memory stick to the module of IPC/NVE series.

**Step 2.** Go to the *Web Page -> Set up -> Record* and set the value of *USB Mount* to *YES* as above.

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

Select which recording mode you want between *Passive* mode and *Schedule* mode. For details, refer to the explanation below.

#### How to record video NOW (Passive mode)

Step 1. Set the Record Enable as YES

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

**Step 3.** Type the *port number* and *Record Recycle*.

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

**Step 4.** Set the *PostTime* with second unit. If you want to record for 30 minutes, type 1800 for the value of *PostTime* and then the recording will continue for 30 minutes on pressing the *Record* button.

**Step 5.** Set the *Skip Frame* and *Record Frame* with referring to the explanation and examples below.

• Skip Frame

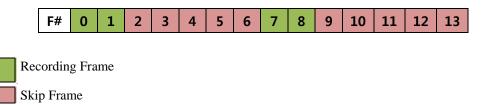
This is to set the number of frames to skip between *Record Frame*. Refer to the examples below.

• Record Frame

This is to set the number of recording frames. For example, if the value is 0, only 1 frame is recorded every time after skipping the number of *skip frame* you set above.

*e.g.* If you set 149 for *Skip Frame* and 0 for *Record Frame* with FPS 30, you will get 1 frame per 5 seconds.

*e.g.* If you set 5 for Skip Frame and 1 for Record Frame with, you will get the frames as below.



Step 6. Click *Record* button and then the recording starts.

#### How to record on SCHEDULE (Schedule mode)

If you want to record the video according to the specific date and time, please follow this instruction.

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

Step 2. Set the *Record Mode* as *Schedule*.

Step 3. Set Record Weekdays, Start Time and End Time as the description below.

- *Record Weekdays* You can assign days for recording . First digit corresponds to Sunday and last digit corresponds to Saturday. For example, if you set as 0111110, the recording runs only from Monday to Friday.
- *Start Time* You can type the time to start recording with 00:00 format. *End Time*
- You can type the time to end recording with 00:00 format.

**Step 4.** Click the *Record* button and then the recording starts.

### 4.5.2. Recording on FTP server

**Step 1**. In order to record the video on FTP server, FTP server should be added in advance. For this, go back to the section *4.4.1.2 FTP Server Settings* and check out if the FTP server is added to IPC/NVE series properly.

Step 2. Set Record Device as FTP

**Step 3.** Set *Record Mode* as you want. You can find the difference between *Passive* mode and *Schedule* mode on *4.5.1 Recording on USB memory stick*.

**Step 4.** Set *FTP Server* number. This is available only when you finish the Step 1. For example, if you added FTP server name as *UDP TEST*, then you can see *FTP F0 UDP TEST* screen as below. This *F0* is the value for *FTP Server*.

NVE4000	CAP http://
	SingleView   <u>MultiView</u>   Setup
	Event Server Configuration
► Video	
► Audio	Add TCP
Network	Event Server
▼ Event	Modify
Motion	Delete
Event	
Event Server	
► Record	
► System	
▶ 10	

**Step 5.** Set the *PostTime* with second unit. If you want to record for 30 minutes, type 1800 for the value of *PostTime* and then the recording will continue on pressing the *Record* button for 30 minutes.

Step 6. Set the *Skip Frame* and *Record Frame* with referring below explanation and example.

• Skip Frame

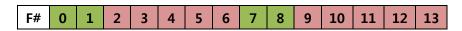
This is to set the number of frames to skip between *Record Frame*. Refer to the examples below.

• Record Frame

This is to set the number of recording frames. For example, if the value is 0, only 1 frame is recorded every time after skipping the number of *skip frame* you set above.

*e.g.* If you set 149 for *Skip Frame* and 0 for *Record Frame* with FPS 30, you will get 1 frame per 5 seconds.

*e.g.* If you set 5 for Skip Frame and 1 for Record Frame with, you will get the frames as below.



Recording Frame

Skip Frame



You must set the video format to MJPEG when you want to use Ftp server for recording.

## 4.5.3. Playback the recoded data in USB device

If you have completed USB recording steps, you can check out the recording status. If you don't see created file in the *Record List*, it means recording is not completed

- **Record List** : Show the created recording files (Red line box in the picture below)
- **Play** / **Stop** : Select one of the files in the *Record List* and click *Play* or *Stop* button for display control

• **Delete** : Select the file you want to remove and click *Delete* button NVE4000

NVE4000			CAP http://
		SingleView   MultiVi	ew Setup
50 50			
► Video	USB Record List		
► Audio	Play		
Network	Record List Stop		
► Event	Delete		
▼ Record			
Record			
USB Data			
► System			
▶ 10			

## 4.6. System Setup

## 4.6.1. System Date

NVE4000		CAP http://
		SingleView Setup
► Video	Device Time	e
► Audio	Time	Date: 2008-08-08 Time: 06:25:51
Network		
Event	Date Config	guration
► Record	TimeZone	GMT 💟
▼ System		Client Time Date : [2008-08-06] Time: 15:25:29
System Date	TimeMode	NTP server
System Update	Imemode	NTP server: time.nist.gov
User Management		User Setting Date : [2008-08-06] Time : [15:25:27]
PTZ protocol	* It takes about	t 10 seconds for synchronizing system time with NTP server if changing time
System Information	mode to NTP :	server
Reboot		Save
▶ 10		

#### **Device** Time

It displays the date and time of NVE /IPC system

#### Time Zone

Select your time zone

#### **Time Mode**

You can select a time mode with 3 options and this will be reflected on NVE /IPC system

- Client time : Synchronized with your current PC time .
- **NTP server** : Synchronized with NTP server. 'time.nist.gov' is selected as a factory default but you can choose one of them from the list.
- User setting : Users can type time manually as they want.

## 4.6.2. System Update

NVE4000			CA
			SingleView Setup
► Video	System Up	late	
► Audio		Browse	
Network	Force update	Upgrade	
► Event		opgiddo	
Record			
▼ System	Current Ver	sion	
System Date	Bootloader	U-Boot 1.0.4.jb16m.33	
-	Firmware	FW V1.5.641	
System Update	Webpage	2.4.0	
User Management	ocx	1.9.0.20	
PTZ protocol	Dome firmware		
System Information			
System mornation			
Reboot			
▶ 10			

This page is required when you want to update another version of software such as bootloader, firmware, webpage, OCX or Dome Firmware. However, for more various update function and system information, "IPAdminTool.exe" is more recommended, as this utility is made for the purpose of managing the IP products in more user friendly way. Refer to the *IPAdminTool user's manual* provided in the SDK.

#### System Update

You can upload firmware files and update your NVE/IPC. Click the *Search* button and choose the file you want to upload. After that, click the *Upgrade* button. In a while, you can see the updated version information in the *Current Version* as below.

#### **Current Version**

- **Bootloader** : Current bootloader version
- Firmware : Current FW version
- Webpage : Current Webpgae version
- **OCX** : Current ActiveX version
- **Dorm Firmware** : This information is shown only when you have just uploaded the dorm firmware on this *System Update* page. This works only when your IP product is a dorm camera type. If you have not uploaded any dorm firmware with this, the version information doesn't appear here.

### 4.6.3. User Management

NVE4000			http://
			SingleView Setup
	Users Co	figuration	
► Video			Add
Audio		root guest	
Network	User	guest	Modify
Event			Delete
Record			
▼ System			
System Date			
System Update			
User Management			
PTZ protocol			
System Information			
Reboot			
> 10	1		

There are two user types provided by default.

ID	Password	Security Level
root	pass	Admin
guest	guest	Guest

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

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

#### How to add a user

#### 1. Click *Add*.

- 2. Type ID & password and select security level on "User add" pop-up window.
- 3. Select Add button on "User add" pop-up window.
- 4. Click *Close* on "User add" pop-up window.

#### How to delete a user

- 1. Select a user to delete in User List.
- 2. Click *Delete*.
- 3. Click *OK* on confirming dialog.
- 4. Click *Close* on "Remove user" pop-up window.

#### How to modify a user

- 1. Select a user to modify in User List
- 2. Click *Modify*.
- 2. Modify the password or security level.

3. Select *Modify* on "User Modify" pop-up window.

4. Click *Close* button on "User Modify" pop-up window.

## 4.6.4. PTZ Protocol

This page shows the list of current PTZ protocols built-in the NVE and also you can upload the new protocol as well if your camera is using protocols other than on the NVE webpage.

If you want to know whether the protocols you need are supported or not, please give an inquiry to our <a href="mailto:support@udptechnology.com">support@udptechnology.com</a>.

Video	PTZ Protocol				
	Protocol Name	FileName	Туре	Version	Description
<ul> <li>Audio</li> <li>Network</li> </ul>	American dynamics	american_dynamics.ptzs	built-in	1.1.0.0	American dynamics ptz protocol for SpeedDome series
	Bosch(ltc856x)	bosch(ltc856x).ptzs	built-in	1.0.0.0	Bosch(LTC 856x) protocol
Event	Custom02	custom02.ptzs	built-in	1.1.2.0	PTZ Protocol
Record	Kalatel(ascii)	kalatel(ascii).ptzs	built-in	1.0.0.0	Kalatel ascii protocol
▼ System	Panasonic(CS850)	panasonic(CS850).ptzs	built-in	1.1.0.0	Panasonic(WV-CS850) protocol
	Pelco-D(probe)	pelco-d(probe).ptzs	built-in	1.1.0.0	Pelco-D protocol for probe
System Date	Pelco-D	pelco-d.ptzs	built-in	1.1.1.0	Pelco-D protocol
System Update	Pelco-P	pelco-p.ptzs	built-in	1.1.0.0	Pelco-P ptz protocol
User Management	Samsung-elec	samsung.ptzs	built-in	1.1.2.0	PTZ Protocol for samsung elec
PTZ protocol	Upload new protocol		Browse	Uploa	d
System Information					
Reboot	* Please refresh the	page if the ptz list is not sh	own properly	atter upload	ding or deleting the PTZ driver.
▶ 10					

#### How to add PTZ protocol manually

- 1. Click *Browse* button.
- 2. Choose the required file and click *Upload* button.
- 3. In a while you can see the protocol is added on the list

If you go to the menu of *IO* -> *PTZ*, you can choose the PTZ protocol you want. Refer to the *4.7.3 PTZ* to find out how to apply the newly added protocol to NVE.

## 4.6.5. System Information

NVE4000			http
п			SingleView Setup
► Video	NVE4000 Inf	ormation	
Audio	MAC	00:13:23:03:1D:E0	
Network	TIME	2008-08-06 06:12:45	
<ul> <li>Event</li> </ul>	Version Info	rmation	
> event	Bootloader	U-Boot 1.0.4.jb16m.33	
Record	Firmware	FW V1.5.641.11304	
▼ System	Webpage	2.4.0	
	OCX	1.9.0.20	
System Date	Dome firmware		
System Update	Server report		
User Management			
PTZ protocol			
System Information			
Reboot			
▶ 10			

This page shows the system information below (The picture above is the example of NVE4000).

#### **NVE4000 Information**

- MAC : MAC Address
- **TIME** : Date and time information being applied to the current NVE/IPC system

#### **Version Information**

- **Bootloader** : Bootloader version.
- **Firmware** : Current firmware version
- Webpage : Current web page version
- OCX : Current ActiveX version
- **Dorm Firmware** : This information is shown only when you have just uploaded the dorm firmware on this *System Update* page. And also the works only when your IP product is a dorm camera type. If you have not uploaded any dorm firmware with this, the version information doesn't appear here.

## 4.6.6. Reboot

NVE4000			CAP http://
			SingleView   Setup
► Video	System Reboot		
► Audio		_	
Network		OK	
► Event			
► Record			
V System			
System Date			
System Update			
User Management			
PTZ protocol			
System Information			
Reboot			
▶ 10			

When you want to reboot your NVE/IPC system on the webpage, you can reboot it on this page without physical operation. Just click OK button and then a pop up window as below is shown. It will take about 1~2 minutes to complete system rebooting. It will take about 110 sec.

Windows Internet Explorer
Do you really want to restart device?
OK Cancel

## 4.7. 10 Setup

## 4.7.1. Serial Port Setting

		SingleView   MultiView   Setup
► Video	RS232 RS485	
► Audio	RS-485 Cont	figuration
Network	Baudrate	9600 🗸
► Event	Databits	8 🗸
	Parity	none 👻
Record	Flow Control	none 🔻
System	Stopbit	1 💌
▼ 10	* You should re	boot the device for applying the new serial configurations.
Serial Port Setting		Save
DI/DO		Save
PTZ		
External Video Out		

This page provides the configuration of RS-232C and RS485. You can select one of the value from the list but the value settings on the picture above are default and normally recommended.

- **Baudrate** : 9600
- Databits : 8
- **Parity** : none
- Flow Control : none
- **Stopbit** : 1

## 4.7.2. DI/DO Setting

NVE4000	CAP http://
	SingleView   MultiView   Setup
► Video	DI State
► Audio	DI0 DI1 DI2 DI3 DI3
Network	
Event	DO State & Control
Record	D00 D01 D02 D03 D
► System	
▼ 10	
Serial Port Setting	
DI/DO →	
PTZ	
External Video Out	

You can set and get the information of DI and DO. For NVE4000, each 4 channel of DI and DO are provided. This webpage is refreshed every3 seconds for checking up DI/DO status.

NOTE : If your NVE/IPC model doesn't support DI and DO, this configuration part is disabled with gray. Please check out the specification of DI/DO of your model.

## 4.7.3. PTZ

						SingleView	S
	PTZ Confi	guration					
Video		Enable	PtzDriver		Addr	CommPort(0~	1)
> Audio	PTZ1		None	*	1	1	
Network	PTZ2		None	~	1	1	
Event	PTZ3		None	~	1	1	
Record		· • • •					
> System	PTZ4		None	*	1	1	
▼ 10				Apply			
Serial Port Setting							
DI/DO							
PTZ							
External Video Out							

PTZ protocol options are shown in the drop down combo box and you can choose a protocol you want per video channel.

- 1. Check *Enable* in the check box and choose the protocol you need.
- 2. Set the *Addr* and *CommPort*.
- 3. Click *Apply* button.

#### **PtzDriver**

Select the protocol you want to use from the list.

#### Addr

You should set the Addr value according to the ID you set by dip switch of PTZ camera.

**CommPort(0~1)** 0 means RS232C 1 means RS485C

## 4.7.4. External Video out Setting

NVE4000						CAP http://
				SingleView	MultiView	Setup
► Video	Video Out					
► Audio	Select	Quad 🗸				
Network						
► Event	Video Loop	oback				
► Record	0-1	No 🔽				
► System	2-3	No 🗸				
▼ 10						
Serial Port Setting			Save			
DI/DO						
PTZ						
External Video Out 🛛 👄						

This page provides the external video output setting and video loopback function setting. The video loopback is related to the dual stream. The dual stream is useful when you want to use one video stream as separate two streams with different video settings (image size, codec type, frame rate and so on).

#### Video Out

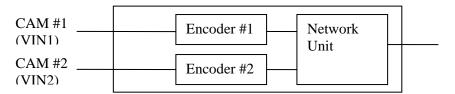
You can choose either single view or multi-view of your stream on the external output. *Quad* displays 4 channels as a quad multi-view on the external video out (Only NVE4000 supports Quad option). Switching-view displays the selected channel one by one on the external video out.

#### Video Loopback

J-11 YES / NO : Enable or disable the video loop back of channel 1 stream 2-3 YES / NO : Enable or disable the video loop back of channel 3 stream

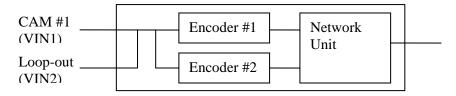
Only NVE2000 and NVE4000 are available with dual stream use. The diagram of single stream mode and dual stream mode as below would help your understanding.

#### **Single Stream Mode**

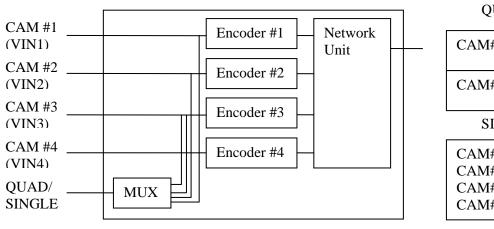


#### **Dual Stream Mode**

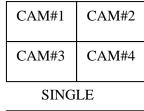
**Single Stream Mode** 



Dual stream of NVE2000

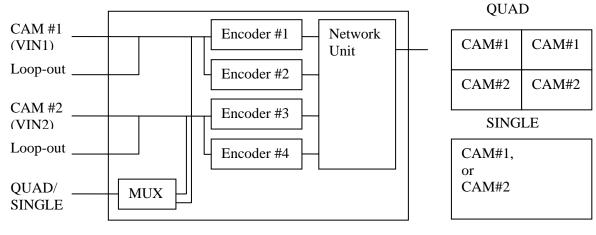


External Video Out QUAD





#### **Dual Stream Mode**



Dual stream of NVE4000

## **Revision history**

Rev.	Date	History		
А	2007-11-16	Created		
В	2008-01-18	Event Server setting corrected		
С	2008-03-25	Updated webpage version interface correction		
D	2008-04-15	Hue adjustment unavailable for PAL in only IPC and NVE100		
		Shared memory usage added		
		User RTSP port description added		
E	2008-04-23	PTZ protocol menu added		
F	2008-06-05	OSD Time configuration corrected		
G	2008-06-23	Snapshot feature corrected		
Н	2008-08-06	• HVRB mode is added for video setting		
		Deinterlace mode is added		
		• <i>Recording server</i> and <i>DO server</i> are added to Event server list		
		Recording on USB memory is corrected		
		• Added how to see the video with RTSP multicast via VLC		
		player		
I.1	2008-11-14	• <i>MIC enabled</i> feature is added on the SingleView page		
		• SMTP server2 is deleted		
		• Log in step is added in SMTP server		
		• PPPoE added.		
		Enabled option was removed in Audio Output Setting		
J.1	2009-03-23	Domain name for FTP server is available		
K.1	2009-04-21	• The limitation of coordinate value for OSD (x,y) is added.		
		• The audio availability is distinguishable on the webpage per model.		
		• The DI/DO availability is distinguishable on the webpage per model.		
		• More of NTP servers are added to the date and time		
		configuration setting page.		
		• kalatel.ptzs is added newly to the built-in PTZ protocol list.		
L.1	2009-05-15	OSD date format changed		
M.1	2009-08-12	[FW v1.12.666]		
		• OSD time setting page for channel of 2,3, and 4 are removed		
		• Options for serial data bits are added		