Air Live®
Powered by OvisLink Corp.

SD-2020

2-Megapixel 20X
Optical Zoom Speed
Dome IP Camera

User's Manual

www.airlive.com

Copyright & Disclaimer

FCC Statement

Federal Communication Commission Interference Statement

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

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

FCC Caution

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment. This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. For product available in the USA/Canada market, only channel 1~11 can be operated. Selection of other channels is not possible.

This device and its antenna(s) must not be co-located or operation in conjunction with any other antenna or transmitter.

FCC Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

Table of Contents

1 Overview

This user's guide explains how to operate this camera from a computer. A user should read this manual completely and carefully before you operate the device.

1.1 Introduction

The SD-2020 IP Camera is a practical and fully scalable surveillance device. Users are able to view live video streaming over the Internet, and it is only one of benefits for using SD-2020 IP Camera. It is also equipped with PoE port which allows power and data to be transmitted via a single Ethernet cable. This useful function provides an easier installation, lower cabling costs and allows placement of AirLive PoE cameras in locations without access to electrical source.

With the IP-66 waterproof housing, AirLive SD-2020 suits for environments such as stairs, main entrance, street, and basement.

The device is accessible via the LAN or Internet connection. Connect your device directly to a local area network or xDSL modem, and with Microsoft® Internet Explorer you get instant, on demand video streams. Within minutes you can set up the device to capture a video sequence to a PC. The live video can be uploaded to a website for the world to see.

1.2 Features

This manual will illustrate the steps of how to setup and operate this IP camera, so you'll also soon be enjoying the benefits of these product features:

- 1/2.8" Sony Progressive CMOS Sensor
- Full HD 1080p D1 Real-Time at Dual Streaming
- Up to 20x Optical Zoom
- Up to 30 fps @ 1080p Full HD
- Weather-Proof IP66 Rated Housing
- Pan / Tilt Resolution of 0.225˚
- Auto Focus
- Motion Detection
- 2-Way Audio

- ❑ Super Wide Dynamic Range
- ❑ -40°C ~ 50°C Wide Temperature Range
- ❑ Compatible with ONVIF Standard
- ❑ 802.3at Power over Ethernet Port
- ❑ Mechanical IR-Cut Filter Removable
- ❑ Micro SDHC Memory Card Slot for Local Storage

1.3 Product Specification

Model		SD-2020
Camera	Camera Type	Speed Dome Type
	Max Resolution	1920X1080
	Image Sensor	1/2.8" 2Mega Sony CMOS image sensor
	Sensor Resolution	1920X1080
	Lens Type	CS Mount Lens
		4.7 ~ 94 mm
		F=1.6
	Night Vision	Yes
	Max IR Distance	None
	Minimum Illumination	0.05 LUX
	Mechanical IR-Cut Filter	Yes
	Auto Iris	Yes
	Viewing Angle	H: Wide: 55.2 ° (H) @ F1.6, Tele: 5.2 ° (H) @ F2.8 V: Wide: 42.1 ° (H) @ F1., Tele: 2.4 ° (H) @ F2.8
	Pan/Tile Control	Pan Degree-0~360
		Tilt Degree--10~190°
		Preset Points-Up to256 preset point
		Camera Tour-Up to 8 tours
	Analog Video Out	None
Video	Video Compression	H.264 HighProfile / MainProfile / Baseline / MJPEG
	Video Profile	358
	Resolution and	30FPS @ 1280 x 1024 (4:3)

	Frame Rate	30FPS @1024 x 768 (4:3)
		60FPS @800 x 600 (4:3)
		60FPS @ 640 x 480 (4:3)
		30FPS @ 1920 x 1080 (16:9)
		60FPS @ 1280 x 720 (16:9)
		60FPS @ 720 x 480
		60FPS @ 352 x 240
	Streaming	Multi-profile streaming
		Streaming over UDP, TCP, or HTTP
		M-JPEG streaming over HTTP (for non IE browser)
		Configurable frame rate and bandwidth
		Support both CBR and VBR
	Region of Interest	none
	Image Processing	AE, AWB
		Text, time and date OSD
	Digital Zoom	10X
Audio	Audio Encoder	G.711 / G.726 ADPCM / AAC
	Audio Streaming	Two-way
	Audio Input/Output	Speaker & microphone I/O port
Network	Ethernet	10 / 100 Mb Ethernet (RJ-45)
	PoE	IEEE802.3at
	Wireless	None
	Supported Protocols	IPv4/v6, TCP/IP, UDP, RTP, RTSP, HTTP, HTTPS, ICMP, FTP, SMTP,DHCP, PPPoE, UPnP, IGMP, SNMP, IEEE 802.1x, QoS, ONVIF
	Security	Password protection
		IP filter
		HTTPS
	Users	Up to 20 simultaneous users
LED and Button	Power LED	Amber Color
	Link/Act. LED	Green Color/Flash Green
	Reset Button	Reboot and Factory Default (Push and Hold default button then plug in power)
General	Network Processor	DSP Base
	System ROM	1GB(Flash)

	System RAM	2GB
	Power Supply	AC24V
	Power Consumption	50 Watts Max.
	Connector	RJ-45 10BaseT/100BaseTX
		24V AC power jack
		Audio I/O
		DIDO
		Reset button
	Environment	Operation: Temp: -40℃ ~ 50℃ Humidity: 0% ~ 90% non-condensing
		Storage: Temp: -40℃ ~ 50℃ Humidity: 0% ~ 90% non-condensing
	SD card slot	Micro SD
	Dimension	HxWxD:282.11x282.11x115 (φ)mm
System Integration	Software	CamPro Express 64,CamPro Professional
		Search & Installation-IP Wizard II
	Event Triggers	Motion detection
		External input via DI interface
	Motion Detection	10
	Event handler	FTP file upload
		E-mail alert
		HTTP
		DO (digital output) alarm
	UPNP	Yes
	Application Programming Interface	Open API for software integration
		SDK
	Video Buffer	Pre- and post- alarm buffering
	Alarm Triggers	Intelligent video motion detection and external input
	Alarm Events	File upload via FTP, email, SD card
		Notification via email, HTTP, and TCP
		External output activation
		Audio alerting output
	Continuous Recording	Yes
Viewing System	OS	Windows VISTA / Windows XP / Windows 7

	Browser	Internet Explorer (6.0+) / Chrome / Firefox / Safari
	Cell Phone	none
	Video Player	VLC, Quick Time, Real Player, Core Player

1.4 System Requirement

For normal operation and viewing of the network camera, it's recommended that your system meets these minimum requirements for proper operation:

Item	**Requirements**
CPU	Pentium-4 3.0 GHz or higher/Core2 Duo, 2GHz or higher
VGA Monitor	Resolution1280 x 1024 or higher
RAM	Minimum 1 GB of RAM, (2GB or above is recommended)
Operating System	Window XP, Vista or Windows 7
Web Browser	Internet Explorer 6 or later; Apple Safari; Firefox; Google Chrome

Note: Please keep updating the latest Windows software and service package.
(Ex: Net Framework, Windows Media Player, Enhance ActiveX Security)

2 Package Contents and Installation

2.1 Package Content

A user can find the following items in the package as below:

1. **AirLive SD-2020** is the main element of the product.
2. **Bundle CD** includes Setup Wizard II, CamPro Express64, Quick Start Guide, User Manual, and Video.
3. **Quick Start Guide** provides important information and instructions for installing this device.
4. **Accessory Package**

2.2 Connections

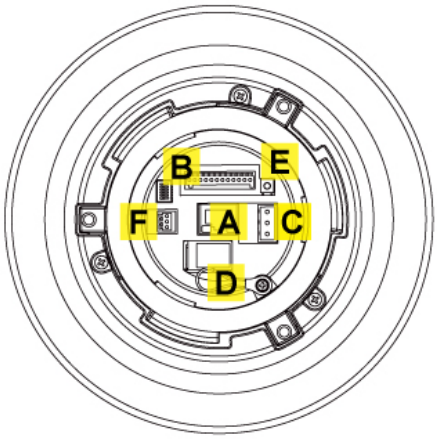
Power Source Requirement

This camera can work with 802.3at POE switch. However, if you need to operate this camera below 0 degree Celsius, please purchase the optional power adapter for the heater to work.

Switch/Connector

There are various connectors located on AirLive SD-2020's back plate as shown in the figures below.

Please refer to the diagrams and tables accompanied with for using of each switch / connector.

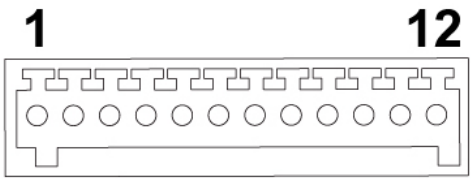


A	RJ-45 Connector
B	ALARM I/O
C	Power Connector
D	Micro SD Card Slot
E	Factory Reset Button
F	Audio I/O

1. RJ45 LAN socket: Connect to PC or Hub/Switch.
   For connections to 10Base-T Ethernet or 100Base-TX Fast Ethernet cabling. This Ethernet port built N-Way protocol can detect or negotiate the transmission speed of the network automatically. Please use Category 5 cable to connect the Network Camera to a 100Mbps Fast Ethernet network switch or hub.

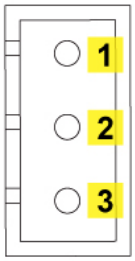
   In the LAN socket, there are two LEDs embedded:
   LAN LED (green color)
   Green Link Light indicates good network connection.
   Power (orange color)
   This LED is used to indicate whether DC power is on or not.

2. Alarm I/O:
   AirLive SD-2020 supports 4 digital alarm inputs and 2 digital alarm outputs. Please make sure the alarm connections are properly wired before starting to configure alarm related settings in section “System→Application (Alarm Settings).”
   Please refer to the pin definition table below for alarm system wiring.



Pin	Definition	Pin	Definition
1	ALARM_OUT_NO_1	7	ALARM_OUT_COM_2
2	ALARM_OUT_NC_1	8	GND
3	ALARM_OUT_COM_1	9	ALARM_IN_4
4	GND	10	ALARM_IN_3
5	ALARM_OUT_NO_2	11	ALARM_IN_2
6	ALARM_OUT_NC_2	12	ALARM_IN_1

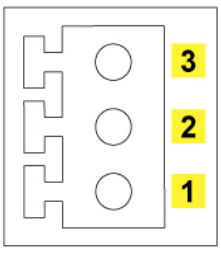
3. AC-in Jack: The input power is 24VAC.
   Please refer to the illustrations below to connect power core through the supplied power adaptor.



Pin	Definition
1	AC 24_1
2	FG
3	AC 24_2

Note: Supply the power to the Network Camera with the power adapter, which is **Not** included in package.

4. Audio I/O Connectors
   Please refer to the illustrations below to set up the audio according to the audio pin definition.



Pin	Definition
1	LINE_OUT
2	GND
3	LINE_IN

5. Micro SD Card Slot: Micro SD Card Slot allows you to insert a memory card for expansion of storage.

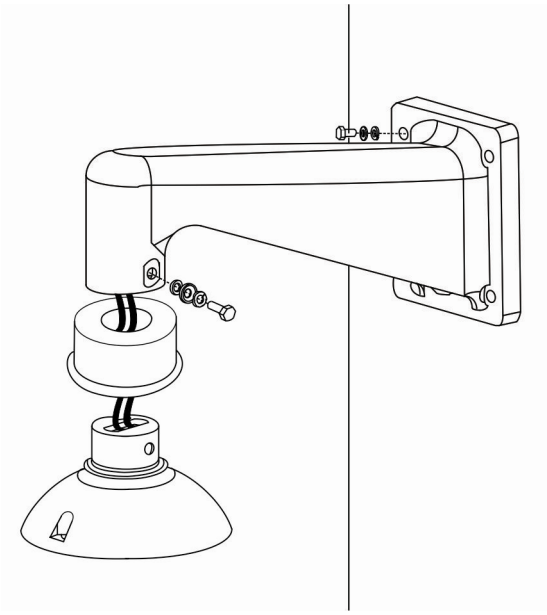
6. Reset Button: This button is used to restore all the factory default settings. Sometimes, restarting the device will make the system back to a normal state.

2.3 Mounting the Camera

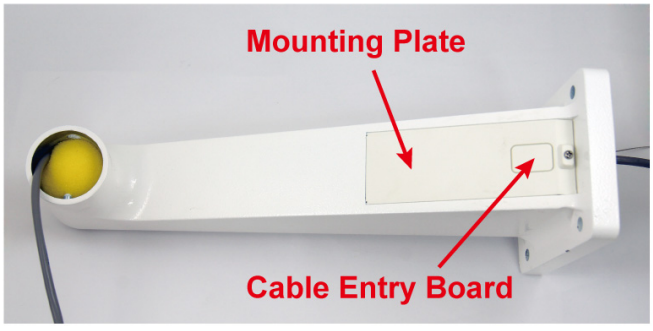
1. Attaching the Standard Mount Kit - AirLive ACC-WMK-SD20 (Optional)

Fix the camera with bundle wall mount kit as below.

Wall Mounting:



Follow the steps below to mount AirLive SD-2020 with the Standard Wall Mount.



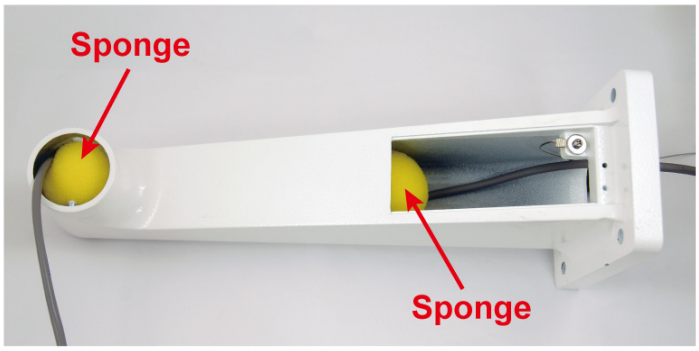
- Make a cable entry hole on the wall to recess the cables. Otherwise, users could push up the cable entry board on the Standard Wall Mount's mounting plate to place the cables.

- Fix the Standard Wall Mount on the wall with proper screws and screw anchors.

- Attach the Waterproof Rubber to the Standard Wall Mount.

- Run the cable(s) through the Standard Wall Mount.

  NOTE: Please block the cable entry hole with the supplied sponge to avoid insects entering the Wall Mount.



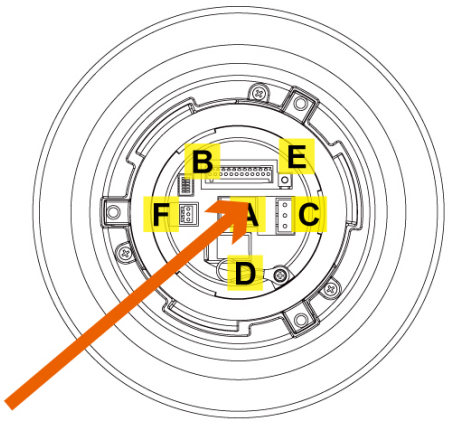
- Thread the cable(s) through the Mounting Kit and join the Mounting Kit to the Standard Wall Mount with the supplied screws and washers. Then, adjust the Waterproof Rubber to the joint.

- Connect the cable(s) to AirLive SD-2020.

- Join AirLive SD-2020 to the Mounting Kit with the supplied screw and washers.

2. Connecting to LAN ("A")

You can use the provided Ethernet cable to connect the camera to your local area network (LAN). When you connect the AC power adapter, the camera is powered on automatically. You can verify the power status from the Power LED on the Ethernet port. Once connected, the Link LED starts flashing green light and the camera is on standby and ready for use now.



3. **Connect the external power supply to Camera (Optional)**
   Connect the power adapter to the AC power jack of the camera.

   Once you have installed the camera well and powered it on, the power LED (orange) will turn on later. When the power LED turned on, it means that the system is booting up successfully. Furthermore, if you have a proper network connection and access to the camera, the LAN LED (green) will flash.

   Note: Use the 24VAC power adapter, which is **Not** included in the package, and connect it to wall outlet for AC power.

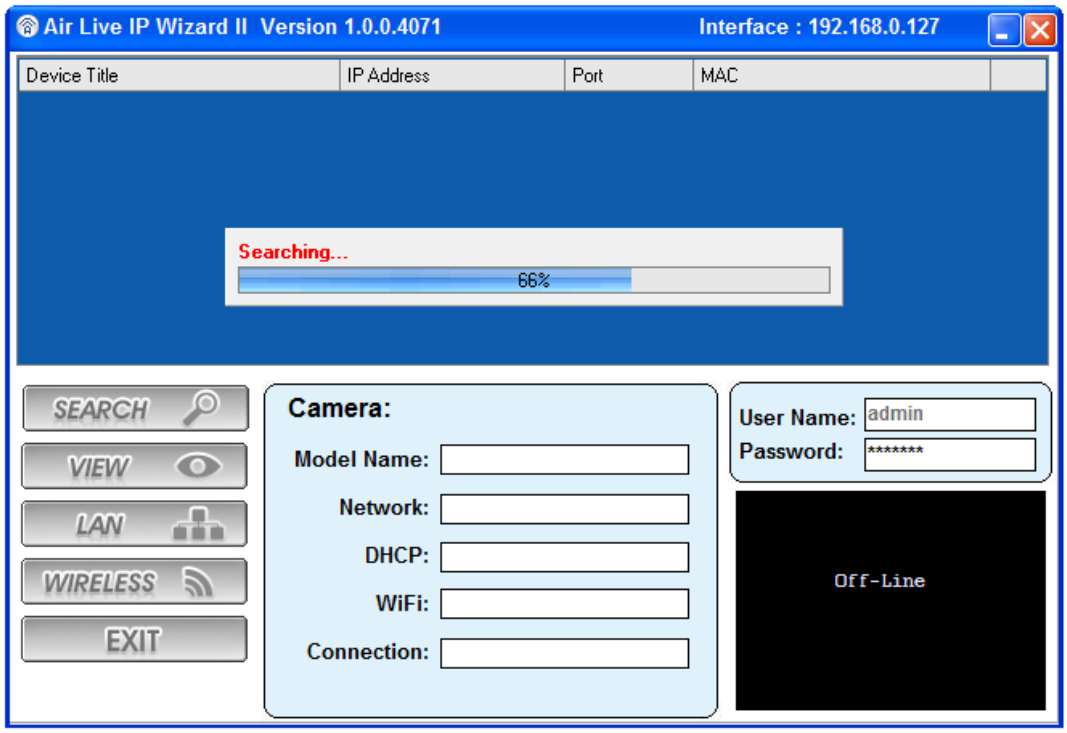
2.4 Connect to IP Camera

1. Insert the bundle CD into your PC/Laptop.
2. Auto Run Screen then shows up; click “Install Software → “IPWizard II” to install the configuration tool software.

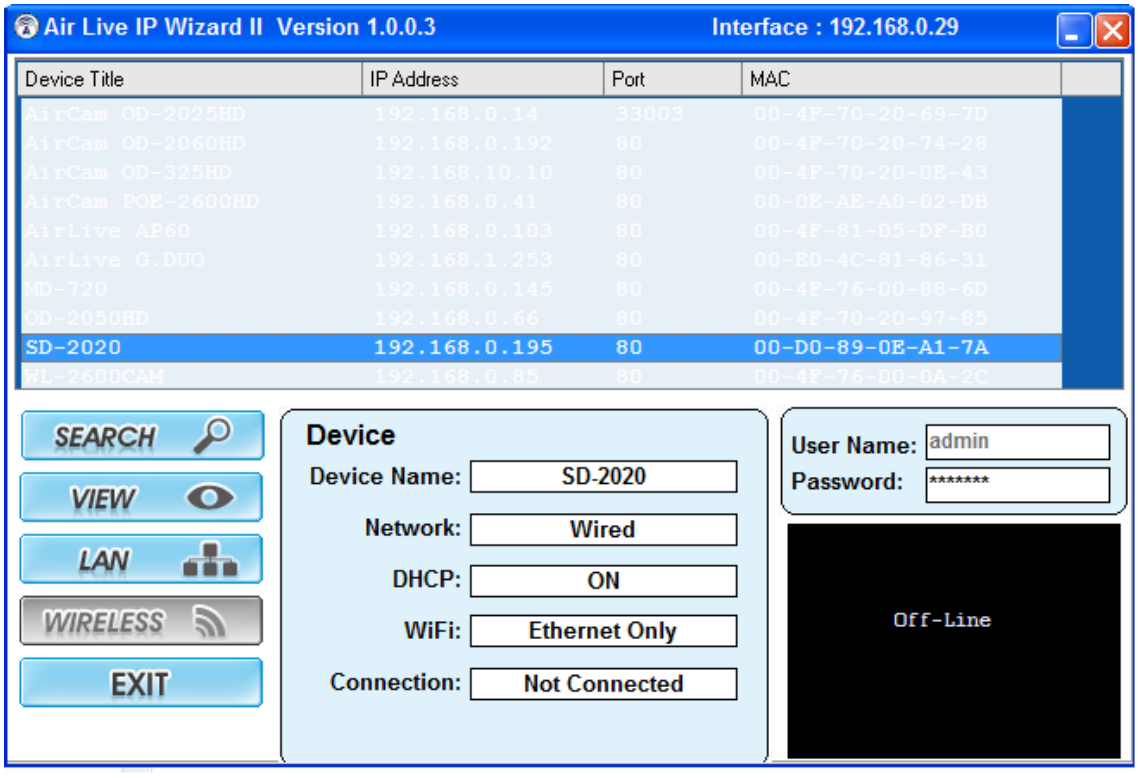

Air Live
SD-2020
/// 2-Megapixel 20X Optical Zoom
Speed Dome IP Camera
Install Software
User's Guide
Installation Video
Browse CD
EXIT
/// Utility & Manual CD
www.airlive.com


Air Live
SD-2020
/// 2-Megapixel 20X Optical Zoom
Speed Dome IP Camera
Camera IP Finder Utility
CamPro Express 64 Recorfing Software
Language Pack
EXIT
Main Menu
/// Utility & Manual CD
www.airlive.com

3. After completing installation, run the configuration tool software.



4. The Software scans the network and finds the IP Camera and then lists them in the dialog box.



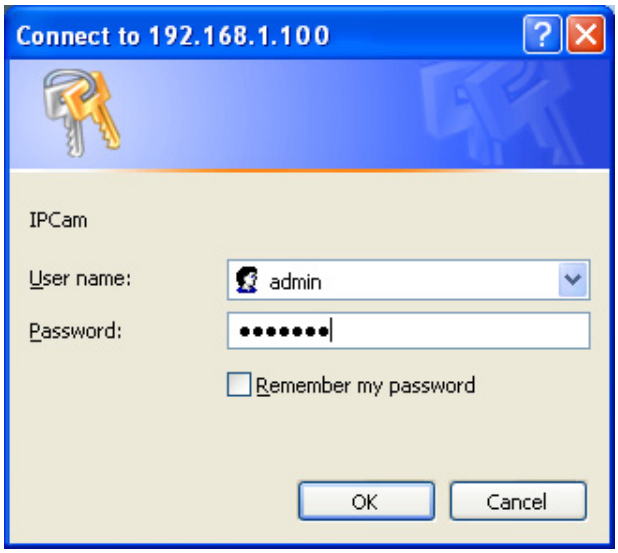
5. If the Camera's IP address is in the same IP segment as your LAN, select the founded IP Camera and double click on the item. Then, the default browser will show up and connect to the IP camera's Web automatically.

3 Using IP Camera via Web Browser

3.1 Windows Web Browser

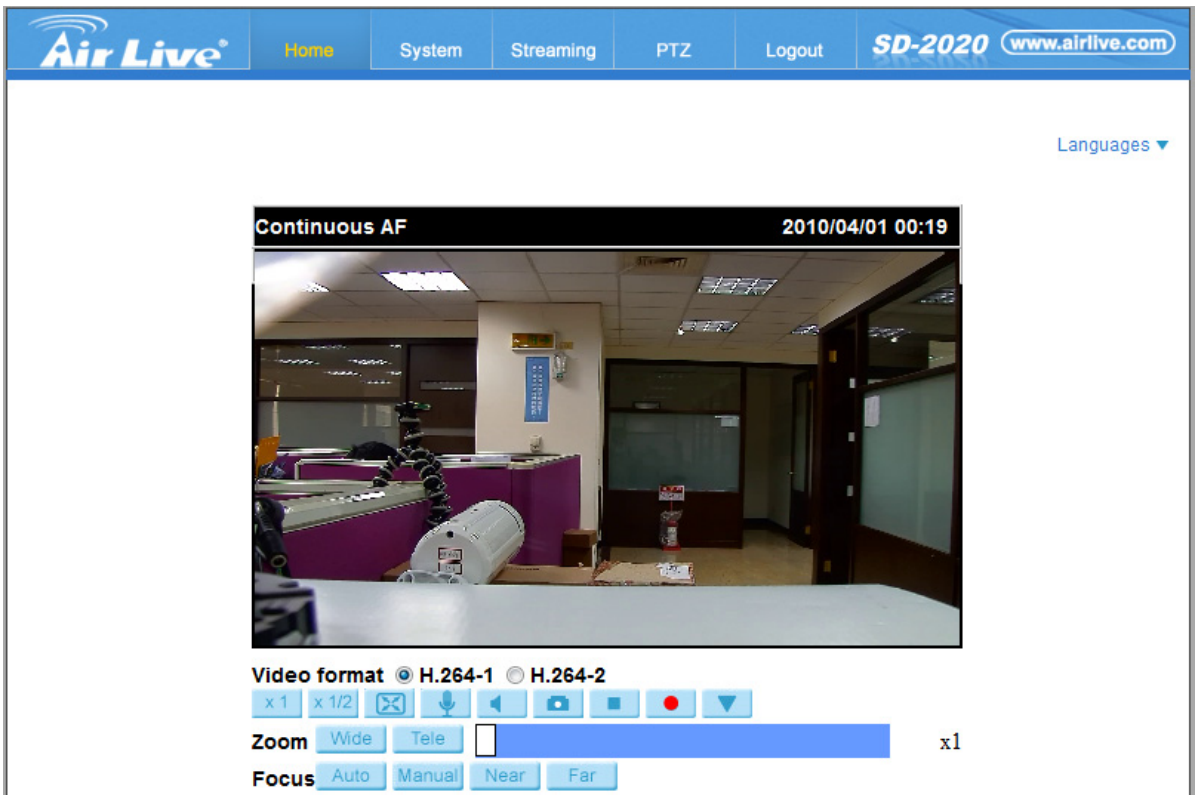
1. Open your web browser, and enter the IP address or host name of the IP camera in the Location / Address field of your browser.
   Note: If you only want to view the video without accessing Setting screen, enter "http://<IP>/index2.htm" as your web URL.

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



   Note: The default user name "**admin**" and the password "**airlive**" are set at the factory for the administrator. You can change them in the Account Menu. (Please check "System → Security → User")

3. The monitor image will be displayed in your browser. In the top side of main configuration are "System", "Streaming" and "PTZ". For more details, you can check the following chapters.


Air Live
Home
System
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SD-2020
www.airlive.com
Languages
Continuous AF
2010/04/01 00:19
Video format
H.264-1
H.264-2
x 1
x 1/2
Zoom
Wide
Tele
x1
Focus
Auto
Manual
Near
Far

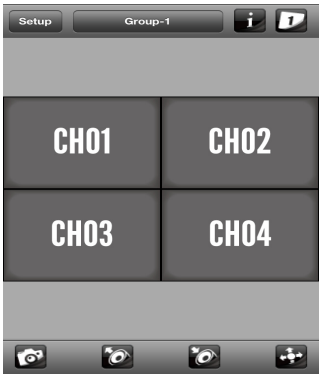
4 Operating IP Camera via Mobile Phone

4.1 Using IP Camera via iPhone

You can access to your IP camera via your iPhone. Please follow the setting process below. Then you can see the live view via iPhone.

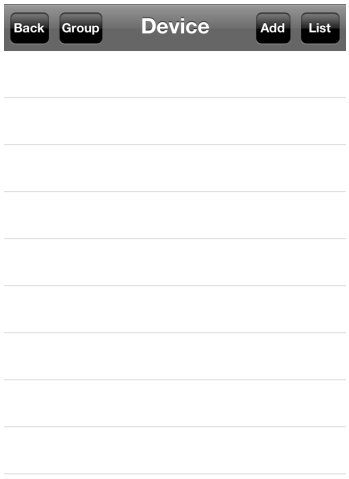
1. Download AirLive CamPro Mobile from APP store

2. Execute AirLive CamPro Mobile

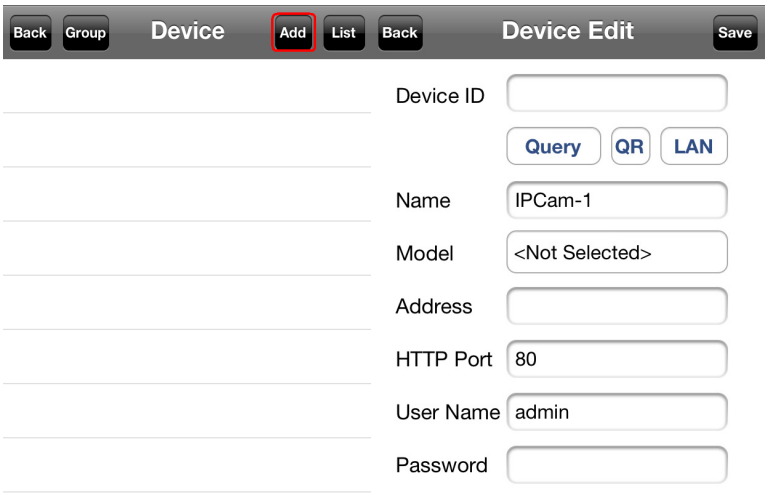


3. Click Setup button.

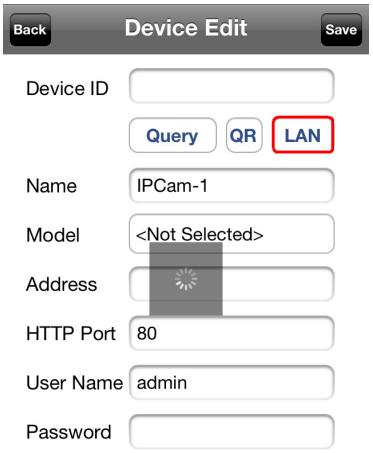
4. Setup page appears



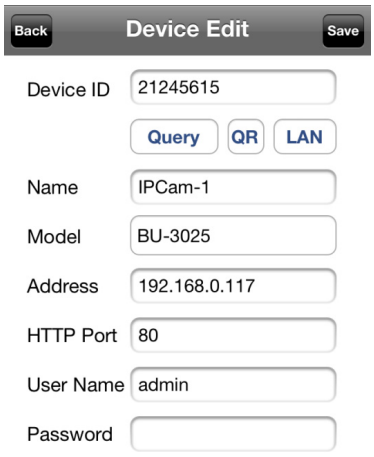
5. Click Add button.



6. Click LAN button and select the camera.

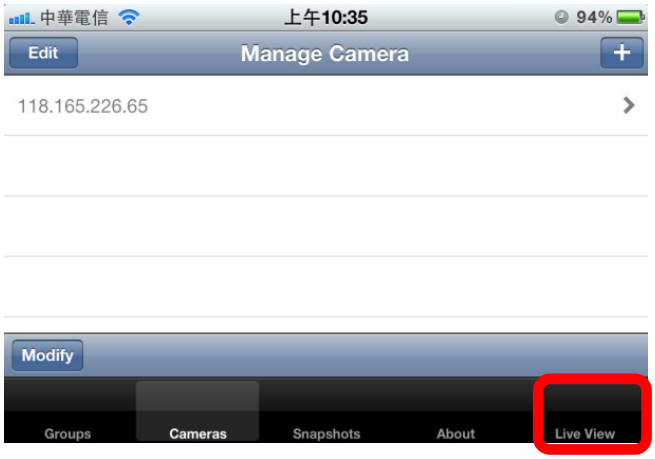


7. Model, Address, HTTP Port info appear on the page.

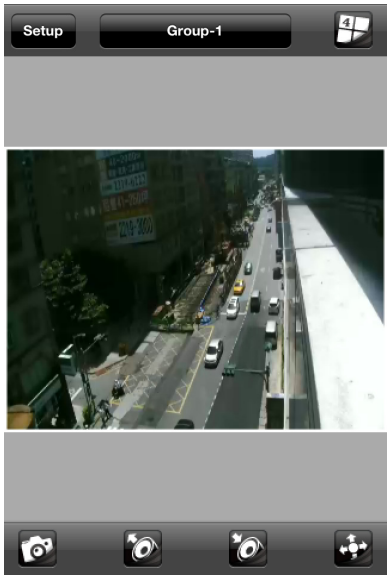


8. Key-in Username and Password then click OK button.

9. Click Live View button.



10. The video appears on the main screen.



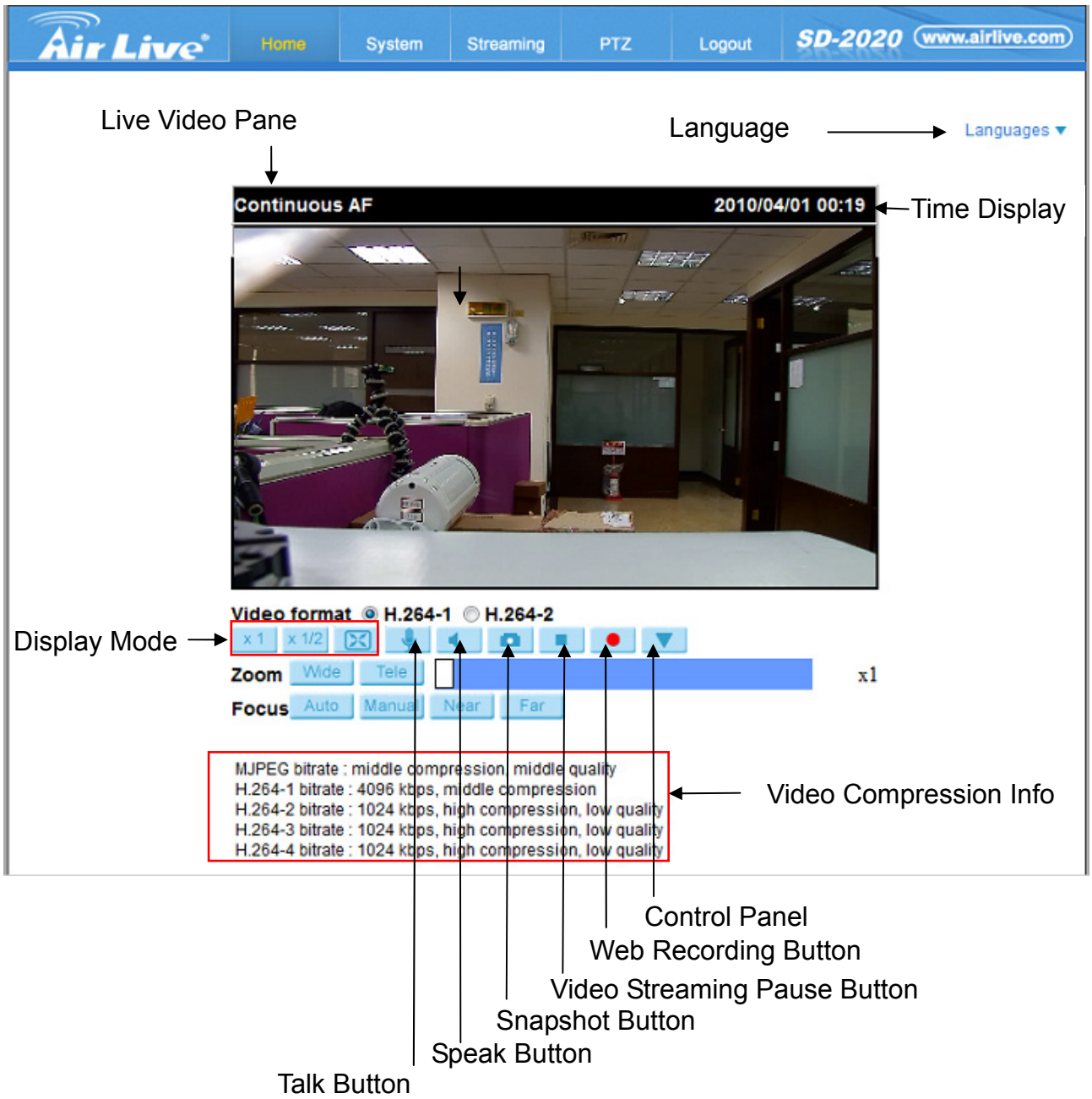
Note: App for Android will be available in 11/2013.

Note: The image is continuous snapshots, not video. Thus, live image can't be recorded here.

5 Configuration of Main Menu

In the top side of main configuration are **System, Streaming, PTZ and Logout**. For more details, please check the following Chapters.

In the top side, you can control Live View in your main Browser. The functions include below.



5.1 Live View

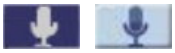
1. Language

Multiple languages are supported, including English, Spanish, German, Portuguese, and Russian etc. for the viewer window interface.

2. Digit Zoom control

In the full screen mode, users can implement digital PTZ by rotating the mouse wheel (for zoom in / out), and drag the mouse into any direction.

- **Screen Size Adjustment** 

Image display size can be adjusted to x1/2 and full screen.
- **Talk button** (on / off) 
Talk function allows the local site talks to the remote site. Click on the button to switch it to on / off.
NOTE: This function is only available for User who has granted this privilege by the Administrator.
- **Speaker button** (on / off) 
Click on the <Speaker> button to mute / activate the audio.
NOTE: This function is only available for User who has granted this privilege by the Administrator.
- **Snapshot button** 
Click on the button and the JPEG snapshots will automatically be saved in the appointed place. The default place of saving snapshots is: C:\. To change the storage location.
NOTE: For users with Windows 7 operating system, it is required to log on as an Administrator to implement the Web Recording function.
- **Video Streaming Pause / Restart button** (pause / restart) 
Click on the <Stop> button to disable video streaming, the live video will be displayed as black. Press the <restart> button to show the live video again.
- **Web Recording button** (on / off) 
Click on the <Recording> button and the Live View through the web browsing will be directly recorded to the specific location on the local hard drive, which could be configured in the <File Location> page. The default storage location for the web recording is: C:\.
NOTE: For users with Windows 7 operating system, it is required to log on as an Administrator to implement the Web Recording function.

- **Control Panel Button** (close / open) 

Click on the <Control Panel> button to open and close the Control Panel on the homepage.

- **Zoom Adjustment** (Wide / Tele) 

Click on the buttons <Wide / Tele> to control zoom in / out. Or move the cursor closely onto the zoom adjustment bar to the desired zoom ratio.

3. Focus Adjustment

- **Auto Focus** (Continuous AF) 

Click on the <Auto> button to enable AF mode. In this mode, the camera will keep in focus automatically and continuously regardless of zoom changes or any view changes. The Focus status will also be displayed above the live video pane.

- **Manual button** 

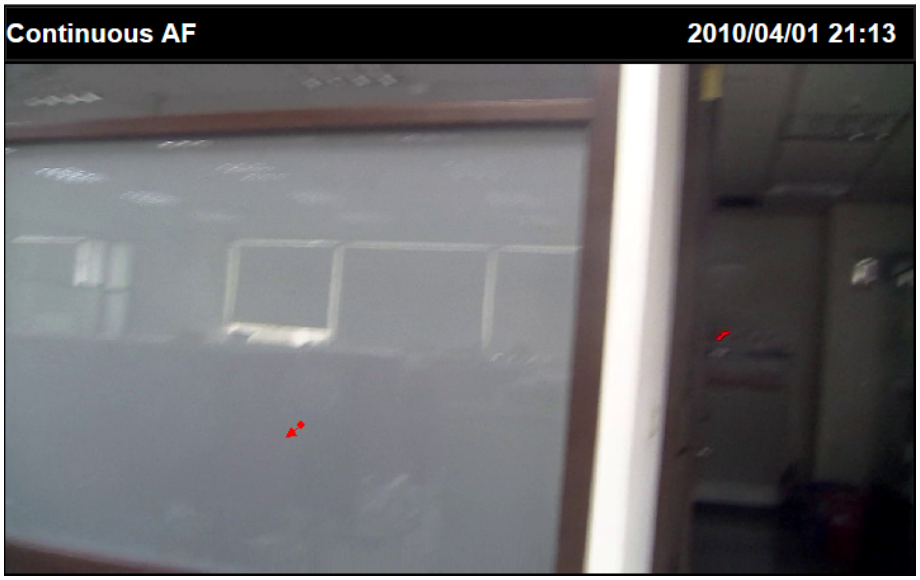
Click on the <Manual> button, and users can adjust focus manually via Near / Far buttons.

- **Nar / Far buttons** 

Click on the <Manual> button first, and users can adjust focus manually via <Near> and <Far> buttons. The status will also be displayed above the screen as shown below.

4. Pan/Tilt Control

Users can implement pan/tilt control by first moving the cursor to the live video pane; then left click and drag the pointer in any direction.



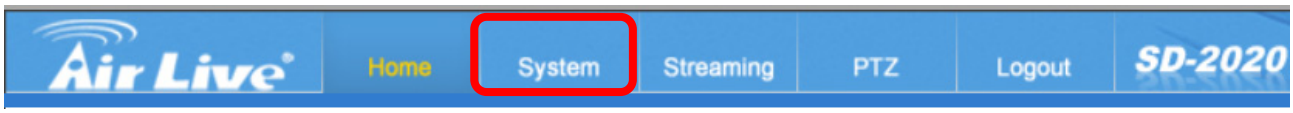
5. Optical / Digital Zoom Control

In Normal View display mode, users can implement zoom in / out by first moving the cursor to the live video pane and then rotating the mouse wheel. As in Full Screen mode, users can directly rotate the mouse wheel to zoom in / out on the image. Digital zoom is only available when the function is activated and which is set in <Camera-Misc1> page under the <PTZ> tab.

Furthermore, after clicking the <**Control Panel**> Button, the Control Panel will be shown as the figure below.

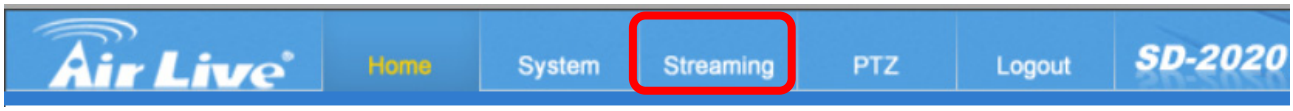
5.2 System

This function is only for the Administrator. In the top side of main configuration, you can see System as below. For more detail information, you can refer to Chapter 6.



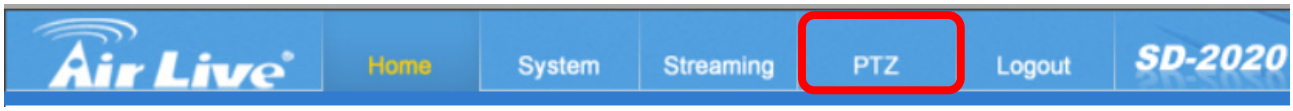
5.3 Streaming

This function is only for the Administrator. In the top side of main configuration, you can see Streaming as below. For more detail information, you can refer to Chapter 7.



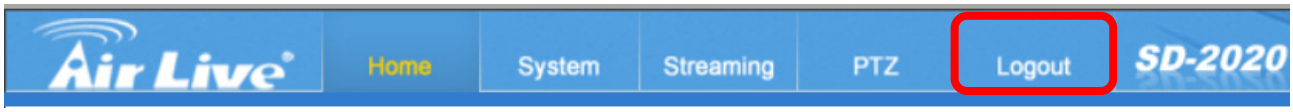
5.4 PTZ

This function is only for the Administrator. In the top side of main configuration, you can see PTZ as below. For more detail information, you can refer to Chapter 8.



5.5 Logout

In the top side of main configuration, you can see Logout as below. Click on the tab <Logout> on the top of the page, and the login window will pop up. This enables login with another user name.



6 System

Click the **System** to display 19 sub-menus as below.

System	System Security Network DDNS Mail FTP HTTP Application Motion Detection Network Failure Detection Storage Management Recording Schedule File Location View Information Factory Default Software Version Software Upgrade Maintenance

6.1 System

1. Host Name

The name is for camera identification. If alarm function is enabled and is set to send alarm message by Mail / FTP, the host name entered here will display in the alarm message.

2. Time Zone

Select the time zone from the drop-down menu.

3. Enable Daylight Saving Time

To enable DST, please check the item and then specify time offset and DST duration. The format for time offset is [hh:mm:ss]; for instance, if the amount of time offset is one hour, please enter “01:00:00” into the field.

4. Time Format

Choose a time format (yyyy/mm/dd or dd/mm/yyyy) from the drop-down menu. The time format for “PC date” under <Sync with Computer Time> and “Date” under <Manual> will be changed according to the selected format.

5. Sync with Computer Time

Select the item and video date and time display will synchronize with the PC’s.

NOTE: Users **MUST** click on the <Save> button to confirm the setting. Otherwise the time will not be synced.

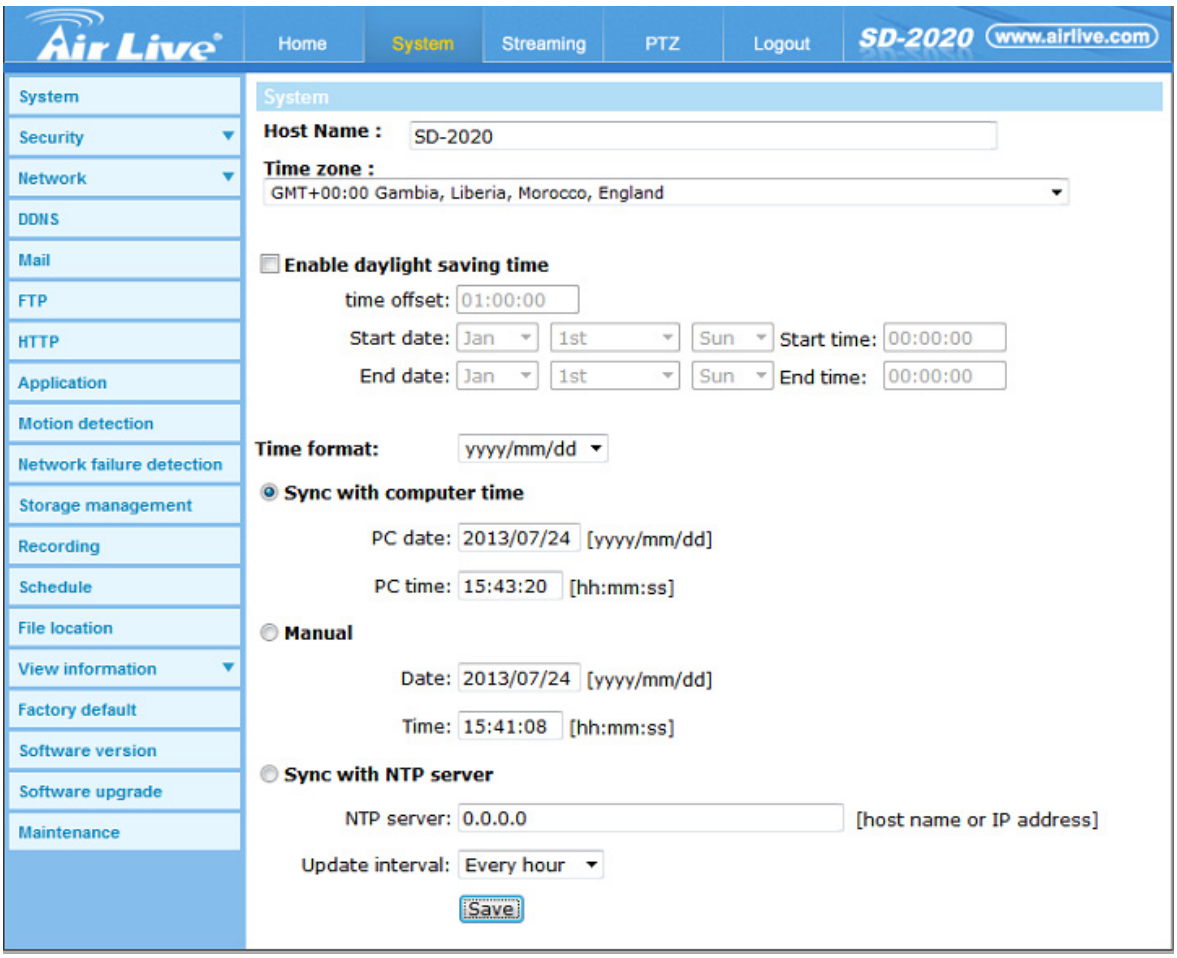
6. Manual

The Administrator can set video date, time and day manually. Entry format should be identical with that shown next to the center field.

7. Sync with NTP Server

Network Time Protocol (NTP) is an alternate way to synchronize the camera’s clock with a NTP server. Please specify the server that is wished to synchronize in the center field. Then select an update interval from the drop-down menu. For further information about NTP, please see the web site: www.ntp.org.

NOTE: The synchronization will be done every time the camera boots up.



6.2 Security

Click the **Security** to display five sub-menus to provide the <User>, <HTTPS>, <IP Filter>, and <IEEE 802.1X> settings of the camera.

1. User

- Admin Password

Change the administrator's password by inputting the new password in both text boxes. The input characters/numbers will be displayed as dots for security purposes. After clicking on <Save>, the web browser will ask the Administrator for the new password for access. The maximum length of the password is 14 digits.

For the first time use (default value), input the

User Name: admin

Password: airlive

NOTE: The following characters are valid: A-Z, a-z, 0-9, !#$%&'-.@^_~.

- Add user

Type the new user's name and password and click on <Add> to add the new user. Both user name and password can be up to 16 characters. The new user will be displayed in the user name list. There is a maximum of twenty user accounts. Each user can be assigned the privileges of **<Camera control>**, **<Talk>** and **<Listen>**.

- **I/O access**

  This item supports fundamental functions that enable users to view video when accessing to the camera.

- **Camera control**

  This item allows the appointed User to change camera parameters on the Camera Setting page.

- Talk/Listen

  Talk and Listen functions allow the appointed user in the local site (PC site) communicating with, for instance, the administrator in the remote site

- Manage User

- Delete user

  To delete a user, select the user name that is wished like to delete from the drop-down user list and then click on <Delete> to remove it.

- Edit user

  Select a user name from the drop-down user list and click on <Edit> to edit the user's password and privilege.

NOTE: It is required to enter the User password as well as select the function open to the user. When finished, click on <Save> to modify the account authority.

2. HTTPS

<HTTPS> allows secure connections between the IP Camera and web browser using <Secure Socket Layer (SSL)> or <Transport Layer Security (TLS)>, which ensure camera settings or Username / Password info from snooping. It is required to install a self-signed certificate or a CA-signed certificate for implementing <HTTPS>.

To use HTTPS on the IP Camera, a HTTPS certificate must be installed. The HTTPS certificate can be obtained by either creating and sending a certificate request to a Certificate Authority (CA) or creating a self-signed HTTPS certificate, as described below.

- Create Self-signed Certificate

Before a CA-issued certificate is obtained, users can create and install a self-signed certificate first.

Click on <Create> button under “Create self-signed certificate” and provide the requested information to install a self-signed certificate for the IP Camera. Please refer to the last part of this section:

NOTE: The self-signed certificate does not provide the same high level of security as when using a CA-issued certificate.

-Install Signed Certificate

Click on the <Create Certificate Request> button to create and submit a certificate request in order to obtain a signed certificate from CA.

Provide the request information in the create dialog. Please refer to the following Provide the Certificate Information for more details.

When the request is complete, the subject of the Created Request will be shown in the field. Click on <Properties> below the Subject field, copy the PEM-formatted request and send it to the selected CA.

When the signed certificate is returned, install it by uploading the signed certificate.

-Provide the Certificate Information

To create a Self-signed HTTPS Certificate or a Certificate Request to CA, please enter the information as requested:

	Create Self Signed Certificate	Create Certificate Request
Country	√	√
State or Province	√	√
Locality	√	√
Organization	√	√
Organizational Unit	√	√
Common Name	√	√
Valid Day	√	-

- Country

Enter a two-letter combination code to indicate the country the certificate will be used in. For instance, type in “US” to indicate United States.

- State or province

Enter the local administrative region.

- Locality

Enter other geographical information.

- Organization

Enter the name of the organization to which the entity identified in “Common Name” belongs.

- Organization Unit

Enter the name of the organizational unit to which the entity identified in “Common Name” belongs.

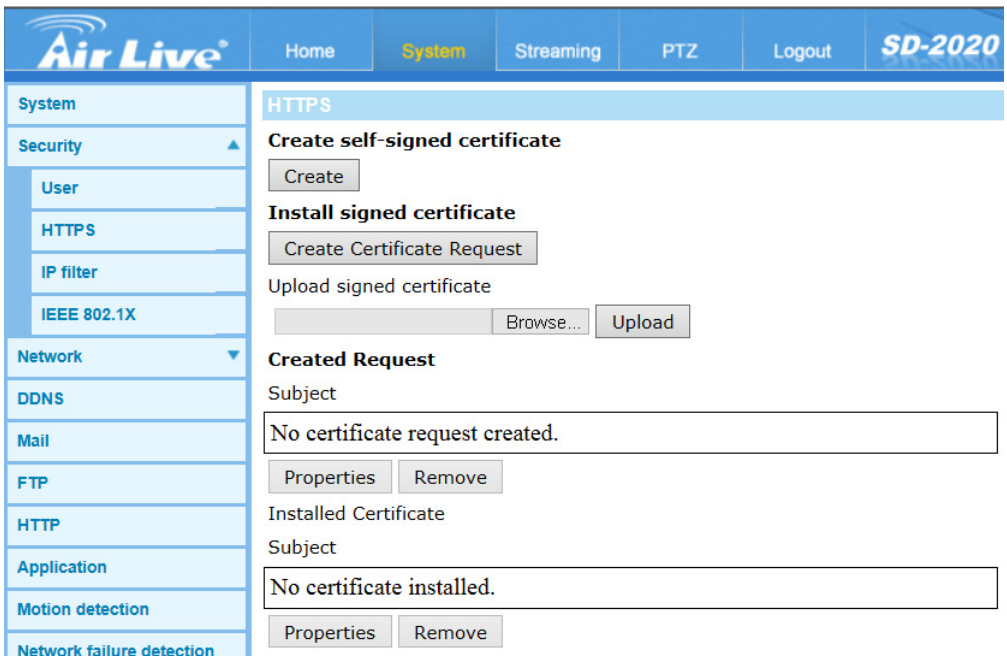
- Common Name

Indicate the name of the person or other entity that the certificate identifies (often used to identify the website).

- Valid days

Enter the period in days (1~9999) to indicate the valid period of certificate.

Click on <OK> to save the Certificate Information after complete.



3. IP Filter

Using the IP filter, access to the IP Camera can be restricted by denying / allowing specific IP addresses.

- Enable IP Filter

Check the box to enable the IP Filter function. Once enabled, the listed IP addresses (IPv4) will be allowed / denied access to the IP Camera.

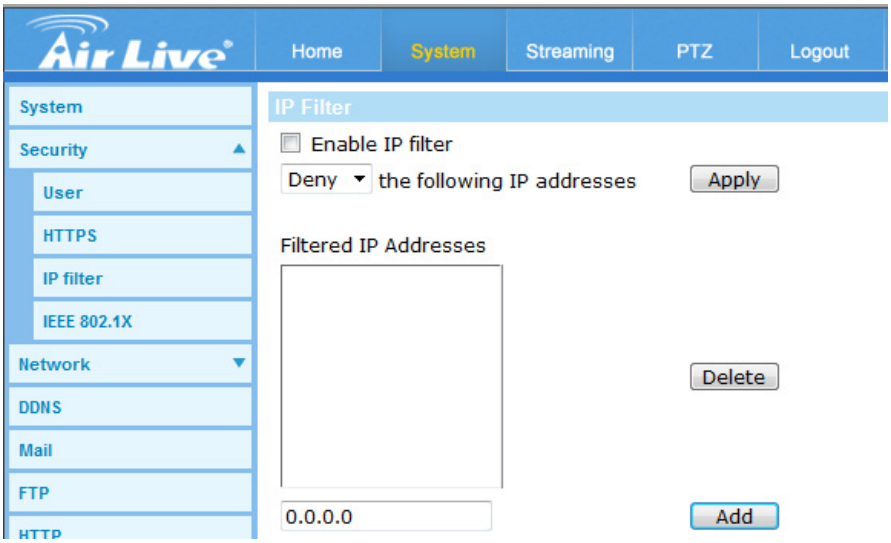
Select <Allow> or <Deny> from the drop-down list and click on the <Apply> button to determine the IP Filter behavior.

- Add / Delete IP Address

Input the IP address and click on the <Add> button to add a new filtered address.

The Filtered IP Addresses list box shows the currently configured IP addresses. Up to 256 IP address entries may be specified.

To remove an IP address from the list, please select the IP and then click the <Delete> button.



4. IEEE 802.1X

The IP Camera is allowed to access a network protected by 802.1X/EAPOL (Extensible Authentication Protocol over LAN).

Users need to contact with the network administrator for gaining certificates, user IDs and passwords

- **CA Certificate**

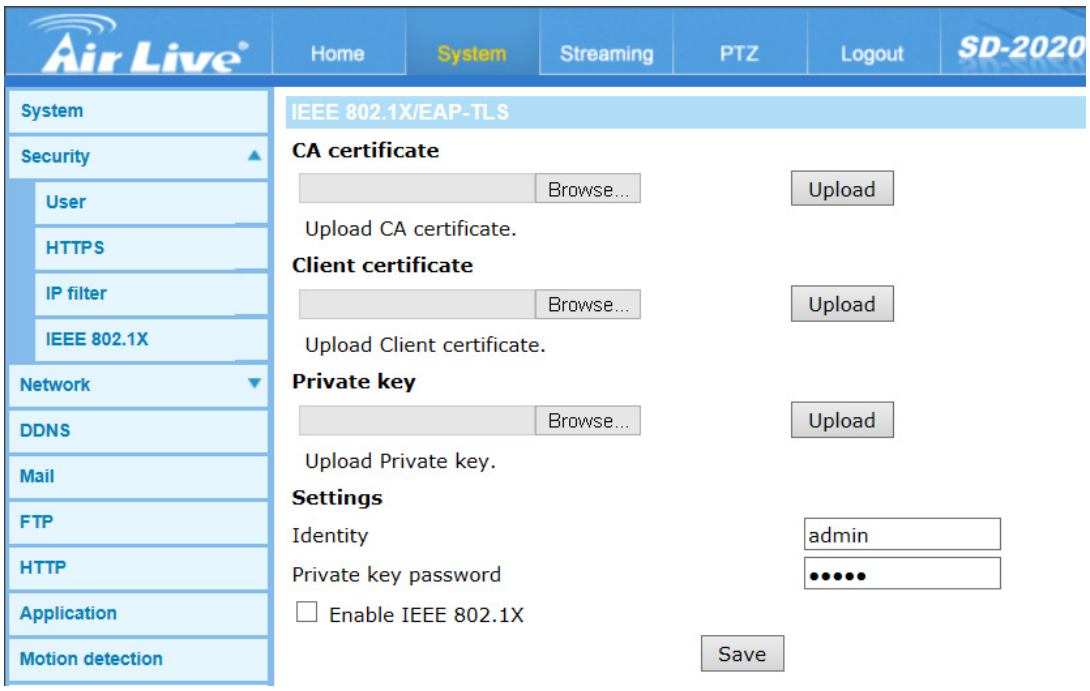
The CA certificate is created by the Certification Authority for the purpose of validating itself. Upload the certificate for checking the server's identity.

-**Client Certificate / Private Key**

Upload the Client Certificate and Private Key for authenticating the IP Camera itself.

-**Settings**

- Identity
  Enter the user identity associated with the certificate. Up to 16 characters can be used.
- Private Key Password
  Enter the password (maximum 16 characters) for user identity.
- Enable IEEE 802.1X
  Check the box to enable IEEE 802.1X.
  Click on <Save> to save the IEEE 802.1X / EAP- TLS setting.



6.3 Network

Click on the <Network> category, there will be a drop-down menu with tabs including <Basic>, <QoS>, <SNMP>, and <UPnP>.

1. Basic

- General

- Get IP address automatically (DHCP)

  The camera's default setting is <Use fixed IP address>. Please refer to User's Manual for login with the default IP address.

  If select <Get IP address automatically>, after the IP Camera restarts, users can search it through the installer program: DeviceSearch.exe, which can be found in "DeviceSearch" folder in the supplied CD.

  NOTE: Please make the record of the IP Camera's MAC address, which can be found in the label of the camera, for identification in the future.

- Use fixed IP address
  To setup static IP address, select <Use fixed IP address> and move the cursor to the IP address blank and insert the new IP address, ex. 192.168.7.123; then go to the Default gateway (explained later) blank and change the setting, ex. 192.168.7.254. Press <Save> to confirm the new setting.

  When using static IP address to login to the IP Camera, users can access it either through "DeviceSearch" software (refer to User's Manual) or input the IP address in the URL bar and click on <Enter>.

  - IP address
    This is necessary for network identification.

  - Subnet mask
    It is used to determine if the destination is in the same subnet. The default value is "255.255.255.0".

  - Default gateway
    This is the gateway used to forward frames to destinations in different subnet. Invalid gateway setting will fail the transmission to destinations in different subnet.

  - Primary DNS
    Primary DNS is the primary domain name server that translates hostnames into IP addresses.

  - Secondary DNS
    Secondary DNS is a secondary domain name server that backups the primary DNS.

IP Address (IPv4/IPv6)	Enter the IP address of the camera. The default setting is 192.168.1.100.
Subnet Mask	Enter the Subnet Mask of the camera. The default setting is 255.255.255.0.
Default Gateway	Enter the Default Gateway of the camera. The default setting is 192.168.1.254
Primary/ Secondary DNS	DNS (Domain Name System) translates domain names into IP addresses. Enter the Primary DNS and Secondary DNS that are provided by ISP.

- Use PPPoE
  For the PPPoE users, enter the PPPoE Username and Password into the fields, and click on the <Save> button to complete the setting.

- **Advanced**
  - Web Server port
    The default web server port is 80. Once the port is changed, the user must be notified the change for the connection to be successful. For instance, when the Administrator changes the HTTP port of the IP Camera whose IP address is 192.168.0.100 from 80 to 8080, the user must type in the web browser "http://192.168.0.100:8080" instead of "http://192.168.0.100".

  - RTSP port
    The default setting of RTSP Port is 554; the setting range is from 1024 to 65535.

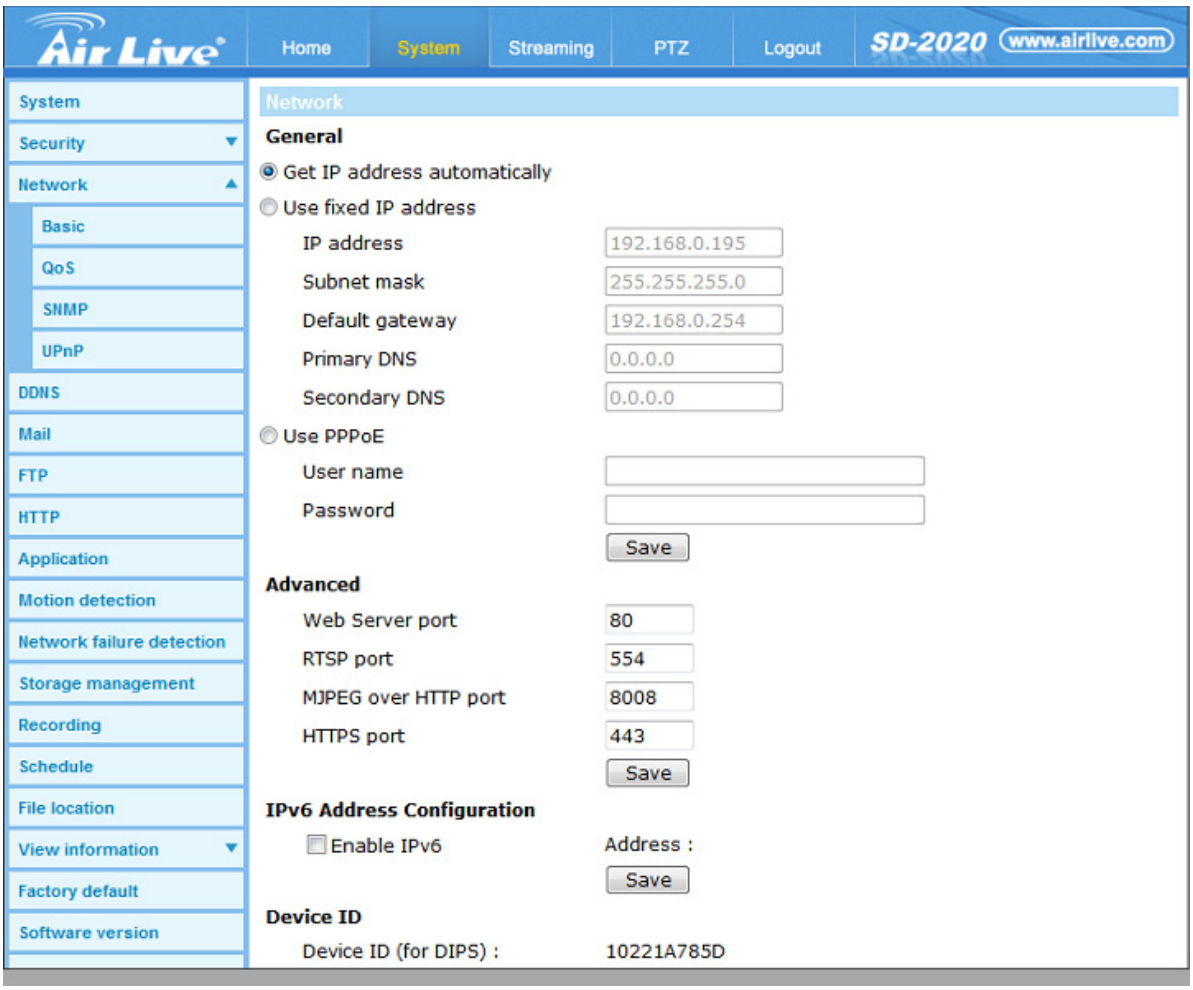
  - MJPEG over HTTP port
    The default setting of MJPEG over HTTP Port is 8008; the setting range is from 1024 to 65535.

  - HTTPS port
    The default setting of HTTPS Port is 443; the setting range is from 1024 to 65535.

  NOTE: Be aware to choose the different port from the one set for the web server port.

- **IPv6 Address Configuration**
  With IPv6 support, users can use the corresponding IPv6 address for browsing. Enable IPv6 by checking the box and click on <Save> to complete the setting.

- **DIPS ID**
  It's a unique number of each device for identification and this ID is used for DIPS. This function now is reserved for future use.



2. QoS

QoS allows providing differentiated service levels for different types of traffic packets, which guarantees delivery of priority services especially when network congestion occurs. Adapting the Differentiated Services (DiffServ) model, traffic flows are classified and marked with DSCP (DiffServ Codepoint) values, and thus receive the corresponding forwarding treatment from DiffServ capable routers.

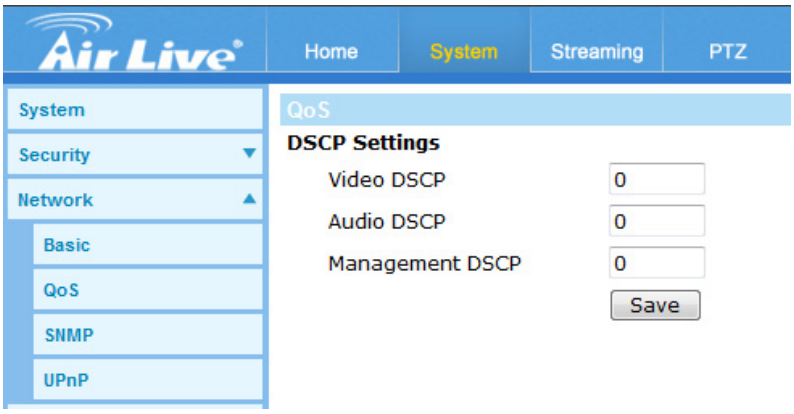
- DSCP Settings

The DSCP value range is from 0 to 63. The default DSCP value is 0, which means DSCP is disabled. The IP Camera uses the following QoS Classes: Video, Audio and Management.

- Video DSCP
  The class consists of applications such as MJPEG over HTTP, RTP/RTSP and RTSP/HTTP.
- Audio DSCP
  This setting is only available for the IP Cameras that support audio.

- Management DSCP
  The class consists of HTTP traffic: Web browsing.

NOTE: To enable this function, please make sure the switches / routers in the network support QoS.



3. SNMP

With Simple Network Management Protocol (SNMP) support, the IP Camera can be monitored and managed remotely by the network management system.

- SNMP v1 / v2

- Enable SNMP v1 / v2
  Select the version of SNMP to use by checking the box.
- Read Community
  Specify the community name that has read-only access to all supported SNMP objects. The default value is “public”.
- Write Community
  Specify the community name that has read / write access to all supported SNMP objects (except read-only objects). The default value is “write”.

- Traps for SNMP v1 / v2/ v3

Traps are used by the IP Camera to send massages to a management system for important events or status changes.

- Enable Traps
  Check the box to activate trap reporting.
- Trap address
  Enter the IP address of the management server.

- Trap community
  Enter the community to use when sending a trap message to the management system.

- Trap Option

- Warm Start
  A Warm Start SNMP trap signifies that the SNMP device, i.e. IP Camera, performs software reload.

Click on <Save> button when complete.

4. UPnP

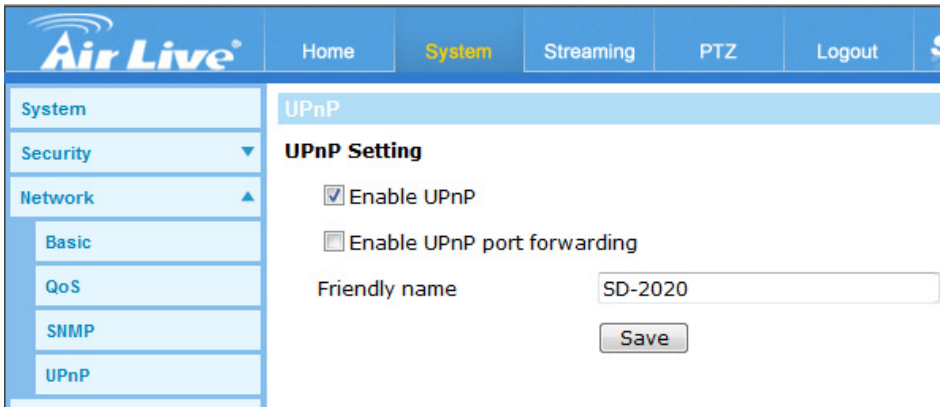
- UPnP Setting

- Enable UPnP
  When the UPnP is enabled, whenever the IP Camera is presented to the LAN, the icon of the connected IP Cameras will appear in My Network Places to allow for direct access.

NOTE: To enable this function, please make sure the UPnP component is installed on the computer.

- Enable UPnP port forwarding
  When the UPnP port forwarding is enabled, the IP Camera is allowed to open the web server port on the router automatically.
  NOTE: To enable this function, please make sure that the router supports UPnP and it is activated.

- Friendly name
  Set the name for the IP Camera for identity.

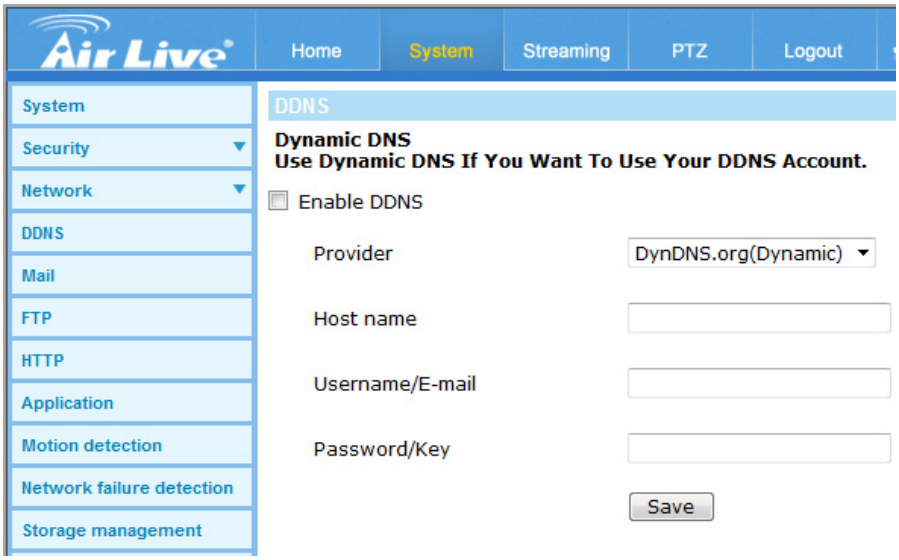


6.4 DDNS

- Dynamic DNS

Dynamic Domain Name System (DDNS) allows a host name to be constantly synchronized with a dynamic IP address. In other words, it allows those using a dynamic IP address to be associated to a static domain name so others can connect to it by name.

- Enable DDNS
  Check the item to enable DDNS.
- Provider
  Select one DDNS host from the provider list.
- Host name
  Enter the registered domain name in the field.
- Username/E-mail
  Enter the username or e-mail required by the DDNS provider for authentication.
- Password/Key
  Enter the password or key required by the DDNS provider for authentication.

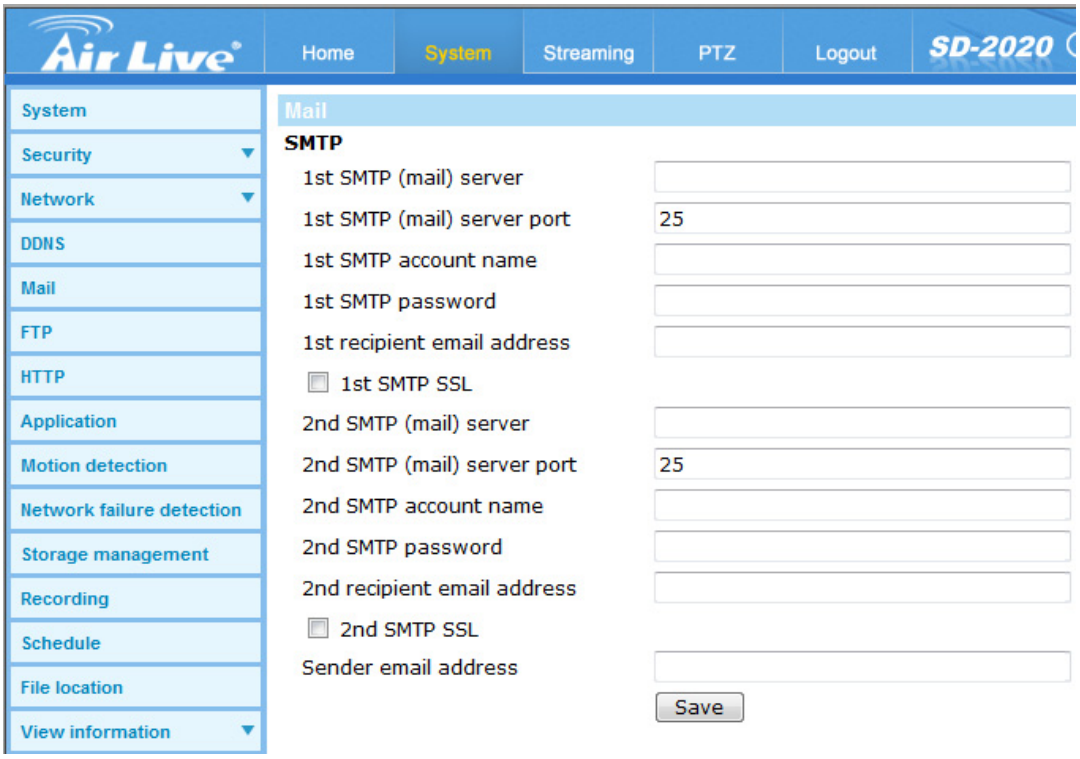


6.5 Mail

- SMTP

The Administrator can send an e-mail via Simple Mail Transfer Protocol (SMTP) when an alarm is triggered. SMTP is a protocol for sending e-mail messages between servers. SMTP is a relatively simple, text-based protocol, where one or more recipients of a message are specified and the message text is transferred.

Two sets of SMTP can be configured. Each set includes SMTP Server, Account Name, Password and E-mail Address settings. For SMTP server, contact the network service provider for more specific information.

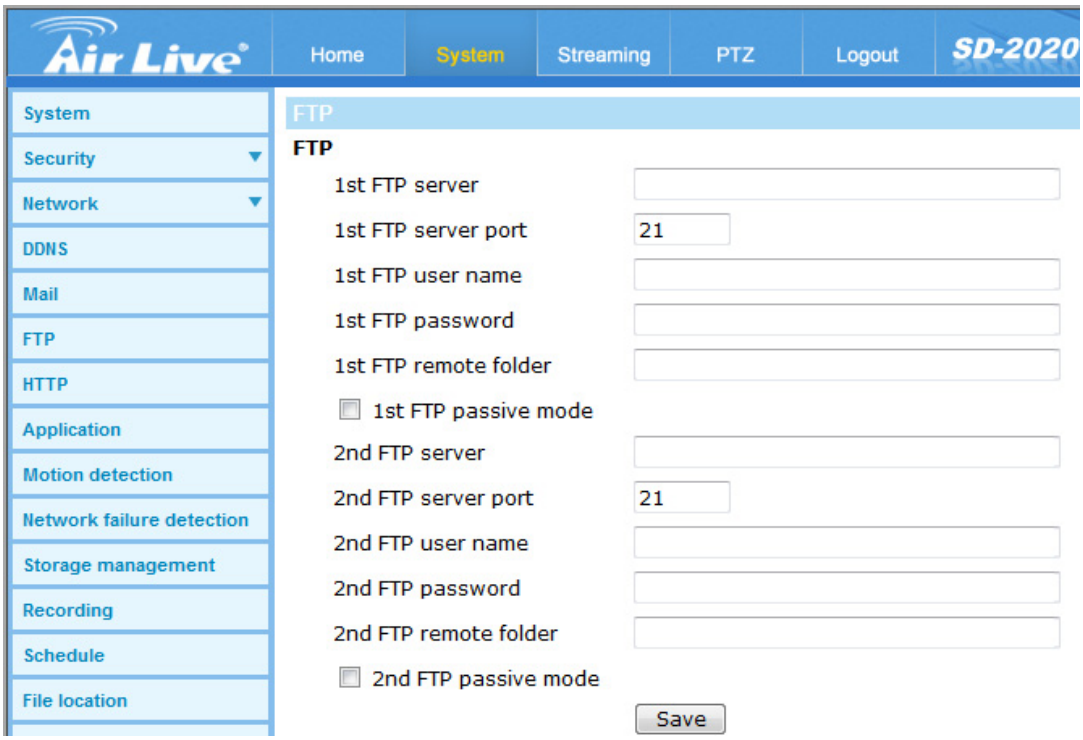


6.6 FTP

- FTP

The Administrator can set as sending alarm message to a specific File Transfer Protocol (FTP) site when an alarm is triggered. Users can assign alarm message to up to two FTP sites. Enter the FTP details, which include server, server port, user name, password and remote folder, in the fields.

Click on <Save> when finished.



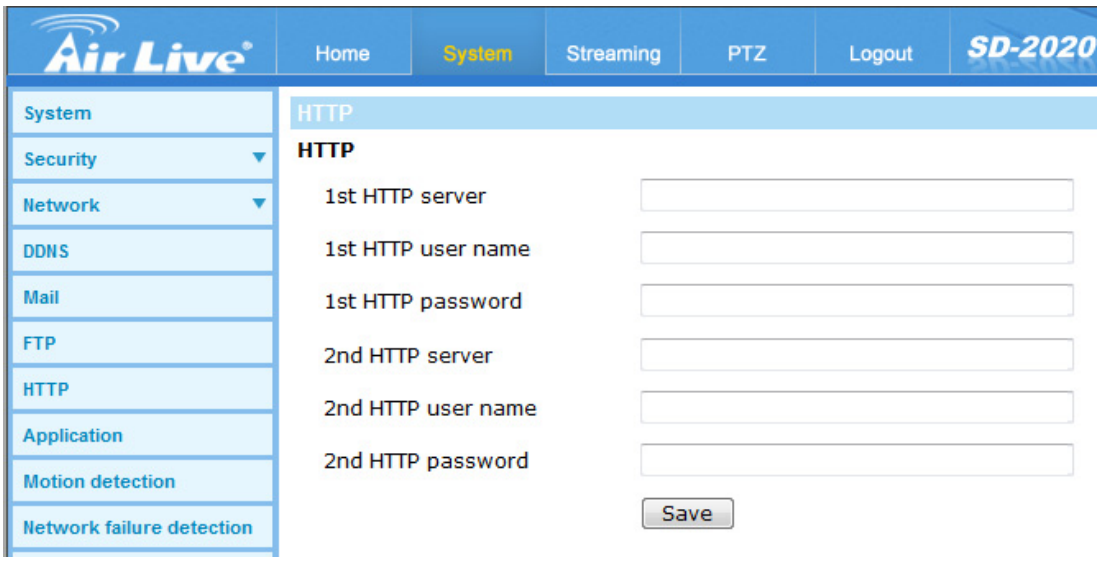
6.7 HTTP

- HTTP

A HTTP Notification server can listen for notification messages from IP Cameras by triggered events. Enter the HTTP details, which include server name (for instance, http://192.168.0.1/admin.php), user name, and password in the fields. <Alarm> triggered and <Motion Detection> notifications can be sent to the specified HTTP server.

Click on <Save> when finished.

Please refer to: section Application> Send HTTP notification or Motion Detection>Send HTTP notification for HTTP Notification settings.



6.8 Application

The Camera equips four alarm inputs and two relay outputs for cooperating with alarm system to catch events' images.

- Alarm Pin Selection

Select an alarm pin (1~4) which is to be configured from the <Alarm Pin Selection> field. Then click on the button <Edit> below the field to carry on alarm programming.

- Alarm Pin Status

- Alarm Setting
  - Alarm Switch
    The default setting for the Alarm Switch function is <Off>. Enable the function by selecting <On>. Users can also activate the function according to the schedule previously set in the <Schedule> setting page. Select <By schedule> and click <Please select…> to choose the desired schedule from the drop-down menu.
  - Alarm Type
    Select an alarm type, <Normal close> or <Normal open>, that corresponds with the alarm application.

- Triggered Action (Multi-option)
  The Administrator can specify alarm actions that will take at an alarm occurrence. All options are listed as follows:

- Enable Alarm Output 1/2
  Select these items to enable alarm relay outputs.

- Send Message by FTP/E-Mail
  The Administrator can select whether to send an alarm message by FTP and/or E-Mail when an alarm is triggered.

- Upload Image by FTP
  Select this item and the Administrator can assign a FTP site and configure various parameters. When the alarm is triggered, event images will be uploaded to the appointed FTP site.

  <Pre-trigger buffer> function allows users to check what happened to cause the trigger. The <Pre-trigger buffer> frame rate could be pre-determined.

  On the other hand, <Post-trigger buffer> is for users to upload certain amount of images after the alarm input is triggered.

  Check the box <Continue image upload> to upload the triggered images during certain time or keep uploading until the trigger is off. Select <Upload for __sec> and enter the duration in the blank. The images of the duration will be uploaded to FTP when the alarm input is triggered. The setting range is from 1 to 9999 seconds. Select <Upload during the trigger active> to make the images keep being uploaded to FTP during the trigger active until the alarm is released. Set the Image frequency as the upload frame rate. The setting range is from 1 frame to 15 frames.

  NOTE: Make sure FTP configuration has been completed. Refer to section FTP for further details.

- Upload Image by E-Mail
  Select this item and the Administrator can assign an e-mail address and configure various parameters. When the alarm is triggered, event images will be sent to the appointed e-mail address.

  <Pre-trigger buffer> function allows users to check what happened to cause the trigger. The <Pre-trigger buffer> frame rate could be pre-determined.

On the other hand, <Post-trigger buffer> is for users to upload certain amount of images after alarm input is triggered.
Check the box <Continue image upload> to upload the triggered images during certain time or keep uploading until the trigger is off. Select <Upload for __sec> and enter the duration in the blank. The images of the duration will be uploading by E-mail when the alarm input is triggered. The setting range is from 1 to 9999 seconds. Select <Upload during the trigger active> to make the images keep being uploaded to E-mail during the trigger active until the alarm is released. Set the Image frequency as the upload frame rate. The setting range is from 1 frame to 15 frames.

NOTE: Make sure SMTP configuration has been completed. Please refer to section Mail for further details.

- PTZ Function
  Assign a camera function: Preset, Sequence, Autopan or Cruise, and specify a Preset Point / Sequence Line / Autopan Path / Cruise Line for the camera to perform at an alarm occurrence.

  NOTE: Please refer to the sections through Preset Programming to Sequence Line Programming for details of Preset Point / Cruise Line / Autopan Path / Sequence Line setups.

  If the selected function is <Preset>, it is required to enter its dwell time (1 ~ 256 sec.) in the corresponding field as shown below. When the alarm is triggered, the camera will go to the selected Preset Point and stay there for a user-defined period of time. As for other function modes, the camera will keep executing the specified function; to stop the performance, simply change the camera's status.

  NOTE: The dwell time is only adjustable when selecting **Preset** as the alarm action. When the dwell time is up, the Camera will go back to its trigger position and recheck alarm pin status.

- Send HTTP notification
  Check this item, select the destination HTTP address, and specify the parameters for event notifications by <Alarm> triggered. When an alarm is triggered, the notification can be sent to the specified HTTP server.

For instance, if the custom parameter is set as" action=1&group=2", and the HTTP server name is" http://192.168.0.1/admin.php", the notification will be sent to HTTP server as" http://192.168.0.1/admin.php? action=1&group=2" when alarm is triggered.

- Record Stream to SD Card
  Select the item and the alarm-triggered recording will be saved into the Micro SD card.

  Pre-trigger buffer recording function allows users to check what happened to cause the trigger. The pre-trigger buffer time range is from 1 to 3 seconds. Select <Upload for __ sec> to set the recording duration after alarm is triggered. The setting range is from 1 to 99999 seconds. Select <Upload during the trigger active> to record the triggered video until the trigger is off.

  NOTE: Please make sure the local recording (with Micro SD / SDHC card) is activated so that this function can be implemented. Refer to section Recording for further details.

- File Name

Enter a file name in the File name field, ex. image.jpg. The uploaded image's file name format can be set in this section. Please select the one that meets the requirements.

- Add date/time suffix
  File name: imageYYMMDD_HHNNSS_XX.jpg
  Y: Year, M: Month, D: Day
  H: Hour, N: Minute, S: Second
  X: Sequence Number

- Add sequence number suffix (no maximum value)
  File name: imageXXXXXXX.jpg
  X: Sequence Number

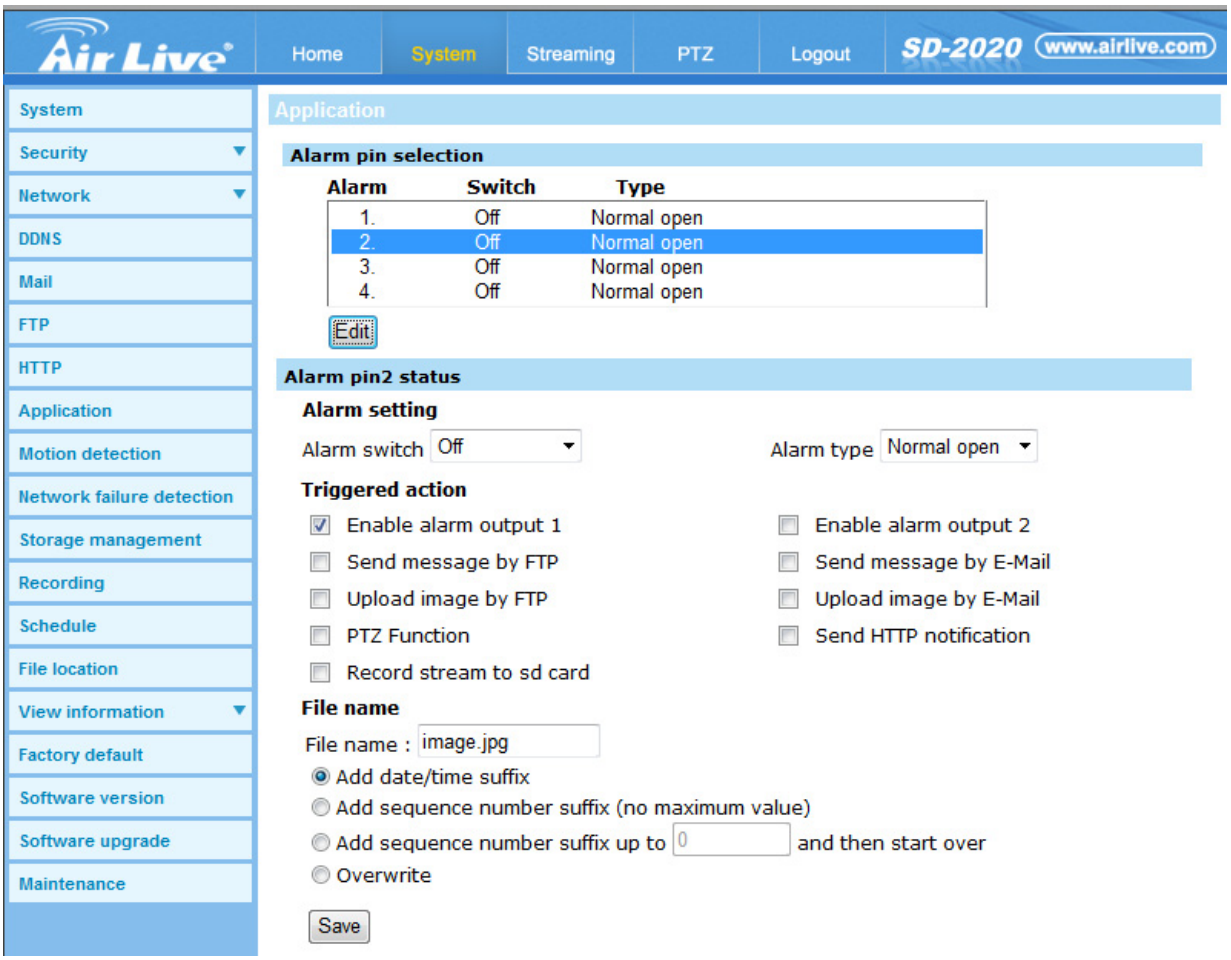
- Add sequence number suffix (limited value)
  File Name: imageXX.jpg
  X: Sequence Number

  The file name suffix will end at the number being set. For example, if the setting is up to "10," the file name will start from 00, end at 10, and then start all over again.

- Overwrite
  The original image in the FTP site will be overwritten by the new uploaded file with a static filename.

- Save

After complete all the settings mentions above, please click on the <Save> button to save all the settings on this page.



6.9 Motion Detection

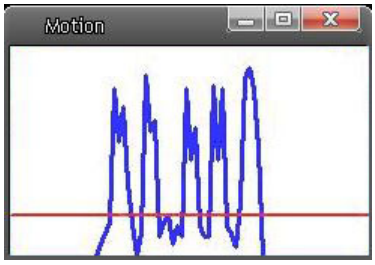
Motion Detection function allows detecting suspicious motion and triggering alarms when motion volume in the detected area reaches / exceeds the determined sensitivity threshold value.

The function supports up to 4 sets of Motion Detection Settings. Settings can be chosen from the drop-down menu beside <Motion Detection>. In each set of setting, there is a frame (**Motion Detection Window**) displayed on the Live Video Pane (shown as the figure below). The Motion Detection Window is for defining the motion detection area. To change the size of the Motion Detection Window, move the mouse cursor to the edge of the frame and draw it outward / inward. Moving the mouse to the center of the frame can shift the frame to the intended location.

Users can configure up to 10 sets of Motion Detection Windows in each set of Motion Detection Setting. Click on the <add> button under the Live Video Pane to add a Motion Detection Window. To cancel a Motion Detection Window, move the mouse cursor to the selected Window, and click on the <delete> button.

If Motion Detection function is activated, the pop-out window (Motion) with indication of motion will be shown.

When motion is detected, the signals will be displayed on the Motion window as shown below.



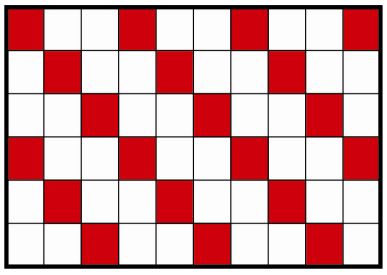
- Motion Detection

In each set of Motion Detection Setting, the default setting for the Motion Detection function is <Off>. Enable the function by selecting <On>. Users can also activate the function according to the schedule previously set in the <Schedule> setting page. Select <By schedule> and click <Please select…> to choose the desired schedule from the drop-down menu.

- Motion Detection Setting

Users could adjust various parameters of Motion Detection in this section.

- Sampling pixel interval [1-10]:
  The default value is 1. If the value is set as 3, it means within the detection region, system will take one sampling pixel for every 3 pixels by each row and each column (refer to the figure below).



- Detection level [1-100]:
  The default level is 10. The item is to set detection level for each sampling pixel; the smaller the value, the more sensitive it is.

- Sensitivity level [1-100]:
  The default level is 80, which means if 20% or more sampling pixels are detected differently, system will detect motion. The bigger the value, the more sensitive it is.

Meanwhile, when the value is bigger, the red horizontal line in the motion indication window will be lower accordingly.

- Time interval (sec) [0-7200]:
  The default interval is 10. The value is the interval between each detected motion.

- Triggered Action (Multi-option)
  The Administrator can specify alarm actions that will take when motion is detected. All options are listed as follows:

- Enable Alarm Output 1/2
  Check the item and select the predefined type of alarm output to enable alarm relay output when motion is detected.

- Send Alarm Message by FTP/E-Mail
  The Administrator can select whether to send an alarm message by FTP and/or E-Mail when motion is detected.

- Upload Image by FTP
  Select this item and the Administrator can assign a FTP site and configure various parameters. When motion is detected, event images will be uploaded to the appointed FTP site.

  <Pre-trigger buffer> function allows users to check what happened to cause the trigger. The <Pre-trigger buffer> frame rate could be pre-determined.
  On the other hand, <Post-trigger buffer> is for users to upload certain amount of images after motion event occurs.

  Check the box <Continue image upload> to upload the triggered images during certain time or keep uploading until the trigger is off. Select <Upload for __sec> and enter the duration in the blank. The images of the duration will be uploaded to FTP when the motion event occurs. The setting range is from 1 to 9999 seconds. Select <Upload during the trigger active> to make the images keep being uploaded to FTP during the trigger active until the event stops. Set the Image frequency as the upload frame rate. The setting range is from 1 frame to 15 frames.

  NOTE: Make sure FTP configuration has been completed. Refer to section FTP for further details.

- Upload Image by E-Mail
  Select this item and the Administrator can assign an e-mail address and configure various parameters. When motion is detected, event images will be sent to the appointed e-mail address.
  Pre-trigger buffer> function allows users to check what happened to cause the trigger. The <Pre-trigger buffer> frame rate could be pre-determined.

  On the other hand, <Post-trigger buffer> is for users to upload certain amount of images after the motion event occurs.

  Check the box <Continue image upload> to upload the triggered images during certain time or keep uploading until the trigger is off. Select <Upload for __sec> and enter the duration in the blank. The images of the duration will be uploading by E-mail when the motion event occurs. The setting range is from 1 to 9999 seconds. Select <Upload during the trigger active> to make the images keep being uploaded to E-mail during the trigger active until the event stops. Set the Image frequency as the upload frame rate. The setting range is from 1 frame to 15 frames.

  NOTE: Make sure SMTP configuration has been completed. Refer to section Mail for further details.

- Send HTTP notification
  Check this item, select the destination HTTP address, and specify the parameters for event notifications by <Motion Detection> triggered. When an alarm is triggered, the notification can be sent to the specified HTTP server.

  For instance, if the custom parameter is set as" action=1&group=2", and the HTTP server name is" http://192.168.0.1/admin.php", the notification will be sent to HTTP server as" http://192.168.0.1/admin.php? action=1&group=2" when alarm is triggered.

- Record stream to SD Card
  Select this item and the Motion Detection recording will be stored in Micro SD / SDHC card when motion is detected.

  Pre-trigger buffer recording function allows users to check what happened to cause the trigger. The pre-trigger buffer time range is from 1 to 3 seconds. Select <Upload for __ sec> to set the recording duration after motion is triggered. The setting range is from 1 to 99999 seconds. Select <Upload during the trigger active> to record the triggered video until the trigger is off.

NOTE: Please make sure the local recording (with Micro SD / SDHC card) is activated so that this function can be implemented. Refer to section Recording for further details.

- File Name

The uploaded image's filename format can be set in this section. Please select the one that meets your requirements.

- Add date/time suffix
  File name: imageYYMMDD_HHNNSS_XX.jpg
  Y: Year, M: Month, D: Day
  H: Hour, N: Minute, S: Second
  X: Sequence Number

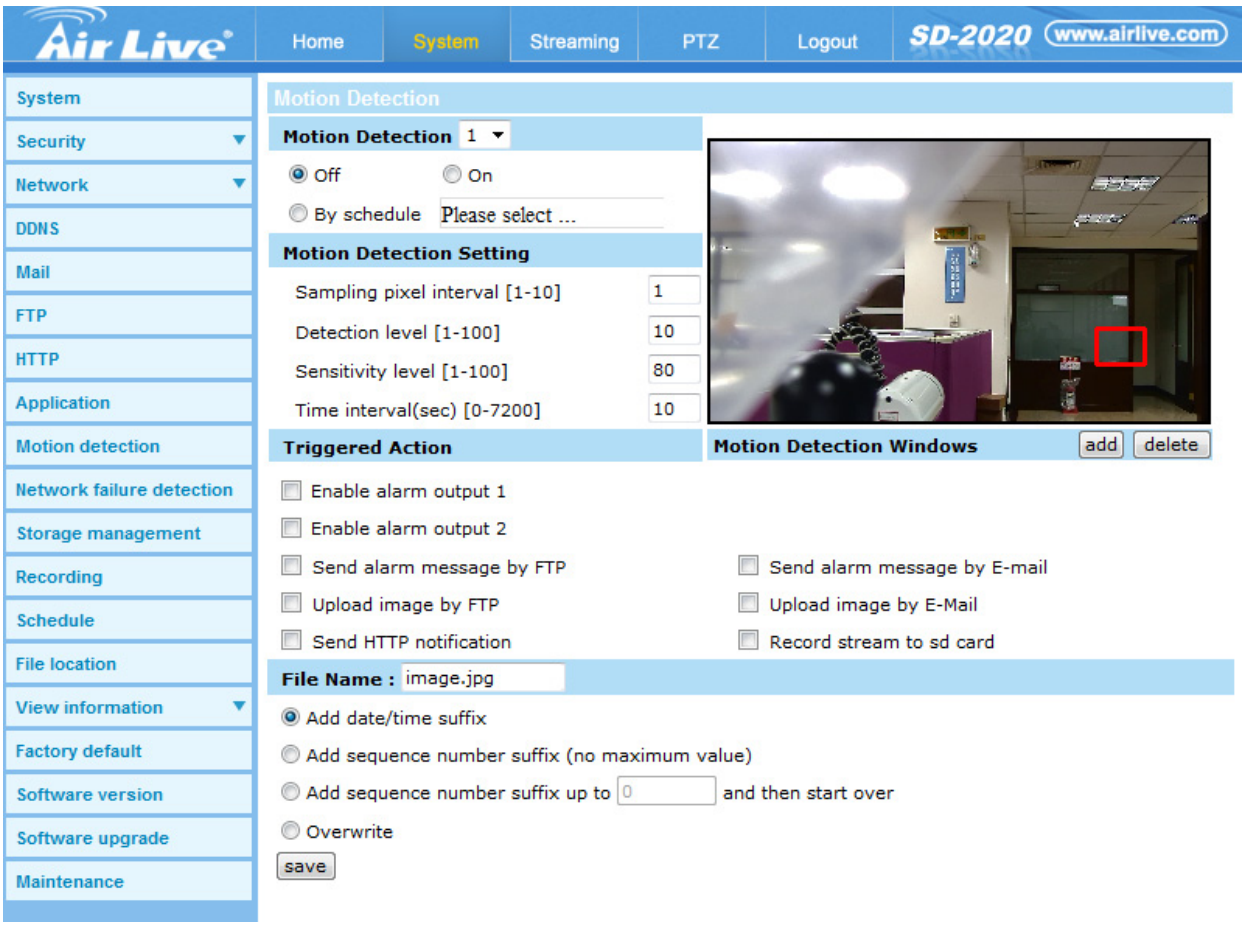
- Add sequence number suffix (no maximum value)
  File name: imageXXXXXXX.jpg
  X: Sequence Number

- Add sequence number suffix (limited value)
  File Name: imageXX.jpg
  X: Sequence Number
  The file name suffix will end at the number being set. For example, if the setting is up to "10," the file name will start from 00, end at 10, and then start all over again.

- Overwrite
  The original image in the FTP site will be overwritten by the new uploaded file with a static filename.

- Save

Please click on the <Save> button to save all the Motion Detection settings mentioned above.



6.10 Network Failure Detection

Network Failure Detection allows the IP Camera to ping another IP device (e.g. NVR, VSS, Video Server, etc.) within the network periodically and generates some actions in case of network failure occurs, for instance, a Video Server is somehow disconnected.

Being capable of implementing local recording (through Micro SD card) when network failure happens, the IP Camera could be a backup recording device for the surveillance system.

- Detection Switch

The default setting for the Detection Switch function is <Off>. Enable the function by selecting <On>. Users can also activate the function according to the schedule time that is previously set in the <Schedule> setting page. Select <By schedule> and click <Please select…> to choose the desired schedule from the drop-down menu.

- Detection Type

Input the IP device address and the period of ping time to ping. The ping time setting range is from 1 to 99 minutes.

- Triggered Action (Multi-option)

The Administrator can specify alarm actions that will take when network failure is detected. All options are listed as follows:

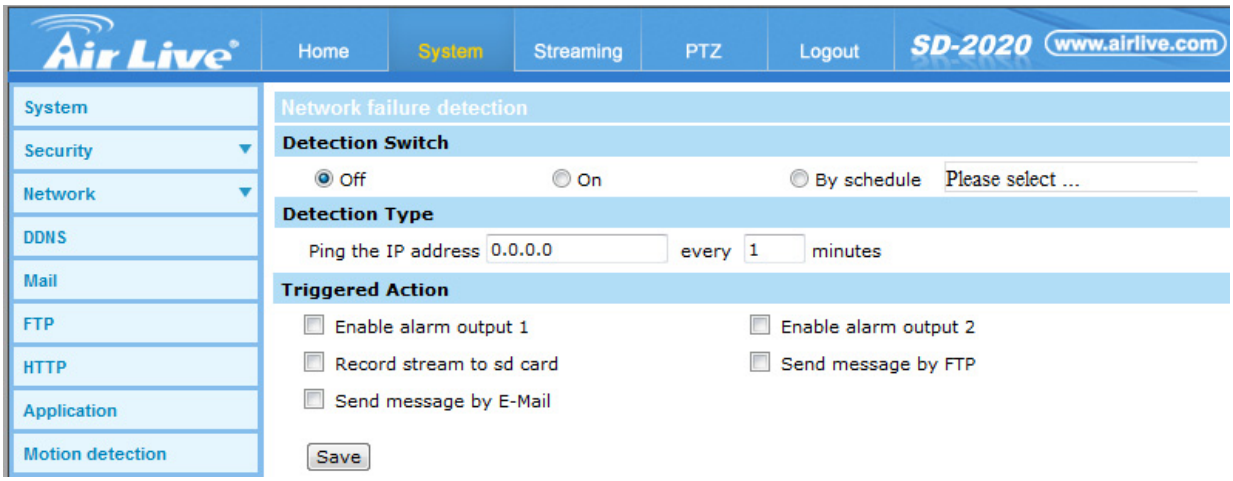
- Enable Alarm Output 1 /2
  Select the item to enable alarm relay output.

- Record Stream to SD Card
  Select the item and the alarm-triggered recording will be saved into your Micro SD card.
  Pre-trigger buffer recording function allows users to check what happened to cause the trigger. The pre-trigger buffer time range is from 1 to 3 seconds. Select <Upload for __ sec> to set the recording duration after alarm is triggered. The setting range is from 1 to 99999 seconds. Select <Upload during the trigger active> to record the triggered video until the trigger is off.

  NOTE: Please make sure the local recording (with Micro SD / SDHC card) is activated so that this function can be implemented. Refer to section Recording for further details.
- Send Alarm Message by FTP/E-Mail
  The Administrator can select whether to send an alarm message by FTP and/or E-Mail when an alarm is triggered.

- Save

Click on the <Save> button to save all the settings mentioned above.



6.11 Storage Management

Users can implement local recording to the Micro SD / SDHC card up to 32GB. This page shows the capacity information of the Micro SD card and a recording list with all the recording files saved on the memory card. Users can also format the SD card and implement automatic recording cleanup through the setting page.

To implement Micro SD card recording, please go to the <Recording> page (refer to the section Recording) for activation.

NOTE: Please format the Micro SD / SDHC card when using for the first time. Formatting will also be required when a memory card already being used on one camera and later transferred to another camera with different software platform.

- Device information

When users insert the Micro SD / SDHC card, the card information such as the memory capacity and status will be shown at Device Information section.

When the memory card is successfully installed, the memory card status shall be shown at <Device information> section in the Storage Management page.

- Device setting

Click on the <Format> button to format the memory card.

- Disk cleanup setting

Users can enable automatic recordings cleanup by specifying the time and storage limits.

- Recording List

Each video file on the Micro SD / SDHC card will be listed in the Recording list. The maximum file size is 60 MB/per file.

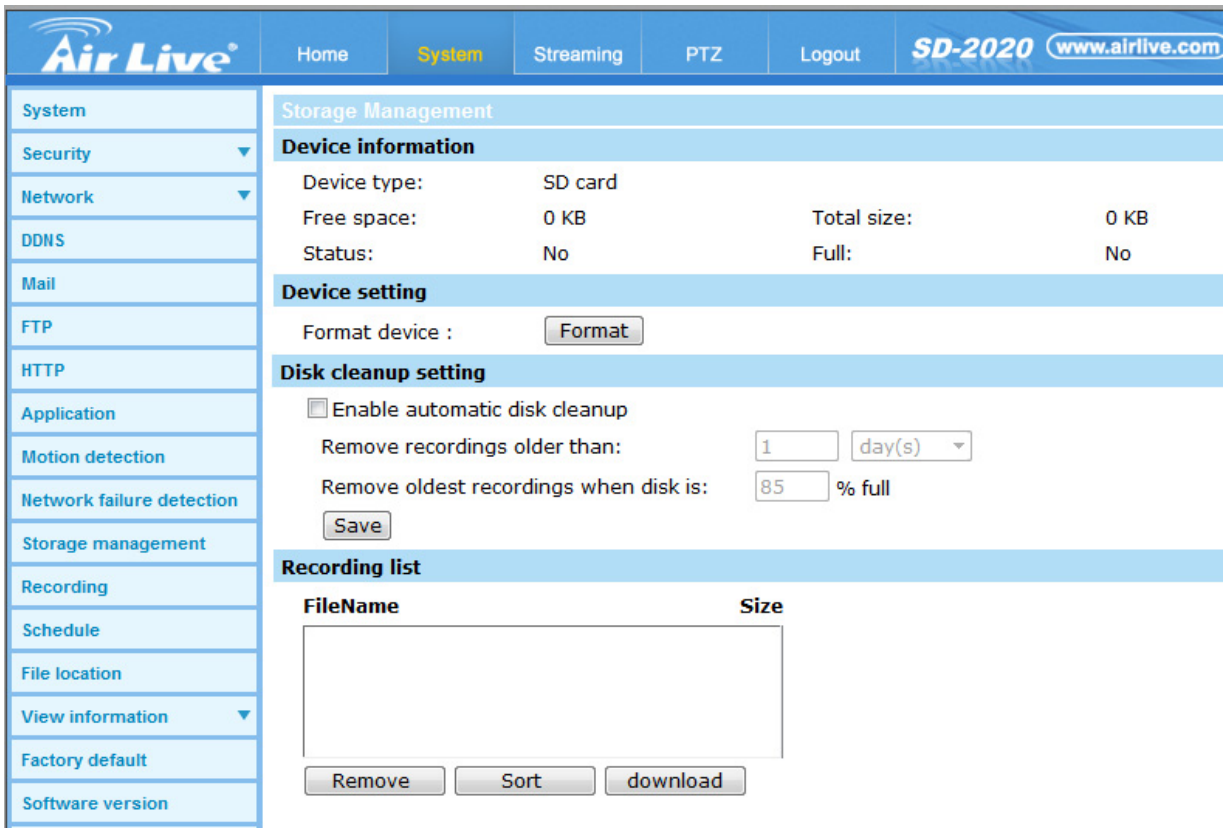
When the recording mode is set as <Always> (consecutive recording) and the Micro SD / SDHC card recording is also allowed to be enabled by events triggered, once events occur, the system will immediately implement events recording to the memory card. Then the IP Camera will return to the regular recording mode after events recording.

- Remove
  To remove a file, select the file first, and then click on the <Remove> button.

- Sort
  Click on the <Sort> button, and the files in the Recording list will be listed in name and date order.

  NOTE: The capital letter A/M/R appears in the very beginning of name denotes the sort of the recording: A stands for Alarm; M stands for Motion; R stands for regular recording.

- Download
  To open / download a video clip, select the file first, and then click on the <download> button below the Recording list field. The selected file window will pop up. Click on the AVI file to directly play the video in the player or download it to a specified location.



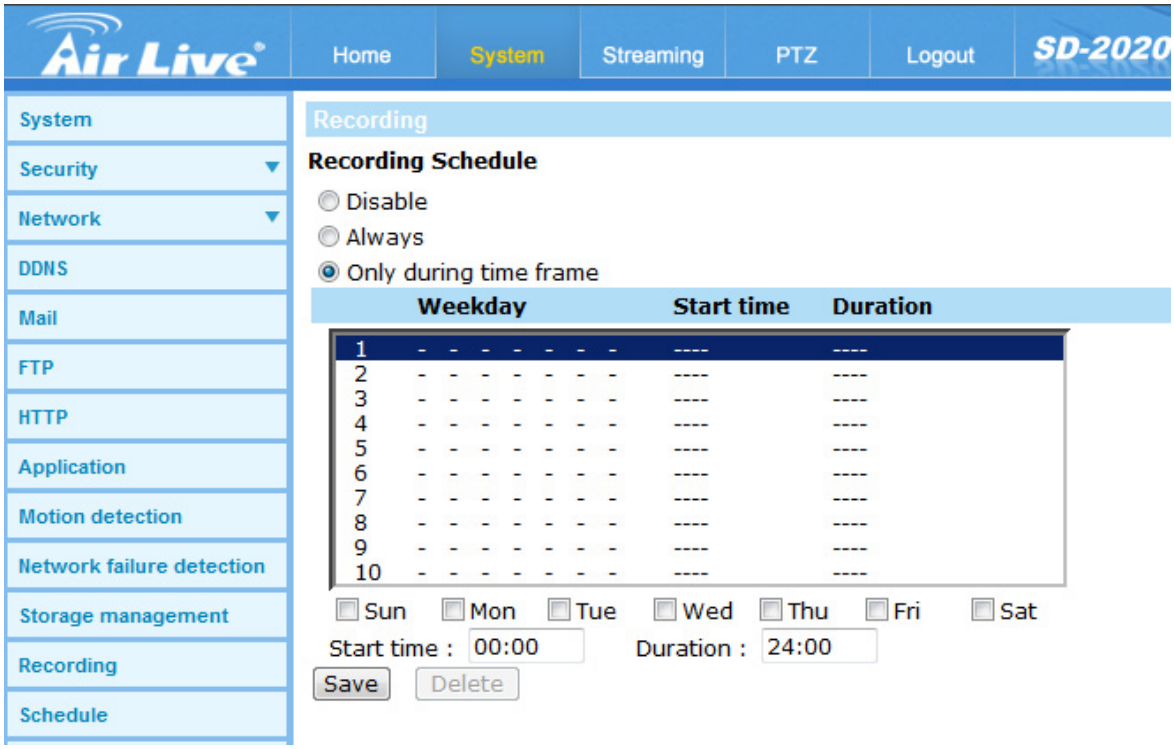
6.12 Recording

In the Recording setting page, users can specify the recording schedule that fits the present surveillance requirement.

- Recording Schedule

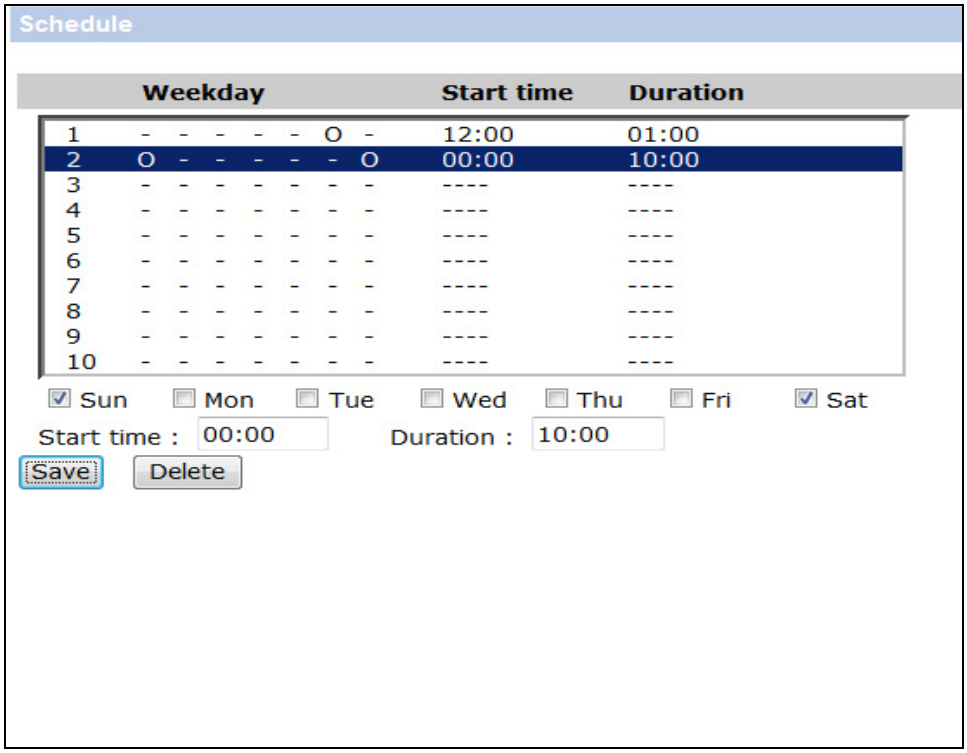
- Disable
  Select <Disable> to terminate the recording function.

- Always/Only during time frame
  Two types of schedule mode are offered: <Always> and <Only during Time Frame>. Users can select <Always> to activate Micro SD / SDHC Card Recording all the time. Or select a set of schedule from the time frame blank, check specific weekdays and setup the start time (hour:minute) and time period (hour:minute) to activate Micro SD / SDHC Card Recording at certain time frames. The setting range for time period hour is from 0 to 168. Please click on <Save> to save the setup.



6.13 Schedule

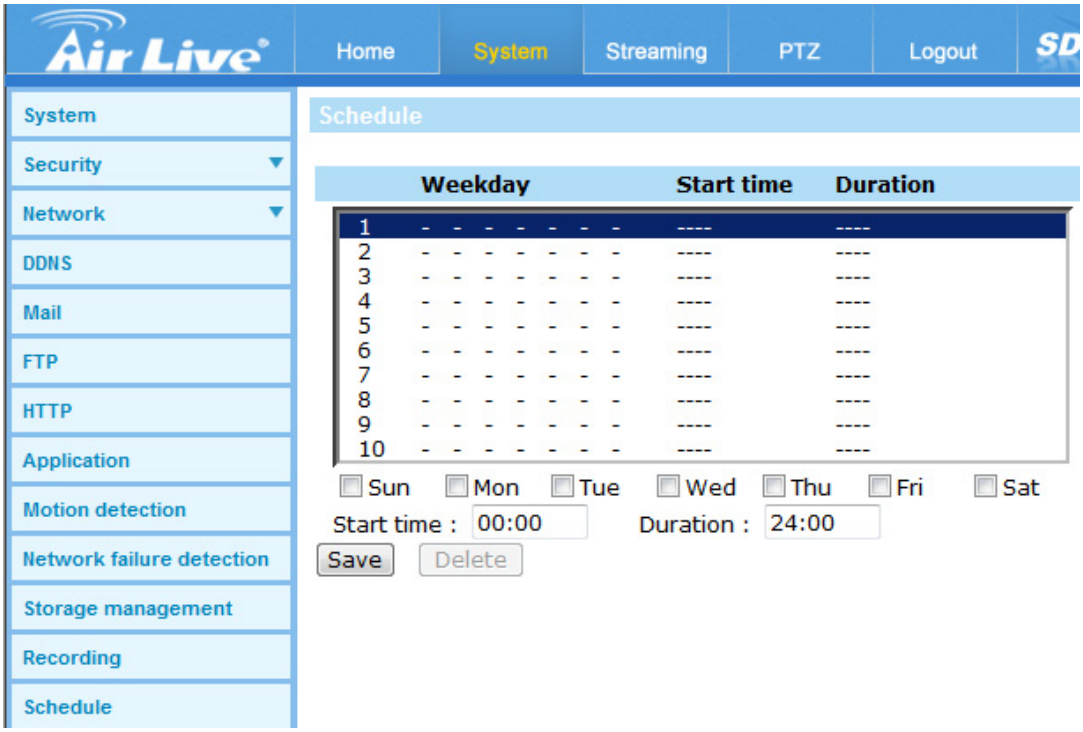
This function allows the users to setup schedules for features including: <Alarm Switch>, <Motion Detection> and <Network Failure Detection>. The function supports up to 10 sets of time frames in the time frame list.



- Setting Schedules

To set a schedule, please select a time frame from the time frame list first. Then check the boxes from below to choose the specific weekdays. At last, type in the start time (hour:minute) and the duration time (hour:minute) for activation of the schedule triggered features. The setting range for the duration time is from 00:00 to 168:59. Click <Delete> to delete a chosen time frame. Please click on <Save> to save the setup.

NOTE: Users **MUST** select <By schedule> under each feature setting page to enable the schedule function.

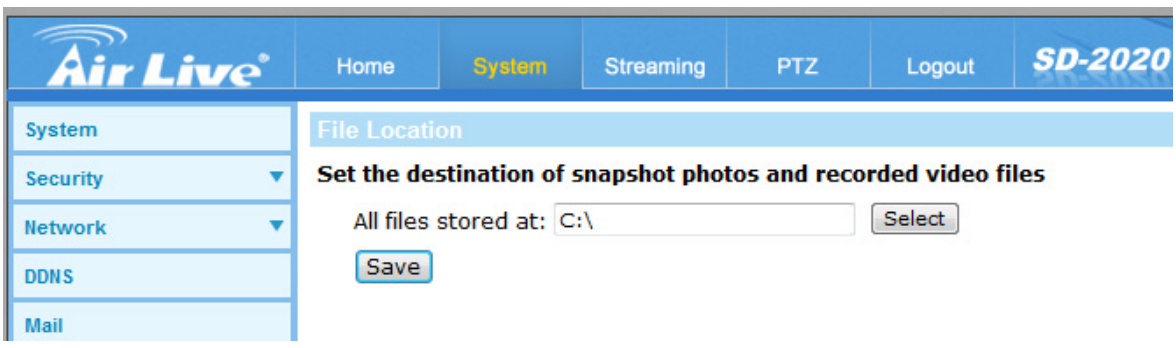


6.14 File Location

Users can specify a storage location on the PC or in the hard drive for the snapshots and live video recording. The default setting is: C:\. Once confirm the setting, click on <Save>, and all the snapshots and web recording will be saved in the designate location.

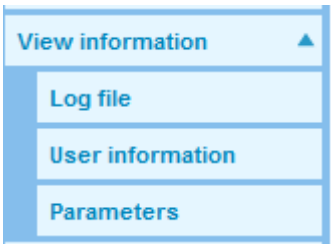
NOTE: Make sure the selected file path contains valid characters such as letters and numbers.

NOTE: For users with Windows 7 operating system, it is required to log on as an Administrator to implement the Snapshot and Web Recording function.



6.15 View Information

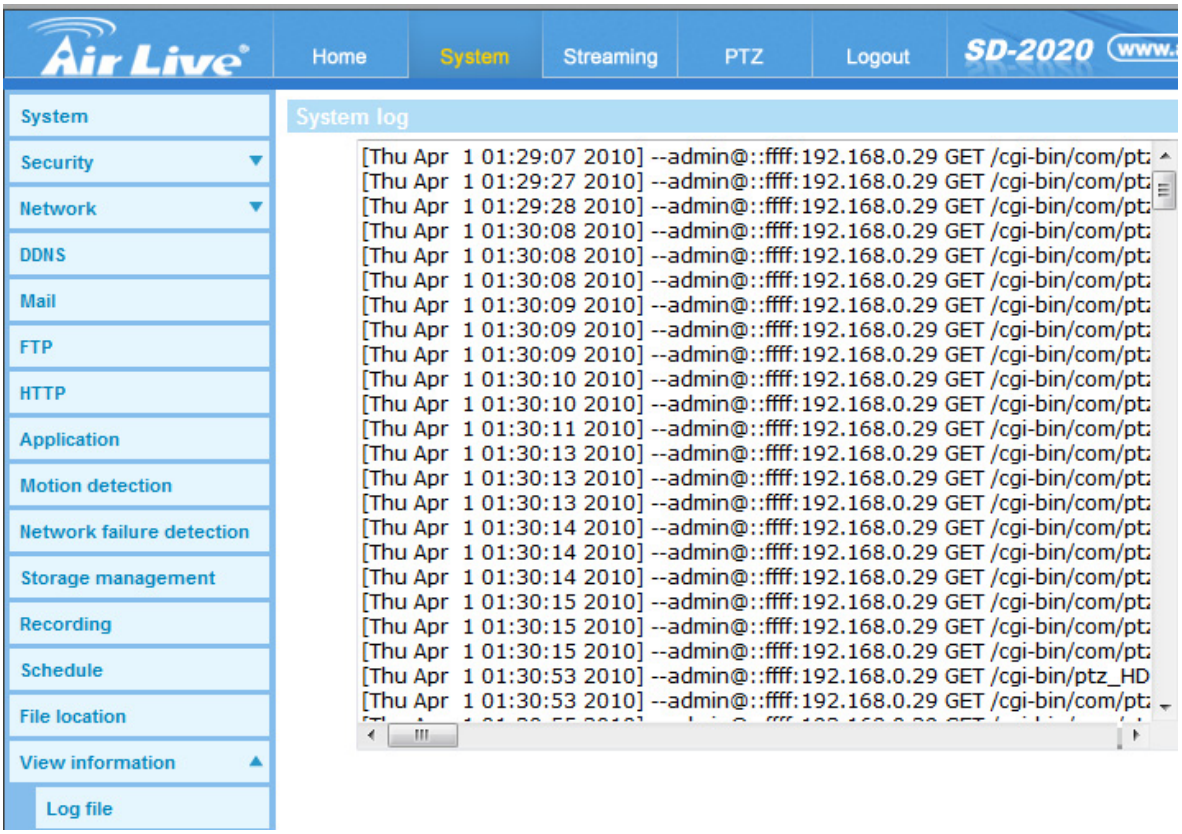
Click on the category: <View Information>, there will be a drop-down menu with tabs including <Log File>, <User Information>, and <Parameters>.



1. **Log File**

   - System Log

   Click on the tab to view the system log file. The content of the file provides useful information about connections after system boot-up.



2. **User Information**

   The Administrator can view each added user's login information and privileges (refer to Security section).

- Get User Information

All the users in the network will be listed in the <User information> zone as shown below:

admin:airlive

It indicates that one user's login username is "admin", and the password is "airlive".

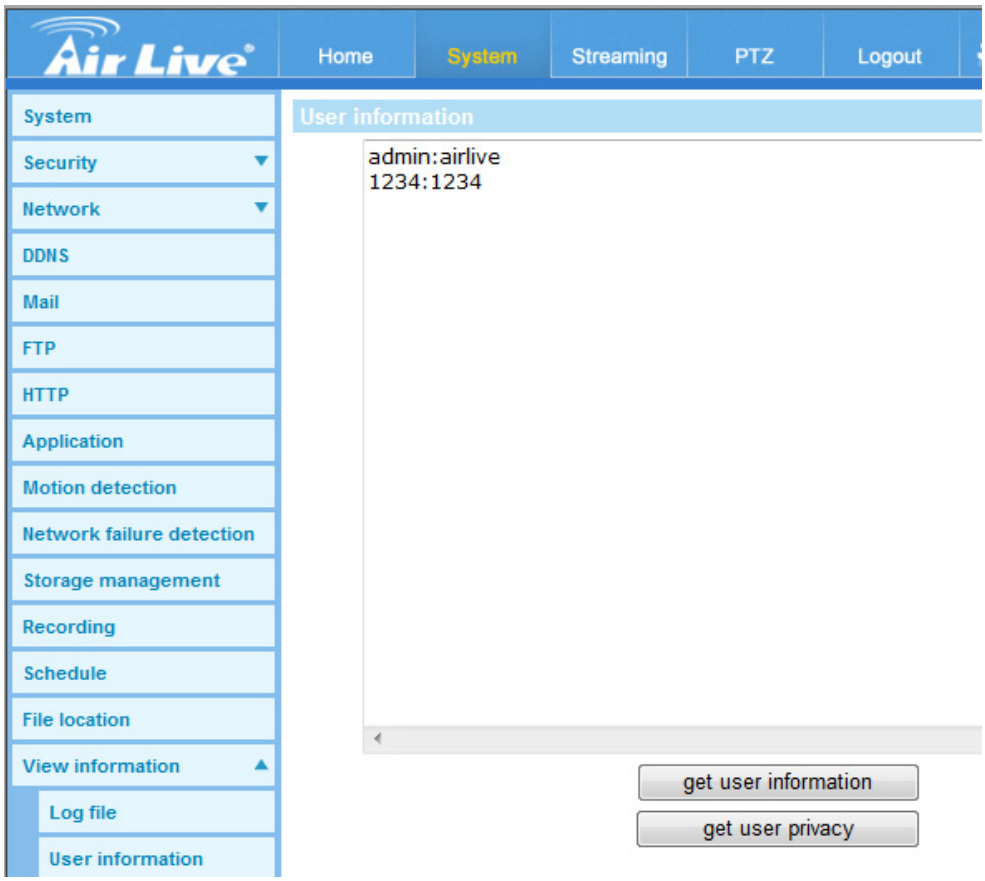
- Get User Privacy

Click on <get user privacy> at the bottom of the page, and the Administrator can view each user's privileges as shown below:

User: 1:1:0:1

1:1:0:1= I/O access: Camera control: Talk: Listen (refer to Security section)

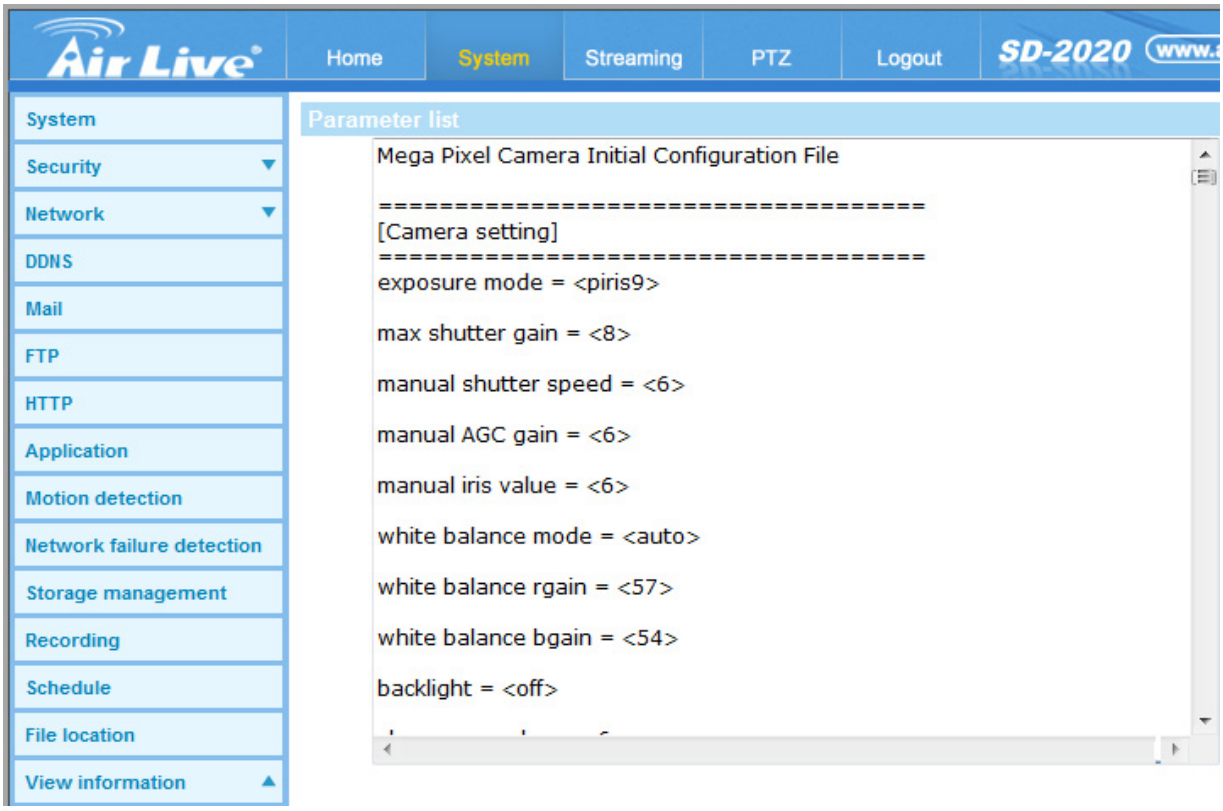
Therefore, it denotes the user is granted privileges of I/O access, Camera control and Listen.



3. Parameters

Click on this item to view the entire system's parameter setting such as Camera Settings, Mask Information and Network Information.

- Parameter List



6.16 Factory Default

Users can follow the instructions on this page to reset the IP Camera to factory default settings if needed.

- Full Restore

Click on the <Full Restore> button to recall the factory default settings. Then the system will restart in 30 seconds.

NOTE: The IP address will be restored to default.

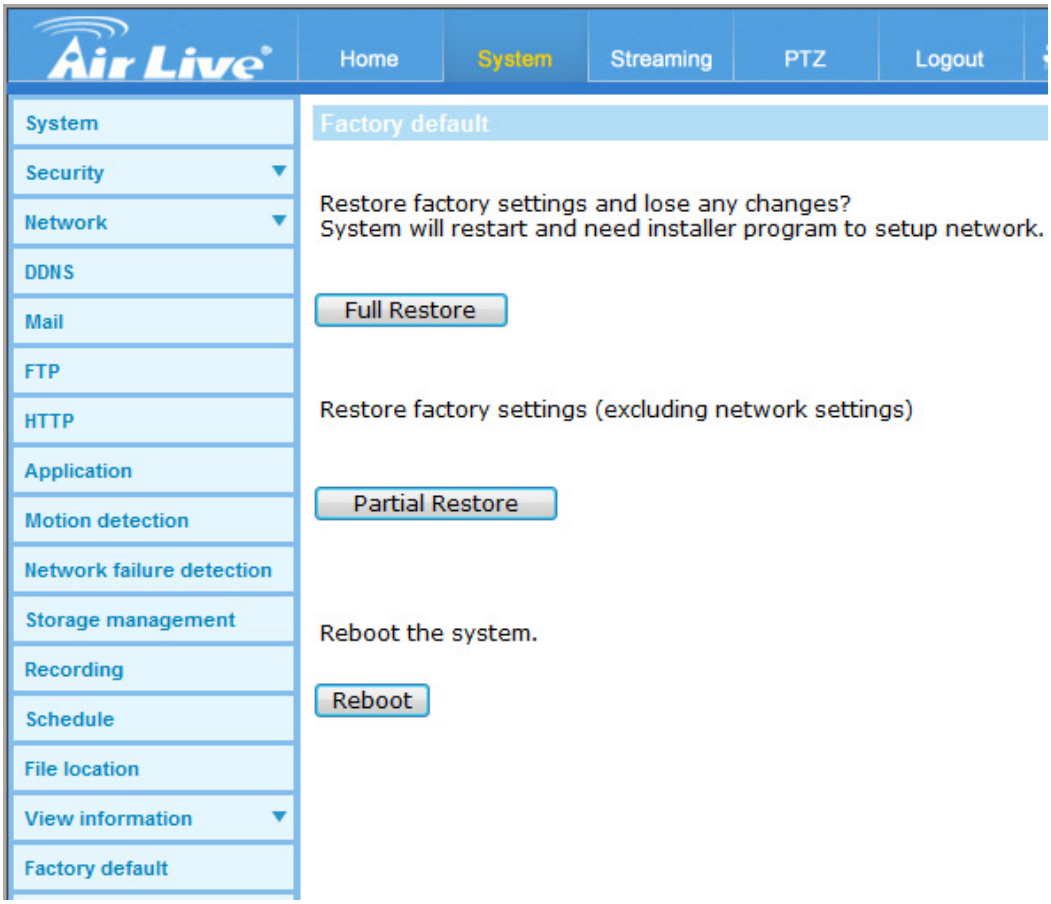
- Partial Restore

Press the <Partial Restore> button to recall partial default setting. Then the system will restart in 30 seconds.

NOTE: The IP address will not be restored to default.

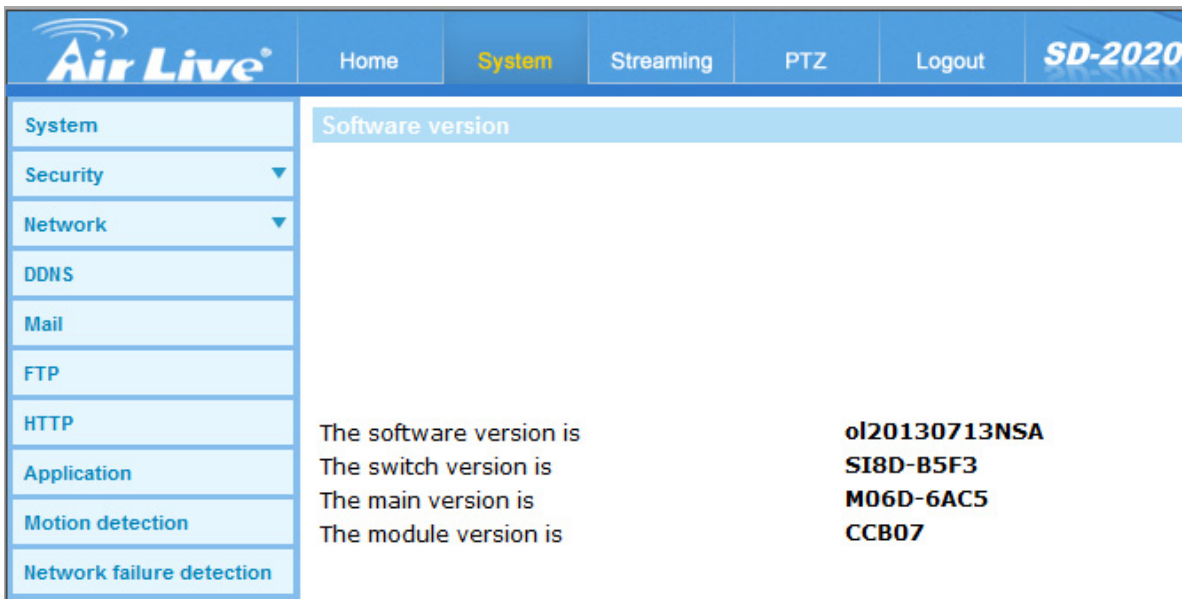
- Reboot

Click on the <Reboot> button, and the system will restart without changing current settings.



6.17 Software Version

The current software version is displayed in the software version page.



6.18 Software Upgrade

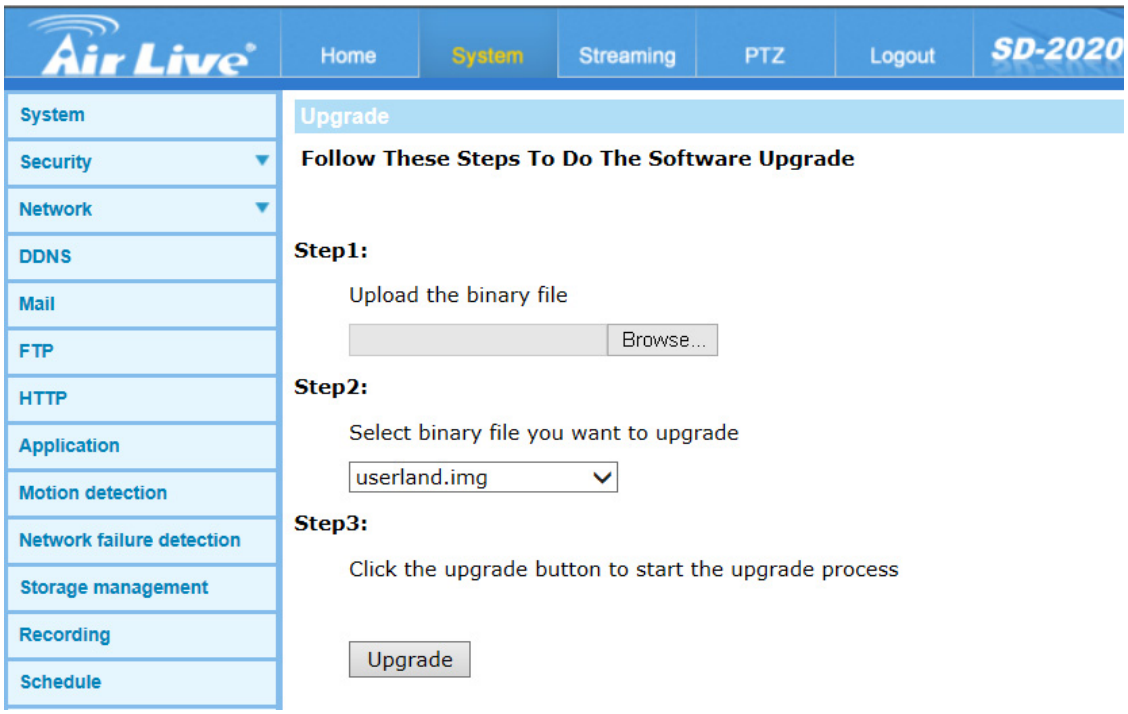
The procedure of software upgrade is as below:

- **Step 1:** Click on <Browse> and select the binary file to be uploaded, ex. userland.
  NOTE: Do not change the upgrade file name, or the system will fail to find the file.

- **Step 2:** Pull down the upgrade binary file list and select the file you want to upgrade; in this case, select “userland.img.”

- **Step 3:** Click on the <Upgrade> button. The system will check whether the upgrade file exists or not, and then begin to upload the upgrade file. Subsequently, the upgrade status bar will be displayed on the page. When it runs to 100%, the upgrade process is finished.

After the upgrade process is finished, the viewer will return to Home page.



6.19 Maintenance

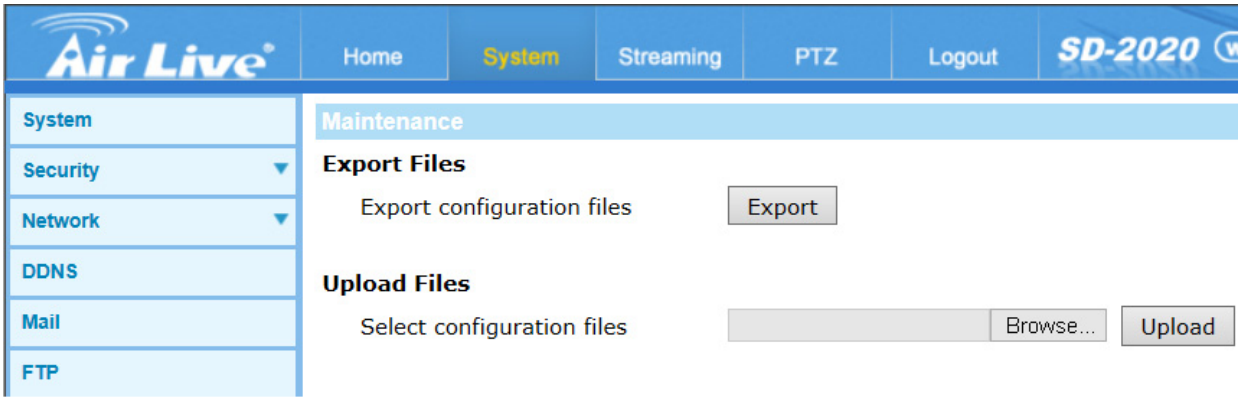
Users can export configuration files to a specified location and retrieve data by uploading an existing configuration file to the IP Camera.

- Export Files

Users can save the system settings by exporting the configuration file (.bin) to a specified location for future use. Click on the <Export> button, and the popup File Download window will come out. Click on <Save> and specify a desired location for saving the configuration file.

- Upload Files

To copy an existing configuration file to the IP Camera, please click on <Browse> to select the configuration file first, and then click on the <Upload> button for uploading.



7 Streaming

Click the **Streaming** to display 5 sub-menus including Video Format, Video Compression, Video OCX Protocol, Video Frame Rate, and Audio.

7.1 Video Format

- Video Resolution

Under Video Resolution section, the available video resolution formats are including MJPEG and H.264. Please refer to the Appendix/ A for more combination details.

Click on <Save> to confirm the setting.

- Text Overlay Settings

Users can select the items to display data including date/time/text on the live video pane. The maximum length of the string is 20 alphanumeric characters.

Click on <Save> to confirm the Text Overlay setting.

- Video Rotate Type

Users can change video display type if necessary. Selectable video rotate types include Normal, Flip, Mirror, 90 degree clockwise, 180 degree rotate and 90 degree counterclockwise.

The following is descriptions for different video rotate type.

- Flip
  If select <Flip>, the image will be rotated vertically.

- Mirror
  If select <Mirror>, the image will be rotated horizontally.

- 90 Degree Counter-/clockwise
  Selecting <90 Degree Counter-/clockwise> will make the image 90° counter-/clockwise inversed.

- 180 Degree Rotate
  Selecting <180 Degree> will make the image 180°inversed.

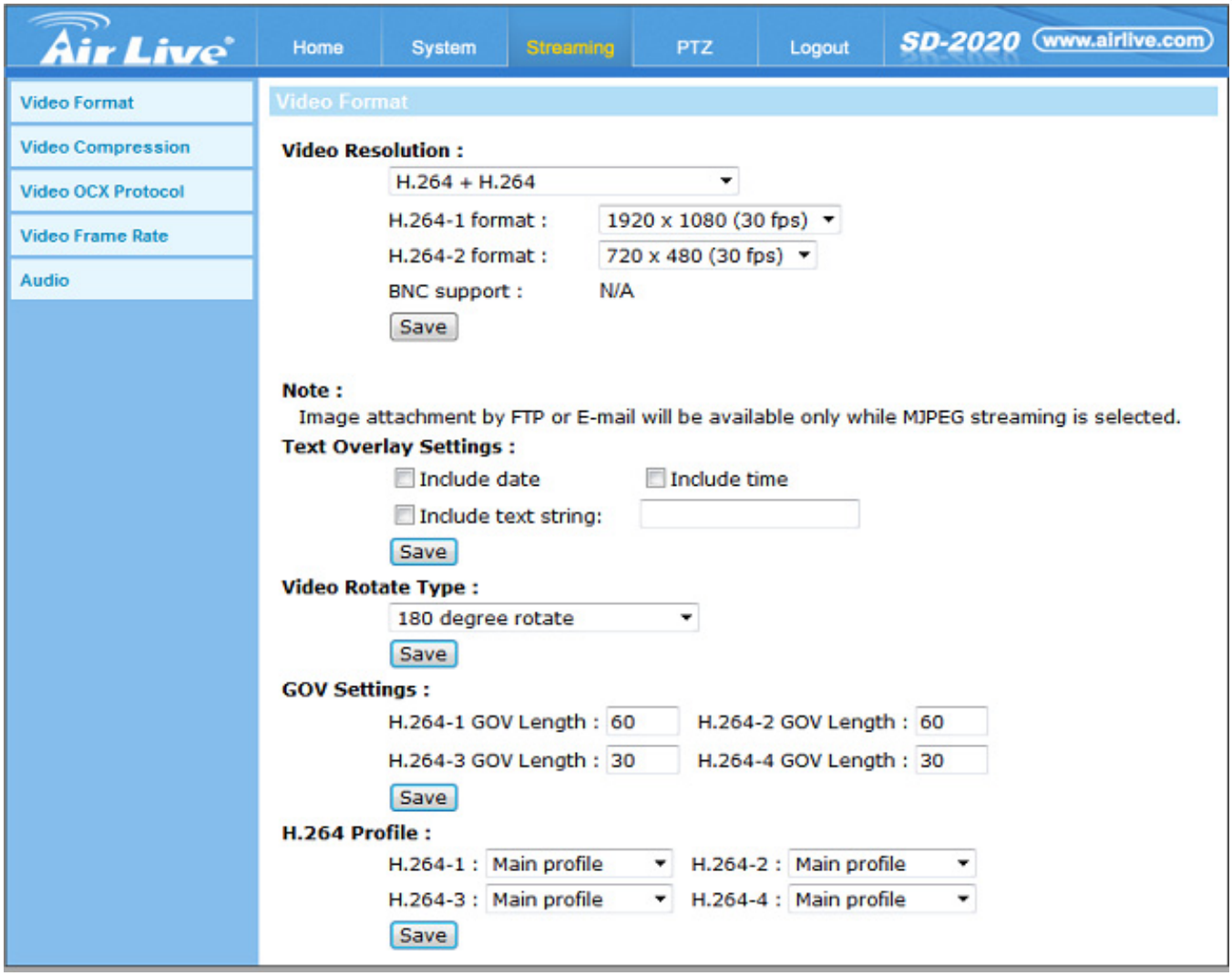
Click on <Save> to confirm the setting.

- GOV Settings

Users can set the GOV length to determine the frame structure (I-frames and P-frames) in a video stream for saving bandwidth. The setting range is from 2 to 64. Default value is 60, which means there are one I-frame every 60 frames. Longer GOV length means lower I-frame frequency. The default value for H.264-1 / H.264-2 / H.264-3 / H.264-4 is 60 / 60 / 30 / 30. Click on <Save> to confirm the GOV setting.

Users can set each H.264 Profile to <Baseline Profile>, <Main Profile> or <High Profile> according to its compression needs. With the same bit rate, the higher the compression ratio, the better the image quality is. The default setting is <Main Profile>.

NOTE: Please make sure the higher compression ratio is supported by system before setup.



7.2 Video Compression

- MJPEG Compression Setting

- - MJPEG Q (Quality) factor
  Higher value implies higher bit rates and higher visual quality. The default setting of MJPEG Q factor is 35; the setting range is from 1 to 70.

- H.264 Compression Setting

- H.264-1 / H.264-2 / H.264-3 / H.264-4 bit rate
  The default setting of H.264-1 is 4096 kbit/s and for H.264-2 / H.264-3 / H.264-4 is 1024 kbit/s; the setting range for H.264-1 is from 64 to 8192 kbps and for H.264-2 / H.264-3 / H.264-4 is from 64 to 2048 kbit/s.

- Compression Information Setting

- Display Compression Information
  Users can also decide whether to display compression information on the Home page.

- CBR Mode Setting

- Enable H.264-1 CBR Mode
- Enable H.264-2 CBR Mode
- Enable H.264-3 CBR Mode
- Enable H.264-4 CBR Mode

The CBR (Constant Bit Rate) mode could be the preferred bit rage mode if the bandwidth available is limited. It is important to take account of image quality while choosing to use CBR mode.

Click on <Save> to confirm the setting.

7.3 Video OCX Protocol

In the Video OCX protocol setting page, users can select RTP over UDP, RTP over TCP, RTSP over HTTP or MJPEG over HTTP, for streaming media over the network. In the case of multicast networking, users can select the Multicast mode. Click on <Save> to confirm the setting.

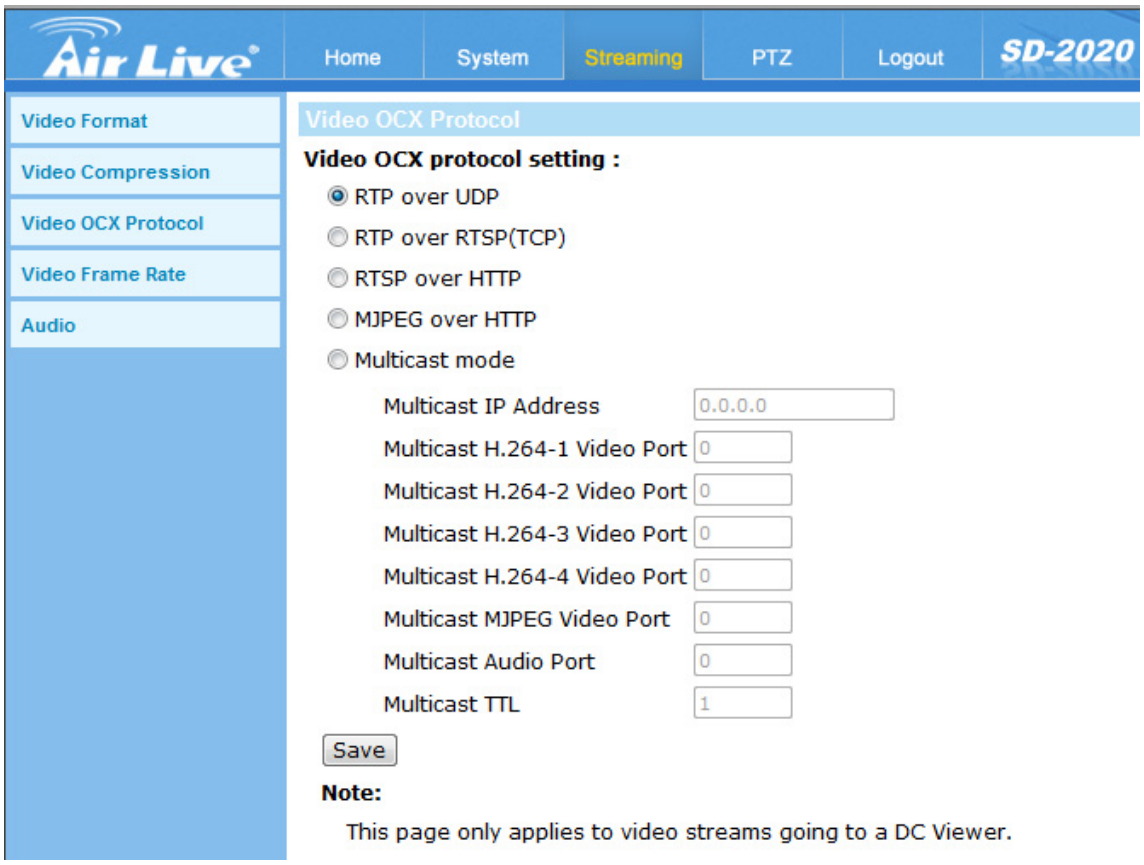
- Video OCX protocol

- RTP over UDP / RTP over RTSP (TCP) / RTSP over HTTP / MJPEG over HTTP
- Multicast Mode

  Enter all required data, including <multicast IP address>, <Multicast H.264-1 / H.264-2 / H.264-3 / H.264-4 Video Port>, <Multicast MJPEG Video Port>, <Multicast Audio Port> and <Multicast TTL> into each blank.

  - **Multicast IP Address:** Specify the multicast server address.
  - **H.264 Video / Audio Port:** Specify the transmission port number of the video data from 1124 to 65534.
  - **Time to Live:** Set the maximum TTL that multicast can pass through. The default value is 15.

Click on <Save> to confirm the setting.



7.4 Video Frame Rate

MJPEG Frame Rate Setting

- MJPEG Frame Rate
  The default setting of MJPEG Frame Rate is 30 fps; the setting range is from 1 to 30.

2. H.264 Frame Rate Setting

- H.264-1/2/3/4 Frame Rate
  The default setting of H.264-1 / H.264-2 / H.264-3 / H.264-4 Frame Rate is 30 fps; the setting range is from 1 to 30.

Click on <Save> to confirm the setting.

7.5 Audio

- Transmission Mode

- Full-duplex (Talk and Listen simultaneously)
  In the Full-duplex mode, the local and remote sites can communicate with each other simultaneously, i.e. both sites can speak and be heard at the same time.
- Half-duplex (Talk or Listen, not at the same time)
  In the Half-duplex mode, the local / remote site can only talk or listen to the other site at a time.
- Simplex (Talk only)
  In the Talk only Simplex mode, the local / remote site can only talk to the other site.
- Simplex (Listen only)
  In the Listen only Simplex mode, the local / remote site can only listen to the other site.
- Disable
  Select the item to turn off the audio transmission function.

- Server Gain Setting

- Input gain/Output gain
  The audio gain values are adjustable from 1 to 6. The sound will be turned off if the audio gain is set to “Mute”.

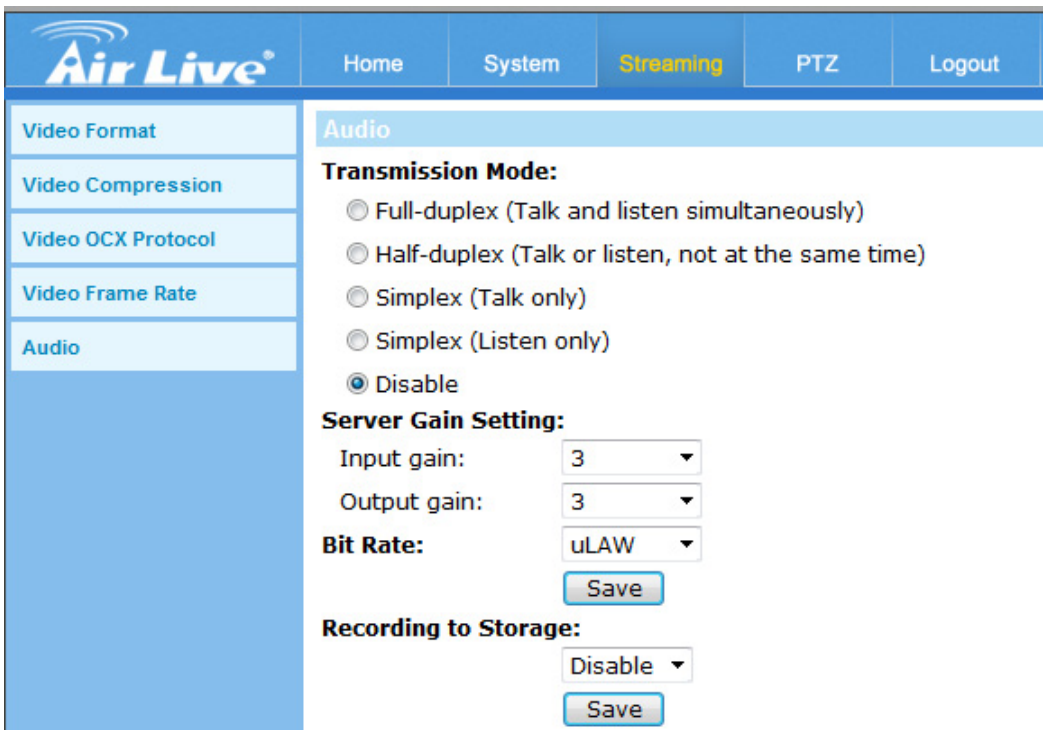
- Bit Rate

Selectable audio transmission bit rate include 16 kbps (G.726), 24 kbps (G.726), 32 kbps (G.726), 40 kbps (G.726), uLAW (G.711) and ALAW (G.711). Both uLAW and ALAW signify 64 kbps but in different compression formats. Higher bit rate will let higher audio quality and require bigger bandwidth.

- Recording to Storage

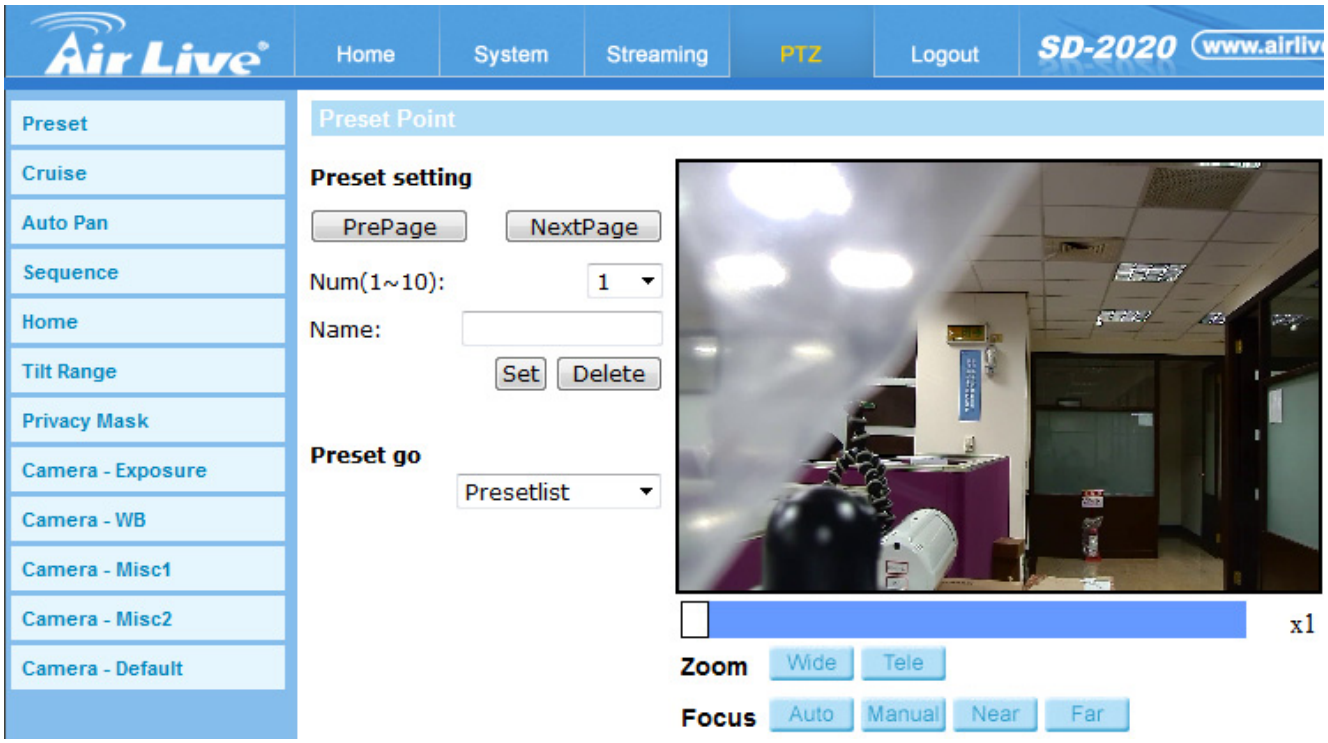
Select <Enable> from the drop-down menu to enable audio recording with videos into SD card.

Click on <Save> to confirm the setting.


Home
System
Streaming
PTZ
Logout
Video Format
Video Compression
Video OCX Protocol
Video Frame Rate
Audio
Audio
Transmission Mode:
Full-duplex (Talk and listen simultaneously)
Half-duplex (Talk or listen, not at the same time)
Simplex (Talk only)
Simplex (Listen only)
Disable
Server Gain Setting:
Input gain:
3
Output gain:
3
Bit Rate:
uLAW
Save
Recording to Storage:
Disable
Save

8 PTZ

Click the **PTZ** to display the sub-menus including **Preset, Cruise, Sequence**, **Home, Tilt Range**, **Camera- Exposure**, **Camera- WB**, **Camera- Misc1**, **Camera- Misc2**, and **Camera- Default**.



8.1 Preset

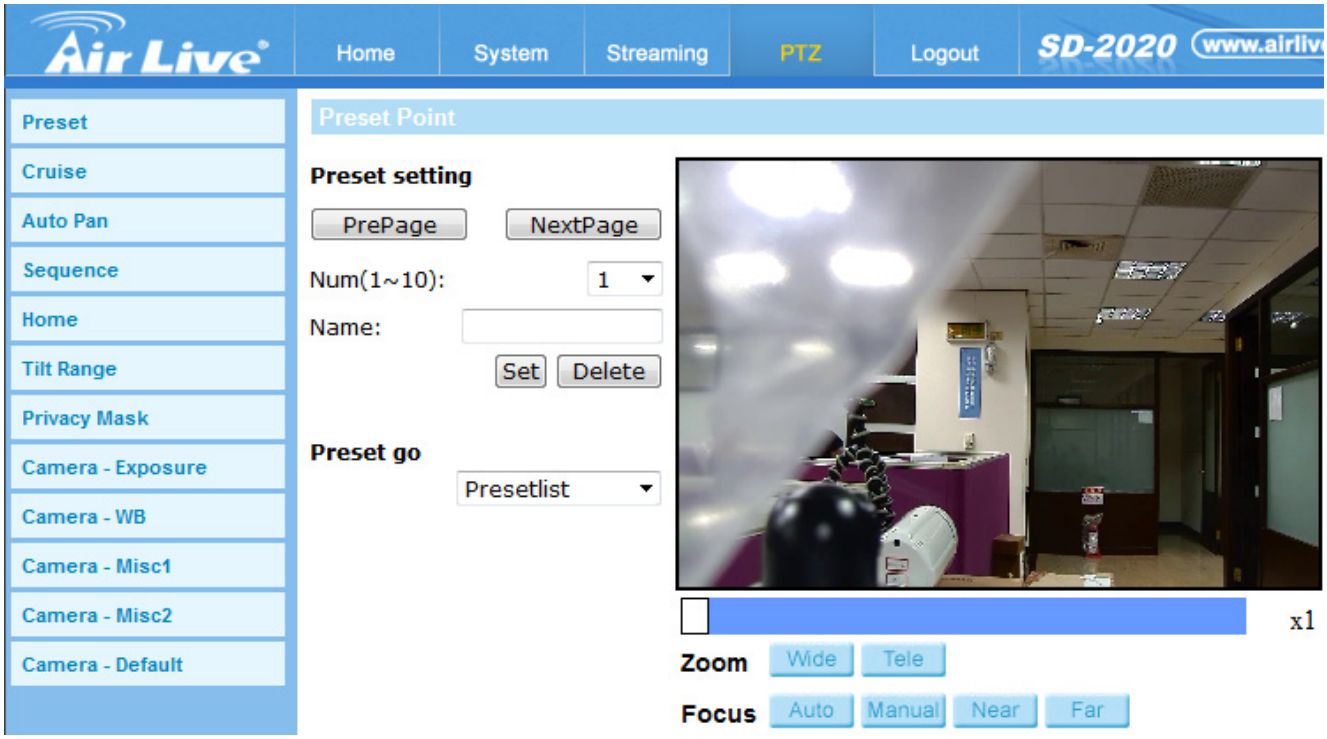
Totally 256 Preset Points can be programmed for the IP Camera. Please refer to the instructions below to set a Preset Point.

- Preset Setting

To setup a Preset Point, please first move the cursor to the live view pane. Then left click and drag the red pointer with PTZ controls to a desired position and adjust the fine zoom / focus ratio. Subsequently, assign a number for the current position from the drop-down Number List (click on <PrePage> or <NextPage> button to reach number 1 to 256), and enter its descriptive name. Click on the button <Set> to save the settings mentioned above.

- Preset Go

To have the camera move to a specified Preset position, please select the Preset Point from the drop-down Preset list (click on <PrePage> or <NextPage> button to reach preset number 1 to 256). Then the camera shall readily move to the target position.



8.2 Cruise

The IP Camera supports up to eight Cruise Paths. Please follow the instructions below for Cruise Path setup.

- Cruise Setting

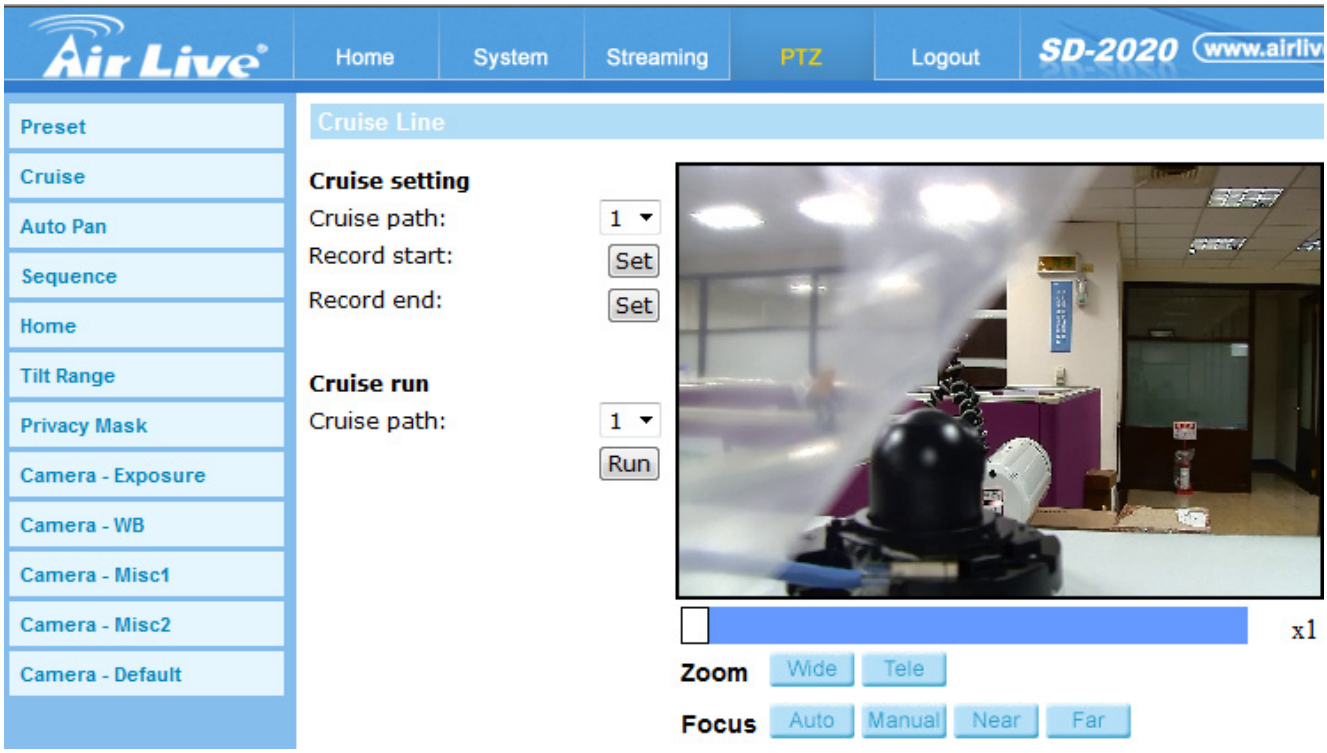
To setup a Cruise Path, please first select a path number from the drop-down list. Then move the cursor to the live view pane, and move the camera to a desired view (PTZ controls) as the start point of a Cruise Path. Click on the <Set> button of <Record Start> and start programming the Cruise Path via PTZ controls. When finishing programming, click on the <Set> button of <Record End> to quit. Then this Cruise Path will be automatically recorded.

- Cruise Run

Select the specified Cruise Path from the drop-down list, click on the <Run> button, and then the camera will start touring around as recorded.

To view the camera touring around in full screen mode, please move the cursor onto the live view pane, right-click and left-click to select “fullscreen”. Then users can view the camera navigation in full screen.

To stop running a Cruise Path, simply move the cursor to the live view pane and move the camera in any direction.



8.3 Auto Pan

The IP Camera supports four Auto Pan Paths. Please refer to the instructions below to set an Auto Pan Path.

- Auto Pan Setting

To setup an Auto Pan Path, please select a path number from the drop-down list first. Then move the cursor to the live view pane, and move the camera to a desired view as the Start Point of an Auto Pan Path. Click on the <Set> button of the <Start Point> and the current view will be automatically saved as the start point of the Auto Pan Path.

NOTE: The room ratio of an Auto Pan’s Start Point will persist throughout the whole path.

Enter the speed ratio into the Speed field; the speed ratio ranges from 0 (low) to 3 (fast). Then choose to run the Auto Pan Path in right/left direction from the Direction drop-down list.

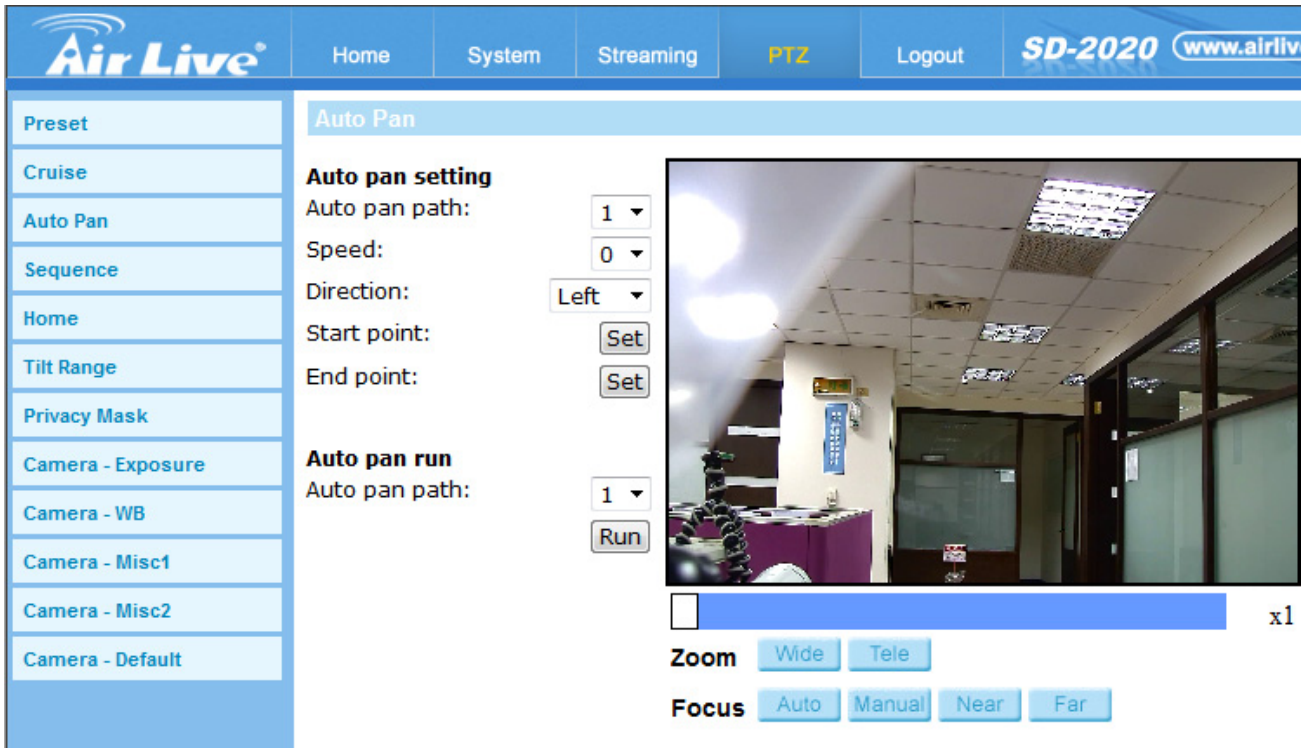
Move the camera to another desired position as the end point of the Auto Pan Path. Click on the <Set> button of the <End Point> for saving the setting.

- Auto Pan Run

Select the specified Auto Pan Path from the drop-down list, click on the <Run> button, and then the camera will start moving horizontally as recorded.

To view the camera panning in full screen mode, please move the cursor onto the live view pane, right-click and left-click to select “fullscreen”. Then users can view the camera navigation in full screen.

To stop running an Auto Pan Path, simply move the cursor to the live view pane and move the camera in any direction.



8.4 Sequence

The IP Camera supports totally eight Sequence Lines; each Sequence Line consists of up to 64 Preset Points. Please refer to the instructions below to program a Sequence Line.

NOTE: Before setting this function, users must pre-define at least two Preset Points.

- Sequence Setting

Please click on the <Edit> button in <Sequence Setting> section to enter the Sequence setting menu.

- Sequence Line
  Please select the number of Sequence Line to be set from the drop-down list in the top of the Sequence setting menu.

- Sequential Preset Points Setting
  Please setup each Preset Point of the programmed Sequence Line in order, assigning a Preset Point from the <Name> list for the specified number of Preset Point (click <Pre Page> or <Next Page> button to reach preset point 1 to 256) and entering both Dwell Time (0~255) and Speed (0~14) into the corresponding fields.

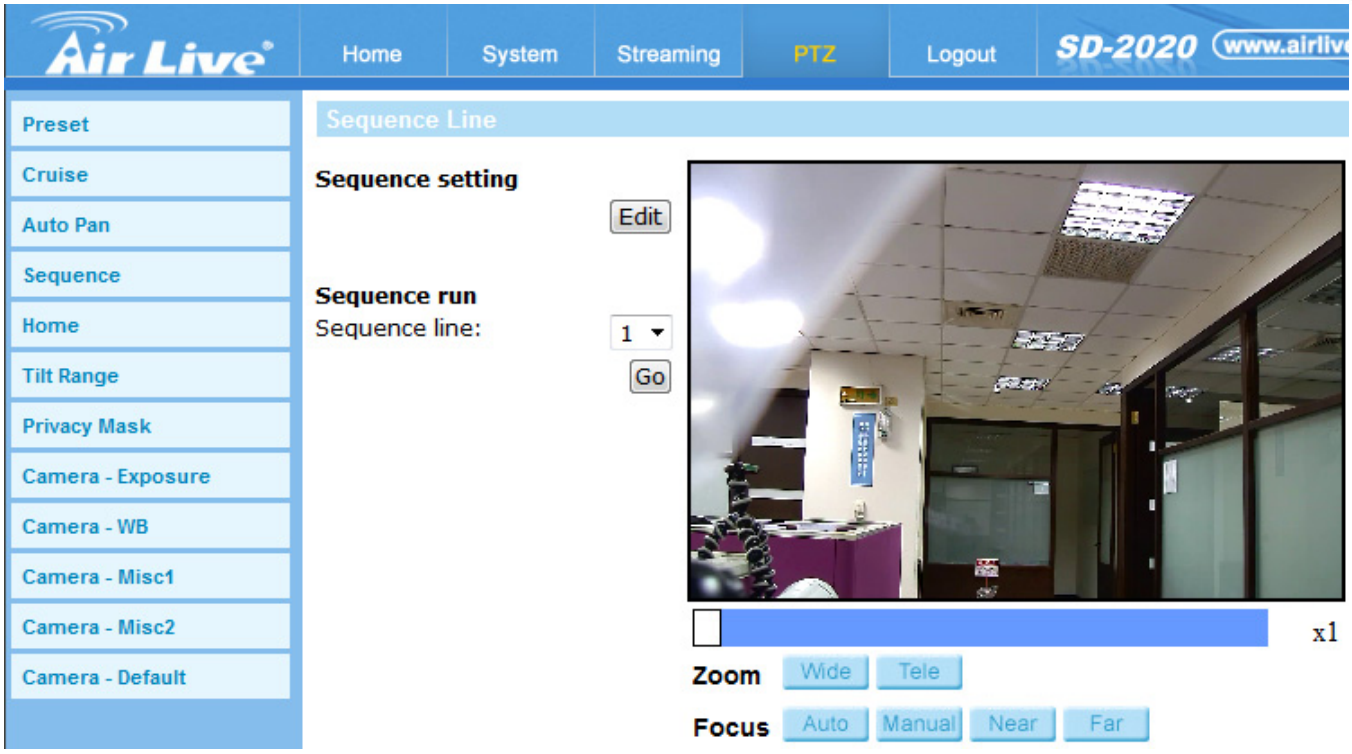
When finishing the sequential Preset Points setting, please click on the button <Save> in the top of the Sequence setting menu.

- Sequence Run

Select the specified Sequence Line from the drop-down list, click on the <Go> button, and then the camera will start moving forward each scene sequentially as programmed.

To view the camera executing a Sequence Line in full screen mode, please move the cursor onto the live view pane, right-click and left-click to select “fullscreen”. Then users can view the camera navigation in full screen.

To stop running the Sequence Line, simply move the cursor to the live view pane and move the camera in any direction.



8.5 Home

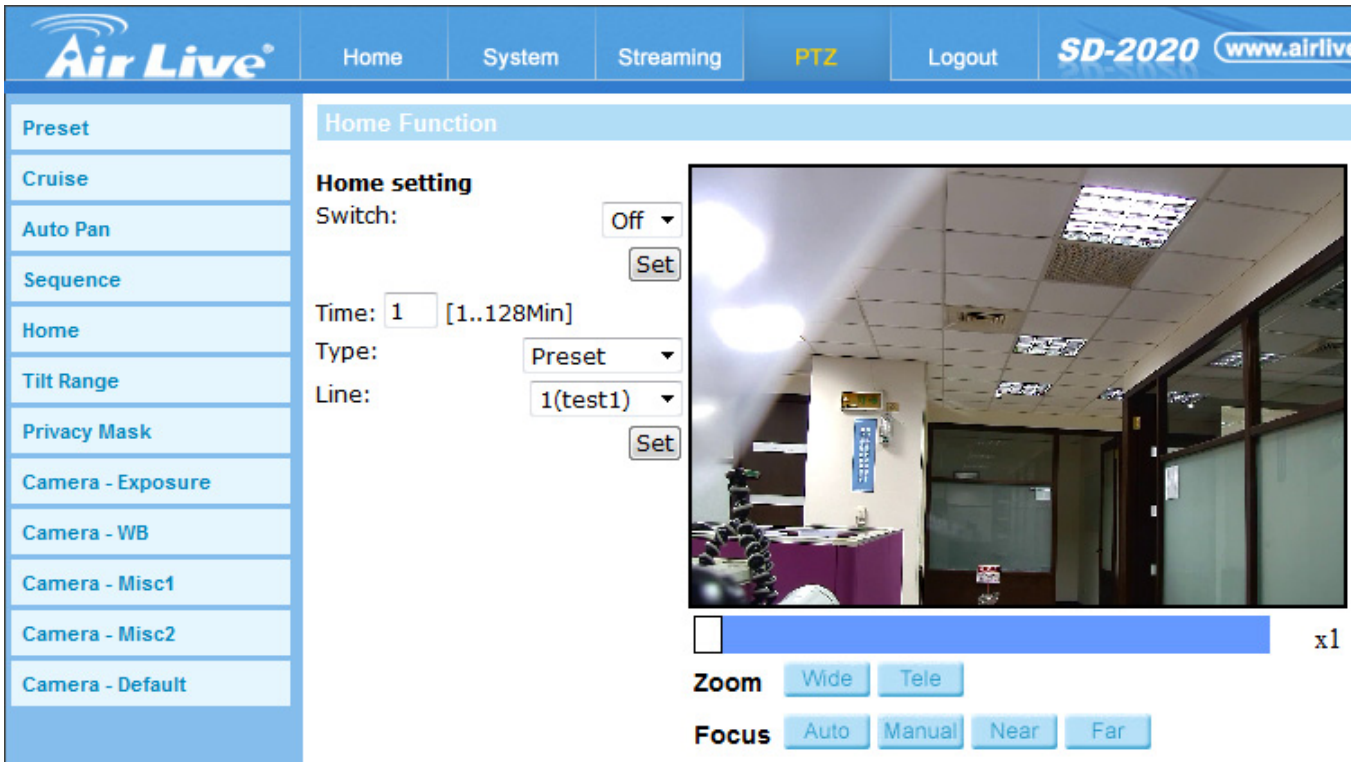
Users are able to set an operation mode to ensure constant monitoring. If the IP Camera idles for a period of time, the selected function will be activated automatically; this is the HOME function. The HOME function allows constant and accurate monitoring to avoid the Dome Camera idling or missing events.

- Home Setting

- Switch
  Select <On> or <Off> to activate or disable the Home function. Then click on the <Set> button to save the setting.

- Time
  The time here represents the duration of camera idle time previous to running a Preset Point / Cruise Line / Auto Pan Path / Sequence Line. When the Home function is activated, the Dome Camera will start to count down when it idles, and then execute the predefined action as time expires. The time period ranges from 1 to 128 minutes; please specify it in the field.

- Type/Line
  Please select a Home action type (Preset Point / Cruise Line / Auto Pan Path / Sequence Line) and specify the number of Preset Point / Cruise Line / Auto Pan Path / Sequence Line from the drop-down <Type> and <Line> lists. Click on the button <Set> to save the Home settings.



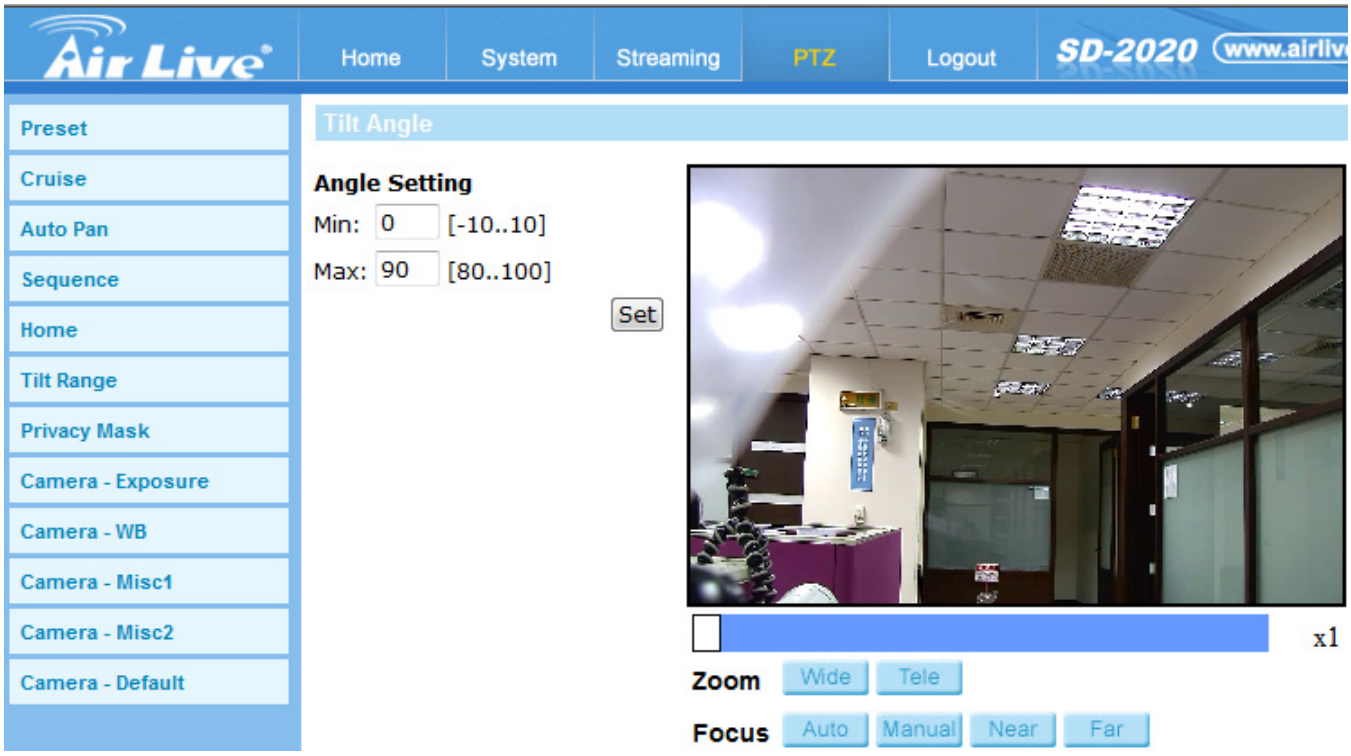
8.6 Tilt Range

- Angle Setting

The IP Camera's tilt angle is adjustable from minimum -10° to maximum +190°. Please enter the desired minimum and maximum tilt angle into the corresponding fields respectively. Click on the <Set> button to save the tilt angle settings.

NOTE: The tilt angle range is between -10° to +100° when the Flip function under Misc 1 setting page is set as <Off> or <M.E.>.

NOTE: The tilt angle range is between -10° to +190° when the Flip function under Misc 1 setting page is set as <Image>.



8.7 Privacy Mask

The Privacy Mask function aims to avoid any intrusive monitoring. When setting a mask, it is suggested to set it at least twice bigger (height and width) than the masked object. The Dome Camera will assume the center of the selected view as a starting point. Therefore, please keep the target object / region nearly positioned in the center of the scene. Refer to the following descriptions for setting a privacy mask.

NOTE: When the Privacy Mask function is enabled, the Flip function under Misc 1 setting page will be disabled.

- Mask Setting

- Switch
  The Privacy Mask function can be activated or disabled. Click on <Set> to save the setting.
- Transparency
  The Privacy Mask can be set as transparency if necessary.
- Color
  Select a desired color from the <Color> drop-down list for the specified Privacy Mask. Click on <Set> to save the Privacy Mask's color properties.

- Mask
  Specify the number of the programmed Privacy Mask in the corresponding field. The numbers of Privacy Masks vary with camera models.

- Hsize/Vsize
  The size of a Privacy Mask can be customized through specifying its horizontal and vertical size. The value of <Horizontal Size> ranges from 1 to 80, while that of <Vertical Size> ranges from 1 to 60.

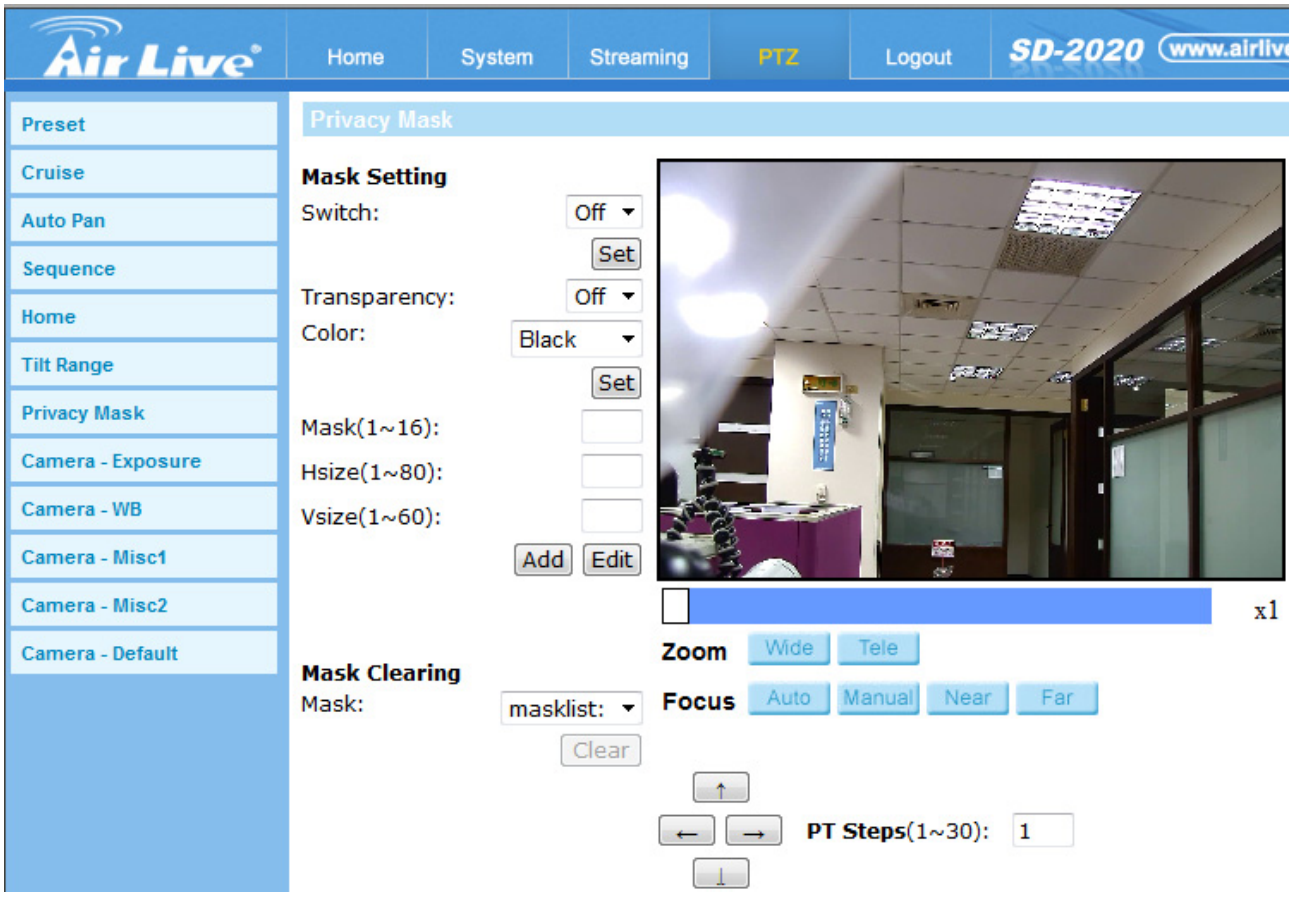
After finishing the setup of a Privacy Mask, click on the button <Add> to save the programmed Privacy Mask.

- Mask Clearing

In this section, users can delete an existing Privacy Mask. Please select the Privacy Mask to be removed from the drop-down list, and click on the button <Clear>. Then the selected Privacy Mask will readily disappear.

- PT Steps (1~30)

Users can setup the location of every privacy mask by the control panel on the Privacy Mask page. Set a number from 1 to 30 as the PT Step when users adjust the privacy mask via the control panel. Every step indicates 0.225°.



8.8 Camera-Exposure

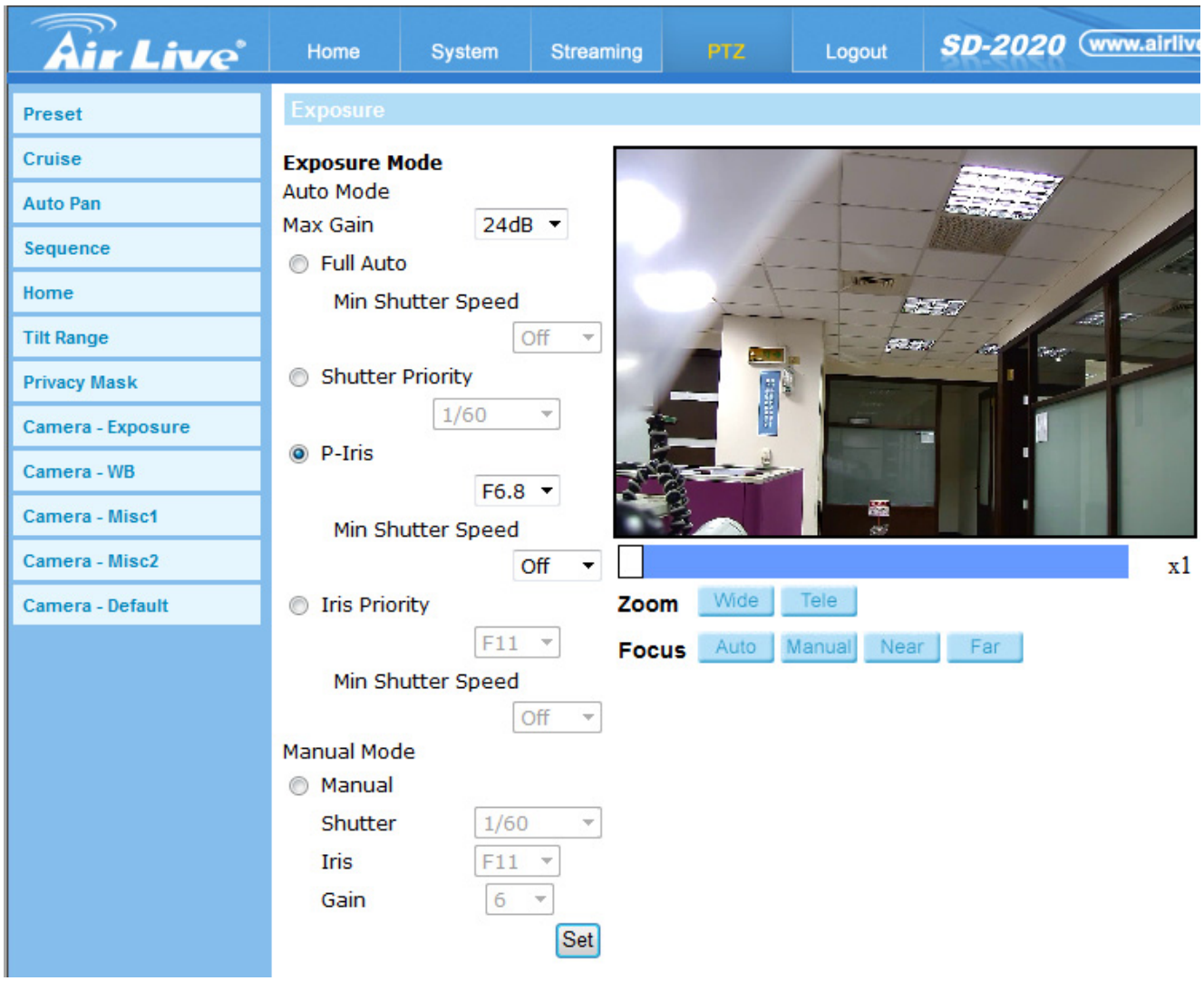
In the Exposure Mode setting page, users can select either the <Full Auto> mode or adjust the parameter of the Shutter / P-Iris / Iris Priority mode for optimized video output in accordance with the operating environment.

- Auto Mode

- Max Gain
  In this mode, the range of Gain is from off to 57dB.
  - **Full Auto:** All settings are auto.
  - **Shutter Priority Mode**
    In this mode, it is the shutter speed that takes main control of the exposure. The range of shutter speed is from 1/10000 to 1.
  - **P-Iris Mode**
    In this mode, the minimum iris opening is limited to affect the exposure. The minimum iris opening can be adjusted from F4.8 to F8.6.
  - **Iris Priority Mode**
    In this mode, it is the iris that has premier priority in control of the exposure. The value of iris is adjustable from F1.6 to F28.

- Manual Mode

In this mode, users can change the Shutter speed (1/10000 to 1/30), Iris (F1.6 to F28), and Gain (1 to 15) manually.



8.9 Camera-WB

A camera needs to find reference color temperature, which is a way of measuring the quality of a light source, for calculating all the other colors. The unit for measuring this ratio is in degree Kelvin (K). Users can select one of the White Balance Control modes according to the operating environment. The following table shows the color temperature of some light sources for reference.

Light Sources	Color Temperature in K
Cloudy Sky	6,000 to 8,000
Noon Sun and Clear Sky	6,500
Household Lighting	2,500 to 3,000
75-watt Bulb	2,820
Candle Flame	1,200 to 1,500

- **White Balance**
  - Auto Mode
    The Auto Balance White mode is suitable for environment with light source having color temperature in the range roughly from 2700 to 7500K.

  - Indoor / Outdoor Mode
    Select for indoor or outdoor mode.

  - ATW Mode (Auto Tracing White Balance)
    The Dome Camera takes out the signals in a screen in the range from 2500K to 10000K.

  - Manual Mode
    In this mode, users can change the White Balance value manually via specifying R gain and B gain; the range of R/B gain is from 0 to 255.

8.10 Camera-Misc1

In the Camera—Misc (Miscellaneous) Setups Menu 1, users can set various camera parameters including Backlight Compensation (BLC), Sharpness, Exposures Compensation (ExpComp), Image Flip, Speed by Zoom and ICR function. Each setting is specified as follows:

- **BLC**
  Users can choose to activate or disable the BLC function. Click on the button <Set> to save the setting.

- **Sharpness**
  Increasing the sharpness level can make the image looked sharper; especially enhancing the object's edge. The Sharpness value is adjustable from 1 to 15. Click on the button <Set> to confirm the setting.

- **Exp Comp**
  Users can define the value of Exposure Compensation; the value ranges from 1 to 15.

- **Flip**
  Users can track an object continuously when it passes through under the Dome Camera with setting Flip to Mechanical (M.E.) mode or Digital Flip (Image) mode.

  NOTE: Flip setting is manual-controlled only. If a Preset Position or a point for other function (ex. Sequence) is set in the position that can only be reached through FLIP motion, when the Flip function is turned off, the position cannot be reached anymore.

  NOTE: To make the Dome Camera tilt between a specific range, such as -10° to +100° or -10° to +190°, please go to the **Tilt Range setting page** to set the tilt angle range. Otherwise, the Dome Camera will tilt 90° as the default setting.

  - M.E. Mode
    M.E. is a standard mechanical operation. As the Dome Camera tilts to the maximum angle, it will pan 180°, and then continue tilting to keep tracking objects.

  - Image Mode
    IMAGE represents digital IMAGE FLIP, which enables users to keep tracking objects seamlessly; under the mode, almost no delay occurs in comparing with that under the M.E. mode.

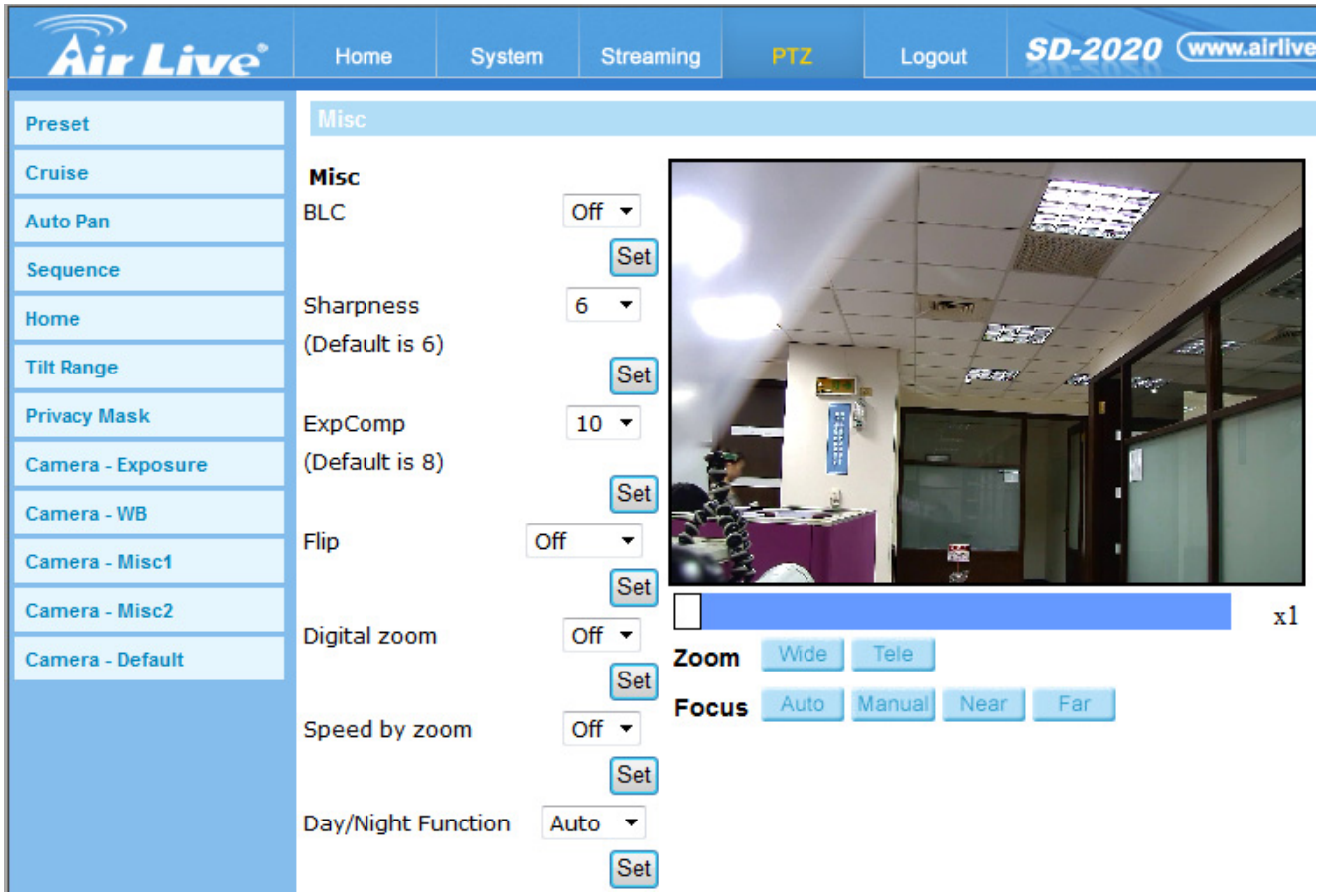
- **Speed by Zoom**
  Enable this function to adjust the pan/tilt speed automatically by internal algorithm when zooming. The larger zoom ratio leads to the lower rotating speed. Click on <Set> button to save the setting.

- **Day/Night Function**
  With the IR cut filter, the camera can still catch clear image at night time or in low light conditions.

  - Auto
    In the Auto mode, the internal circuit will automatically decide the occasion to remove the IR cut filter according to the image brightness level.

  - Day
    Select the item to enable the IR cut filter.

  - Night
    Select the item to disable IR cut filter.



8.11 Camera-Misc2

In the Camera—Misc (Miscellaneous) Setups Menu 2, users can setup various functions such as Wide Dynamic Range (WDR), Auto Calibration, 2D Noise Reduction (2DNR), and TV System.

- **WDR**
  The WDR function is especially effective in environment with extreme contrast. Click on <Set> button to save the setting.

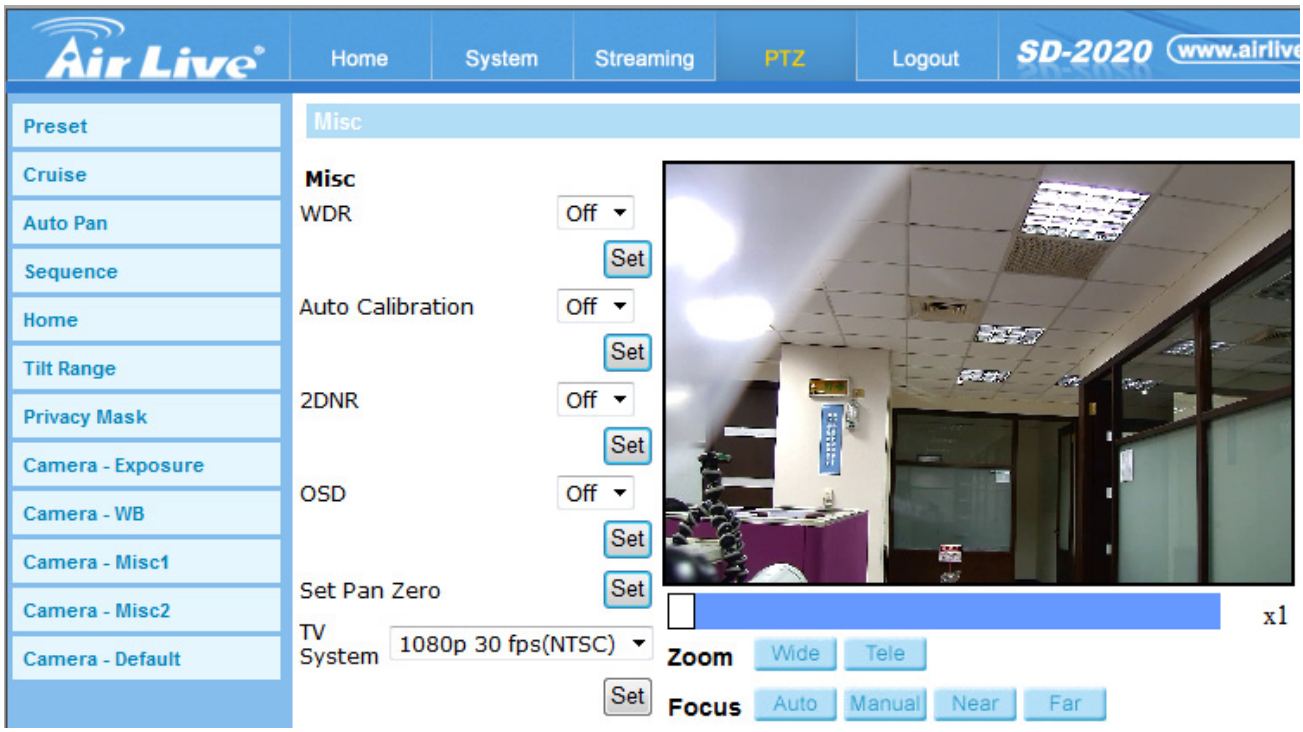
- **Auto Calibration**
  With the Auto Calibration function, the IP Camera calibrates when the deviation of dome pivot is detected. Click on <Set> button to save the setting.

- **2DNR**
  With the 2D Noise Reduction function, the processor analyzes pixel by pixel and frame by frame to eliminate environmental noise signal so that the highest quality image can be produced even in low light conditions. Click on <Set> button to save the setting.

- **OSD**
  Select <ON> on OSD Setting to turn on the OSD display on the live video. The OSD display shows the pan/tilt degree and the shooting position of the Dome Camera, such as NE 050/00, which “NE” indicates the shooting position of the Dome Camera, “050” indicates the pan degree, “00” indicates the tilt degree. Click on <Set> button to save the setting.

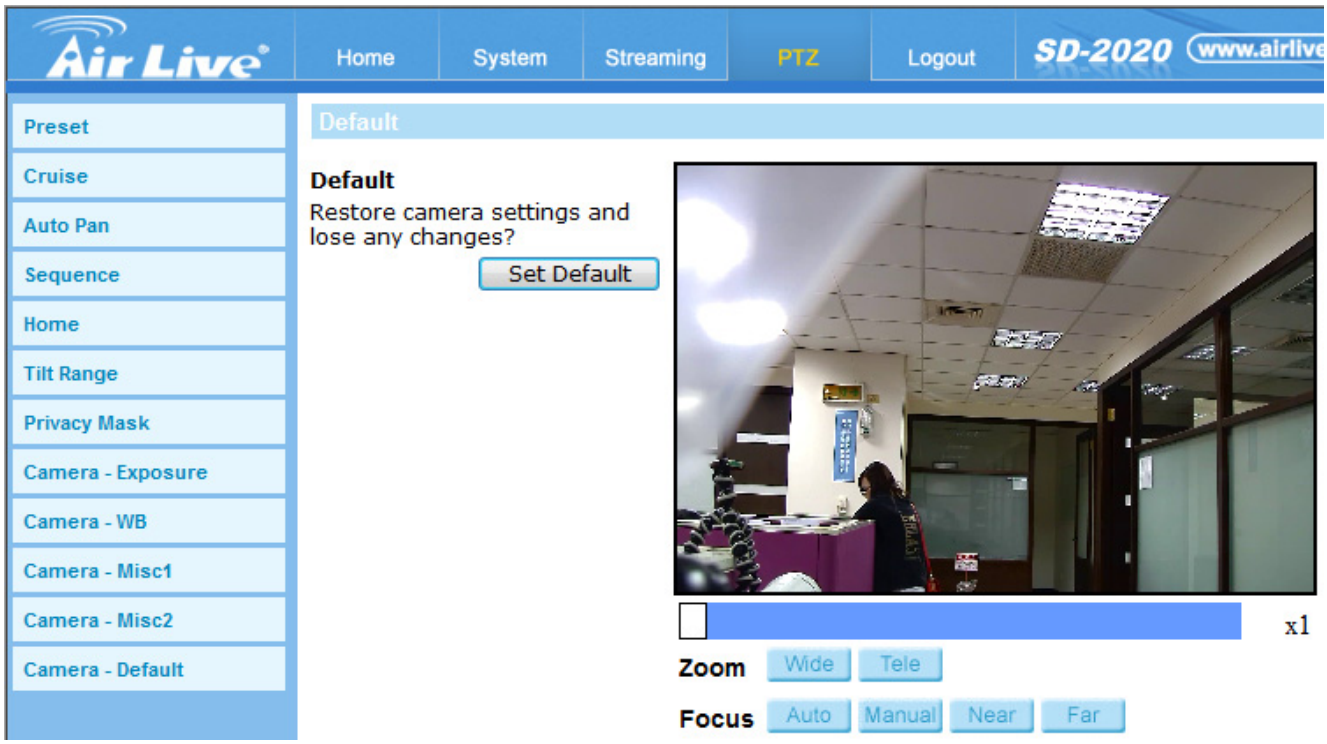
- **Set Pan Zero**
  Click on <Set> to set the Dome Camera’s currently shooting position as the original spot Dome Camera would start to pan (0 degree).

- **TV System**
  Select the video format that matches the present TV system. Click on <Set> button to save the setting. It contains 1080P 30fps (NTSC), 1080P 25fps (PAL), 720P 60fps (NTSC), 720 50fps (PAL).



8.12 Camera-Default

In the Camera Default page, users can set the camera back to factory default settings simply by clicking on the <Set Default> button.



9 Appendix

A. Video Resolution

A.1 Quad Stream

H.264 + H.264 + H.264 + H.264 / MJPEG			
H.264-1	**H.264-2**	**H.264-3**	**H.264-4 / MJPEG**
1920 x 1080 (15 fps)	1280 x 1024 (15 fps)	1280 x 720 (15 fps)	720 x 480 (15 fps)
			640 x 480 (15 fps)
			352 x 240 (30 fps)
		800 x 600 (15 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
		800 x 600 (30 fps)	352 x 240 (30 fps)
		720 x 480 (15 fps)	720 x 480 (30 fps)
		720 x 480 (30 fps)	640 x 480 (30 fps)
			352 x 240 (30 fps)
		640 x 480 (30 fps)	640 x 480 (30 fps)
			352 x 240 (30 fps)
		352 x 240 (30 fps)	352 x 240 (30 fps)
	1280 x 720 (15 fps)	1280 x 720 (15 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
			352 x 240 (30 fps)
		800 x 600 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
			352 x 240 (30 fps)
		720 x 480 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
		640 x 480 (30 fps)	640 x 480 (30 fps)
	1280 x 720 (30 fps)	720 x 480 (30 fps)	352 x 240 (30 fps)
		640 x 480 (30 fps)	352 x 240 (30 fps)
		352 x 240 (30 fps)	352 x 240 (30 fps)
	1024 x 768 (15 fps)	800 x 600 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
		720 x 480 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
		640 x 480 (30 fps)	640 x 480 (30 fps)
	1024 x 768 (30 fps)	800 x 600 (30 fps)	352 x 240 (30 fps)
		720 x 480 (30 fps)	352 x 240 (30 fps)
		640 x 480 (30 fps)	352 x 240 (30 fps)
		352 x 240 (30 fps)	352 x 240 (30 fps)

H.264 + H.264 + H.264 + H.264 / MJPEG			
H.264-1	**H.264-2**	**H.264-3**	**H.264-4 / MJPEG**
	800 x 600 (30 fps)	800 x 600 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
			352 x 240 (30 fps)
		720 x 480 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
			352 x 240 (30 fps)
		640 x 480 (30 fps)	640 x 480 (30 fps)
			352 x 240 (30 fps)
		352 x 240 (30 fps)	352 x 240 (30 fps)
	720 x 480 (30 fps)	720 x 480 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
			352 x 240 (30 fps)
		640 x 480 (30 fps)	640 x 480 (30 fps)
			352 x 240 (30 fps)
		352 x 240 (30 fps)	352 x 240 (30 fps)
	640 x 480 (30 fps)	640 x 480 (30 fps)	640 x 480 (30 fps)
			352 x 240 (30 fps)
		352 x 240 (30 fps)	352 x 240 (30 fps)
1920 x 1080 (30 fps)	352 x 240 (30 fps)	352 x 240 (30 fps)	352 x 240 (30 fps)
1280 x 1024 (15 fps)	1280 x 1024 (15 fps)	1280 x 720 (15 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
		1280 x 720 (30 fps)	352 x 240 (30 fps)
		800 x 600 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
			352 x 240 (30 fps)
		720 x 480 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
		640 x 480 (30 fps)	640 x 480 (30 fps)
	1280 x 1024 (30 fps)	720 x 480 (30 fps)	352 x 240 (30 fps)
		640 x 480 (30 fps)	352 x 240 (30 fps)
		352 x 240 (30 fps)	352 x 240 (30 fps)
	1280 x 720 (15 fps)	1280 x 720 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
			352 x 240 (30 fps)
	1280 x 720 (30 fps)	800 x 600 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
			352 x 240 (30 fps)
		720 x 480 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
			352 x 240 (30 fps)
		640 x 480 (30 fps)	640 x 480 (30 fps)
			352 x 240 (30 fps)
		352 x 240 (30 fps)	352 x 240 (30 fps)
	1024 x 768 (30 fps)	800 x 600 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
			352 x 240 (30 fps)
		720 x 480 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)

H.264 + H.264 + H.264 + H.264 / MJPEG			
H.264-1	**H.264-2**	**H.264-3**	**H.264-4 / MJPEG**
			352 x 240 (30 fps)
		640 x 480 (30 fps)	640 x 480 (30 fps)
			352 x 240 (30 fps)
	800 x 600 (30 fps)	800 x 600 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
		720 x 480 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
1280 x 1024 (30 fps)	1024 x 768 (30 fps)	352 x 240 (30 fps)	352 x 240 (30 fps)
	800 x 600 (30 fps)	800 x 600 (30 fps)	352 x 240 (30 fps)
		720 x 480 (30 fps)	352 x 240 (30 fps)
		640 x 480 (30 fps)	640 x 480 (30 fps)
			352 x 240 (30 fps)
		352 x 240 (30 fps)	352 x 240 (30 fps)
	720 x 480 (30 fps)	720 x 480 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
			352 x 240 (30 fps)
		640 x 480 (30 fps)	640 x 480 (30 fps)
			352 x 240 (30 fps)
		352 x 240 (30 fps)	352 x 240 (30 fps)
	640 x 480 (30 fps)	640 x 480 (30 fps)	640 x 480 (30 fps)
			352 x 240 (30 fps)
		352 x 240 (30 fps)	352 x 240 (30 fps)
	352 x 240 (30 fps)	352 x 240 (30 fps)	352 x 240 (30 fps)
1280 x 720 (15 fps)	1280 x 720 (15 fps)	1280 x 720 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
	1280 x 720 (30 fps)	1280 x 720 (30 fps)	352 x 240 (30 fps)
		800 x 600 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
		720 x 480 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
		640 x 480 (30 fps)	640 x 480 (30 fps)
	1024 x 768 (30 fps)	800 x 600 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
1280 x 720 (30 fps)	1280 x 720 (30 fps)	800 x 600 (30 fps)	352 x 240 (30 fps)
		720 x 480 (30 fps)	352 x 240 (60 fps)
		640 x 480 (30 fps)	352 x 240 (60 fps)
		352 x 240 (60 fps)	352 x 240 (60 fps)
	1024 x 768 (30 fps)	800 x 600 (30 fps)	352 x 240 (30 fps)
		720 x 480 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
			352 x 240 (60 fps)
		640 x 480 (30 fps)	640 x 480 (30 fps)
			352 x 240 (60 fps)
		352 x 240 (60 fps)	352 x 240 (60 fps)
	800 x 600 (30 fps)	800 x 600 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
			352 x 240 (60 fps)
		720 x 480 (30 fps)	720 x 480 (30 fps)

H.264 + H.264 + H.264 + H.264 / MJPEG			
H.264-1	**H.264-2**	**H.264-3**	**H.264-4 / MJPEG**
			640 x 480 (60 fps)
		720 x 480 (60 fps)	352 x 240 (60 fps)
		640 x 480 (30 fps)	640 x 480 (60 fps)
		640 x 480 (60 fps)	352 x 240 (60 fps)
	800 x 600 (60 fps)	352 x 240 (60 fps)	352 x 240 (60 fps)
	720 x 480 (30 fps)	720 x 480 (30 fps)	720 x 480 (60 fps)
			640 x 480 (60 fps)
		720 x 480 (60 fps)	352 x 240 (60 fps)
		640 x 480 (30 fps)	640 x 480 (60 fps)
	720 x 480 (60 fps)	640 x 480 (60 fps)	352 x 240 (60 fps)
		352 x 240 (60 fps)	352 x 240 (60 fps)
	640 x 480 (30 fps)	640 x 480 (30 fps)	640 x 480 (60 fps)
	640 x 480 (60 fps)	640 x 480 (60 fps)	352 x 240 (60 fps)
		352 x 240 (60 fps)	352 x 240 (60 fps)
	352 x 240 (60 fps)	352 x 240 (60 fps)	352 x 240 (60 fps)
1024 x 768 (30 fps)	1024 x 768 (30 fps)	800 x 600 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
			352 x 240 (30 fps)
		720 x 480 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
			352 x 240 (30 fps)
		640 x 480 (30 fps)	640 x 480 (30 fps)
			352 x 240 (30 fps)
		352 x 240 (30 fps)	352 x 240 (30 fps)
	800 x 600 (30 fps)	800 x 600 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
			352 x 240 (30 fps)
		720 x 480 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
			352 x 240 (30 fps)
		640 x 480 (30 fps)	640 x 480 (30 fps)
			352 x 240 (30 fps)
		352 x 240 (30 fps)	352 x 240 (30 fps)
	720 x 480 (30 fps)	720 x 480 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
			352 x 240 (30 fps)
		640 x 480 (30 fps)	640 x 480 (30 fps)
			352 x 240 (30 fps)
		352 x 240 (30 fps)	352 x 240 (30 fps)
	640 x 480 (30 fps)	640 x 480 (30 fps)	640 x 480 (30 fps)
			352 x 240 (30 fps)
		352 x 240 (30 fps)	352 x 240 (30 fps)
	352 x 240 (30 fps)	352 x 240 (30 fps)	352 x 240 (30 fps)
800 x 600 (30 fps)	800 x 600 (30 fps)	800 x 600 (60 fps)	352 x 240 (60 fps)
		720 x 480 (60 fps)	720 x 480 (60 fps)
			640 x 480 (60 fps)
		640 x 480 (60 fps)	640 x 480 (60 fps)
	800 x 600 (60 fps)	720 x	352 x

H.264 + H.264 + H.264 + H.264 / MJPEG			
H.264-1	**H.264-2**	**H.264-3**	**H.264-4 / MJPEG**
		480 (60 fps)	240 (60 fps)
		640 x 480 (60 fps)	352 x 240 (60 fps)
	720 x 480 (30 fps)	720 x 480 (60 fps)	720 x 480 (60 fps)
			640 x 480 (60 fps)
	720 x 480 (60 fps)	720 x 480 (60 fps)	352 x 240 (60 fps)
		640 x 480 (60 fps)	640 x 480 (60 fps)
			352 x 240 (60 fps)
	640 x 480 (60 fps)	640 x 480 (60 fps)	640 x 480 (60 fps)
800 x 600 (60 fps)	800 x 600 (60 fps)	352 x 240 (60 fps)	352 x 240 (60 fps)
	720 x 480 (60 fps)	352 x 240 (60 fps)	352 x 240 (60 fps)
	640 x 480 (60 fps)	640 x 480 (60 fps)	352 x 240 (60 fps)
		352 x 240 (60 fps)	352 x 240 (60 fps)
	352 x 240 (60 fps)	352 x 240 (60 fps)	352 x 240 (60 fps)
720 x 480 (30 fps)	720 x 480 (60 fps)	720 x 480 (60 fps)	720 x 480 (60 fps)
			640 x 480 (60 fps)
		640 x 480 (60 fps)	640 x 480 (60 fps)
	640 x 480 (60 fps)	640 x 480 (60 fps)	640 x 480 (60 fps)
720 x 480 (60 fps)	720 x 480 (60 fps)	720 x 480 (60 fps)	352 x 240 (60 fps)
		640 x 480 (60 fps)	352 x 240 (60 fps)
		352 x 240 (60 fps)	352 x 240 (60 fps)
	640 x 480 (60 fps)	640 x 480 (60 fps)	352 x 240 (60 fps)
		352 x 240 (30 fps)	352 x 240 (60 fps)
	352 x 240 (60 fps)	352 x 240 (30 fps)	352 x 240 (60 fps)
640 x 480 (30 fps)	640 x 480 (60 fps)	640 x 480 (60 fps)	640 x 480 (60 fps)
640 x 480 (60 fps)	640 x 480 (60 fps)	640 x 480 (60 fps)	352 x 240 (60 fps)
		352 x 240 (60 fps)	352 x 240 (60 fps)
	352 x 240 (60 fps)	352 x 240 (60 fps)	352 x 240 (60 fps)
352 x 240 (60 fps)	352 x 240 (60 fps)	352 x 240 (60 fps)	352 x 240 (60 fps)

A.2 Triple Stream

H.264-1 + H.264-2 + H.264-3 / MJPEG		
H.264-1	**H.264-2**	**H.264-3 / MJPEG**
1920 x 1080 (15 fps)	1280 x 1024 (15 fps)	1280 x 720 (15 fps)
		800 x 600 (30 fps)
		720 x 480 (30 fps)
		640 x 480 (30 fps)
		352 x 240 (30 fps)
	1280 x 720 (15 fps)	1280 x 720 (30 fps)
		800 x 600 (30 fps)
	1280 x 720 (30 fps)	720 x 480 (30 fps)
		640 x 480 (30 fps)
		352 x 240 (30 fps)
	1024 x 768 (30 fps)	800 x 600 (30 fps)

H.264-1 + H.264-2 + H.264-3 / MJPEG		
H.264-1	**H.264-2**	**H.264-3 / MJPEG**
		720 x 480 (30 fps)
		640 x 480 (30 fps)
		352 x 240 (30 fps)
	800 x 600 (30 fps)	800 x 600 (30 fps)
		720 x 480 (30 fps)
		640 x 480 (30 fps)
		352 x 240 (30 fps)
	720 x 480 (30 fps)	720 x 480 (30 fps)
		640 x 480 (30 fps)
		352 x 240 (30 fps)
	640 x 480 (30 fps)	640 x 480 (30 fps)
		352 x 240 (30 fps)
1920 x 1080 (30 fps)	352 x 240 (30 fps)	352 x 240 (30 fps)
1280 x 1024 (15 fps)	1280 x 1024 (15 fps)	1280 x 720 (30 fps)
		800 x 600 (30 fps)
	1280 x 1024 (30 fps)	720 x 480 (30 fps)
		640 x 480 (30 fps)
		352 x 240 (30 fps)
	1280 x 720 (15 fps)	1280 x 720 (30 fps)
	1280 x 720 (30 fps)	800 x 600 (30 fps)
		720 x 480 (30 fps)
		640 x 480 (30 fps)
	1024 x 768 (30 fps)	800 x 600 (30 fps)
		720 x 480 (30 fps)
1280 x 1024 (30 fps)	1280 x 720 (30 fps)	352 x 240 (30 fps)
	1024 x 768 (30 fps)	640 x 480 (30 fps)
		352 x 240 (30 fps)
	800 x 600 (30 fps)	800 x 600 (30 fps)
		720 x 480 (30 fps)
		640 x 480 (30 fps)
		352 x 240 (30 fps)
	720 x 480 (30 fps)	720 x 480 (30 fps)
		640 x 480 (30 fps)
		352 x 240 (30 fps)
	640 x 480 (30 fps)	640 x 480 (30 fps)
		352 x 240 (30 fps)
	352 x 240 (30 fps)	352 x 240 (30 fps)
1280 x 720 (15 fps)	1280 x 720 (30 fps)	1280 x 720 (30 fps)
1280 x 720 (30 fps)	1280 x 720 (30 fps)	800 x 600 (30 fps)
		720 x 480 (30 fps)
		640 x 480 (30 fps)
	1280 x 720 (60 fps)	352 x 240 (60 fps)
	1024 x 768 (30 fps)	800 x 600 (30 fps)
		720 x 480 (30 fps)
		640 x 480 (30 fps)
		352 x 240 (30 fps)
	800 x 600 (30 fps)	800 x 600 (60 fps)
		720 x 480 (60 fps)

H.264-1 + H.264-2 + H.264-3 / MJPEG		
H.264-1	**H.264-2**	**H.264-3 / MJPEG**
		640 x 480 (60 fps)
	800 x 600 (60 fps)	352 x 240 (60 fps)
	720 x 480 (60 fps)	720 x 480 (60 fps)
		640 x 480 (60 fps)
		352 x 240 (60 fps)
	640 x 480 (60 fps)	640 x 480 (60 fps)
		352 x 240 (60 fps)
1280 x 720 (60 fps)	352 x 240 (60 fps)	352 x 240 (60 fps)
1024 x 768 (30 fps)	1024 x 768 (30 fps)	800 x 600 (30 fps)
		720 x 480 (30 fps)
		640 x 480 (30 fps)
		352 x 240 (30 fps)
	800 x 600 (30 fps)	800 x 600 (30 fps)
		720 x 480 (30 fps)
		640 x 480 (30 fps)
		352 x 240 (30 fps)
	720 x 480 (30 fps)	720 x 480 (30 fps)
		640 x 480 (30 fps)
		352 x 240 (30 fps)
	640 x 480 (30 fps)	640 x 480 (30 fps)
		352 x 240 (30 fps)
	352 x 240 (30 fps)	352 x 240 (30 fps)
800 x 600 (30 fps)	800 x 600 (60 fps)	800 x 600 (60 fps)
		720 x 480 (60 fps)
		640 x 480 (60 fps)
800 x 600 (60 fps)	800 x 600 (60 fps)	352 x 240 (60 fps)
	720 x 480 (60 fps)	720 x 480 (60 fps)
		640 x 480 (60 fps)
		352 x 240 (60 fps)
	640 x 480 (60 fps)	640 x 480 (60 fps)
		352 x 240 (60 fps)
	352 x 240 (60 fps)	352 x 240 (60 fps)
720 x 480 (60 fps)	720 x 480 (60 fps)	720 x 480 (60 fps)
		640 x 480 (60 fps)
		352 x 240 (60 fps)
	640 x 480 (60 fps)	640 x 480 (60 fps)
		352 x 240 (60 fps)
	352 x 240 (60 fps)	352 x 240 (60 fps)
640 x 480 (60 fps)	640 x 480 (60 fps)	640 x 480 (60 fps)
		352 x 240 (60 fps)
	352 x 240 (60 fps)	352 x 240 (60 fps)
352 x 240 (60 fps)	352 x 240 (60 fps)	352 x 240 (60 fps)

A.3 Dual Stream

H.264-1 + H.264-2 / MJPEG		
H.264-1	**H.264-2 / MJPEG**	**BNC SUPPORT**
1920 x 1080 (15 fps)	1920 x 1080 (15 fps)	-
	1280 x 1024 (30 fps)	-
	1280 x 720 (30 fps)	-
	1024 x 768 (30 fps)	-
	800 x 600 (30 fps)	-
1920 x 1080 (30 fps)	720 x 480 (30 fps)	-
	640 x 480 (30 fps)	-
	352 x 240 (30 fps)	-
1280 x 1024 (30 fps)	1280 x 1024 (15 fps)	-
	1280 x 720 (30 fps)	-
	1024 x 768 (30 fps)	-
	800 x 600 (30 fps)	-
	720 x 480 (30 fps)	-
	640 x 480 (30 fps)	-
	352 x 240 (30 fps)	-
1280 x 720 (30 fps)	1280 x 720 (30 fps)	-
	1024 x 768 (30 fps)	-
	800 x 600 (60 fps)	-
	720 x 480 (60 fps)	-
	640 x 480 (60 fps)	-
1280 x 720 (60 fps)	352 x 240 (60 fps)	-
1024 x 768 (30 fps)	1024 x 768 (30 fps)	-
	800 x 600 (30 fps)	-
	720 x 480 (30 fps)	-
	640 x 480 (30 fps)	-
	352 x 240 (30 fps)	-
800 x 600 (60 fps)	800 x 600 (60 fps)	-
	720 x 480 (60 fps)	-
	640 x 480 (60 fps)	-
	352 x 240 (60 fps)	-
720 x 480 (60 fps)	720 x 480 (60 fps)	-
	640 x 480 (60 fps)	-
	352 x 240 (60 fps)	-
640 x 480 (60 fps)	640 x 480 (60 fps)	-
	352 x 240 (60 fps)	-
352 x 240 (60 fps)	352 x 240 (60 fps)	-

A.4 Single Stream

H.264 Only	BNC SUPPORT
1920 x 1080 (30 fps) Low Latency	-
1920 x 1080 (30 fps)	-
1280 x 1024 (30 fps)	-
1280 x 720 (60 fps)	-
1024 x 768 (30 fps)	-
800 x 600 (60 fps)	-
720 x 480 (60 fps)	-
640 x 480 (60 fps)	-
352 x 240 (60 fps)	-

MJPEG Only	BNC SUPPORT
1920 x 1080 (30 fps)	-
1280 x 1024 (30 fps)	-
1280 x 720 (30 fps)	-
1024 x 768 (30 fps)	-
800 x 600 (60 fps)	-
720 x 480 (60 fps)	-
640 x 480 (60 fps)	-
352 x 240 (60 fps)	-

B. Smart Tracking (Optional)

This function will only become available after authentication is done. Please refer to below B.2 Insert Key.

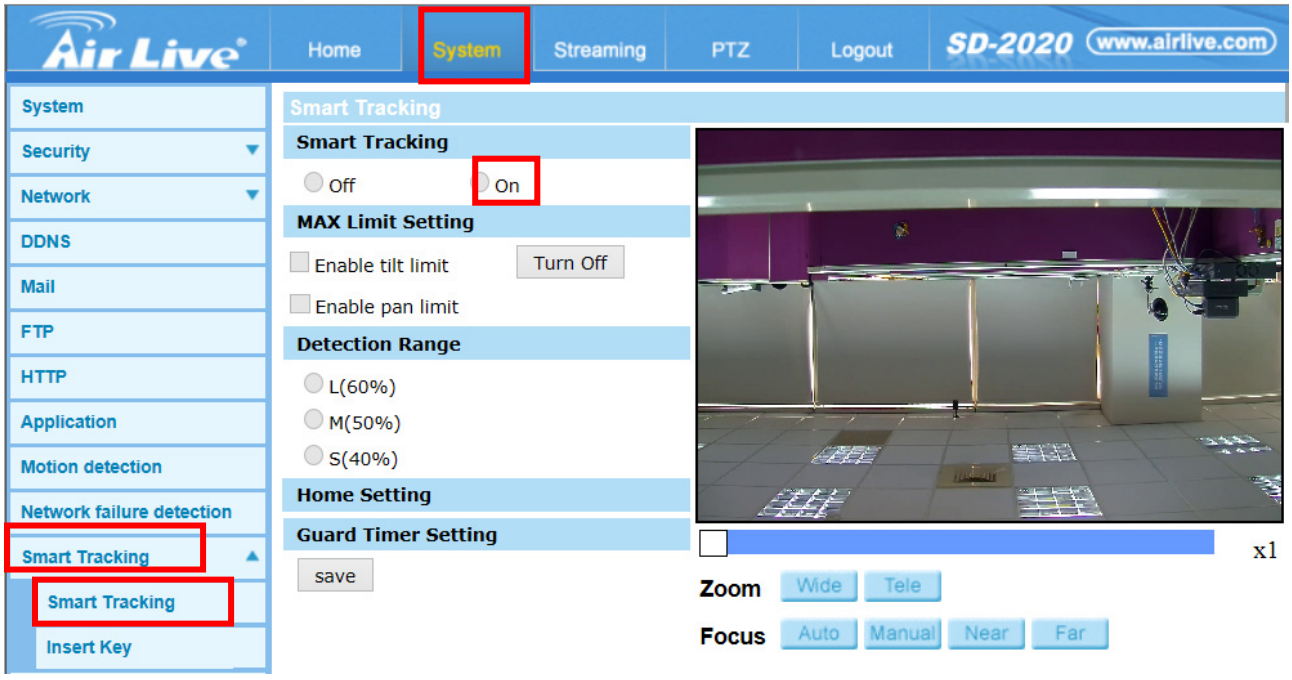
The Smart tracking function will automatically detect a moving object in the preset area and follow it according to the defined settings. Please find the function setting in the following path: **System> Smart tracking**.

Click on the category <Smart tracking>, the <Smart tracking> and <Insert Key> tabs will be shown in the drop-down menu. Enter the setting menu by clicking the <Smart tracking> tab.

B.1 Smart tracking

The default setting of the Smart-tracking function is <Off>. Select <On> to enable the function.

NOTE: Setting items will be available after <On> is selected



B.1.1 Max Limited Setting

This setting menu allows the users to define a tracking area for the detection and tracking movement of the camera.

- **Turn Off**

To avoid the setting process being disturbed by the camera's tracking movement, please click on the <Turn Off> button to switch off the tracking function.

NOTE: The Smart tracking function needs to be reactivated to take effect after saving all the necessary settings. Please follow the steps below.

- Select <Off> under <Smart tracking> at the top.
- Click the <Save> button for confirmation.
- Select <On> under <Smart tracking> at the top.
- Click the <Save> button to confirm the settings.

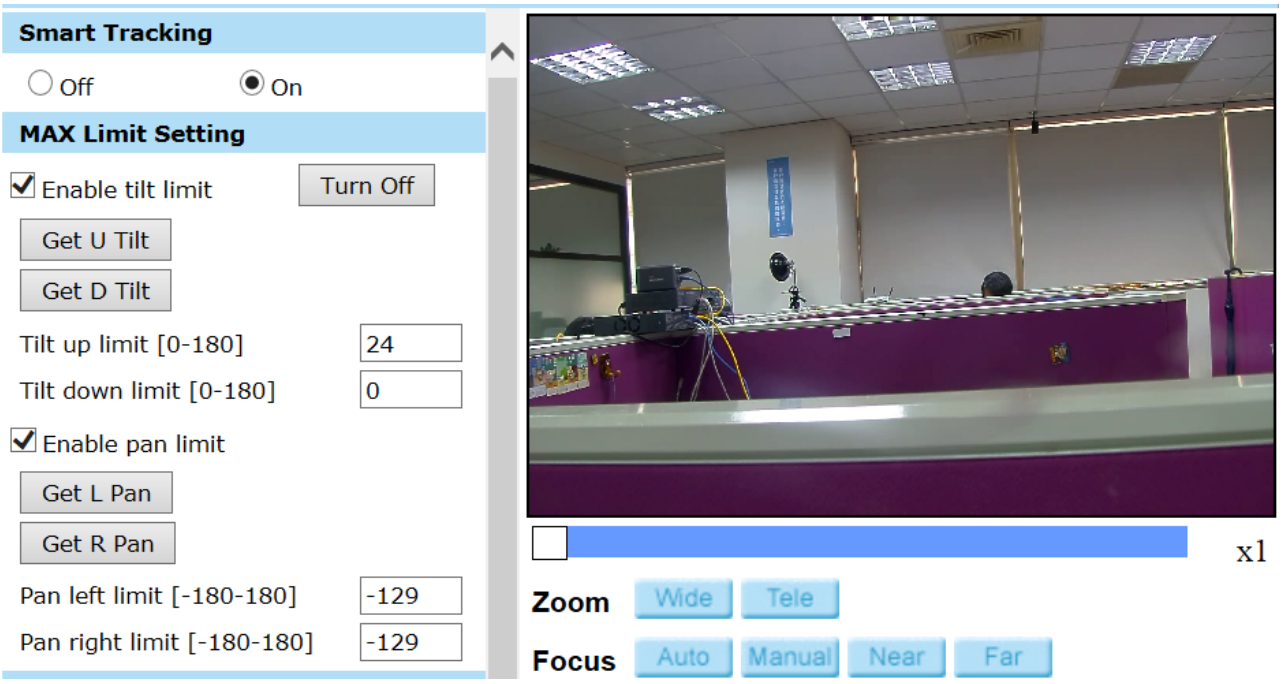
- **Enable tilt limit**
  Tick the box to enable the tilt limit setting.

- **Get U Tilt / D Tilt**
  Please click and drag the PTZ pointer in the view window to the desired up or down tilt position. Then click on the <Get U Tilt> / <Get D Tilt> button to get the boundary values.

- **Enable pan limit**
  Tick the box to enable the pan limit setting.

- **Get L Pan / R Pan**
  Please click and drag the PTZ pointer in the view window to the desired left or right pan position. Then click on the <Get L Pan> / <Get R Pan> button to get the boundary values.

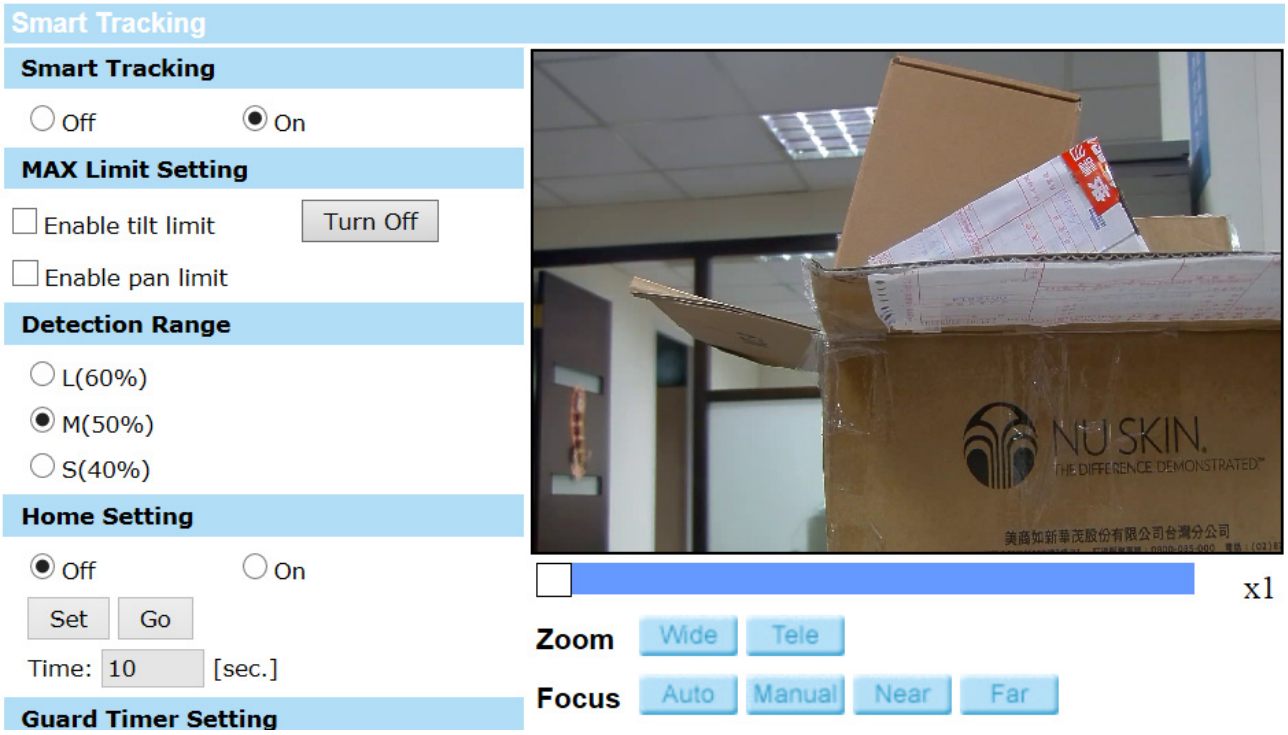
Save：Click on <Save> to confirm the settings.



B.1.2 Detection Range

Detection range can be set to detect motions around the centre of the view window. Please choose a value to define the detection area (in percentage) around the centre point. The available options are <L(60%)>, <M(50%)> and <S(40%)>.

Save：Click on <Save> to confirm the settings.



B.1.3 Home Setting

This function allows users to set the main monitoring area as the home position for the camera. In addition, maximum time can also be set for defining the time for the camera to keep watching a stopped tracking object. The camera will return to the home position according to the defined time setting.

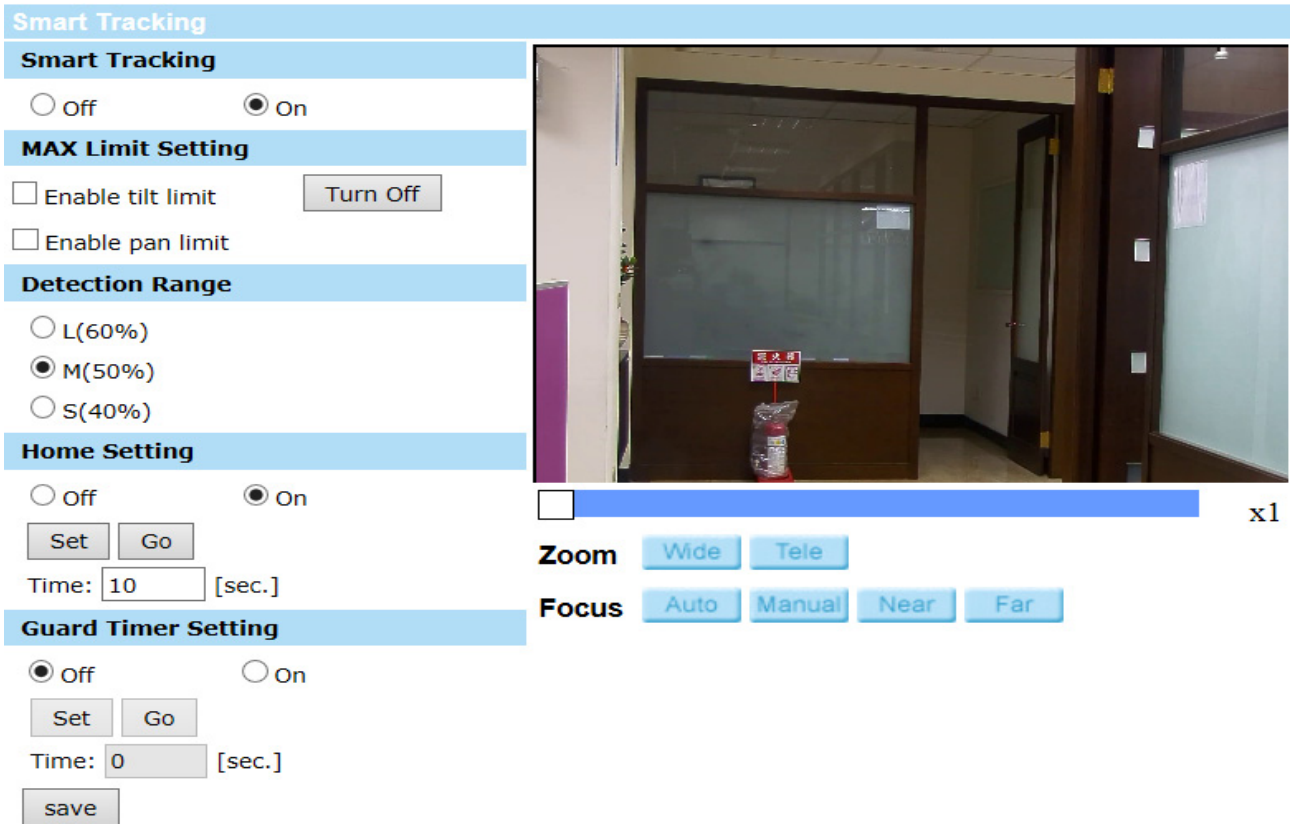
- **Off / On**
  The default setting of Home Setting is <Off>. Select <On> to enable the function.

- **Home Position**
  To set the home position, please click and drag the PTZ pointer in the view window to the desired position. Click on <Set> to confirm the position.

- **Time**
  Please type in the time that the camera should keep watching a stopped tracking object. The camera will return to the home position after the defined time period.

- **Go**
  Click on <Go> to move the camera to the home position.

Save：Click on <Save> to confirm the settings.



B.1.4 Guard Timer Setting

This function allows users to set the main monitoring area as the guard position, and set the duration of time for the camera to track an object.

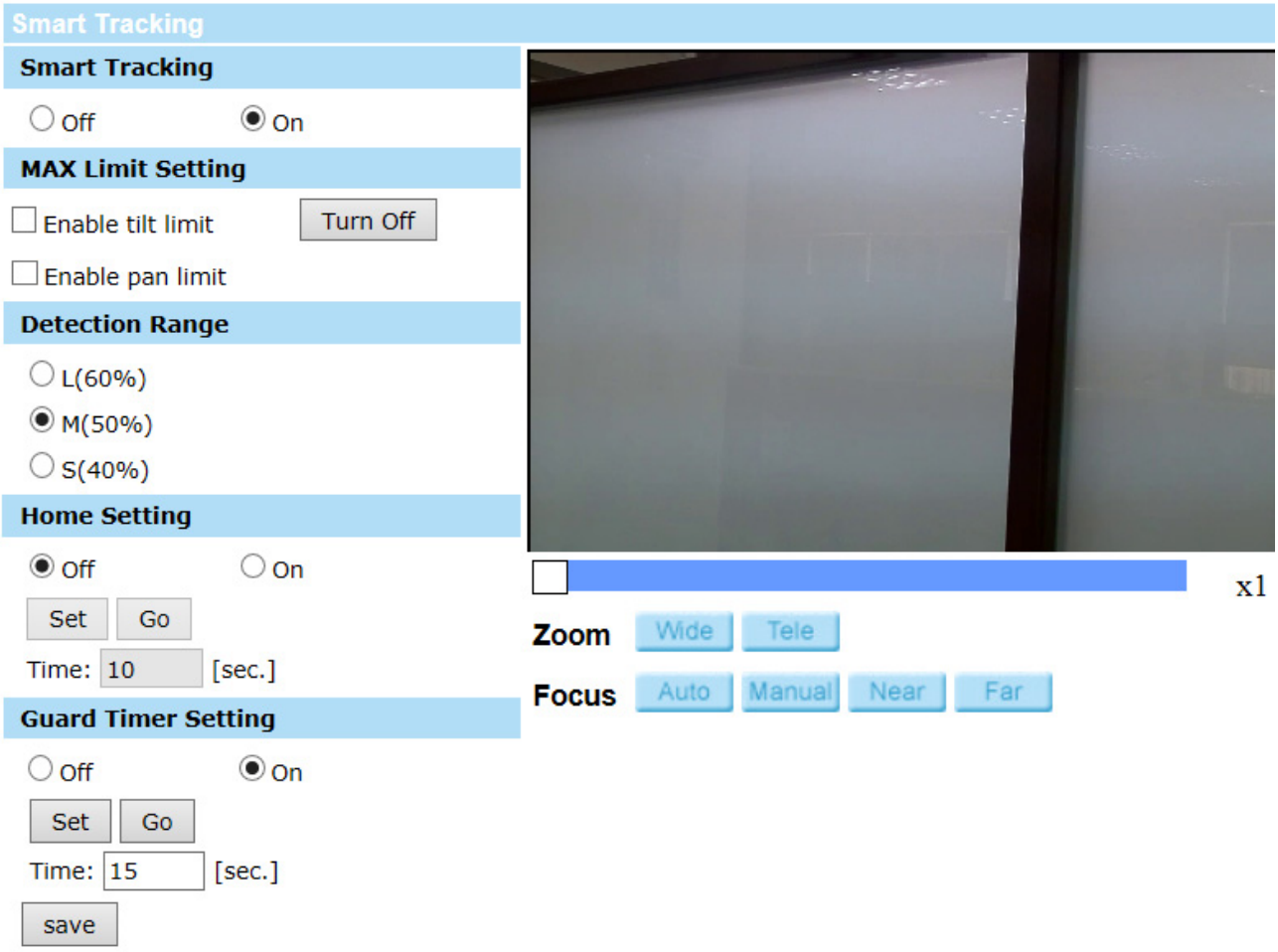
- **Off / On**
  The default setting of the Guard Timer Setting is <Off>. Select <On> to enable the function.

- **Guard Position**
  To set the guard position, please click and drag the PTZ pointer in the view window to the desired position. Click on <Set> to confirm the position.

- **Time**
  Please type in the duration of time that the camera should track a moving object.

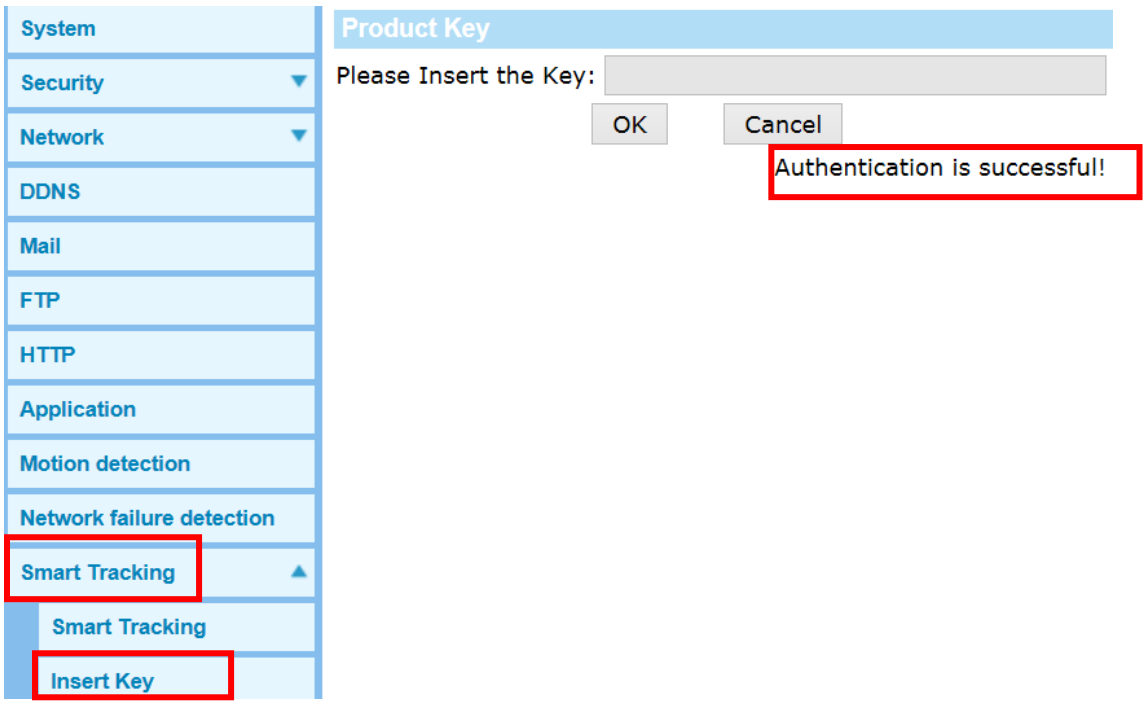
- **Go**
  Click on <Go> to move the camera to the guard position.

Save：Click on <Save> to confirm the settings.



B.2 Insert Key

If the Smart tracking function is already available, users do not need to type in any product key in this page. However, if it is not, please contact the system installers or the sales representatives for the product key. Authentication can be done by type in the product key in the blank space provided in the Inset Key page and click <OK> to enable the function.


System
Security
Network
DDNS
Mail
FTP
HTTP
Application
Motion detection
Network failure detection
Smart Tracking
Smart Tracking
Insert Key
Product Key
Please Insert the Key:
OK
Cancel
Authentication is successful!