



POE-260 CAM

POE Pan-Tilt Vision IP Camera

User's Manual





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Before You Use this Product

This product has been designed with safety in mind. However, if not used properly, electrical products can cause fires which may lead to serious bodily injury. To avoid such accidents, be sure to heed the following:

Legal Caution

Video and audio surveillance can be forbidden by laws that vary from country to country. Check the laws in your local region before using this product for surveillance purposes.

Heed the safety precautions

Be sure to follow the general safety precautions and the “Operation Notice.”

In case of a breakdown

In case of system breakdown, discontinue usage and contact your authorized dealer.

In case of abnormal operation

- If the unit emits smoke or an unusual smell,
- If water or other foreign objects enter the cabinet, or
- If you drop the unit or damage the cabinet:
 - 1 Disconnect the cable and the connecting cables.
 - 2 Contact your authorized dealer or the store where you purchased the product.

Operation Notice - Operating or storage location

Avoid operating or storing the camera in the following locations:

- Extremely hot or cold places (operating temperature: 0 °C to +50 °C [32 °F to 122°F])
- Exposed to direct sunlight for a long time or close to heating equipment (e.g., near heaters)
- Close to sources of strong magnetism
- Close to sources of powerful electromagnetic radiation, such as radios or TV transmitters
- Locations subject to strong vibration or shock

Ventilation

To prevent heat buildup, do not block air circulation around the device.

Transportation

When transporting the camera, repack it as originally packed at the factory or in materials of equal quality.

Cleaning

- Use a soft, dry cloth to clean the external surfaces of the device. Stubborn stains can be removed using a soft cloth dampened with a small quantity of detergent solution, then wipe dry.
- Do not use volatile solvents such as alcohol, benzene or thinners as they may damage the surface.

Table of Content

1. Introduction	1
1.1 Overview	1
1.2 How to Use This Guide	2
1.3 Firmware Upgrade and Tech Support	3
1.4 Features	4
2. Hardware Installation	5
2.1 Hardware Installation Steps	5
2.2 Package Contents	6
2.3 Overviews	7
2.4 EZ Install CamPro Express	8
3. Using IP Camera via Mobile Phone	22
3.1 3G Mobile Phone Viewing	22
3.2 2.5G Mobile Phone Viewing	22
4. Using IP Camera via Web Browser	23
5. Initial accessing the IP Camera	24
6. How to Use	25
6.1 Accessing the IP Camera	25
6.2 Configuration of Main Menu	26
7. Setting	29
7.1 Basic	29
7.2 Advance	44
8. CamPro Express	58
8.1 Getting Started	58
8.2 Start Service Program	69
8.3 Admin Program	70
8.4 Monitor Program	102
8.5 Web Monitor	112
8.6 Multi Playback	114
9. Technical Specification	145

1

Introduction

1.1 Overview

The POE-260CAM is an advanced POE IP camera with Pan and Tilt function. You can set a particular patrol area; it will then move its lens in both horizontal and vertical direction continuously to scan the area. Or you can remote control the camera to look in the desirable direction.



1.2 How to Use This Guide

The AirLive POE-260CAM is a high performance camera designed for professional indoor surveillance and security applications. It is recommended that you read through the entire user's guide whenever possible. The user guide is divided into different chapters, include hardware installation and campro express installation.

Recommended Reading

- ❑ **Chapter 2**
 - **2.1 Hardware Installation:** This section explain the hardware installation and Package content.
 - **2.4 EZ Install CamPro Express** This section inroduces cam pro express quick installation step and different between instatl server verison and client verison. This is must read section when you need to setup multiple camera and recording in the computer.
- ❑ **Chapter 5:** This section has default settings information suchs as IP, password, of the device.
- ❑ **Chapter 6:** This chapter is about most of the firmware function in the camera. This is must of read.
- ❑ **Chapter 7:**
 - **7.1 Getting Started:** This section inroduces cam pro express quick installation step and different between instatl server verison and client verison.
 - **7.3 Admin Program:** This section inroduces majoy function in admin program configurations.
 - **7.4 Monitor Program:** This section tells you how to get into the monitor program and how to using monitor program.
 - **7.5 Web Monitor :** This section tells you how to get into the Web UI using HTTP
 - **7.6 . Multi Playback :** This section explain how to using the Multi Play back function when you need to review your recording file.

- ❑ APPENDIX –This section tell you most of the case study when you need to Setup Frame Rate & Bit Rate Table,Storage Requirement Table,DIDO in Motion detection,DIDO in Cam Pro Express. This is most of read if you need to setup DIDO.

1.3 Firmware Upgrade and Tech Support

If you encounter a technical issue that can not be resolved by information on this guide, we recommend that you visit our comprehensive website support at www.airlive.com. The tech support FAQ are frequently updated with latest information.

In addition, you might find new firmwares that either increase software functions or provide bug fixes for POE-260CAM. You can reach our on-line support center at the following link: http://www.airlive.com/support/support_2.jsp

Since 2009, AirLive has added the “Newsletter Instant Support System” on our website. AirLive Newsletter subscribers receives instant email notifications when there are new download or tech support FAQ updates for their subscribed airlive models. To become an AirLive newsletter member, please visit: http://www.airlive.com/member/member_3.jsp

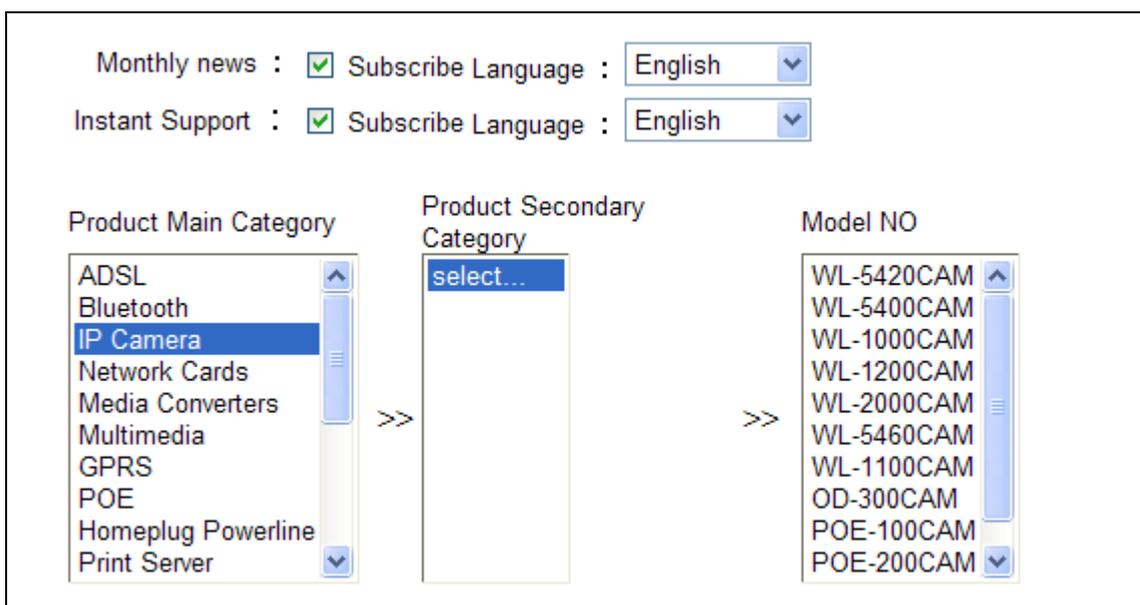


Figure 1.3: AirLive Newsletter Support System

1.4 Features

- Simultaneous MPEG-4 and Motion JPEG video stream
- 12 pcs Infrared LEDs for night use up to 10 working distance
- IEEE 802.3 af Power over Ethernet Support
- 2-Way Audio Capability
- Support Mac OS Browser
- CAMPRO Express- 16 channel recording software.
- Support multiple Language firmware and Web Monitor
- Support DIDO function.
- CAMPRO Express- Support Remote management.

2

Hardware Installation

This section describes the hardware features and the hardware installation procedure for the POE-260CAM.

For software configuration, please go to chapter 3 for more details.

2.1 Hardware Installation Steps

Follow these steps to install the POE-260CAM on your Ethernet:

1. Check the package contents against the list below.
2. Set the device. See IP Installer User Manual on the available methods.

Hardware Installation.

1. Please plug power and Speaker. * If you don't have POE Switch



2. Please connect your LAN cable to POE Switch.



3. Install the Stand



2.2 Package Contents

Camera	POE-260CAM Dome IP Camera
Quick Installation Guide	Brief product information and quick installation
Software CD	IP Surveillance Software Intelligent IP Installer User Manuals Language Packs
Screw Pack	Two screws and plastic wall anchors
Adaptor	12V DC, max 6W
Camera	POE-260CAM Dome IP Camera



IP Camera



Power Adapter, DC12V, 1.25A



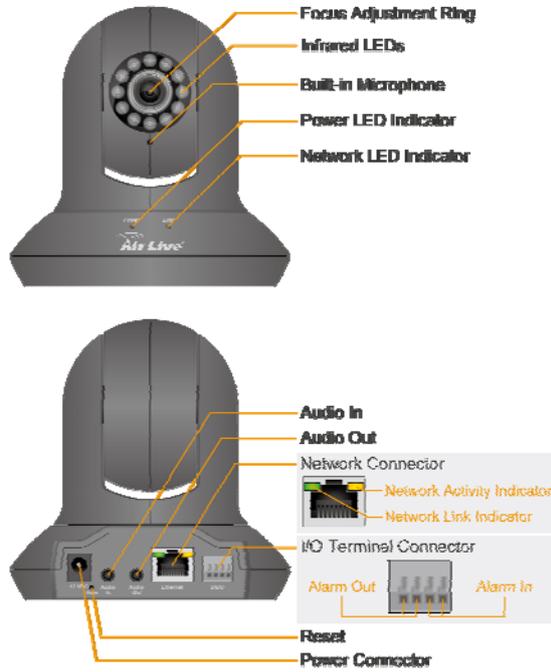
Installation CD



Quick Setup Guide

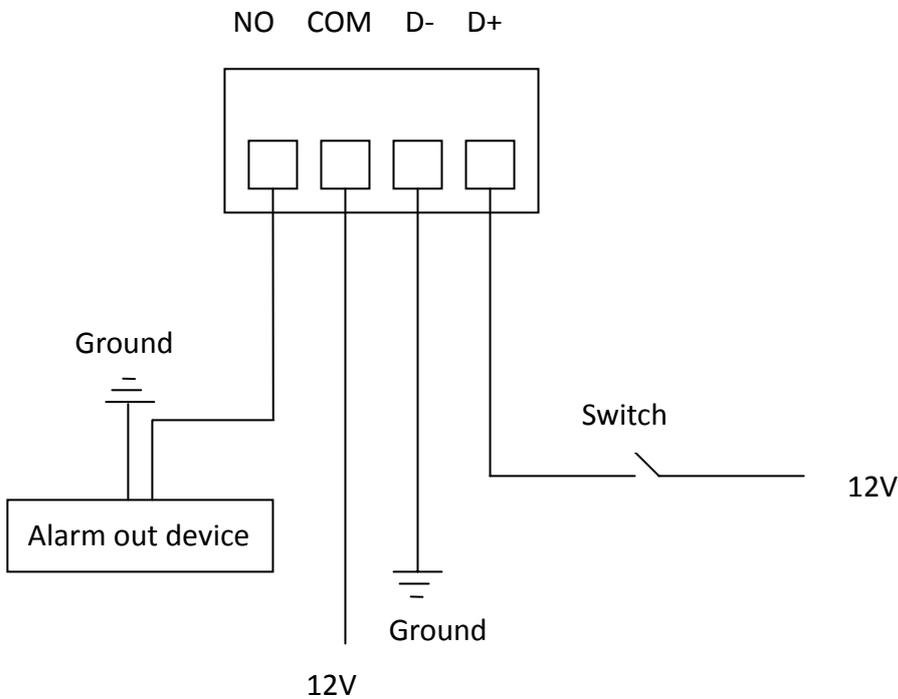
2.3 Overviews

Front & Side:



DI / DO Terminal connector diagram

Please refer the following illustration below for connection method.



Note

Max. 30W

Hold the Reset Button for 10 seconds to restore the camera to default

2.4 EZ Install CamPro Express

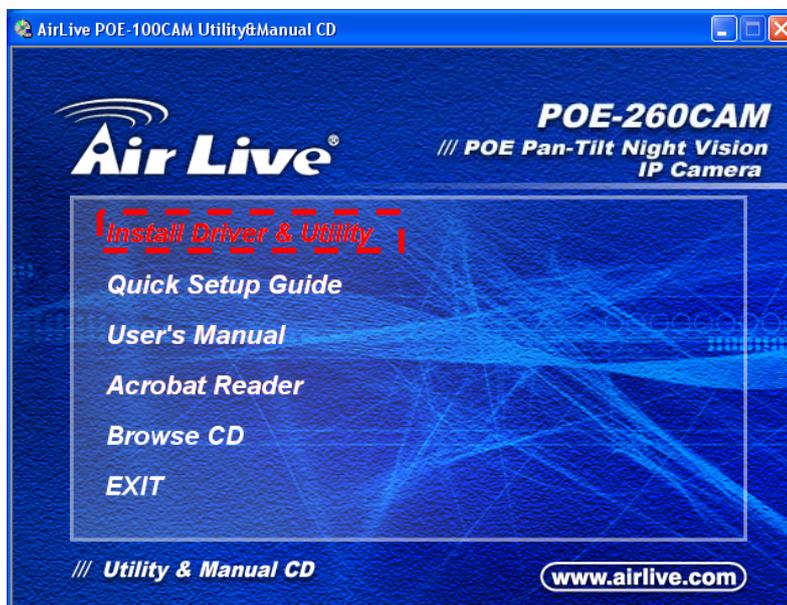
All ipcam use the factory default settings

All ipcam and Airlive CamPro Express server in the same subnet

Please see the detail setting in user manual

[Step 1] Install:

1. Select "Install Driver & Utility"



2. Select "CamProExpress" to start install



For a better understanding, please read this manual before operate the AirLive CamPro Express system.

■ System Requirement- SERVER version

CPU	P-4 3.0G
RAM	1G or above
Operating System	Windows XP Professional Service Pack2 (English/Traditional Chinese/Simplified Chinese) Windows Vista Home Basic/Home Premium/Business/Ultimate
Network	10/100 Mbps Fast Ethernet
Display Card	1024 x 768 (XVGA) or above

■ System Requirement- CLIENT version

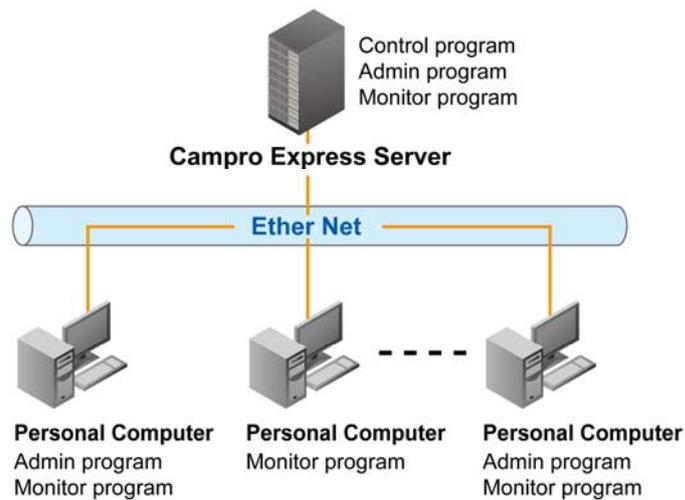
CPU	P-4 1.2G
RAM	1G or above
Operating System	Windows XP Professional Service Pack2 (English/Traditional Chinese/Simplified Chinese) Windows Vista Home Basic/Home Premium/Business/Ultimate
Network	10/100 Mbps Fast Ethernet
Display Card	1024 x 768 (XVGA) or above

Networking Suggestion

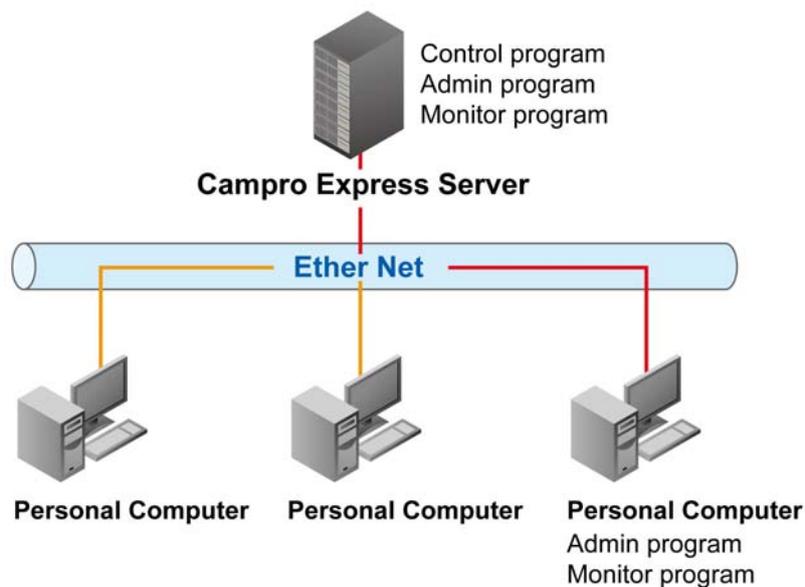
AirLive CamPro Express is optimized for small-scale project, simple LAN or simple WAN environment. Place the system behind firewall or IP sharing device to efficiently protect this system from hackers' attack.

AirLive CamPro Express is consisted of SERVER version and CLIENT version.

SERVER version limits one installation. SERVER version includes Admin, Monitor, Control and Web Monitor programs.



The **CLIENT** version is designed for monitoring purpose, and the Admin program is an option while installation



[Step 2]Select language

The Installation Wizard will select the language of your operation system intelligently. AirLive CamPro Express supports three languages : Traditional Chinese, Simplified Chinese, English

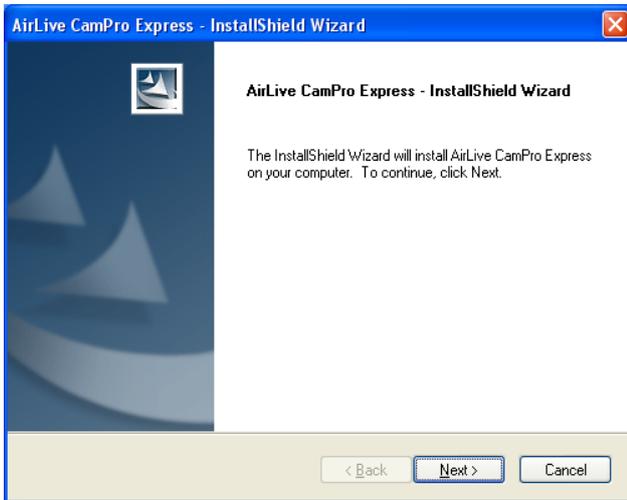


[Step 3]

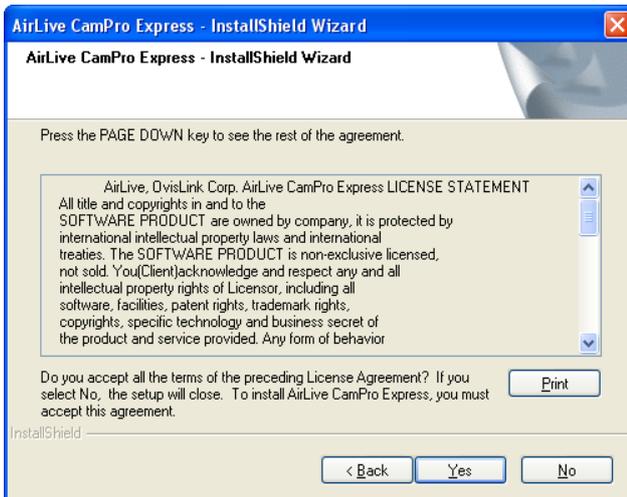
The Installshield Wizard will check if IIS is installed at your system. If not, you can continue installing AirLive CamPro Express, but you will not be able to use the WEB monitoring feature without IIS. To Install IIS, do the following,

1. Click "Start".
2. Go to Control Panel → Add/Remove Program
3. Click Add/Remove Windows Component
4. Check Internet Information Services (IIS)
5. Click "Next".
6. Click "Finish".

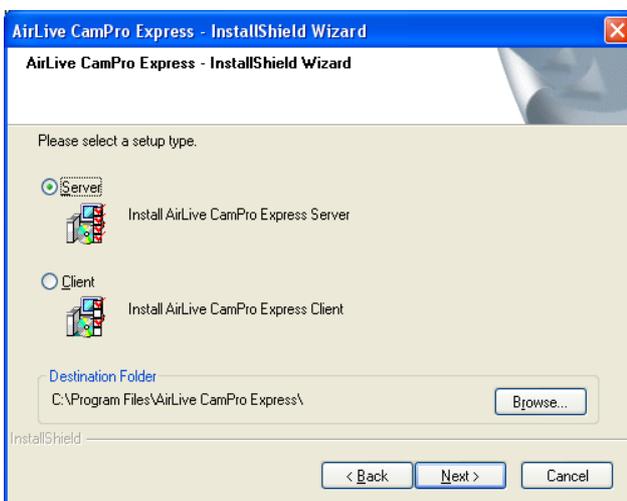
During the installation process, you may need Microsoft Windows Operating System CD.

**[Step 4]**

Select language. Click “Next” to begin the installation process.

**[Step 5]**

Please read the License Statement and select “Yes” to accept and continue.

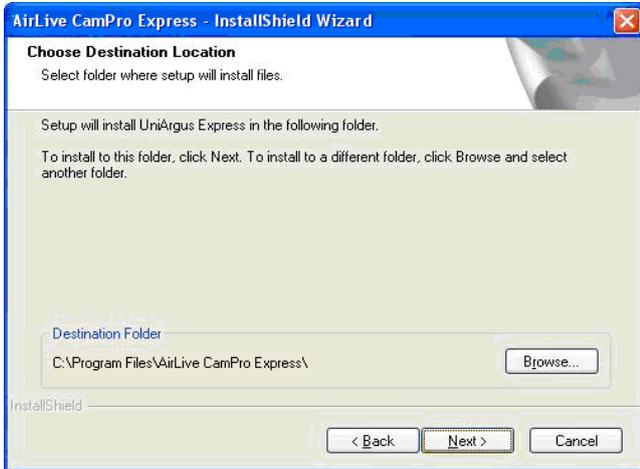
**[Step 6]**

Choose Setup type and click “Next” to continue.

For first time installation please select server to install. AirLive CamPro Express is consisted of SERVER version and CLIENT version.

SERVER version limits one installation. SERVER version includes Admin, Monitor, Control and Web Monitor programs.

The **CLIENT** version is designed for monitoring purpose, and the Admin program is an option while installation.



[Step 7]

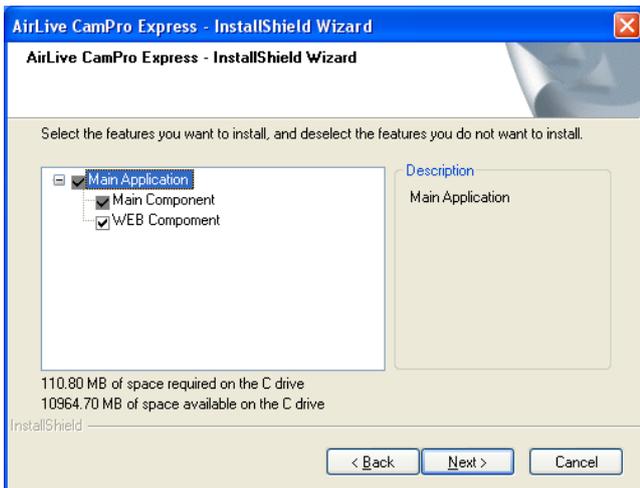
Choose Destination Location or click “Next” simply

Specify the Destination Folder; you may click “Browse...” to select a folder other than the default one.

Click “Next” to continue.

Note:

The default location is deemed adequate for most situations, it is recommended that you use the default location.

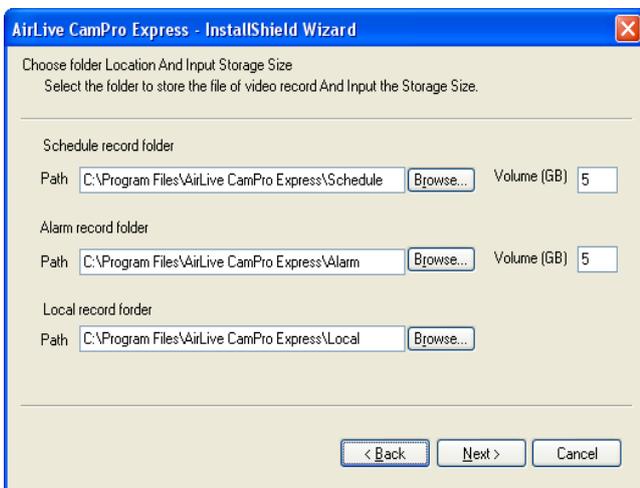


[Step 8]

Choose the components to install, then click “Next” to continue. Main Component is a required component.

Note:

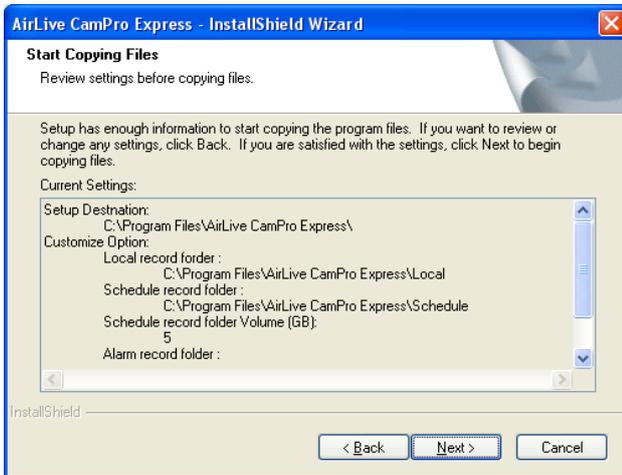
If you would like to view video image via a browser from remote locations, select Web Component.



[Step 9]

Select Program Folder

Specify the Program Folder where AirLive CamPro Express icons will be installed to Click “Next” to continue.

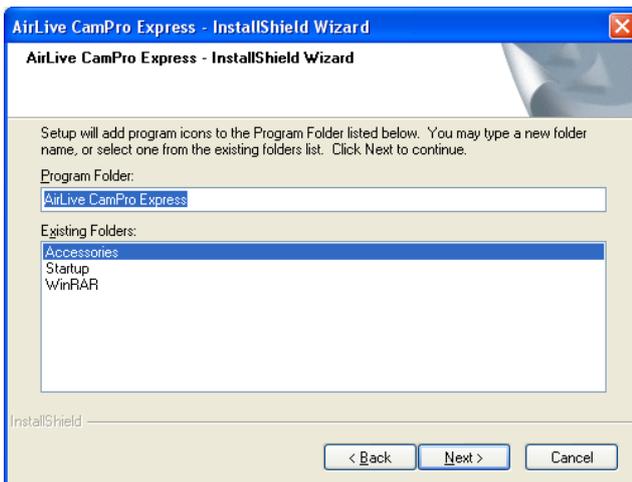


[Step 10]

Start Copying Files page pop out, review all your configuration that you have made. Click “Next” to accept these setting and continue.

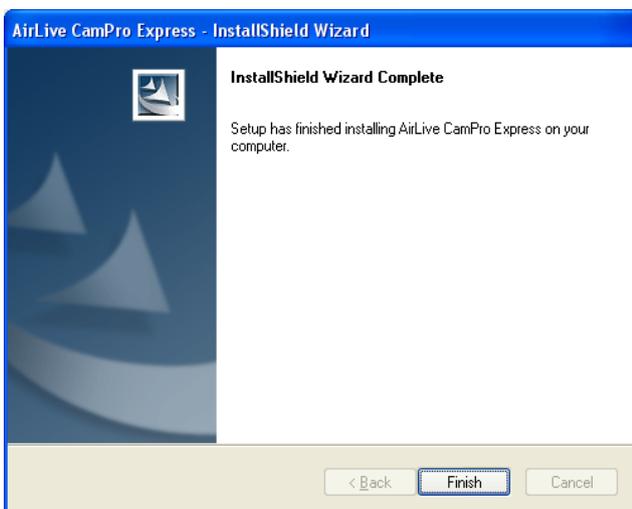
Note:

The installation process may take several minutes to complete, depending on the handling capability of your computer system (refer to Section 7.1.2 System Requirement for system requirement detail)



[Step 11]

Click “Next” to continue



[Step 12]

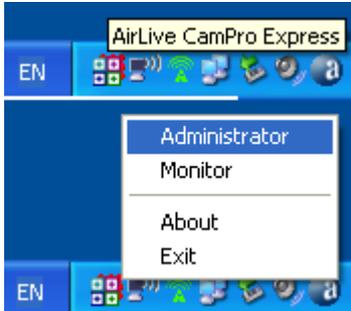
Installshield Wizard Complete; click “Finish” to complete the setup. The system should start AirLive CamPro Express in 1 to 3 minutes, and the icon of AirLive CamPro Express () appear in task bar of screen’s lower-right corner.

Note:

If in real case, this does not happen, please restart your computer.

Setting:

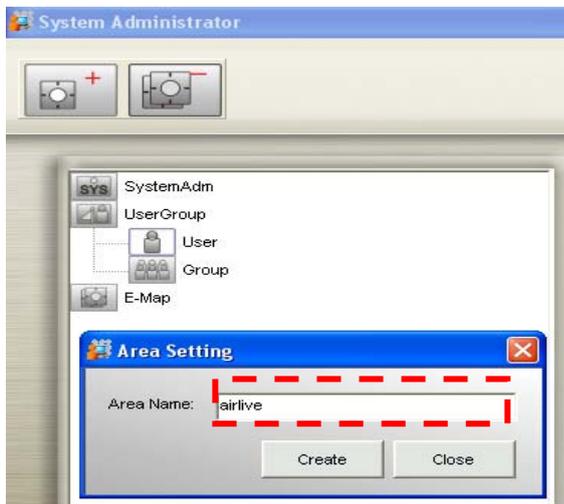
1. Run the AirLive CamPro Express-->Admin.



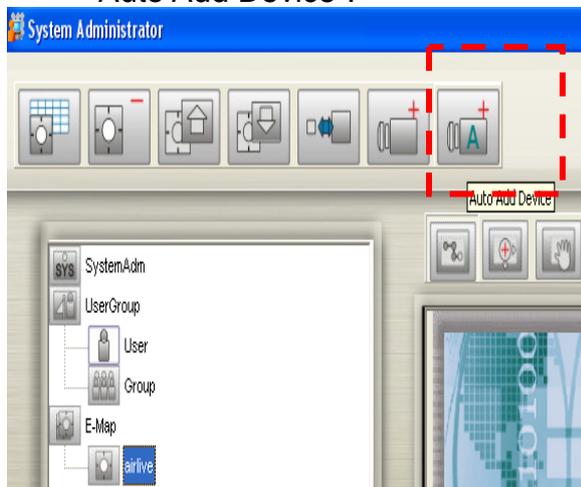
2. Select "E-MAP" then "Add Area".



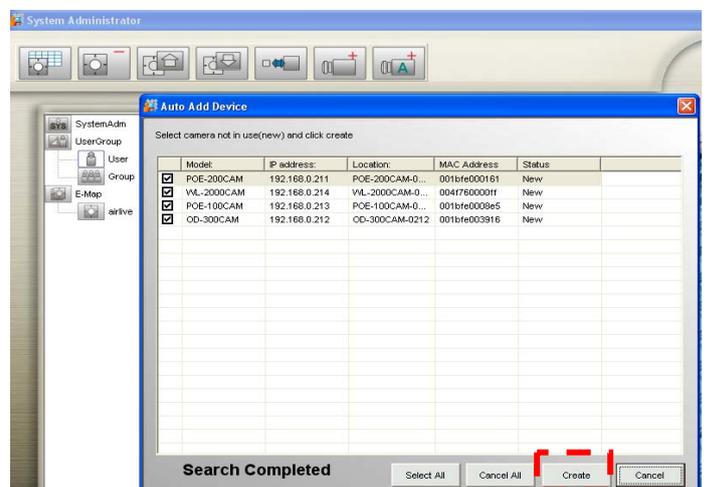
3. Enter the Area Name then Create.



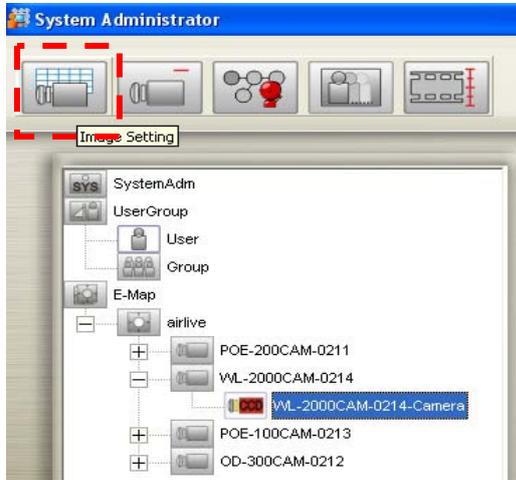
4. Select area name then select "Auto Add Device".



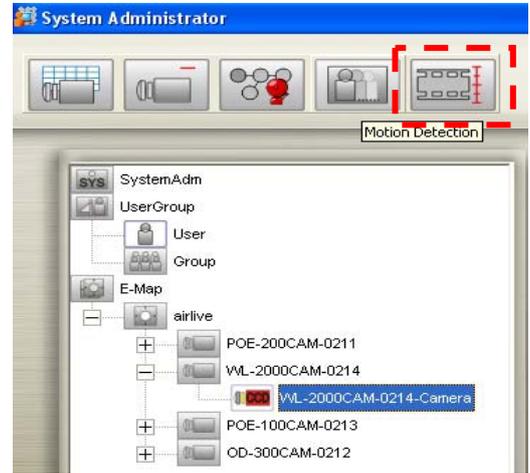
5. When search completed select Create".



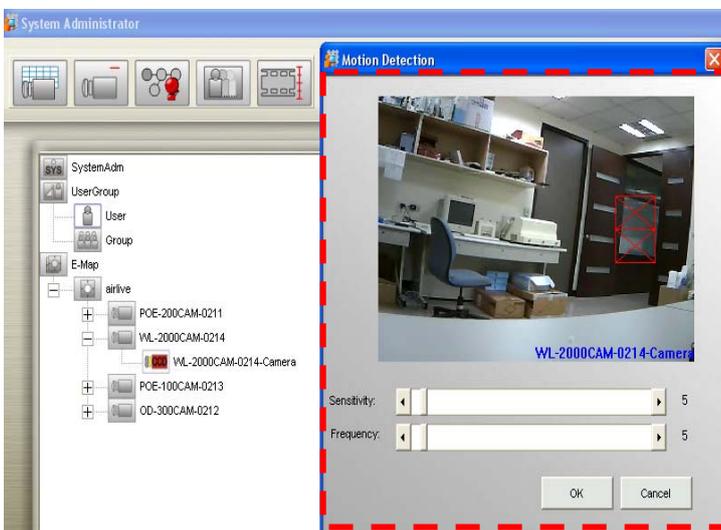
6. Select the ipcam device icon then select “Image Setting” .



7. Select the ipcam device icon then select “Motion Detcetion”.



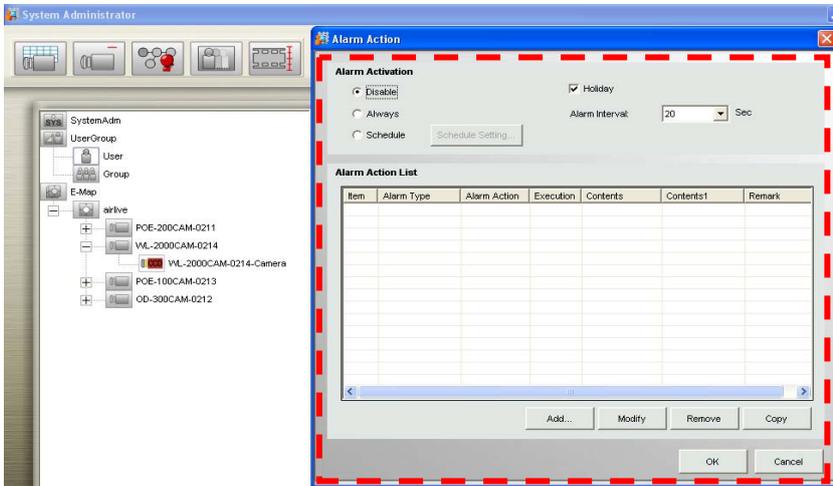
8. Setting motion detection area in this page.



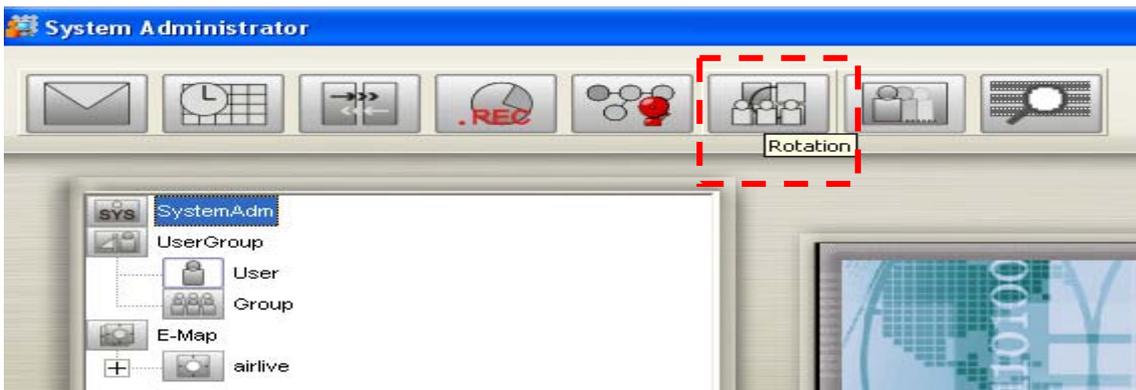
9. Select the ipcam device icon then select “Image Alarm”.



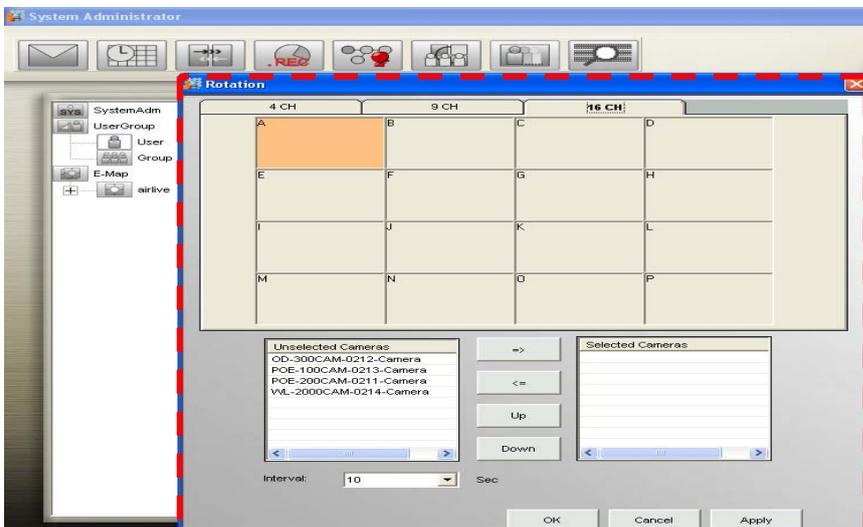
10. Setting motion detection alarm in this page.



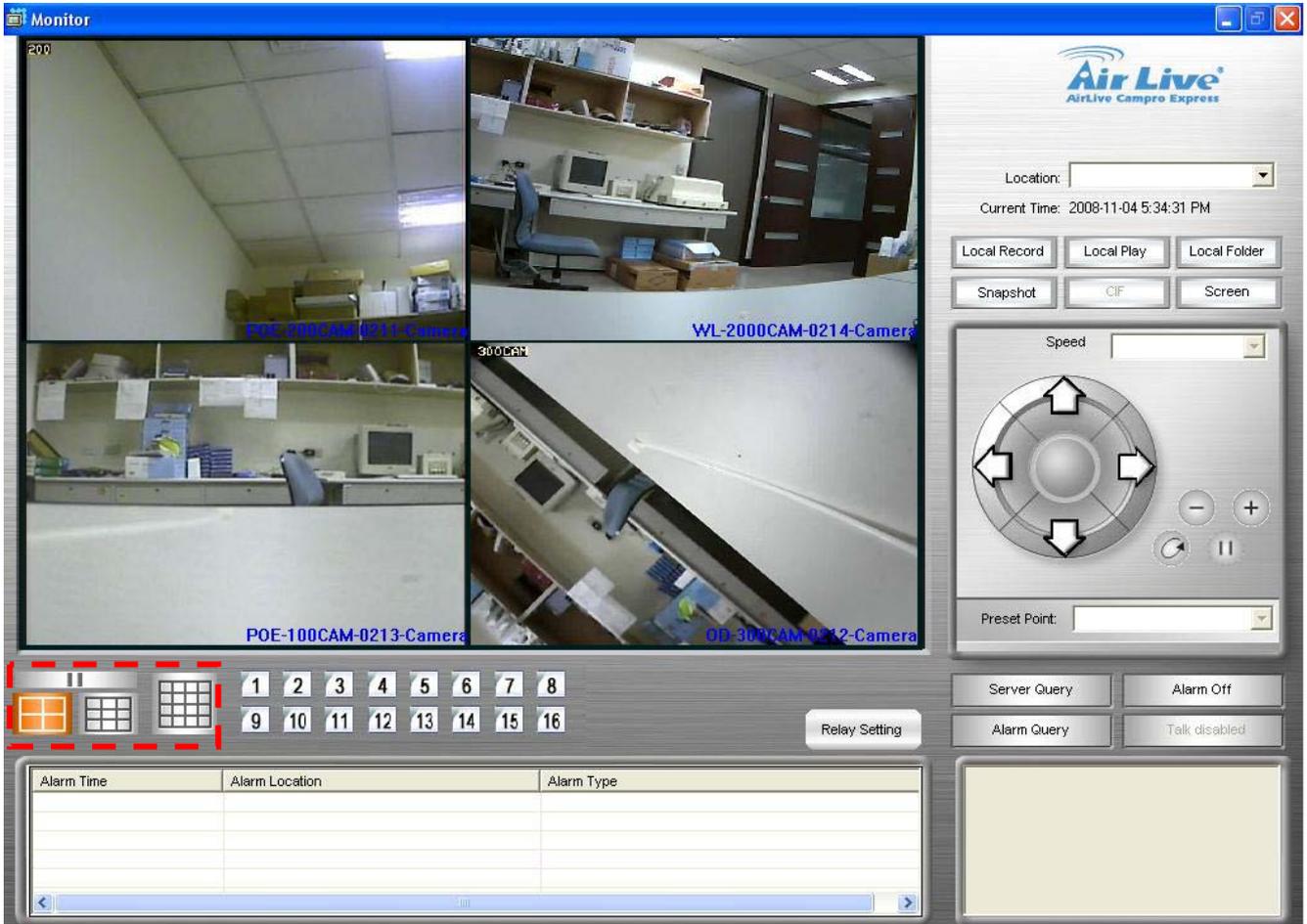
11. Select "SystemAdm" then select "Rotation"



12. Setting rotation place in the monitor

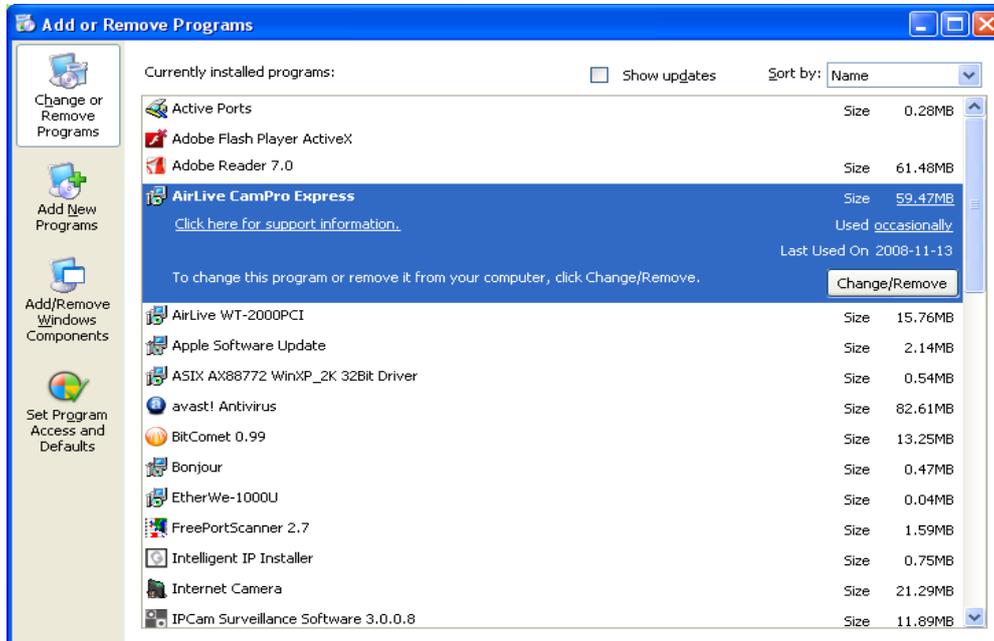


13. Run the Airlive CamPro Express-->Monitor.

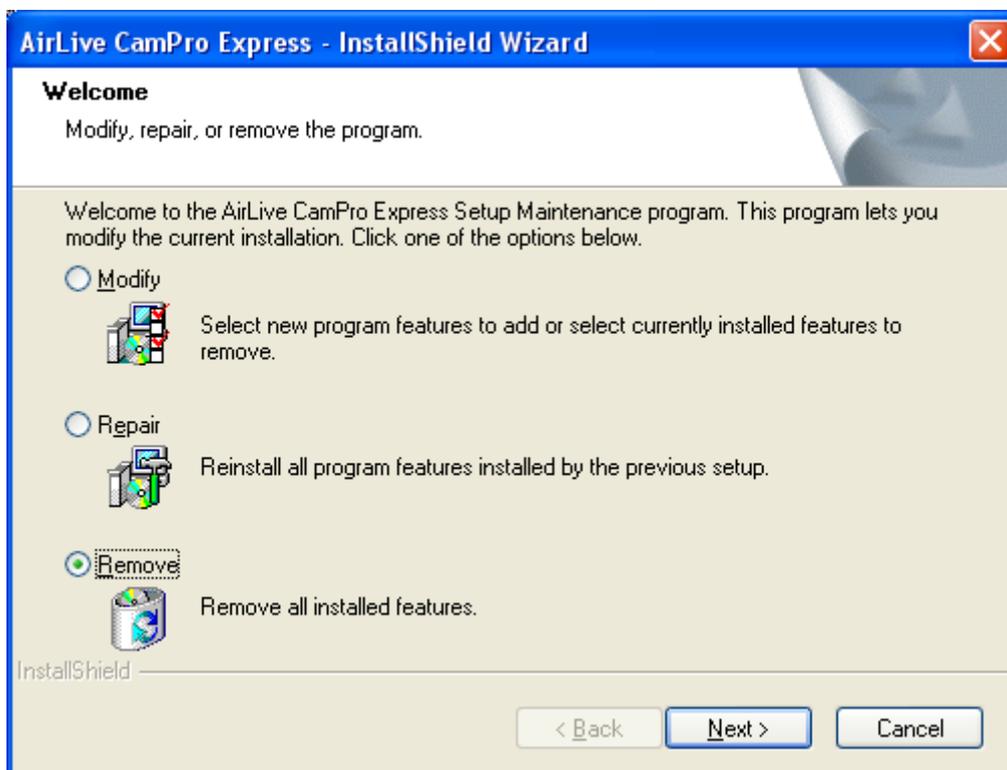


Uninstall:

1. Run windows “Add or Remove Programs” then select utility name to remove



2. Select “Remove” then “Next” to start uninstall.

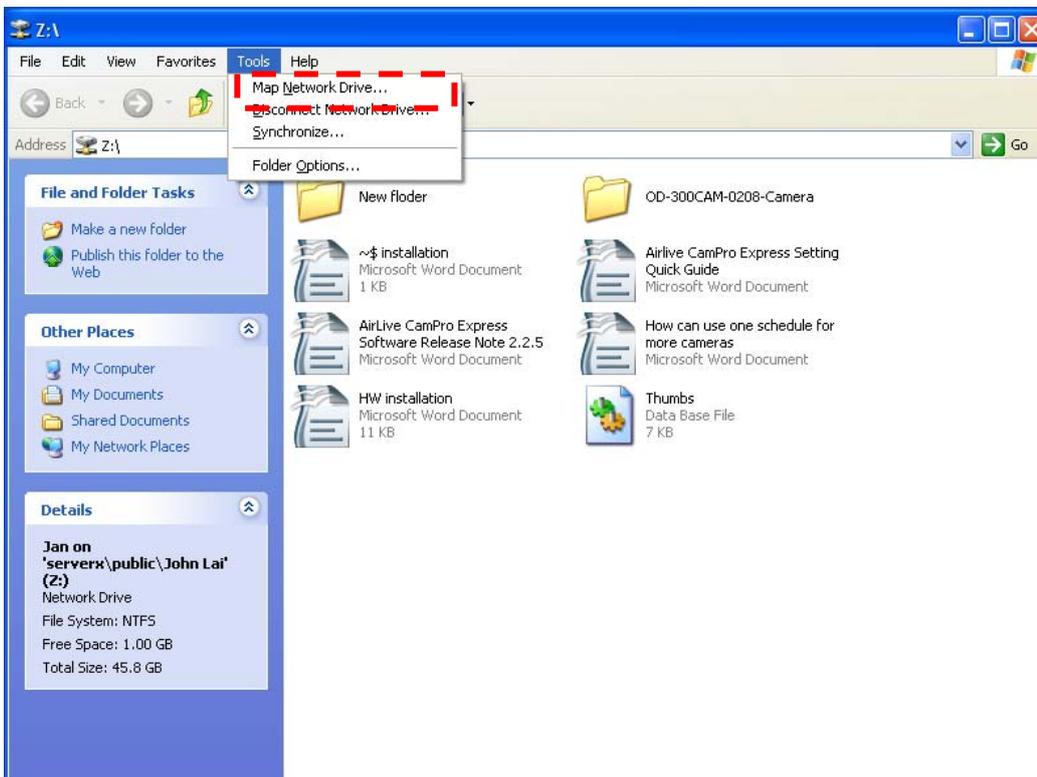
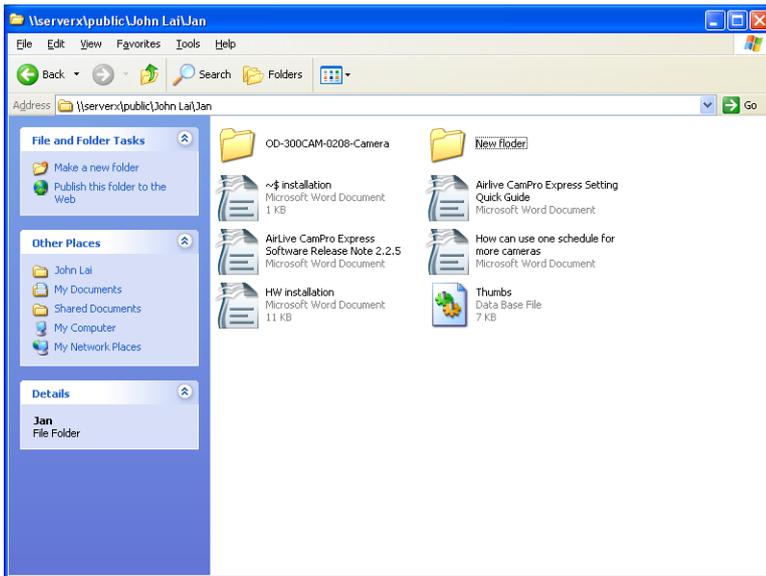


Appendix

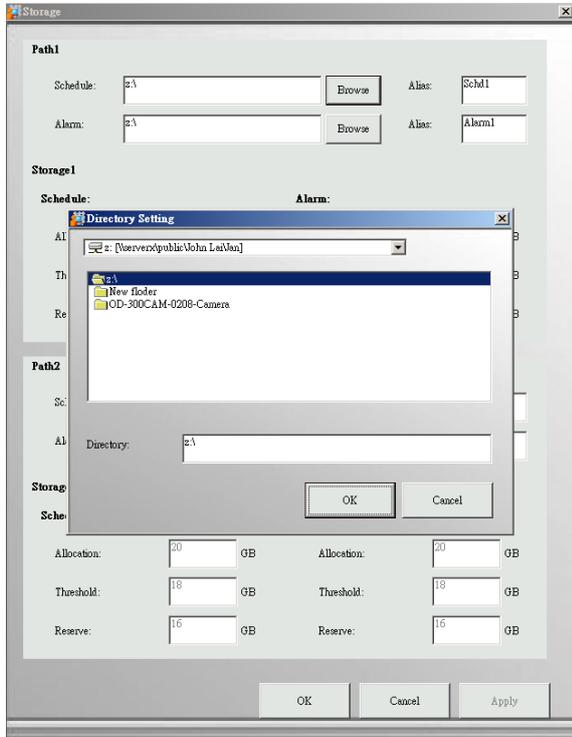
Save Into Network Storage

If you want to save to local recording to your Network Storage, Please do the following.

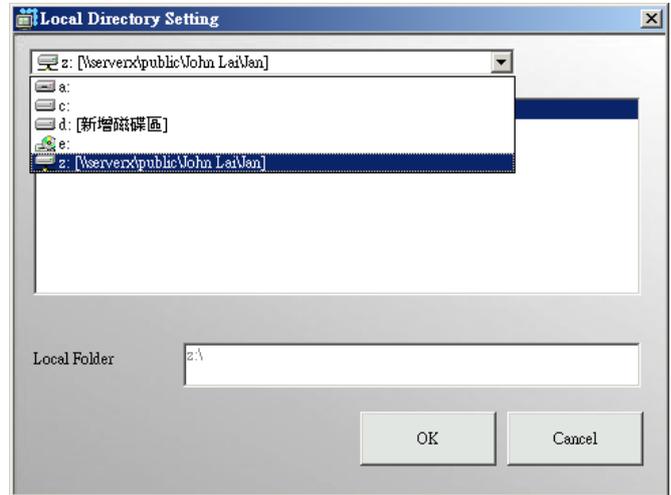
1. Copy your file location that you want to save, and mapping network device.



2. Or you can change the save location in the monitor mode for the local recording.

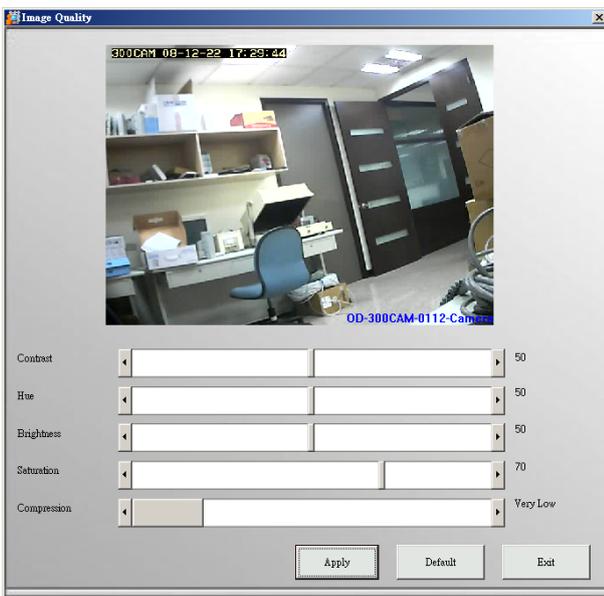


3. Make your 2nd Saving Location to Nus

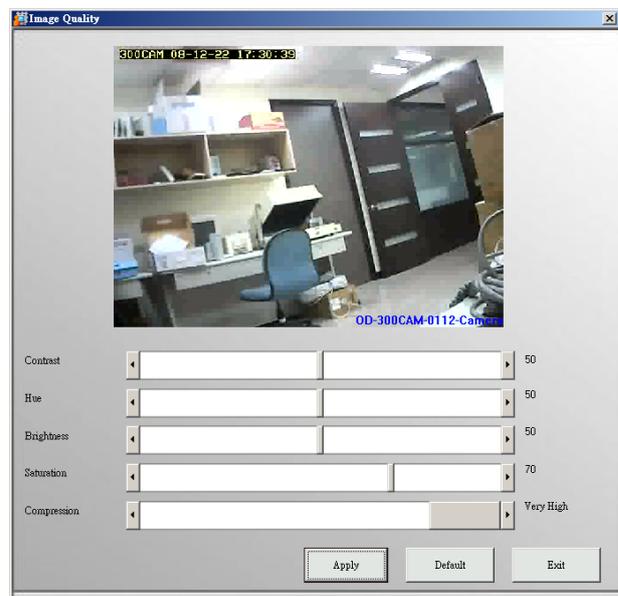


4. Sometimes when your network traffic is very busy or you wish to decrease your computer/networking loading that you can increase your compression.

Compression Very Low



Compression Very High



3

Using IP Camera via Mobile Phone

To use IP cameras via mobile phones, please make sure your RTSP is set to “ON”. (Default is “ON”) To change the settings of IP cameras, please see “Settings” for details.

3.1 3G Mobile Phone Viewing

For 3G mobile phone viewing, type “[rtsp://<IP>:<PORT>/video.3gp](#)” into your 3G web browser. <IP> is the IP address of your IP camera, <PORT> is the RTSP port of your IP camera (Default value is 8554.)

Example: [rtsp://100.10.10.1:8554/video.3gp](#)

Note:

You can also use RTSP clients (RealPlayer, MPlayer, Windows Media Player, QickTime...etc.) to view RTSP streaming, just type in “[rtsp://<IP>:<PORT>/video.3gp](#)” as the Player’s URL.

3.2 2.5G Mobile Phone Viewing

For 2.5G mobile phone viewing, type “[<IP>/mobile.wml](#)” into your 2.5G web browser. <IP> is the IP address of your IP camera.

4

Using IP Camera via Web Browser

This Chapter explain how to searching ip camera and basic system requirement.

System Requirement

To use the product normally, we strongly recommend your computer follows our minimum system requirement (Computer level lower than this might cause some problems.)

Item	Requirements
CPU	Pentium 4 1600MHz (or equivalent AMD)
Graphic Card	64MB RAM graphic cards (or equivalent on-board graphic cards)
RAM	512MB
Operating System	Windows 98, ME (Please see Note) Windows 2000, 2003, XP, Vista
Web Browser	Internet Explorer 6 or later

Note:

- If you're using Windows 98 or ME, please install **IP Installer** before using WEB UI to ensure the system runs normally.
- If you can't view the recorded video file (missing video decoder), please install **Xvid codec** while installing Intelligent IP Installer. (For Windows 98, ME or 2000 server, the codec might not work properly. You'll need to download **Xvid codec 1.0** from the internet.

5

Initial accessing the IP Camera

This Chapter explains default setting of the device and how to access into ip camera

1. Start your web browser, and enter the IP address or host name of the IP camera in the Location / Address field of your browser.

Note :

- If you only want to view the video without setting page, enter “<http://<IP>/index2.htm>” as your web URL.

2. Use the default account “admin” and default password “admin”.

Note :

- The default user name “admin” and the password are set at the factory for the administrator.

You can change them in the **Account** Menu under **Setting** on page 25.



3. The monitor image will be displayed in your browser.

6

How to Use

This chapter introduces how to monitor the image from the device using Microsoft web browser. The IP camera can be used with Microsoft web browsers and Intelligent IP Installer in Windows operation systems. This document focuses on introducing you to Microsoft web browser. The recommended browser for Windows is Internet Explorer 6.0. If you want to know how to use IP camera with Intelligent IP Installer, check Intelligent IP Installer User's Manual in Windows operation systems.

The functions of the device should be set by the Administrator. For further instructions on setting the device, see "Setting the Camera."

6.1 Accessing the IP Camera

1. Start your web browser, and enter the IP address or host name of the IP camera in the Location / Address field of your browser.

Note :

- If you only want to view the video without setting page, enter "<http://<IP>/index2.htm>" as your web URL.

2. Use the default account "admin" and default password "admin".

Note :

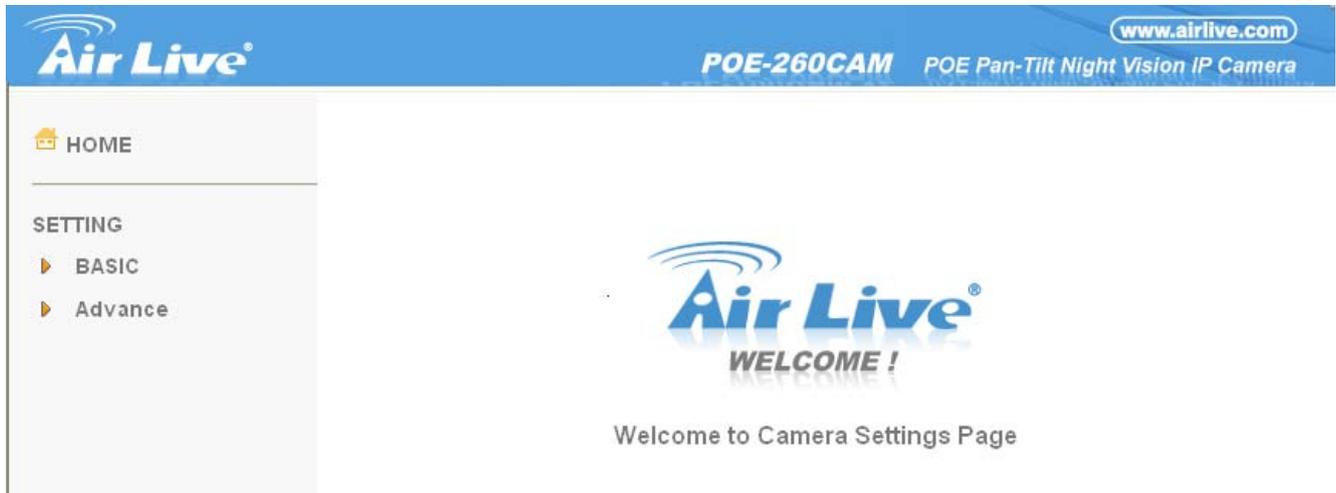
- The default user name "admin" and the password are set at the factory for the administrator.

You can change them in the **Account** Menu under **Setting** on page 25.

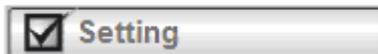


3. The monitor image will be displayed in your browser.

6.2 Configuration of Main Menu



6.2.1 Setting



This function is only for the Administrator.

Click this button to get into the **Basic** and **Advance settings** menu.

6.2.2 Client Setting



Mode: Click on the pull-down box to choose between MPEG4 and MJPEG video compression mode.

Note : MJPEG streaming is unavailable if RTSP mode is ON.

View Size: Select the desired display image resolution to 640X480 or 320X240.

Protocol: Select the transferring protocol from TCP, UDP, HTTP and Multicast.

Video Buffer: Turn the Video Buffer function On/Off. The Video Buffer function makes the streaming more smoothly in unsteady network environment, but might cause a little delay in live viewing.

6.2.3 Image Setup



You can use the tool bar to optimize video brightness, contrast, and saturation.

6.2.4 Live View

Snapshot:

You can capture a still image shot by the camera and save it in your computer.

1. Press  and a snapshot window will appear.
2. Click **“Save”** to save the picture in your computer.
3. Click **“Close”** to return to the view page.

Zoom in/out the image via the monitor window.



4. Click  to display the digital zoom in window.
5. Pull the  to adjust the digital zoom range, and it will be shown on the above window.
6. You can use the left click of your mouse to move the  to any where on the window.

Audio buttons :

: Speakers turned on.



: Microphone turned on.

 : Volume control bar.

: Speakers turned off.



: Microphone turned off.

Note :

It means the speakers of your computer are turned on to transmit the sounds from the connected IP camera(s). Similarly,  means you can broadcast to the connected IP camera(s) via the Ethernet using your microphone.

Video play buttons:

: Pause the current video



: Stop the current video.



: Play the video.



: Record the current video.



7

Setting

This chapter explain to you all of the function in the firmware. You can setup image, color network, and different level user in this chapter.

7.1 Basic

Click on the “Basic” folder to display the sub folders, including **System**, **Camera**, **Network**, and **Security**.

7.1.1 System

■ Information

The Information page provides you with product factory information, including Product name, Firmware version, and Web version.

The screenshot displays the Air Live web interface for a POE-260CAM. The top navigation bar includes the Air Live logo, the model name POE-260CAM, and the description POE Pan-Tilt Night Vision IP Camera, along with the website URL www.airlive.com. The left sidebar shows a menu with 'HOME' and 'SETTING'. Under 'SETTING', the 'BASIC' folder is expanded to show 'System', 'Camera', 'Network', 'Security', and 'Advance'. The 'System' folder is further expanded to show 'Information', 'Date/Time', and 'Initialize'. The 'Information' page is active, displaying the following information:

Product name	1/4 CMOS Dual Stream PoE IP Camera
Firmware version	LM.1.6.16.03P2_SIGN Tue Mar 31 09:16:11 CST 2009
Web version	LM.1.6.16.03P2_SIGN



■ Date & Time

- ❑ **Current date & time:** This displays the current date and time of the device.
- ❑ **PC clock :** This displays the date and time of the monitoring PC clock.
- ❑ **Date & time format :** Click the pull-down box to select among different time display formats, including yyyy-mm-dd hh:mm:ss (year-month-day hour:minute:second), mm-dd-yyyy hh:mm:ss (month-day-year hour:minute:second), and dd-mm-yyyy hh:mm:ss (day-month-year hour:minute:second).
- ❑ **Adjust :** Select one of four time adjusting modes.
- ❑ **Keep current setting :** Select this mode to keep the current date and time of the device.
- ❑ **Synchronize with PC:** Select this mode to make the date and time of the device the same as the monitoring PC.
- ❑ **Manual setting:** Select this mode to manually adjust the date & time of the device.
- ❑ **Synchronize with NTP:** Specify the **NTP server name** and the Refresh **Interval** to synchronize the date and time of the device with those of the time server, known as the NTP (Network Time Protocol) server.

Note:

The NTP server (Network Time Protocol) is the time server which is an Internet standard protocol (built on top of TCP/IP) that assures accurate synchronization to the millisecond of computer clock times in a network of computers.

- ❑ **NTP server name:** Type the host name or IP address of the NTP server, up to 64 characters.
- ❑ **Time zone:** Select the time zone and time difference from Greenwich Mean Time in the area where the device is installed from the pull-down box.



■ Initialize



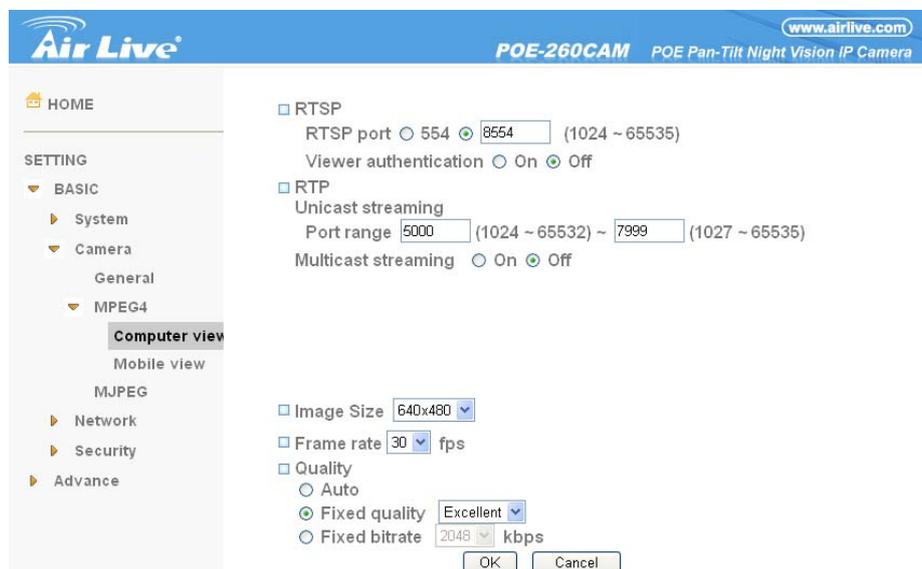
- **Reboot** : Click this button to reboot the device. A confirmation dialogue will appear. Click **OK** to proceed. It takes about two minutes to reboot the device.
- **Factory default** : Click this button to reset the device to the factory default settings. A confirmation dialogue will appear. Click **OK** to proceed; the network indicator on the device will start to blink. After completing adjustments to the default settings, the device will reboot automatically. Do not turn off the device until the device reboots.
- **Backup setting data** : Save the setting data of the device to a file. Click **Save**, and follow the instructions on the browser to save the setting data file to your specified location.
- **Restore setting** : Load the saved setting data of the device. Click **Browse** and select the file in which the setting data is stored. Click **OK**, and the device is adjusted according to the loaded data and restarted.
- **Firmware update** : Upgrade the device software. Click **Browse** and select the file for upgrading. A confirmation dialogue will appear. Click **OK** to start upgrading. The device will reboot upon completion.

Note:

- Use only upgraded files that are special for this device. Problems may occur otherwise.
- Do not turn off the device power or disconnect the network until the upgrading is completed.
- **Upload language pack** : Upgrade the device language pack. Click **Browse** and select the file for upgrading. A confirmation dialogue will appear. Click **OK** to start upgrading. The upgrade is applied immediately. The default language is “**English.**”



7.1.3.1 MPEG4



■ Computer View

- ❑ **RTSP (If RTSP mode is ON)**
- ❑ **RTSP port:** Specify the transmission port number of RTSP streaming video. Default value is 554.
- ❑ **Viewer authentication:** If the viewer authentication is ON, users viewing through RTSP will be requested to key-in username and password.
- ❑ **RTP (If RTSP mode is ON)**
 - Unicast streaming:**
 - Unicast streaming Video/Audio port range:** Specify the transmission port range of RTP streaming video. RTP will select a port randomly from the range.
 - ❑ **Multicast streaming:**
 - ❑ **Multicast address:** Specify the multicast server address.
 - ❑ **Video / Audio Port:** Specify the transmission port number of the video data. Specify an even number from 1024 to 65534.
 - ❑ **Time-To-Live:** Set the maximum TTL that multicast can pass through.



■ MPEG4 viewer port (If RTSP mode is OFF)

- **Unicast streaming Video/Audio port number:** Specify the transmission port number of the video data. It is initially set to 8090. Specify an even number from 1024 to 65534.
- **Image Size :** Specify the image size the network camera transmits. You can choose among **704 × 480**, **352 × 240** and **176 × 120 for NTSC mode and 704 × 576**, **352 × 288** and **176 × 144 for PAL mode**.
- **Frame rate :** Set the frame rate of the MPEG4 image. Selectable values are 5, 10, 15, 20, 25, 30 fps. The unit “fps” stands for “frames sent per second”.
- **Quality**
Auto : The quality and bit rate will be automatically decided according to the frame rate.
Fixed Quality : The selectable values are Medium, Standard, Good, Detailed and Excellent.
Fixed Bit rate : Set the bit rate of MPEG4 image transmission for a line. Selectable values are 64, 128, 256, 384, 512, 768, 1024, 1280, 1536 and 2048 kbps.

Note :

- The selected frame rate and bit rate are a tentative value. The actual frame rate and bit rate may be different according to the image size, the shooting scene or the network condition.

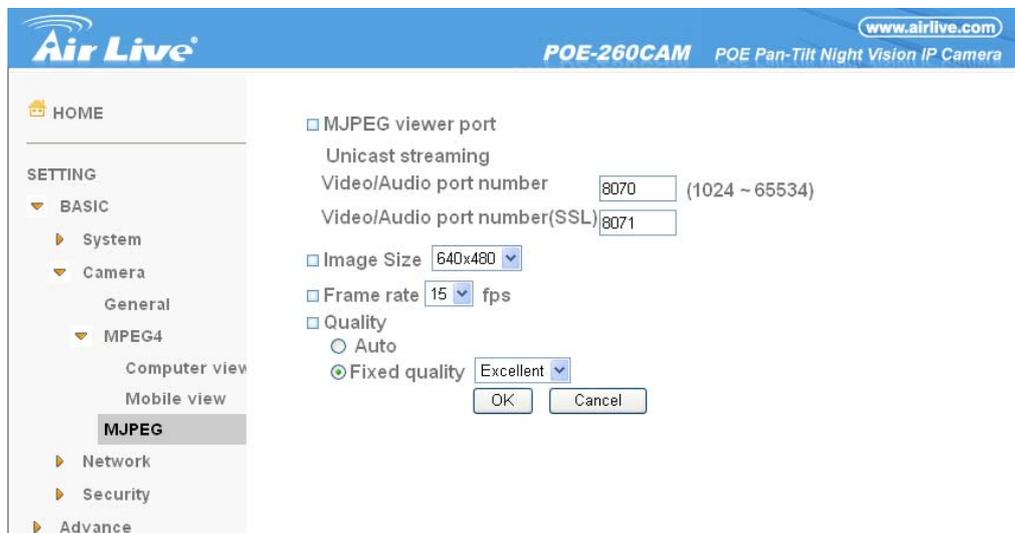


■ Mobile View

- **RTSP (If RTSP mode is ON)**
- **RTSP port:** Specify the transmission port number of RTSP streaming video. Default value is 8554.
- **RTP (If RTSP mode is ON)**
- **Unicast streaming:**
- **Unicast streaming Video/Audio port range:** Specify the transmission port range of RTP streaming video. RTP will select a port randomly from the range.
- **Multicast streaming:**
- **Multicast address:** Specify the multicast server address.
- **Video / Audio Port:** Specify the transmission port number of the video data. It is initially set to 10000 and 11000. Specify an even number from 1024 to 65534.
- **Time-To-Live:** Set the maximum TTL that multicast can pass through.
- **Image Size:** The Image size of Mobile view is fixed at 176x120.
- **Frame rate :** Set the frame rate of the MPEG4 image. Selectable values are 5, 10, 15, 20 fps. The unit “fps” stands for “frames sent per second”.
- **Quality**
 - **Fixed Bit rate :** Set the bit rate of MPEG4 image transmission for a line. Selectable values are 64, 32, and 16kbps.



7.1.3.2 MJPEG



Note :

- MJPEG settings are unavailable if the RTSP mode is ON, which means the MJPEG streaming is closed.

□ MJPEG viewer port

- **Unicast streaming Video/Audio port number:** Specify the transmission port number of the video data. It is initially set to 8070. Specify an even number from 1024 to 65534.

Note :

- **Unicast streaming :** Specify the transmission port number of the video data and audio data used when **UDP (Unicast)** is selected with the TCP/UDP transmission switching icon in the main viewer.
- **Image Size :** Specify the image size the network camera transmits. You can choose among **704 × 480, 352 × 240** and **176 × 120 for NTSC mode** and **704 × 576, 352 × 288** and **176 × 144 for PAL mode**.
- **Frame rate :** Set the frame rate of the MJPEG image. Selectable values are 5, 10, 15 fps. The unit “fps” stands for “frames sent per second”.
- **Quality**
- **Auto :** The quality will be automatically decided.
- **Fixed quality :** The selectable values are Medium, Standard, Good, Detailed and Excellent.



7.1.4 Network

7.1.4.1 Information

- ❑ **MAC address** : Display the MAC address of the device.
- ❑ **Obtain an IP address automatically (DHCP)** : If a DHCP server is installed on the network, to select this while the IP address is assigned by the DHCP server.

Note :

- When you set **Obtain an IP address automatically (DHCP)**, make sure that the DHCP server is working on the network.
- ❑ **Use the following IP address** : Select this when a fixed IP address is set.
- ❑ **IP address** : Enter the IP address of the device.
- ❑ **Subnet mask** : Enter the subnet mask.
- ❑ **Default gateway** : Enter the default gateway.
- ❑ **Use the following DNS server address** : Select this when you set the fixed address as the IP address of DNS server.
- ❑ **Primary DNS server** : Enter the IP address of the primary DNS server.
- ❑ **Secondary DNS server** : Enter the IP address of the secondary DNS server, if necessary.
- ❑ **HTTP port number** : Select **80** in general situations. If you want to use a port number other than **80**, select the text box and enter a port number between 1024 and 65535.

Note :

- When you have set the HTTP port number to a number other than 80 on the Network setting page or in the Setup Program, access the device by typing the IP address of the device on the web browser as follows:

Example: when HTTP port number is set to 2000 `http://192.168.1.100:2000/`



7.1.4.2 PPPoE

Use this when you connect the device through PPPoE (Point-to-Point Protocol over Ethernet). PPPoE connection is the protocol that is widely used in xDSL (digital affiliate line such as ADSL, VDSL or SDSL) as the authentication and connection system.

- ❑ **IP address** : The IP address obtained at the PPPoE connecting with network.
- ❑ **User ID** : Enter the user ID for authentication necessary for PPPoE connections. Type it up to 64 characters.
- ❑ **Password** : Enter the password for authentication necessary for PPPoE connections. Type it up to 32 characters.
- ❑ **Re-type password** : Re-type the password to confirm.
- ❑ **Obtain DNS server address automatically** : Select this to obtain the address of DNS server automatically.
- ❑ **Use the following DNS server address** : Select this when you set the fixed address as the IP address of DNS server.
- ❑ **Primary DNS server** : Enter the IP address of the primary DNS server.
- ❑ **Secondary DNS server** : Enter the IP address of the secondary DNS server.



7.1.4.3 DDNS

- ❑ **Server name** : Choose the DDNS Server from the list.
- ❑ **User ID** : Enter the user ID for authentication necessary for DDNS connections. Type it up to 64 characters.
- ❑ **Password** : Enter the password for authentication necessary for DDNS connections. Type it up to 32 characters.
- ❑ **Re-type password** : Re-type the password to confirm.
- ❑ **Host name** : Enter the host name that is registered to the DDNS server.

Note :

- When you want to use DDNS function, you need to register an account in DDNS server first.



7.1.4.4 UPnP

The device includes support for UPnP, which is enabled by default. If also enabled on your computer, the device will automatically be detected and a new icon will be added to “My Network Places.” It provides port forwarding for opening a port in a router or firewall in a private network in order to let a party from the outside world contact a user inside.

The screenshot shows the UPnP configuration page in the Air Live web interface. The page title is "POE-260CAM POE Pan-Tilt Night Vision IP Camera". The left sidebar shows a navigation menu with "UPnP" selected. The main content area shows the UPnP settings, including a checkbox for "UPnP" (checked), a checkbox for "Turn On UPnP port forwarding" (checked), and several port configuration fields: HTTP port (80), SSL port (443), MPEG4 viewer port (8090), MPEG4 viewer port(SSL) (8091), MJPEG viewer port (8070), MJPEG viewer port(SSL) (8071), and MPEG4 RTSP port (Computer view: 8050, Mobile view: 8030). There are "OK" and "Cancel" buttons at the bottom.

- ❑ **HTTP port** : Enter the HTTP port number and default HTTP port is 80.
- ❑ **SSL port**: Enter the SSL port number and default SSL port is 443.
- ❑ **MPEG4 viewer port** : Enter the MPEG4 viewer port number and default MPEG4 viewer port is 8090.
- ❑ **MPEG4 viewer port (SSL)**: Enter the MPEG4 SSL viewer port and default is 8091.
- ❑ **MJPEG viewer port** : Enter the MJPEG viewer port number and default MJPEG viewer port is 8070.
- ❑ **MJPEG viewer port (SSL)**: Enter the MPEG4 SSL viewer port and default is 8071.
- ❑ **MPEG4 RTSP port**: Enter the MPEG4 RTSP port, default value is 8050 for computer view, 8030 for mobile view.



7.1.4.5 IP Notification

When network notify type is set to **On**, you can send an e-mail notification of the completion of the network setting.

- ❑ **Notify type** : Select type of DHCP, Static IP and PPPoE will notify.
- ❑ **SMTP server name** : Type the SMTP server name up to 64 characters, or the IP address of the SMTP server.
- ❑ **Authentication** : Select the authentication required when you send an email.
- ❑ **Off** : Select if no authentication is necessary when an email is sent.
- ❑ **On** : When authentication is necessary an e-mail is sent, select one of the authentication methods from the followings.
- ❑ **SMTP** : Select if SMTP authentication is necessary when an e-mail is sent.
- ❑ **POP before SMTP** : Select if POP before SMTP authentication is necessary when an e-mail is sent.

Note :

- When you set to **On**, be sure to select either or both **SMTP** or/and **POP before SMTP**.
- ❑ **POP server name** : It is necessary when the **POP before SMTP** is selected in **Authentication**. Type the POP (receiving mail) server name up to 64 characters, or type the IP address of the POP server. This setting is necessary when the SMTP server which sends e-mails performs authentication using the POP user account.
- ❑ **User name, Password** : Type the user name and Password of the user who has the mail account. This setting is necessary when the SMTP server which sends e-mails performs authentication.



- ❑ **Recipient e-mail address** : Type the recipient e-mail address up to 64 characters. You can specify up to three recipient e-mail addresses.
- ❑ **Administrator e-mail address** : Type the Administrator e-mail address up to 64 characters. This address is used for reply mail and sending system messages from the SMTP server.
- ❑ **Subject** : Type the subject/title of the e-mail up to 64 characters. With respect to mail which is sent according to the IP notification.
- ❑ **Message**
- ❑ Type the text of the e-mail up to 384 characters. Default value provides network information including IP, Port, MAC, Model, Firmware Version and Web Version.

7.1.5 Security

7.1.6.1 Account

The device default account and password setting is “admin/admin”. That means everyone might access the device including the configuration as long as the IP address is known. It is necessary to assign a password if the device is intended to be accessed by others. Use this menu to set the user names and passwords of Administrator and up to 9 different users (User 1 to User 9), and the access right of each user.

User ID	User name	Password	Re-type Password	Viewer mode
Administrator	admin	Admin
User 1				Admin
User 2				Admin
User 3				Admin
User 4				Admin
User 5				Admin
User 6				Admin
User 7				Admin
User 8				Admin
User 9				Admin

Viewer authentication On Off

OK Cancel

- ❑ **User name** : Set a user name between 5 and 16 characters.
- ❑ **Password** : Set a password between 5 and 16 characters.
- ❑ **Re-type password** : Re-type the password to confirm.
- ❑ **Viewer Mode** : Set a user to **Admin**, **Operator** or **Viewer** mode.
- ❑ **Viewer authentication** : Allows any viewer direct access to Live View.



7.1.6.2 HTTPS

HTTPS is a URI scheme used to indicate a secure HTTP connection. It is syntactically identical to the `http://` scheme normally used for accessing resources using HTTP. Using an `https:` URL indicates that HTTP is to be used, but with a different default TCP port (443) and an additional encryption/authentication layer between the HTTP and TCP. You can use the IP camera through HTTPS easily by using `https://` instead of `http://`.



To use the HTTPS encryption, please set up “**Create self-signed certificate**” for the first time you use the HTTPS function, then set up the connection policy for different users, and click “**Set Policy**” to apply the settings.

- ❑ **Create & Install:** Create a self-signed certificate for HTTPS to recognize.
- ❑ **Installed Certificate:** Display or remove the properties of the installed certificate.
- ❑ **HTTPS Connection Policy:** Set HTTPS connection policy for different level of users.



7.2 Advance

7.2.1 FTP Client

Use this menu to set up for capturing and sending images to an FTP server. By using FTP client function, you can send the image and audio file which has been shot and recorded linked with the external sensor input or with the built-in motion detection function to FTP server. FTP client setting menu is composed of two tabs, **General**, **Alarm sending** and **Periodical sending**.

7.2.1.1 General

- ❑ **FTP client function** : To activate the FTP client function, select **On**. The FTP client setting page appears. When you do not wish to use the FTP client function, select **Off**.

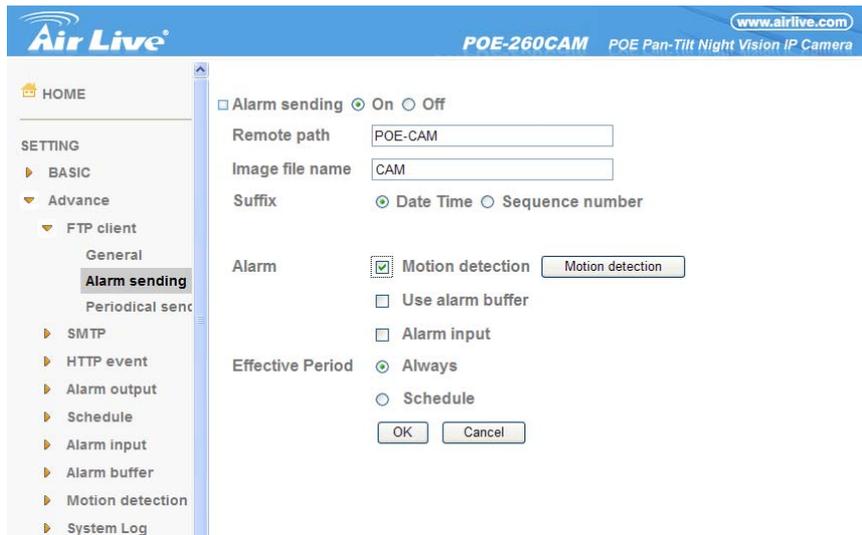
Note :

The frame rate and operability on the main viewer may decrease while a file is being transmitted by the FTP client function.

- ❑ **FTP server name** : Type the FTP server name to upload still images up to 64 characters, or the IP address of the FTP server.
- ❑ **User name** : Type the user name for the FTP server.
- ❑ **Password** : Type the password for the FTP server.
- ❑ **Retype password** : To confirm the password, type the same characters as you typed in the Password box.
- ❑ **Passive mode** : Set whether you use the passive mode of FTP server or not when connecting to FTP server. Select **On** to connect to FTP server using the passive mode.

7.2.1.2 Alarm Sending

Set to forward the image and audio file to the specified FTP server linked with the alarm detection by the external sensor input or by the built-in motion detection function. Select **On** to send the image and audio file to FTP server linked with the alarm detection.

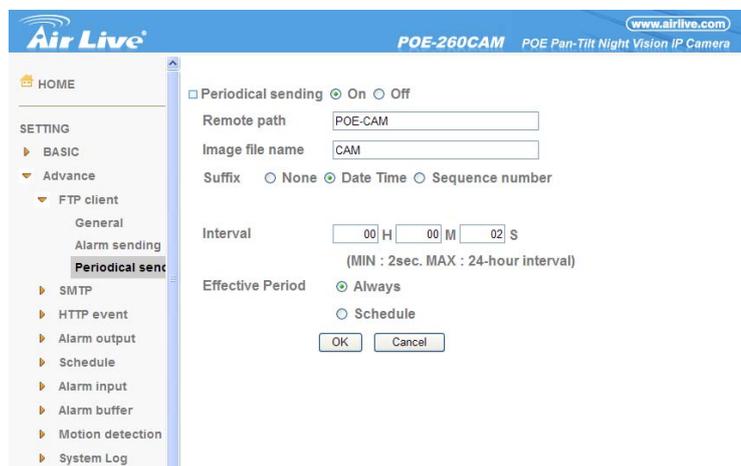


- ❑ **Remote path** : Type the path to the destination in FTP server up to 64 characters.
- ❑ **Image file name** : Type the file name you want to assign to the images when sending to the FTP server. You can use up to 10 alphanumeric characters, - (hyphen) and _ (underscore) for naming.
- ❑ **Suffix** : Select a suffix to add to the file name:
- ❑ **Date & time**: The date & time suffix is added to the Image file name. The date/time suffix consists of lower two-digits of year (2 digits), month (2 digits), date (2 digits), hour (2 digits), minute (2 digits), second (2 digits), and consecutive number (2 digits), thus 14-digit number is added to the file name.
- ❑ **Sequence number**: A consecutive number of 10 digits between 0000000001 and 4294967295 and two fixed digits 00 are added to the Image file name.
- ❑ **Motion Detection** : Click it on for using **Motion Detection** function as a sensor. You can set the motion detection function page.
- ❑ **Effective period** : Set the period when the periodical sending is effective.
- ❑ **Always** : The periodical sending is always effective.
- ❑ **Schedule** : You can specify the period when the periodical sending is effective in the schedule setting in the other section. Click **Schedule** and the setting menu for the effective period is displayed.



7.2.1.3 Periodical Sending

You can set to send an image file to FTP server periodically by selecting **On** to send the image file to FTP server linked with setting period.



- ❑ **Remote path** : Type the remote path up to 64 characters.
- ❑ **Image file name** : Type the file name of the image sent to FTP server up to 10 alphanumeric characters, - (hyphen) and _ (under score).
- ❑ **Suffix** : Select a suffix to be added to the file name sent to FTP server.
- ❑ **None** : The name of the sent file will be the Image file name.
- ❑ **Date & time** : The date & time suffix is added to the Image file name. The date & time suffix consists of lower two-digits of year (2 digits), month (2 digits), date (2 digits), hour (2 digits), minute (2 digits) and second (2 digits), and consecutive number (2 digits), thus 14-digit number is added to the file name.
- ❑ **Sequence number** : A **consecutive** number is added to the Image file name.
- ❑ **Sequence number clear** : Click **Clear** and the suffix of the sequence number returns to 1.
- ❑ **Interval** : Set the periodical sending is effective interval. Min value is 1 min and Max value is 24 hours.
- ❑ **Effective period** : Set the period when the periodical sending is effective.
- ❑ **Always** : The periodical sending is always effective.
- ❑ **Schedule** : You can specify the period when the periodical sending is effective in the schedule setting in the other section. Click **Schedule** and the setting menu for the effective period is displayed.



7.2.2 SNMP

Set the SMTP menu when you want to send an image via e-mail. By using Mail (SMTP) function, you can send a mail with attached image which has been shot linked with the external sensor input or with the built-in motion detection function. The image file can also be sent periodically. E-mail (SMTP) setting menu is composed of three tabs, **General**, **Alarm sending** and **Periodical sending**.

7.2.2.1 General

Select On when you use the SMTP function. The common setting options are displayed below. If you do not wish to use the e-mail (SMTP) function, select Off and click OK.

Note :

- During transmission of an image file via mail, the frame rate and operation performance of the monitor image of the main viewer decline.
 - While the camera video mode is set to **MPEG4**, the image of the composite video signal output from the video output connector of the camera may be distorted during mail transmission.
 - You cannot send an audio file by using the mail sending function.
- **SMTP server name** : Type the SMTP server name up to 64 characters, or the IP address of the SMTP server.
 - **Authentication** : Select the authentication required when you send an e-mail.



- Off:** Select if no authentication is necessary when an e-mail is sent.
- On:** When authentication is necessary an e-mail is sent, select one of the authentication methods from the followings.
- SMTP:** Select if SMTP authentication is necessary when an e-mail is sent.
- POP before SMTP:** Select if POP before SMTP authentication is necessary when an e-mail is sent.

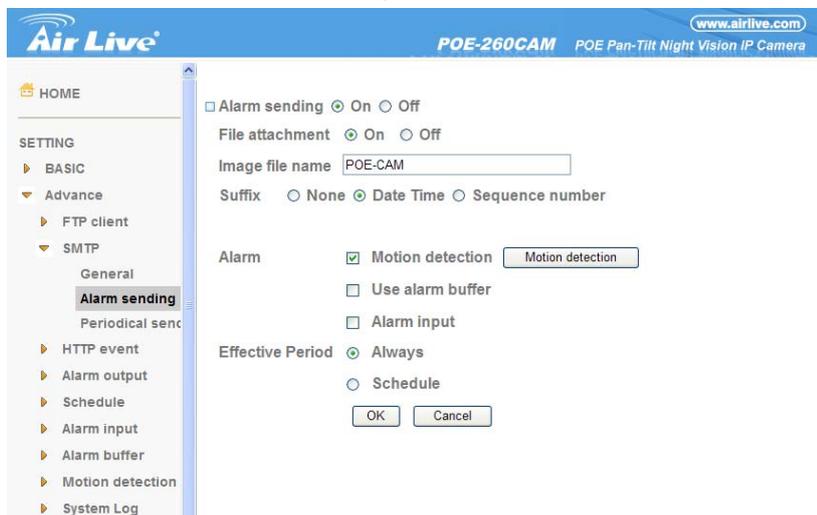
Note :

When you set to **On**, be sure to select either or both **SMTP** or/and **POP before SMTP**.

- **POP server name :** It is necessary when the **POP before SMTP** is selected in **Authentication**. Type the POP (receiving mail) server name up to 64 characters, or type the IP address of the POP server. This setting is necessary when the SMTP server which sends e-mails performs authentication using the POP user account.
- **User name, Password :** Type the user name and Password of the user who has the mail account. This setting is necessary when the SMTP server which sends e-mails performs authentication.
- **Recipient e-mail address :** Type the recipient e-mail address up to 64 characters. You can specify up to three recipient E-mail addresses.
- **Administrator e-mail address :** Type the Administrator e-mail address up to 64 characters. This address is used for reply mail and sending system messages from the SMTP server.
- **Subject :** Type the subject/title of the e-mail up to 64 characters. With respect to mail which is sent according to the alarm detection when **Alarm sending** of the alarm tab is set to **On**, the characters standing for the sensor type added to the subject.
- **Message :** Type the text of the e-mail up to 384 characters. (A line break is equivalent
- to 2 characters.)



7.2.2.2 Alarm Sending



Set to send the mail with connection to the alarm detection by the external sensor input or by the built-in motion detection function.

- ❑ **Alarm sending** : Select **On** to set to send mail with connection to the alarm detection.
- ❑ **File attachment** : Set whether an image file is attached to the mail sent or not. When **On** is selected, the image file made by the settings below is attached. When **Off** is selected, only the message is sent.
- ❑ **Image file name** : Type the file name you want to assign to the image to attach a mail. You can use up to 10 alphanumeric, - (hyphen) and _ (underscore) for naming.
- ❑ **Suffix** : Select a suffix to add to the file name:
 - ❑ **None**: No suffix is added. The Image file name is assigned to the image to be sent via an e-mail.
 - ❑ **Date & time**: The date & time suffix is added to the Image file name. The date/time suffix consists of lower two-digits of year (2 digits), month (2 digits), date (2 digits), hour (2 digits), minute (2 digits), second (2 digits), and consecutive number (2 digits), thus 14-digit number is added to the file name.
 - ❑ **Sequence number**: A consecutive number of 10 digits between 0000000001 and 4294967295 and two fixed digits 00 are added to the Image file name.
- ❑ **Motion Detection** : Click it on for using **Motion Detection** function as a sensor. You can set the motion detection function page.

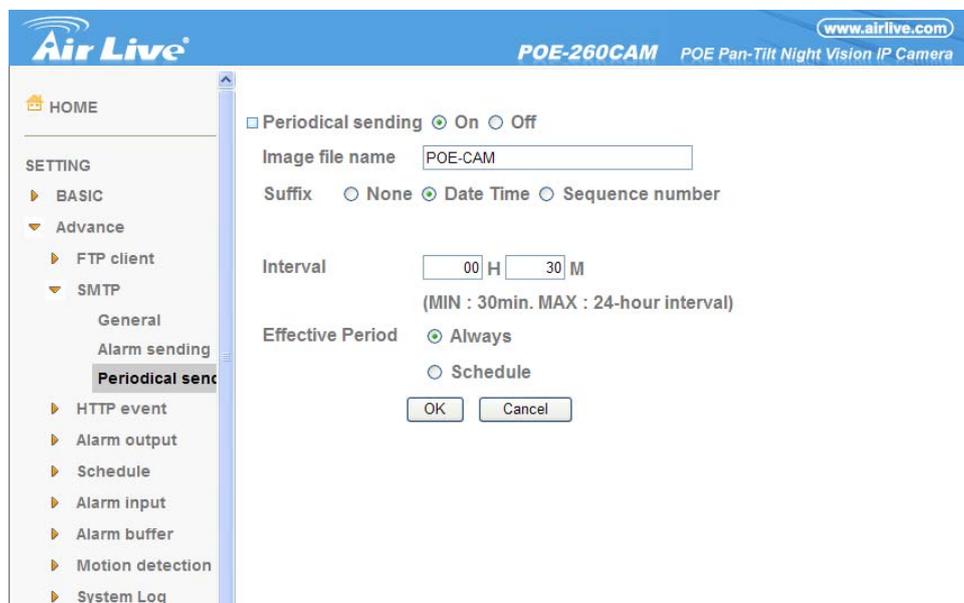
Note :

- **Motion Detection** works only when the Video mode is set to **MPEG4** and the **Cropping** is set to **Off**.



7.2.2.3 Periodical Sending

You can set to send an image file by SMTP server periodically by selecting **On** to send the image file by SMTP server linked with setting period.



- ❑ **Image file name** : Type the file name of the image sent by SMTP up to 10 alphanumeric characters, - (hyphen) and _ (under score).
- ❑ **Suffix** : Select a suffix to be added to the file name sent by SMTP.
- ❑ **None** : The name of the sent file will be the Image file name.
- ❑ **Date & time** : The date & time suffix is added to the Image file name. The date & time suffix consists of lower two-digits of year (2 digits), month (2 digits), date (2 digits), hour (2 digits), minute (2 digits) and second (2 digits), and consecutive number (2 digits), thus 14-digit number is added to the file name.
- ❑ **Sequence number** : A **consecutive** number is added to the Image file name.
- ❑ **Sequence number clear** : Click **Clear** and the suffix of the sequence number returns to 1.
- ❑ **Interval** : Set the periodical sending is effective interval. Min value is 30 min and Max value is 24 hours.
- ❑ **Effective period** : Set the period when the periodical sending is effective.
- ❑ **Always** : The periodical sending is always effective.
- ❑ **Schedule** : You can specify the period when the periodical sending is effective in the schedule setting in the other section. Click **Schedule** and the setting menu for the effective period is displayed.



7.2.3 HTTP Event

Use this menu to set up for capturing and sending images to an HTTP server. By using HTTP client function, you can send the image and audio file which has been shot and recorded linked with the external sensor input or with the built-in motion detection function to HTTP server. HTTP client setting menu is composed of two tabs, **General** and **Alarm sending**.

7.2.3.1 General

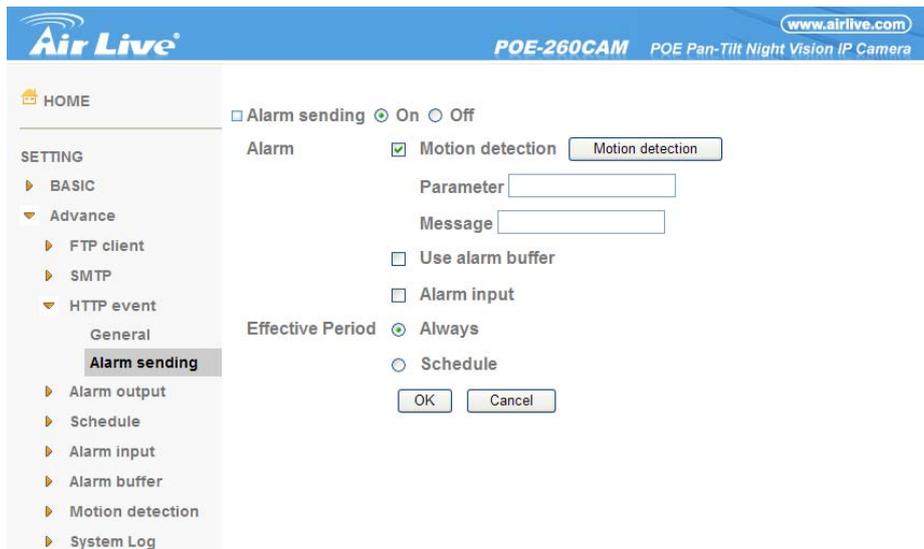
The screenshot shows the web interface for the Air Live POE-260CAM. The top navigation bar includes the Air Live logo, the model name 'POE-260CAM', and the description 'POE Pan-Tilt Night Vision IP Camera'. A 'HOME' button is visible on the left. The main menu on the left lists various settings categories: HOME, SETTING, BASIC, Advance, FTP client, SMTP, HTTP event (selected), Alarm sending, Alarm output, Schedule, Alarm input, Alarm buffer, Motion detection, and System Log. The 'HTTP event' section is expanded to show the 'General' tab. The settings include a checkbox for 'HTTP event' (set to 'On'), and input fields for 'URL', 'Port' (set to 80), 'User ID', 'Password', 'Proxy server name', 'Proxy port number', 'Proxy user ID', and 'Proxy password'. At the bottom of the form are 'OK', 'Cancel', and 'Test' buttons.

HTTP event: Set up the HTTP server URL, port, user ID, password, and proxy server settings.



7.2.3.2 Alarm Sending

Set to send the mail with connection to the alarm detection by the external sensor input or by the built-in motion detection function.



- **Alarm sending** : Select **On** to set to send mail with connection to the alarm detection.
- **Motion Detection** : Click it on for using **Motion Detection** function as a sensor. You can set the motion detection function page.

Note :

Motion Detection works only when the Video mode is set to **MPEG4** and the **Cropping** is set to **Off**.

- **Alarm Buffer** : Select **Use alarm buffer** when you forward the image/ audio of before and after the alarm detection (pre-alarm, post-alarm). If you do not select it, only the image of the moment of the alarm detection is forwarded. Click **Alarm buffer** to display the Alarm buffer setting menu. For details, see “Setting the Alarm Buffer — Alarm buffer setting Menu on page.
- **Effective period** : Set the period when the periodical sending is effective.
- **Always** : The periodical sending is always effective.
- **Schedule** : You can specify the period when the periodical sending is effective in the schedule setting in the other section. Click **Schedule** and the setting menu for the effective period is displayed.



7.2.4 Schedule

When you click **Schedule** on the Advanced mode menu, the Schedule setting menu appears. This is the same menu as the setting menu which is displayed when you click **Schedule** to set Effective period and Schedule in FTP client setting menu, e-mail (SMTP) setting menu, Alarm out setting menu and so on. Example: When setting e-mail (SMTP) (the alarm sending) in the Schedule setting menu.

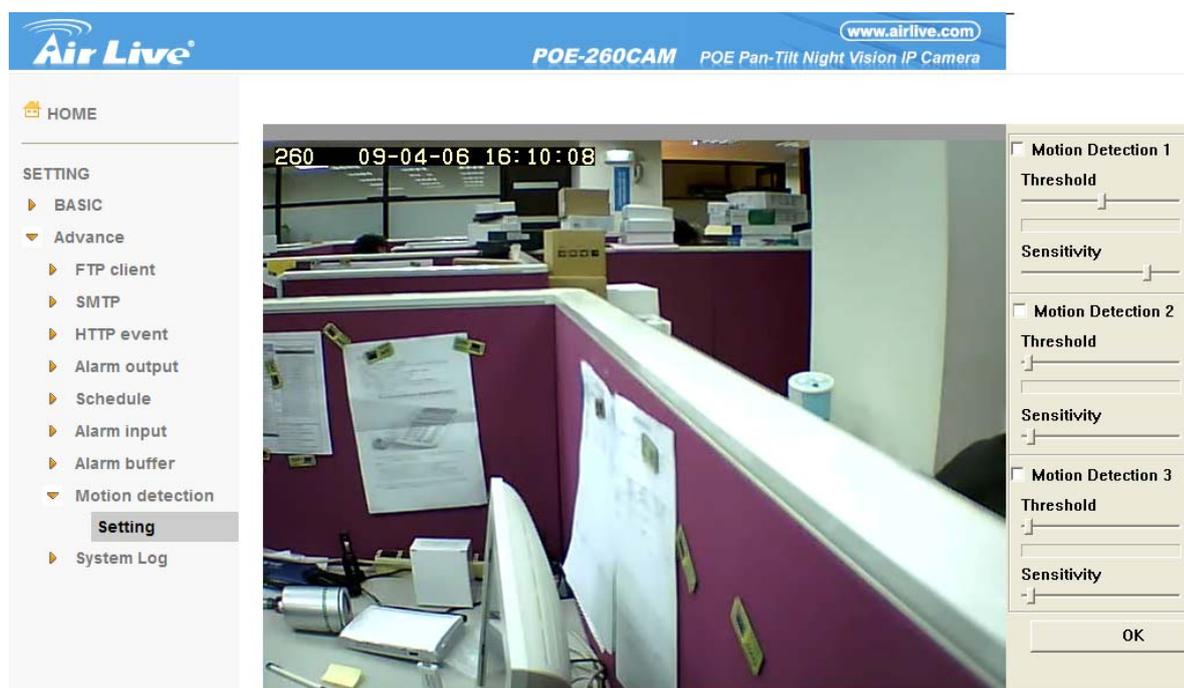
The screenshot shows the 'Schedule selection' menu in the Air Live web interface. The 'Schedule selection' dropdown is set to 'FTP - Alarm'. Below it, there are checkboxes for each day of the week (Mon, Tue, Wed, Thu, Fri, Sat, Sun). Each day has a 'Start time' and 'End time' input field, both showing '00 : 00' and '24 : 00' respectively. At the bottom, there is a checkbox for 'Use the same time schedule every day.' and two buttons: 'OK' and 'Cancel'.

- Setting**
- Schedule selection**
- Select the list box to specify the schedule you want to set. **E-mail (SMTP) – Alarm, e-mail (SMTP) – Periodical, FTP – Alarm, FTP – Periodical, HTTP event – Alarm, Alarm output – Alarm or Alarm output – Timer**, can be selected.
- Mon (Monday) to Sun (Sunday)**
- The time period on the right of the checked day is the effective period of the schedule.
- Start time, End time**
- Specify the **Start time** and the **End time**.
- Use the same time schedule every day**
- When this is checked, the **Start time** and **End time** set to **Mon (Monday)** are applied to all days. In this case, the **Start time** and **End time** of the other days than **Mon (Monday)** cannot be input.



7.2.5 Motion Detection

When you click **Motion Detection** on the Advance mode menu, the Motion Detection setting menu appears. There are three Motion Detection functions as sensors to set for different detecting zones. Each one has Threshold and Sensitivity inputs which you can adjust to specific zone sequentially. Motion Detection function can support to FTP, SMTP and Alarm output for capturing and sending images or starting alarm output.



Click it **On** when you use the Motion Detection function and detecting zone appears for adjusting and moving. The common setting options are displayed below. If you do not wish to use the Motion Detection function, click it **Off** and press **OK**.

- ❑ **Motion Detection 1** : Click it on for using **Motion Detection 1** function as a sensor. You can adjust and move the detecting zone by using mouse.
- ❑ **Motion Detection 2** : Click it on for using **Motion Detection 2** function as a sensor. You can adjust and move the detecting zone by using mouse.
- ❑ **Motion Detection 3** : Click it on for using **Motion Detection 3** function as a sensor. You can adjust and move the detecting zone by using mouse.
- ❑ **Threshold** : You can use the tool bar to set up-limit value. When detecting zone signals are over setting value, it would carry on assigned work.
- ❑ **Sensitivity** : You can use the tool bar to set down-limit value. When detecting zone signals are over setting value, it would carry on assigned work.



Carry out the following steps :

1. Click **On** to Motion Detection 1 choose one of eight orders.
2. A detecting zone 1 appears and use mouse to adjust and move the zone boundaries and position.
3. Use tool bar to set **Threshold** and **Sensitivity** value.
4. Follow the steps to set the other Motion Detection.
5. Click the **OK** to save the setting.

Note :

- Be careful! Motion Detection function don't work with Patrol function at same time.

7.2.6 System Log

The System Log function allows users to review any changes and events happened. The system starts logging automatically after started.

Remote Log: Enables user to send the log data to a specified log server.

The screenshot shows the Air Live web interface for a POE-260CAM. The left sidebar contains a menu with 'SETTING' expanded to 'System Log', where 'Setting' is selected. The main content area has two sections: 'Remote Log' with an unchecked checkbox for 'Enable remote log' and 'Current Log' with a scrollable list of system events. The events include log startup, network initialization, watchdog start, alarm buffer event receive, SMTP sending success, and RTSP connections from 192.168.0.128.

```

Jan 1 00:00:09 <info > SYS: log started
Apr 6 14:00:16 <info > NET: Starting network...
Apr 6 14:00:16 <info > NET: MAC = 00:1B:FE:00:39:3F
Apr 6 14:00:16 <info > NET: Network type = DHCP
Apr 6 14:00:18 <info > WDT: watchdog start
Apr 6 14:00:18 <info > ALARM: Alarm Buffer Event Receive
Apr 6 14:00:24 <info > SSMTMP: Send SMTP to:'leo.chen@airlive.com'
Apr 6 14:00:29 <info > SSMTMP: SMTP Sending Success
Apr 6 14:05:51 <info > RTSP: HTTP from 192.168.0.128
Apr 6 14:06:38 <info > RTSP: Close from 192.168.0.128
Apr 6 14:09:15 <info > RTSP: HTTP from 192.168.0.128
Apr 6 14:09:16 <info > RTSP: Close from 192.168.0.128
Apr 6 14:13:14 <info > RTSP: HTTP from 192.168.0.106
Apr 6 14:14:37 <info > RTSP: Close from 192.168.0.106
Apr 6 15:17:38 <info > RTSP: HTTP from 192.168.0.128
Apr 6 15:18:14 <info > RTSP: Close from 192.168.0.128
Apr 6 15:20:03 <info > RTSP: HTTP from 192.168.0.106
Apr 6 15:20:11 <info > RTSP: Close from 192.168.0.106
Apr 6 15:52:26 <info > Video: MPEG4 - New Connection from 192.168.0.128
Apr 6 15:53:00 <info > Video: MPEG4 - Close Connection from 192.168.0.128
  
```

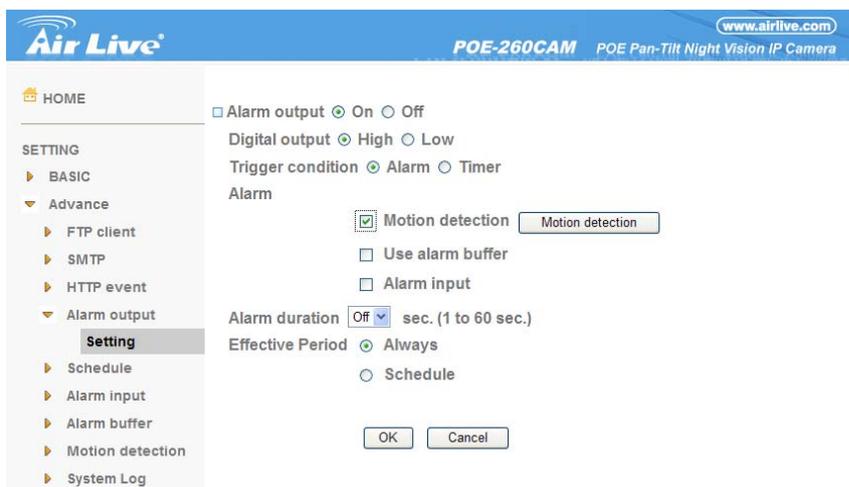


7.2.7 Alarm Input

When you click **Alarm Input** on the Advance mode menu, the Alarm input setting menu appears. You can set in this menu to control the external alarm input of I / O port on the rear of the device linked to **FTP, SMTP, and HTTP sending function**.



7.2.8 Setting



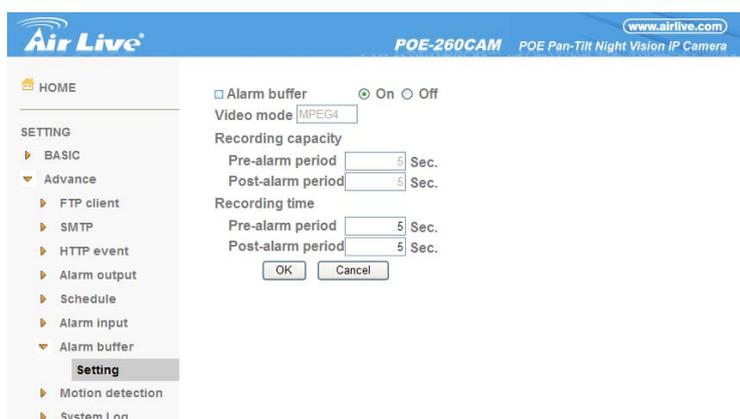
Sensor input 1: Click it on for using external sensor which is connected to sensor input1 of the camera I / O port.

- Trigger condition:** Select High signal output and Low signal output as your alarm.
- Camera move:** Pull down the window to select the camera preset position.



7.2.9 Alarm buffer

You can set the Pre-alarm image and audio (the image and audio before the alarm detection) and the Post - alarm image and audio. These can be set when **Alarm sending** FTP client setting menu or Image memory setting menu is set to **On**, and besides when **Use alarm buffer** is selected.



7.2.10 Setting

Alarm buffer: To activate the Alarm buffer function, select **On**. The basic setting options are displayed below. When you do not use the Alarm output function, select **Off**.

■ Recording capacity

- Pre-alarm period:** Display the maximum recording capacity of image/audio before the alarm detection.
- Post-alarm period:** Display the maximum recording capacity of image/audio after the alarm detection.

■ Recording time: Set the recording time for the Pre-alarm image/audio and Post alarm image/audio.

- Pre alarm period:** Type it with recording time of the image/audio before the alarm detection.
- Post alarm period:** Type it with recording time of the image/audio after the alarm detection.

Note : The value of Recording capacity differs depending on Image size, Bitrate (for MPEG4) and Image quality (for MPEG4 and MJPEG) in the camera setting menu.

8

CamPro Express User's Manual

This Chapter explains how to install CamPro express and different between server and client version. Also tell you how to modify all of the function in the CamPro Express.

8.1 Getting Started

For a better understanding, please read this manual before operate the AirLive CamPro Express system.

■ System Requirement- SERVER version

CPU	P-4 3.0G
RAM	1G or above
Operating System	Windows XP Professional Service Pack2 (English/Traditional Chinese/Simplified Chinese) Windows Vista Home Basic/Home Premium/Business/Ultimate
Network	10/100 Mbps Fast Ethernet
Display Card	1024 x 768 (XVGA) or above

■ System Requirement- CLIENT version

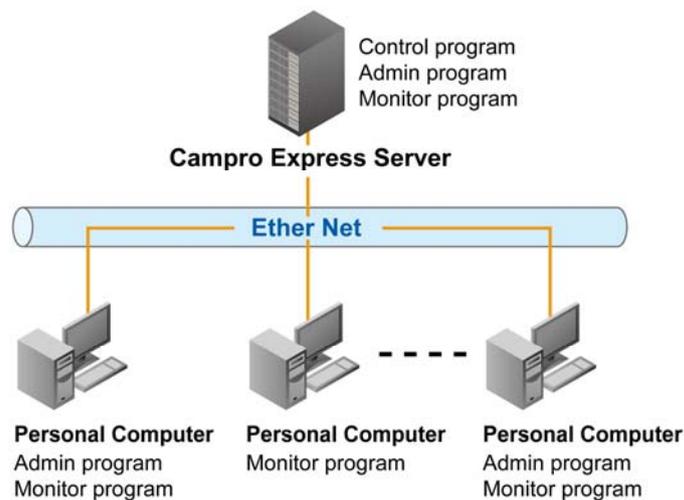
CPU	P-4 1.2G
RAM	1G or above
Operating System	Windows XP Professional Service Pack2 (English/Traditional Chinese/Simplified Chinese) Windows Vista Home Basic/Home Premium/Business/Ultimate
Network	10/100 Mbps Fast Ethernet
Display Card	1024 x 768 (XVGA) or above

■ **Networking Suggestion**

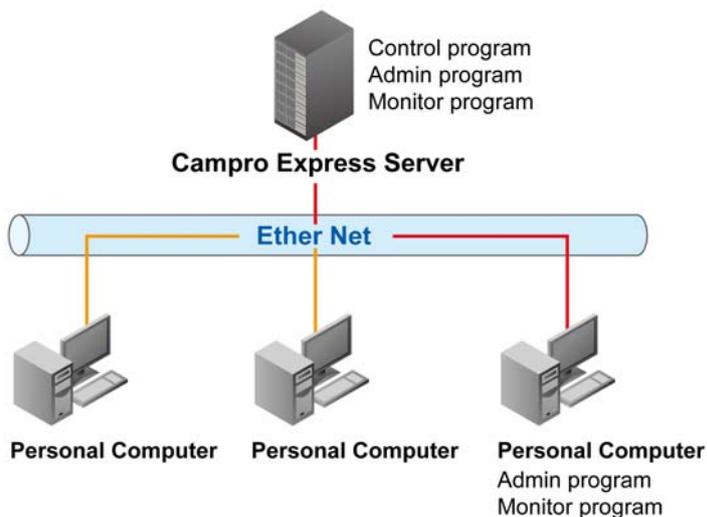
AirLive CamPro Express is optimized for small-scale project, simple LAN or simple WAN environment. Place the system behind firewall or IP sharing device to efficiently protect this system from hackers' attack.

AirLive CamPro Express is consisted of SERVER version and CLIENT version.

SERVER version limits one installation. SERVER version includes Admin, Monitor, Control and Web Monitor programs.



The **CLIENT** version is designed for monitoring purpose, and the Admin program is an option while installation



- [Step 1]** Please insert AirLive CamPro Express CD into CD-ROM drive.
Go to AirLive CamPro Express Server and click for the installation.



[Step 2] Select language

The Installation Wizard will select the language of your operation system intelligently. AirLive CamPro Express supports three languages : Traditional Chinese, Simplified Chinese, English

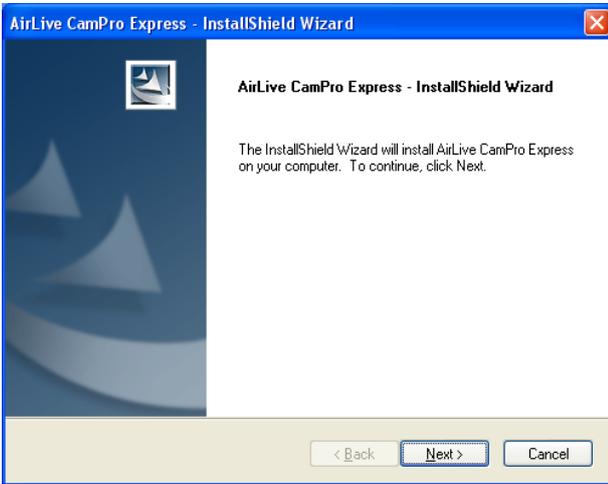


[Step 3]

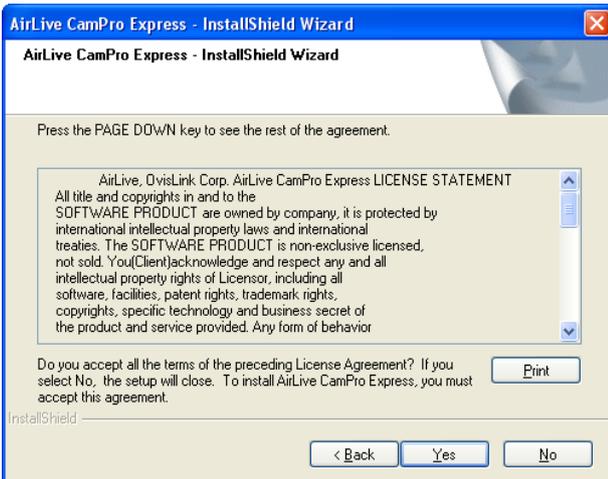
The Installshield Wizard will check if IIS is installed at your system. If not, you can continue installing AirLive CamPro Express, but you will not be able to use the WEB monitoring feature without IIS. To Install IIS, do the following,

1. Click "Start".
2. Go to Control Panel → Add/Remove Program
3. Click Add/Remove Windows Component
4. Check Internet Information Services (IIS)
5. Click "Next".
6. Click "Finish".

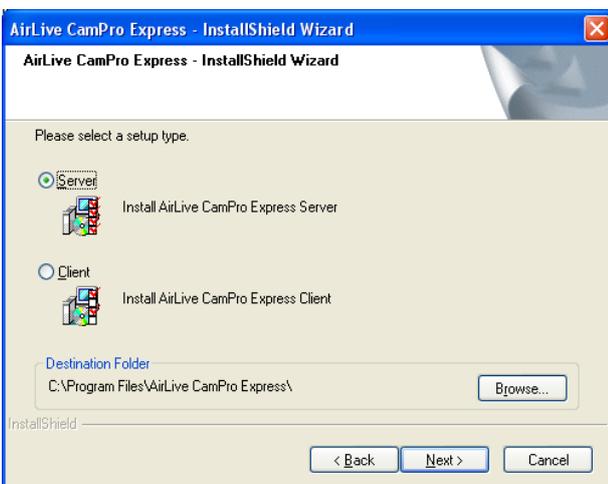
During the installation process, you may need Microsoft Windows Operating System CD.



【Step 4】 Select language
Click “Next” to begin the installation process.



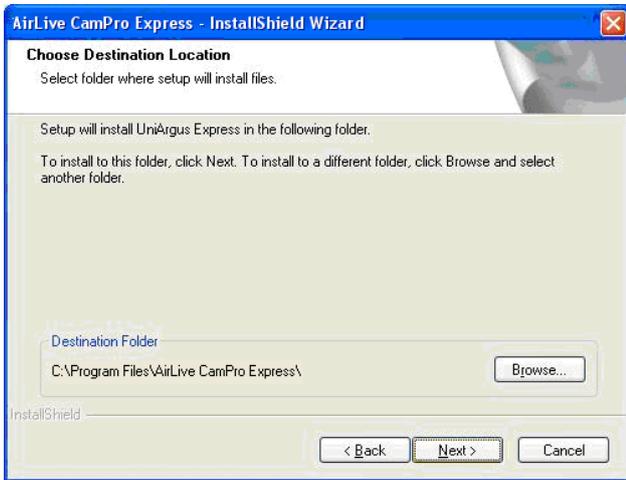
【Step 5】
Please read the License Statement and select “Yes” to accept and continue.



【Step 6】
Choose Setup type and click “Next” to continue.

For first time installation please select server to install. AirLive CamPro Express is consisted of SERVER version and CLIENT version.

SERVER version limits one installation. SERVER version includes Admin, Monitor, Control and Web Monitor programs. The **CLIENT** version is designed for monitoring purpose, and the Admin program is an option while installation.



[Step 7]

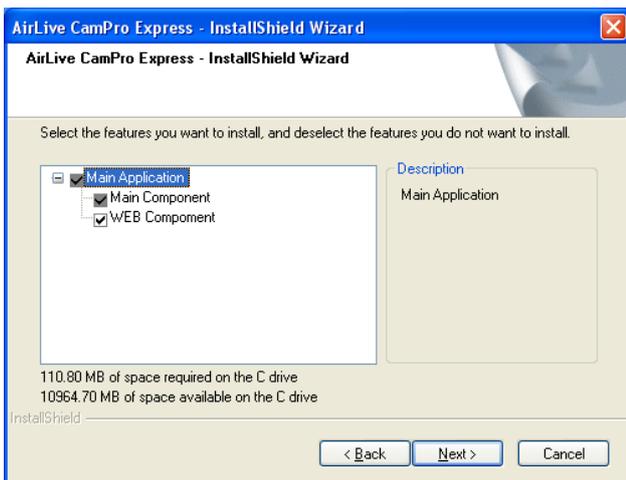
Choose Destination Location or click “Next” simply

Specify the Destination Folder; you may click “Browse...” to select a folder other than the default one.

Click “Next” to continue.

Note:

The default location is deemed adequate for most situations, it is recommended that you use the default location.

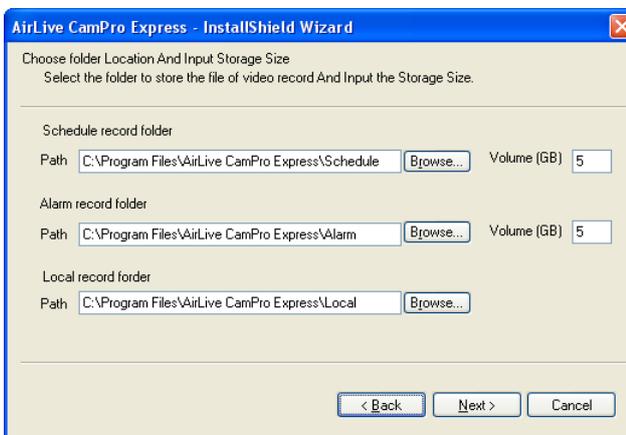


[Step 8]

Choose the components to install, then click “Next” to continue. Main Component is a required component.

Note:

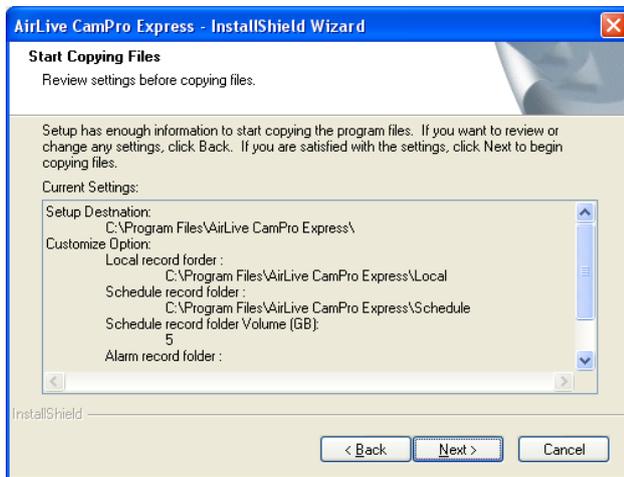
If you would like to view video image via a browser from remote locations, select Web Component.



[Step 9]

Select Program Folder

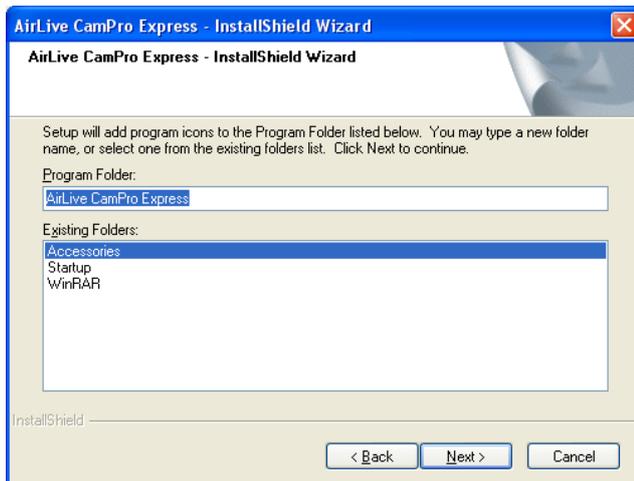
Specify the Program Folder where AirLive CamPro Express icons will be installed to Click “Next” to continue.

**[Step 10]**

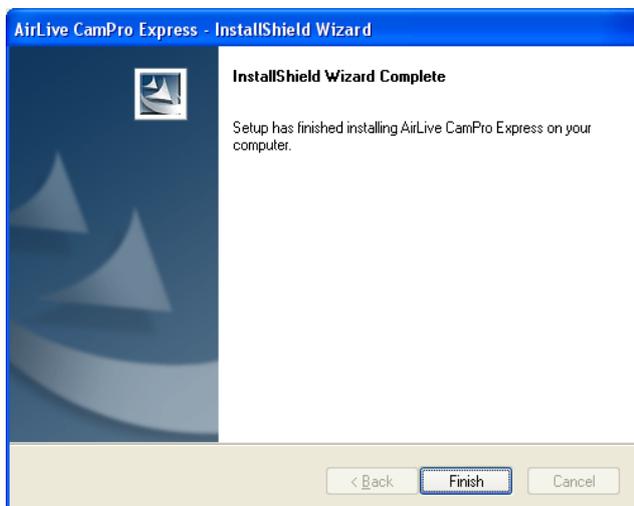
Start Copying Files page pop out, review all your configuration that you have made. Click “Next” to accept these setting and continue.

Note:

The installation process may take several minutes to complete, depending on the handling capability of your computer system (refer to Section 7.1.2 System Requirement for system requirement detail)

**[Step 11]**

Click “Next” to continue

**[Step 12]**

Installshield Wizard Complete; click “Finish” to complete the setup. The system should start AirLive CamPro Express in 1 to 3 minutes, and the icon of AirLive CamPro Express () appear in task bar of screen's lower-right corner.

Note:

If in real case, this does not happen, please restart your computer.

Setting:

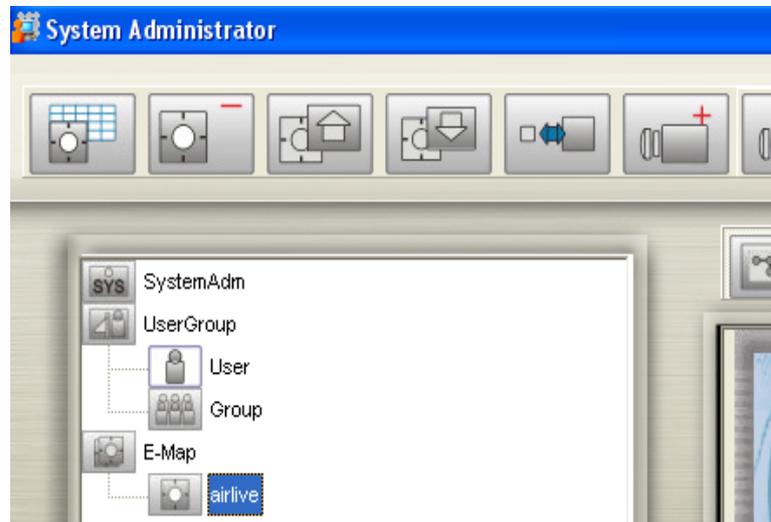
1. Run the Airlive CamPro Express-->Admin.



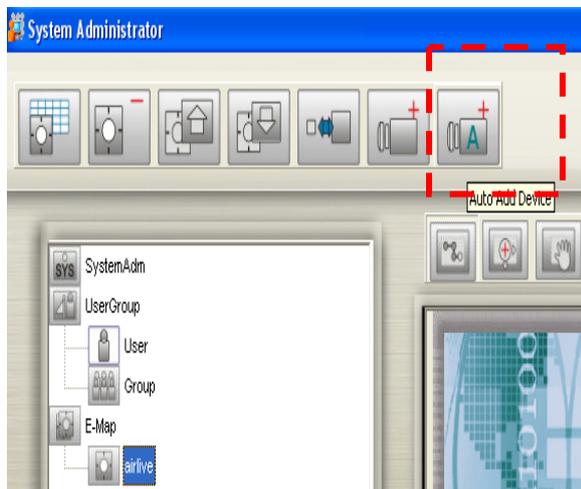
2. Select "E-MAP" then "Add Area".



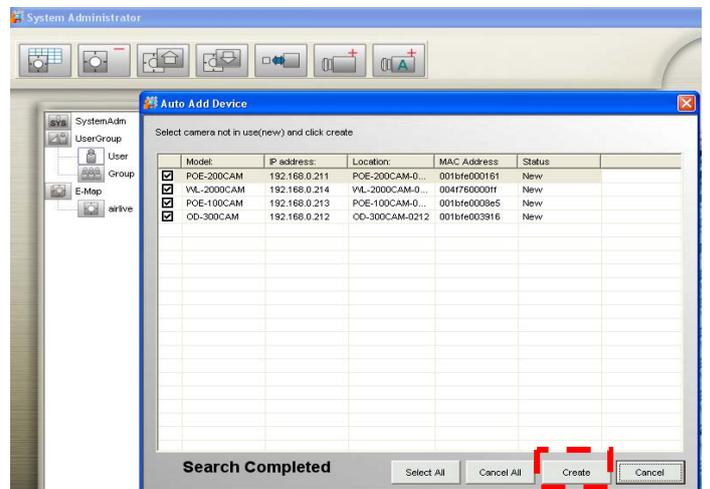
3. Enter the Area Name then Create.



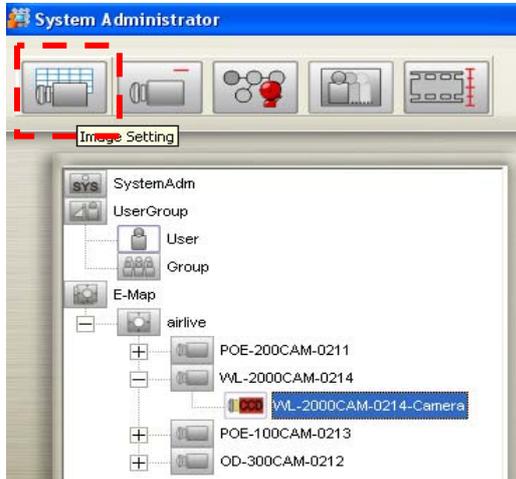
4. Select area name then select "Auto Add Device".



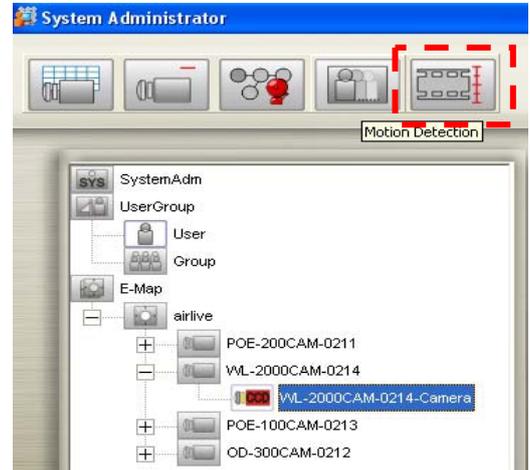
5. When search completed select "Create".



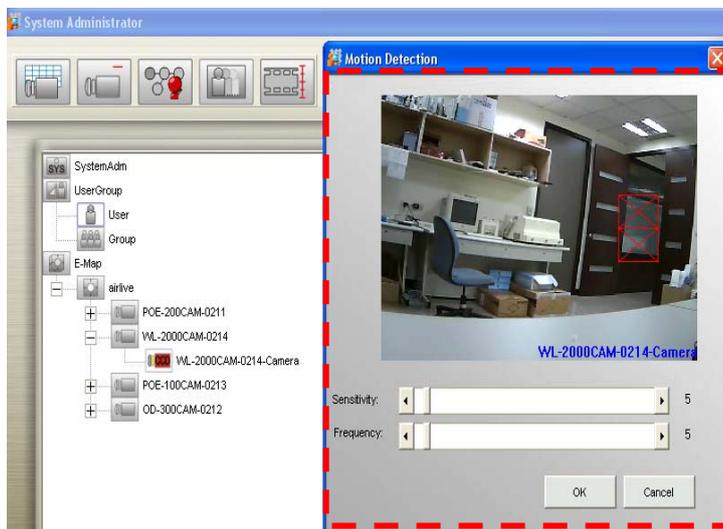
6. Select the ipcam device icon then select "Image Setting".



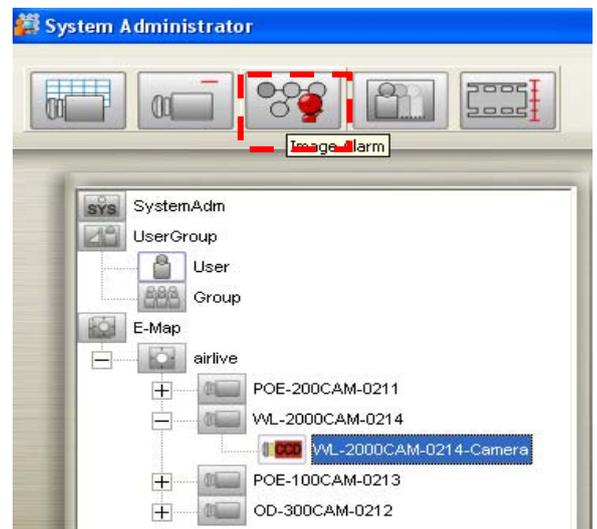
7. Select the ipcam device icon then select "Motion Detection".



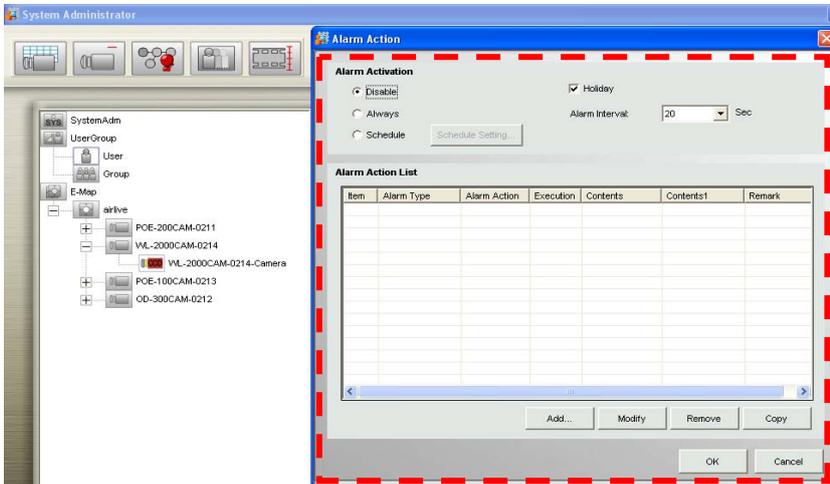
10. Setting motion detection area in this page.



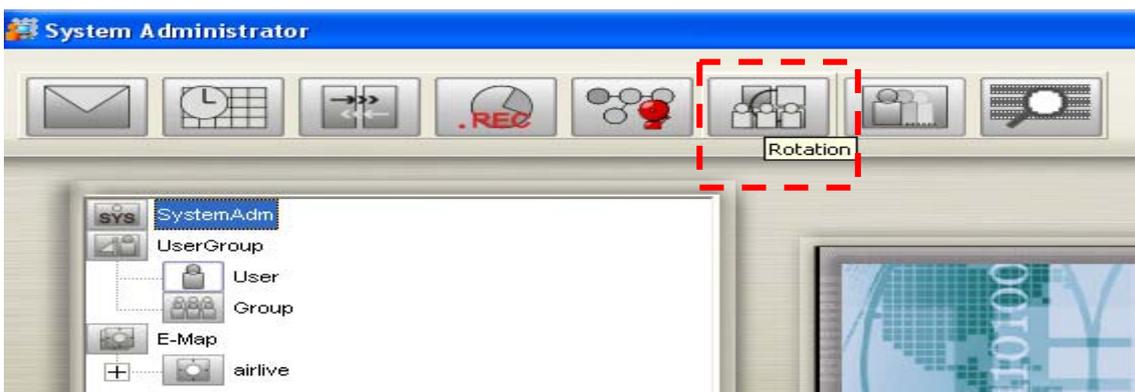
9. Select the ipcam device icon then select "Image Alarm".



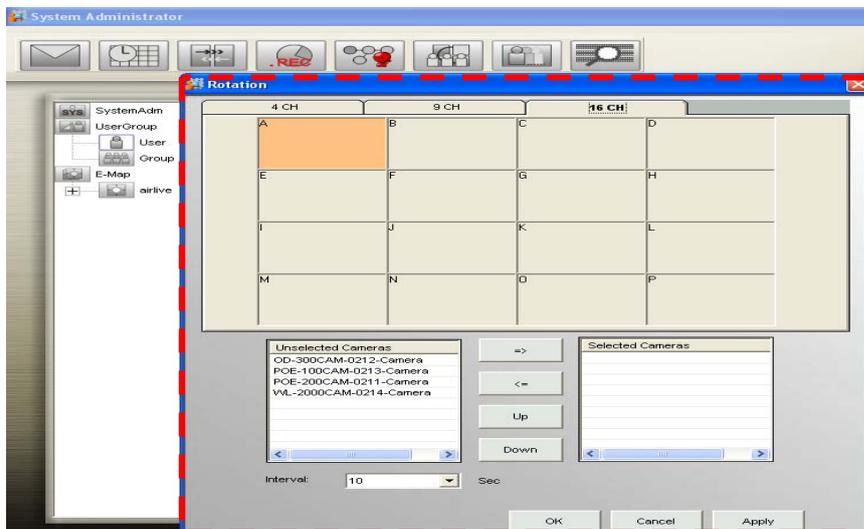
10. Setting motion detection alarm in this page.



11. Select "SystemAdm" then select "Rotation"



12. Setting rotation place in the monitor



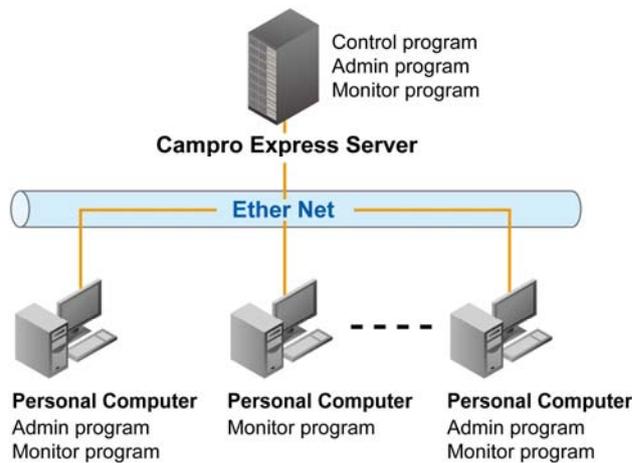
12. Run the Airlive CamPro Express-->Monitor.



8.1.1 System Requirement

AirLive CamPro Express is consisted of SERVER version and CLIENT version. SERVER version limits one installation, license key are required whenever adding devices for central management. SERVER version includes Admin, Monitor, Control and Web Monitor programs. The CLIENT version is designed for monitoring purpose, and the Admin program is an option while installation

8.1.2 Client-Server System Structure



■ **System Requirement- SERVER version**

CPU	P-4 3.0G
RAM	1G or above
Operating System	Windows XP Professional Service Pack2 (English/Traditional Chinese/Simplified Chinese) Windows Vista Home Basic/Home Premium/Business/Ultimate
Network	10/100 Mbps Fast Ethernet
Display Card	1024 x 768 (XVGA) or above

■ **System Requirement- CLIENT version**

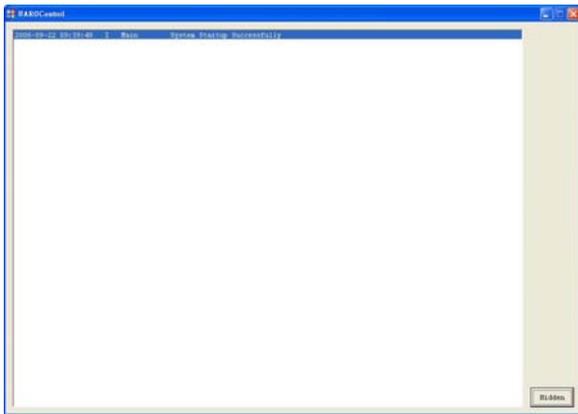
CPU	P-4 1.2G
RAM	1G or above
Operating System	Windows XP Professional Service Pack2 (English/Traditional Chinese/Simplified Chinese) Windows Vista Home Basic/Home Premium/Business/Ultimate
Network	10/100 Mbps Fast Ethernet
Display Card	1024 x 768 (XVGA) or above

■ **Networking Suggestion**

AirLive CamPro Express is optimized for small-scale project, simple LAN or simple WAN environment. Place the system behind firewall or IP sharing device to efficiently protect this system from hackers' attack.

8.2 Start Service Program

8.2.1 Automatically Starts Upon System Boot Up



Only one instance of AirLive CamPro Express Server's start service program can be running at a time. The computer with the running startup service program will become a AirLive CamPro Express Server. After installation, the program can be found in the windows start menu at Start → Programs → AirLive CamPro Express → Start Service. The Start Service will hide itself automatically after start up and be displayed as an icon in the system tray.

8.2.2 Shutting Down the Start Service Program



【Step 1】 Right click on the AirLive CamPro Express Server's start service icon from the system tray.

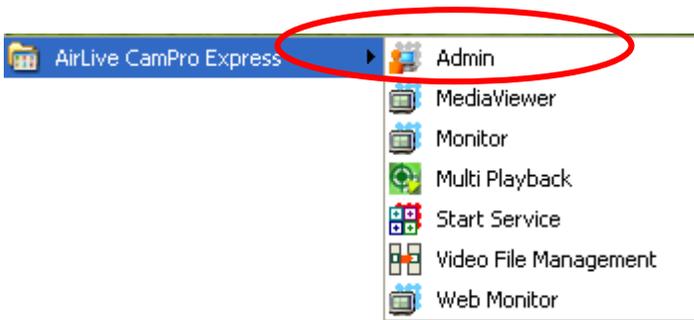
【Step 2】 Click "Exit" and you will be asked with a dialog "Are you sure you to exit the system?"
Click "Yes" to exit the program.

8.2.3 Start the Start Service Program Manually

Navigate to Start → Program → AirLive CamPro Express → Start Service. This will start the start service program and its icon  will appear in the system tray.

8.3 Admin Program

8.3.1 Running the Admin Program



【Step1.】 Select Start \All Programs \AirLive CamPro Express \ Admin



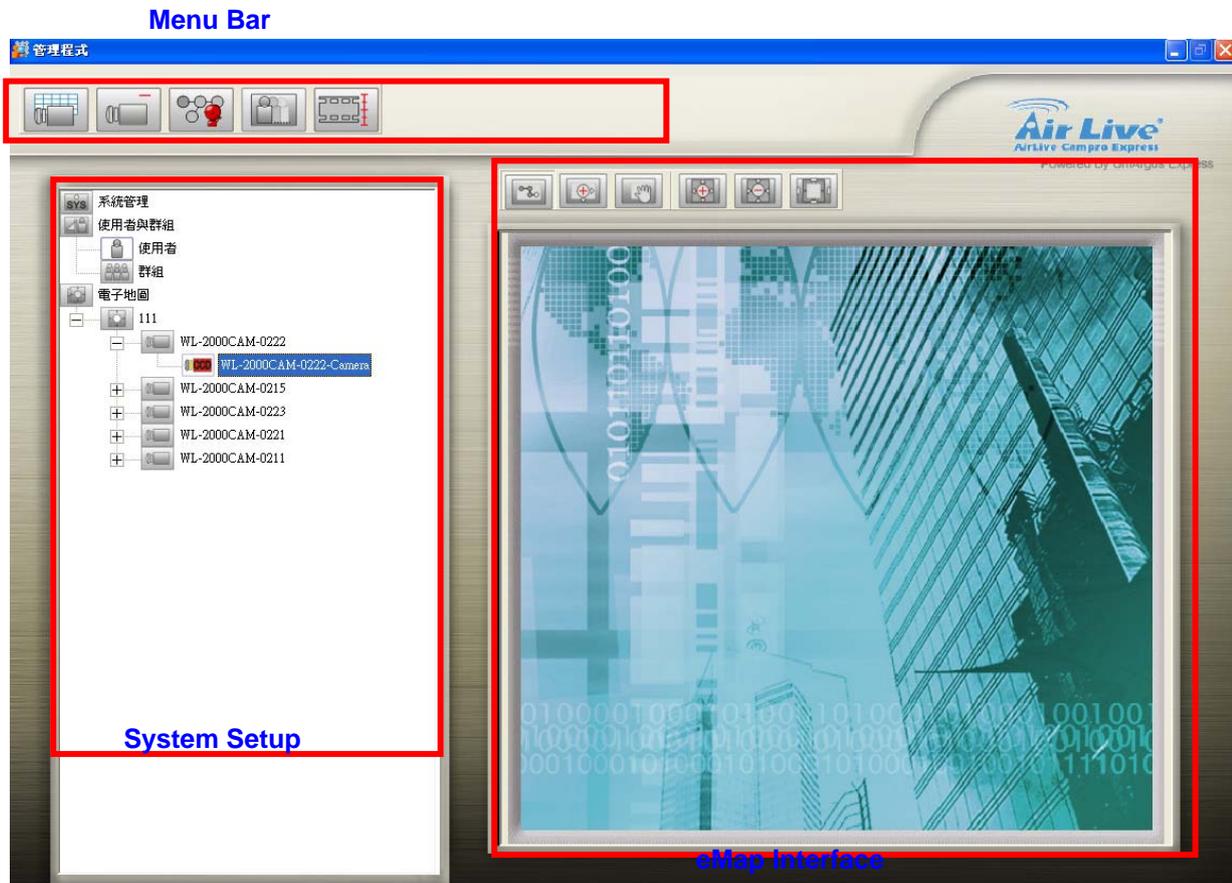
【Step2】 System Log on window.

Note:

- Password: The default password of Administrator is blank. It is recommended that you change password for security management,
- Please go to User Group section to change the password.

- **Server Location:** "127.0.0.1" is the default for local server. If you want to access server from client, then please enter the IP of server to this text box.
- **User name:** If this is the first time you logon, use Administrator as default user name and leave the password blank, then click "OK" to log into the system.
- **Receive video through server:** If you want to remote control AirLive CamPro Express server from client which is not within intranet, then check this box.

8.3.2 Admin Interface Overview



The System Admin screen is divided into three areas:

- The Menu Bar area
- The System Setup area
- The eMap Interface area

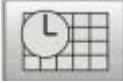
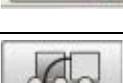
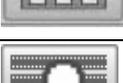
If your system does not display the screen properly, please check if your display resolution is at least 1024 x 768, and that the font size is Windows system default. AirLive CamPro Express does not support font sizes larger than the Windows system default one.

Note:

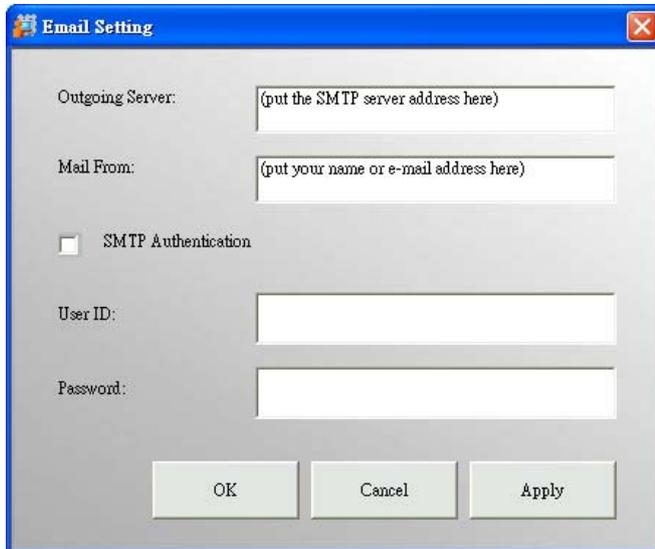
The buttons that appear in the Menu Bar depend on which administration function you are using. For example, when you click the User Group icon in System Setup area, the Menu Bar buttons will show related function accordingly. Details will be explained in the following sections.

8.3.3 System Management Overview

Select SystemAdm icon in System Setup Area, you will see the button in Menu Bar change accordingly.

Button	Use To
	E-Mail Setting: Specify the email outgoing server for sending security alert.
	Holiday Setting: Specify the calendar holidays for schedule setting which is not included in weekly routine.
	DNS Setting: Specify the Domain Name your computer registered for DNS service.
	Storage: Specify the path and storage for recorded file respectively.
	System Alarm: Set alarm actions respond to the selected system alarm.
	Rotation: Set the interval for image rotation in Monitor split screen.
	Motion Rectangle: Set the square size of motion detection.
	Video Format Setting: Set video format corresponding to the device format.
	Playback Setting: For accessing and searching multiple schedule recording files.

Email Setting



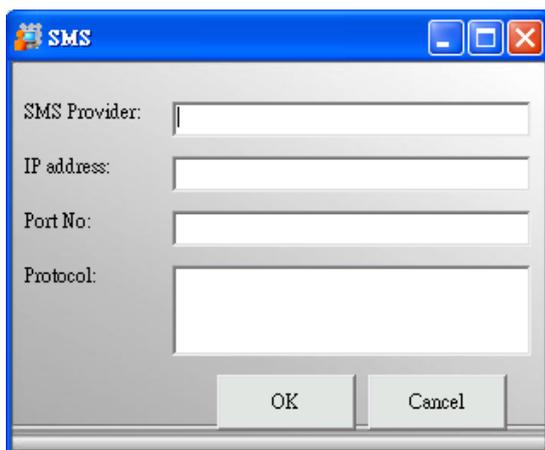
【Step1】 By selecting E-Mail

button() from the Menu Bar.

【Step2】 You can specify the email server that will be used when sending security alerts via email.

【Step3】 To authenticate on the mail server, check SMTP Authentication and enter your user name and password on the mail server.

- **Outgoing Server:** Enter the mail server which could forward your mail to receiver. Some company mail server set the policy of exchanging email within company only. We suggest you use the mail server of the receiver.
- **Mail From:** It is an email address display in the sending column.

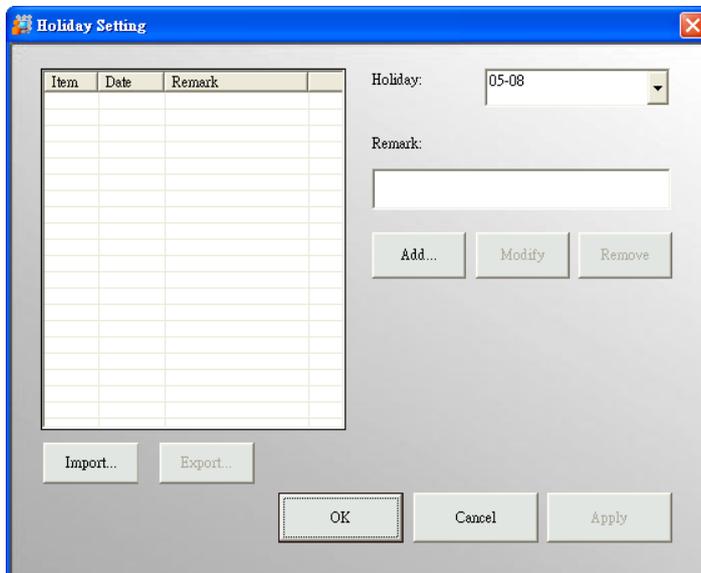


Adding a SMS provider

China Telecom is the default SMS service provider. If you wish to add a local SMS provider, please consult your local distributor for information on SMS providers that are able to provide service for AirLive CamPro Express

【Step1】 Click “Add” to bring up the SMS window and enter the related information about your SMS provider.

Holiday Setting



【Step1】 By selecting Holiday button  from Menu Bar. You may specify any calendar holidays except weekend that may affect the security system settings.

- **Export:** If you have installed multi sites with AirLive CamPro Express server they might require the same holiday setting, you can set on one server first, and use the “Export” function to save holiday setting.
- **Import:** You may update the holiday setting to another AirLive CamPro Express server, by copying the file to that server and use “Import” to update holiday setting accordingly.
- **Add:** Input a description in the Remark field and click “Add” to add the date to the list box at left.
- **Modify:** You can select a holiday from the list and use “Modify” to edit it
- **Remove:** Click “Remove” to remove it from the list.

DNS Setting

It is designed for the DNS resolution between AirLive CamPro Express server and IP device. Your video IP device will connect server via IP address of server if you did not enable DNS Resolution. But your IP device will connect server via Domain Name which your server registered, so that alarm action could be executed.



【Step1】 By selecting DNS Setting button



from the Menu Bar, you may specify the Domain Name Server.

【Step2】 If your computer gets IP from DHCP service or its IP changes periodically due to the policy of your network administrator, please check “Enable DNS resolution”, so any alert message could be delivered to AirLive CamPro Express from camera no matter what IP your server is assigned. Enter the Domain Name your computer registered to “DNS of this PC” field.

Note:

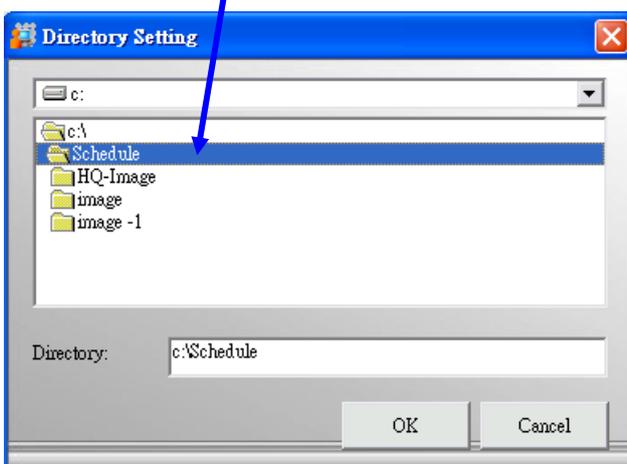
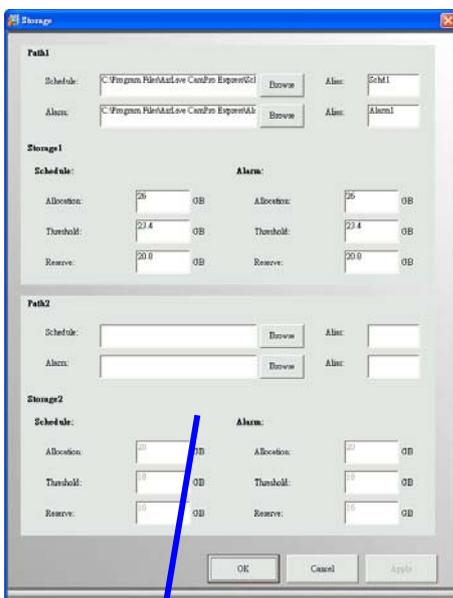
Please request a DNS for AirLive CamPro Express from your MIS.

Storage

By selecting Storage button  from the Menu Bar, you may configure the storage and recycling rule. There is two different areas, namely area 1 (include path1 and storage1) and area 2 (include path2 and storage2):

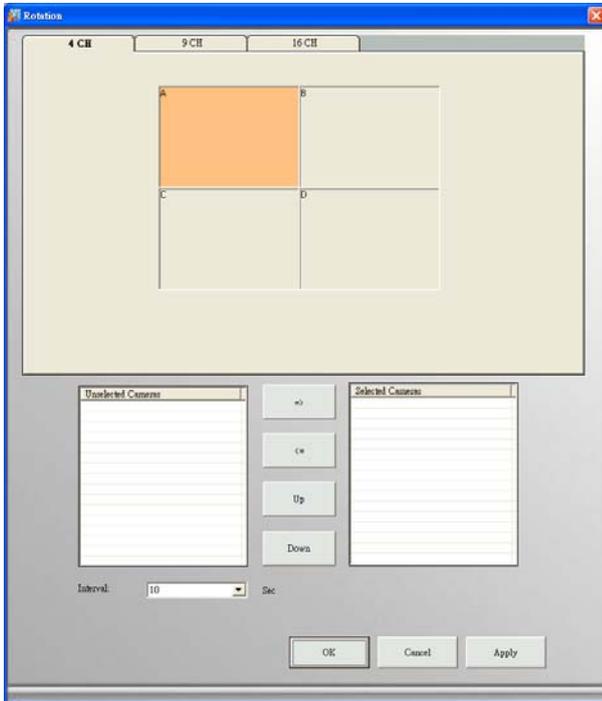
Area 1: is assigned the disk to store recorded data.

Area 2: is assigned for the backup purpose, it is an optional service.



- **Path1 and Path2**
Assigned the disk to store recorded data of Schedule and Alarm.
(Alias: suggest to give an alias for the path, so that path could be easily differentiated)
- **Storage1 and Storage2**
Set the maximum disk space for recording image.
- **Allocation:** The storage allocation should be no less than 2 GB.
- **Threshold:** When the image data exceeds 90% of allocation, AirLive CamPro Express will trigger a warning message to related parties. Threshold no less than 1.8 GB.
- **Reservation:** AirLive CamPro Express will overwrite historical data when it reaches 80% of allocation. Reservation no less than 1.6 GB.
- **Browse:** You may change the default path.

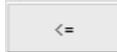
Rotation



By selecting Rotation button  from the Menu Bar, you can set the camera to assigned split screen and rotation interval.

【Step 1】 Select the Tab of split screen, 4CH, 9CH and 16CH.

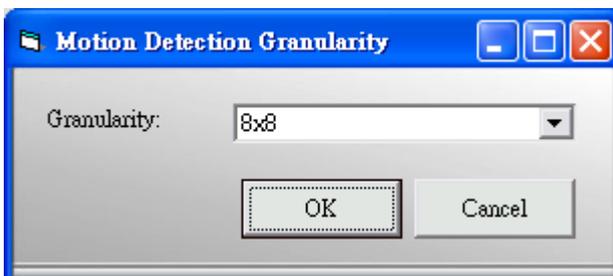
【Step 2】 Assign camera to split screen: Take 16-splitscreen as example: select Tab of 16CH, and select the split-ed screen (remark the selection by changing color to orange) to move camera from “Unselected Column” to “Selected Column” by clicking

 button.

【Step 3】 Set Rotation Sequence.

You can adjust camera sequence by clicking up/down button and also set the rotation frequency by selected interval.

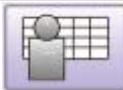
Motion Rectangle



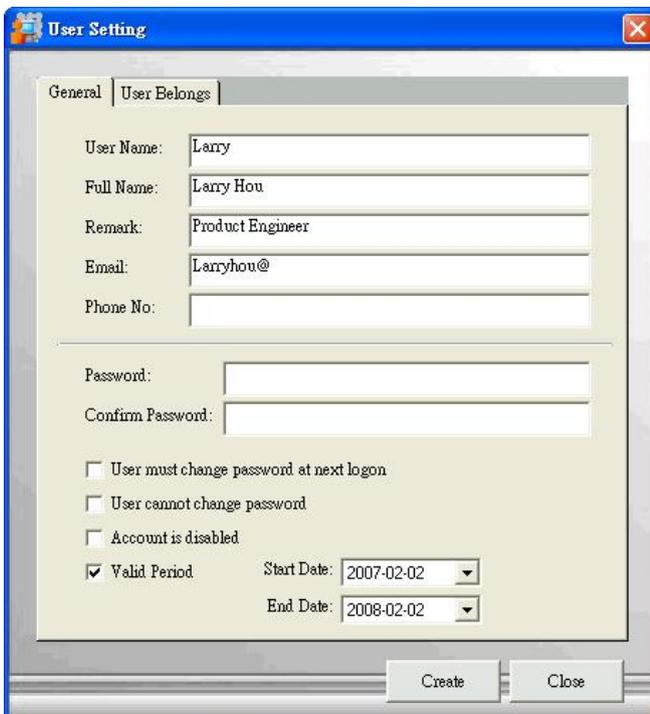
By selecting Motion Rectangle button  from the Menu Bar, you can set the square size of detected area.

8.3.4 User Group

The User Group functions in System Setup area is for managing user privileges. Default user "Administrator" is created with full privileges during installation. You may add users to the system and differentiate their privilege by designating them to different groups.

Button	Use To	Button	Use To
	Add User		User Setting
	Remove User		Add Group
	Group Setting		Remove Group

User



Add User

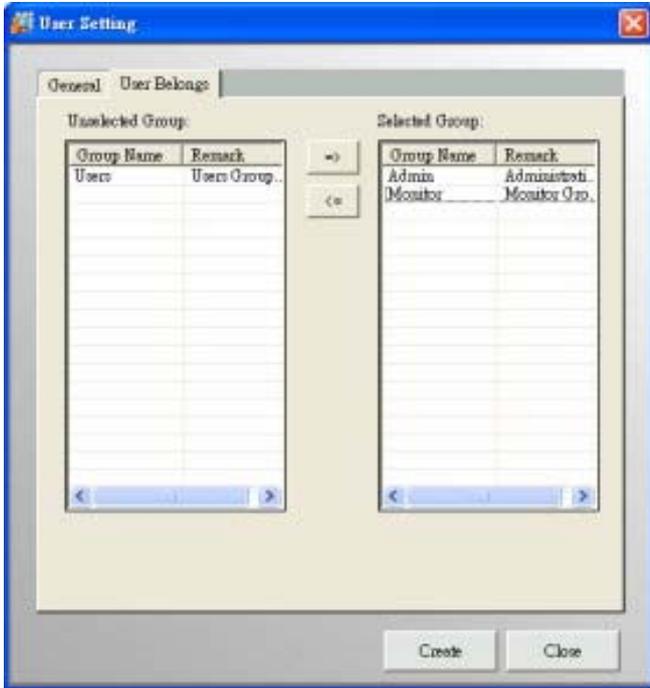
【Step 1】 Select User icon in the System Setup area, then click the New User

button  in the Menu Bar.

【Step2】 Enter user information in the "General" Tab.

Note:

For security concern, it is recommended to assign Password and tick the box for password changing and validation.



User Belongs

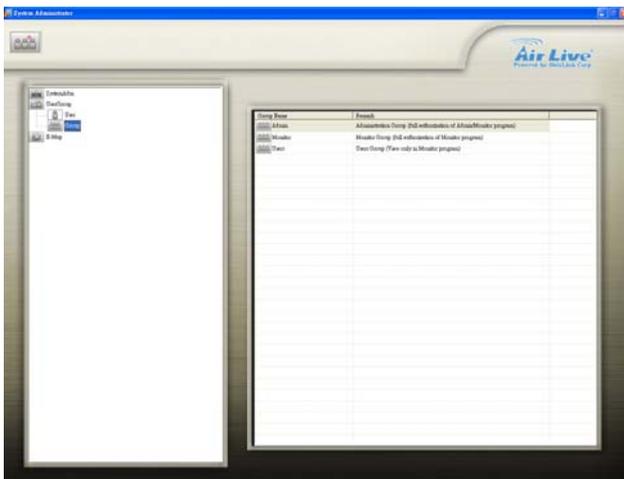
【Step3】

Designating a User to a Group

Select the “User Belongs” tab to designate a user to a group.

Select the group name and move it between “Selected group” and “Unselected group”. Click “OK” to continue.

After setting both general information and user belongs, click “Create” to save the setting.



User Setting (Modify)

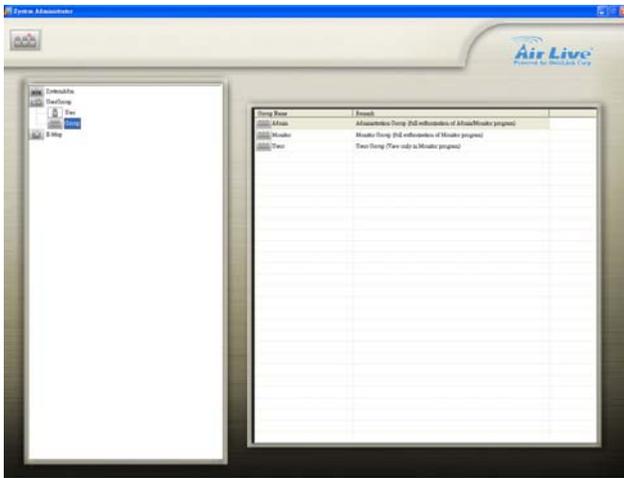
【Step1】 Select User Setting

Select User icon in the right, the User Table display in the E-Map Interface area, when select any user icon from the User Table, the User Setting Button will display in the Menu Bar accordingly. Then click the Edit User button in the Menu Bar.

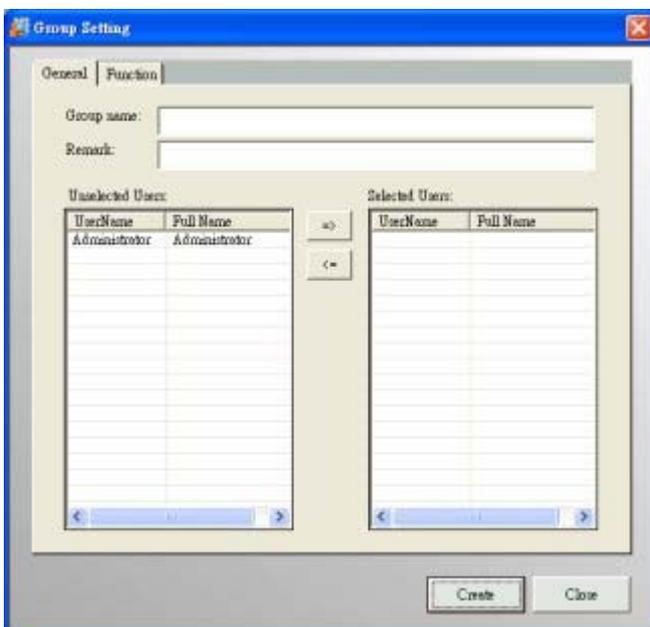
【Step2】 Modifying user Information

You may change the information by modifying the general information or user belongs of that user.

Group



- Admin Group is the user group that has the full privilege to the Admin and Monitor programs. The user of "Administrator", system default and belong to "Admin Group", can add users and assign users to whatever user group.
- Monitor Group is the group for general users that has the full privilege to the Monitor program.
- User Group is the group for viewing monitor program only.

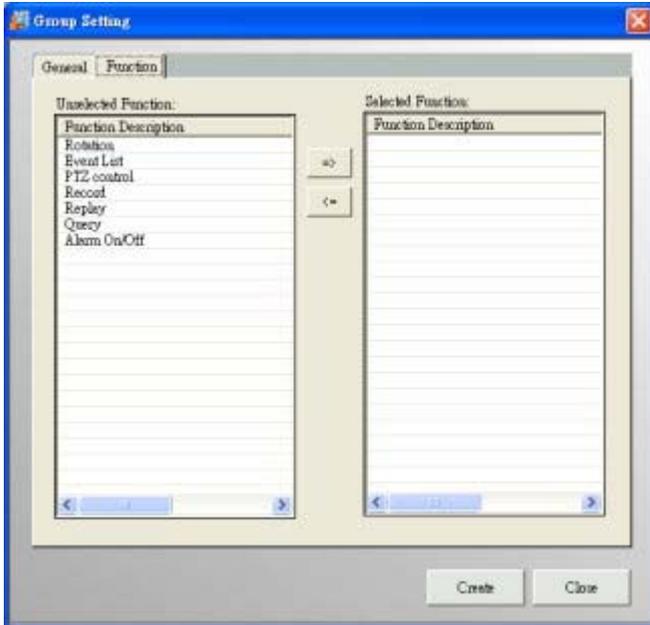


Add Group

【Step1】 Select the User icon in the System Setup area, then click Add User

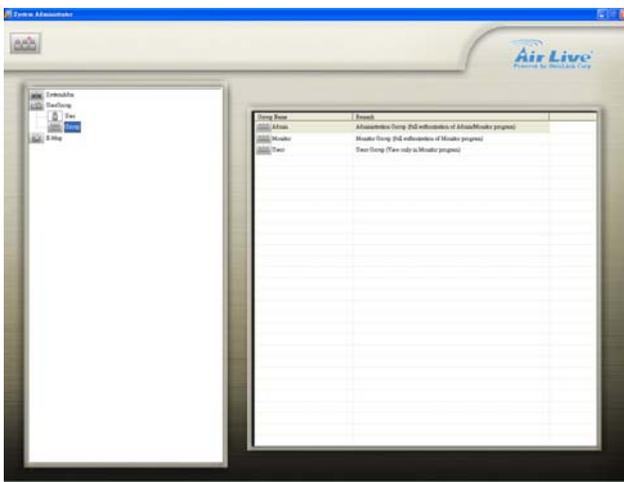
Group button  in the Menu Bar to add the user group's data.

【Step2】 Give a name to the new group and group the selected users here in one step.



【Step3】 Select the “Function” tab to designate function to a group. Select the function list and move them from “Unselected function” to “Selected function”. Click “OK” to continue.

【Step4】 After setting both Tab of “General” and “Function”, click “Create” to save the setting.



Modify Group

【Step1】 Select User Group
Select User Group icon in the System Setup area, the User Group Table display in the right area, when select the icon from the User Group Table, the User Group Setting Button will display in the Menu Bar accordingly. Then click the Edit User button in the Menu Bar.

【Step2】 Modify User group Information.
You may change the information by modifying the general information or function of that user group.

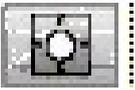
8.3.5 Area and eMap management

Area refers to the geography and device scope of AirLive CamPro Express. Area is a prerequisite of any device setting (device includes: video server, LanCam, camera image, relay or sensor), AirLive CamPro Express provides multi-areas to meet user different requirement.

eMap refers to (1) a hierarchical tree-structured management tool in System Setup area (2) background of the area, it could be a picture or a map (3) an interface which combines eMap background and device icon, eMap visually presents the devices in your security system.

To configure a new system, select eMap icon in the System Setup to bring up the Area button in the Menu Bar. Select the newly created area under the eMap branch and use the corresponding menu options to add a LanCam or Video Server to your system or to upload a background picture to the eMap Interface.

Icon Overview

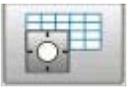
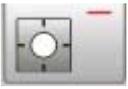
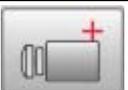
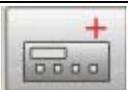
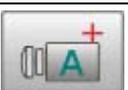
Icon	Representing
	Area icon: The first level of the eMap hierarchy, the place to add a device.
	Video Server : Depending on the device model. There may be an image, a sensor, or a relay under this object.
	LanCam : Depending on the device model. There may be an image, a sensor, or a relay under this object
	I/O controller: There may be a sensor or a relay under this object.
	Image icon: The image component of a camera.
	PTZ icon: The image component of a PTZ Dome camera.
	Relay icon: The image component of a Relay setting.
	Sensor icon: The image component of a Sensor setting.

Button Overview

When you select eMap icon, *Menu Bar* will display the following functions:

Button	Use to
	Add Area: This button allows you to add a new area under eMap branch.
	Remove SubArea: This button allows you to remove all areas and devices that are under the eMap branch.

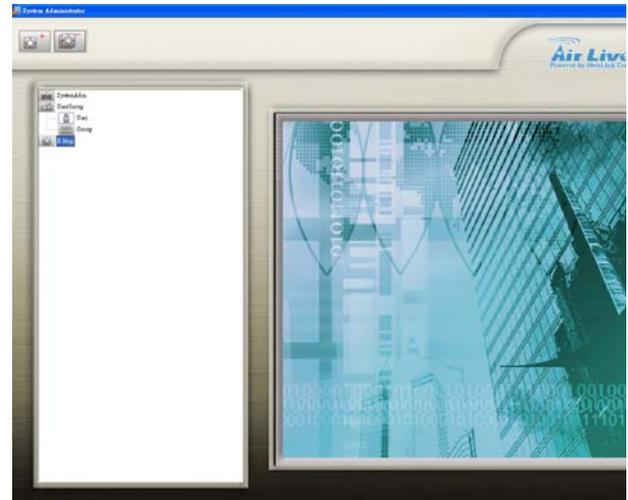
When you select the Area icon, *Menu Bar* will display the following functions:

Button	Use to
	Rename the Area: This button allows you to edit a name of a selected area.
	Remove Area: This button allows you to remove a selected area and all devices in that area.
	Upload eMap: This button allows you to upload a blueprint or map to a selected area.
	Refresh eMap: This button allows you to refresh a blueprint or map from your PC to get updated in case a new eMap was uploaded from server or another client access.
	Resize eMap icon: This button allows you to change the ratio of the device icons to display on the eMap interface.
	Add LanCam: This button allows you to add a new IP Cam, Speed Dome and Fix Dome to the area.
	Add Video Server: This button allows you to add a new video server to the area.
	Add IO Controller: This button allows you to add an IO controller to the area.
	Auto Add Device: This button allows you to automatically search all IP cameras/Video server that are located at the same subnet within a LAN environment. Auto add device just support the IP cameras/Video server with UPnP supported.

Add Area

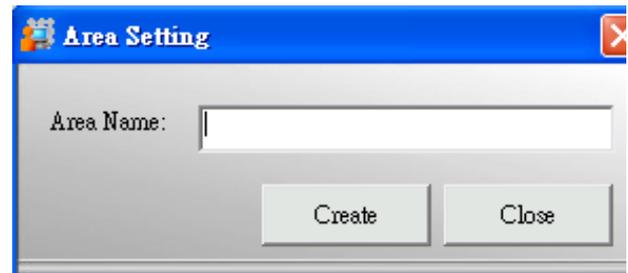
【Step1】

Select eMap icon from the System Setup.

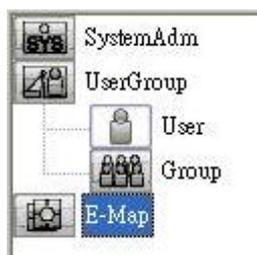


【Step2】

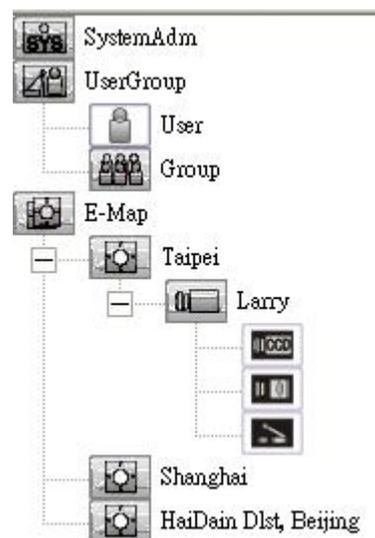
Click Add Area button from the Menu Bar.
An Area Setting window will pop up.
Enter the name to the "Area Name" textbox.



【Step3】 Click "Create" to save setting, a newly created area demonstrate as following:



Before Add Area



After Add Area

Remove SubArea

Select eMap icon, then click the Remove All Areas button. A warning message pops up confirming if you want to remove all areas and devices under area. Click "OK" to confirm.

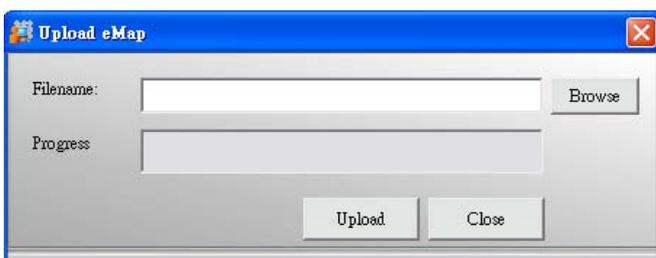
Rename the Area

Select Area icon, then click the Rename Area button. You can modify this area name.

Remove Area

Select Area icon, then click the Remove Area button. A warning message pops up to get your confirmation. Click "OK" to confirm.

Upload eMap



【Step1】 Select Upload eMap button in the Menu Bar. An Upload eMap window will pop up.

【Step2】 Click "Browse" to navigate the image file representing the area that you wish to secure, and then click "Upload" button.

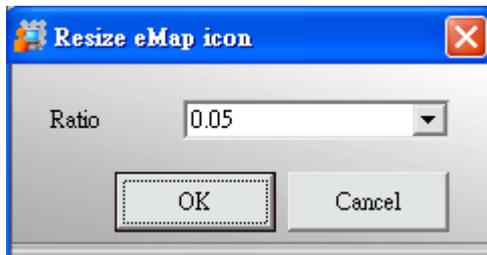
Note:

Image files can be in the format of *.jpg, *.gif, *.bmp, *.wmf, *.emf, *.ico.

Refresh eMap

For the system performance, all the admin setting are kept by cache, so if the server eMap is changed from the client PC, then the others PC, no matter server nor client is, need to refresh the eMap background manually by clicking the Refresh eMap button.

Resize eMap Icon



【Step1】 Select Device Ratio button in the Menu Bar. A Resize eMap icon window pops up.

【Step2】 Select the ratio of device and click "OK", the icon display in eMap interface will change it's ratio accordingly.

Device Management (LanCam, Video Server, I/O Controller)

New device should be added and configured in AirLive CamPro Express Admin program. The following section will explain the details of LanCam, video server, and I/O Controller setting. The supported H/W manufactures and models for each device can be found in the AirLive CamPro Express Hardware Support list.



Adding Device (LanCam / Video Server /IO controller)

Add Manually.

【Step1】 Click  or  or 

button from the Menu Bar to bring up the Device Setting window. Type information to textbox as following:

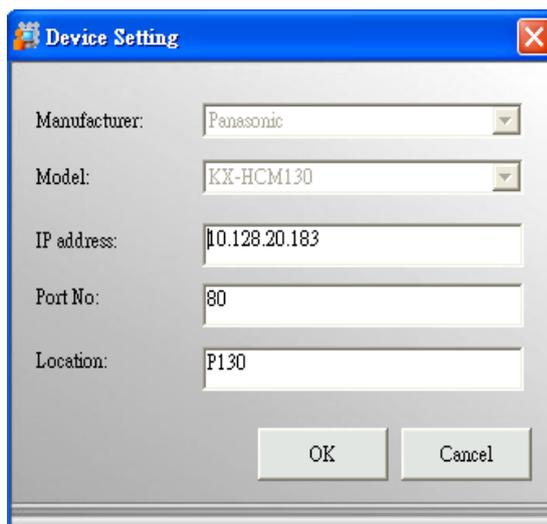
Manufacturer: Device manufacturer.

Model: Device model.

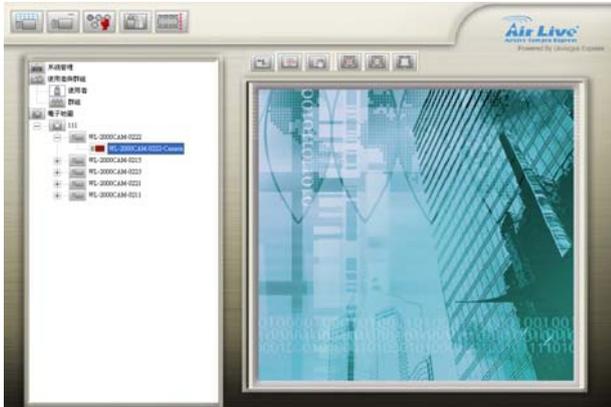
IP address: IP address from your chosen device you wish to connect to.

Port No: The default port number is 80, which can be edited to match with camera web configuration.

Location: The naming of newly added device.



LanCam



Select LanCam icon

When select LanCam icon in System Setup area, the buttons display in Menu Bar as left bar.

LanCam Button Overview

Button	Use To
	LanCam Setting: to configure IP/ Port Number associated to a selected device, it displays the information set in Add LanCam button for further modify
	Remove LanCam: to remove the configuration of a selected LanCam including the image under it.
	HW Password: to change the User Name or Password of selected LanCam from AirLive CamPro Express or to sync with the direct change in device.

LanCam Setting Overview

When select Camera Image icon in System Setup area, the buttons display in Menu Bar as following:

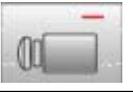
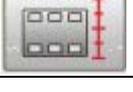
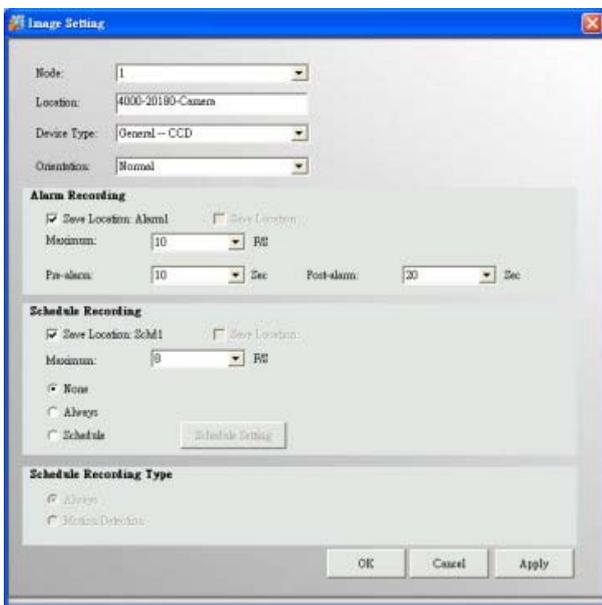
Button	Use To
	Image Setting: to configure frame per second of recording and activate schedule recording for that camera image.
	Remove Image: to remove all the configuration of a selected camera image.
	Image Alarm: to set alarm action when alarm is detected on selected camera image.
	Preset Setting: to set preset point under preset setting.
	Motion Detection: to specify area for detecting motion.
	Image Quality: to configure the contrast, hue, brightness and resolution of camera image.

Image Setting

All the setting item defined as following:

- **Nodes:** the number of camera nodes of LanCam and video server could be varied base on what models is selected.
- **Location:** to differentiate the device image source. Please give a meaningful description that identifies the installed location.
- **Device Type:** here are two options of device type which are the Speed Dome or General-CCD. Speed Dome should only support the models which are on the list, but General-CCD has no model limitation. You can freely connect to whatever General-CCD as you like. (Currently we support General-CCD only.)
- **Orientation:** Normal or Inverted to get image up-side down.
- **Alarm Recording:** you may define the “frame per second” and the seconds of “pre-alarm” and “post-alarm” of alarm recording.
- **Save Location Alarm1:** here display the alias of recorded path.

- **Schedule Recording:** you may define the “frame per second” (only for MJPEG camera) and recording schedule.
- **Save Location Schd1:** here display the alias of recorded path.
- **Recording Type:** Schedule recording could be activated by clicking to select “Always” or “Schedule”, and check Recording Type of “Motion Detection” to significantly reduce the storage of schedule recording.



【Step1】

Select the Image icon  of a LanCam in the System Setup area, and click Image Setting button  from the Menu Bar to bring up the Image setting window.

【Step2】

Click “Create” to save the setting.

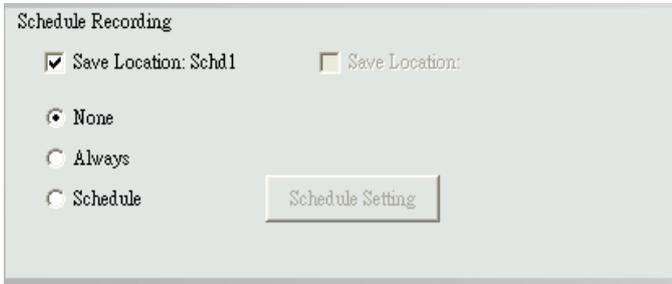


Set Orientation

Click on the right of Image Rotation drop list to support different camera mounting methods. Here are “Normal” and “Inverted” for your option.

Note:

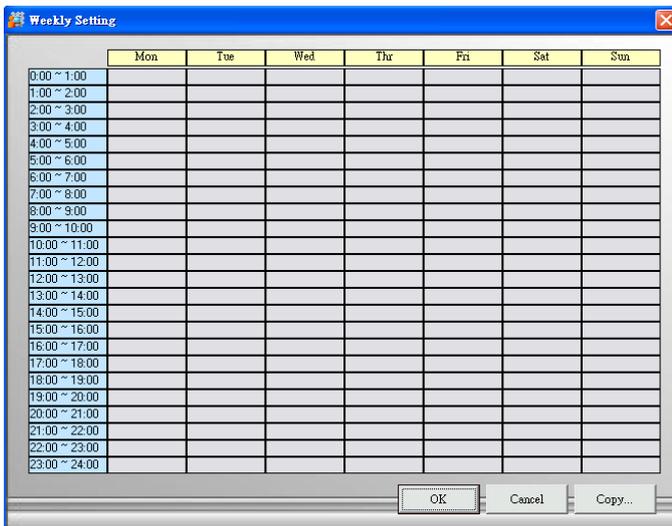
- (1) Monitor program requires restarting to activate the new setting.
- (2) This configuration requires 20 sec at least to reconnect camera.



Schedule Recording

【Step1】 Select the Image icon and click Image Setting button  to bring up the Image setting window.

【Step2】 Select "Recording Type" Check the Schedule in Recording Type first, and you will find that the Schedule Setting button is enabled.



【Step3】 Schedule a Weekly Setting Click the Schedule Setting button. A Weekly Setting table will pop up. Select the time period for which you want to schedule a recording. The activated block will turn pink.

【Step4】 Edit a Schedule To cancel or modify a schedule setting, click the pink block to deactivate it.

【Step5】 Run schedule recording automatically Schedule recording will be executed immediately after click "OK" in Weekly Setting and Image setting window.

Copy.: If you want to copy the setting from one of the existing setting, click "Copy" to select the device you want to copy from, you can easily copy all the setting information. This function could be found in Image setting, weekly setting, alarm action, etc.

Note:

Weekly setting is a cycling setting which is automatically applied to the following week, with each block being equal to 1 hour.

- If an error message pops up, please check if any related device is unable to connect due to the information described in Error Message window. Solve the problem, and then go back to LanCam Setting button to configure this device again.

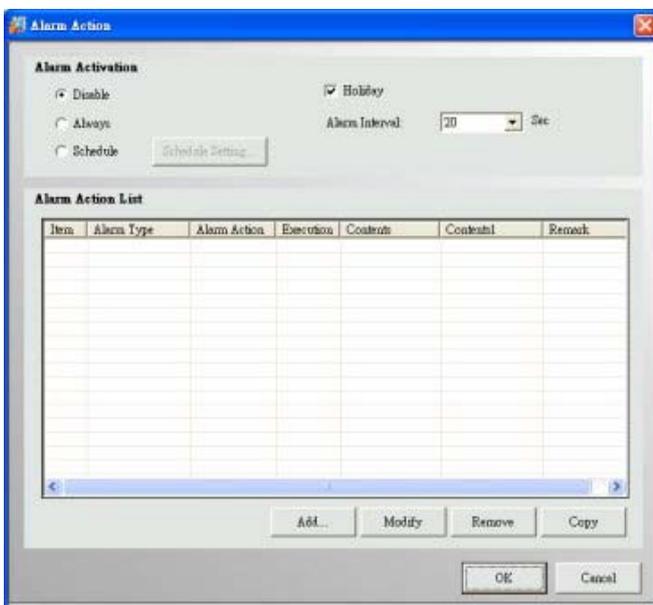


■ Remove Image

Remove all the configuration of a selected camera image.

■ Image Alarm

Activate Alarm Action



【Step1】 Start Alarm Action

Select the Image icon of a LanCam/Video Server in the System Setup area, and click

Alarm Action button  from the Menu Bar to bring up the Alarm Action window.

【Step2】 Select the Alarm Activation Type
It is disabled by default you can change to “Always” to turn it on, or “Schedule” to activate it per schedule defined in Schedule Setting.

【Step3】 The “Holiday” Option

“Holiday” check box only works with Schedule, you may click to check “Holiday” to activate alarm action full day during holiday, regardless the scheduled time in previous setting. The holiday is also user-definable.

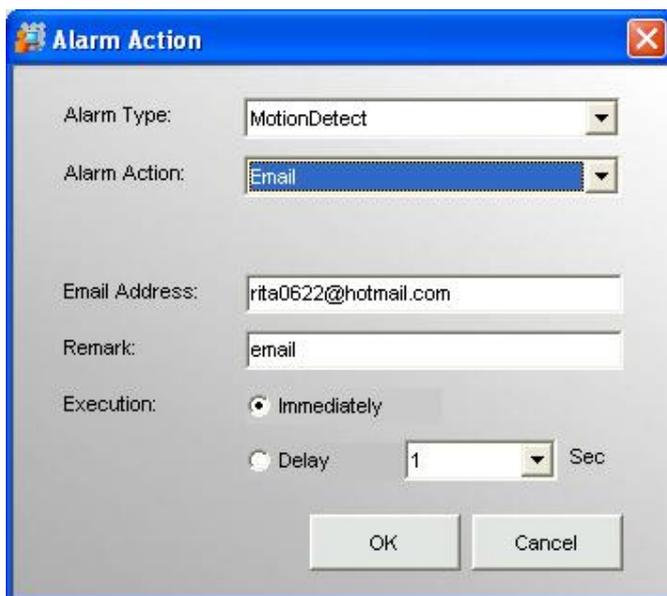
【Step4】 The “Alarm Interval”

Configure the number of seconds between alarms. If successive alarm occurred during this interval, it will be ignored. The total seconds of pre-alarm and post-alarm are suggested to be the minimum of alarm interval.

【Step5】 Click “Add”... to add new Alarm Action.

【Step6】 Click “OK” to save all alarm action configuration (including “Add”, “Modify”, “Remove” and “Copy”) and dismiss this window. Click “Cancel” to ignore all configurations and dismiss this window.

Alarm Action



【Step1】 To add Alarm Action by clicking “Add” to continue.

【Step2】 “Alarm Type” go with the icon you selected. If select camera image icon, then it bring up Motion Detection as alarm type.

【Step3】 Select Alarm Action (refer to Alarm Action Table)

【Step4】 Select “Action Device” if any, and enter the information to “Remark” field.

【Step 5】 Set “Execution” time ◦
Action execution could be set by the delayed second you configured here. This setting does not apply to Live Video, which is always executed immediately.

【Step6】 Create it to Alarm Action List
Click “Create” to add action to alarm action list. If no further action to add, click “Close” to dismiss this window.

■ Alarm Action Table

Alarm Action	Use To
Email	The email of breached device, one Email receiver at an action.
Live Video	The live video of breached camera, it will pop up in Monitor's 4-split screen.
Recording	The alarm recording of breached camera; it is set by number of seconds.

■ “Alarm Breach” Scenario

Set alarm triggered by Camera-image 1 and records the video of Camera-image 2:

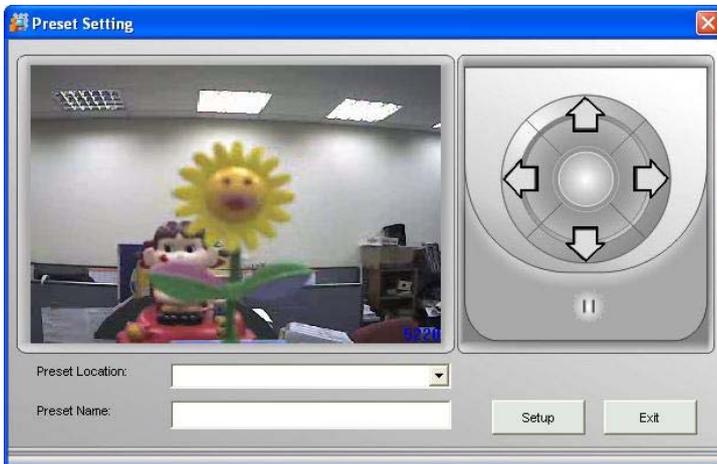
Select Camera-image 1 icon in System setup Area and click Image Alarm button from Menu bar, then select “Alarm action” by Recording and “Acting Device” by “Camera-image 2”.

■ “Alarm Live Video” Scenario

- If only one alarm is triggered, the different device breached by “live video” alarm action will be displayed on the 4 split screen of Monitor Program and is arranged starting from upper-left to upper-right, lower-left, and lower-right.
- If live video is breached by different alarm source, live video is display respectively. The live video of latest event will replace the live video of old event. If the number of live video is greater than 4, they will be displayed rotationally.
- Dismiss the live video in 4-split of monitor program: click “Cancel Alarm” button in Monitor Program.

■ Preset Setting

Click the Preset button to bring the preset setting dialog, as shown below:



【Step1】 Select a Preset Location from the dropdown list and give it a meaningful name in Preset Name.

【Step2】 Press “||” to pause the video location.

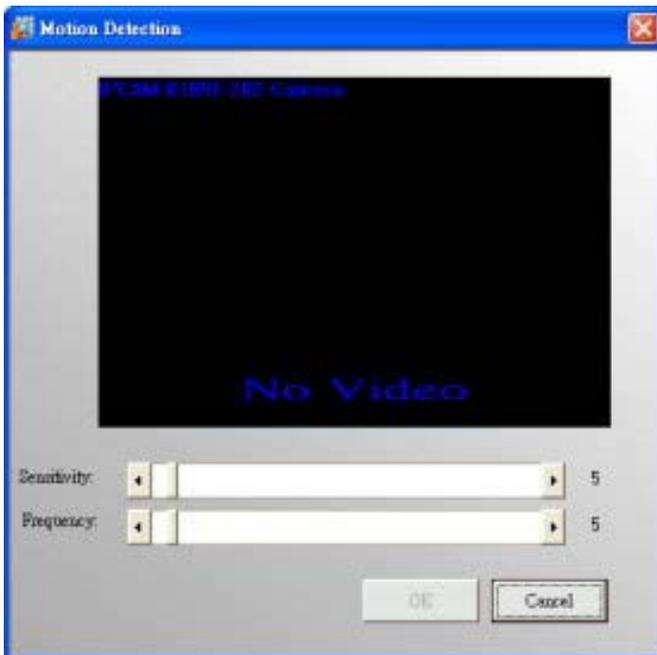
【Step3】 Adjust the gimbal direction using the narrow buttons.

【Step4】 Click Setup to store this location into the gimbal, if it supports preset location.

Note:

This will also overwrite the previous setting stored in this preset location. Preset locations can not be removed. Set the other preset locations in the same process. Click “Exit” to leave this dialog.

■ Motion Detection



【Step1】 Select the Image icon of a LanCam/Video Server in the System Setup area, and click Motion Detection

button  from the Menu Bar to

bring up the Motion Detection window.

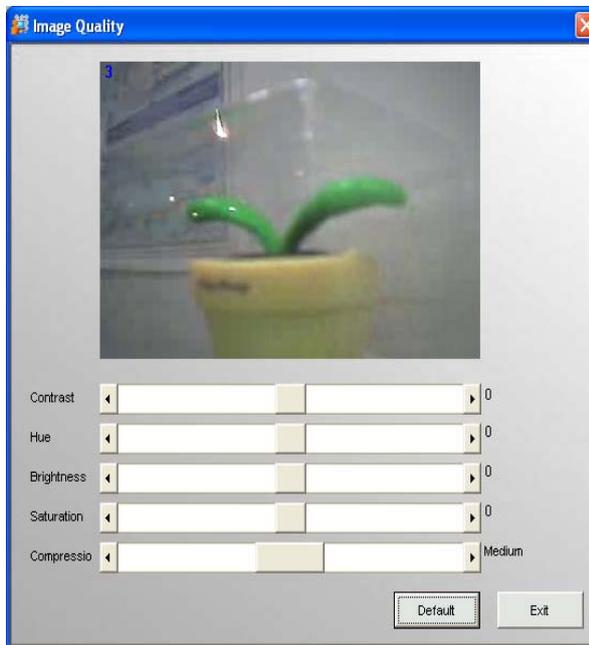
【Step2】 Set Detection Area: A red square follows mouse movement, click to place the red square to the area of motion detection or click to deselect a specified area. Any motion within the detected area should over the threshold of sensitivity to trigger a motion detection alarm.

【Step3】 Sensitivity and Frequency setting. Sensitivity refers to the pixels of image changes, and Frequency refers to the No of frame mapping.

Note:

- The size of red frame is configurable in Motion Detection Granularity.
- Different camera may have different interface for motion detection adjustment. Some may require you to install Active-X components.

■ **Image Quality**



Select the Image icon of a LanCam/Video Server in the System Setup area, and click Image Quality button  from the Menu Bar to bring up the Image Quality window.

Note:

- Reset button is activated while select camera image under LanCam/Video Server, by clicking this button to get the real time Image Quality.
- User may drag the scroll bar to right or left direction for your viewing preference and get real time quality.

Remove LanCam

Click the Remove LanCam button to remove the video node. You will be asked to confirm the removal. If you had dragged this video source to the e-map, the icon of this camera in the e-map will also be removed.

HW Password



【Step1】 Select the device icon in the System Setup area, and click HW

Password button  from the Menu Bar to bring up the setting window.

Current Username/Password :

The default value for current username and current password is same as device default.

New Username/Password :

Change information and save to both AirLive CamPro Express and Web configuration of selected device.

【Step2】 Click OK to save the setting.

Note: When to configure?

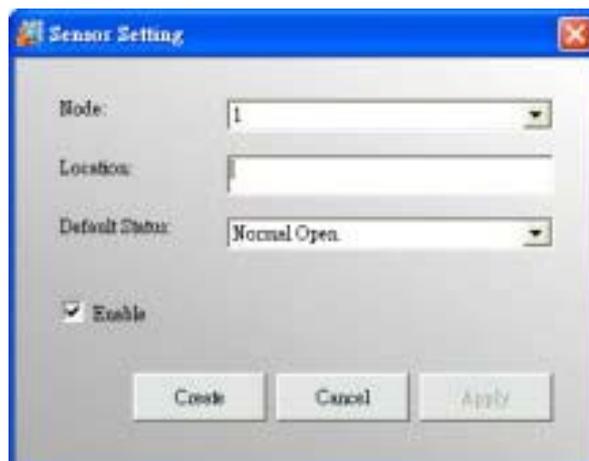
AirLive CamPro Express system default are same as device default, only when you want to change PW from AirLive CamPro Express or when you find the PW of device has been changed in web configuration program

Sensor (Digital Input)

- Many video gateways and LAN cameras has GPIO port. The digital inputs can be connected to sensors, while digital outputs can be connecting to relay switches.
- In System Setup tree, a sensor is represented by  (un-configured sensor) or  (configured sensor) icon, and relay switch is represented by  icon.
- When you select a sensor in the System Setup tree, the toolbar becomes:  But the two buttons on the right will appear only after a sensor has been configured.

■ Sensor Setting

Click the [Sensor Setting] button to bring up the Sensor Setting dialog, as shown below:



- Node: is the serial number of this sensor of the current device.
- Location: give a meaningful name to this sensor.
- Pattern: There are two kinds of sensor: General and Critical. General sensor can be turned on or off by system administrator while critical sensor can not.
- fault Status: can be normal open or normal close depend on the sensor type.
- Enable: check this to activate the sensor.
- Click [OK] to save the settings and leave this dialog.
- Click [Apply] to save the settings of this sensor, and stay in this dialog to set the other sensor nodes.

■ **Remove Sensor**

Click [Remove Sensor] to remove the selected sensor. You will be asked to confirm the deletion.

■ **Breach**

The alarm actions are the same as those for LAN camera, with two additional alarm actions: [Enable DI] and [Disable DI].

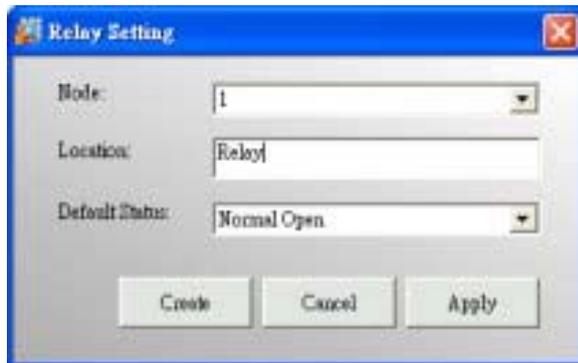
Relay (Digital Output)

Click the  button in the System Setup tree, the toolbar becomes: 

The button on the right will only appear if you select a configured relay.

■ **Relay Settings**

Click [Relay Setting] button and the Relay Setting dialog will appear, as shown below:

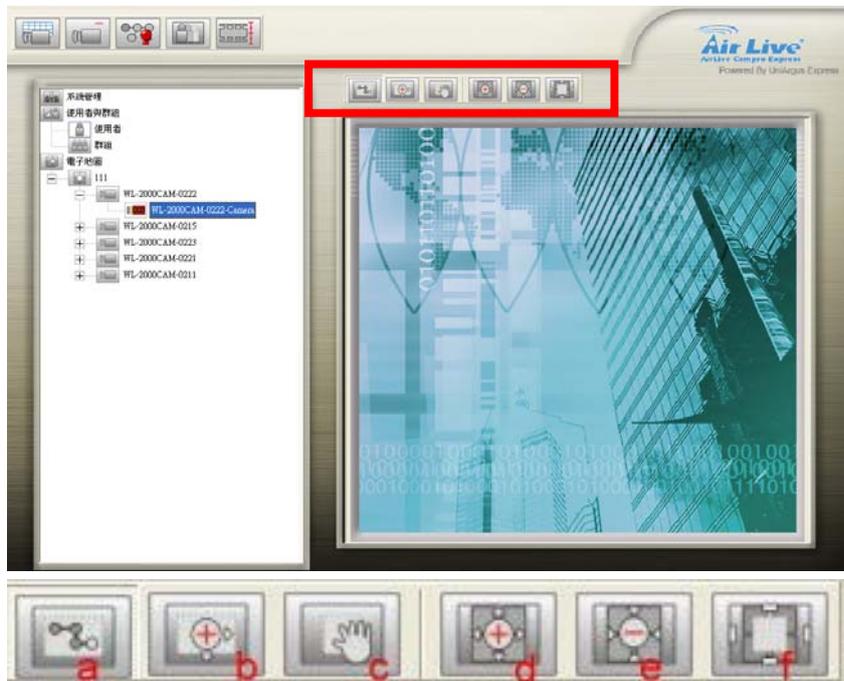


- Node: is the serial number of this relay on the current device.
- Location: give a meaningful name for this relay.
- Default Status: set the default status of this relay.
- Click [Create] to save the configuration and leave the dialog, or click [Apply] to save the configuration and continue to set another relay on the current device or modify current setting.

■ **Remove Relay**

Click the [Remove Relay] button to remove the selected Relay. You will be asked to confirm the deletion.

Tools in Menu Bar of eMap interface

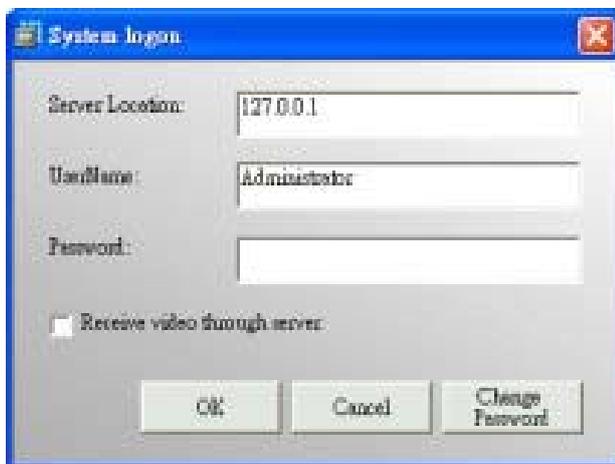


- eMap tools bar will appear above the eMap Interface area after the picture that you uploaded to the eMap Interface area.
- The tools of eMap interface could be used to control the EMap background as following:
 - Pointer : to drag the device icon on the interface
 - Area Zoom : to enlarge background from the specified area selected by mouse
 - eMap Shift : to move the background
 - Center Zoom In : to enlarge background from the center
 - Center Zoom Out : to downsize background from the center
 - Default Size : back to the default size and location

8.4 Monitor Program

AirLive CamPro Express Monitor program could be selected from the Program Path; user may log on monitor program through Monitor.exe or Web monitor. You may access AirLive CamPro Express server thru IE browsing by entering the URL. (Format is: IP address of server and \Web. Example are:127.0.0.1\Web)

8.4.1 Running Monitor Program



【Step1】

Select Start/All Programs/AirLive CamPro Express/ Monitor.

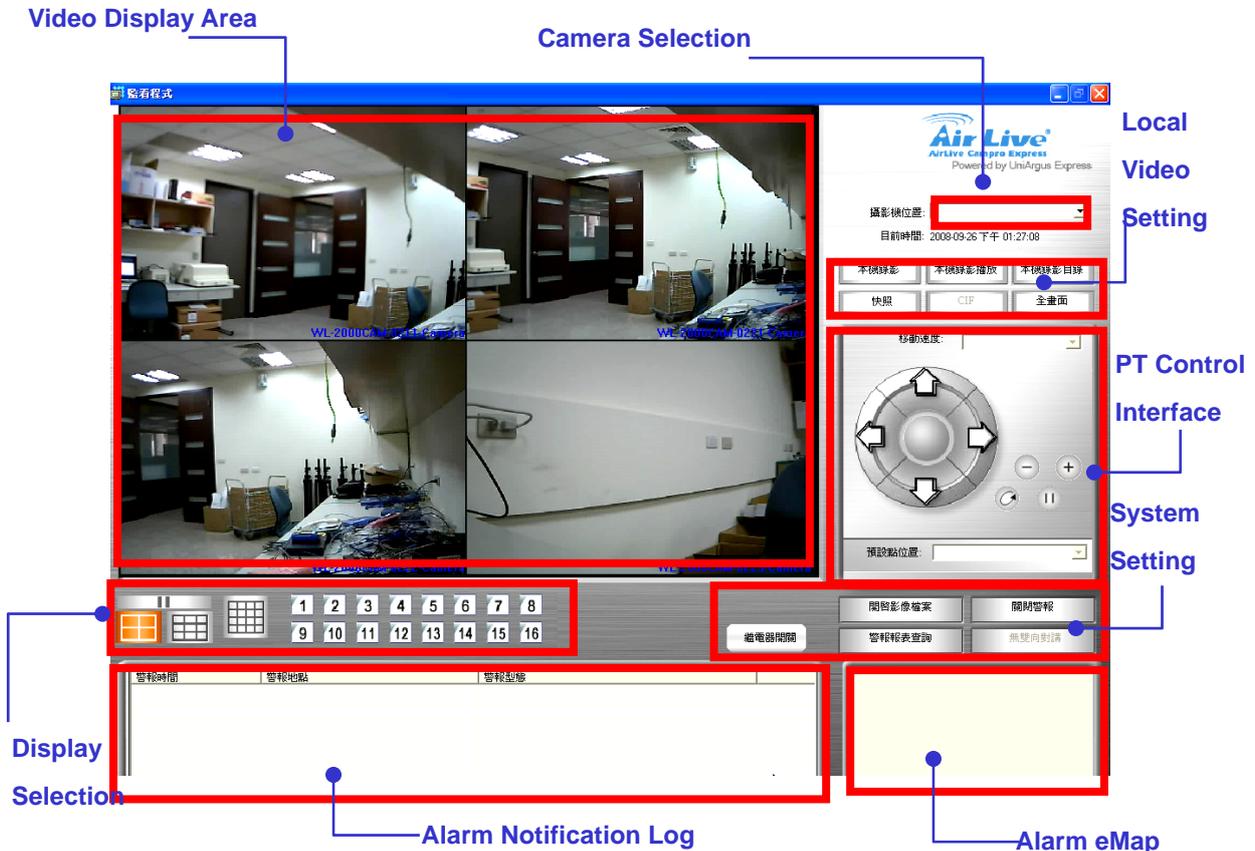
【Step2】 System Log on window. If this is the first time you login, use Administrator as default user name and leave the password blank, then click OK to log into the system.

- **Server Location:** “127.0.0.1” is the default for local server. If you want to access from client PC, then please enter the IP of server PC to this field.
- **Receive Video through Server:** if you want to remote control AirLive CamPro Express server from a client which is not within intranet, then check this box, so that you can remote monitoring in internet environment.

Note:

Password: It is recommended that you change this default password, for user restriction please go to User Group section to change the password.

8.4.2 Monitor Program Interface



The User Interface has been classified into the following functions:

- Video Display Area
- Display Selection
- Alarm Notification Log
- Camera Selection
- Local Video Setting
- PT Control interface
- System Setting
- Alarm eMap

8.4.3 Video Display Area

Video display area display video of single camera or split screen of multiple cameras, when you want to control a camera in your monitor program, you may click the split-ed screen and it will be covered by a red-frame.

8.4.4 Camera Selection



Select the camera location by clicking the drop list.

■ Display Selection



Display Selection (Video of Single Camera)

Select camera button in Display Selection.

Note: The number of camera varies according to the registration status.



Display Selection (Split Screen of Multiple Cameras)

Select split screen in Display Selection, the video display area will change the video accordingly.

Note: Double click the selected screen in Split screen, the split screen will change to single display mode.

Pause the live video

Click the pause button , the live video will be paused and the button change to play button , for user to click to get the live video back.

8.4.5 Local Video Setting



Local Record

Live video could be manually recorded in the local computer by clicking the Local Record button, so that user could record live video easily and save in any local computer.

Start Local Record



【Step1】 Select a camera from display area by a red frame.

【Step2】 Click “Local Record” button to start the recording.



The text of the button will change from Local Record to Recording. The maximum of Local Record is 15 minutes and recording status will display in the Process Bar.

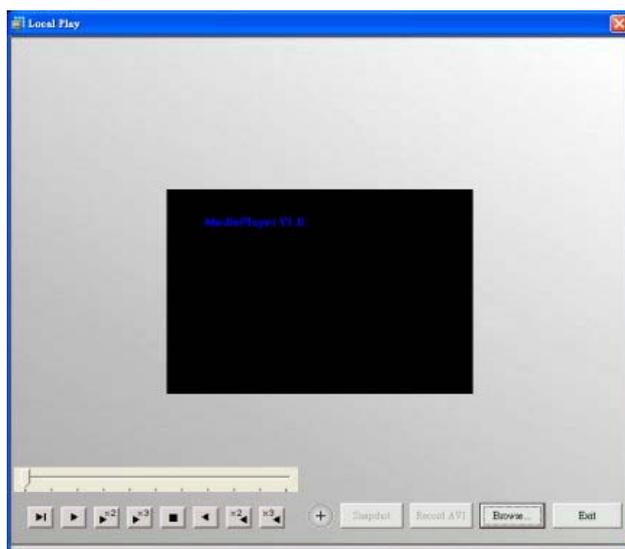
Stop Local Record

Click the Recording button. The text of the button will change from “Recording” to “Local Record”. The Process Bar will disappear.

Note: The path of Local Record has no storage recycle service, because Local Record could be executed in whatever CLIENT PC which is out of Server Management scope.

Local Play

The Local Play button allows you to playback recorded video through “Local Record” at local PC. This function also provides additional functions for exporting video files to the AVI format and taking snapshots.



Basic Operation

【Step1】 Open the Local Play window.

【Step2】 Browse a file

Browse the file you want to display.

【Step3】 Play a file

You may also select playback speed by

selecting different button 

Click  to full screen display.

■ Snapshot

Click "Pause" button to get a still image first, then click "Snapshot" button to save the image in JPG format.

■ Transfer to AVI

Click the "Record AVI" to export the image to the AVI format. Assign a file name, a location, and a video compression option.

Note: The available compression format varies according to computers, depending on the Codec application components installed, operation system and Media Player version. If you require the best image quality, choose the "Full Screen (uncompressed)" option.

Local Folder

Click "Local Folder" button, system will bring up "Local Directory Setting" window for user to select the local recording folder. System will create a sub-folder differentiate by camera location automatically.

Snapshot

Saves snapshot of selected video source in JPEG format. Follow below instruction:

【Step1】 Select a camera from Video Display Area.

【Step2】 Click "Snapshot" button to get a still image of the camera.

【Step3】 Click the "Save" to save a still image in your computer by .jpg format.

Resolution switch while Single camera (CIF/4CIF)

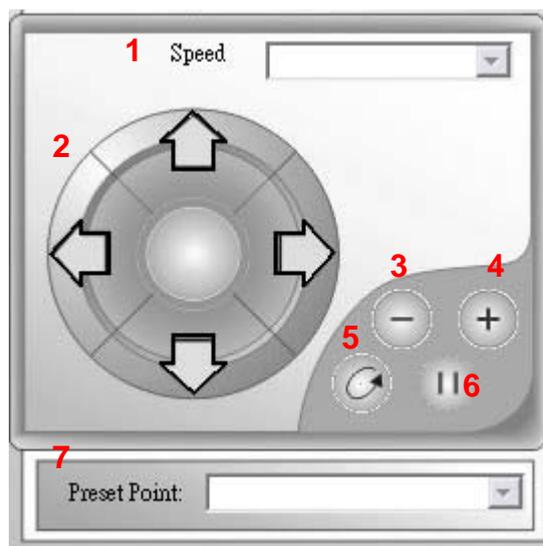
While video display in a single mode (only one video display in Video Display Area), or the select video from the split screen, you may click **CIF** or **4CIF** button to change resolution to 352x240/320x288(NTSC/PAL) or 704x480/704x576 (NTSC/PAL). (CIF/4CIF/Screen display: AirLive CamPro Express resolution button will change text according to the device resolution setting.



While video display in split screen, the resolution button will change to CIF and Screen respectively, while click Screen, it display Screen of selected camera.

8.4.6 PT Control Interface

If your IP camera or analogue camera under Video Server has PTZ function, you may use AirLive CamPro Express control interface to view different angle of Camera by clicking button on PT Control Interface.



- 1: PT Speed:** You may select the drop list to change speed of camera movement.
- 2: PT control:** PT interface consist of a control icon which can change view angle of your camera to 4 directions manually.
- 3: - (Zoom out)** : to get PT camera zoom out.
- 4: + (Zoom in)** : to get PT camera zoom in.
- 5: AutoPan:** to get PT camera auto panning.
- 6: Stop:** to stop PT camera's auto-action.
- 7: Preset Point:** by this drop list, you could select preset point (Preset point is configured in Admin program).

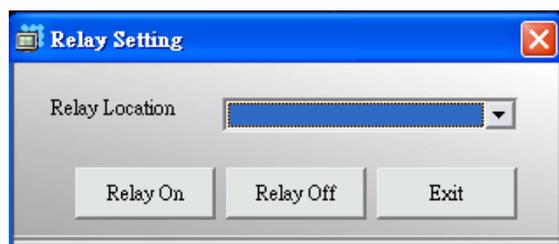
8.4.7 System Setting



■ Relay Setting/Cancel Alarm



【Step1】 Click "Relay Setting" button



【Step2】 Select the "Relay Location" to remote control Digital Output (light, for example, via Internet) to on or off. Control facility via "Relay Setting" may involve electronic danger, please consult your system integrator and get their professional support.

Note: “Relay Setting” button use the same button of Cancel Alarm, the text varies according to alarm status.

Breach Alert!



【Step1】 Disable a System Alarm

When a “Breach Alert” message appears at the bottom of the Video display area, an alarm has occurred and warn user by following methods:

- The text of the “Relay Setting” button changed to “Cancel Alarm”.
- The most up-to-date alarm was logged in the “Alarm notification log”.
- An eMap with the device that triggered the alarm will pop up in the “Alarm eMap”.
- Depending on how your alarm setting, a live video of the device may pop up in the Video Display Area

【Step2】

Click the “Cancel Alarm” button to disable the “Breach Alert” message.

The “Cancel Alarm” button will be replaced by a “Relay Setting” button.

The alarm live video will disappear and the screen will return to its normal setting.

Server Query

The Server Query button allows you to playback recorded video of "Schedule Recording" or "Alarm Recording". This function also provides functions of exporting video files to the AVI format and taking snapshots.

■ Basic Operation



【Step1】 Click "Server Query" button.

【Step2】 Open the window

Query Video File via criteria setting of :

- "Schedule recording" or "Alarm recording"
- "Image Location"
- "Query Date".

【Step3】 Click the "Query", a query result will appear in the upper left table.

【Step4】 Select the file you want to display.

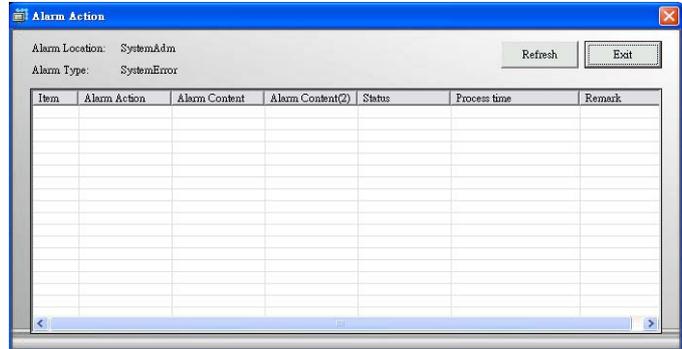
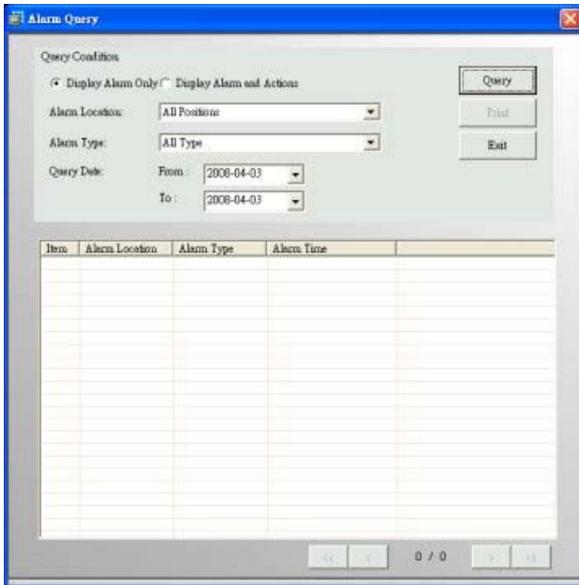
Alarm On/Off



Alarm Disable/Enable

You can disable alarms when your security staff is on duty to handle event. To do this, click the Alarm On/Off button to disable/enable all alarm settings in the Administration program.

Alarm Query



【Step1】 Click “Alarm Query” button.

【Step2】 Open a window to set query criteria.

Query Alarm Log via criteria setting of:

- “Display Alarm Only” or “Display Alarm and Actions”
- “Alarm location”
- ” Alarm Type”
- “Query date”

【Step3】 A query result will appear in the lower spreadsheet. You can use the arrow button to navigate the page of the spreadsheet, and print the page which you selected.

: Home : End

: Page Up : Page Down

【Step4】 You can print out the query by clicking the “Print” or “Export” button.

【Step5】 Select the Export support list, assign export format and destination support. Text, Excel and Word are all supported.

【Step6】 Select an alarm log and click it to bring up a window to get the alarm action detail.

Talk Enabled/Disabled (Two-way Audio)

The system provides two-way audio features that the user can use to start an audio conversation with another person near the camera.

Talk Enable/Disabled displays three different status, as below:

Talk Enabled	The device support two-way audio function, click this button to start audio conversation.
Talk Disabled	The device does not support two-way audio function.
Talking	The system is proceeding the audio conversation. Press the button again to stop the function.

Note:

While you turn on the two-way audio mode, perform the below functions, the audio conversation session will be automatically terminated:

- Execute the local play function, server query function, alarm query function.
- Selecting another camera.
- Exit the monitor program.
- Switch to another split screen.
- When an alarm occurred and shows the live video.
- Click the relay setting.
- Click the alarm eMap.
- When the image rotation is enabled.

8.4.8 Alarm eMap

An E-Map with the device that triggered the alarm will pop up in the E-Map display area.

8.4.9 Alarm Notification Log

The most up-to-date alarm was logged in the alarm notification log.

8.5 Web Monitor

Web Monitor provides User an easy access thru IE to get real time video and central monitoring.

8.5.1 Logon Web Monitor

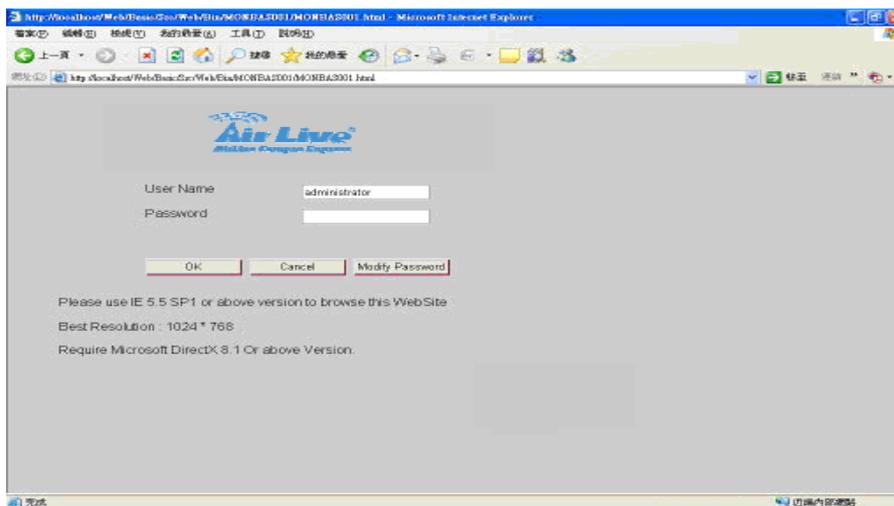
■ Log on Web Monitor from server

Start→Program Files→AirLive CamPro Express→Web Monitor ◦

■ Log on Web Monitor from client

You may open IE browser and entering the URL in the format of server IP and “\Web”.

(Example <http://localhost/Web/>)



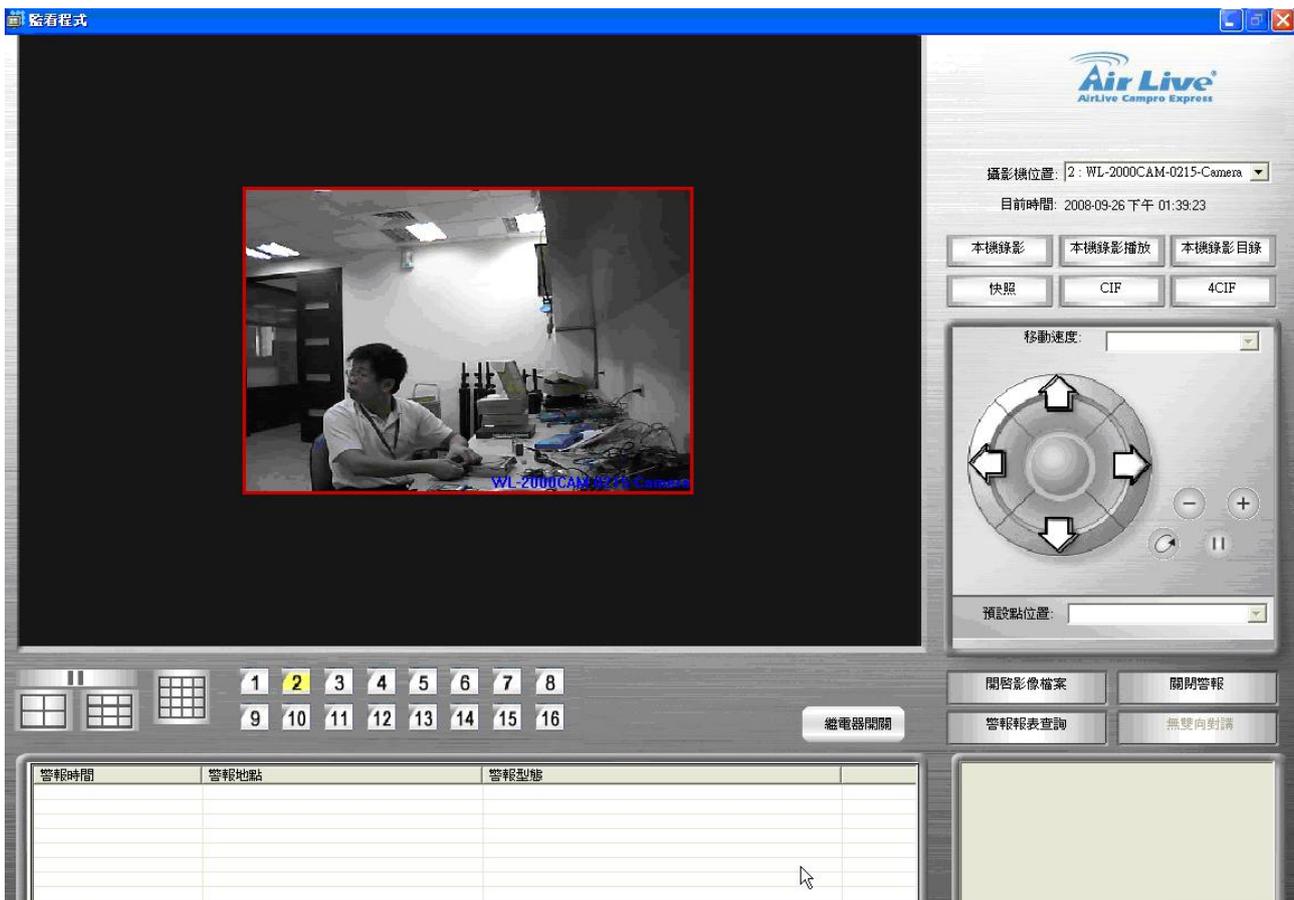
【Step1】 System will bring up IE and display log In window for user to login User Name and Password.

Note:

- System Requirement for browsing this website: IE5.5 SP1 or above version Screen display resolution is at least 1024*768. Microsoft DirectX8.1 or above version.
- Permit to use pop-up window

【Step3】 For the first time login Web Monitor, system will auto detect if this computer has installed VideoPlayer Control or not. If not installed yet, an installation page will pop up for user to install this program.

【Step4】 After install all these required program, the Web Monitor will pop up, the operation process are exactly same as Monitor program.



Note:

Web Monitor is for viewing convenience, so there are few differences between Web Monitor and Monitor program, and which are (1) no alarm notification log (2) no alarm eMap (3) no schedule status display in Web Monitor (4) no relay setting.

8.6 Multi Playback

Multi Playback is a program designed for quickly accessing and searching multiple schedule recording files. Since this program will consume a large amount of memory and CPU time, it is strongly recommended that this program only run on a remote computer, not on the server itself.

8.6.1 Running Multi Playback Program

【Step1】 Select Start/All Programs/AirLive CamPro Express/ Multi playback.

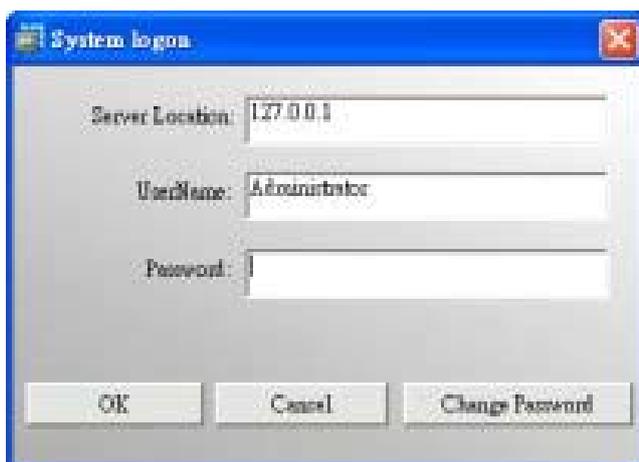
【Step2】 System Log on window.

If this is the first time you login, use Administrator as default user name and leave the password blank, then click OK to log into the system.

Server Location: "127.0.0.1" is the default for local server. If you want to access from client PC, then please enter the IP of server PC to this field.

Note:

Password: It is recommended that you change this default password, for user restriction please go to User Group section to change the password.



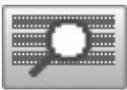
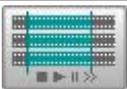
8.6.2 Main Display Area



The user interface of Multi Playback can be divided into three main areas: Function Area, Video Display and Query Result Area and Query Criteria Area. The following three sections will describe these three areas in detail.

Function Area

Multi playback provides two major functions: Recording History Query and Recording History Playback.

	<p>Recording History Query: provides functions to add display group and query all recording (within a 24 hours period) in a display group. User can select any hour in this period to start the playback.</p>
	<p>Recording History Playback: provides playback function for all playback groups with a given date/time.</p>

Recording History Query

Group Name Query Date: 2008-04-03

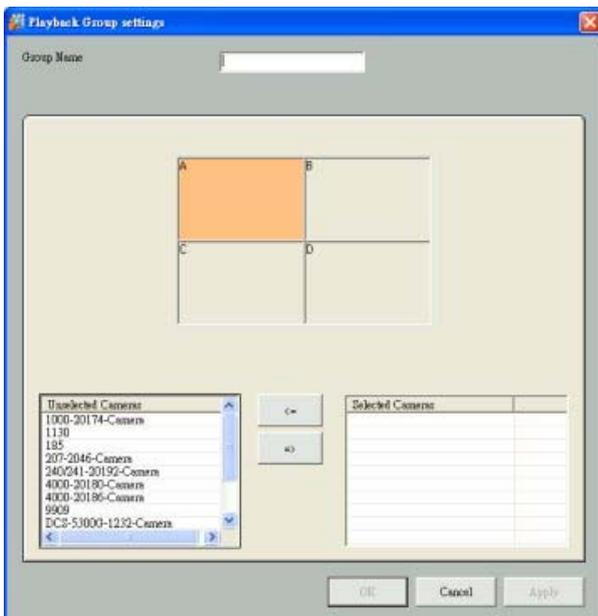
【Step 1】 Click “Recording history query” button from the Function Area. Then click



to bring up the Playback Group configuration window.



【Step 2】 Playback Group Setting.



■ **Add a new playback group.**

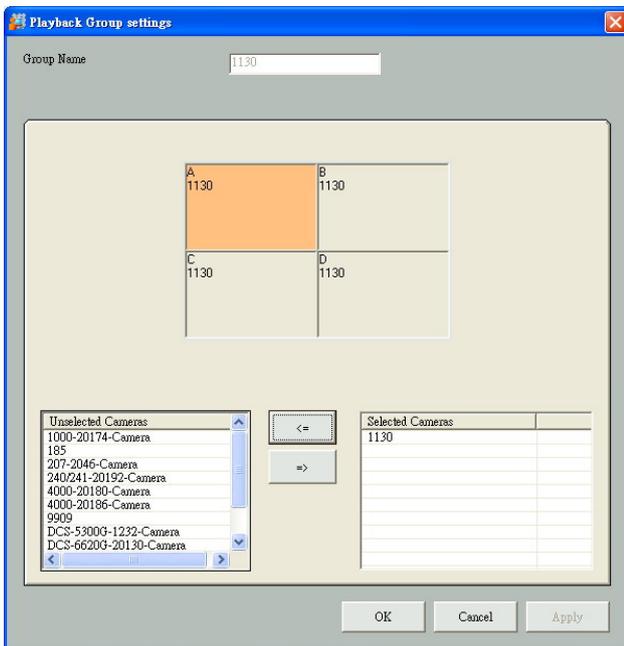
Click [Add] button at the group window.

The system will show the window to add a group. Use the split screen to select

playback location and or to

select/unselect cameras in the group.

Click “OK” button to save the setting and close the setting window or click “Apply” button to save the setting and remain in this setting window.



■ **Modify a playback group.**

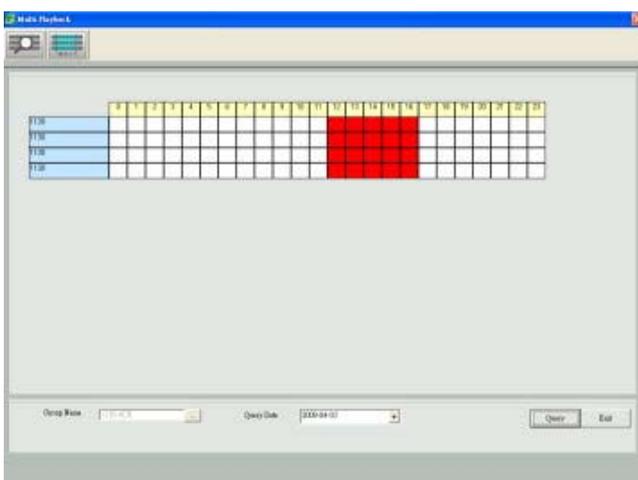
Modify an existing playback group by first select a playback group and then click “Modify”. The system will show the window to modify group. Use the split screen to select playback location and

 or  to select/unselect cameras in the group.



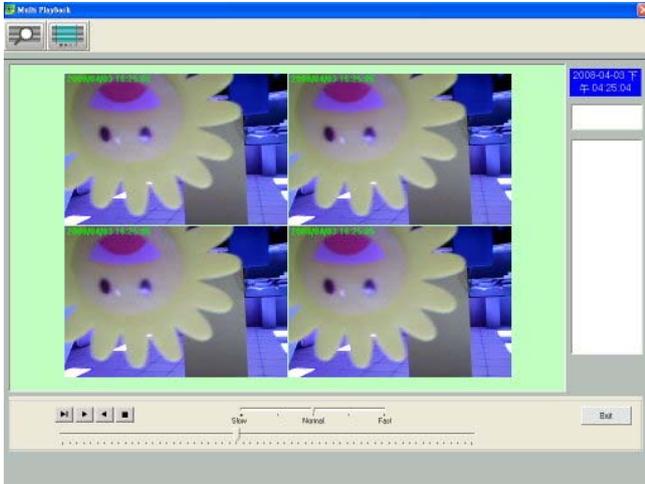
■ **Remove a playback group.**

Users can delete an existing playback group by first select a playback group and then click “Delete” and then click “OK” to confirm.



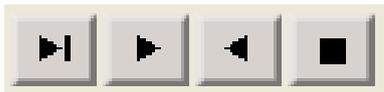
【Step 3】 Query result display.

After you have finished selecting a group and date, the system will show all historical recording for cameras in that group shown to the left.



【Step 4】 Playing Playback Group.

The system will playback all recordings shown in the query result window. During the multiple playback, double clicking any screen will switch the display to single channel mode. The playback can be controlled with the following.



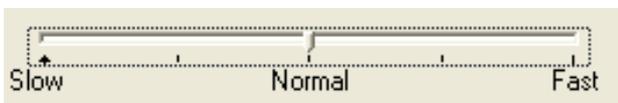
■ **Playback Control.**

 Back to the starting hour

 Play

 Rewind

 Stop



■ **Playback speed control:**

The system supports five playback speeds. The default speed is normal. Move the slider toward “slow” will slow down the playback. Move the slider toward fast will increase the playback speed.

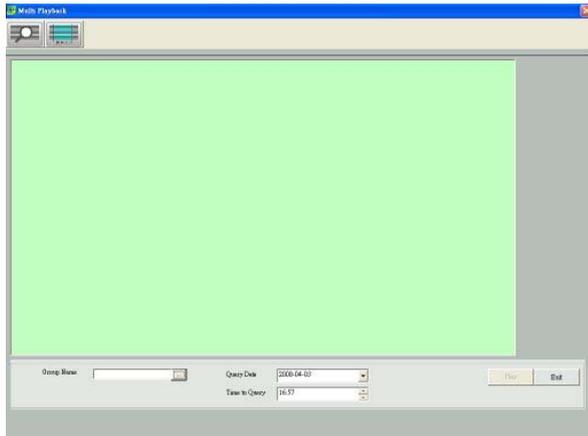


■ **Playback Control:**

Use the pointer in the control area to operate the video.

Recording History Playback

Configuring and operating for the recording history playback function is very similar to recording history query.



【Step1】 Click “Recording history playback” button from the Function Area.

【Step2】 Select playback criteria.

Select Group Name:

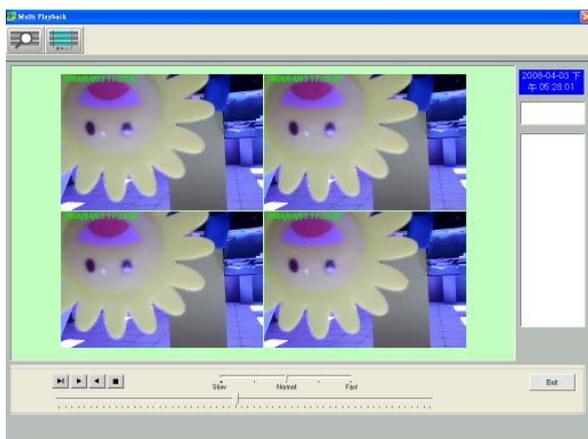
When user clicks the group name, the image viewing area will automatically show the configured playback group with black channels.

Selecting a date:

Use pull down menu to the right of the date field. The system will show the calendar to select a date.

Selecting a time:

Change the query time by clicking the hour or minute, then click  to increase the time or click  to decrease the time.



【Step3】 Click the “Play” button, the system will start playback in the channels. Similar to recording history query function, recording history playback can control various kinds of playback groups.

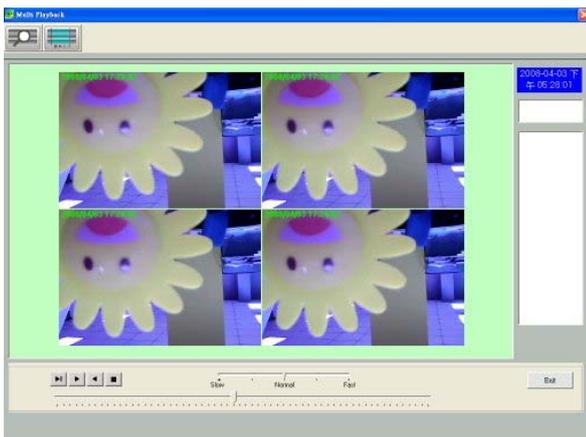
Video Display and Query Result Area

Depending on the function in use and query criteria selected, this area will show either query result for recording history or multiple channel playback for historical recordings

Query Criteria Area

Query criteria area provides user ability to specify query criteria for searching historical recording.

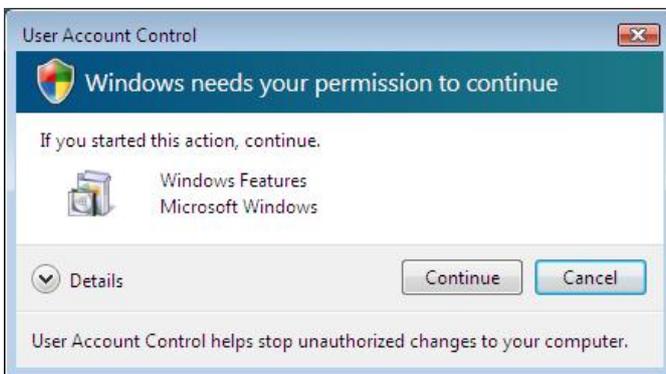
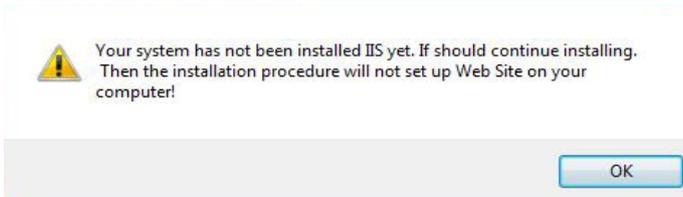
8.6.3 Exiting the Multi Playback



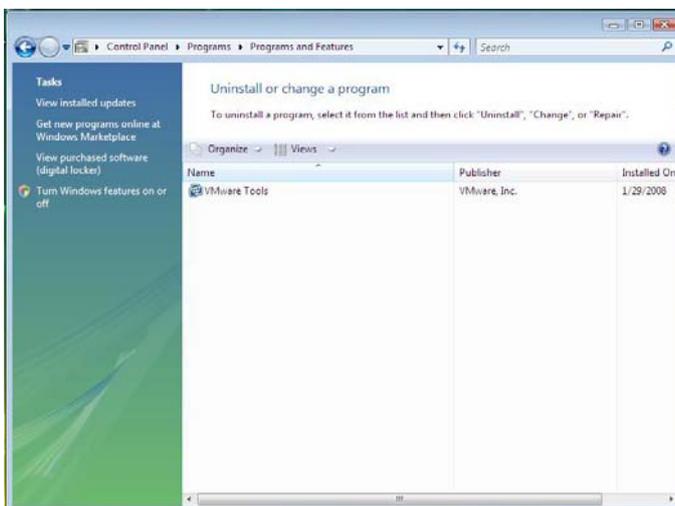
Click the “Exit” button to exit the Multi Playback program.

APPENDIX A: IIS Installation for Windows Vista

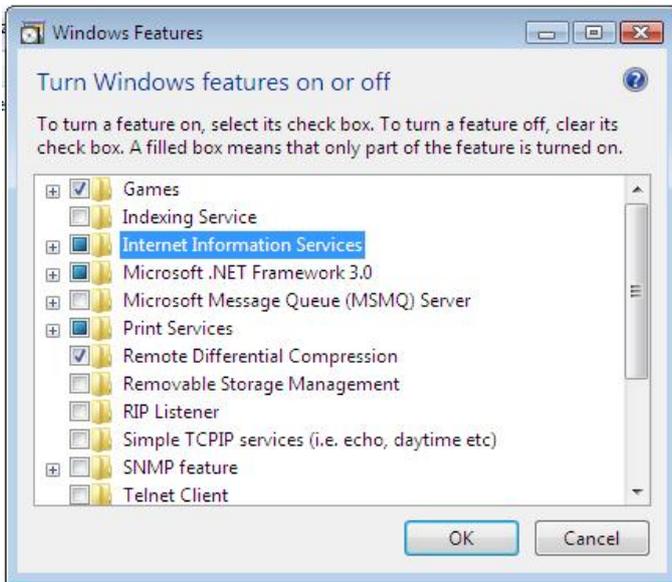
To Install IIS for Windows Vista version, please do the followings:



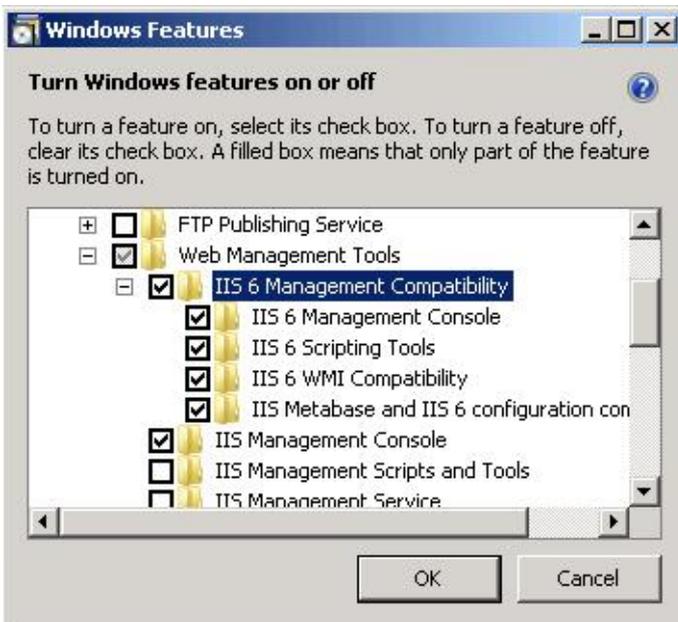
【Step1】
Click "Continue".



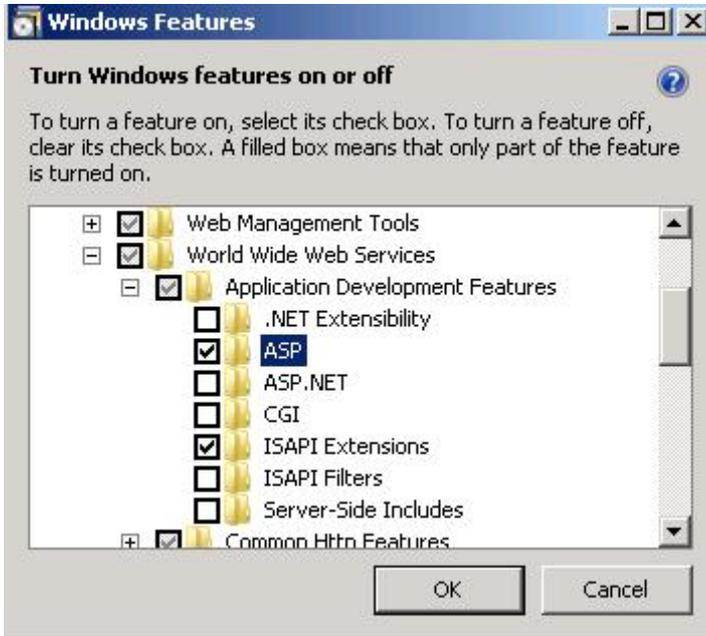
【Step2】
Start → Control Panel → Program and Features → Click Turn Windows features on or off. The Windows Features dialog box opens.



【Step3】 Select the Internet Information Services check box

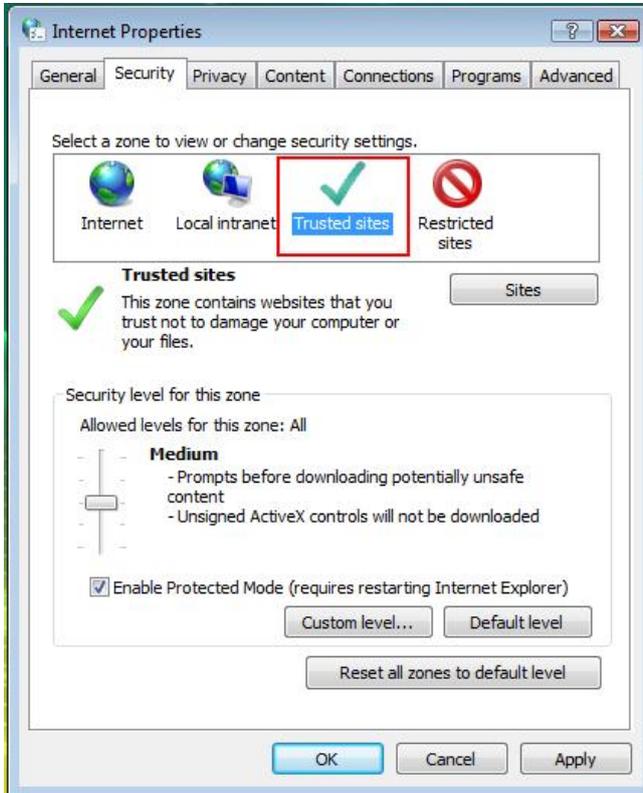


【Step4】 Double-click (or expand) “Web Management Tools”, double-click “IIS 6 Management Compatibility”, then select the “IIS 6 Management Console, IIS 6 Scripting Tools, IIS 6 WMI Compatibility, IIS Metabase and IIS 6 Configuration Compatibility“ check box.

**【Step5】**

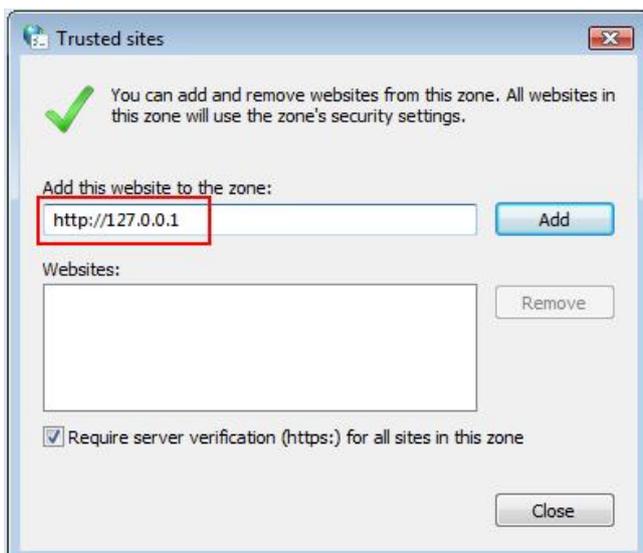
Double-click (or expand) World Wide Web Services, double-click Application Development Features, then select the ASP and ISAPI Extensions check box.

APPENDIX B: Security Setting in Web Monitor under Vista



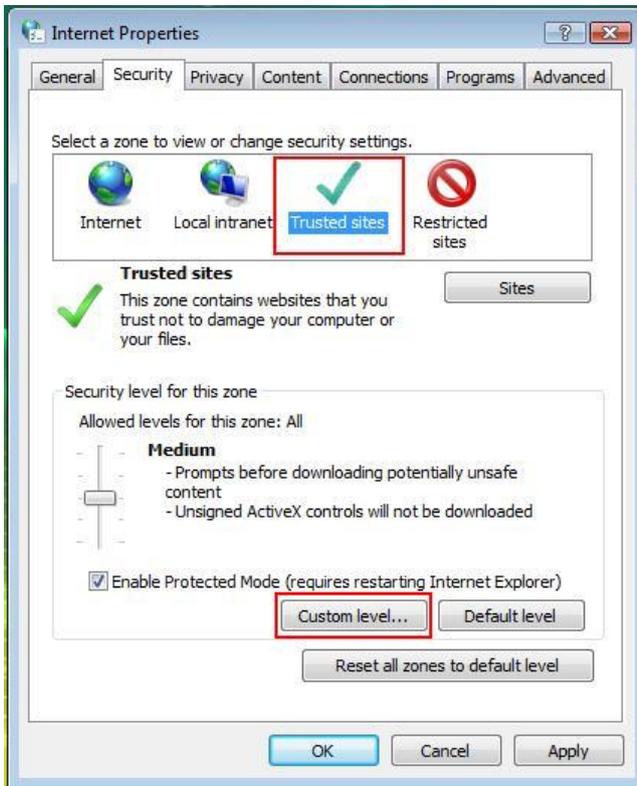
【Step1】

Launch Internet Explorer Browser → Select Internet Options → Select Security tab → Choose Trusted sites and click Sites button.



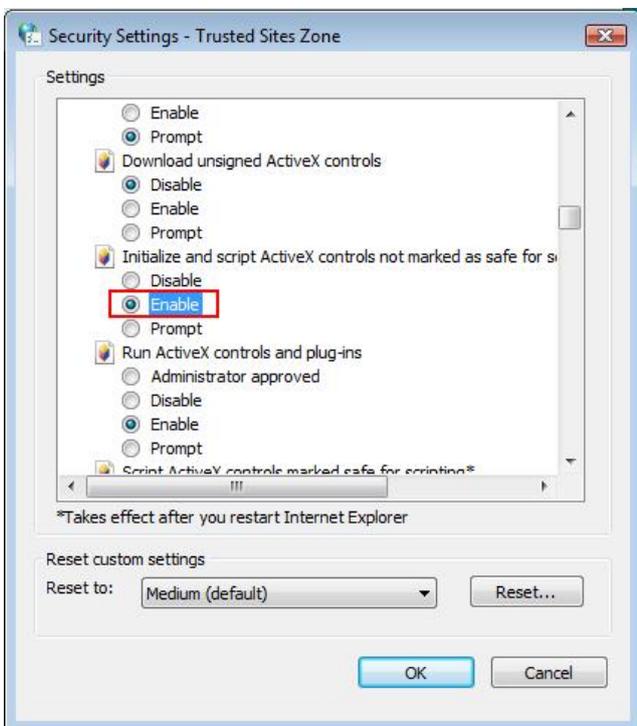
【Step2】

Input the web server IP, example: `http://127.0.0.1`.



【Step3】

Select Trusted sites then click “Custom level...” button.



【Step4】

Find Initialize and script ActiveX controls not marked as safe option, then select “Enable”.

APPENDIX C: Frame Rate & Bit Rate Table

This chapter provides tables that help you to optimize your IP camera with your network environment. Base on your network upload environment, choose the best Image-Quality setting.

For example, if the network environment is ADSL 256Kb (upload) / 2Mb (download), the most fluent Image-Quality needs to set up under 256 Kb situation.

■ MPEG4 @ 30fps / kbps

Quality	640*480	320*240	160*120
Excellent	1000	300	90
Detailed	400	150	50
Good	300	100	30
Standard	250	70	25
Medium	250	55	20

■ MPEG4 / kbps, fps

Image-Size	Bitrate Setting	Frame-Rate Setting	Current Bitrate	Current Frame-Rate
640*480	2048	30	1800	26
640*480	2048	15	2200	16
640*480	1536	30	1500	30
640*480	1536	15	1700	16
640*480	1024	30	1000	30
640*480	1024	15	1000	16
640*480	512	30	500	30
640*480	512	15	600	16
320*240	1536	30	1500	30
320*240	1536	15	1600	16
320*240	1024	30	1000	30
320*240	1024	15	1000	16
320*240	512	30	550	30
320*240	512	15	600	16
160*120	1024	30	950	30
160*120	1024	15	750	16
160*120	512	30	500	30
160*120	512	15	50	16
160*120	128	30	130	30
160*120	128	15	140	16

■ MJPEG @ 15fps / kbps

Quality	640*480	320*240	160*120
Excellent	4000	1500	600
Detailed	2400	900	400
Good	1600	650	300
Standard	1300	500	240
Medium	900	350	170

■ MJPEG / kbps, fps

Image-Size	Quality Setting	Frame-Rate Setting	Current Bitrate	Current Frame-Rate
640*480	Excellent	15	4000	13
640*480	Excellent	5	1600	5
640*480	Good	15	1600	13
640*480	Good	5	650	5
640*480	Medium	15	900	14
640*480	Medium	5	360	5
320*240	Excellent	15	1500	13
320*240	Excellent	5	550	5
320*240	Good	15	650	13
320*240	Good	5	260	5
320*240	Medium	15	350	13
160*120	Medium	5	130	5
160*120	Excellent	15	600	13
160*120	Excellent	5	230	5
160*120	Good	15	300	13
160*120	Good	5	115	5
160*120	Medium	15	170	13
160*120	Medium	5	65	5

■ System Requirement & D1 Performance of 16 Channel IP Camera

□ Equipment Configuration

Software:	MainConsole Version 2.6.4 Professional
CPU:	AMD Athlon 64*2 @3600+MHz
Memory:	2048 MB (2 x 1024 DDR2-SDRAM)
Ethernet:	VIA Rhine II Fast Ethernet Adapter
Hard Disk:	ST3250620A (250 GB)
Graphic card:	ATI Technologies Inc EAX1600 Series
Operating System:	Windows XP Professional SP2 x64

□ Results from Test with a Resolution of 704x480 CCD IPCamera

704x480	Quality	Frame Rate	CPU Load	Bandwidth
16 IP camera	Excellent	30	95%	15~20 Mbps

□ Results from Test with a Resolution of 640x480 CMOS IPCamera

640x480	Quality	Frame Rate	CPU Load	Bandwidth
16 IP camera	Excellent	30	95%	10~15 Mbps

APPENDIX D: Storage Requirement Table

This chapter provides tables that help you set your recording storage system.

Please refer to the following table to find out the capability for recording into your hard disk.

□ MPEG4 Storage Requirement GB / channel / day @ 30fps

Quality	640*480	320*240	160*120
Excellent	10.5	3.2	0.9
Detailed	4.2	1.6	0.5
Good	3.2	1.1	0.3
Standard	2.6	0.7	0.3
Medium	2.6	0.6	0.2

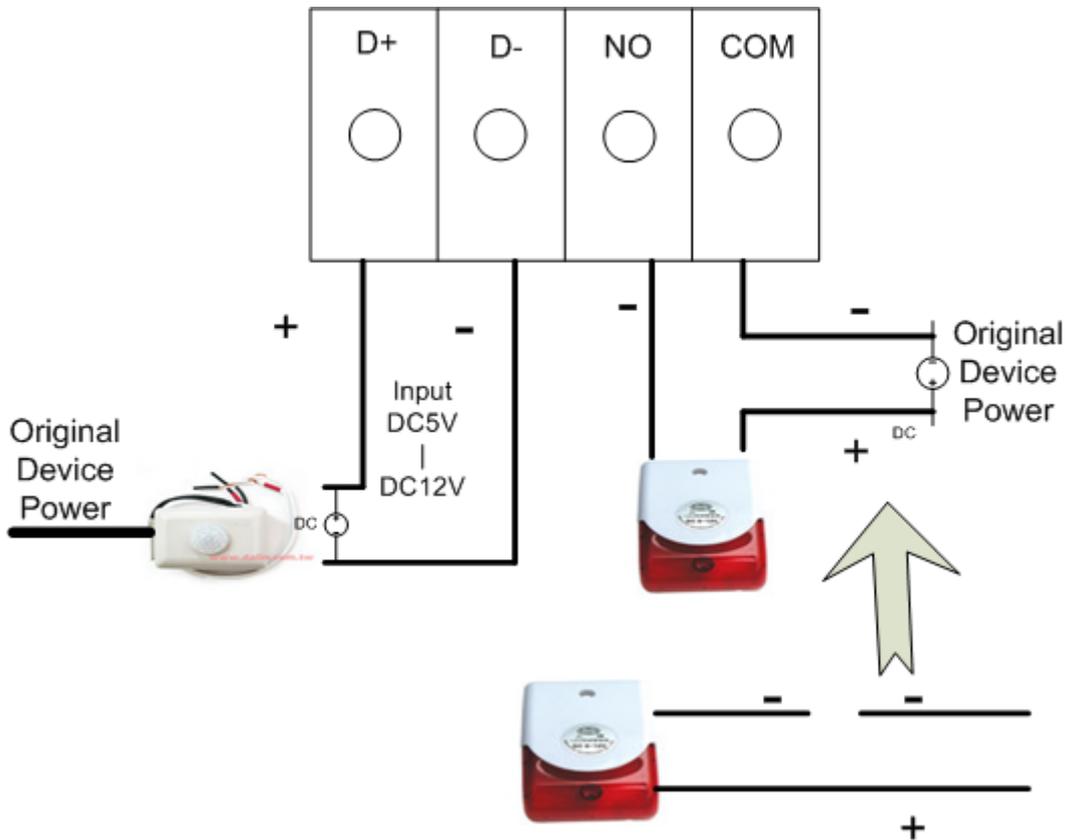
□ MPEG4 Storage Requirement GB / channel / day @ 15fps

Quality	640*480	320*240	160*120
Excellent	5.3	1.6	0.4
Detailed	2.1	0.8	0.3
Good	1.6	0.6	0.2
Standard	1.3	0.4	0.1
Medium	1.3	0.3	0.1

□ MPEG4 Storage Requirement GB / channel / day

Image-Size	Bitrate Setting	Frame-Rate Setting	Current Bitrate
640*480	2048	30	23.0
640*480	2048	15	22.2
640*480	1536	30	18.5
640*480	1536	15	17.9
640*480	1024	30	10.5
640*480	1024	15	10.5
640*480	512	30	5.3
640*480	512	15	6.3
320*240	1536	30	15.8
320*240	1536	15	16.9
320*240	1024	30	10.5
320*240	1024	15	10.5
320*240	512	30	5.8
320*240	512	15	6.3
160*120	1024	30	10.0
160*120	1024	15	7.9
160*120	512	30	5.3
160*120	512	15	0.5
160*120	128	30	1.4
160*120	128	15	1.5

APPENDIX E: How can I configure Alarm Output with Alarm Input



1. DI/DO connection picture

2. DI need a sensor can output a DC voltage between 5V-12V. For example we are use a sensor can output DC12V



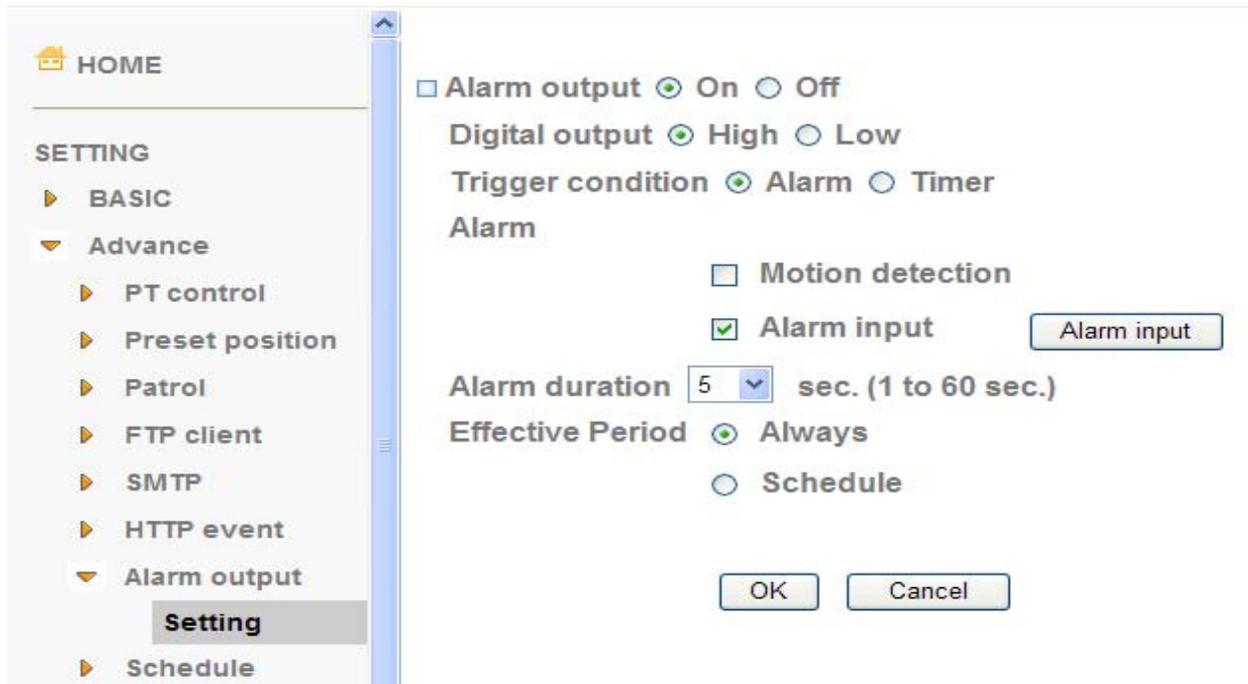
IR sensor Input DC 12V Output DC12V

3. DO need a siren/buzzer. For example we are use a siren that use DC12V.

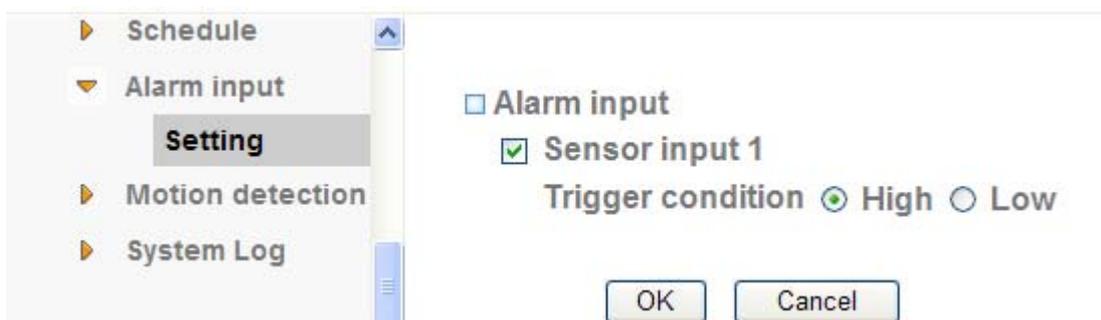


Siren Input by DC 12V

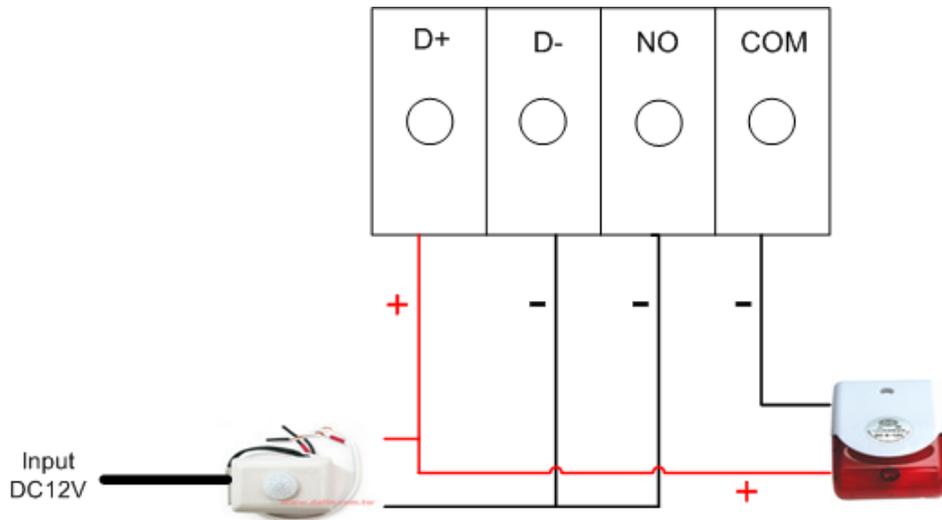
4. Alarm output Setting like below picture



5. Alarm input Setting like below picture



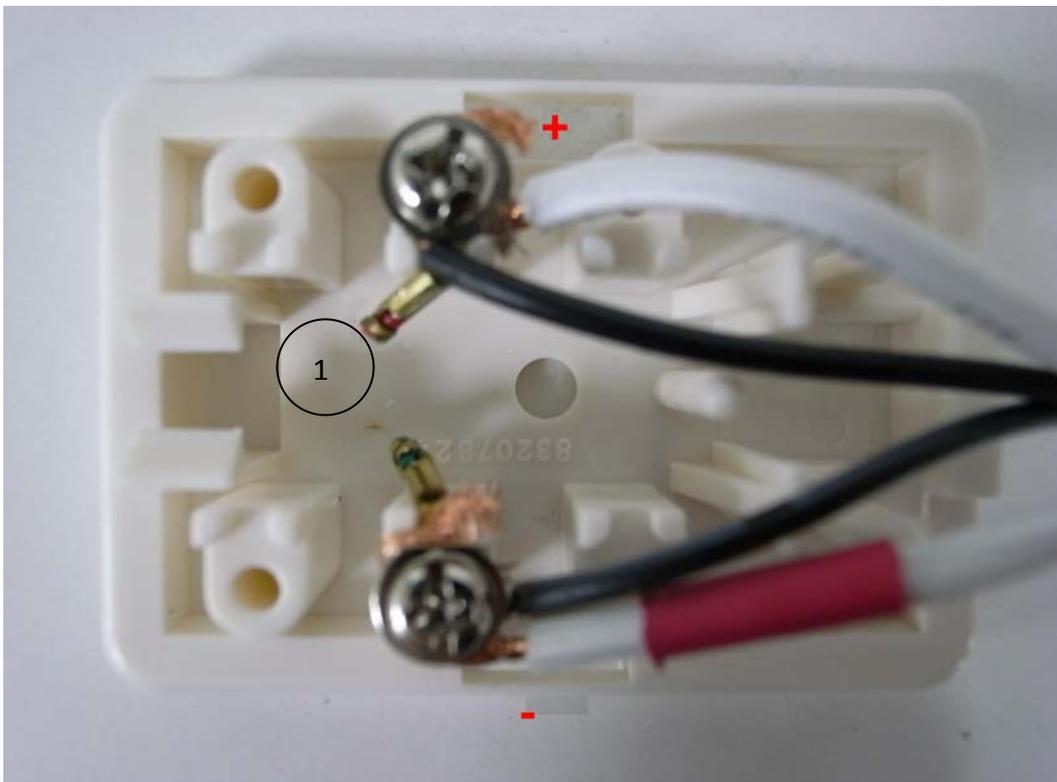
6. Connect all device to DI/DO connector (Below pictures are my example, not necessarily suits all kind of siren.)

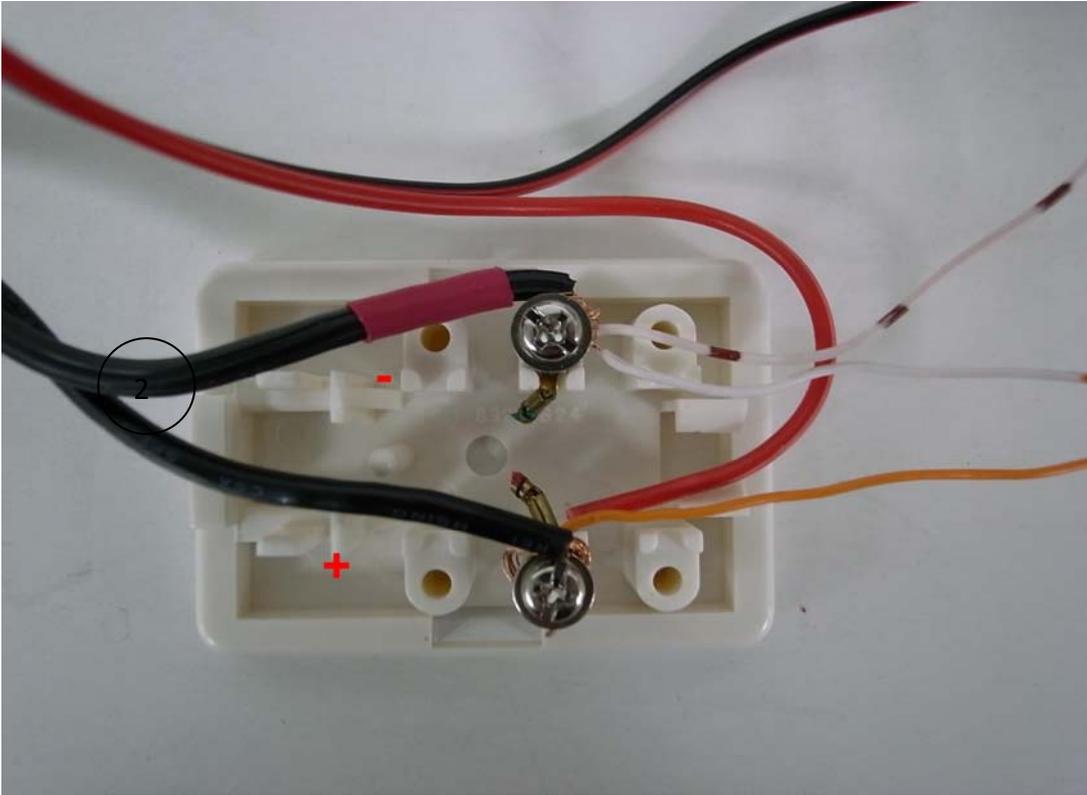


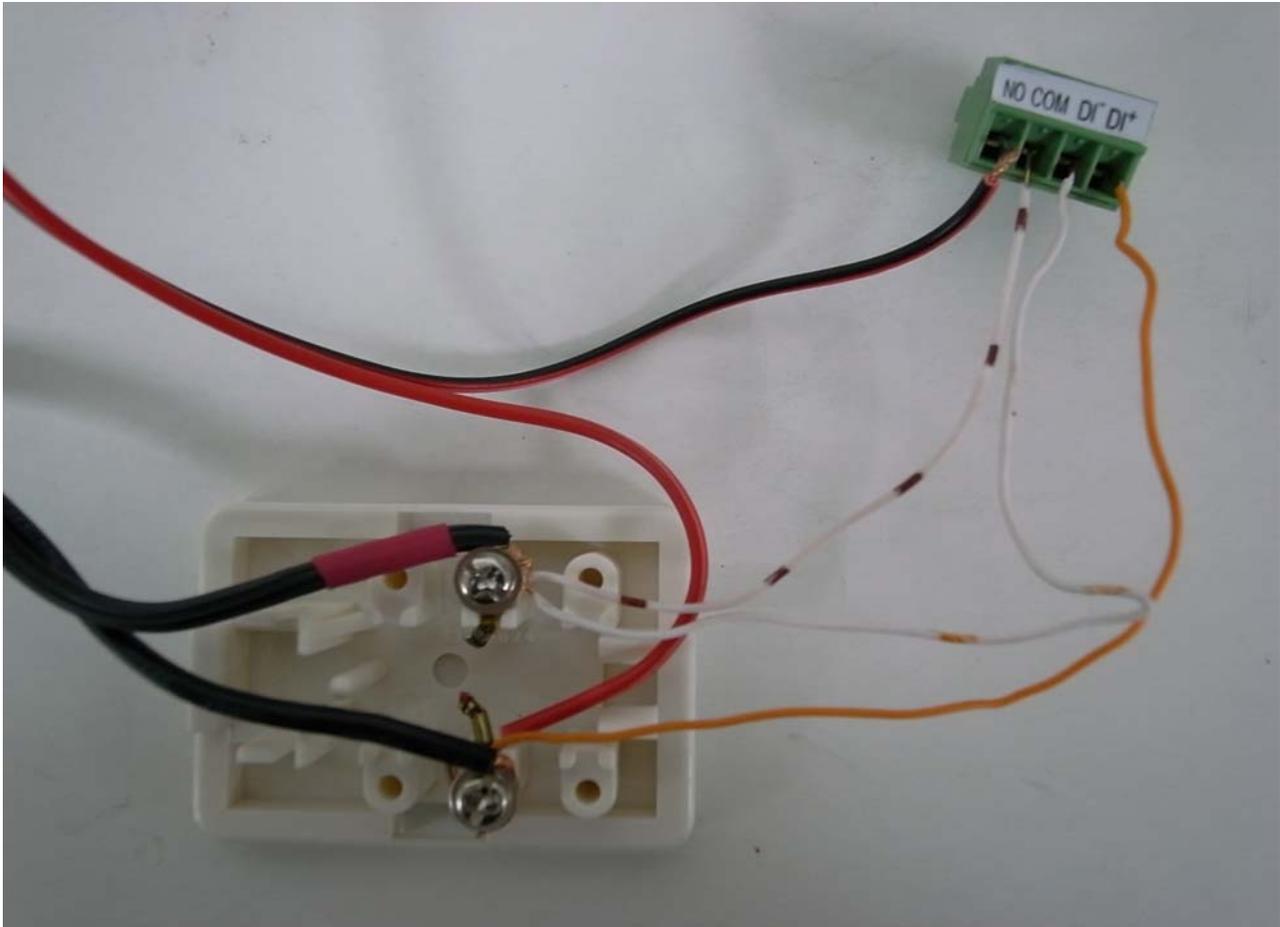
Example:
Because my device all are use DC12V,
So I can connect like this.

7. Device connection pictures (Below pictures is the example, not necessarily suits each all kind of siren}





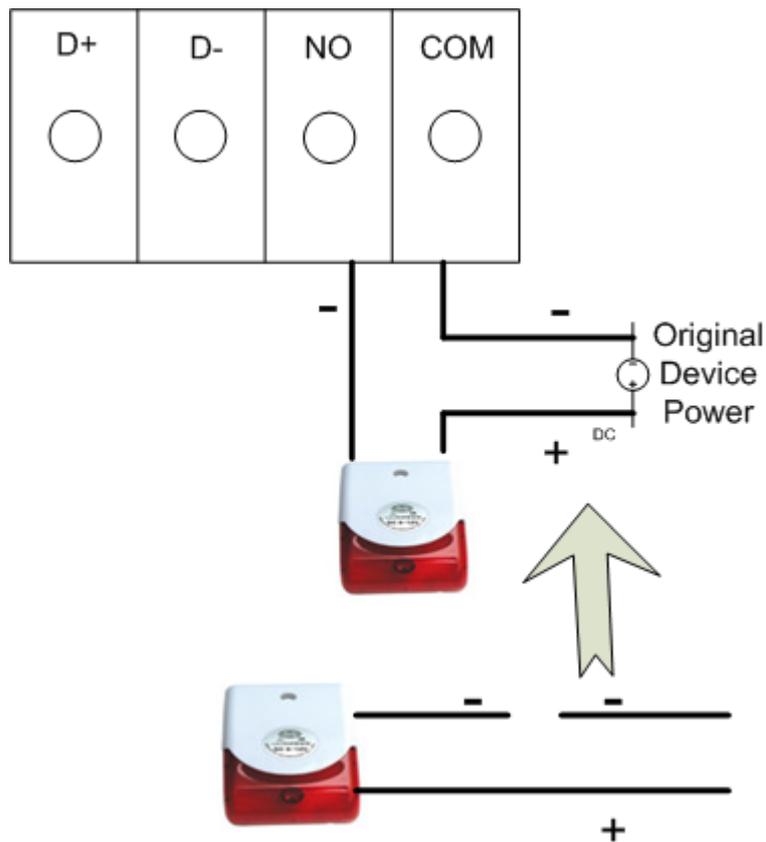




8. Above pictures is the example, not necessarily suits each one
9. When sensor receive signal will start the siren .

APPENDIX F: How can I configure Alarm Output with Motion Detection

1. DO connection picture

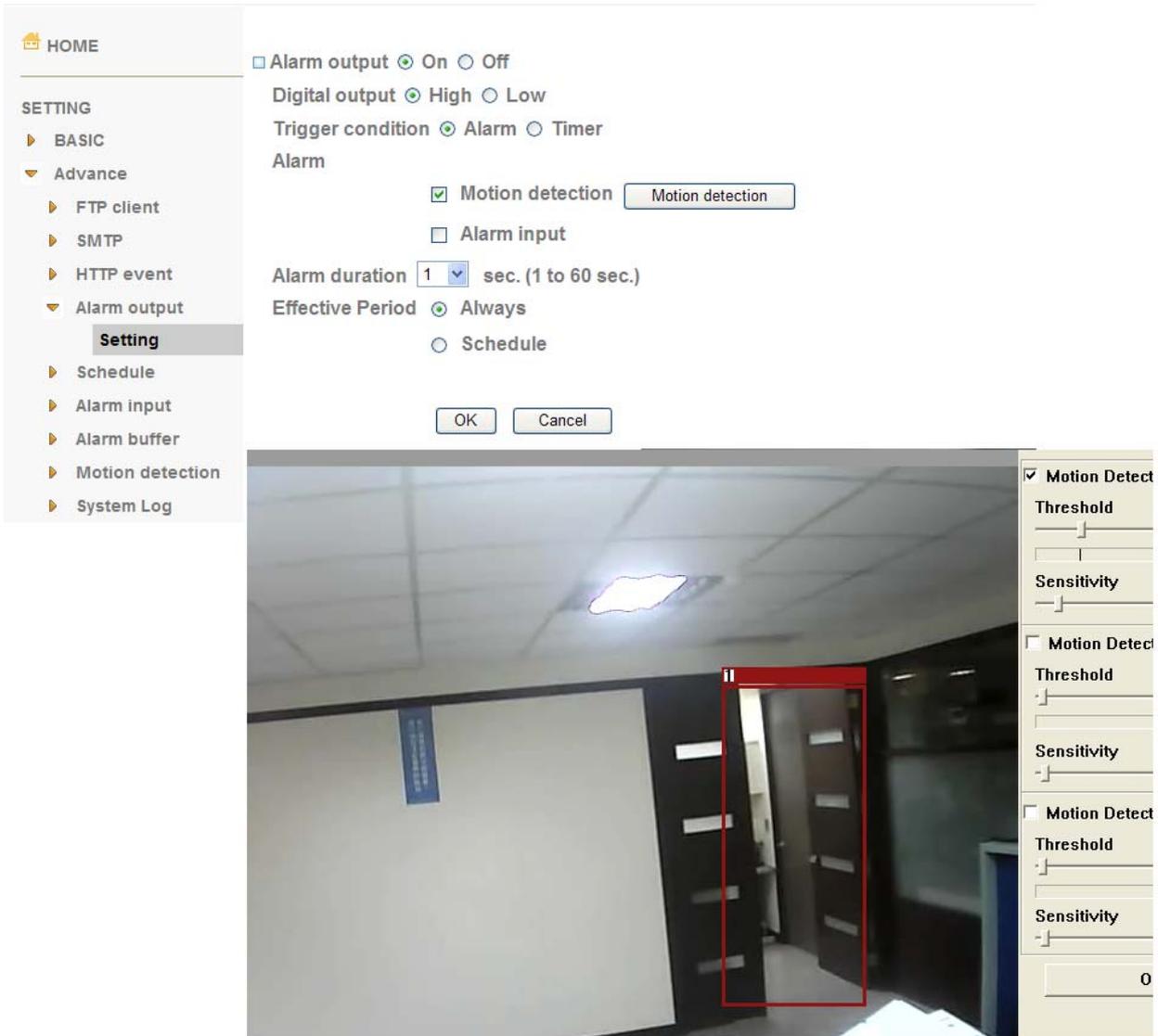


2. DO need a siren/buzzer. For example we are use a siren that use DC12V.



Siren Input by DC 12V

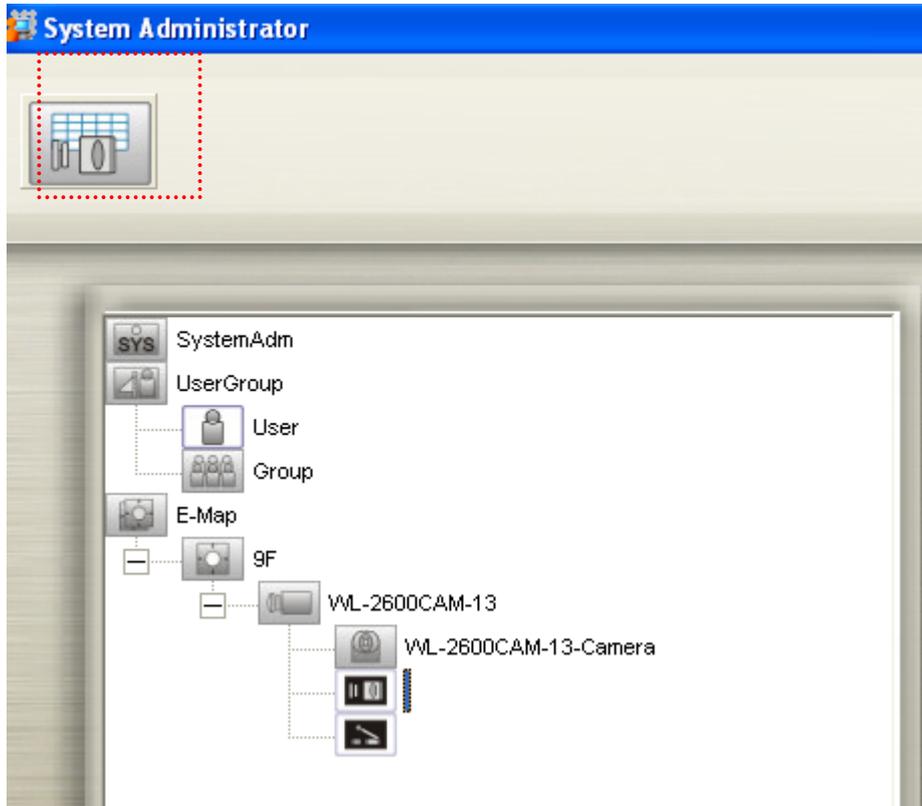
3. Alarm output Setting like below picture



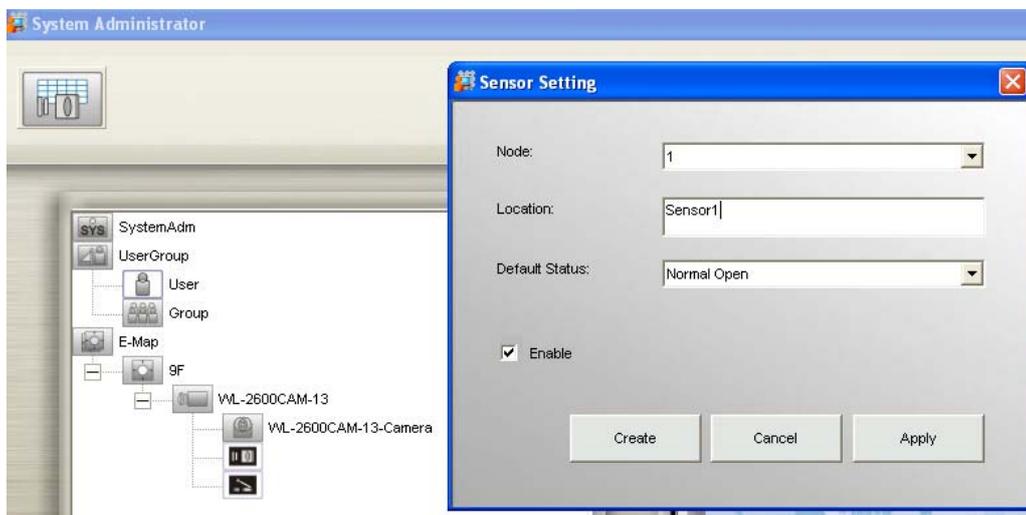
4. When Motion Detection will start the siren.

APPENDIX G: How can I configure DI/DO at CamProExpress

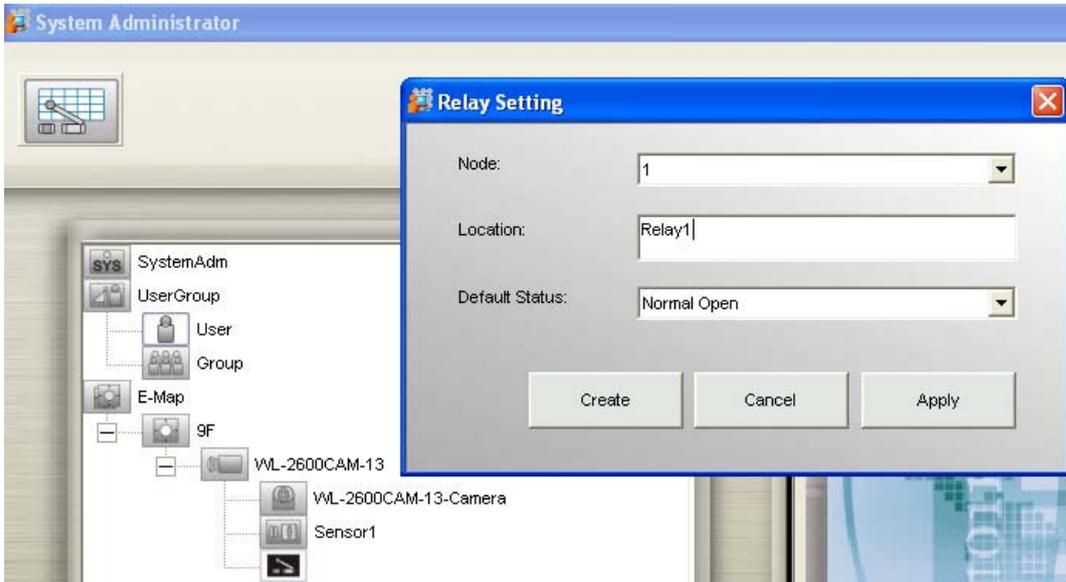
1. Add an IPCAM then select Sensor



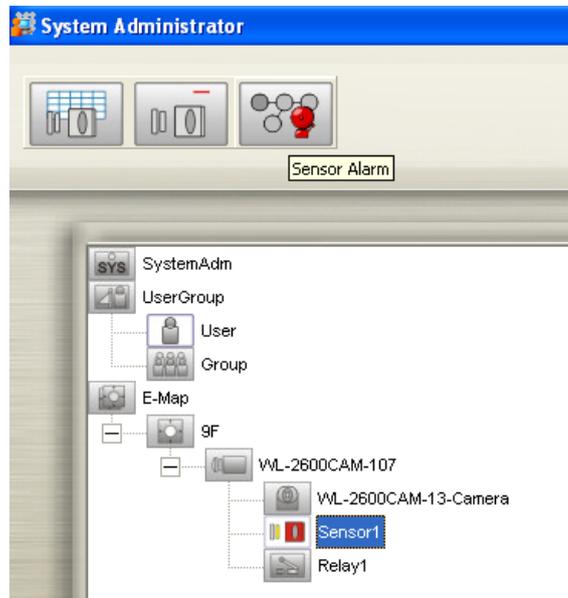
2. Click "Sensor setting " then enter a name for Location



3. Select Relay and click "Relay setting" then enter a name for Location

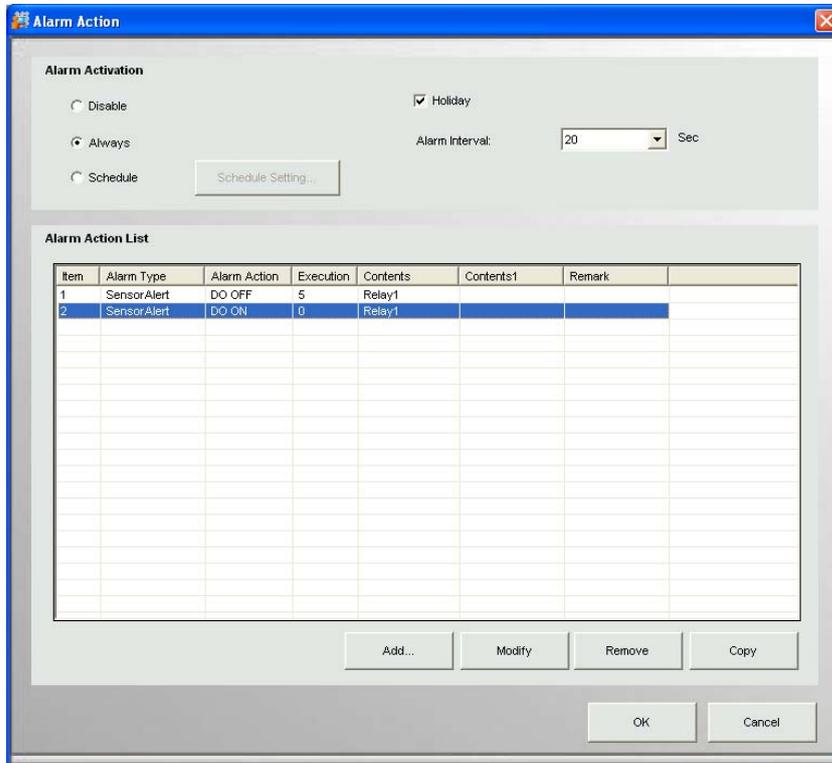


4. Select sensor then click "Sensor Alarm"

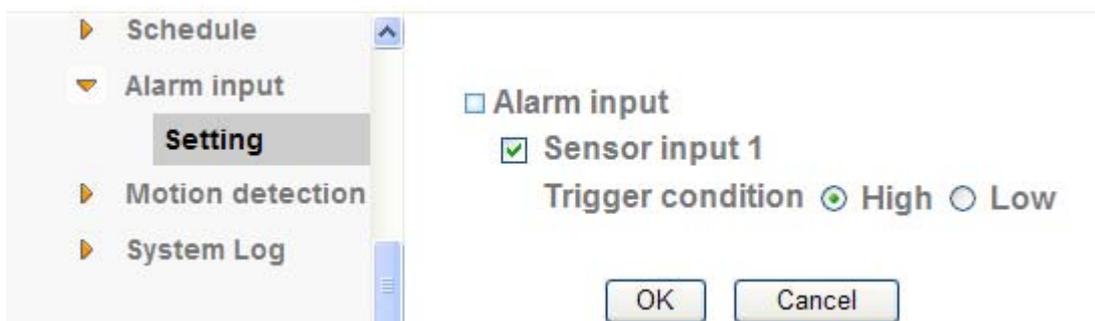


5. Select always or schedule enable alarm

8. Click "OK" to save setting



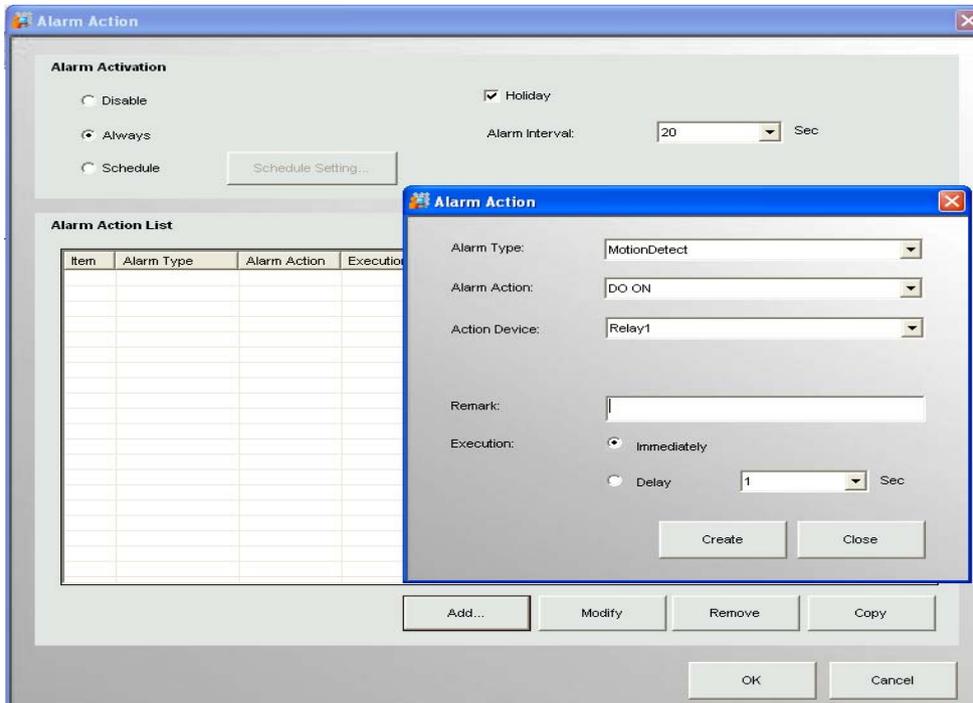
9. Turn on the "Sensor input1" in IPCAM WEB UI



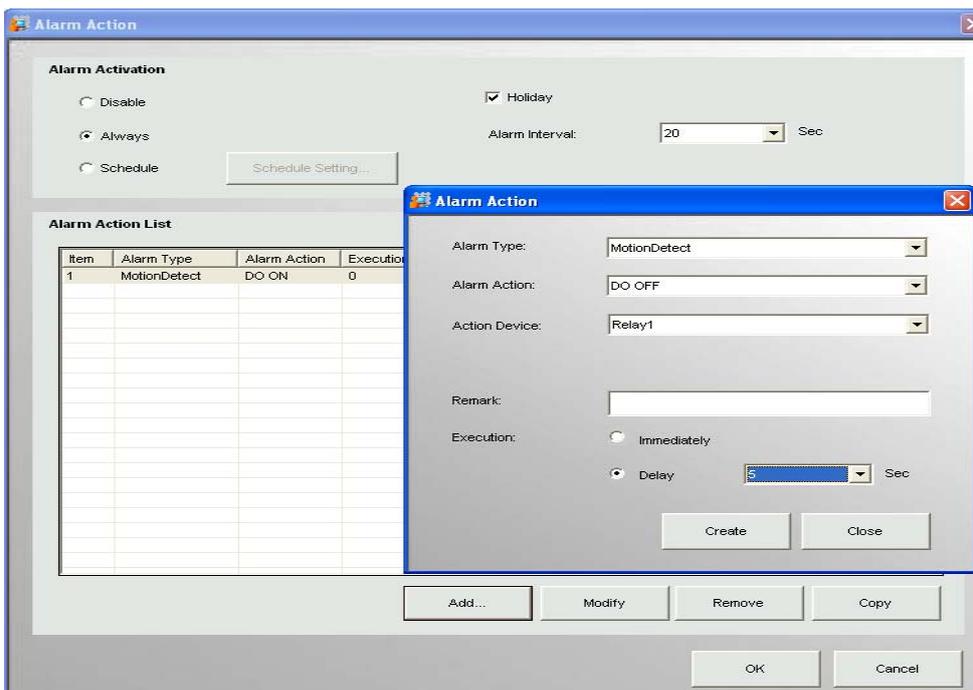
10. Connect DI/DO device to the IPACM

11. Click ok to finish the setting.

3. Select always or schedule enable alarm
4. Add alarm action: when MotionDetect will turn on Relay1



5. Add alarm action: after 5 sec turn off Relay1



9

Technical Specification

Models	POE260CAM
Image sensor	1/4" Progressive scan CMOS sensor
Lens	F2.0, 4.3 mm
Angle of view	55° horizontal
Digital Zoom	10x digital
Min Illumination	0.5 Lux
S/N Ratio	50dB
Video Compression	Motion JPEG MPEG-4 Part2 (ISO/IEC 14496-2), Profile: SP
Resolutions	Motion JPEG: 3 resolutions from 640x480 to 160x120 via API, 3 resolutions via configuration web page MPEG-4: 3 resolutions from 640x480 to 160x120 via API, 3 resolutions via configuration web page
Frame rate	Motion JPEG: Up to 15 fps at 640x480 (4:3 resolution) MPEG-4: Up to 30 fps at 640x480 (4:3 resolution)
Video streaming	Simultaneous Motion JPEG and MPEG-4 (Dual streaming) Controllable Frame rate and bandwidth Support Unicast and Multicast Support 3GPP/ISMA RTSP (Real Time Streaming Protocol)
Image settings	Rotation: Mirror, Flip, Mirror Flip brightness, contrast, saturation, hue Overlay capabilities: time, date, text and privacy image
Shutter time	1/60 ~ 1/30000 sec.
Audio	Two-way (full duplex) External microphone input or line input Audio compression: G.711 PCM, 8kHz, 64 kbit/s
Security	Multiple user access levels with password protection, HTTPS encryption

Alarm Input/Output	Alarm input 5V/12V DC Alarm output Max 30W
Alarm and event management	Input: alarm buffer, alarm input, motion detection Output: FTP, SMTP, HTTP event, alarm output Pre-and post alarm buffer
Connectors	RJ-45 for Ethernet 10/100 Base-T (with PoE) DC power jack Terminal blocks for 1 alarm input, 1 output Reset push switch 3.5 mm jack for Mic/Line, 3.5 mm jack for line out
Casing	PC+ABS casing
Power	12V DC, 1A, Max 5W PoE (Power over Ethernet) Built-in IEEE 802.3af
Operating conditions	0 ~ 50 °C (32 ~ 122 °F)
Installation, management, and maintenance	Camera Management tool on CD and web-based configuration. Configuration of backup and restore Firmware upgrades over HTTP, firmware available at www.airlive.com
Minimum web browsing requirement	Pentium 4 1.8GHz (or equivalent AMD) 64 MB RAM graphic cards (or equivalent on-board graphic cards) 512 MB RAM Window 98, ME, 2000, 2003, XP, Vista Mac OS Leopard 10.5
Supported protocols	Bonjour, TCP/IP, DHCP, PPPoE, ARP, ICMP, FTP, SMTP, DNS, NTP, UPnP, RTSP, RTP, HTTP, TCP, UDP, 3GPP/ISMA RTSP
Included accessories	Quick Installation Guide, CD (IP Surveillance Software, Intelligent IP Installer, User Manuals, and Language Pack), mounting and connector kits, power supply 12V DC CE, FCC, RoHS
Approvals	
Alarm and event management	Input: alarm buffer, alarm input, motion detection Output: FTP, SMTP, HTTP event, alarm output Pre-and post alarm buffer

Connectors	RJ-45 for Ethernet 10/100 Base-T (with PoE) DC power jack Terminal blocks for 1 alarm input, 1 output Reset push switch 3.5 mm jack for Mic/Line, 3.5 mm jack for line out
Casing	PC+ABS casing
Power	12V DC, 1A, Max 5W PoE (Power over Ethernet) Built-in IEEE 802.3af
Operating conditions	0 ~ 50 °C (32 ~ 122 °F)
Installation, management, and maintenance	Camera Management tool on CD and web-based configuration. Configuration of backup and restore Firmware upgrades over HTTP, firmware available at www.airlive.com
Minimum web browsing requirement	Pentium 4 1.8GHz (or equivalent AMD) 64 MB RAM graphic cards (or equivalent on-board graphic cards) 512 MB RAM Window 98, ME, 2000, 2003, XP, Vista Mac OS Leopard 10.5
Supported protocols	Bonjour, TCP/IP, DHCP, PPPoE, ARP, ICMP, FTP, SMTP, DNS, NTP, UPnP, RTSP, RTP, HTTP, TCP, UDP, 3GPP/ISMA RTSP
Included accessories	Quick Installation Guide, CD (IP Surveillance Software, Intelligent IP Installer, User Manuals, and Language Pack), mounting and connector kits, power supply 12V DC
Approvals	CE, FCC, RoHS
Dimensions (HxWxD) and weight	112 x 114 (φ)mm (4.4" x 4.4") 281 g (11.2oz) excl. power supply

■ **ActiveX -**

A standard that enables software components to interact with one another in a networked environment, regardless of the language(s) used to create them. Web browsers may come into contact with ActiveX controls, ActiveX documents, and ActiveX scripts. ActiveX controls are often downloaded and installed automatically as required.

■ **AF (Autofocus) -**

A system by which the camera lens automatically focuses on a selected part of the subject.

■ **Angle -**

The field of view, relative to a standard lens in a 35mm still camera, expressed in degrees, for example, 30°. For practical purposes, this is the area that a lens can cover, where the angle of view is determined by the focal length of the lens. A wide-angle lens has a short focal length and covers a wider angle of view than standard or telephoto lenses, which have longer focal lengths.

■ **ARP (Address Resolution Protocol) -**

This protocol is used to associate an IP address to a hardware MAC address. A request is broadcast on the local network to discover the MAC address for an IP address.

■ **ASIC (Application Specific Integrated Circuit) -**

A circuit designed for a specific application, as opposed to a general purpose circuit, such as a microprocessor.

■ **Aspect ratio -**

A ratio of width to height in images. A common aspect ratio used for television screens and computer monitors is 4:3. High-definition television (HDTV) uses an aspect ratio of 16:9.

■ **Autoiris (or DC-Iris) -**

This special type of iris is electrically controlled by the camera, to automatically regulate the amount of light allowed to enter.

■ **AVI (Audio Video Interleave) -**

A video format that supports simultaneous playback of audio and video.

■ **Bitmap -**

A bitmap is a data file representing a rectangular grid of pixels. It defines a display space and color for each pixel (or "bit") in the display space. This type of image is known as a "raster graphic." GIF and JPEG are examples of image file types that contain bitmaps.

Because a bitmap uses this fixed raster method, it cannot easily be rescaled without losing definition. Conversely, a vector graphic image uses geometrical shapes to represent the image, and can thus be quickly rescaled.

■ **Bit rate -**

The bit rate (in kbit/s or Mbit/s) is often referred to as speed, but actually defines the number of bits/time unit and not distance/time unit.

■ **Bluetooth -**

Bluetooth is an open standard for wireless transmission of voice and data between mobile devices (PCs, handheld computers, telephones and printers).

■ **Bonjour -**

Also known as zero-configuration networking, Bonjour enables devices to automatically discover each other on a network, without having to enter IP addresses or configure DNS servers. Bonjour is a trademark of Apple Computer, Inc.

■ **Broadband -**

In network engineering terms, this describes transmission methods where two or more signals share the same carrier. In more popular terminology, broadband is taken to mean high-speed data transmission.

■ **CCD (Charged Coupled Device) -**

This light-sensitive image device used in many digital cameras is a large integrated circuit that contains hundreds of thousands of photo-sites (pixels) that convert light energy into electronic signals. Its size is measured diagonally and can be 1/4", 1/3", 1/2" or 2/3".

■ **CGI (Common Gateway Interface) -**

A specification for communication between a web server and other (CGI) programs. For example, a HTML page that contains a form might use a CGI program to process the form data once it is submitted.

■ **CIF (Common Intermediate Format) -**

CIF refers to the analog video resolutions 352x288 pixels (PAL) and 352x240 pixels (NTSC). See also *Resolution*.

- **Client/Server -**

Client/server describes the relationship between two computer programs in which one program, the client, makes a service request from another program, the server, which fulfills the request. Typically, multiple client programs share the services of a common server program. A web browser is a client program that requests services (the sending of web pages or files) from a web server.

- **CMOS (Complementary Metal Oxide Semiconductor) -**

CMOS is a widely used type of semiconductor that uses both negative and positive circuits. Since only one of the circuit types is on at any given time, CMOS chips require less power than chips using just one type of transistor. CMOS image sensors also allow processing circuits to be included on the same chip, an advantage not possible with CCD sensors, which are also much more expensive to produce.

- **Codec -**

In communications engineering, a codec is usually a coder/decoder. Codecs are used in integrated circuits or chips that convert for example, analog video and audio signals into a digital format for transmission. The codec also converts received digital signals back into analog format. A codec uses analog-to-digital conversion and digital-to-analog conversion in the same chip.

Codec can also mean compression/decompression, in which case it is generally taken to mean an algorithm or computer program for reducing the size of large files and programs.

- **Compression -**

See *Image Compression*.

- **Contrast -**

Defines the degree of difference between the lightest and darkest parts of an image or video stream.

- **DC-Iris -**

This special type of iris is electrically controlled by the camera, to automatically regulate the amount of light allowed to enter.

- **DHCP (Dynamic Host Configuration Protocol) -**

DHCP is a protocol that lets network administrators automate and centrally manage the assignment of Internet Protocol (IP) addresses to network devices in a network.

DHCP uses the concept of a "lease" or amount of time that a given IP address will be valid for a computer. The lease time can vary, depending on how long a user is likely to require the network connection at a particular location.

DHCP also supports static addresses for example, computers running web servers, which need a permanent IP address.

■ **DNS (Domain Name System) -**

DNS is used to locate and translate Internet domain names into IP (Internet Protocol) addresses. A domain name is a meaningful and easy-to-remember name for an Internet address. For example the domain name www.example.com is much easier to remember than 192.0.34.166. The translation tables for domain names are contained in Domain name servers.

■ **Domain Server -**

Domains can also be used by organizations who wish to centralize the management of their (Windows) computers. Each user within a domain has an account that usually allows them to log in to and use any computer in the domain, although restrictions may also apply. The domain server is the server that authenticates the users on the network.

■ **Duplex -**

See *Full-duplex*.

■ **Ethernet -**

Ethernet is the most widely installed local area network technology. An Ethernet LAN typically uses

special grades of twisted pair wires. The most commonly installed Ethernet systems are 10BASE-T and 100BASE-T10, which provide transmission speeds up to 10 Mbps and 100 Mbps respectively.

■ **ETRAX (Ethernet Token Ring AXIS) -**

Axis' own microprocessor.

■ **Factory default settings -**

These are the settings that originally applied for a device when it was first delivered from the factory. If it should become necessary to reset a device to its factory default settings, this will, for many devices, completely reset any settings that were changed by the user.

■ **Firewall -**

A firewall works as a barrier between networks, for example, between a Local Area Network and the Internet. The firewall ensures that only authorized users are allowed to access the one network from the other. A firewall can be software running on a

computer, or it can be a standalone hardware device.

■ **Focal length -**

Measured in millimeters, the focal length of a camera lens determines the width of the horizontal field of view, which in turn is measured in degrees.

■ **FTP (File Transfer Protocol) -**

An application protocol that uses the TCP/IP protocols. It is used to exchange files between computers/devices on networks.

■ **Frame -**

A frame is a complete video image. In the 2:1 interlaced scanning format of the RS-170 and CCIR formats, a frame is made up of two separate fields of 262.5 or 312.5 lines interlaced at 60 or 50 Hz to form a complete frame, which appears at 30 or 25 Hz. In video cameras with a progressive scan, each frame is scanned line-by-line and not interlaced; most are also displayed at 30 and 25 Hz.

■ **Frame rate -**

The frame rate used to describe the frequency at which a video stream is updated is measured in frames per second (fps). A higher frame rate is advantageous when there is movement in the video stream, as it maintains image quality throughout.

■ **Full-duplex -**

Transmission of data in two directions simultaneously. In an audio system this would describe for example, a telephone systems. Half-duplex also provides bi-directional communication, but only in one direction at a time, as in a walkie-talkie system. See also *Simplex*.

■ **Gain -**

Gain is the amplification factor and the extent to which an analog amplifier boosts the strength of a signal. Amplification factors are usually expressed in terms of power. Decibel (dB) is the most common way of quantifying the gain of an amplifier.

■ **Gateway -**

A gateway is a point in a network that acts as an entry point to another network. In a corporate network for example, a computer server acting as a gateway often also acts as a proxy server and a firewall

server. A gateway is often associated with both a router, which knows where to direct a given packet of data that arrives at the gateway, and a switch, which furnishes the actual path in and out of the gateway for a given packet.

- **GIF (Graphics Interchange Format) -**

GIF is one of the most common file formats used for images in web pages. There are two versions of the format, 87a and 89a. Version 89a supports animations, i.e. a short sequence of images within a single GIF file. GIF89a can also be specified for interlaced presentation.

- **GOV (Group Of VOPs) -**

A group of VOPs is the basic unit of an MPEG-4 video stream. The GOV contains different types and numbers of VOPs (I-VOPs, P-VOPs, etc.) as determined by the GOV length and GOV structure. See also *VOP*.

- **GOV length -**

The GOV length determines the number of images (VOPs) in the GOV structure. See also *GOV* and *VOP*.

- **GOV structure -**

The GOV structure describes the composition of an MPEG-4 video stream, as regards the type of images (I-VOPs or P-VOPs) included in the stream, and their internal order. See also *GOV* and *VOP*.

- **Half-duplex -**

See *Full-duplex*.

- **HTML (Hypertext Markup Language) -**

HTML is the set of "markup" symbols or codes inserted in a file intended for display in web browser. The markup tells the browser how to display the page's words and images for the user.

- **HTTP (Hypertext Transfer Protocol) -**

HTTP is the set of rules for exchanging files (text, graphic images, sound, video, and other multimedia files) on the web. The HTTP protocol runs on top of the TCP/IP suite of protocols.

- **Hub -**

A (network) hub is used to connect multiple devices to the network. The hub transmits all data to all devices connected to it, whereas a switch will only transmit the data to the device it is specifically intended for.

- **IEEE 802.11 -**

A family of standards for wireless LANs. The 802.11 standard supports 1 or 2 Mbit/s transmission on the 2.4 GHz band. IEEE 802.11b specifies an 11 Mbit/s data rate on the 2.4 GHz band, while 802.11a allows up to 54 Mbit/s on the 5 GHz band.

■ **Image compression -**

Image compression minimizes the file size (in bytes) of an image. Two of the most common compressed image formats are JPEG and GIF.

■ **Interlacing -**

Interlaced video is video captured at 50 pictures (known as fields) per second, of which every 2 consecutive fields (at half height) are then combined into 1 frame. Interlacing was developed many years ago for the analog TV world and is still used widely today. It provides good results when viewing motion in standard TV pictures, although there is always some degree of distortion in the image.

To view interlaced video on for example, a computer monitor, the video must first be de-interlaced, to produce progressive video, which consists of complete images, one after the other, at 25 frames per second. See also *Progressive scan*.

■ **IP (Internet Protocol) -**

The Internet Protocol is a method transmitting data over a network. Data to be sent is divided into individual and completely independent "packets." Each computer (or host) on the Internet has at least one address that uniquely identifies it from all others, and each data packet contains both the sender's address and the receiver's address.

The Internet Protocol ensures that the data packets all arrive at the intended address. As IP is a connectionless protocol, which means that there is no established connection between the communication end-points, packets can be sent via different routes and do not need to arrive at the destination in the correct order.

Once the data packets have arrived at the correct destination, another protocol - Transmission Control Protocol (TCP) - puts them in the right order. See also *TCP*.

■ **IP Address -**

An IP address is simply an address on an IP network used by a computer/device connected to that network. IP addresses allow all the connected computers/devices to find each other and to pass data back and forth.

To avoid conflicts, each IP address on any given network must be unique. An IP address can be assigned as fixed, so that it does not change, or it can be assigned dynamically (and automatically) by DHCP.

An IP address consists of four groups (or quads) of decimal digits separated by periods, for example, 130.5.5.25. Different parts of the address represent different things. Some part will represent the network number or address, and some other part will represent the local machine address. See also *IP (Internet Protocol)*.

- **VOP -**
See *VOP*.
- **JPEG (Joint Photographic Experts Group) -**
Together with the GIF file format, JPEG is an image file type commonly used on the web. A JPEG image is a bitmap, and usually has the file suffix '.jpg' or '.jpeg.' When creating a JPEG image, it is possible to configure the level of compression to use. As the lowest compression (i.e. the highest quality) results in the largest file, there is a trade-off between image quality and file size.
- **kbit/s (kilobits per second) -**
A measure of the bit rate, i.e. the rate at which bits are passing a given point. See also *Bit rate*.
- **LAN (Local Area Network) -**
A LAN is a group of computers and associated devices that typically share common resources within a limited geographical area.
- **Linux -**
Linux is an open source operating system within the Unix family. Because of its robustness and availability, Linux has won popularity in the open source community and among commercial application developers.
- **MAC address (Media Access Control address) -**
A MAC address is a unique identifier associated with a piece of networking equipment, or more specifically, its interface with the network. For example, the network card in a computer has its own MAC address.
- **Manual iris -**
This is the opposite to an auto iris, i.e. the camera iris must be adjusted manually to regulate the amount of light allowed to reach the image sensor.
- **Mbit/s (Megabits per second) -**
A measure of the bit rate, i.e. the rate at which bits are passing a given point. Commonly used to give the "speed" of a network. A LAN might run at 10 or 100 Mbit/s. See also *Bit rate*.
- **Monitor -**
A monitor is very similar to a standard television set, but lacks the electronics to pick up regular television signals.

- **Motion JPEG -**

Motion JPEG is a simple compression/decompression technique for networked video. Latency is low and image quality is guaranteed, regardless of movement or complexity of the image. Image quality is controlled by adjusting the compression level, which in turn provides control over the file size, and thereby the bit rate. High-quality individual images from the Motion JPEG stream are easily extracted.

See also *JPEG*.

- **Megapixel -**

See *Pixel*.

- **MPEG (Moving Picture Experts Group) -**

The Moving Picture Experts Group develops standards for digital video and audio compression. It operates under the auspices of the International Organization for Standardization (ISO). The MPEG standards are an evolving series, each designed for a different purpose.

- **MPEG-2 -**

MPEG-2 is the designation for a group of audio and video coding standards, and is typically used to encode audio and video for broadcast signals, including digital satellite and Cable TV. MPEG-2, with some modifications, is also the coding format used by standard commercial DVD movies.

- **MPEG-4 -**

MPEG-4 is a group of audio and video coding standards and related technology. The primary uses for the MPEG-4 standard are web (streaming media) and CD distribution, conversational (videophone), and broadcast television.

Most of the features included in MPEG-4 are left to individual developers to decide whether to implement them or not. This means that there are probably no complete implementations of the entire MPEG-4 set of standards. To deal with this, the standard includes the concept of "profiles" and "levels", allowing a specific set of capabilities to be defined in a manner appropriate for a subset of applications.

- **Multicast -**

Bandwidth-conserving technology that reduces bandwidth usage by simultaneously delivering a single stream of information to multiple network recipients.

- **Multiplexer -**

A multiplexer is a high-speed switch that provides full-screen images from up to 16 analog cameras. Multiplexers can playback everything that happened on any one camera with no interference from the other cameras on the system.

- **Network connectivity -**

The physical (wired or wireless) and logical (protocol) connection of a computer network or an individual device to a network, such as the Internet or a LAN.

- **NTSC (National Television System Committee) -**

NTSC is the television and video standard in the United States. NTSC delivers 525 lines at 60 half-frames/second.

- **NWay -** is a telecommunications protocol used to automatically negotiate the highest available transmission speed between network devices. The NWay protocol is also known as auto-negotiation or auto-sensing.

- **OEM (Original Equipment Manufacturer) -**

This is a designation for companies that manufacture equipment which is then marketed and sold to other companies under their own names.

- **PAL (Phase Alternating Line) -**

PAL is the dominant television standard in Europe. PAL delivers 625 lines at 50 half-frames/second.

- **PEM (Privacy Enhanced Mail) -**

An early standard for securing electronic mail. The PEM-format is often used for representing an HTTPS certificate or certificate request.

- **Ping -**

Ping is a basic network program used diagnostically to check the status of a network host or device. Ping can be used to see if a particular network address (IP address or host name) is occupied or not, or if the host at that address is responding normally. Ping can be run from for example, the Windows Command prompt or the command line in UNIX.

- **Pixel -**

A pixel is one of the many tiny dots that make up a digital image. The color and intensity of each pixel represents a tiny area of the complete image.

- **PoE (Power over Ethernet) -**

Power over Ethernet provides power to a network device via the same cable as used for the network connection. This is very useful for IP-Surveillance and remote monitoring applications in places where it may be too impractical or expensive to power the device from a power outlet.

- **PPP (Point-to-Point Protocol) -**

A protocol that uses a serial interface for communication between two network devices. For example, a PC connected by a phone line to a server.

- **PPTP (Point-to-Point Tunnelling Protocol) -**

A protocol (set of communication rules) that allows corporations to extend their own corporate network through private "tunnels" over the public Internet. In this way a corporation can effectively use a WAN (Wide Area Network) as a large single LAN (Local Area Network). This kind of interconnection is known as a virtual private network (VPN). *See also VPN.*

- **Pre/post alarm images -**

The images from immediately before and after an alarm. These images are stored in a buffer for later retrieval.

- **Progressive scan -**

Progressive scan, as opposed to interlaced video, scans the entire picture, line by line every sixteenth of a second. In other words, captured images are not split into separate fields as in interlaced scanning.

Computer monitors do not need interlace to show the picture on the screen, but instead show them progressively, on one line at a time in perfect order, i.e. 1, 2, 3, 4, 5, 6, 7 etc., so there is virtually no "flickering" effect. In a surveillance application, this can be critical when viewing detail within a moving image, such as a person running. A high-quality monitor is required to get the best from progressive scan. *See also Interlacing.*

- **Protocol -**

A special set of rules governing how two entities will communicate. Protocols are found at many levels of communication, and there are hardware protocols and software protocols.

- **Proxy server -**

In an organization that uses the Internet, a proxy server acts as an intermediary between a workstation user and the Internet. This provides security, administrative control, and a caching service. Any proxy server associated with a gateway server, or part of a gateway server, effectively separates the organization's network from the outside network and the local firewall. It is the firewall server that protects the network against outside intrusion.

A proxy server receives requests for Internet services (such as web page requests) from many users. If the proxy server is also a cache server, it looks in its local cache of previously downloaded web pages. If it finds the page, it is returned to the user without forwarding the request to the Internet. If the page is not in the cache, the proxy server, acting as a client on behalf of the user, uses one of its own IP addresses to request the page from another server over the Internet. When the requested page is returned, the proxy server forwards it to the user that originally requested it.

■ **PTZ -**

Pan, tilt and zoom.

■ **Resolution -**

Image resolution is a measure of how much detail a digital image can hold: the greater the resolution, the greater the level of detail. Resolution can be specified as the number of pixel-columns (width) by the number of pixel-rows (height), for example, 320x240.

Alternatively, the total number of pixels (usually in megapixels) in the image can be used. In analog systems it is also common to use other format designations, such as CIF, QCIF, 4CIF, etc.

■ **RTCP (Real-Time Control Protocol) -**

RTCP provides support for real-time conferencing of groups of any size within an intranet. This support includes source identification and support for gateways like audio and video bridges as well as multicast-to-unicast translators.

RTCP offers quality-of-service feedback from receivers to the multicast group as well as support for the synchronization of different media streams.

■ **RTP (Real-Time Transport Protocol) -**

RTP is an Internet protocol for the transport of real-time data, for example, audio and video. It can be used for media-on-demand as well as interactive services such as Internet telephony.

■ **RTSP (Real Time Streaming Protocol) -**

RTSP is a control protocol, and a starting point for negotiating transports such as RTP, multicast and Unicast, and for negotiating codecs.

RTSP can be considered a "remote control" for controlling the media stream delivered by a media server. RTSP servers typically use RTP as the protocol for the actual transport of audio/video data.

■ **Router -**

A device that determines the next network point to which a packet should be forwarded on its way to its final destination. A router creates and/or maintains a special routing table that stores information on how best to reach certain destinations. A router is sometimes included as part of a network switch. See also *switch*.

■ **Server -**

In general, a server is a computer program that provides services to other computer programs in the same or other computers. A computer running a server program is also frequently referred to as a server. In practice, the server may contain any number of server and client programs. A web server is the computer program that supplies the requested HTML pages or files to the client (browser).

■ **Sharpness -**

This is the control of fine detail within a picture. This feature was originally introduced into color TV sets that used notch filter decoders. This filter took away all high frequency detail in the black and white region of the picture. The sharpness control attempted to put some of that detail back in the picture. Sharpness controls are mostly superfluous in today's high-end TVs. The only logical requirement for it nowadays is on a VHS machine.

■ **Simplex -**

In simplex operation, a network cable or communications channel can only send information in one direction.

■ **SMTP (Simple Mail Transfer Protocol) -**

SMTP is used for sending and receiving e-mail. However, as it is "simple," it is limited in its ability to queue messages at the receiving end, and is usually used with one of two other protocols, POP3 or IMAP. These other protocols allow the user to save messages in a server mailbox and download them periodically from the server.

SMTP authentication is an extension of SMTP, whereby the client is required to log into the mail server before or during the sending of email. It can be used to allow legitimate users to send email while denying the service to unauthorized users, such as spammers.

■ **SNMP (Simple Network Management Protocol) -**

SNMP forms part of the Internet Protocol suite, as defined by the Internet Engineering Task Force. The protocol can support monitoring of network-attached devices for any conditions that warrant administrative attention.

- **Sockets -**

Sockets are a method for communication between a client program and a server program over a network. A socket is defined as "the endpoint in a connection." Sockets are created and used with a set

of programming requests or "function calls" sometimes called the sockets application programming interface (API).

- **SSL/TSL (Secure Socket Layer/Transport Layer Security) -**

These two protocols (SSL is succeeded by TSL) are cryptographic protocols that provide secure communication on a network. SSL is commonly used over HTTP to form HTTPS, as used for example, on the Internet for electronic financial transactions. SSL uses public key certificates to verify the identity of the server.