AR1500 Series

IPNC

Getting Started Guide

Version 1.0.4

January 2013

Preface

Read This First

About This Guide

This guide provides the information of the user interface usage for AR1500 IPNC.

AR1500 series include AR1500, AR1500H (with HDD), AR1500T, AR1520, AR1520H (with HDD), and AR1520T.

Abbreviations

The following abbreviations are used in this document

Table 1 List of Abbreviations

Abbreviation	Description
CCTV	Closed Circuit Television.
DHCP	Dynamic Host Configuration Protocol.
FTP	File Transfer Protocol
IPNC	IP Network Camera
JPEG	Joint Picture Experts Group.
MJPEG	Motion JPEG
NTSC	Nation Television System Committee.
PAL	Phase Alternate Line.
SMTP	Simple Mail Transfer Protocol.
SNTP	Simple Network Time Protocol.
UPnP	Universal Plug and Play.
RTSP	Real Time Streaming Protocol.

Storage Support

	SD	SDHC	USB	HDD
AR1500	○	○	○	
AR1500H	○	○		○
AR1500T	○	○	○	
AR1520	○	○	○	
AR1520H	○	○		○
AR1520T	○	○	○	

 Warning. Hot surface, do not touch. (“T” series only).

“T” Series cameras will be installed and maintained by the authorized trained personal only. “T” Series cameras will be installed at the proper height / locations where unauthorized personal would not touch, adjust or manage the cameras in any way.

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1. AR1500 IPNC - Overview

This chapter provides the information about the outlook overview of AR1500 IPNC, which show you the parts available on the front, rear, and left panels of AR1500 IPNC.

1.1. AR1500 IPNC Panel Details

1.1.1 Front and Rear Panels

The following figure shows the front and rear panels of AR1500 IPNC

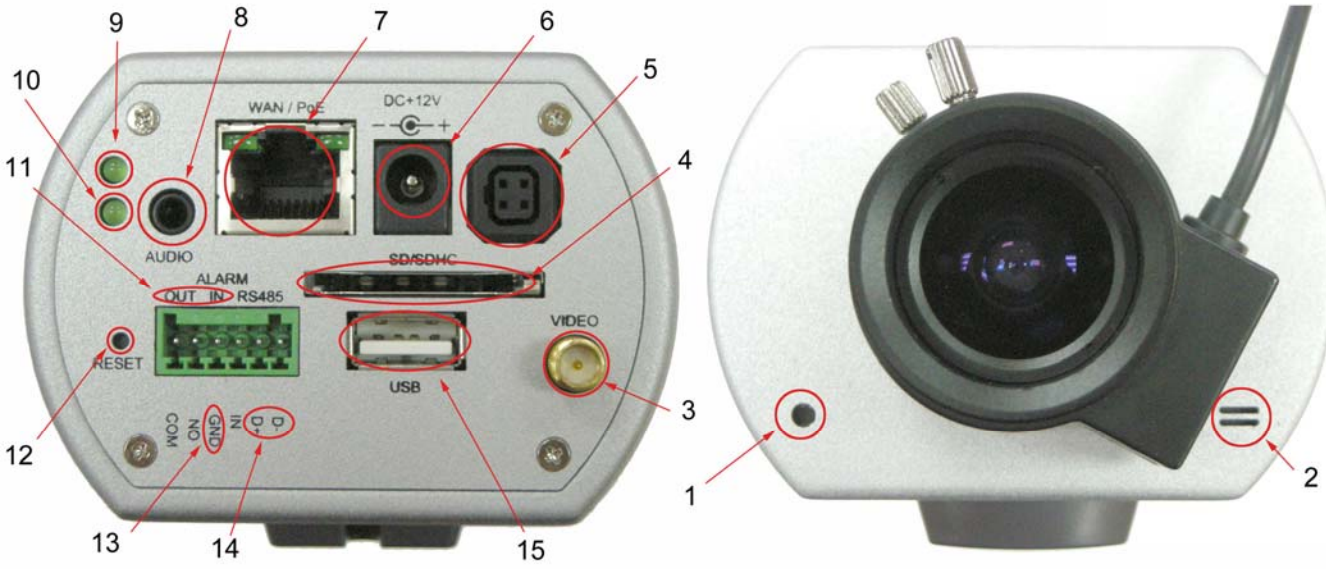

Figure 1-1 IPNC Front and Rear Panels

Table 2 Description of Front and Rear Panel

Part	Front Panel / Rear Panel Part	Description
1	Light sensor	Light measurement support cell.
2	Microphone	To capture sound around the camera.
3	Video out	Analogue video output
4	SD/SDHC card	Local storage
5	Iris control	Lens auto-iris control
6	DC power in	Camera DC power supply
7	LAN/POE connection	Network connection / POE power in
8	Audio out	Audio out connection jack
9	Power on	Power on Led
10	System ready	System ready Led
11	Alarm in/out	Alarm connector in/out
12	Reset	Camera reset button
13	Ground connection	Camera ground connection

14	RS485 port	RS485 connection port
15	USB memory	USB memory

2. AR1500 IPNC Installation

This chapter provides the information about how to connect the IPNC with the PC, and VLC media player Settings

2.1. Minimum PC Requirement

2.1.1 Hardware:

- Intel(R), Pentium(R), DUAL Core (D),CPU 3.0GHz or equivalent
- 2GB system memory or above.
- Sound Card: DirectX 9.0c compatible sound card
- Video Card: 3D hardware accelerator card required – 100% DirectX9.0c compatible
- 10/100 Ethernet switch/hub

2.1.2 Software:

- VLC media player 1.0.5 or above
- Windows XP Service Pack 2 or above
- Resolution of screen setting: 1280x960 or higher for the display of 720P/1080P

2.2. Connection Using Static IP

You can connect the IPNC with a static IP address. The default static IP is 192.168.1.168.

> Note :
> You can press and hold RESET on the rear panel more than 5 sec to reset the static IP address to the default value (192.168.1.168).

To do this:

1) Connect an external power supply to turn on IPNC, and wait until boot up complete LED changes to green. (reference the section 1.1.1 for the boot up complete LED information)

2) Open the Web browser with the default static IP address to remote monitor on Web interface.

3) You can set the required static IP address when you have more than one IPNC s.

To do this:

- Open Web browser with default static IP address, 192.168.1.168(see Figure 2-1). After you login to the Web interface, select **"**Network and port" and type the required IP address (example, 192.168.1.168). Click "OK" (see Figure 2-1). Once you open a new Web browser, IPNC starts working with the new static IP address. You can use the same method to set others.

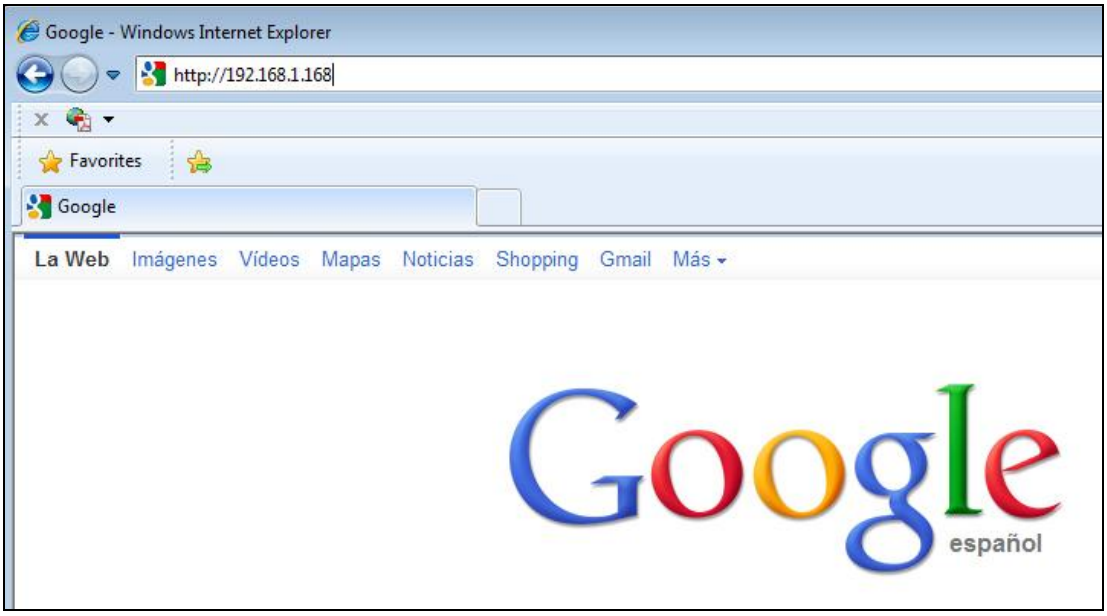

Figure 2-1 Microsoft Internet Explorer window

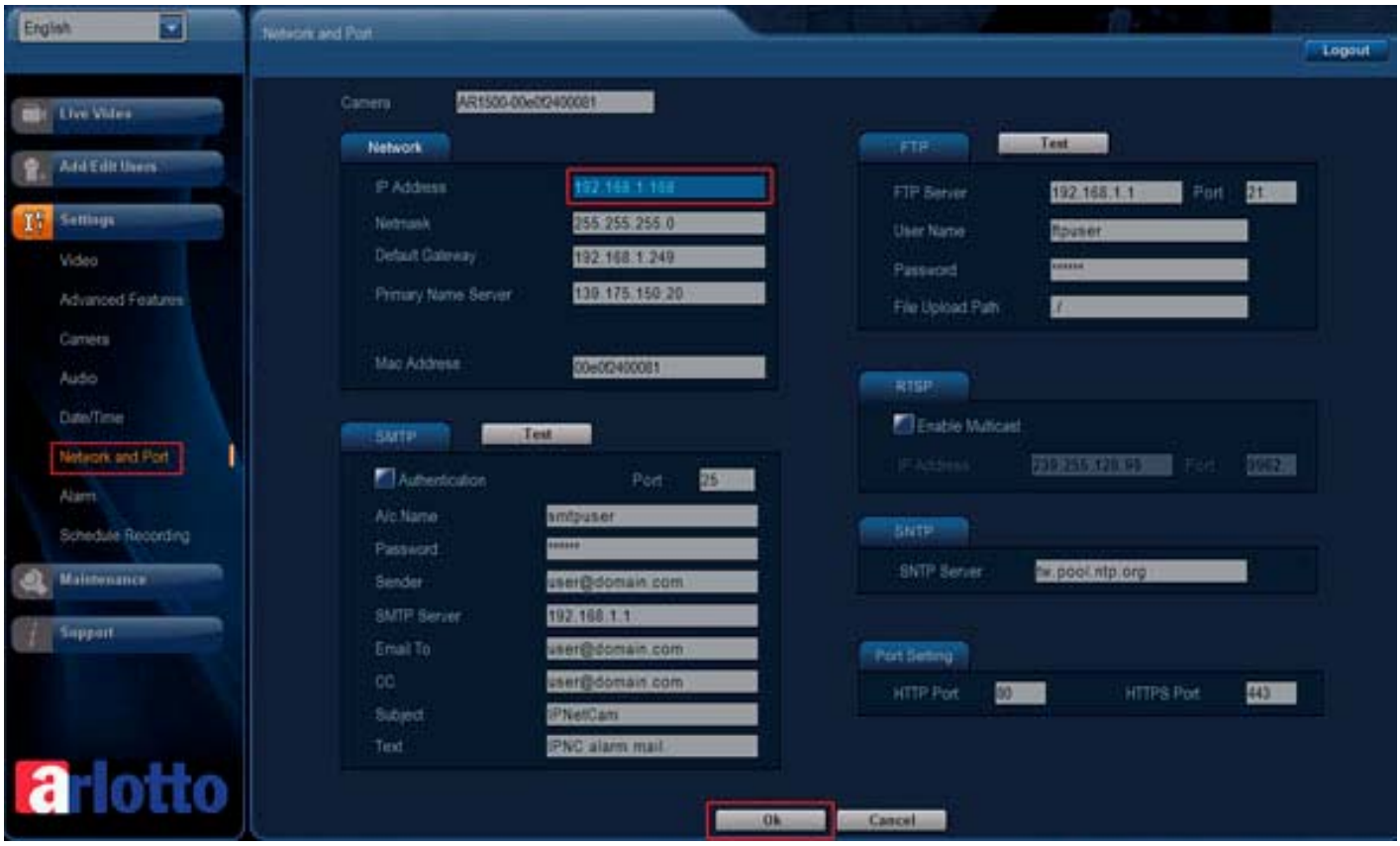

Figure 2-2 Static IP Network Page

2.3. VLC Media Player Setting

To set the VLC media player and open a network stream:

1) Install VLC media player on your Host PC.
2) Open VLC media player (test with version1.1.9).
3) Click Tools > Preferences. The Preferences dialog box is displayed.

Note: Before setting, ensure that all the parameters are set to default values. To do this, in the Preferences dialog box, click Reset Preferences.

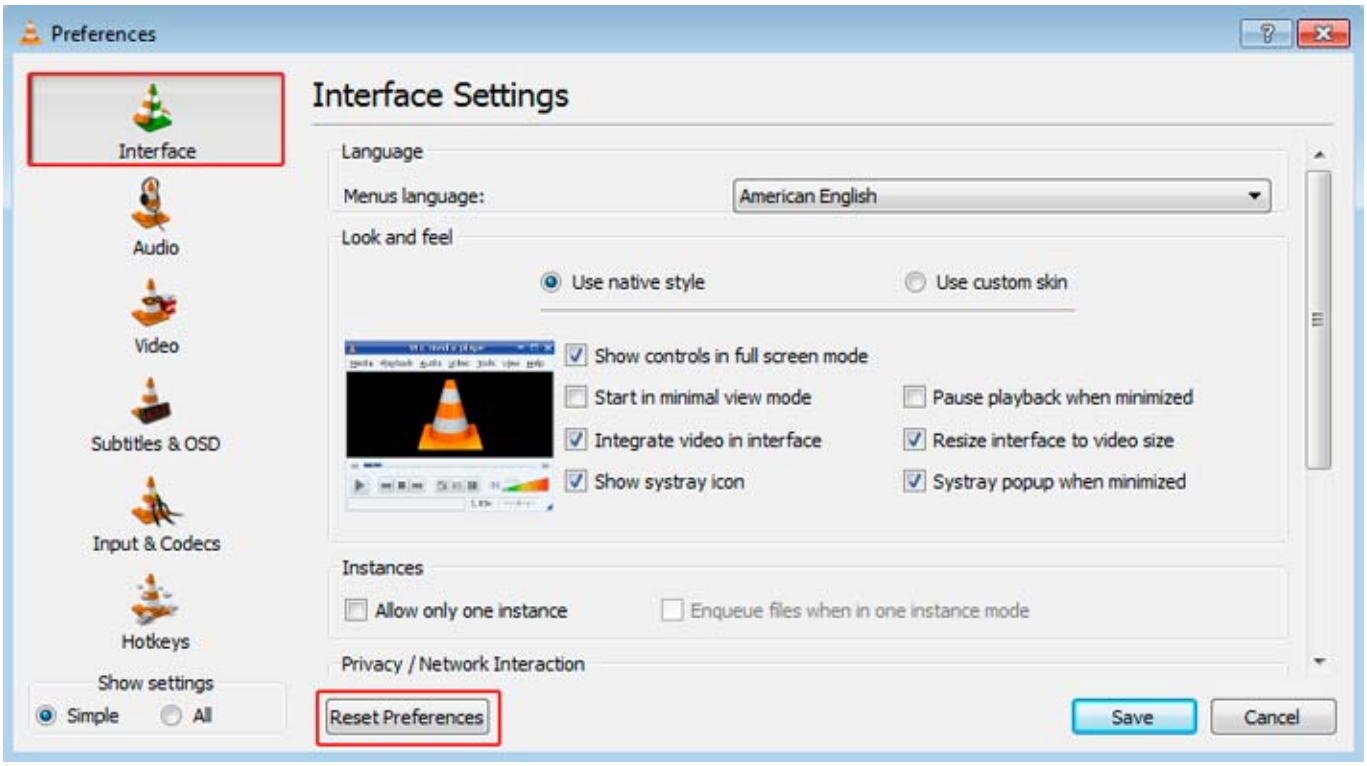

Figure 2-3 Preferences dialog box.

4) On the left pane, click Video and select Overlay video output option. Also, select All in Show settings.

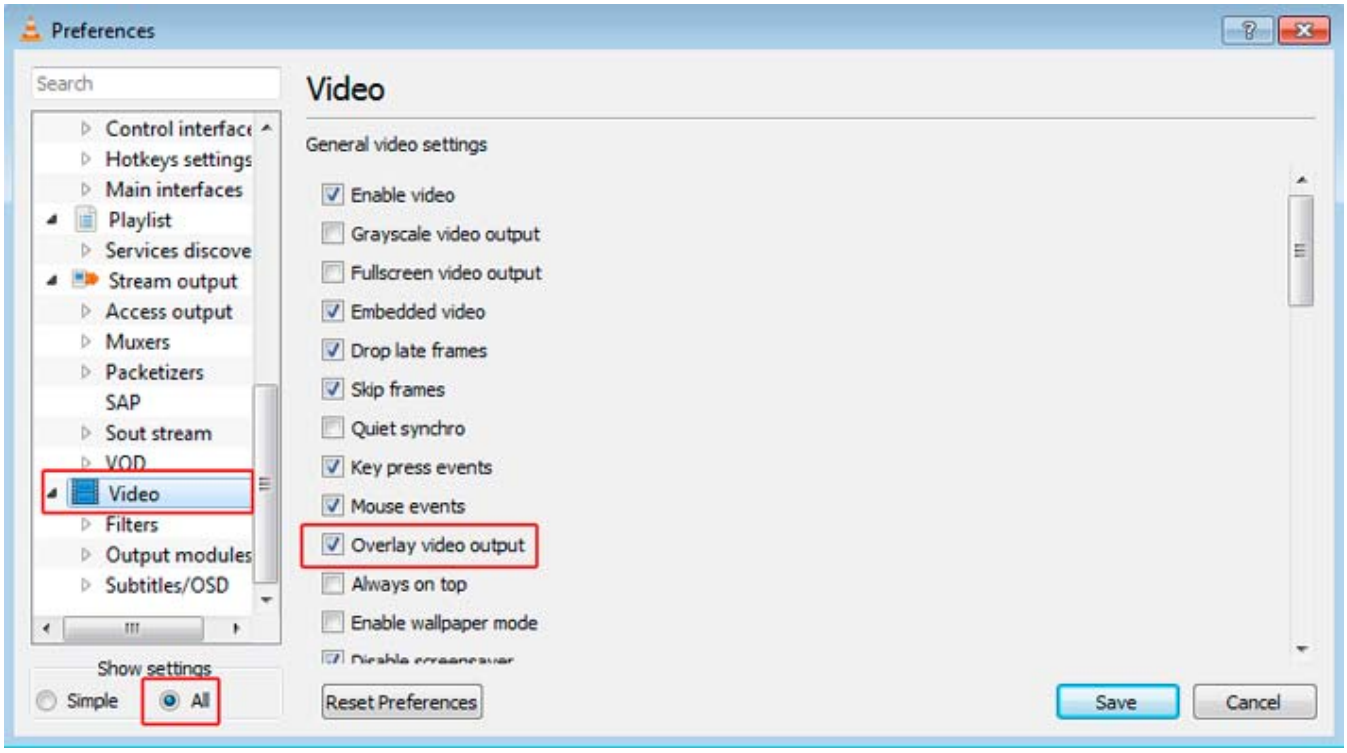

Figure 2-4 Overlay Video Output Option Selected.

5) On the left pane, click Input/Codecs > Demuxers > RTP/RTSP.
Check the caching value. For low latency, it should be 70~80 based on PC's performance,

only in VLC older version.

6) Click Save to save the settings.

7) In the VLC media player window, on the Media menu, click Open Network Stream. The Open dialog box is displayed.

8) Select the RTSP option. In Address textbox, type the URL and click Play (see Figure 2-6).

- ✧ For H.264 Stream1:
  rtsp://<IP_Address>:8557/PSIA/Streaming/channels/2?videoCodecType=H.264
- ✧ For H.264 Stream2:
  rtsp://<IP_Address>:8556/PSIA/Streaming/channels/2?videoCodecType=H.264
- ✧ For MPEG4 Stream1:
  rtsp://<IP_Address>:8553/PSIA/Streaming/channels/1?videoCodecType=MPEG4
- ✧ For MPEG4 Stream2:
  rtsp://<IP_Address>:8554/PSIA/Streaming/channels/1?videoCodecType=MPEG4
- ✧ For JPEG Stream:
  rtsp://<IP_Address>:8555/PSIA/Streaming/channels/0?videoCodecType=MJPEG

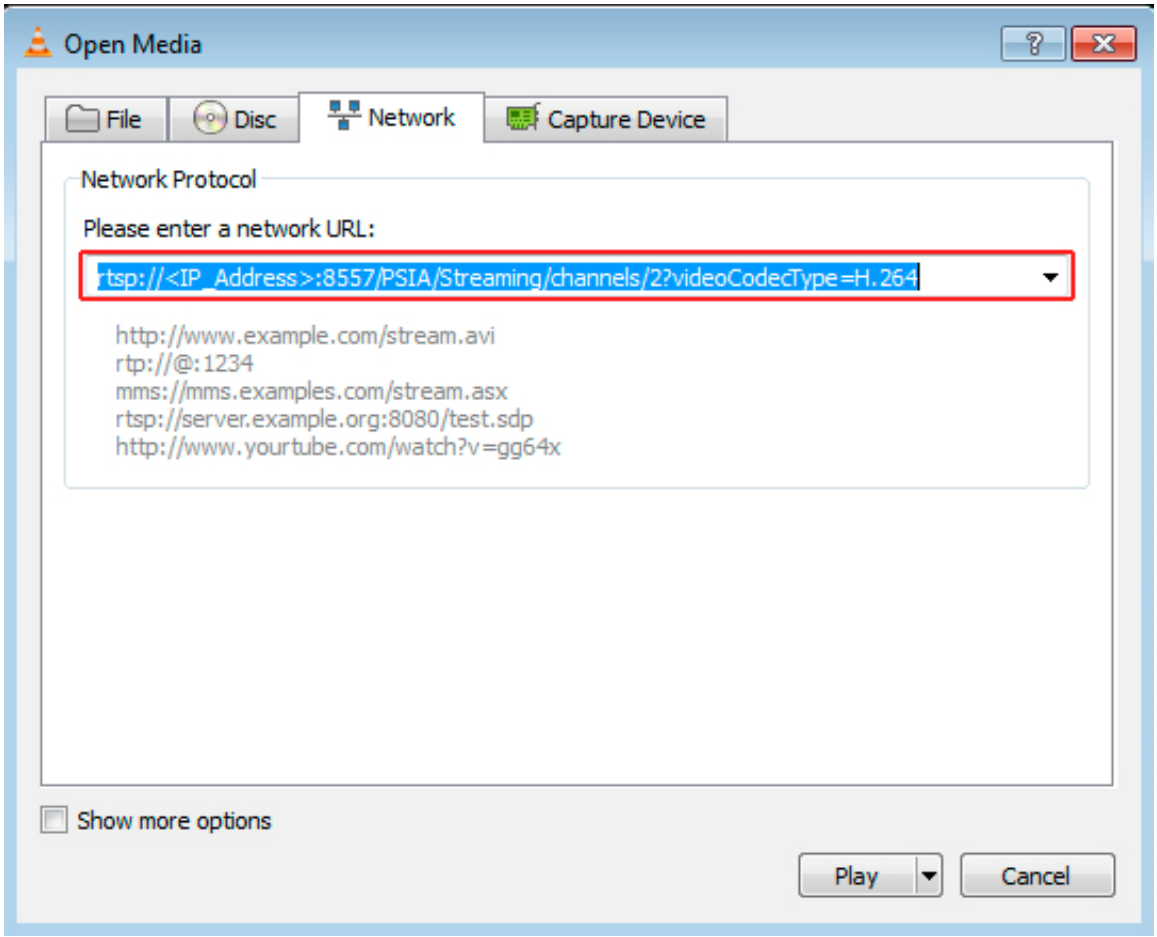

Figure 2-5 Open Streaming dialog box

9) Once you click Play, the video appears on the browser.

3. Running AR1500 IPNC Application

This chapter provides information about using the AR1500 IPNC application through the application interface.

3.1. Starting the Application

To start the application:

1) Plug the Power Supply and Ethernet connector into IPNC or PoE based Ethernet.(Power Supply DC12V 1000mA)
2) Open Microsoft Internet Explorer window, type the required IP address in Address box. Press Enter. (default IP is 192.168.1.168)

Note : you can press and hold RESET on the rear panel more than 5 sec to reset the static IP address to the default value (192.168.1.168)

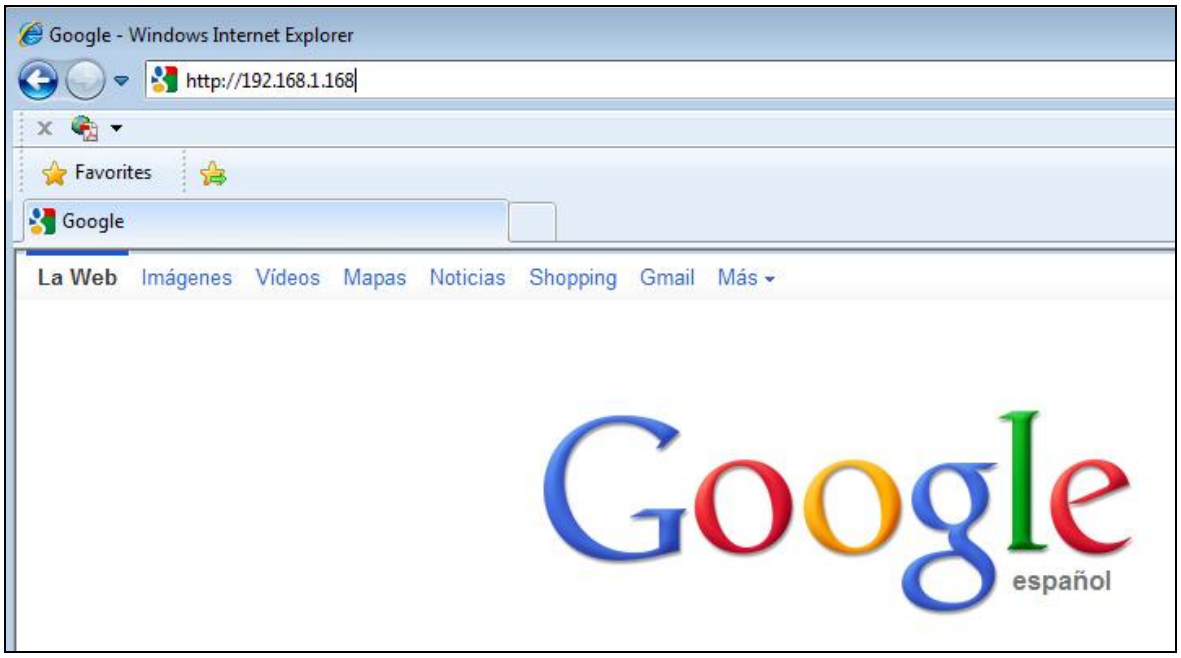

Figure 3-1 IE address bar IP address.

3) Once IP address is typed please go to IE tools, then internet options and select security tab. Click in trusted sited and then in sites.

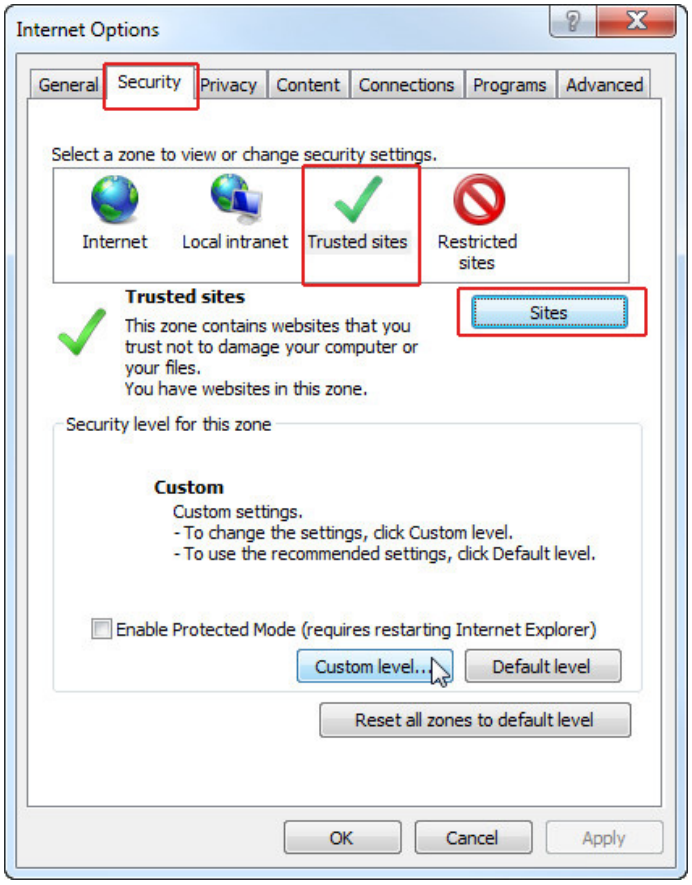

Figure 3-2 Access to trusted Sites.

4) After this step a new window will pop-up, here you should add to the trusted website the new IP number. Please disable the option to require the server verification.

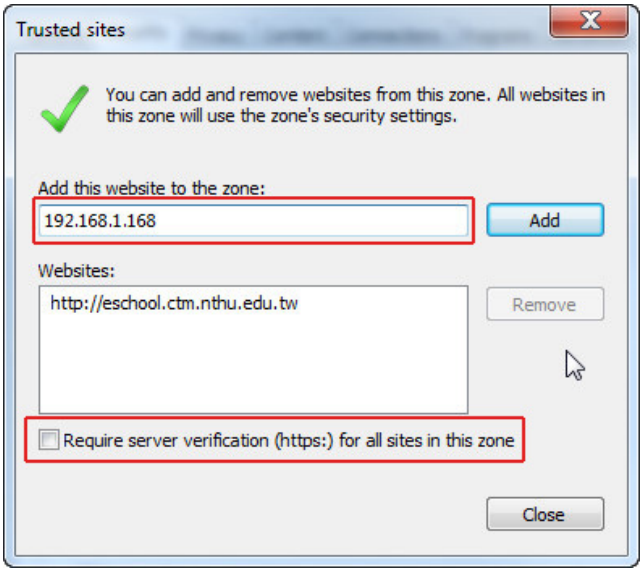

Figure 3-3 Add new IP address to trusted zone.

5) In IE, Internet options go to security and click in custom levels, a new window will pop-up, please enable all ActiveX options. This would allow to IE to load the required ActiveX in the system.

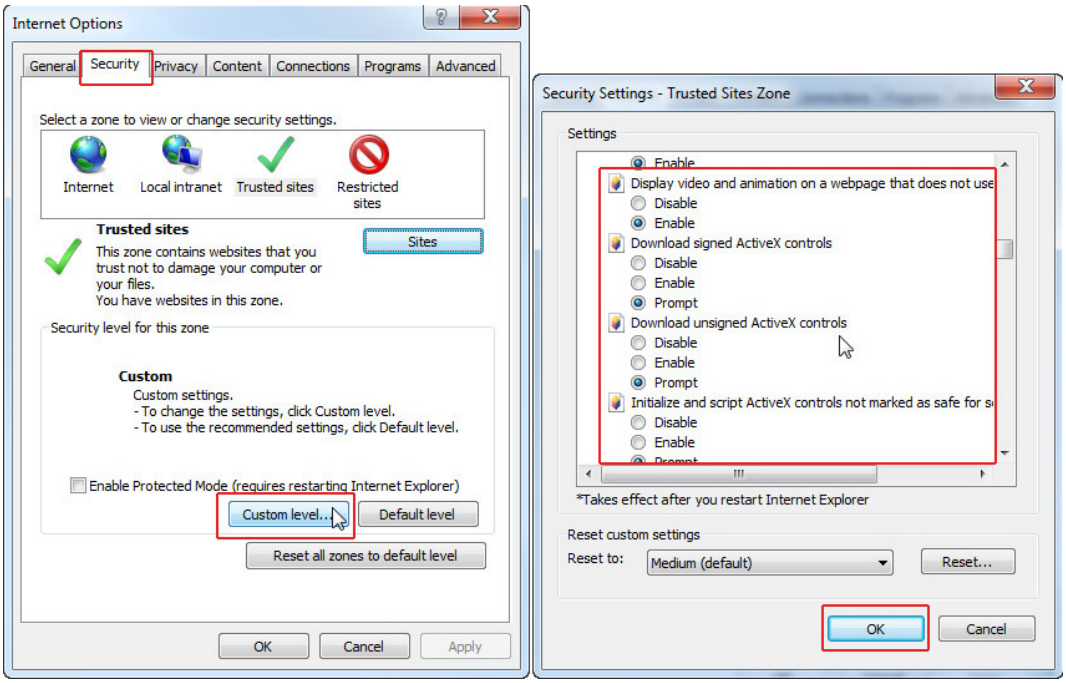

Figure 3-4 Enable ActiveX.

Open IE web browser and type the default IP address of the camera, now the IE would require you to install 2 Add-on applications, in the new menu shown please allow to the system to install them.

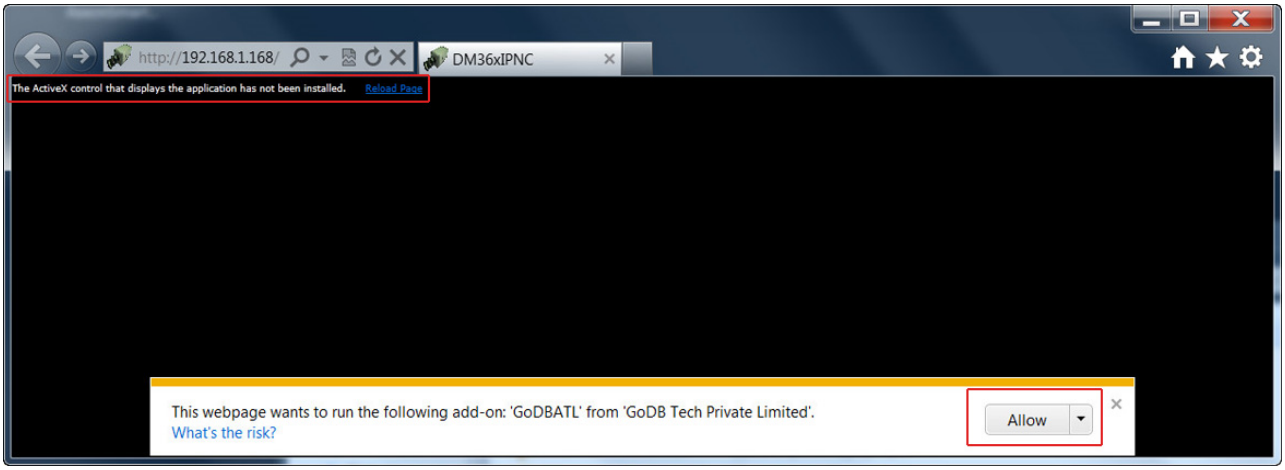

Figure 3-5 Install ActiveX

6) After installation, user needs to press key F5 on keyboard to refresh the IE active window. This will take the user to main Login screen (see Figure 3-3).

Figure 3-6 Login Screen

7) Enter the required User Name and Password, and then click ”Submit”.

Note: The default user name and password are “**admin**” and “**123456**” respectively.

8) After successful installation and login, live video from IPNC can be seen in the Live Video window (see Figure 3-7).

Figure 3-7 Live Video Window

3.2. Uninstalling ActiveX Component

Whenever there is a firmware updates of IPNC software, the user should clean the software components cached on the browser. Following are the steps to clean the software.

1) Close all Web browsers connected to the IPNC and open Internet Explorer in a blank page.
2) In the Windows Internet Explorer window, click on the “Tools” tab. Select Manage Add-ons > Enable or Disable Add-ons. The Manage Add-ons dialog box is displayed.
3) From the Show drop-down list, select Downloaded Controls.

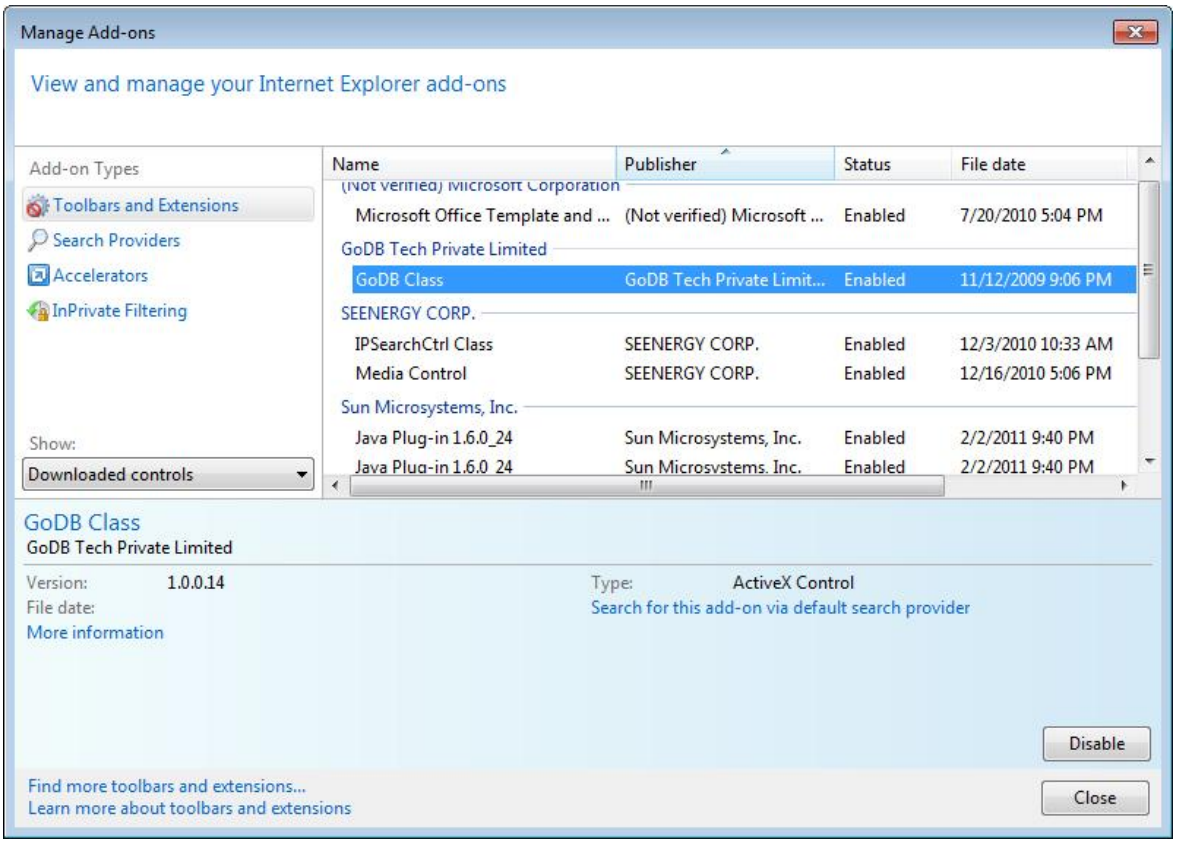

Figure 3-8 Manage Add-ons window

4) You will see an ActiveX Control published by GoDB Tech Private Limited as shown.

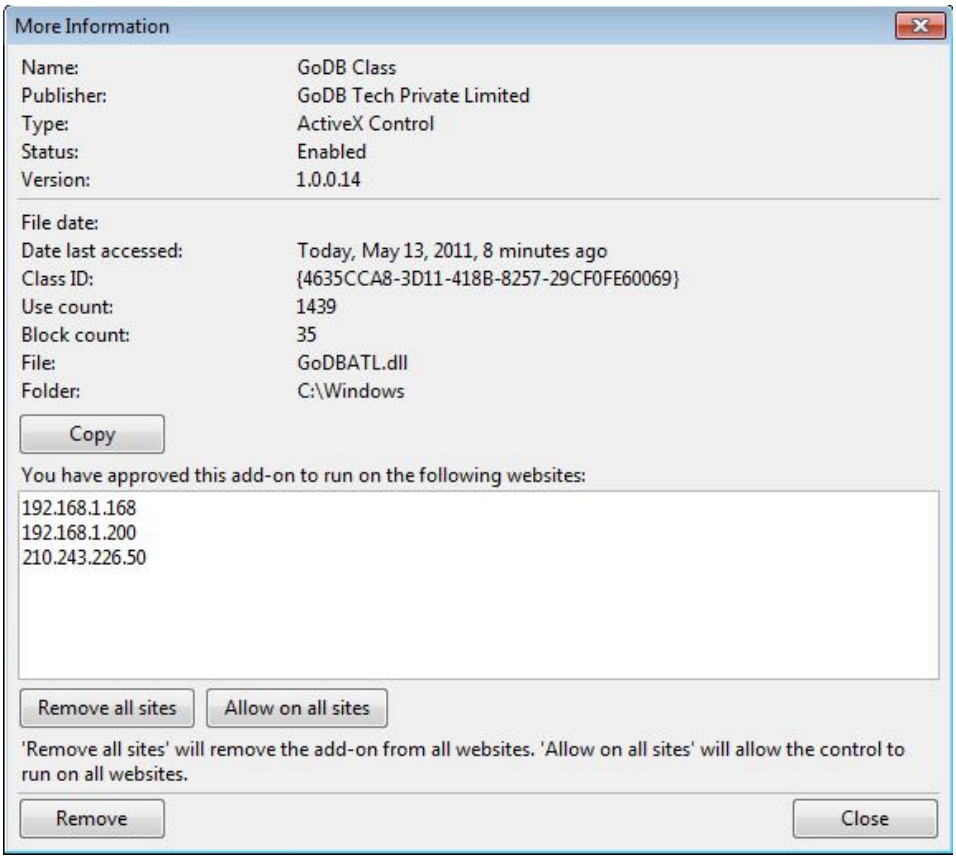

Figure 3-9 Video Control DLL Window

5) Clean the cookies and temporary file in IE browser.
6) Remove files gdobridge.dll, gffx.dll, GoDBATL.dll from C:\WINDOWS Folder
7) Enter the path “C:\WINDOWS\Downloaded Program Files” in your PC and delete file “GoDB Class” and “GFFMpeg Class”.
8) Close and Restart your IE browser.

3.3. Browsing Images From IPNC

The images from IPNC are displayed on the Live Video window while accessing IPNC online.

Figure 3-10 Live Video page

The options available in the Live Video page are:

- Select Stream drop-down list: Set the resolution of the image. This is at the top left corner of the page.
- Left Panel to navigate to the other screens, this will have an introduction afterward.

Figure 3-11 Left panel

The following icons are available at the Left Menu:

- ✧ Live Video
- ✧ Add/Edit Users
- ✧ Settings
  - ■ Video
  - ■ Advanced Features
  - ■ Camera
  - ■ Audio
  - ■ Date/Time
  - ■ Network and Port
  - ■ Alarm
  - ■ Storage

- ✧ Maintenance
- ✧ Support

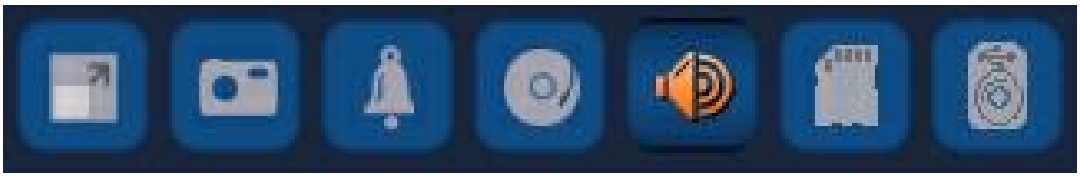

Figure 3-12 Live Video Icons

➢ Icons available on live video page

➢ 1X Display: This will display in 1X mode in the PC. There are scroll bars overlaid on the video by the player. User can click on these to scroll the image

➢ Snapshot: This will help the user to store the first resolution YUV data at the instant to SD CARD. This will be helpful to check if any issue with YUV data. The data will be in YUV420 interleaved format. This will be stored in SD CARD. User needs to enter the desired filename in the dialog box as shown below.

Figure 3-13 Snapshot View

➢ Alarm Status: Works when you turn on the motion detection function or other alarm

section is activated, When some elements enter the detection area as you set, it will change its state from alarm disabled  to alarm activated 

➢ Record Status: When recording is carried to SD CARD based on Storage selected, this icon will change its state from disabled  to Active 

➢ Toggle Audio: User can use this to switch OFF  to ON audio in the camera 

➢ SD CARD Explorer: Opens the SD Card File List of the MEMORY CARD window, if the SD card is inserted.

➢ USB Disk Explorer: Opens the USB Disk File List of the USB DISK window, if the USB Disk is inserted.

➢ Display all Streams: This can be selected to view all the streams in the same view or window. This will disable “1X Display” and “SD Card Explorer” Icons.

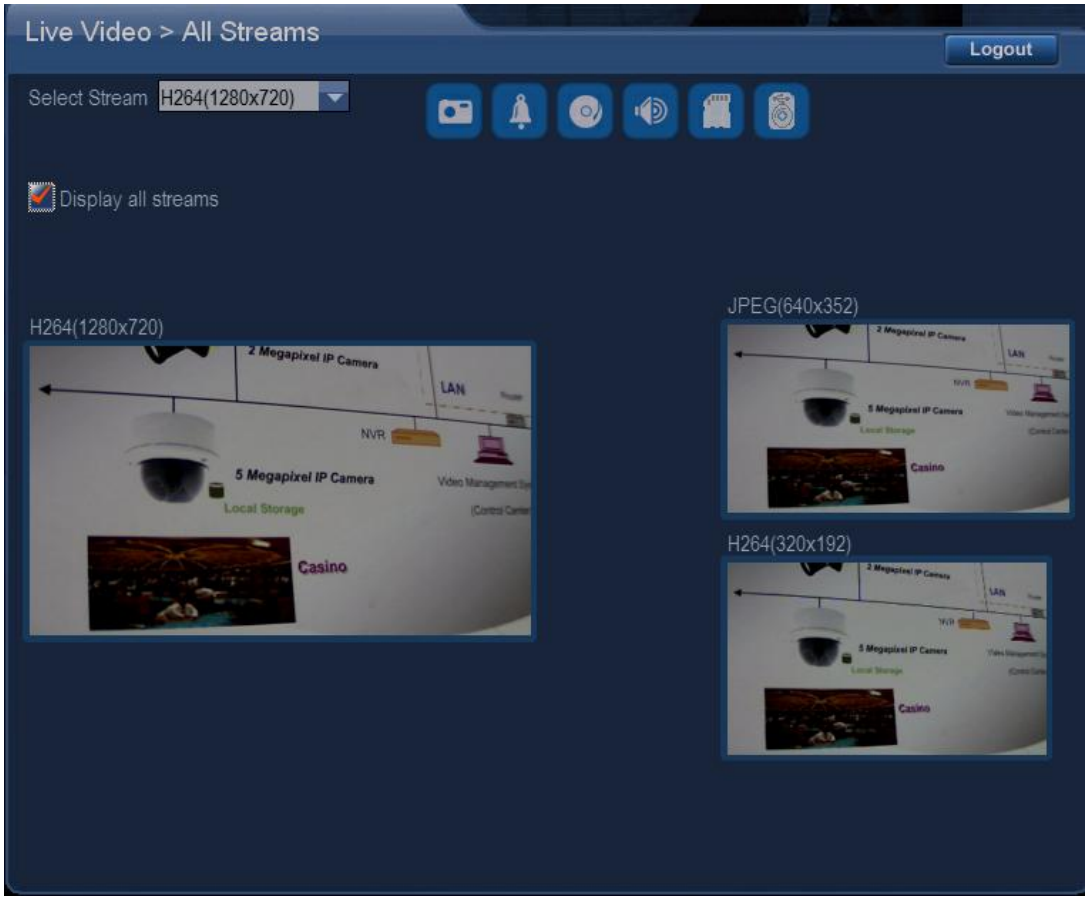

Figure 3-14 Display All Streams.

3.4. Modifying User Settings

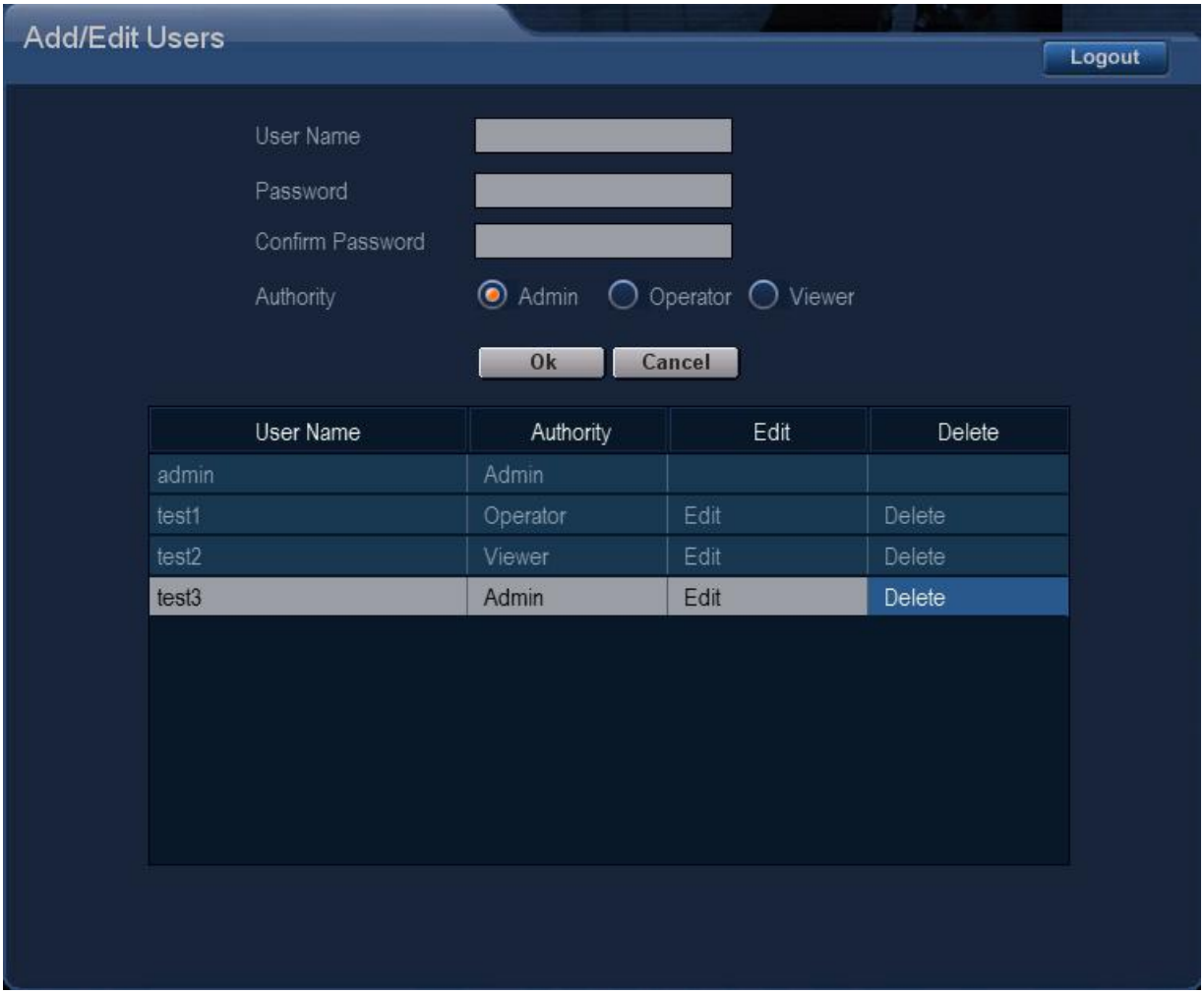

Figure 3-15 ADD EDIT User .

You can perform the following:

- Add/Modify User: You can add or modify the user name by entering the following details:
  - ✧ User Name: Type the user name to add/modify.
  - ✧ Password: Type the password to change the existing data
  - ✧ Confirm Password: Type the user password same as in Password box. Password length supported by application is 4 to 32.
  - ✧ Authority: Select one of the following options:
    - ●Admin: You can operate all functions in Web interface. Also, you can add or delete any user's account.
    - ●Operator: You can operate all functions in Web interface except user Add/Delete.
    - ●Viewer: You can only monitor the Web interface, but cannot operate all function and set parameters.

Following are the access control given based on the Authority selected:

Table 3 User Access Control

MODULES	ACCESS TO USER TYPES		
	Admin	Operator	Viewer
Live Video(Main Window)	Yes	Yes	Yes
Video/Image Setting	Yes	Yes	No
Camera Setting	Yes	Yes	No
Audio Setting	Yes	Yes	No
Date/Time Setting	Yes	Yes	No
Network and Port Setting	Yes	Yes	No
Alarm Setting	Yes	Yes	No
Storage Setting	Yes	Yes	No
User Setting	Yes	No	No
Maintenance	Yes	No	No
Support	Yes	Yes	Yes
SD Card Explorer	Yes	Yes	Yes
Advanced Features Setting	Yes	Yes	No

➢ Delete: Under User List, select the registered user(s) and then click Delete User to delete a user.

Note:
- Admin is the default account and cannot be deleted.
- Maximum of 10 accounts can be created.
- Maximum length of username is limited to 32 characters.
- Maximum length of password is limited to 33 characters with a minimum length of 4 characters.

➢ Edit/Delete User:

✧ Edit User: Clicking on Edit column for the added user list will allow to the user to change setting like User Name/ Password/Authority.

✧ Delete User: Clicking on the Delete column for the added user list will allow deleting that particular user from that camera.

3.5. Modifying Video Image Settings

To change the video/image settings, click on the Video Setting button.

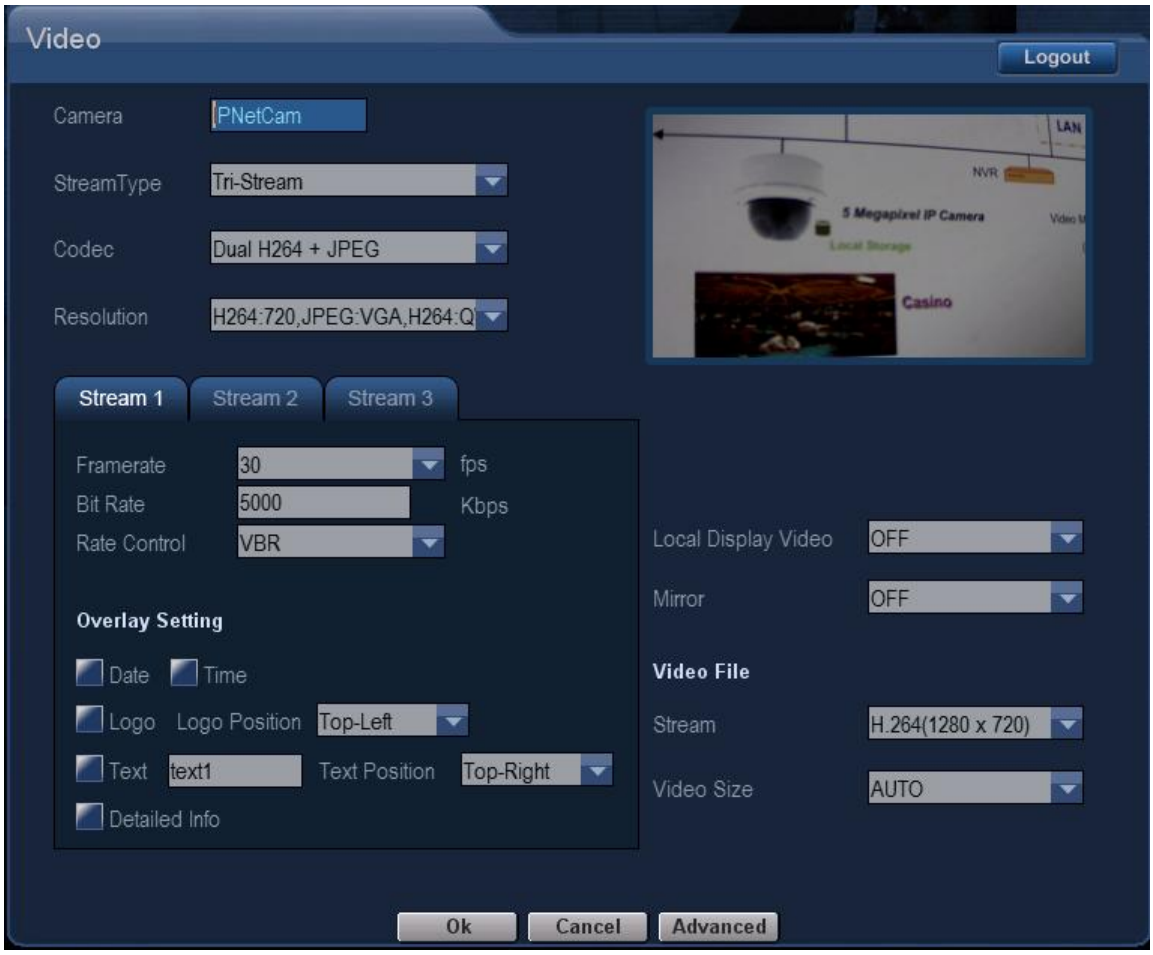

Figure 3-16 Video/Image Setting

- Camera: Type the camera title.

- Stream Type: Select the stream type.
  - Single : This will have single stream use cases only
  - Dual : This will enable dual stream use case with second resolution
  - Triple: This will enable triple stream use cases

- Codec Combo: Select the required codec. The options available are:
  - H.264 (Single)
  - MPEG4 (Single)
  - MegaPixel (Single)
  - H.264+JPEG (Dual)
  - MPEG4+JPEG (Dual)
  - Dual H.264 (Dual)
  - Dual MPEG4 (Dual)
  - H.264+MPEG4 (Dual)
  - Dual H.264+JPEG (Triple)
  - Dual MPEG4+JPEG (Triple)

- Resolution: Select the required image resolution. The options available are:
  - MPEG4:720, JPEG:VGA, MPEG4:QVGA(in Dual MPEG4+JPEG)
  - H.264:720, JPEG:VGA, H.264:QVGA(in Dual H.264+JPEG)
  - H.264:D1, MPEG4:D1(in H.264+MPEG4)
  - MPEG4:1080P, MPEG4:QVGA(in MPEG4+MPEG4)

- MPEG4:720, MPEG4:QVGA(in MPEG4+MPEG4)
- MPEG4:D1, MPEG4:D1(in MPEG4+MPEG4)
- MPEG4:D1, MPEG4:QVGA(in MPEG4+MPEG4)
- H.264:1080P, H.264:QVGA(in H.264+H.264)
- H.264:720, H.264:QVGA(in H.264+H.264)
- H.264:D1, H.264:D1(in H.264+H.264)
- H.264:D1, H.264:QVGA(in H.264+H.264)
- MPEG4:720, JPEG:720(in MPEG4+JPEG)
- MPEG4:720, JPEG:VGA(in MPEG4+JPEG)
- MPEG4:D1, JPEG:D1(in MPEG4+JPEG)
- H.264:720, JPEG:720(in H.264+JPEG)
- H.264:720, JPEG:VGA(in H.264+JPEG)
- H.264:D1, JPEG:D1(in H.264+JPEG)
- JPG:1600x1200 (in MegaPixel)
- JPG:2048x1536 (in MegaPixel)
- JPG:2592x1920 (in MegaPixel)
- H.264:1600x1200 (in MegaPixel)
- H.264: 2048x1536 (in MegaPixel)
- H.264:2592x1920 (in MegaPixel)
- MPEG4:720 (in Single MPEG4)
- MPEG4:D1 (in Single MPEG4)
- MPEG4:SXVGA (in Single MPEG4)
- MPEG4: 1080P (in Single MPEG4)
- MPEG4:720MAX60(in Single MPEG4)
- H.264:720(in Single H.264)
- H.264:D1(in Single H.264)
- H.264:SXVGA(in Single H.264)
- H.264:1080P(in Single H.264)
- H.264:720MAX60(in Single H.264)

➢ Local Display Video: Select one of the following options of the display device:
- OFF: Will switch off the display
- NTSC : Will switch to NTSC display @ 30fps
- PAL : Will switch to PAL display @ 25fps

➢ Mirror: Select the required option
- OFF
- VERTICAL: Flips the data in vertical direction
- HORIZONTAL: Flips the data in horizontal direction
- BOTH: Flips the data in both directions, equivalent to 180 rotation

➢ Video File:
- Video Size: From the drop-down list, select the length of an AVI file that needs to be saved in case of scheduled recording or Alarm Trigger. Options available are
  - ✓ Auto
  - ✓ 5 Sec
  - ✓ 10 Sec

- Stream**:** From the drop-down list, select the stream that needs to be saved in the AVI file. The following options are available(this will be based on the combo used):
  - ✓ MPEG4 (1920x1080)
  - ✓ MPEG4(1280x1024)
  - ✓ MPEG4 (1280x720)

- ✓ MPEG4(720x480)
- ✓ MPEG4(320x192)
- ✓ H.264 (1920x1080)
- ✓ H.264(1280x1024)
- ✓ H.264 (1280x720)
- ✓ H.264 (720x480)
- ✓ H.264(320x192)

Note:
If you insert the SD card or USB memory in IPNC, then Video Size option cannot be selected and will switch to Auto. The Stream size based on the length of schedule and alarm duration cannot be set. Recording continues until the SD card or USB memory has no space.

Following setting are in TAB form for individual streams settings:

- Bit rate: Type the required bit-rate for both MPEG4 Setting and H.264 Setting. Bit-rate values ranges between 64 and 12000 from stream1 and 64 to 8000 for stream2/stream3.

- JPEG Quality: Type the selected image quality required for JPEG stream. Quality value can vary from 3 to 99.

- Frame Rate: Select the required frame rate for JPEG, MPEG4 and H.264. This changes based on the selected codec combo.

- Rate Control: Select the required option
  - OFF: This will switched off the rate control and will encode the frame in constant QP mode for all MBs (Macro-Blocks)
    - MPEG4 will be coded with QP = 4
    - H.264 will be coded with QP = 28
  - VBR: Variable Bitrate (max_delay set is for 2000msec)
  - CBR: Constant Bitrate. This will have frame skips to maintain bitrate with specified VBV buffer(max_delay set is for 2000msec)

- Overlay Setting:
  - Select Enable Date and Time check box to activate the function.
  - OSD Logo: This will enable/disable insertion of Logo as per the position specified corner of the captured image.
    - ✓ Top-Left
    - ✓ Top-Right
  - OSD Text: This will enable/disable insertion of Text as per the position specified corner of the captured image.
    - ✓ Top-Left
    - ✓ Top-Right
  - Detailed Info: This will enable/disable insertion of following stream related details
    - ✓ Framerate value set for each stream
    - ✓ Bitrate value set for H.264/MPEG4 or QP value for JPEG
    - ✓ Codec type like H.264, MPEG4 or MJPEG
    - ✓ Rate control used like OFF, VBR or CBR

3.6. Modifying Video Advanced Settings

To change the video advanced settings, click on the "Advanced" button in Video page.

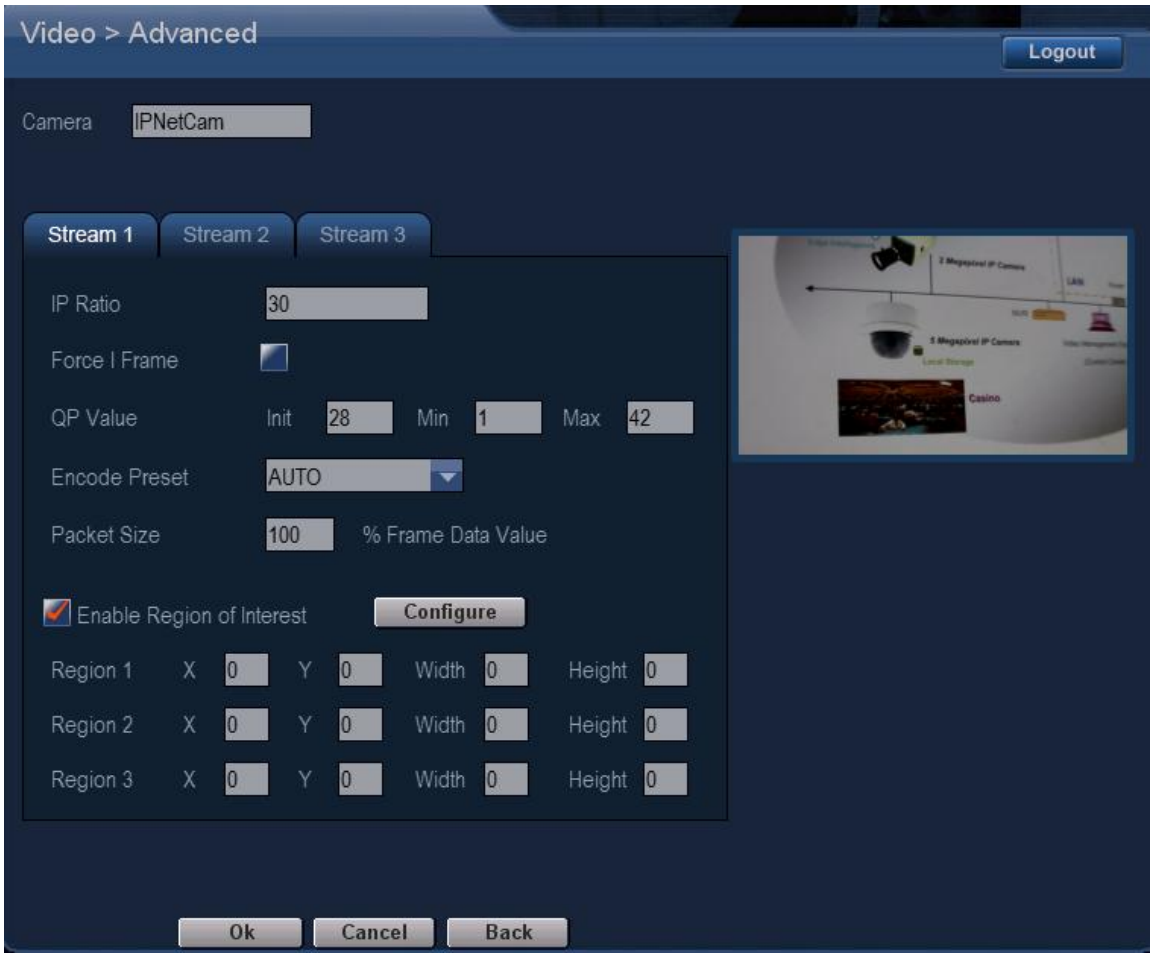

Figure 3-17 Video/Image Advanced Setting.

Enter the following settings:

- IP Ratio: Type the IP Ratio that needs to be set for the codec, default value is 30.This means once every 30 frames, one I frame will be inserted. Value range from 1 to 30.

- Force I Frame: By checking this box, it will enable that particular stream to insert I frame at that instant. Once I frame is inserted, this flag has no significance. In GUI, this will show as checked if selected to show the user the last setting.

- Encode Preset: Following Encoding Preset are supported
  - Auto: This will automatically set the value based on the codec combo used for best tradeoff with performance and quality
  - SVC: This will enable SVC mode of encoding with RTSP streaming on ports 8601, 8602, 8603, 8604 enabled.
  - Custom: This will enable custom preset based on the codec used.
    - ✓ For H.264, this will enable legacy version codec used in IPNC release 1.5
    - ✓ For MPEG4, this switches all the tools and put the codec to maximum quality. Tools enabled are intra Algo, UMV, SkipMB and ME is put to High Quality mode.

Note:
To use Custom mode, user need to have a good knowledge of Codec setting and its implications

- Packet Size: The percentage value entered will split the frame into slices and the packet header will be introduced at slice boundaries. Please refer to codec datasheet supplied along with the release.

- QP Value: Following options are supported
  - Init: Value with which codec starts encoding the MacroBlocks. When Rate Control is in OFF position, this value will be used to encode all the frames.
  - Min: Minimum Value of QP with which codec encodes the MacroBlocks.
  - Max: Maximum Value of QP with which codec encodes the MacroBlocks.

- Enable Region of Interest:

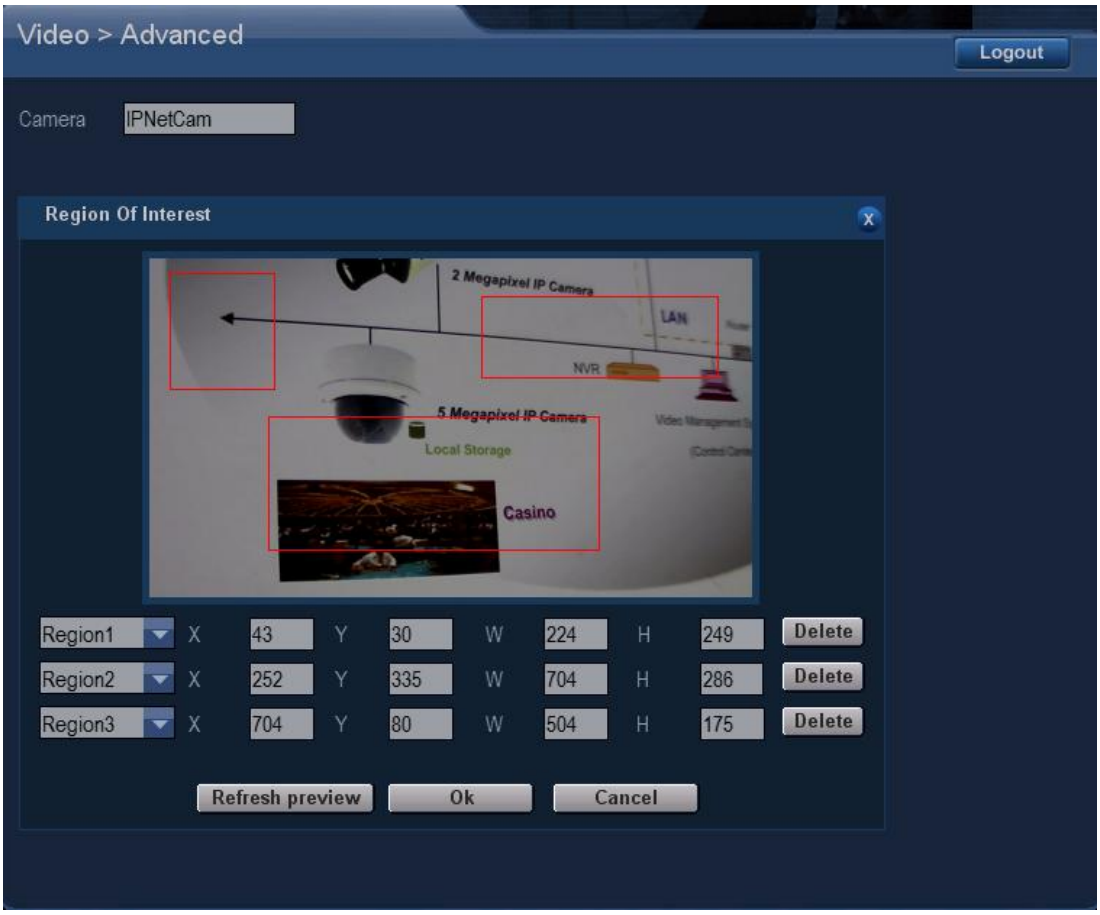

Figure 3-18 Video/Image Advanced Setting.

- This will enable the user to select 3 regions of interest
- User to select the regions using the Mouse, click and expand the box to select the region.
- Once done with all the selection, click OK.
- User can use Delete button is any regions needs to be deleted
- User can also fine tune these values in the main Video->Advanced Page
- On selection, Codec will assign better quality to these regions by varying QP value.

Note:
Region of Interest feature is supported only for H.264 codec. This has no significance for Mpeg4 or JPEG algorithms.

3.7. Modifying Advanced Features Settings

Click on the video Advanced Features settings to enable this page.

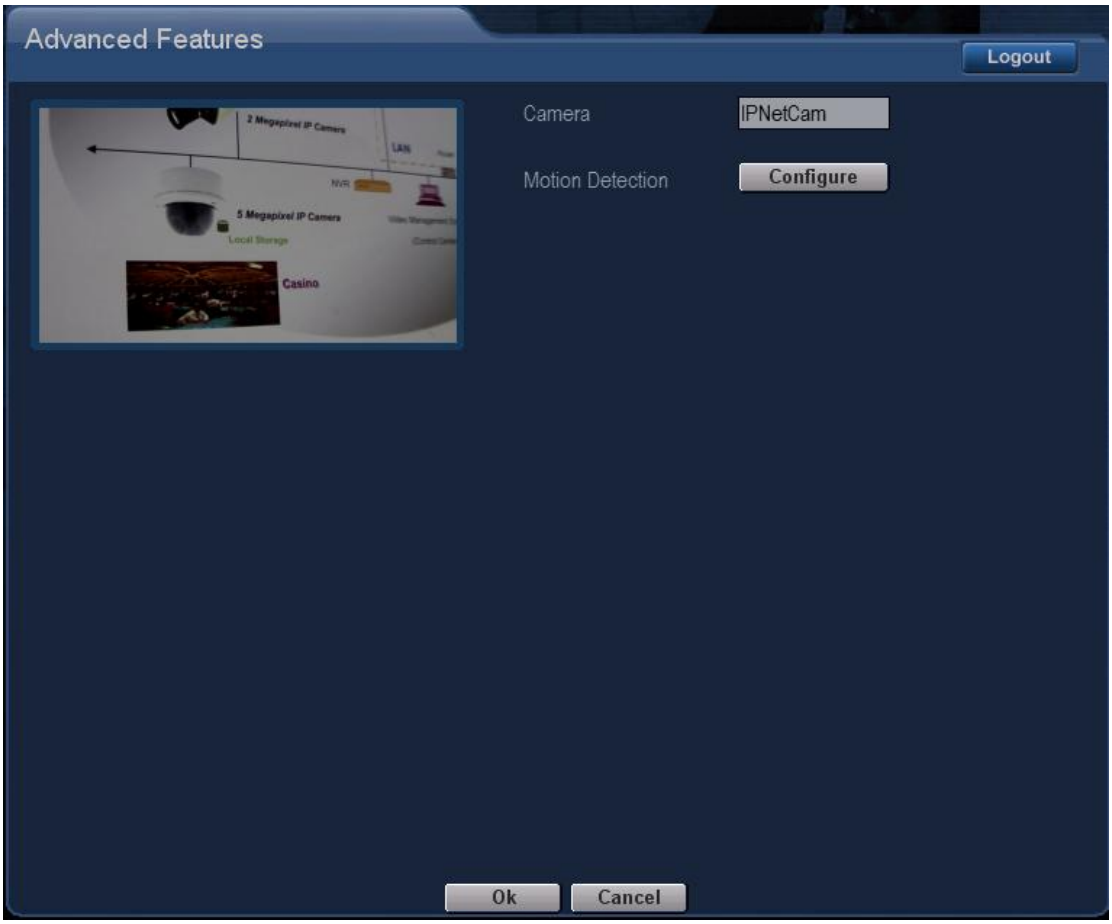

Figure 3-19 Advanced Feature Setting

- Motion Detection Setting: To set motion detection click configure button.

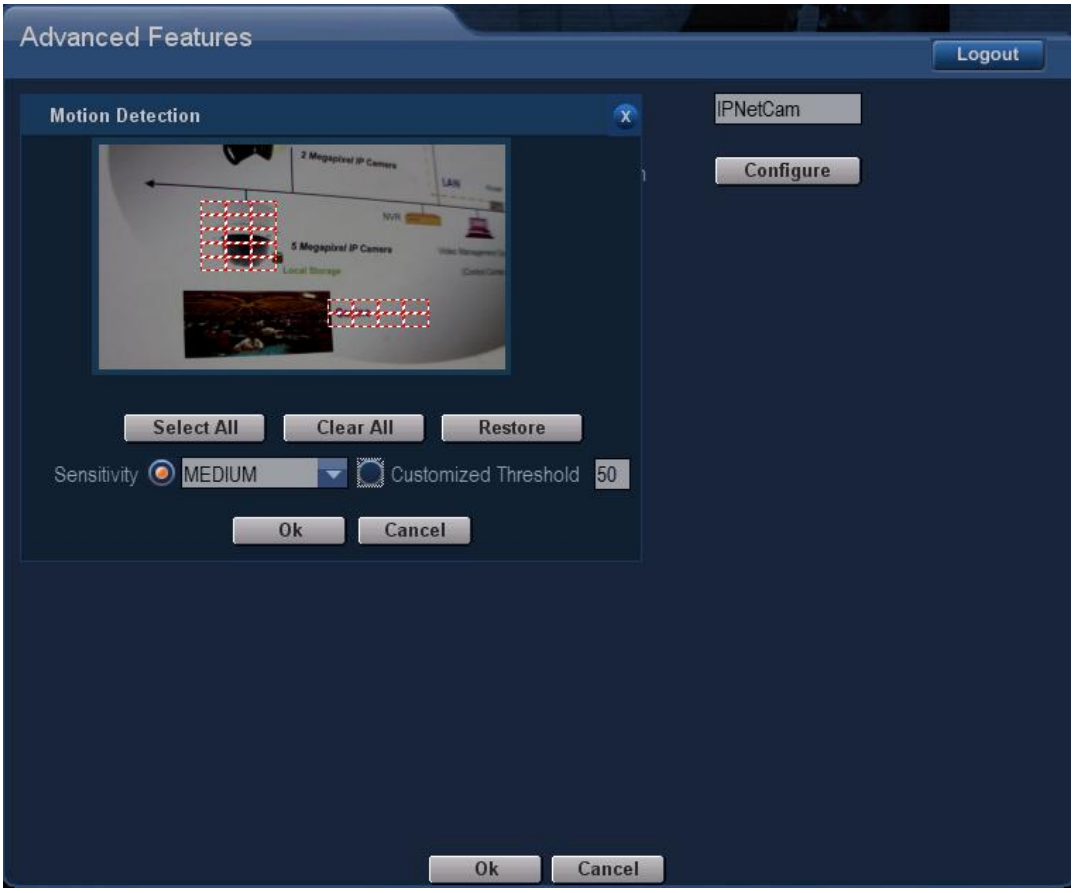

Figure 3-20 Motion Detection Setting

Note:
- Ensure that the codec of the image is not Megapixel JPEG before starting the function.
- You can click Enable Alarm to select the save type. Save the record file through FTP, SD Card, and SMTP. In addition, you can use Alarm Duration to determine the length of time for every record made.

- Zone Selection: Image is split into 256 zone (16 horizontally and 16 vertically). Click the left mouse button on the targeted image to select a red rectangle. User can set more than one targeted zone depending on your requirement by clicking on the zone. Clicking the zone once will select it and clicking it again will deselect it.

- Sensitivity: From the drop-down list, select the required option.
  - ✓ Low
  - ✓ Medium
  - ✓ High

- Customized Threshold: Type the threshold value. Range is 1-100.

Note:
- To set customized Threshold value, one must understand the motion detect algorithm present in IPNC application.
- The system starts motion detection, when some objects enter the area that you have selected, it triggers an alarm and records the video file based on the setting done on ALARM page.

3.8. Modifying Camera Settings

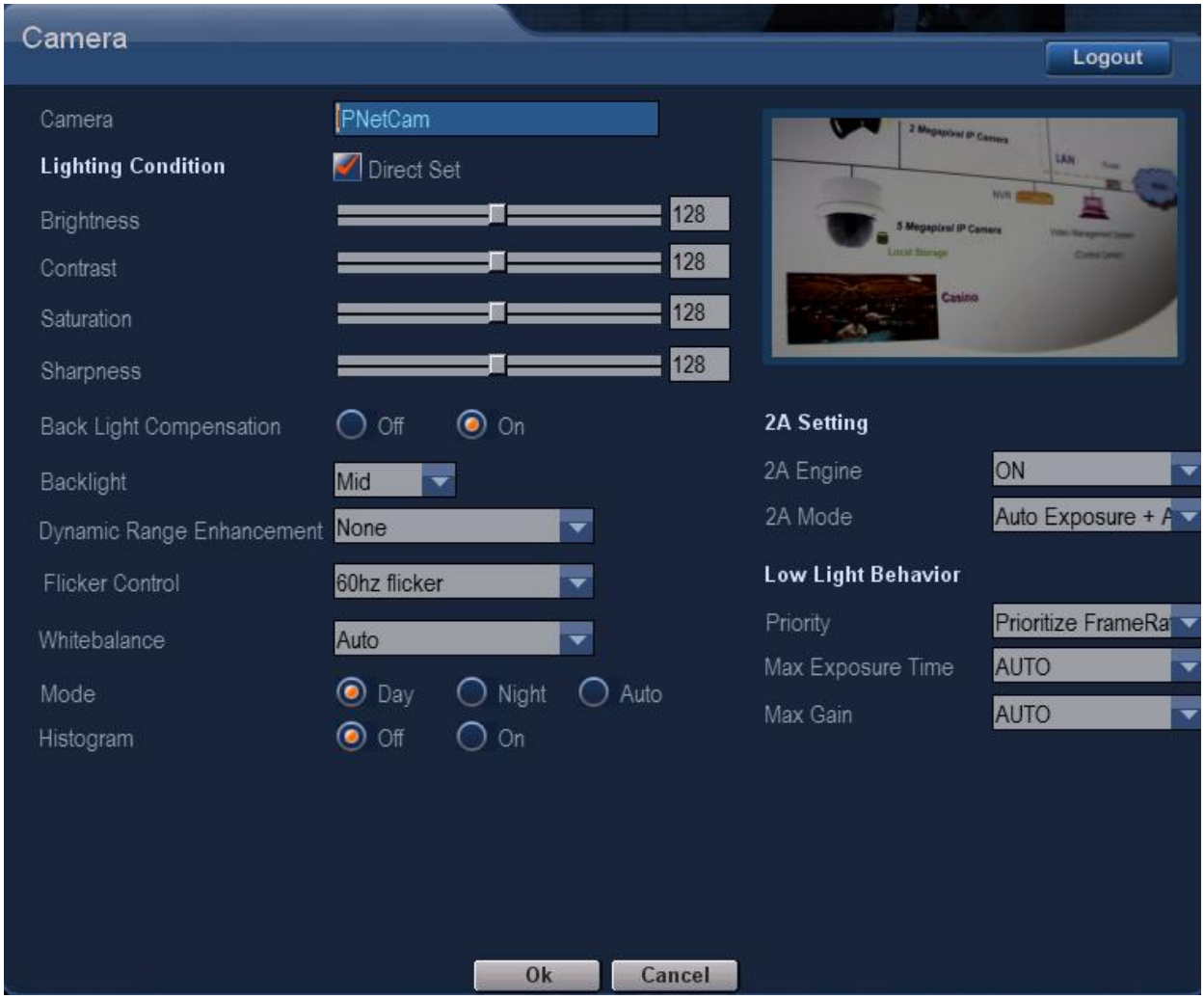

Figure 3-21 Camera Setting

- Brightness: Select the required brightness level that ranges from 1 to 255. A brighter scene appears, if you choose higher level of brightness.
- Contrast: Select the required range. The range available is from 1 to 255.
- Saturation: Select the required saturation level that ranges from 1 to 255. A vivid scene appears, if you choose a higher level of saturation.
- Sharpness: Select the required range of sharpness. The range available is from 1 to 255.
- BLC: Select one of the following options to turn on/off the backlight function:
  - ON
  - OFF
- Backlight: Select the required range. The range is set to MIN, MED and HIGH values based on user selection.
- Dynamic Range Enhancement: Select Global Dynamic Range Enhancement options are:

- Low Global Enhancement: This will enable Global dynamic range enhancement with lower strength values
- Medium Global Enhancement: This will enable Global dynamic range enhancement with medium strength values
- High Global Enhancement: This will enable Global dynamic range enhancement with high strength values
- Low Local Enhancement: This will enable Local and Global dynamic range enhancement with lower strength values
- Medium Local Enhancement: This will enable Local and Global dynamic range enhancement with medium strength values
- High Local Enhancement: This will enable Local and Global dynamic range enhancement with high strength values

Note:
- This feature (SALDRE) will work only with TI 2A algorithm, user need to ensure that 2A engine selected in GUI is from vendor TI.
- This is disabled for resolution above 720P.
- All advanced features like Noise Filter, Video Stabilization and Lens Distortion Correction algorithms will be switched OFF, if this feature is enabled.

➢ Flicker Control: Select one of the following options of the Flicker device:
- NTSC/60Hz : This will compensate for 60Hz flicker and will put the display if selected to NTSC mode
- PAL/50Hz : This will compensate for 50Hz flicker and will put the display if selected to PAL mode

➢ White Balance Mode: Select one of the following options:
- Auto: Only this mode is supported in this version.

➢ Day and Night: Select one of the following options:
- Day
- Night
- Auto

➢ Histogram: Select one of the following options for switching histogram display. This will be enabled only on primary stream
- OFF/ON button to enable/disable this option.

➢ 2A Engine: Select one of the following options to turn on/off the 2A Engine function:
- ON
- OFF

➢ 2A Mode: Select the required option. The options available are:
- OFF: 2A is switched OFF
- AE: Only Auto Exposure is switched ON
- AWB: Only Auto White Balance is switched ON
- AEWB: Both Auto Exposure and Auto White Balance are enabled

➢ Low Light Behavior: Select the required option. The options available are:
- Prioritize Frame rate
- Prioritize Exposure
- Max Exposure Time: Indoor, Outdoor, 1/8, 1/15, 1/30, 1/45

- Max Gain: Auto

3.9. Modifying Network Settings

This section provides information on the following network settings:

- Setting Network Options and IP Address
- Setting FTP
- Setting SMTP
- Setting SNTP
- Setting RTSP
- Setting Port Details

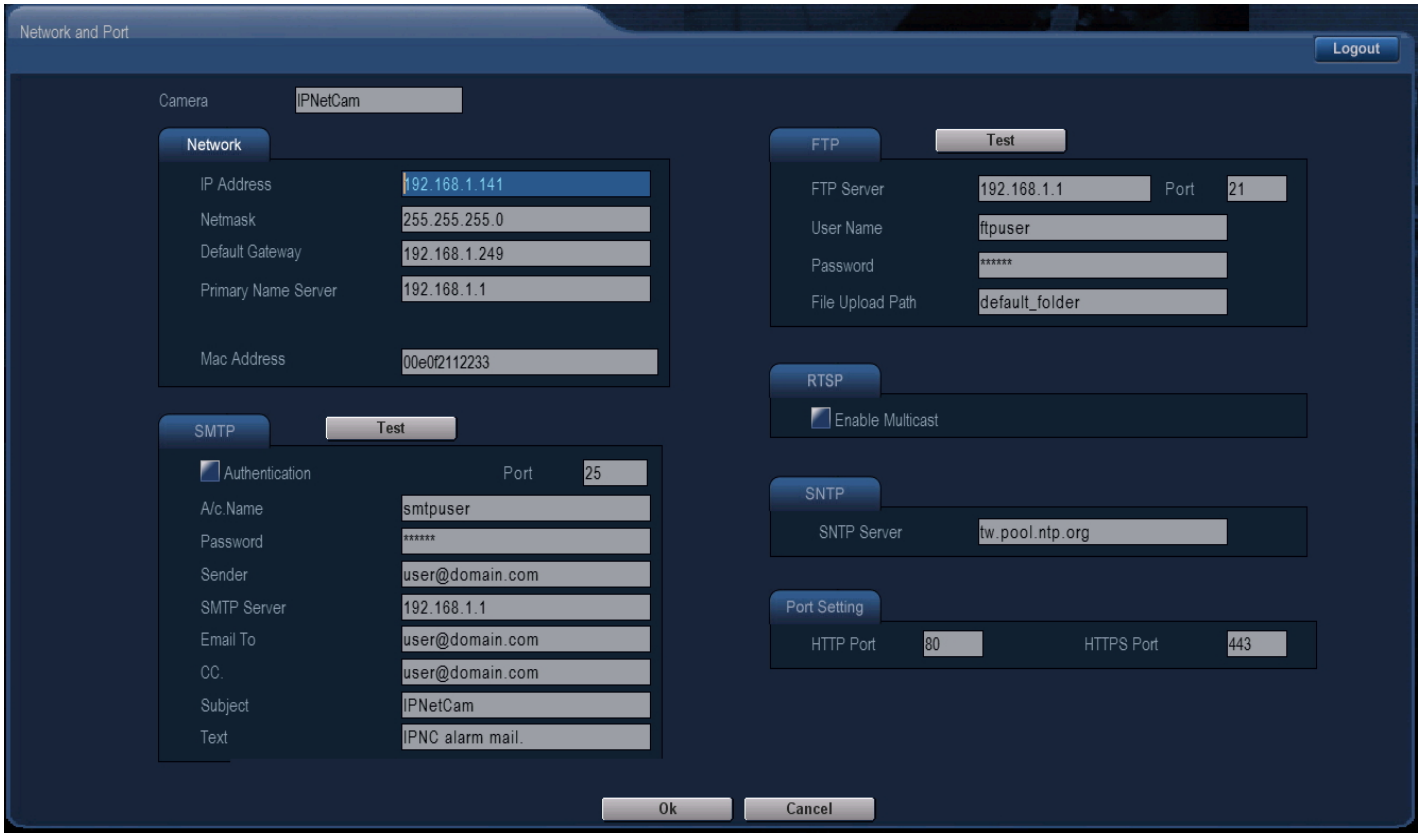

Figure 3-22 Network Options

3.9.1 Setting Network Options

In the Network page, enter the following:

- IP Address: Type the required 4-byte IP Address. The value in each box should be between 0 and 255. Each network camera has to have an IP address to be identified on the network.
- Netmask: Type the required 4-byte Subnet Mask. Any number between 0 and 255 is preferred. It is used to identify the subnet where the network camera is located.
- Default Gateway: Type the required 4-byte Gateway. Each unit value should be

between 0 and 255.

- Primary Name Server: Type the required 4-byte DNS server address. Each value unit should be between 0 and 255. The DNS Server translates the domain name to IP address.
- MAC Address: Only show the IPNC Mac address.

3.9.2 Setting FTP

To change FTP settings through the network and upload recording live data:

- FTP Server: Type the required FTP server domain name.
- Port: Type the FTP network port number.
- User Name: Type the required FTP login user name. A warning message is displayed, if the data is not provided.
- Password: Type the required FTP login password. A warning message is displayed, if the data is not provided.
- File Upload Path: Type the required FTP file upload path.

Note: FTP will function only when all the settings are accurately configured.

3.9.3 Setting SMTP

To change SMTP settings through the network:

- Select My Server Requires Authentication check box to activate the function.
- Account Name: Type the required account name.
- Password: Type the password.
- Sender: Provide valid mail details
- SMTP Server: Type the required SMTP server domain name.
- Email Address: Type the required e-mail address of the recipient.

Note: SMTP will function only when all the settings are accurately configured.

3.9.4 Setting SNTP

To change SNTP settings through the network:

- SNTP Server: Type the required SNTP server domain name.

3.9.5 Setting RTSP

To change RTSP settings through the network:

- Enable Multicast: By clicking this checkbox, RTSP stream will be in multicast format.

3.9.6 Setting Port

To change RTSP settings through the network:

- HTTP Port: Type the required HTTP Port. The default value is 80. This indicates the specific HTTP port number.
- HTTPS Port: Type the required HTTPS Port. The default value is 443.

3.10. Modifying Date Time Settings

Click on the Date/Time settings to enable this page.

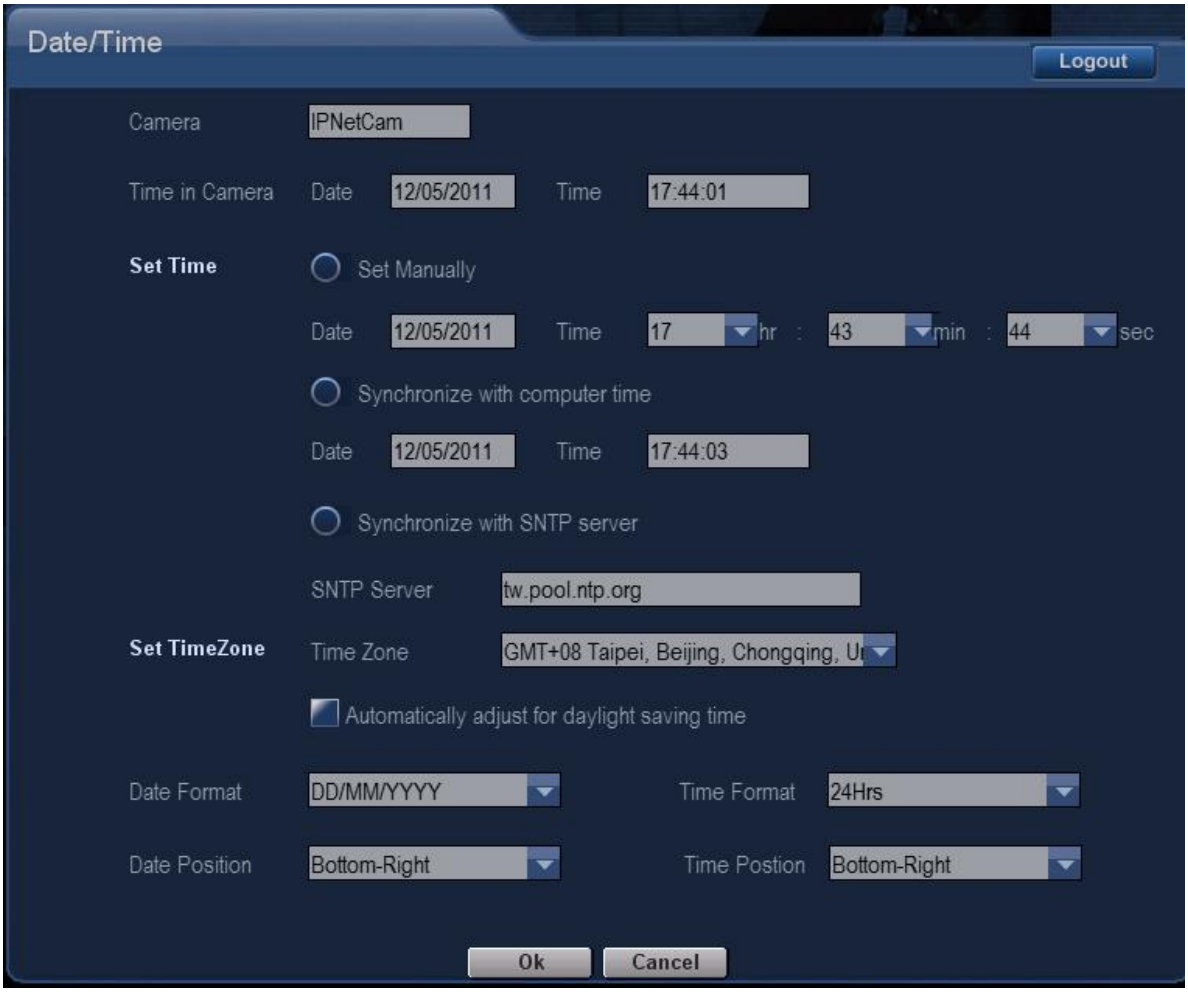

Figure 3-23 Date and Time

- Time in Camera: Shows time in the Network Camera.

- Set Time: You can change the time in the Network camera in one of the following ways:
  - Set Manually: Select the date and time from the drop-down lists.
  - Synchronize with Computer Time: Select this option to set the computer date and time to the network camera.
  - Synchronize with SNTP Server: Select this option to set the SNTP Server date and

time to the network camera.

- Time Zone: Select the required time zone from the drop-down list. If this is not done, the time given by the unit may be incorrect. There are 25 default time zones.

➢ Select Automatically Adjust for Daylight Saving Time Changes check box to activate the function.

➢ Date Format: From the Date format drop-down list, select one of the following modes to specify the date format:
- YYYY/MM/DD
- MM/DD/YYYY
- DD/MM/YYYY

Note: MM-Month, DD-Day, YY-Year

➢ Time Format: From the Time format drop-down list, select one of the following modes to specify the time format:
- 12 hour format
- 24 hour format

➢ Date Position: This will set the position of the date on the captured image.
- Bottom-Left
- Bottom-Right

➢ Time Position: This will set the position of the time on the captured image.
- Bottom-Left
- Bottom-Righ

3.11. Modifying Audio Settings

Click on the Audio settings to enable this page

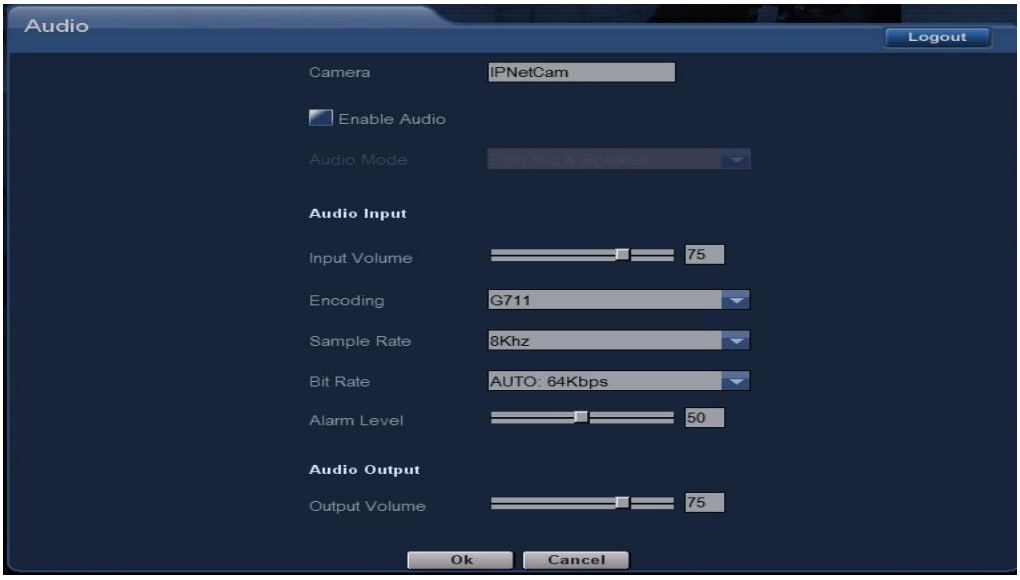

Figure 3-24 Audio Settings

- Enable Audio: This will switch ON/OFF the audio in camera

- Audio Mode: You can change the audio mode in the Network camera in one of the following ways:
  - Only Mic: Enables only audio capture in camera.
  - Only Speaker: Enables only audio playback in camera.
  - Both Mic & Speaker: Enables both audio playback & capture in camera.

- Input Volume: Sets the input capture gain, values set from 1-100

- Encoding: Set which codec is used for encoding.
  - G711
  - AAC-LC

- Sample Rate: Supports 8 KHz and 16 KHz sampling options from this drop down menu.

- Bit- Rate: Auto(64Kbps)

- Alarm Level: Set the alarm level, values set from 1-100.

- Output Volume: Set the audio playback volume, values set from 1-100.

3.12. Modifying Alarm Settings

Click on the Alarm settings to enable this page

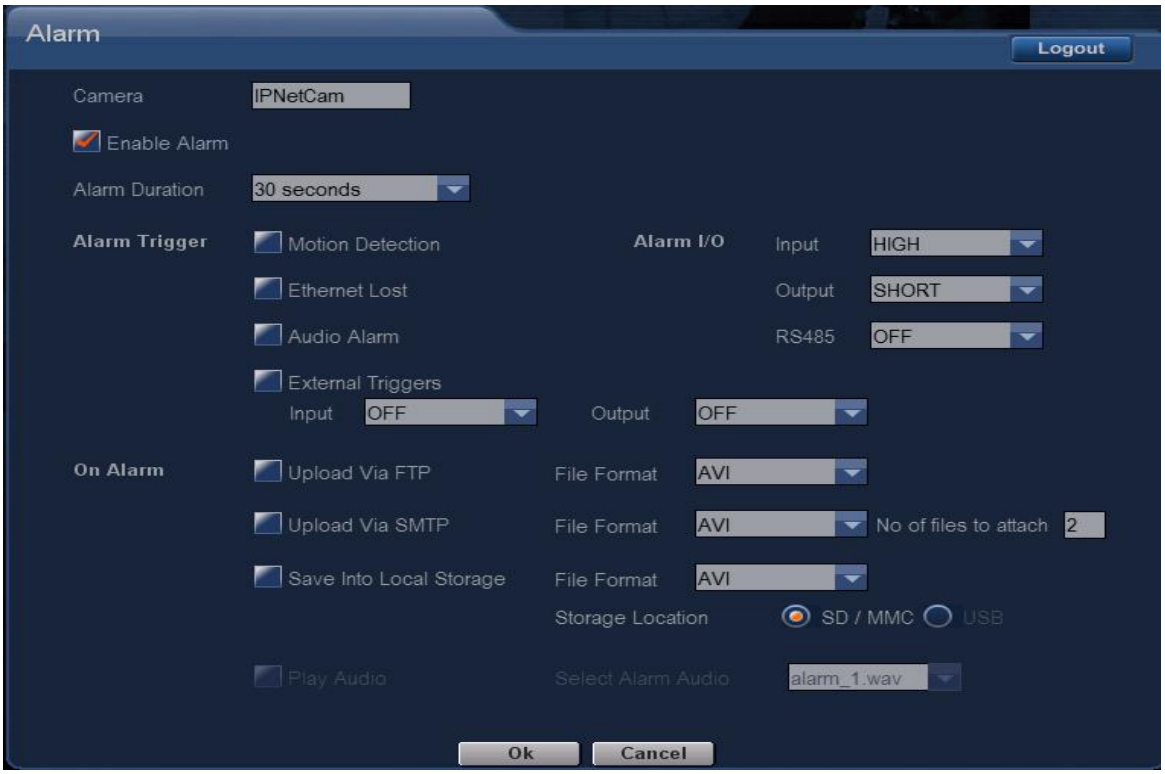

Figure 3-25 Alarm Settings

- Enable Alarm: This will switch ON/OFF the alarm in camera

- Alarm Duration: From the drop-down list, select the length of the alarm (10sec, 30sec, 1 min, 5min, 10min, Non-Stop). This option will determine how long the ALARM signal should be ON after it gets detected.

- Alarm Trigger: You can change the Alarm Trigger mode in the Network camera:
  - Motion Detect: Activates or deactivates the alarm when the Motion is found based on motion detection setting
  - Ethernet Lost: Activates or deactivates the alarm when the network connection is down or network cable is tampered with
  - Audio Alarm: Activates or deactivates the alarm at high audio level based on the value set in Alarm Level in Audio Page.
  - For External Triggers Input : Select one of the following options
    - ✓ ON: Corresponds to the ALM-IN in the IPNC, you can use GPIO connector.
    - ✓ OFF: Corresponds to the ALM-IN in the IPNC, GPIO connector is shut down.
  - For External Triggers Output : Select one of the following options
    - ✓ ON: Corresponds to the ALM-OUT in the IPNC, you can use GPIO connector.
    - ✓ OFF: Corresponds to the ALM-OUT in the IPNC, GPIO connector is shut down.

- On Alarm : You can change the Alarm Actions by setting appropriate check boxes
  - Upload via FTP: Activates or deactivates the alarm recording upload to FTP
    - ✓ File Format: User needs to select this option based on drop-down Menu. AVI or JPEG format is supported
  - Save Into Local Storage: Activates or deactivates the alarm recording to be saved to SD card.
    - ✓ File Format: User needs to select this option based on drop-down Menu. AVI or JPEG format is supported
  - Storage Location: SD CARD/USB or other memory is supported in this version.
  - Upload via SMTP: Activates or deactivates the alarm recording upload to SMTP.
    - ✓ File Format: User needs to select this option based on drop-down Menu. AVI or JPEG format is supported
    - ✓ Attached File numbers: Type the number of images per email. The default value is 2. The limit is 20.
  - Play Audio: Selects the audio playback based of alarm detection
    - ✓ Alarm Audio Files: User needs to select the Alarm Wave Files that needs to be played

- Alarm I/O :
  - Input/Output: For both Digital Input and Digital Output, select the Active Type as Low or High from the respective drop-down lists. Active Type means low trigger or high trigger (or triggers to high or triggers to low when output). The alarm can be triggered with the digital signal.
  - RS485: This is disabled for current release.

Note:
- Before starting the function, you have to set the FTP, SMTP server parameters should be entered through Network Page
- Mail server should limit the file size of an e-mail (3 MB usually). For more

information, you can consult a qualified MIS professional or your ISP.
- If you insert a SD card into IPNC, the file format for FTP and SMTP works only in JPEG mode.
- For Alarm Audio Playback to be ON, user needs to enable Audio with Speaker mode enabled
- The access throughout is based on the SD card or other memory speed. Use high-speed SD card to increase the access efficiency.

3.13. Storage Settings

The page provides user setup the save media type and file format, and the record schedule. Click on the Storage tag can enable this page

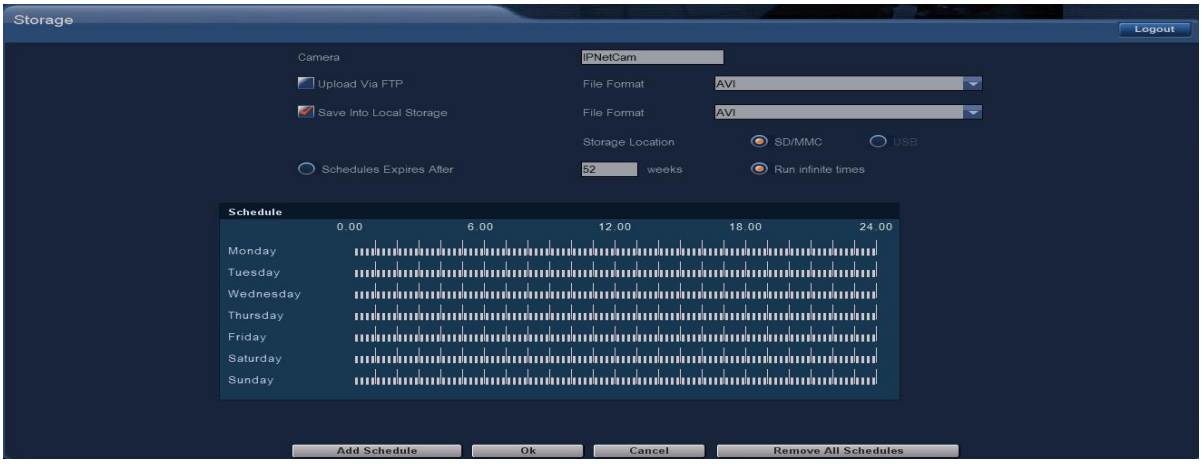

Figure 3-26 Storage Settings

- Upload via FTP: Activates or deactivates the recording to the FTP server.
  - File Format: User needs to select this option based on drop-down Menu. AVI or JPEG format is supported
- Save Into Local Storage**:** Activates or deactivates the recording to the SD card, USB or other memory.
  - File Format: User needs to select this option based on drop-down Menu. AVI or JPEG format is supported
  - Storage Location: SD CARD or USB.

Note:
- Ensure to set all the parameters for FTP server before selecting the two options.
- If SD CARD and FTP are both selected, Then, AVI files will be captured to SD CARD and JPEG file will be uploaded to FTP.

- Schedule Expires After: This will run the schedule set for number of weeks specified in this textbox. Range is 1-99.
- Run infinite times: This will run the schedule set forever till the schedule is RESET by user
- Add Schedule: Click on this button will open new screen.

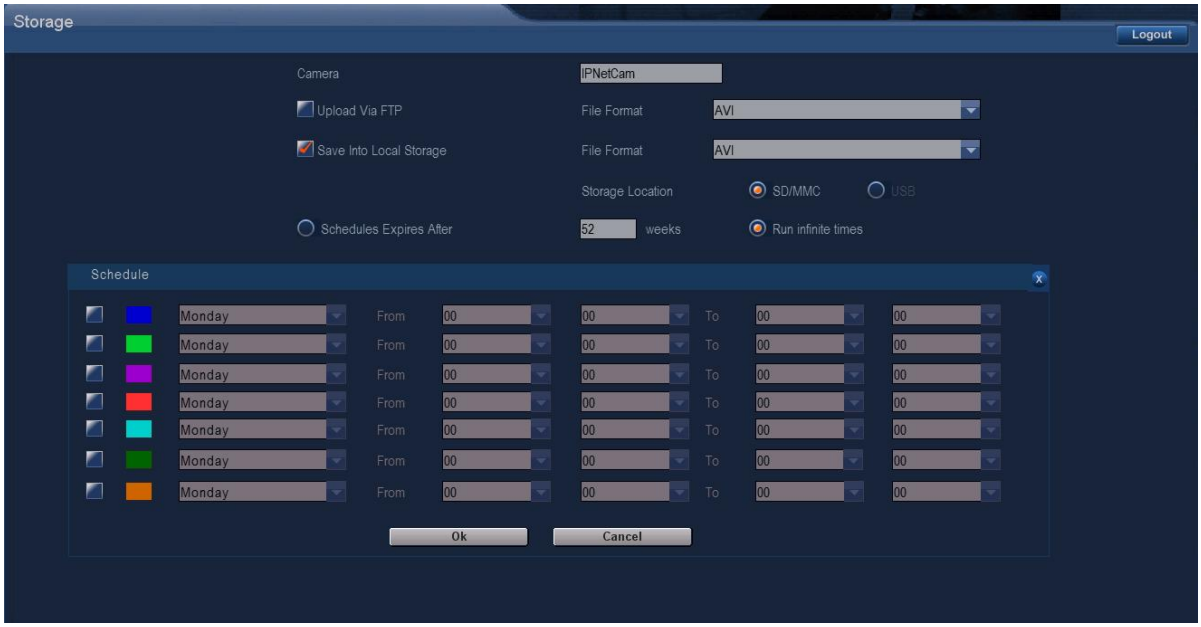

Figure 3-27 Schedule Settings

- You can select any/all of the seven checkboxes boxes set vertically in to enable/disable the programmed recording function, and vary the day and time of the targeted item while it is enabled.
- Remove All Schedules: This will remove the entire schedule by clearing the setting.

3.14. SD-CARD/Memory Explorer Page

Click on the SD CARD Explorer icon in live video will enable this page

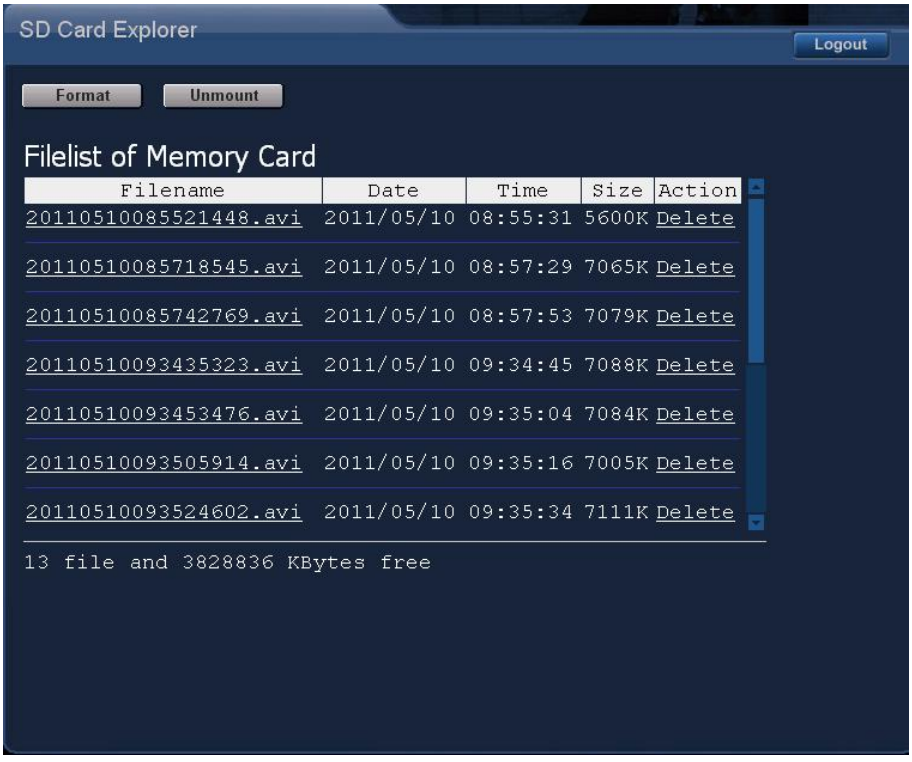

Figure 3-28 SDCARD/Memory Explorer

- This page will indicate the total size of SD card at bottom of the page and the space used in the card in percentage as well.
- Format: Formats the SD card. If selected, all the data will be deleted.
- Un-mount: Un-mounts the SD card/memory. Before removing the SD card, click this option.
- File view: All the files can be viewed in this page. Files can be deleted using delete option and scrollbars can be used to browse through the menu

Note: This page will display only YUV, JPEG or AVI files only. Other files in the SD card or other memory will not be displayed.

3.15. Support Page

Click on the Support to enable this page

Figure 3-29 Support Details

- Release Version:
  - Kernel Version specifies the version of the Linux Kernel which is used for IPNC ref design
  - Uboot Version specifies the version of the u-boot running in IPNC hardware
  - Software Version specifies IPNC ref Design version number
  - Video Player Version specifies the version of the PC ActiveX player
  - GUI Version specifies the release number of the GUI integrated to the IPNC Software

3.16. Maintenance Page

Click on the Maintenance to enable this page

Figure 3-30 Maintenance Page

Event Logs:

- System Logs: This will give details on the system related log form the camera. User can click on View, Save and Clear button based on the requirement.

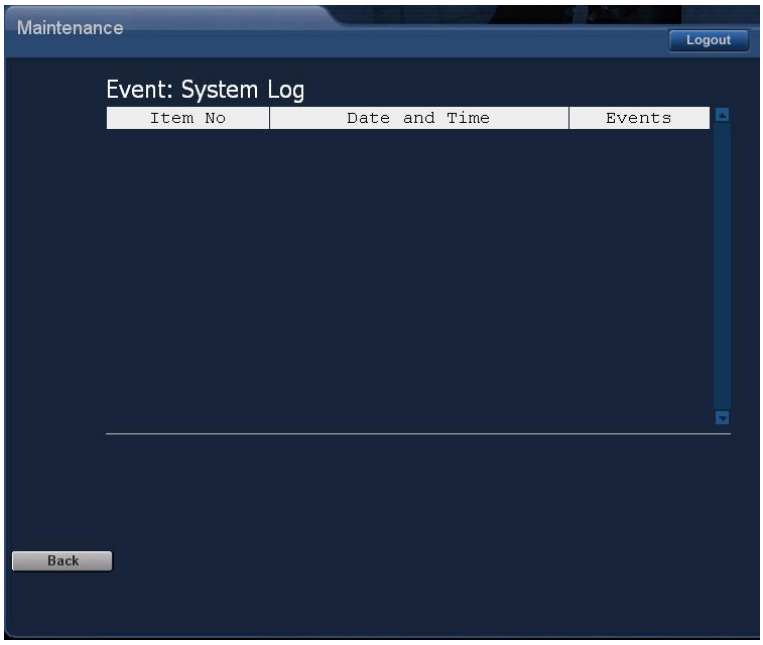

Figure 3-31 System Logs

- Access Logs: This will give details on the user related log form the camera. User can click on View, Save and Clear button based on the requirement.

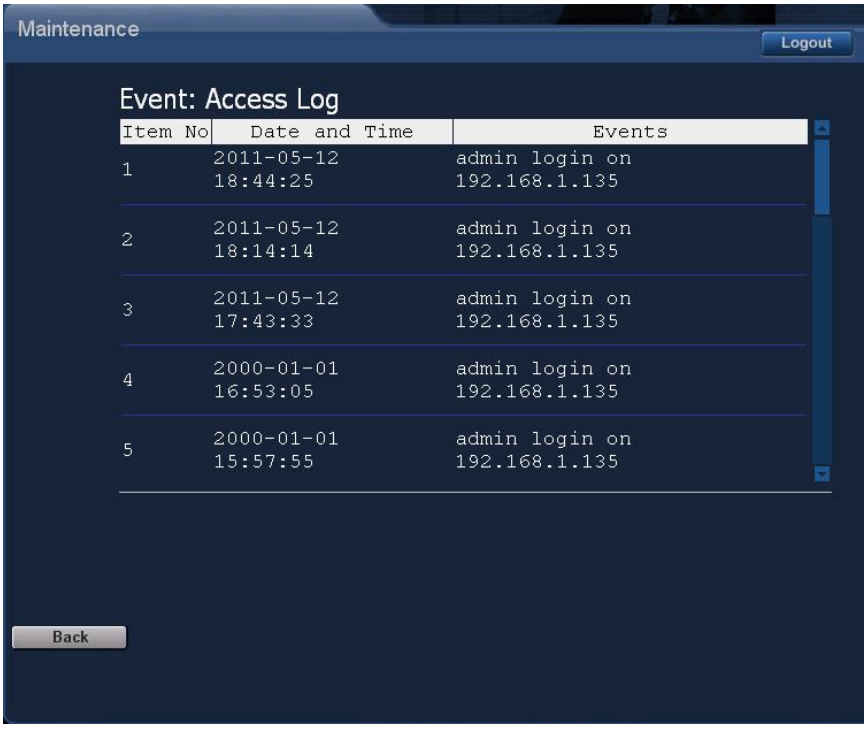

Figure 3-32 Access Logs

Camera Logs:

- Active connection list: This is not supported in the current release.
- Current Parameter List: This will give details on the selected and important camera parameter. User can click on View and Save based on the requirement. Clicking on Default will RESET the hardware to Factory default value

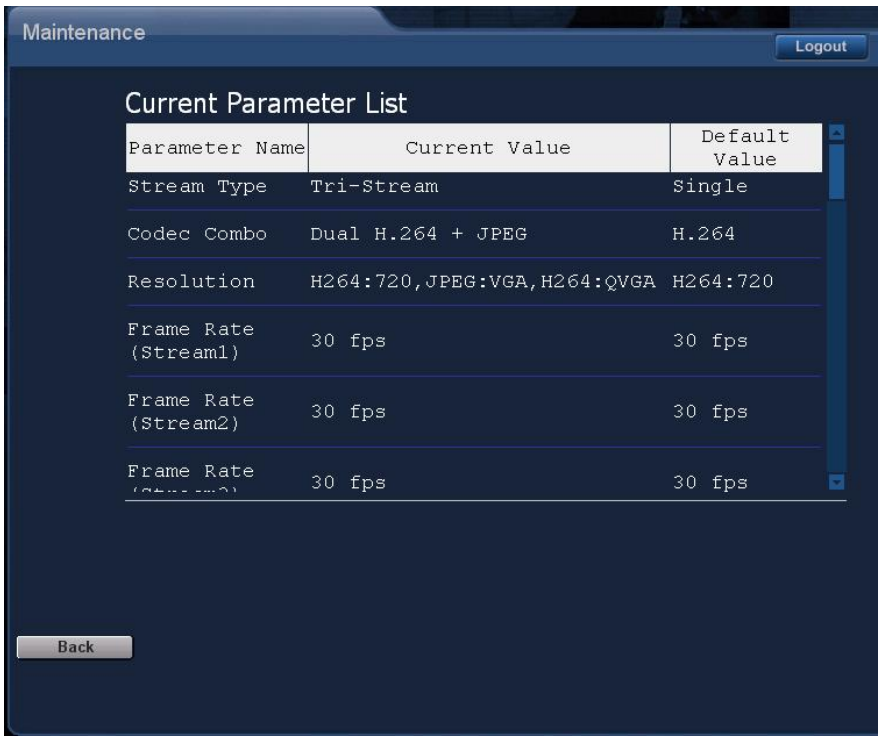

Figure 3-33 Default value screen

Camera Maintenance:

- New Kernel: New uImage file to upgrade the camera can be sent from this section.

- Root File System: New cramfs file to upgrade the camera can be sent from this section.
- Restore Firmware: This will copy the entire Nand with new nand Image. Not supported in current release.
- Backup Firmware: This will save entire Nand to PC hard disk. Not supported in current release.
- Restart Camera: This will restart the camera.

X.509 Certificate Maintenance:

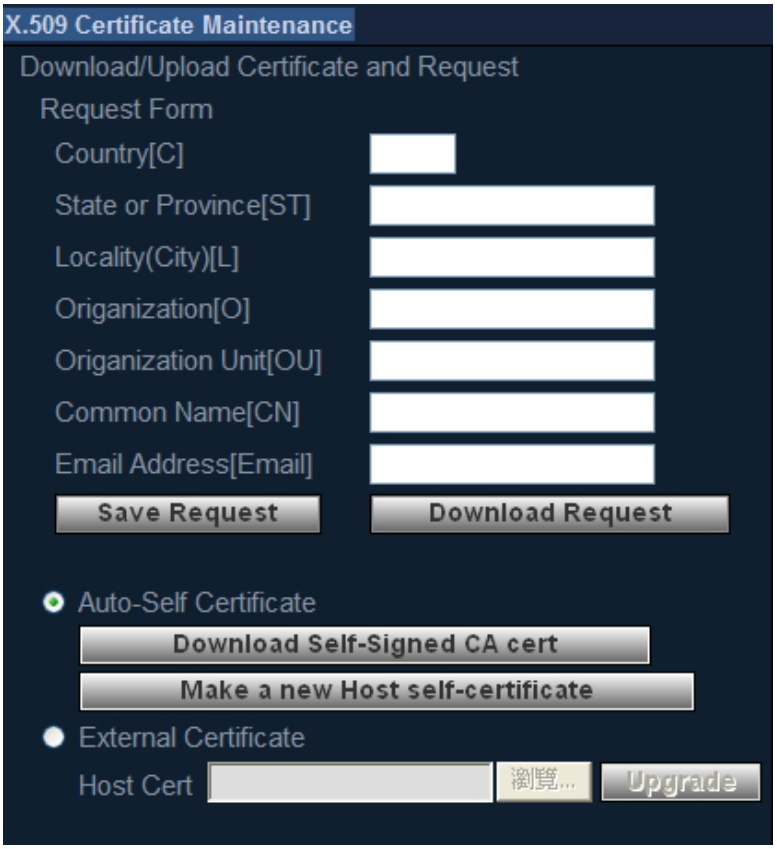

Figure 3-34 Certificate Maintenance

- Create New Request From

  Request Form must be enter in English (ASCII character set). Some field can leave blank.

  Field explanation as below.

  Country: Country Name, 2 letter code and must be uppercase. Please reference ISO-3166 Country Codes. ex. [TW].

  State or Province: State or Province Name, ex. [Taiwan].

  Locality: Locality Name, like city name, ex. [Taipei].

  Organization: Organization Name, like company name, ex. [Abc Comnet Inc.].

  Organization Unit: Organization Unit Name, like section, ex. [Sales].

  Command Name: The name of the certificate. If you use server certificate please enter server full name (www.abc.com). If you use email certificate please enter your email (keanu@abc.def). Or you can enter your name, ex. [Keanu].

  Email Address: enter your contact email address, ex. [keanu@abc.def].

After you fill the certificate request form, click “Save Request” button to generate the IPNC device certificate request. And you can click “Download Request” button to download request form file to PC side.

- Auto Self-Certificate
  When you click “Save Request” button, the IPNC device will auto generate a host self-certificate. You can click “Download Self-Signed CA cert” button to download CA cert to PC side. Click “Make a new Host self-certificate” button will auto generate new host self-certificate.

- External Certificate
  You can use external generate host certificate. Select External Certificate, Click “Browser” button to find the host certificate file, then Click “Upgrade” button to save host certificate file in the IPNC device.