



**AirGoggle™ NVC100/110**

**Network Video Camera**

**User's Manual**

**Inscape Data Corporation**



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Inscape Data Corporation

## Directions

The NVC100/110 is designed for indoor use only. When using the NVC100/110 outdoors or in an environment that exceeds the limited range, you must separately use a water-resistant case.

Be careful not to cause any physical damage by dropping or throwing the NVC100/110. Especially keep the NVC100/110 out of reach from children.

Do not disassemble NVC100/110. Doing so will cause you to be excluded from After Service.

Use only the power adapter provided with the NVC100/110.

If you would like to use the NVC100/110 for security monitoring, please check the legal regulations within the country.

## Note

This equipment has been manufactured and tested to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures :

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into and outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help.

**Caution**

Any changes or modifications in this device which are not expressly approved by Inscape Data could void the user's authority to operate the equipment

This appliance and its antenna must not be co-located or operating in conjunction with any other antenna or transmitter. A minimum separation distance of 20 cm must be maintained between the antenna and the person for this appliance to satisfy the RF exposure requirements.

Revision History

Date	Rev No	Description
2004-7	1.1	Initial Release
2004-12-29	1.3	Supporting PC – Removed Window 98SE Modifications and new features in Admin page Network, Motion detection, Encryption, Upgrade

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# 1. Introduction

## 1.1. Overview

The NVC100/110 is a state-of-the-art network video camera (and simultaneously a 1-channel A/V server) which transmits both video and audio data in real time with high resolution at a high frame rate. This is possible through MPEG4 CODEC technology, which provides data transmission at high compression rates with high data resolution via networks. The NVC100/110 can be connected, controlled, and monitored from a remote location through an IP address. Unlike CCTV or DVR, the NVC100/110 is easy to install and also cuts costs and space without any additional installation. Based on Embedded Software Solution (Embedded Web Server, Embedded Streaming Server, Network Protocol), the NVC100/110 ensures high performance and stability and provides integration of various Internet solutions.

## 1.2. Features of NVC100/110

- 1 channel real time audio/video streaming based on **MPEG4 video and ADPCM audio**.
- 1 channel bi-directional audio between the 100/110 and the client PC for two-way communication
- The viewer assists **recording and playback functions**.
- 1-alarm sensor input/1 relay output
- Motion detection (Up to 3 motion detection regions)  
Motion detection can initiate video recording, which is sent to the user through the FTP and (or) E-mail.
- Resolution:
  - NTSC Video: 640x480 (VGA, for still image/small motion), 640x240, 320x240 (QVGA)
  - PAL/SECAM: 704x576 (for still image/small motion), 704x288, 352x288 (CIF)
- Remote P/T/Z control
- Remote software upgrade over network
- Easy to use with a convenient user interface

## 1.3. Applications of NVC100/110

- Security surveillance (buildings, stores, factories, parking lots, banks, government facilities, military, etc.)
- Real time Internet broadcasting (resort areas, events, etc.)
- Remote monitoring (hospitals, kindergartens, traffic, public areas, etc.)

- Teleconference (bi-directional audio conference)
- Remote learning
- Weather and environmental observation

## 2. Product Description

### 2.1. Contents

Open the package and make sure it contains the following:

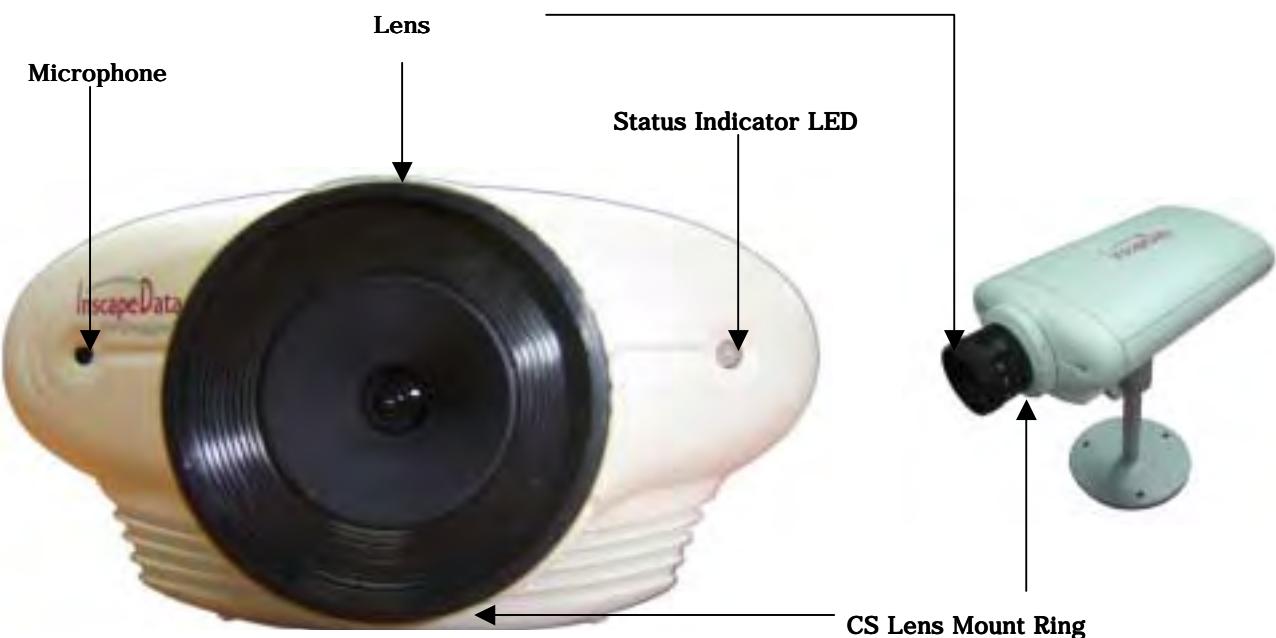
Components	Description	Remarks
<b>NVC</b>	MPEG4 Network Camera	NVC100 : Fixed Iris Lens NVC110 : Auto Iris Lens
<b>Power adapter</b>	Input: 100~250V 50-60Hz Output: +12V, 1.0A	NVC110P includes PoE power injector module
<b>AC power cable</b>	AC 250V, 10A~16A	
<b>LAN cable</b>	6ft. LAN cable – crossover type	For direct connection between the server and PC.
<b>CD-ROM</b>	Software & User's Guide	
<b>Quick Reference Guide</b>		Warranty Information
<b>Mounting Stand</b>		
<b>Antenna</b>	5 dBi Omni-antenna	NVC110W only

### 2.2. Preview

NVC100/110	IP-Installer	NVR100 Software
		
NVC100: Fixed Iris Lens NVC110: Auto Iris Lens NVC110P : NVC110+PoE NVC110W : Wireless NVC	PC software to allocate an IP address to the NVC100/110	PC software to view and record the A/V streaming data transmitted from the NVC100/110

## 2.3. Physical description

### 2.3.1. Front View



**Figure 2-1. Front view of NVC100**

- **Lens Assembly:**

NVC100 has fixed focal (6mm), fixed iris lens with C/CS mounting converter and NVC110 has vari-focal (3.5 ~ 8mm) auto iris lens with a CS type mounting fixture. It can be replaced with other lens types with CS mounting.

- **Status Indicator LED:** Status indicator LED shows the status of the NVC100/110 in 3 different colors.

- ① Green: Green color indicates that the NVC100/110 is in normal operating condition. A continuous green light indicates that the NVC100/110 is ready for transmitting data. A flickering green light means that someone is connected to NVC100/110.
- ② Red: A red light flickers or stays continuously on when the hardware of NVC100/110 is in abnormal condition.

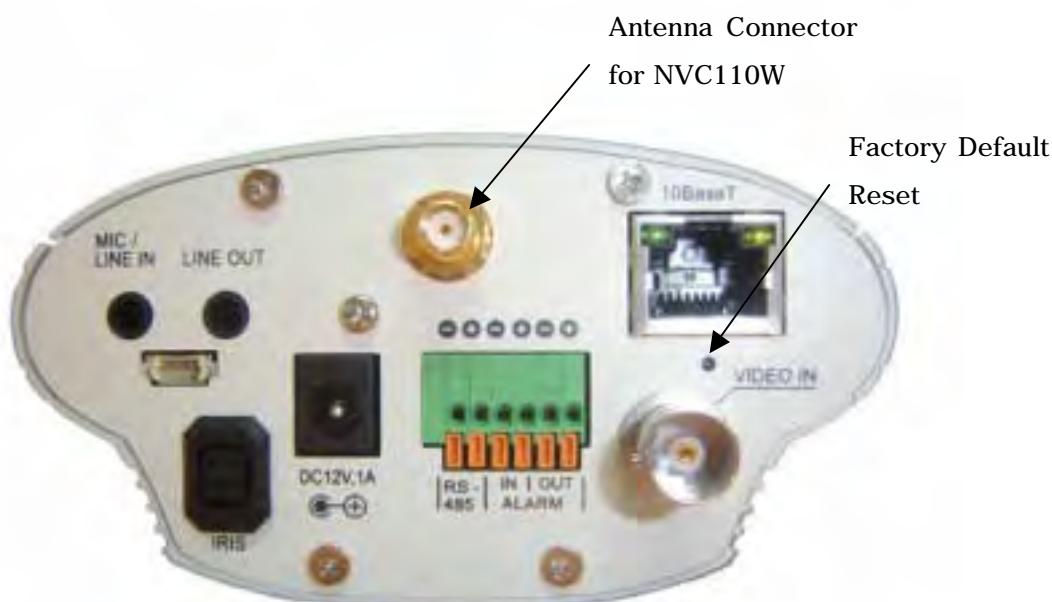
③ Orange: An orange light flickers or stays continuously on when the software of the NVC100/110 is in abnormal condition.



The status indicator LED temporarily lights red then returns to green when applying power to the NVC100/110, which is normal.

- **Microphone:** Picks up sound from the environment for transmission over the network.
- **Mount Ring:** Used for attaching the lens unit to the NVC100/110.

### 2.3.2. Rear panel



**Figure 2-2. Rear Panel of NVC100/110**

- **MIC/LINE IN:** Is used to connect an external audio source or microphone to the NVC100/110.
- **LINE OUT:** Is used for connecting external speakers with the built-in amplifier. Audio from a remote site is output through Line Out in bi-directional audio mode.  
Use a standard stereo earphone jack for the connection.

- **10Base-T:** 10Mbps Ethernet connector (RJ-45).
- **LINK LED:** A green light means that the network cable is in normal condition.
- **LAN LED:** When there is traffic on the LAN, a yellow light flickers.
- **RS-232 (3 pins):** Used only by developers for modifying a program.
- **DC12V, 1A:** Power input of the NVC100/110- 12V/1A.
- **DC-IRIS:** Plug in the cable attached on the standard DC-Iris lens (Apply for NVC110).
- **RS-485 and ALARM IN/OUT:** Is used for connecting P/T/Z and alarm devices to NVC100/110. Pin assignments are:

Pin 1	RS-485 Negative (-) input
Pin 2	RS-485 Plus (+) input
Pin 3	Alarm In (-)
Pin 4	Alarm In (+)
Pin 5	Alarm Out (-)
Pin 6	Alarm Out (+)

- RS-485: Used for connecting Pan/Tilt/Zoom devices having an RS-485 interface standard.
- Alarm In: It is used for connecting external alarm sensors such as the infrared sensors, heat sensor, magnetic sensors, etc.
- Alarm Output: It is used for connecting external alarm generators such as sirens, flashing light, etc. When activated, relay output configures a closed circuit

- **VIDEO-IN :** External Video input (composite NTSC, PAL, SECAM)
- **Factory Default Reset :** Press and hold for 5 second to make factory default configuration
- **Antenna Connector :** Connect 5dBi antenna supplied with NVC110W (RP-SMA)

## 2.4. PC Requirements

Streaming A/V data from the NVC100/110 can be observed through the NVR100 software program, which is a viewing & recording program that runs on a PC. Minimum requirement of the PC is described below:

	<b>Minimum</b>	<b>Recommended</b>
CPU	Pentium III 700	Pentium IV 1.2G above
Main Memory	128 MB	256MB above
Operating system*	Windows 98 SE.	Windows 2000 or later
Web browser	Internet Explorer 5.0	Internet Explorer 5.0 above
Resolution	1024 X 768	1600 X 1200
Network	10 Base-T Ethernet	10/100 Base-T Ethernet

\* Operating systems supported: Windows 98 Second edition

Windows ME

Windows 2000 Professional

Windows XP Professional / Windows XP Home Edition

## 2.5 Quick Installation Guide

Brief information for rapid installation is provided in this section. For more detailed information, refer to the pertinent documents provided with the product, or refer to Inscape Data's home page (<http://www.InscapeData.com>).

- 1. Apply power to the NVC100/110.**
- 2. Connect NVC100/110 to your PC or network by using one of the following methods:**

- Connect your PC and NVC100/110 using the Cross Type LAN cable provided with NVC100/110 or
- Connect the NVC100/110 and your PC to an Ethernet using Direct Type cable.

- 3. Install "IP installer" and "NVR100" on your PC.**

Detailed information for installing these programs can be found in the **IP-Installer User's Guide** and the **NVR100 User's Guide**, respectively.

- 4. Assign an IP address to the NVC100/110 using the IP installer.**

Identify the type of the network environment and set up the IP address. A detailed process for setting up the IP address can be found in the **IP-Installer User's Guide**. If the network type is xDSL or cable modem, you will need supplementary information

provided by your ISP.

## 5. Connect to NVC100/110 in Administrator Mode for initial parameter set-up.

All parameters are set to the factory default state when the NVC100/110 is delivered to you. You are asked to configure the system for your environment in administration mode.

Detailed information for using the administration mode can be found in [\[5. Configuring the A/V Server in Administrative Mode\]](#). The parameters in the following table should be set up with the proper values. Detailed information for the parameters in Administrator Mode can be found in [\[5. Configuring the A/V Server in Administrative Mode\]](#)

**[Note]:** Setup values are preserved even when the power is turned off.

Page	Parameter	Setup value	Factory default value
Basic Setup	Video Size	Define the resolution of the video transmission from the NVC100/110.	Make sure that you press the Check button to find out the number of maximum possible simultaneous users, then set the number of users as smaller than or equal to that number.
	Max Upload Rate	Set this value as smaller than the upload speed of your network.	
	Frame Rate	Indicates the number of frames transmitted per second.	
	Video Rate	Indicates the bandwidth allowed for video transmitted from the NVC100/110.	
User Admin & Time Setup	Administrator Name & Password	For safety, it is recommended that you change these values from the factory default. For a new connection, you need to input the changed values for the corresponding fields. Do not share these values with others, and memorize them for safety.	Default value  Username: root  Password: dw2001
User Admin & Time Setup	Current Time	Input the correct time in this field.	Default value:  2001/1/1

## 6. Connect the input and output signals to NVC100/110.

The NVC100/110 does not function properly if there is no video and audio input- you have to connect at least one Video In.

Refer to the following table:

Connectors	Function	Signal description	Number
<b>Video In</b>	Input Video Connector	Analog video outputs from analog CCTV camera, DVD, TV etc., (NTSC/PAL/SECAM)	1
<b>LINE-In/MIC</b>	Audio In	Connects microphone or output from audio devices.	1
<b>Line Out</b>	Audio Out for Speaker	When in bi-directional audio mode, the audio signal from a remote site is available from this connector. Use a speaker with an amplifier.	1
<b>Alarm In</b>	Connecting Alarm Sensor	IR sensor, Motion Sensor, Smoke Detector. . .	2
<b>Alarm Out</b>	Connecting Alarm Alerting Device	<b>SIREN, FLASHING LIGHT, ...</b>	2
<b>RS485</b>	PTZ Device Control	Remote P/T/Z control having RS485 interface.	1
<b>10Base-T</b>	Network Connection	Connect the NVC100/110 to an Ethernet connector from a Hub, PC, ADSL or Cable modem.	1

## 5. Video connection to NVC100/110

You can connect to the NVC100/110 in video mode by running the "[NVR100 Software](#)" program on your PC. Detailed information on using the "NVR100" can be found in the [NVR100 Software User's Guide](#).

## 3. Connecting the NVC100/110

The NVC100/110 supports LAN, xDSL, and Cable modems. It also supports shared IP networks where single IP is shared by many devices using an IP sharing device. Refer to the [IP-Installer User's Guide](#) for details on setting the IP address for the NVC100/110 using the "IP-Installer".

### 3.1. Connecting to LAN

When connecting the NVC100/110 to an LAN, it is generally connected as follows:

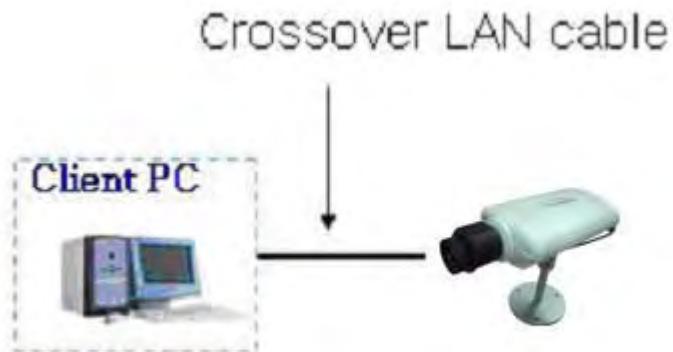


**Figure 3-1. Connecting the NVC100/110 to LAN**

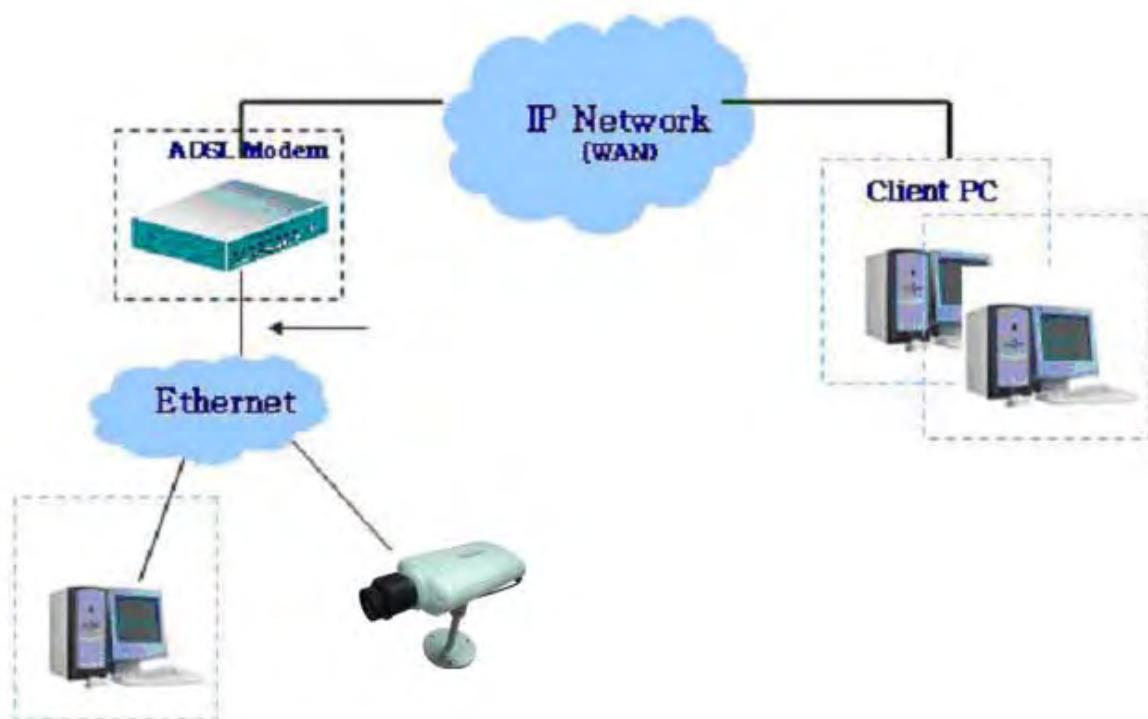
1. After applying the power, connect the LAN cable and assign an IP address to the NVC100/110 by using the IP-Installer.
2. To assign an IP address to the NVC100/110, run the IP-Installer on the PC connected to the same subnet as the NVC100/110 is connected.
3. Check to see if you can receive video data when connecting to the NVC100/110 using the viewer program.

### 3.2. Connecting to xDSL Modem

1. Apply power and connect the PC and the NVC100/110 using the crossover LAN cable provided with the system.
2. Set up network parameters by running the "IP-Installer."



**Figure 3-2. Direct connection using a crossover LAN cable**



**Figure 3-3. Connecting the NVC100/110 to an ADSL Modem**

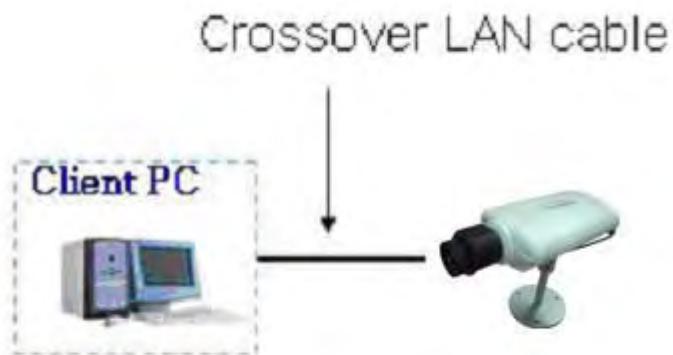
3. Remove the crossover LAN cable and connect the NVC100/110 to the network using a regular LAN cable. Check to see if you can receive video data when connecting to the NVC100/110 using the viewer program.



When connecting the NVC100/110 to an xDSL Modem, a regular LAN cable is usually required. However, since some xDSL Modems have crossover connections, please contact your xDSL provider for detailed information.

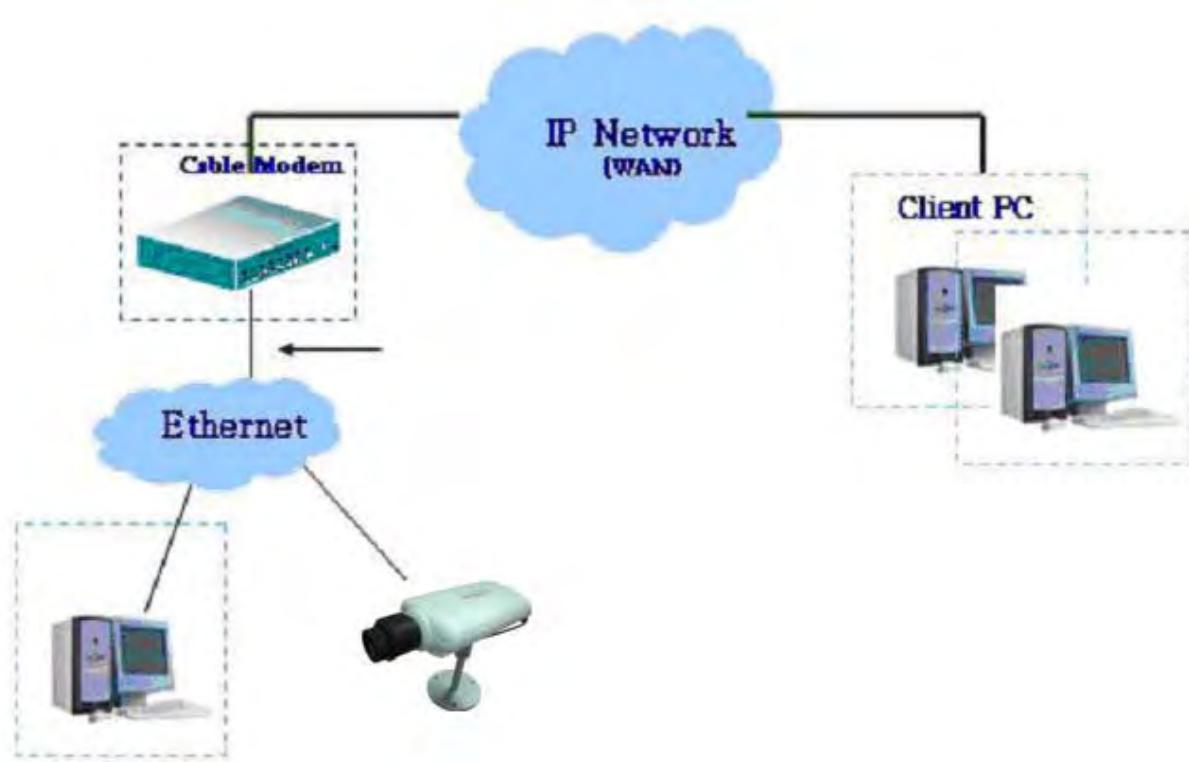
### 3.3. Connecting to Cable Modem

1. Apply power and connect the PC and the NVC100/110 using the crossover cable provided with the system.
2. Set up network parameters by running the "IP-Installer". (Refer to Figure 3-4).



**Figure 3-4. Direct connection using crossover LAN**

3. Remove the crossover cable and connect the NVC100/110 to the network using a regular LAN cable as shown in Figure 3-5. Check to see if you can receive video data when connecting to the NVC100/110 using the viewer program.



**Figure 3-5. Connecting the NVC100/110 to a Cable Modem**



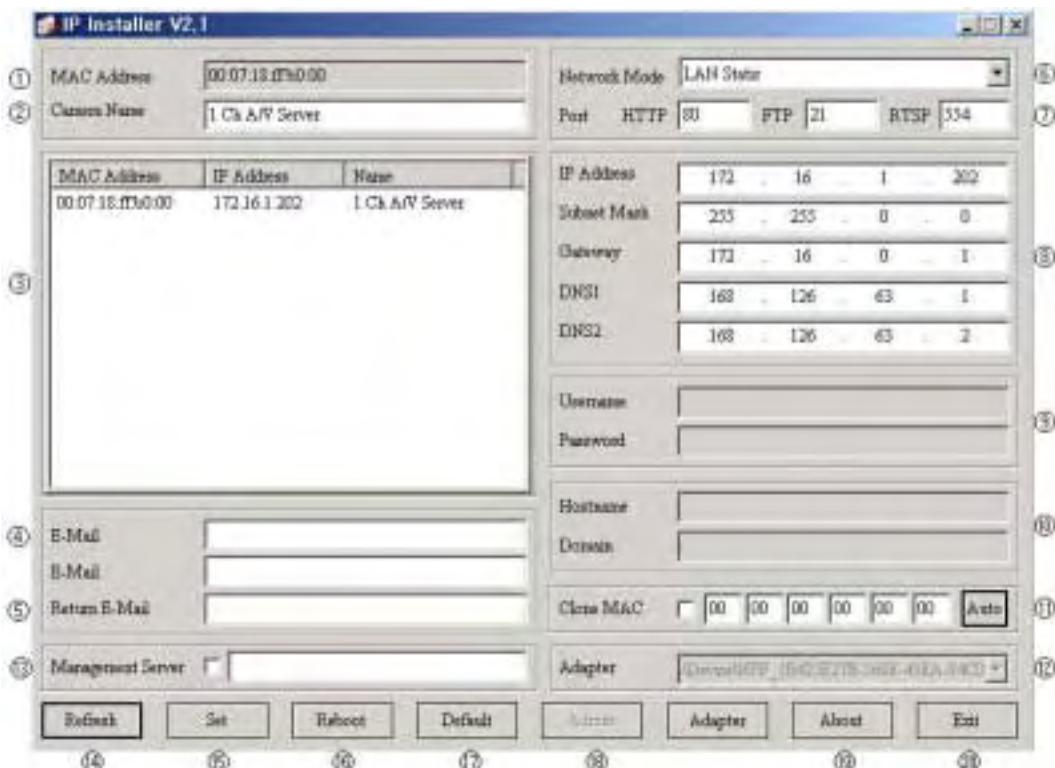
When connecting the NVC100/110 to a cable modem, a regular LAN cable is usually required. However, since some cable modems have crossover connections, please contact your cable modem service provider for detailed information.

## 4. IP-Installer

The NVC100/110 needs an IP address for connection to the network (Internet/Intranet). The IP-Installer is a PC program developed to assign an IP address and set up network parameters for digital network video security products such as the AirGoggle Network Camera and A/V Server. The IP-Installer is provided in a CD supplied with the NVC100/110, or it can be downloaded from "[www.InscapeData.com](http://www.InscapeData.com)".

**Detailed information on installing and running IP-installer can be found in the IP-Installer User's Guide.**

### 4.1. Main window of the IP-Installer



**Figure 4-1. IP-Installer**

## 5. Configuring the A/V Server in Administrative Mode

### 5.1. Log On

There are 2 ways of connecting to the NVC100/110 in administrative mode. One is through a standard Internet browser, and the other is through the “**NVR100**” program.

#### 1. Using Internet Explorer

You can log on to the server by clicking the admin mode button, or by using your Internet browser.

Type in the following address in the window of the Internet browser:

[http://\[NVC100/110 IP address\]/admin.htm](http://[NVC100/110 IP address]/admin.htm)

**Example: <http://172.16.64.133/admin.htm>**

If you changed the HTTP port from the default value, you can log in by typing:

[http://\[NVC100/110 IP address\]:\[port\]/admin.htm](http://[NVC100/110 IP address]:[port]/admin.htm)

**Example: <http://172.16.64.133:8080/admin.htm>**

#### 2. Log on from “NVR100”

Select the video channel in the viewing window of the “**NVR100**”. The selected video channel will be highlighted. Click the  button on the right side of the display screen.



**Figure 5-1. Select the display channel and click the “Camera Admin” button to log on to the administrative mode from “NVR100”**

**3. Input your User Name and Password in the display screen shown in Figure 5-2.**

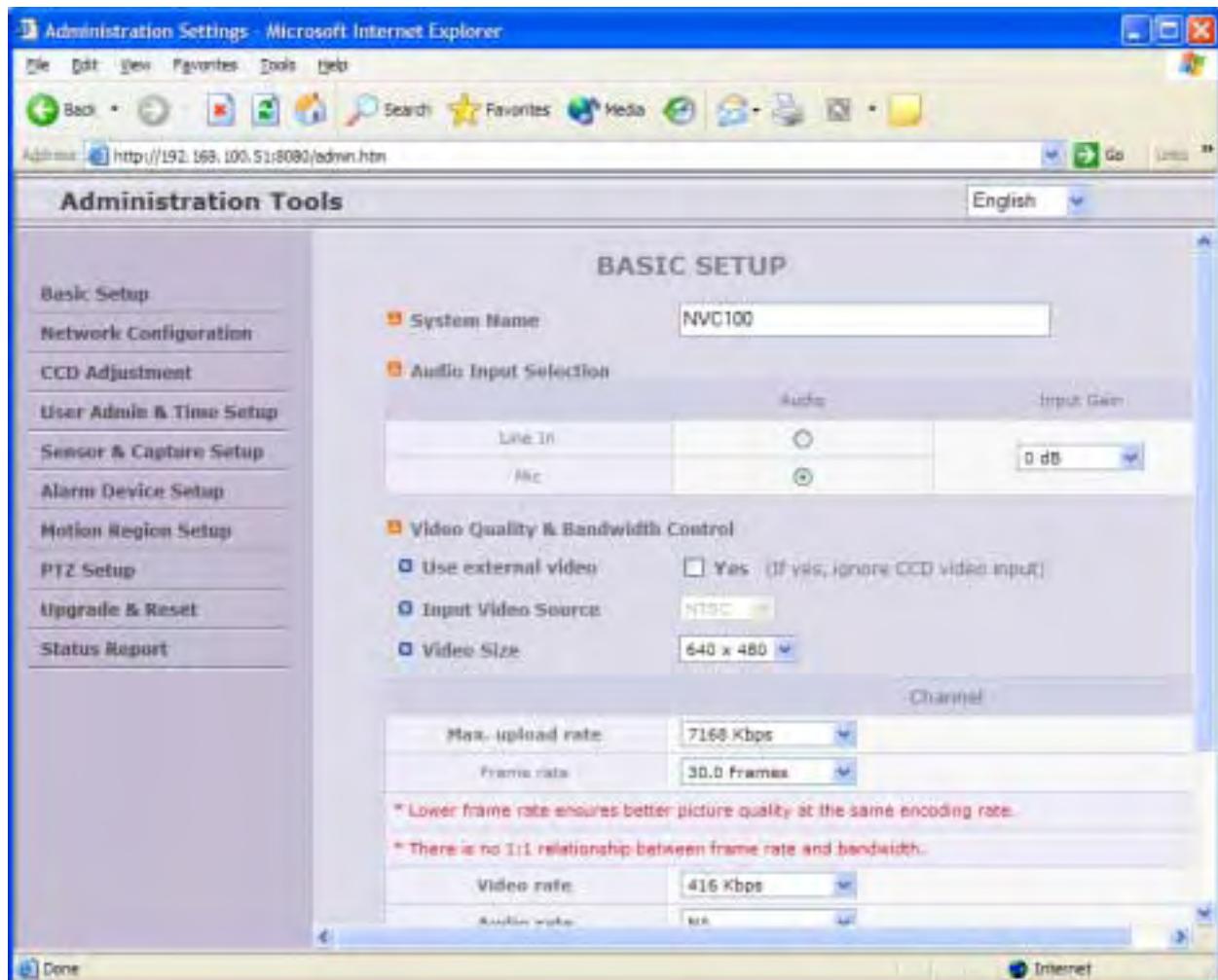


**Figure 5-2. Log On Screen**

The factory default User Name and Password are set as 'root' and 'dw2001', respectively. Click the "OK" button to enter into the Basic Setup page of Admin Mode. If you have changed the user name and password of the Administrator, you must log on with the changed user name and password.

## 5.2. Basic Setup

Set up the basic parameters of the NVC100/110.



**Figure 5-3. Basic Setup**

• **Language Selection:** You can select your language in the admin page.

- Supported languages: English, Korean, Japanese, Chinese, Spanish

• **System Name**

Is the name of the NVC100/110. It is the same as the one set up by the IP-installer. You can reassign the system name in admin mode.

• **Audio Input Selection**

- Select the type of input audio for each channel. Line In is used for connecting audio output from audio devices. Mic is used for connecting the output of microphone.
- Input Gain: Sets the gain of the input audio.

### • **Video Quality & Bandwidth Control**

- Input Video Source: Select the analog video standard for input. Select one from NTSC, PAL, and SECAM.
- Video Size: Select a video size for transmission. Allowed video sizes are different for each video standard.
  - NTSC (30 frames/sec Max.): 320x240 / 640x240 / 640x480 (still image/small motion).
  - PAL/SECAM (25 frames/sec Max.): 352x288 / 704x288.
- Max upload rate  
Assign the maximum bandwidth of the uplink for the network connected to the NVC100/110.
- Frame rate  
Assign the number of video frames transmitted for each second. You can improve picture quality by lowering the frame rate for the same bandwidth.
- Video rate  
Assign the bandwidth for transmitting video data.
- Audio rate  
Assign the bandwidth for transmitting audio data. Audio data is not transmitted if you select "NA"

### • **Check**

After you finish the setup of the video and audio for all the channels, check this box to obtain the **maximum possible number of users** (Possible Max Users) and the **network bandwidth margin** (Remained) remaining when maximum possible users are connected.

### • **Possible Max Users**

Shows the number of maximum simultaneous connections for the network connection setup.

### • **Remained**

Shows the network bandwidth margin when **Max Possible Users** are connected.

### • **Limited Users**

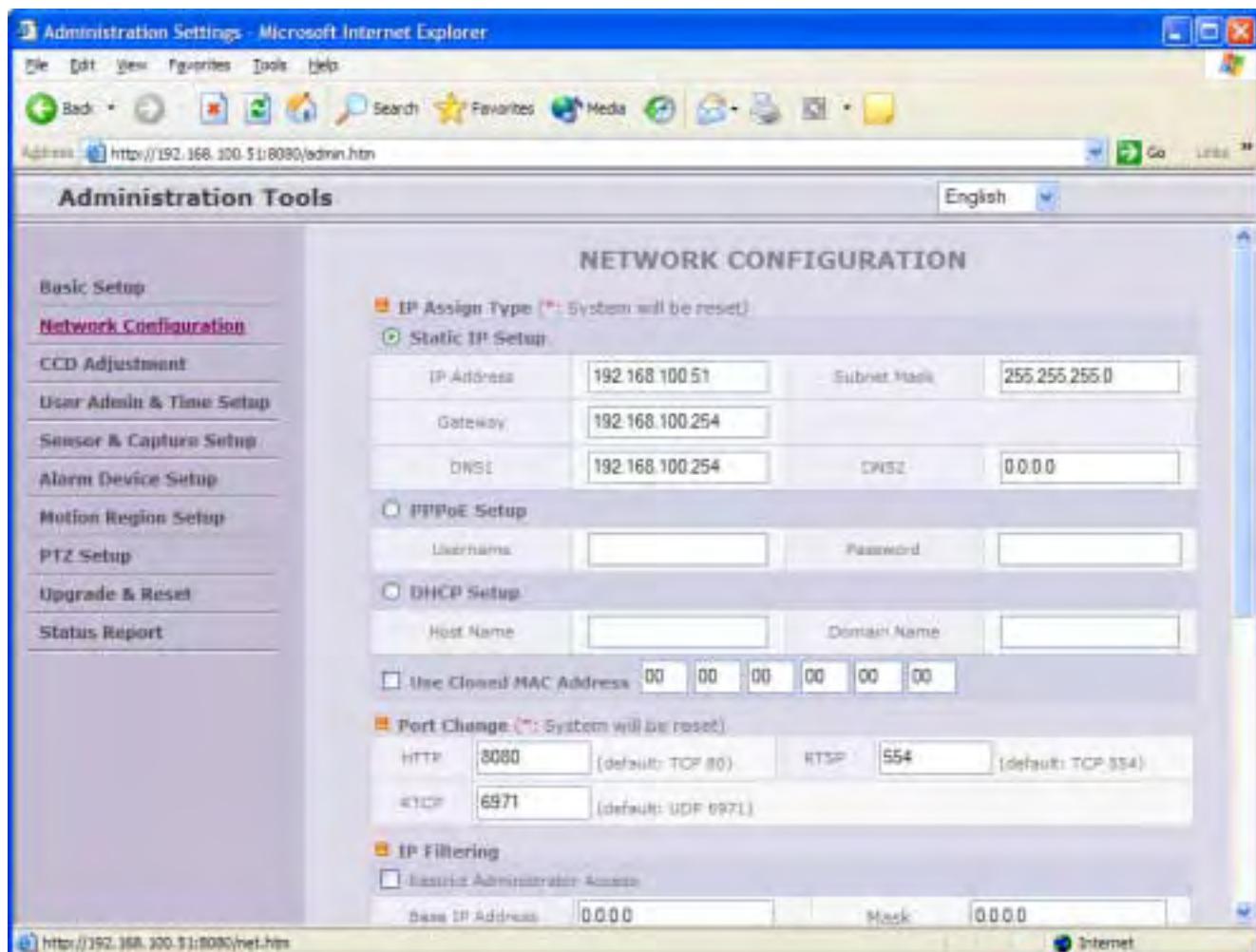
Useful network bandwidth varies according to the condition of the network. This parameter is used to limit the number of simultaneous connections below the number shown in **Max Possible Users**.

- **Save**

Save the setup parameters when the setup parameters are done.

### 5.3. Network Configuration

Set up the network parameters appropriately in accordance with your network environment. Many of the parameters on this page are the same as those used during setup by the "IP-Installer".



**Figure 5-4. Network Configuration**

- **IP Assign Type:** The network types supported by the NVC100/110 are LAN (fixed IP), PPPoE, and DHCP (automatic IP allocation)

- When the network environment is fixed IP, select 'LAN' in the network type, and put the IP address, Subnet Mask, Gateway, DNS1 and DNS2 assigned by the network administrator or ISP. DNS2 is used when DNS1 does not work.
- When the network environment is PPPoE and the IP address is assigned automatically, select 'PPPoE' in the network type. Next, fill in the 'User Name' and 'Password' fields with the values assigned by the network service provider.
- When the network environment is "automatic IP allocation by DHCP", select 'DHCP' in the network type.
  - Refer to **IP-installer user's guide** for "Clone MAC".
  - Refer to **IP-installer user's guide** for "Host name and domain for Cable Modem".

- **Port Change:** You can change the HTTP port, FTP port and RTSP port numbers. The RTSP port is used to connect the "Viewer" to the NVC100/110 <sup>TM</sup>.  
Each port should have a number below # 65535.

- **HTTP:** default "80"
- **RTSP:** default "554"

- **IP Filtering:** You can restrict the access to the administrator page from IP addresses beyond a certain IP address range.

- **Restrict Administrator Access:** Check this box to restrict administrative log on.
  - . **Base IP Address:** Input the IP address of the PC which is intended to be used for log on to administrative mode.
  - . **Mask:** This is the same as a subnet mask. It is used to allow administrative logon only to the PCs located in the same subnet as the base IP address. If you want to allow only one PC to be accessed in administrative mode, set this value to 255.255.255.255.

#### • **E-Mail Setup**

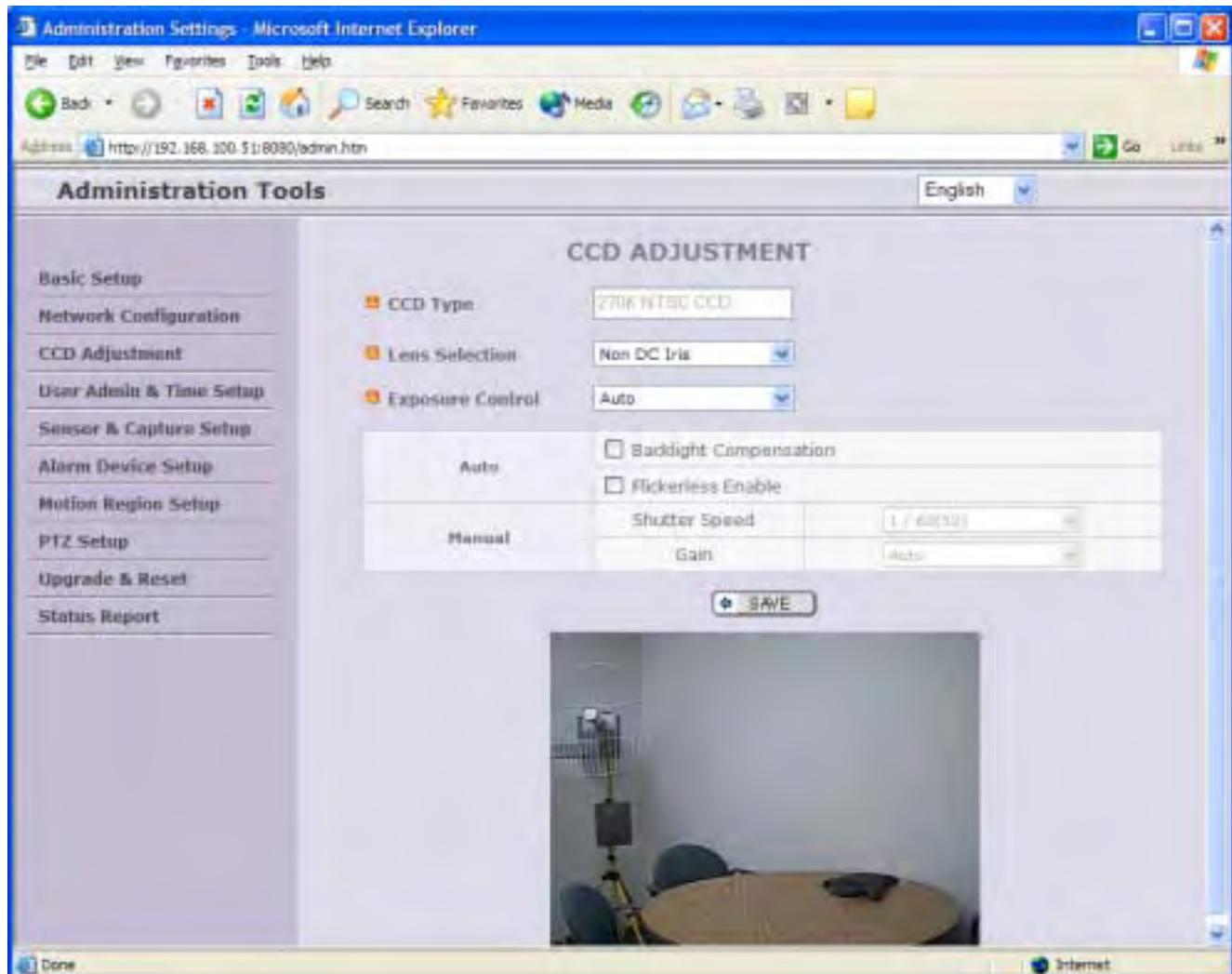
- **Recv E-Mail Address:** Refer to **IP-installer user's guide** for "Recv E-Mail Address".
- **Return E-Mail Address:** Refer to **IP-installer user's guide** for "Return E-Mail Address".
- **Notify for IP Changed:** If you check this, the IP address will be sent via E-mail whenever the IP address changes. It is sent to the E-mail address set by "Recv E-Mail Address".
  - . **Title:** Is the predefined title of the e-mail message sent to users.

- . **Message:** Is the pre-defined content of the e-mail message sent to users.
- **FTP Server Setup:** Set up IP address, Username, Password and Directory of the FTP server to send data in case of alarm. Default FTP port number is 21.
- **Management Server:** You can register the NVC100/110 to the Management Server for various support from Inscape Data. For more information about the management server, check Inscape Data's web site, [www.InscapeData.com](http://www.InscapeData.com).
- **Log on to Server:** Check this box to enable logon to the Management Server and input Server name. Default server name is: [www.AirGoggle.com](http://www.AirGoggle.com) and you should register your NVC100/110 to management server before using this feature.

## 5.4. CCD Adjustment

You can optimize the quality of the video input by adjusting the parameter of the CCD. To enter into this mode, click “**CCD Adjustment**” in the administrative page. You will find the screen shown in Figure 5-5.

**Click “SAVE” to save the parameter after you finish the parameter setting.**



**Figure 5-5. CCD Adjustment**

### • CCD Type

Either NTSC or PAL type CCD sensors are installed on the NVC100/110. The type of CCD is identified by the system and shown in this field.

### • Lens Selection

Any lens having CS mount type can be installed on the NVC100/110. The standard NVC100 is delivered with a C mount type fixed lens. In order for convenient replacement with a CS type, a C-CS adaptor is packaged with the NVC100/110.

Confirm whether your lens is a Non DC IRIS or DC IRIS lens before your selection and then click "**SAVE**" to save your selection.

<b>DC IRIS Lens</b>	DC IRIS lens is a kind of auto IRIS lens. Opening of IRIS can be adjusted by applying DC voltage. The opening of IRIS is optimally adjusted by detecting the signal level from CCD. This type is selected when CS Type DC IRIS (Auto Iris) lens is mounted on your NVC100/110. <b>DC IRIS has to be selected for NVC110.</b>
<b>Non DC IRIS Lens</b>	Non DC IRIS lens is a fixed IRIS lens. This is a standard lens that is installed with the NVC100. <b>Non DC IRIS lens is factory default selection for NVC100.</b>

#### • **Exposure Control**

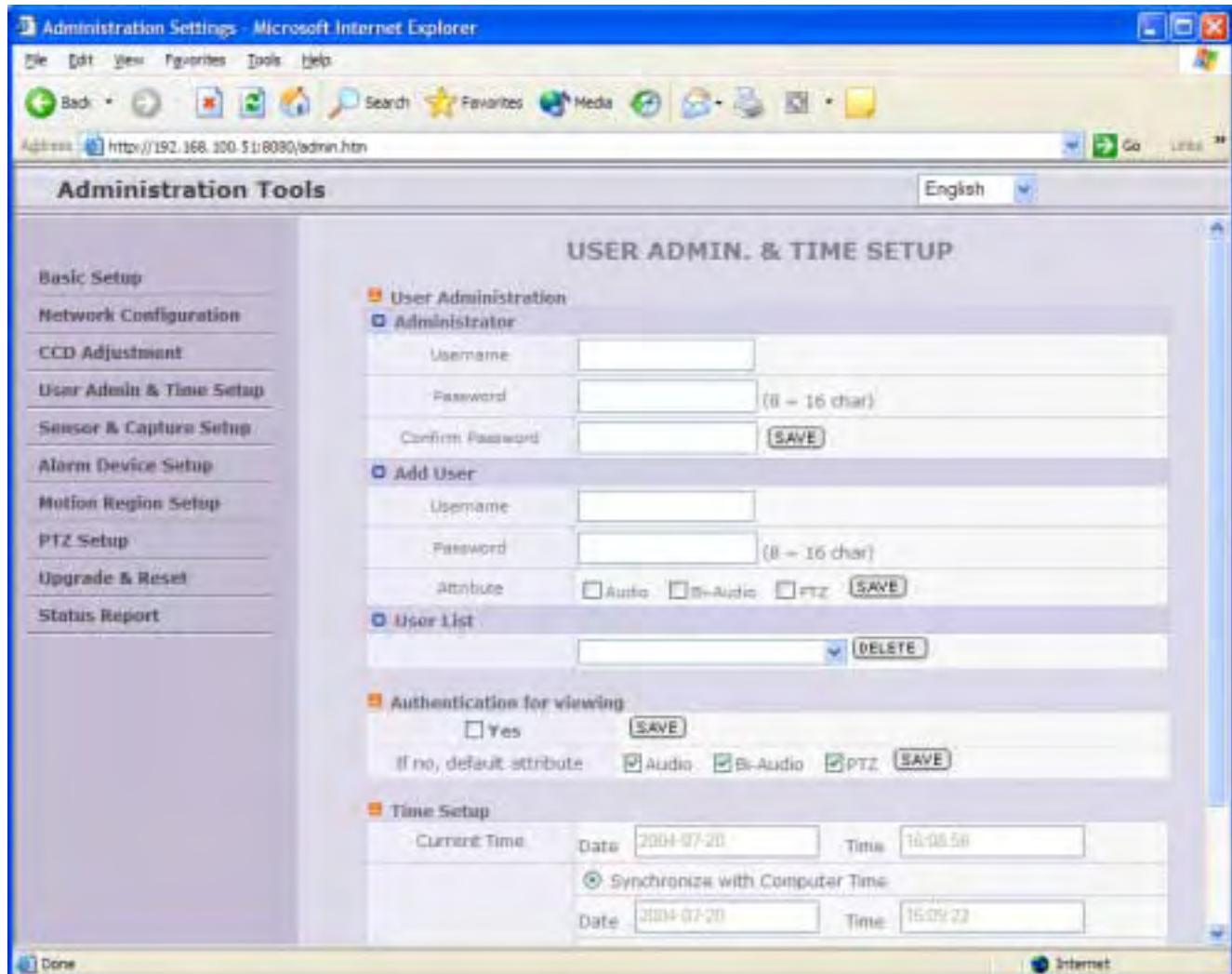
Users of the NVC100/110 can select either Auto or Manual exposure control. The sub menus in Auto exposure mode are Backlight Compensation and Flickerless Enabled. The sub menus in Manual exposure are Shutter Speed and Gain Adjustment. Set the parameters to control the amount of light reaching the CCD sensor to obtain various videos.

<b>Auto</b>	<p>Adjusts the amount of light reaching the CCD automatically. If this mode is selected, Backlight Compensation and Flickerless Enabled submenus are activated. To apply to the sub menu, check the box at the left of each sub menu and click "SAVE".</p> <p><input type="checkbox"/> <b>Backlight Compensation</b> When the camera is acquiring video from an object with a bright backlight, it is hard to identify the details of the targeting object since the object appears very dark. Apply backlight compensation mode for this case. Default mode is Backlight Compensation Off.</p> <p><input type="checkbox"/> <b>Flickerless Enable</b> When using the NTSC type NVC100/110 in a 50Hz AC regions or using the PAL type NVC100/110 in a 60Hz AC region, video output tends to flicker when the NVC100/110 is used under fluorescent lamps. This mode</p>
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	<p>reduces the flickering phenomena. If this mode is selected, the electronic shutter speed is set to 1/100 sec for the NTSC camera while it is set to 1/120 for the PAL camera to synchronize the shutter speed to the AC current.</p> <p><b>&lt;Note&gt; : Make sure that you apply this mode only when using an NTSC camera in a PAL region or a PAL camera in a NTSC region.</b></p>
<b>Manual</b>	<p>Adjust the amount of light reaching the CCD manually. The Shutter Speed and Gain sub menus are activated when this mode is selected. Check the box at the left of each sub menu and click "SAVE" to apply the sub menu.</p> <p><b>□ Shutter Speed</b></p> <p>Electronic shutter speed can be selected between 1/60 sec and 1/10000 sec for the NTSC camera. If using a PAL camera, shutter speed can be selected between 1/50 sec and 1/10000 sec. If using a DC IRIS lens under manual exposure mode, you will not find a difference in brightness when controlling the shutter speed because the opening of the IRIS is automatically adjusted. If using a NON DC IRIS lens, the brightness of the video will change as you adjust the shutter speed. When using your camera in low light conditions, set the value to a maximum (1/50 or 1/60) to increase the amount of light reaching CCD.</p> <p><b>□ Gain</b></p> <p>You can adjust the gain of CCD sensor in accordance with the speed of the shutter. If you select Auto, the gain is automatically adjusted in accordance with the situation. Alternatively, you can select one of 10, 16, 22 or 28dB to set the maximum gain. Setting the gain to a higher value will ensure you can enhance the brightness under low light conditions, while it amplifying noise level.</p>

## 5.5. User Admin & Time Setup

You can change the ID and password of users and also assign different attributes for each user.



**Figure 5-6. User Admin. & Time Setup**

### • User Administration

#### - Administrator

- . **Username:** Admin ID. Default ID is “root”
- . **Password:** Admin password. The default password is “dw2001”.
- . **Confirm Password:** Enter the password once more to confirm the password.



If you lost the Administrator's ID and password, the only means of recovery is to reset the settings to factory default, which will cause you to lose your previous settings.

### - Add User

. **Username:** Enter the user ID you want to add. Up to 100 users are supported by the NVC100/110.

. **Password:** Enter the user password.

. **Attribute:** You can set different system resource access capabilities for each of the users.

Attributes are Audio, Bi-directional Audio, and Pan/Tilt.

For example, if you want a specified user to hear the audio from the NVC100/110, check Audio in the check box.

### - User List:

You can list "user IDs" and "their attributes" here.

Format: user ID[A, BA, P] : A – audio, B – bi-directional audio, P – ptz, attribute.

You can delete specific user by clicking the "DELETE" button.

- **Authentication for Viewing:** If you want to restrict viewing access to the NVC100/110, check the "Yes" box and click on "Save". Users need to input their ID and password to connect to the NVC100/110 in viewing mode. (Figure 5-7.)



**Figure 5-7. User Authentication in NVC100/110**

- **If No, default attribute:** If you uncheck the above "Yes", every user can access the NVC100/110 without restriction with the same attribute set here. You can enable this by checking each attribute and clicking the "Save" button.



Even if you have added a user through authentication for viewing connections to the NVC100/110, it will not be enabled unless you check "Yes" in "Authentication for Viewing" and click on the "Save" button.

### • Time Setup

- **Current Time:** It shows you the current time of the NVC100/110.

- **Time Settings:** You can set the time manually or you can synchronize the time to the PC.

Options	Description
"Synchronize With Computer Time"	Synchronize the time with the PC time.
"Set Manually"	You can manually set the time.

## 5.6. Sensor & Capture Setup

This is the setup page for sensors and video capture conditions, which will be sent to user by FTP or E-mail.

The screenshot shows a Microsoft Internet Explorer window with the title 'Administration Settings - Microsoft Internet Explorer'. The address bar shows 'http://192.168.100-51:8080/admin.htm'. The main content area is titled 'Administration Tools' and 'SENSOR & CAPTURE SETUP'. On the left, a vertical menu lists: Basic Setup, Network Configuration, CCD Adjustment, User Admin & Time Setup, Sensor & Capture Setup (which is selected and highlighted in blue), Alarm Device Setup, Motion Region Setup, PTZ Setup, Upgrade & Reset, and Status Report. The 'Sensor & Capture Setup' section contains the following fields:

- Sensor Setup:** Two dropdown menus for 'Sensor 1' and 'Sensor 2', both set to 'Normal Open'. To the right are two empty text fields with '(Name)' placeholder text.
- Video Capture Condition:**
  - Sensor Select:** Two checkboxes: 'Sensor 1' (unchecked) and 'Sensor 2' (unchecked).
  - Motion Detection Select:** A checkbox 'Motion enable' (unchecked).
  - Periodic Transfer Select:** A 'Day Selection' section with checkboxes for Sun, Mon, Tue, Wed, Thu, Fri, and Sat. Below it are two time zone selection boxes, each with a 4-digit hour/minute input field (e.g., 00:00 to 23:00).
- Captured Video Transmission:** Three checkboxes: 'by E-mail' (unchecked), 'by FTP' (unchecked), and a 'SAVE' button.

**Figure 5-8. Sensor & Capture Setup**

- **Sensor Setup:** A sensor can be connected to the NVC100/110.

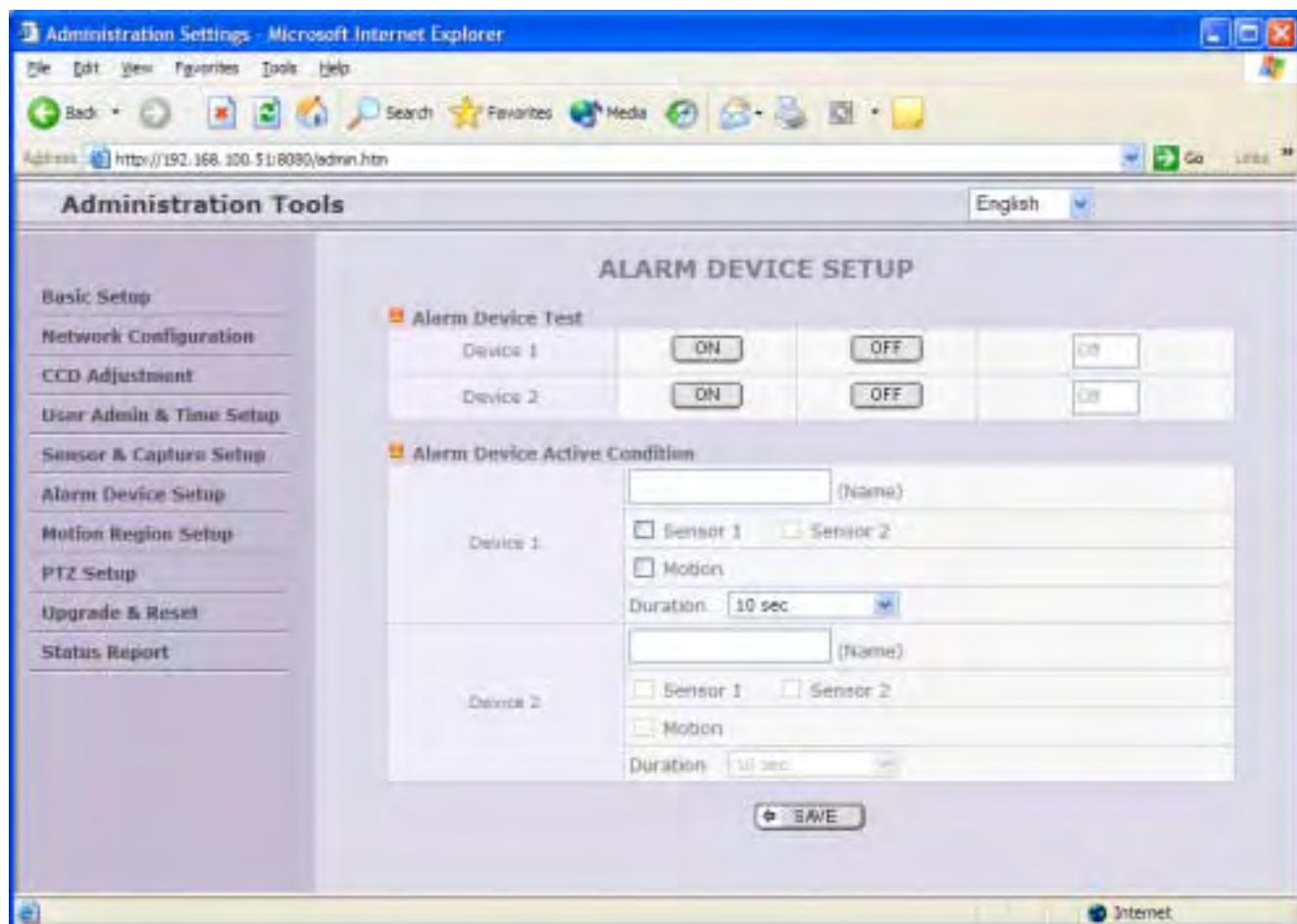
- **Type Selection:** Select sensor type. There are two types of sensors
  - . **Normal Open:** "floating" in normal situations, non-floating means an alarm condition.
  - . **Normal Close:** "non-floating" in normal situations, floating means an alarm condition.
- **Video Capture Condition:** Sets the condition of the video recording and transmission via FTP or E-mail. The NVC100/110 supports 3 types of conditions:
  1. Sensor: When at least one of the sensors detects an alarm condition.
  2. Motion-detected: When motion is detected from the video channel.
  3. Periodic: Video is recorded during pre-defined time zone.The above 3 conditions are mutually independent in operation.
  - Sensor Select: Select the sensor that triggers video capture.
  - Motion Detection Select: Select the video channel that triggers video capture.
  - Periodic Transfer Select: Set the pre-defined time for periodic video capture.
- **Captured Video Transmission:** Select a way of sending captured video. You can send captured video through FTP or E-mail, or both.
  - FTP is sent to the **FTP** Server. Refer to [\[Section 5.3.\]](#)
  - E-mail is sent to the **Recv E-mail address**. Refer to [\[Section 5.3.\]](#)If the FTP server is not properly assigned in **Network Configuration** mode, the NVC100/110 ignores the video transmission by FTP



Captured video data for E-mail consists of intra frames only in consideration of the limited storage space for E-mail account. FTP data contains entire video frames. Video for periodic recording is sent only to the FTP server.

## 5.7. Alarm Device Setup

Test alarm output and describe the condition of alarm.

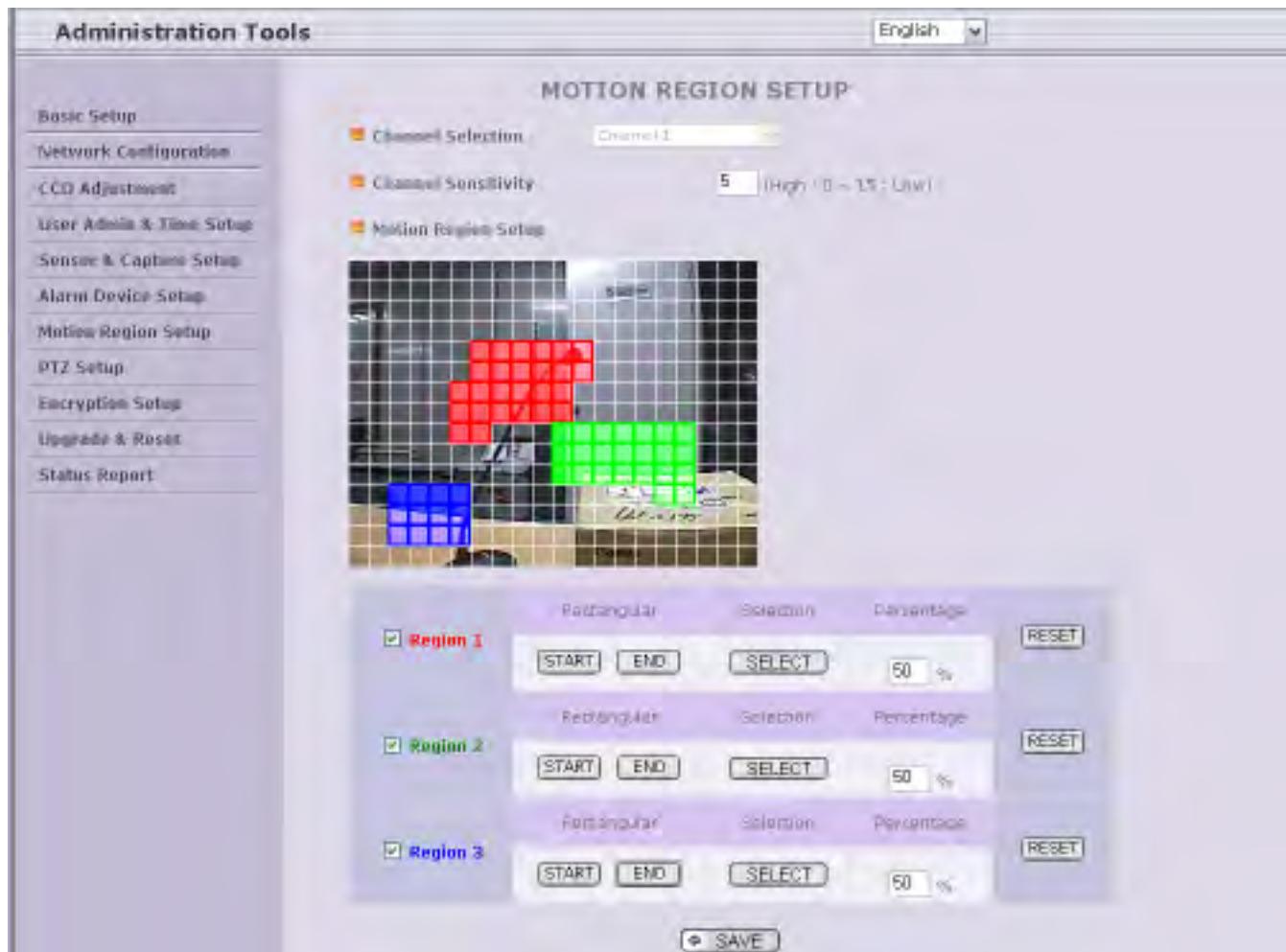


**Figure 5-9. Alarm Output Setup**

- **Alarm Device Test:** Test alarm devices. Press On/Off for testing.
- **Alarm Device Active Condition:** Set up the condition of the activating alarm device. Select sensor or motion detection as the condition.
  - **Duration:** Set the duration of the Alarm out.  
10 sec, 30 sec, 1 min, 2 min, 5 min, 10 min, 30 min, 1 hour.

## 5.8. Motion Region Setup

Set the motion detection regions. Up to 3 regions can be defined.



**Figure 5-10. Motion Region Setup**

- **Channel Selection:** Choose the channel you want to enable motion detection.
  - The NVC100/110 only has one channel (Channel 1).
- **Channel Sensitivity:** Set the sensitivity in motion detection for each channel.
  - 1 is the least sensitive number, and 66 is the most sensitive number.
  - Sensitivity values can be set to be different among channels, but the same sensitivity is applied for regions.
- **Motion Region Setup:** Set up the motion detection region with up to 3 per each video channel

- **Region 1, 2, or 3:** Motion detection is enabled for the channels by checking each box.
  - . You can set the region by pressing the "START" button, and clicking one corner of the region in the left viewing area. It will show the coordinate value automatically. Next, press the "END" button and click the other diagonal corner.

Regions are shown in three different transparent colors:

red (region 1), green (region 2), blue (region3)

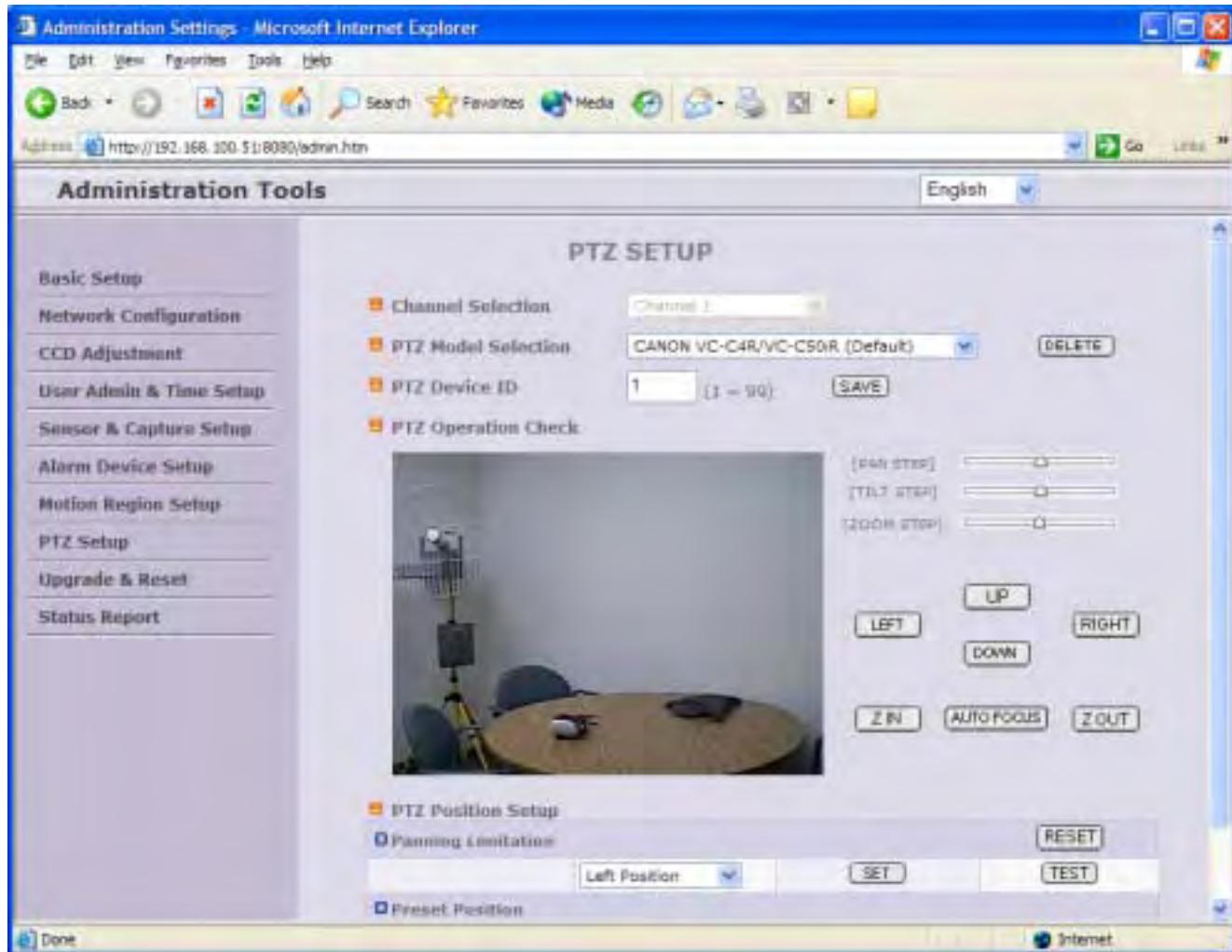
"RESET" button clears the start & end point to (0,0) & (0,0)

. Percent: This value controls the sensitivity of each region.

1 is the most sensitive and 100 is the least sensitive.

## 5.9. PTZ Setup

Set up and test the PTZ devices.



**Figure 5-11. PTZ Setup**

- **Channel Selection:** Choose the channel having the PTZ device.

- **PTZ Model Selection:** Choose the PTZ model for each channel.

Different PTZ models can be applied for each channel.

- **Delete Button:** Press this button to delete the setup of the PTZ.



Refer to **[5.11 Upgrade & Reset]** for adding a new PTZ device.

- **PTZ Device ID:** If your PTZ device needs an ID, input the ID in this field.

"Left"/"Right"/"UP"/"DOWN", "AUTO FOCUS"/"ZIN"/"ZOUT"

- **PTZ Operation Check:** You can check the various operations of the PTZ devices.

"Left"/"Right"/"UP"/"DOWN", "AUTO FOCUS"/"ZIN"/"ZOUT"

- **PTZ Position Setup:** You can set up the PTZ limitation & preset positions if the PTZ device supports it.

- **Panning Limitation:** Set the left/right limitation and test.

- **Preset Position:** Set the preset position and test.

**<Note>**: The "PTZ Position Setup" feature is applicable only for the PTZ devices that support it.

## 5.10. Encryption Setup

For additional security to the video and audio data transmitted from the network camera, you can set key codes and use them for encrypting the data from the network camera.

You can selectively activate encryption for the video and audio data. For enabling the encryption, check the box at the left of the “Enable data encryption”, then check the proper boxes to the left of “Video” and “Audio”. After the selection, click on the SAVE button beneath the “Video” and “Audio” check boxes.



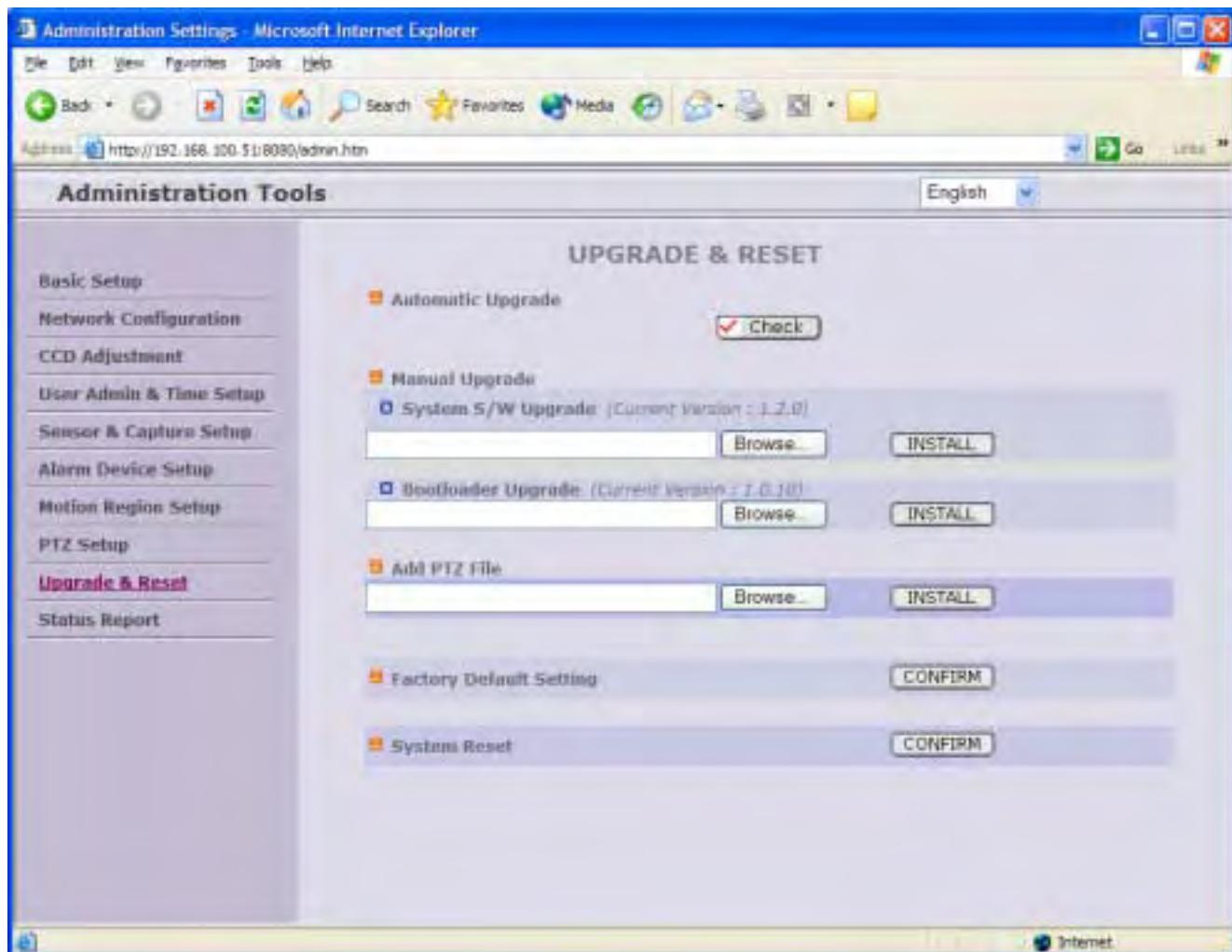
**Figure 5-12. Upgrade & Reset**

- **Key Value:** You can use up to 20 different key codes for the encryption of the data.
  - **Generation:** To generate the key value, click the “GENERATE” button. The boxes for the Key values will be filled with new values.
  - **Saving key values on the Video server:** Click the SAVE button beneath the GENERATE button to save the key value generated by the network camera.
  - **Downloading key values to your PC:** The key values can be downloaded and stored as a file to your PC for reference when you make a connection. When encryption is enabled, the PC client program will ask for a particular key value out of the 20 available key values.

- **Uploading key values to the video server:** The key value stored on your PC can be uploaded to your network camera. This feature is useful when you manage multiple network cameras having the same key value sets. Select a file having key values, then click the “INSTALL” button to upload the key values.

## 5.11. Upgrade & Reset

You can upgrade the NVC100/110 via the network.



**Figure 5-13. Upgrade & Reset**

For each of the upgrade of the system component, upgrade code should be downloaded from **Inscape Data's** home page before the system upgrade is performed.

(Refer to [\[6.4. How To Upgrade Your NVC100/110 System\]](#)

- **Automatic Upgrade**

Automatic upgrade is a feature that enables the NVC100/110 to upgrade to newly released system software by automatically connecting to Inscape Data's upgrade server. The administration page indicates a newer release by a blinking red arrow mark on the right of **Upgrade & Reset** menu bar. Click **Upgrade & Reset** to enter into upgrade mode. You will

find a screen as shown in Figure 5-12. Click the **UPGRADE** button to initiate the upgrade. All the upgrade sequences will be performed automatically.

- **Manual Upgrade**

- **System S/W Upgrade:** Upgrade the system software installed in the server via the network. System software needed for the upgrade can be downloaded from Inscape Data's home page. Refer to [\[6.4. How To Upgrade Your NVC100/110 System\]](#).
- **Bootloader Upgrade:** Upgrade the bootloader installed in the server via the network. The bootloader needed for the upgrade can be downloaded from Inscape Data's home page. Refer to [\[6.4. How To Upgrade Your NVC100/110 System\]](#).
- **Add the PTZ File:** Add a new PTZ driver software via the network. The PTZ driver can be downloaded from Inscape Data's home page. Refer to [\[6.4. How To Upgrade Your NVC100/110 System\]](#).

- **Factory Default Setting:** Re-initialize the NVC100/110 to the factory default state.



Once the NVC100/110 is re-initialized to the factory default state, it should be set up again using the IP-Installer.

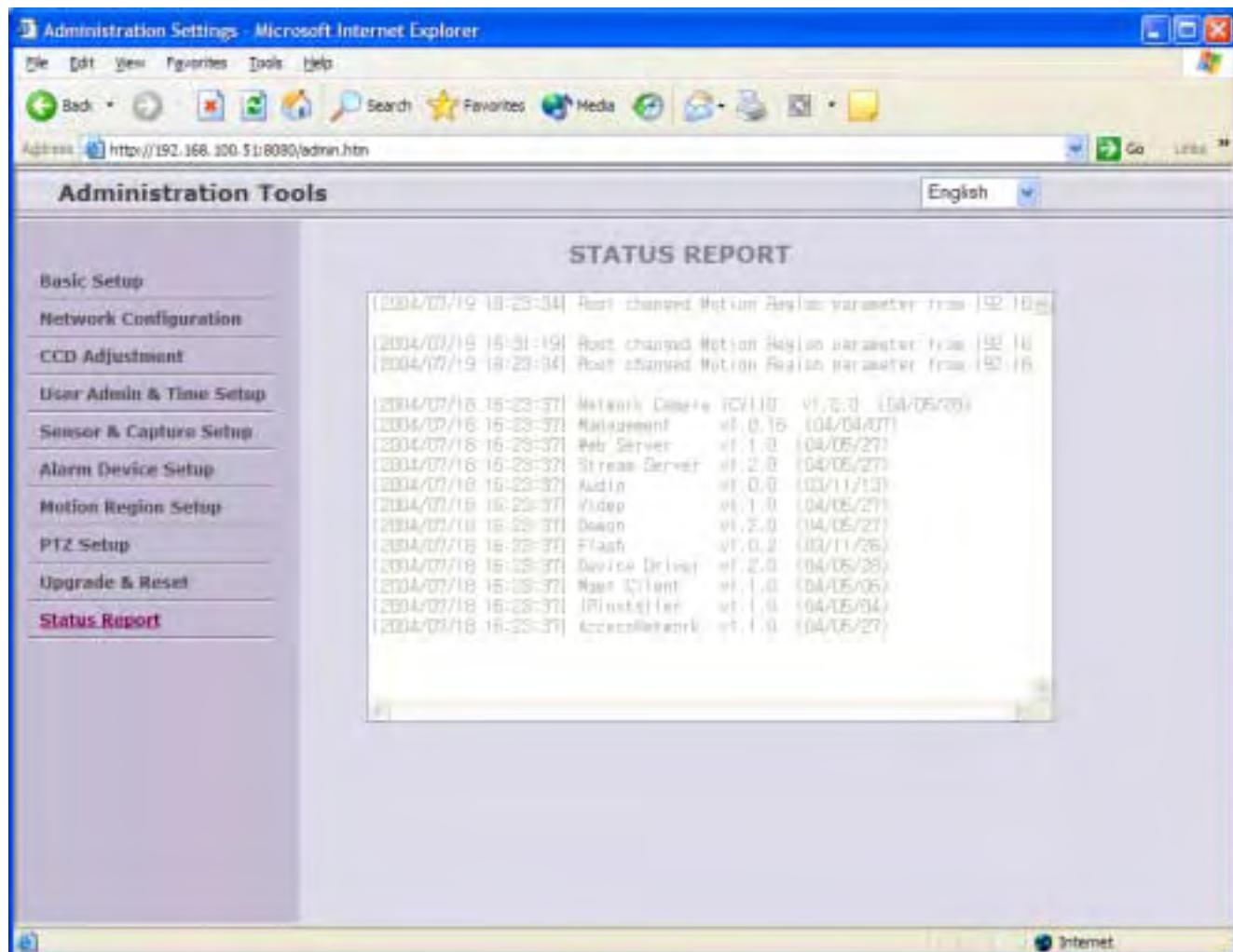
- **System Reset:** Perform a remote reset by clicking the "CONFIRM" button.



All previous connections will be disconnected upon reset. The NVC100/110 does not resume the connections and the users must re-connect to the server manually.

## 5.12. Status Report

Shows you system records since the system started.



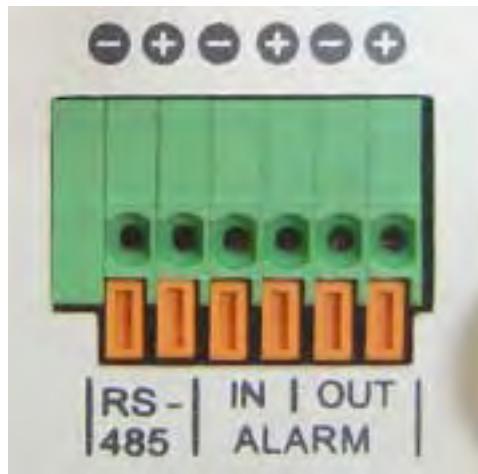
**Figure 5-13. Status Report**

You can check the problems as well as the versions and event status of the whole system and each module.

## 6. Tips for Using the NVC100/110

### 6.1. ALARM-IN and ALARM-OUT

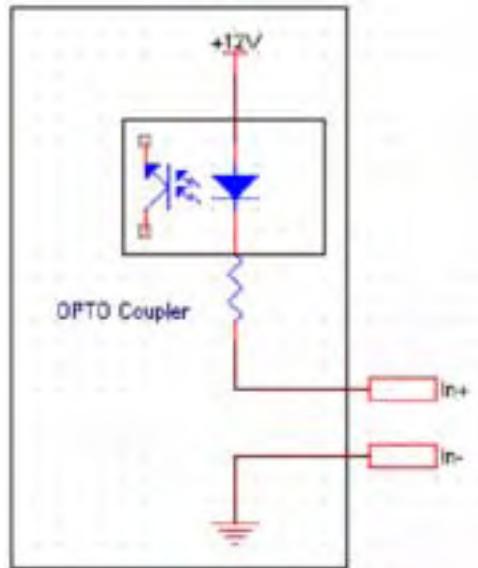
ALARM connectors are used to connect various sensing and alerting devices. Examples of sensing devices are infrared sensors, motion sensors, heat/smoke sensors, magnetic sensors, etc. ALARM-OUT is used for connecting alerting devices such as loud speakers, flashing lights, etc.



**Figure 6-1. ALARM-IN/ALARM-OUT Connector**

#### 1. ALARM-IN

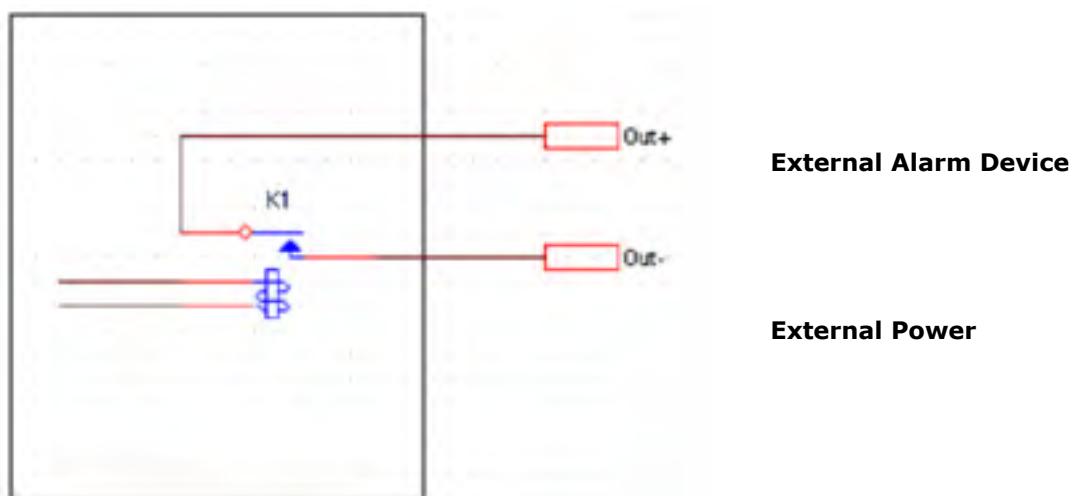
Connect the two wires of the sensors. The sensor type can be set in Administrative Mode (Ref. 5.5 & 5.6). Output lines providing on-off switching are connected between the "+" and "-" pins. Figure 6-2 shows the input circuit of "Alarm In".



**Figure 6-2. SENSOR input of NVC100/110**

## 2. ALARM-OUT

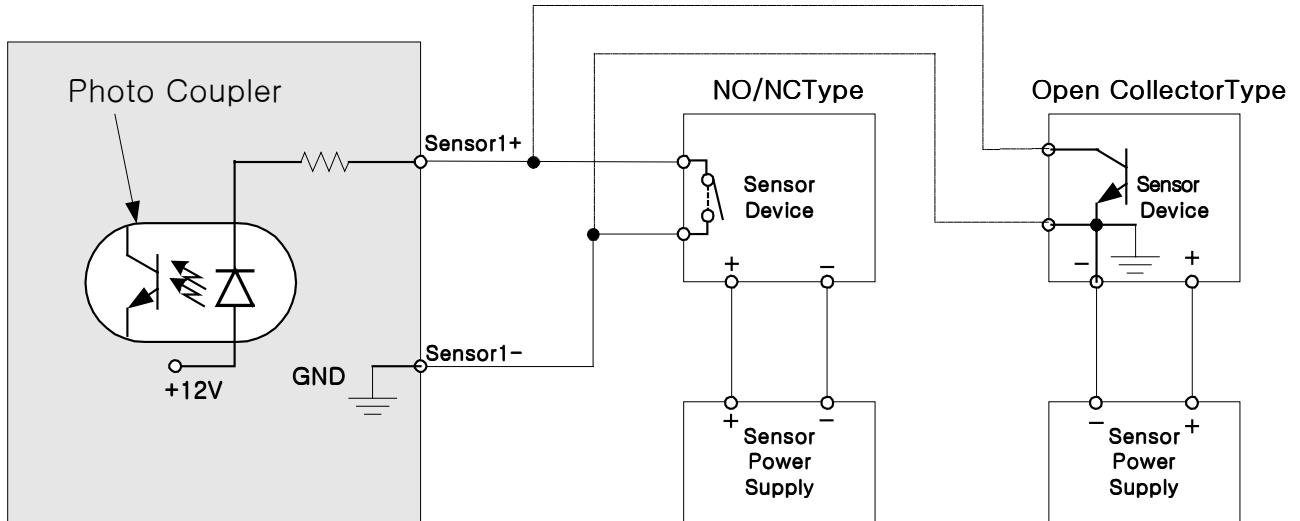
A Relay output is provided for connecting alarm devices or for remote on/off devices such as light control. Relay circuits are normally open and circuits are closed upon alarm output or remote on. The relay is capable of switching an AC/DC 30V,1A electrical signal.



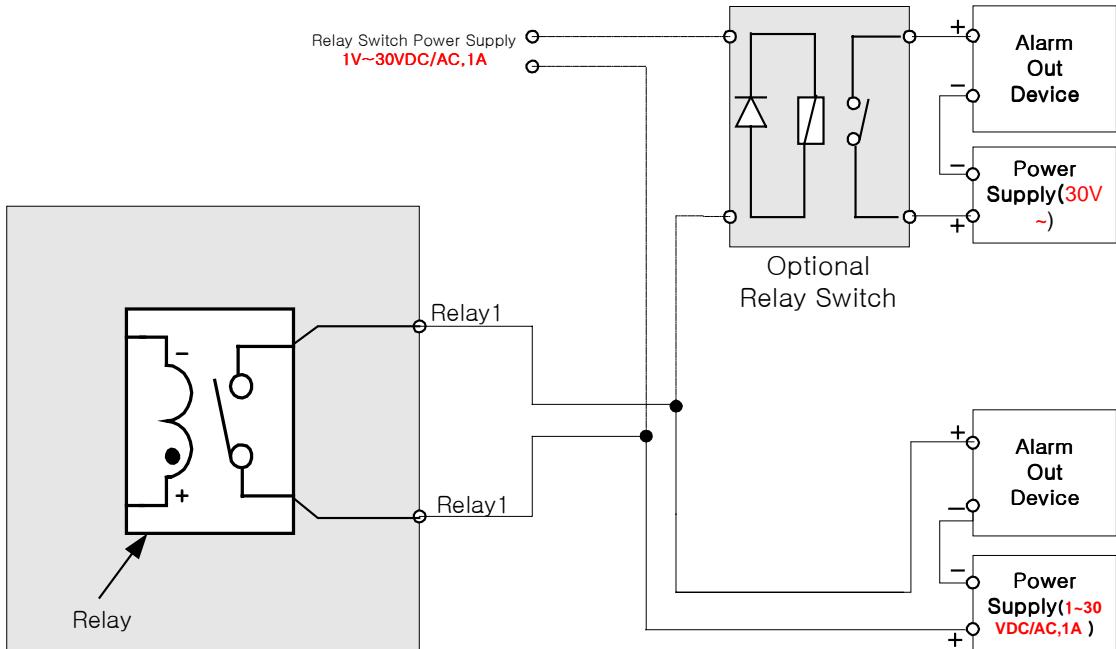
**Figure 6-3. RELAY Output of NVC100/110**

### 3. Connection of Sensor, Alarm Device

#### 3.1 Connection of Sensor



#### 3.2 Connection of Relay



You can use the supported relay output to directly drive a maximum load of 30V AC/DC at 1A. By connecting additional relay circuitry (such as an optional relay switch), it can also drive heavier loads.

## 6.2. Trouble Shooting

### 1. After the NVC100/110 is successfully installed.

- **When the NVC100/110 is in viewing mode, neither channel name nor video is displayed, and eventually a timeout message is shown.**

Check the power and network connection of the NVC100/110.

To check if the network is properly operating, open the browser and try to connect to any server.

**Example) <http://www.yahoo.com>**

Or open the MS-DOS Prompt and type the following.

**ping www.yahoo.com**

Then press Enter. If you see the “[Reply from ...](#)” message it means that the network is working properly. To check if the NVC100/110 is connected, open the MS-DOS Prompt and type the following.

**ping [the IP of the server]**

**Example) ping 192.168.1.112**

If you see the “[Reply from ...](#)” message, it means that the server is properly connected.

If you do not see a Reply message, check if the network cable and power cable are properly connected.

- **The name of the channel on the NVC100/110 is displayed but there is no video.**

Check if there is input video source to the channel. And check if there is a firewall in the network. Check if the network is NAT type.

In case there is a firewall in the network:

1. Try a TCP connection. A TCP connection is usually enabled by checking the TCP box before connecting to the NVC100/110. Refer to the viewer manual for more detailed operation.
2. TCP causes delay and low network throughput. It is recommended you use UDP connection for better performance. To use the UDP connection, UDP ports from 6970 to 7009 should be open. Ask your network manager for assistance.

If the network is NAT type, you need port mapping. This can be achieved by setting the NAT

server to forward all packets coming in through a specific port to the NVC100/110. You must open the UDP Ports from 6970 to 7009.

## **2. After Successfully Connecting to the NVC100/110**

- **Video movement is slow.**

In the Basic Setup of Admin Mode, lower the "Quality". High quality means more data. You can also set the "Max. Bandwidth" to a higher value. However, this value must be lower than the maximum upload speed of your network. For example, if the maximum uploading bandwidth of the network is 400Kbps, set the total "Max. Bandwidth" to 384Kbps. If you set it higher, the video image can be corrupted with artifacts. Ask your network manager or ISP for the maximum uploading bandwidth of the network.

- **The image is dull and I see green and pink dots.**

This could be caused by performance limitations of the PC. Do not run too many programs while running the viewer program. The other reason could be missing data while transmitting from the NVC100/110.

- **Mosaic phenomenon.**

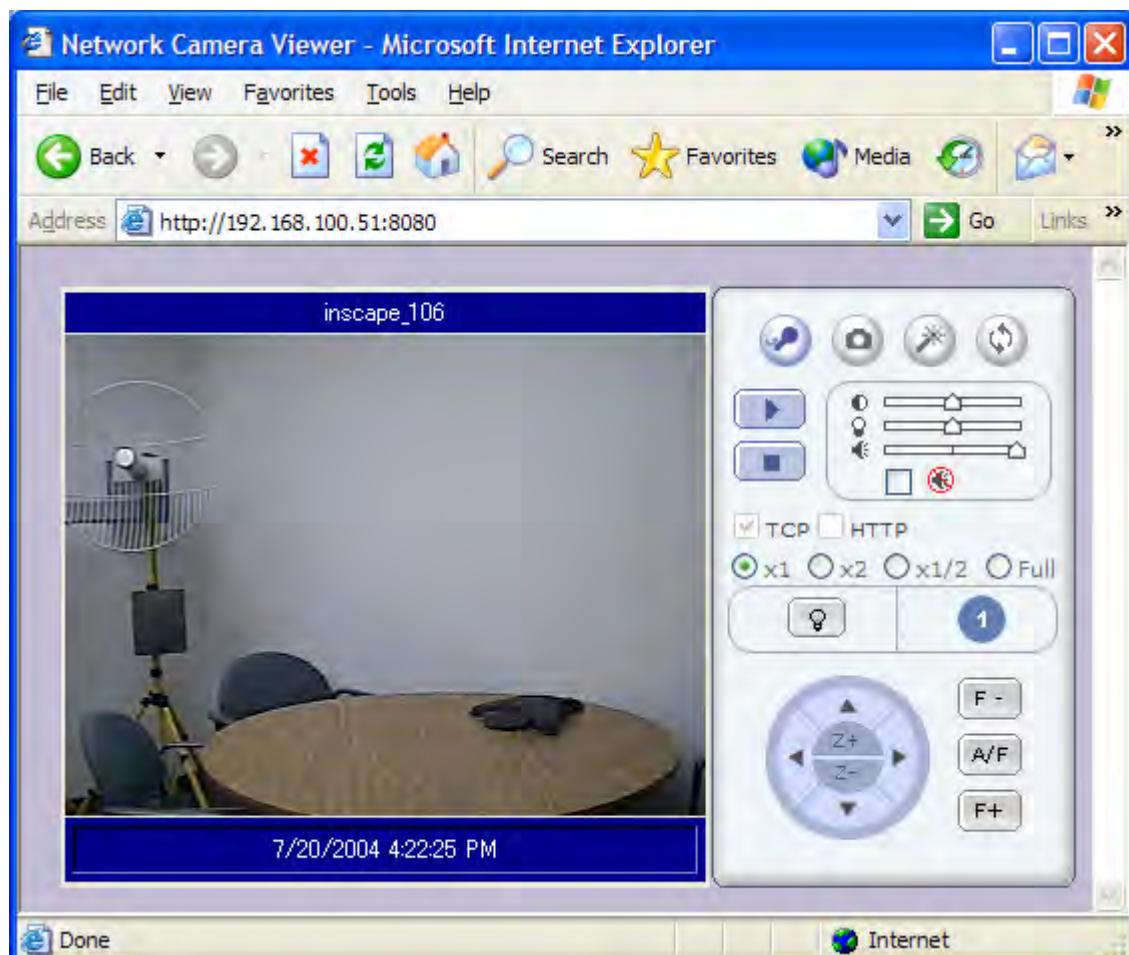
Mosaic phenomenon occurs when not enough network bandwidth is available considering the resolution and frame rate of the video.

An example is 640x240 video with low Max. Bandwidth.

Users are recommended to adjust resolution and frame rates to lower values for lower bandwidth network.

### 6.3. Web Viewer

The NVC100/110 is designed to be connected through Internet Explorer, too. For connecting to the NVC100/110 using Internet Explorer, type in the IP address or host address in the address input field of the Internet Explorer field.



**Figure 6-4. Web Viewer of NVC100/110**

#### ● Control Panel of Web Viewer

		Enable bidirectional audio. When bidirectional audio is enabled, audio from your PC is delivered to the NVC100/110.
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		Capture and store the still image on your desktop screen.
		Connect to the NVC100/110 in administrative mode of the NVC100/110.
		Rotate the screen by 180 degree.
		Connect to NVC100/110.
		Stop the connection.
		Contrast, Brightness, and Volume adjustment.
		Check the box to mute the audio.
		Adjust the size of the screen. Normal (x1), Twice (x2), Half (1/2), Full Screen (full).
		On/off the relay by pressing the button
		Shows the status of the sensor. A blue color means that the sensor is in a normal state, while a red color indicates an alarm situation. The number on the button indicates the number of the sensor.
		Move the center of the camera in up/down/left/right directions.
	<b>Z+</b>	Zoom in (Z+)
	<b>Z-</b>	Zoom out (Z-)
	<b>F-</b>	Moves the focus to a farther position.
	<b>A/F</b>	Auto focus.
	<b>F+</b>	Moves the focus to a nearer position.

## 6.4. How To Upgrade Your NVC100/110 System

There are two ways of upgrading the system software of the NVC100/110. In most cases it is more convenient to upgrade the system software in automatic sequence. But when your NVC100/110 cannot be connected to our upgrade server, it is recommended you use a manual upgrade.

### 1. Automatic Upgrade

- 1) Connect to the NVC100/110 and log on to administrative mode with administrator's ID and Password. Then start "**Upgrade & Reset**" menu.
- 2) When your system software is older than the latest release, the admin page will indicate this fact with a blinking red arrow mark on the right of the "**Upgrade & Reset**" menu. Click the "**Upgrade & Reset**" menu when the indicator is blinking. You will find a screen as shown in Figure 5-12. Click the "**UPGRADE**" button to start the upgrade.
- 3) The server will notify the end of the upgrade process on your screen.
- 4) Click the **Confirm** button to the right of **System Reset** to reboot the NVC100/110.
- 5) After the reboot is finished, log on to the NVC100/110 with administrator ID and password. Then click the "**Status Report**" menu to display the current status of the NVC100/110.
- 6) Confirm the version number and date of all the system software on your NVC100/110.

### 2. Manual Upgrade

- 1) Save the upgraded system software to your PC. Upgrade software can be downloaded from

Inscape Data's home page or provided in CD.

- 2) Log on to administrative mode and select the "Update & Reset" menu.
- 3) Click "Browse..." to find the files you want to use for the upgrade. This will open a "Choose file" dialogue window. The file extension is "ief".
- 4) When you've found the file, click "Open." This will select the file and close the "Choose file" dialogue window.
- 5) Click the "INSTALL" button. An alert message box will pop up. Click the "OK" button so it will start uploading the file. This may take some time.
- 6) An upgrade completion message will appear after the system upgrade has been completed.
- 7) Reboot the NVC100/110 by performing a "System Reset".
- 8) After rebooting, log on to the server in administrative mode again and click the "Status Report".
- 9) Check the version number and release date of the NVC100/110.



You can download the NVC100/110 system software from Inscape Data's homepage-  
<http://www.InscapeData.com>.