



VD-2028

2-Megapixel IR Dome IPCAM

User Manual



www.airlive.com



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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.

WEEE Marking Warning:

The crossed out wheeled bin indicates the product must not be disposed together with household waste. For the sake of the environment, the product should only be given to entities involved in the reception of waste electronic and electrical equipment. The lists of entities entitled to receive used equipment can be found on the websites of municipalities. Some components of devices such as external wiring, circuit boards and liquid crystal displays have a negative impact on the environment.



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1

Overview

This user manual 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

AirLive VD-2028 is a 2.0 Megapixels network camera which is designed for vandal surveillance and security applications. This 2.0MP IP camera offers many improvements in image quality when comparing to conventional surveillance cameras. Users are able to view live video streaming over the Internet, and it is not only one of benefits for using AirLive VD-2028 IP cameras. It is also designed to offer high-performance surveillance by being equipped with PoE switch 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 IP66 water and vandal proof housing, AirLive VD-2028 suits for environments such as office, elevators, campus, chain stores, and boutique stores.

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:

- Vandal Proof and IP-66 Protection
- Support 30FPS at 1080.
- 802.3af PoE Port.
- Low Lux Sensor for Ultra Bright Images.
- 25m IR LEDs.
- Mechanical IR-Cut Filter Removable.
- MicroSD Card Slot for Local Storage.
- Two-Way Audio, DI/DO.
- WDR Enhanced.
- Video Stabilization.
- Free 64-Channel Recording Software.

1.3 Product Specification

Model		VD-2028
Camera	Camera Type	Dome Type
	Max Resolution	1920x1080
	Image Sensor	1/2.8" CMOS Sensor
	Sensor Resolution	1920x1080
	Lens Type	Varifocal Lens
		2.8~12mm, F1.6
	Night Vision	Yes
	Max IR Distance	25m
	Minimum Illumination	0.01 Lux@F1.6 (Color)
		0.001 Lux@F1.6 (B/W)
	Mechanical IR-Cut Filter	Yes
	Viewing Angle	H :98°
		D :116°
V :53°		
Pan/Tilt Control	Lens Adjustment: Pan:0°~360°	
	Lens Adjustment: Tilt:0°~90°	
Video	Video Type	H.264
		MJPEG
	Video Profile	Yes
	Resolution and Frame Rate	30 fps @ 1920X1080
		30 fps @ 1280X720
		30 fps @ 640X480
		30 fps @ 640X360
		30 fps @ 320X240
	Stream	Streaming over UDP, TCP or HTTP
		Configurable frame rate and bandwidth
		Support both CBR and VBR
	Region of Interest (ROI)	Yes
	Image Processing	AE, BLC, AW
Brightness, sharpness, contrast, saturation		
Mirror/Flip		
Privacy Masks		
Text, time and Date		
Digital Zoom	Yes	
Audio	Audio Encoder	G.711_a-law

		G.711_u-law
		AMR
	Audio Streaming	Two-way
	Audio Input/Output	1 Lin-in / 1 Lin-ou
Network	Ethernet	Ethernet(10/100 Base-T), RJ-45
	PoE	IEEE802.3af
	Suported Protocols	IPV4/IPV6/Bonjour,TCP/IP, DHCP, DNS, DynDns/ PPPoE, ARP, ICMP, FTP, SMTP, NTP,UPnP, RTSP, RTCP, HTTPS,SSL, TCP, UDP
	Security	Password protection
		IP filter, HTTPS encrypted data transmission
	Users	Up to 5 simultaneous users
LED and Button	Power LED	Yellow Color
	Link/Act.LED	Orange Color
	Reset Button	Reboot and Factory Default (Push and Hold Over 10 Sec)
General	System ROM	16MB
	System RAM	256MB
	Power Supply	Optional (12V DC 1A)
	Power Consumption	Max 5.1 Waltts
	Connector	RJ-45 10BaseT/100BaseTX
		Audio(1in/1out), DI/DO(2 in/1 out), DC jack, Ethenet/Poe
	Environment	Starting Temperature: -10°~60°
		Working Temerature:-30°~60°
		Humidity:10~100% RH
	Ingress Protection	IP66 rated weatherproof housing
	Impact Protection	IK10 rated vandal proof housing
	SD card Slot	Micro SD
Dimension	φ132 x 112.20mm	
System Integration	Even Triggers	Motion detection, Digital Input, Tamper Detection, Periodically Time, Audio Detection
	Motion Detection	2
	Alarm Output	Network Storage, SD card, FTP, SMTP, HTTPs, DIDO
	Application Programming Interface	OnVIF2.4, Profile S
	Video Buffer	Pre- and Post- alarm buffering

	Continuous recording	Yes
Viewing System	OS	Windows XP / 7 / 8 / 8.1/10, MAC OS, Linux
	Browser	Internet Explorer 9 / 10 / 11, Chrome, Firefox, Safari

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 2.0 GHz or higher
VGA Monitor	Resolution 1024 x 768 or higher
RAM	1 GB or more
Operating System	Windows XP, Vista, 7, 8
Web Browser	Internet Explorer 9 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 Contents

User can find the following items in the package as below:

1. AirLive VD-2028 is the main element of the product.
2. Quick Start Guide provides important information and instructions for installing this device.
3. Accessory Package (Screws / Plastic Anchors/ Tool Kit (Screw, Plastic Anchors, Flathead screwdriver, HEX Wrench, Power Plug Adapter, Waterproof main body, Cable Tie.)/ GPIO Adapter)

Note: *The power adapter is optional.*

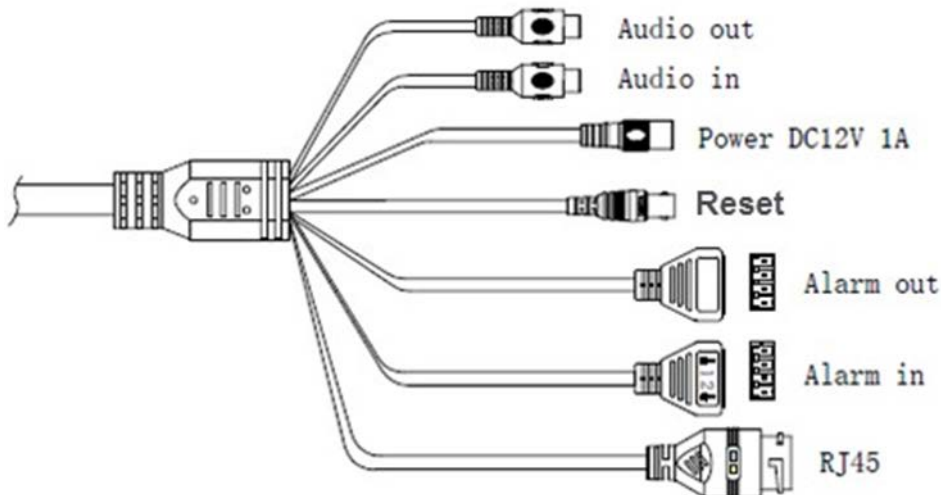
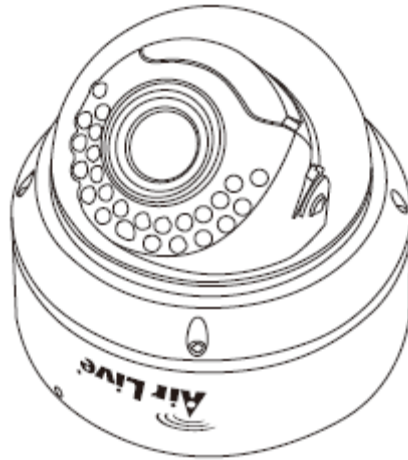
2.2 Connections

Power Source Requirement

This camera can work with 802.3af PoE switches. However, if you don't have the PoE switch, you can use a power adapter to provide power to camera.

Connector

There are various connectors of AirLive VD-2028 as shown in the figures below. Please refer to the diagrams and tables for using of each connector.



1. DC Jack: The input power is DC 12V.

If you don't have the PoE switch, you can use a power adapter to provide power to camera.

2. PoE/RJ45 LAN Socket: Connect to PC or Hub/Switch.

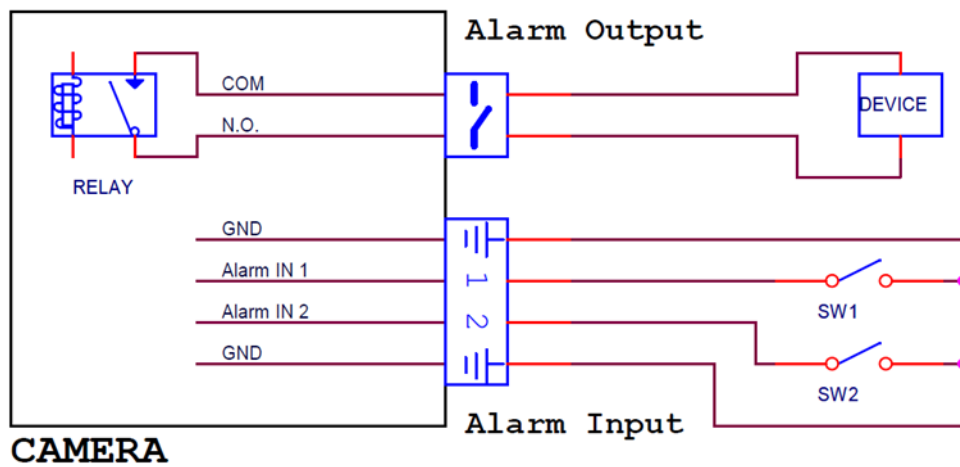
This Ethernet port built N-Way protocol can detect or negotiate the transmission speed of the network automatically. Please use Category 5 cable to connect the Network Camera to a 100Mbps Fast Ethernet network switch or hub.

3. Alarm Digital I/O:

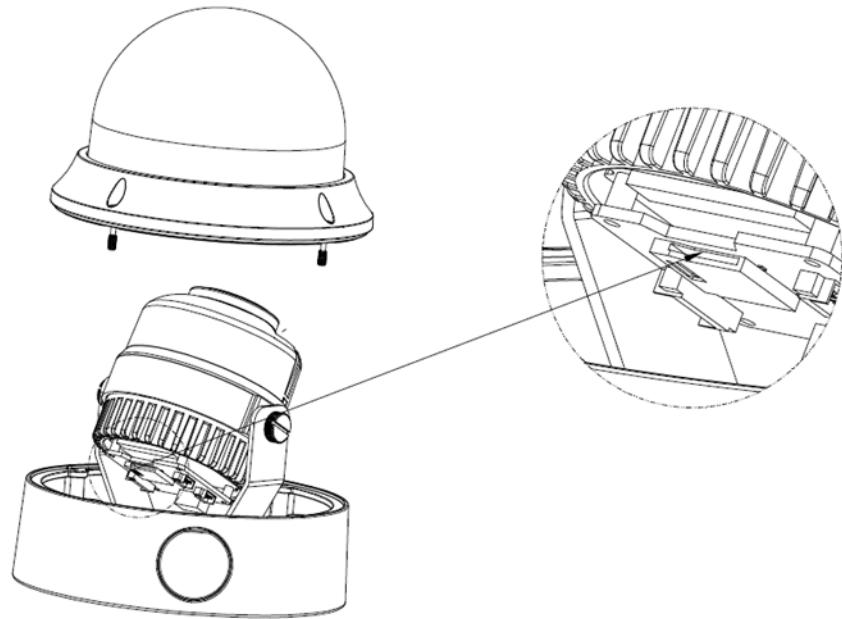
AirLive VD-2028 supports 2 digital alarm inputs and 1 digital alarm output. Please make sure the alarm connections are properly wired. Please refer to the pin definition table below.

Definition	Description	Max. V/A
Alarm Input 1	Connect to GND to activate, or leave floating/unconnected to deactivate.	5V DC / 50mA

Alarm Input 2	Connect to GND to activate, or leave floating/unconnected to deactivate.	5V DC / 50mA
Alarm Output	Relay contact output. Contact capacity with resistance load.	0.3A at 125V AC or 1A at 30V DC



4. Audio Output: Composite video connector.
5. Audio Input: Composite video connector.
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.
7. MicroSD Card Slot: MicroSD Card Slot allows you to insert a memory card for expansion of storage.



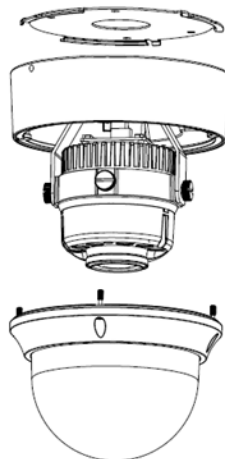
8. LEC indicator: The LED colors are defined below.

LED	Color	Indication
Network	Green	Solid green when network is established.
	Orange	Blink orange when there is network activity.

2.3 Mounting the Camera

1. Disassembling

Loosen the screw on top and then take off the cover.



2. Installation

- Attach the alignment sticker to the wall/ceiling. Drill three holes into the wall/ceiling.

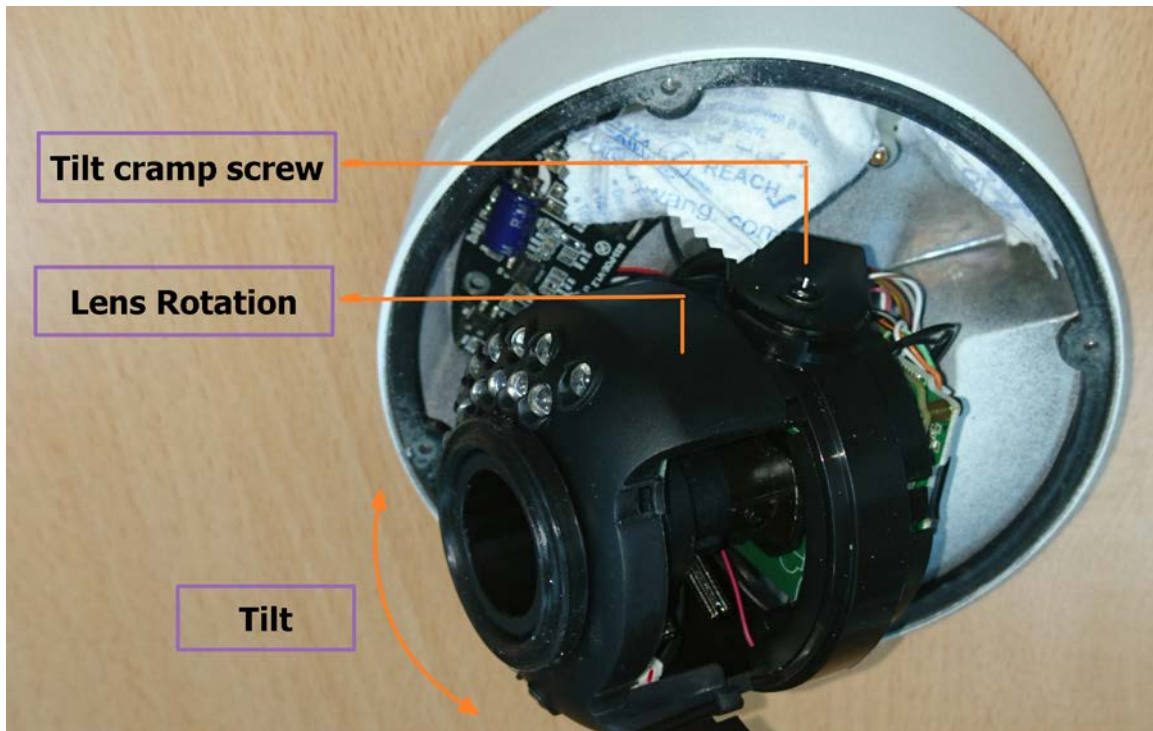
Then hammer the supplied plastic anchors into the screw holes and secure the mounting plate with supplied screws.

- Attach the camera to the mounting plate and turn the camera clockwise until the clips snap to the mounting plate.

Note: when the adjustment is finished, please change the desiccant bag in back cover.

3. Adjusting the monitoring direction for the camera

You can adjust the camera direction only when the camera is fixed on the ceiling. Where adjusting the tilt is called Tilt, and turning the lens on its axis is called Rotation.

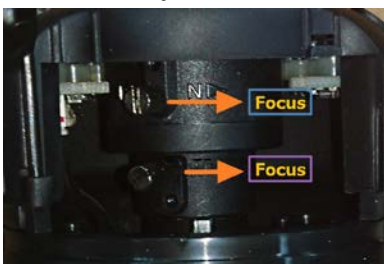


- Adjust the rotation angle to correct the image display position (up/down/left/right).

- Adjust the tilt angle and let the camera faces toward the monitoring object.

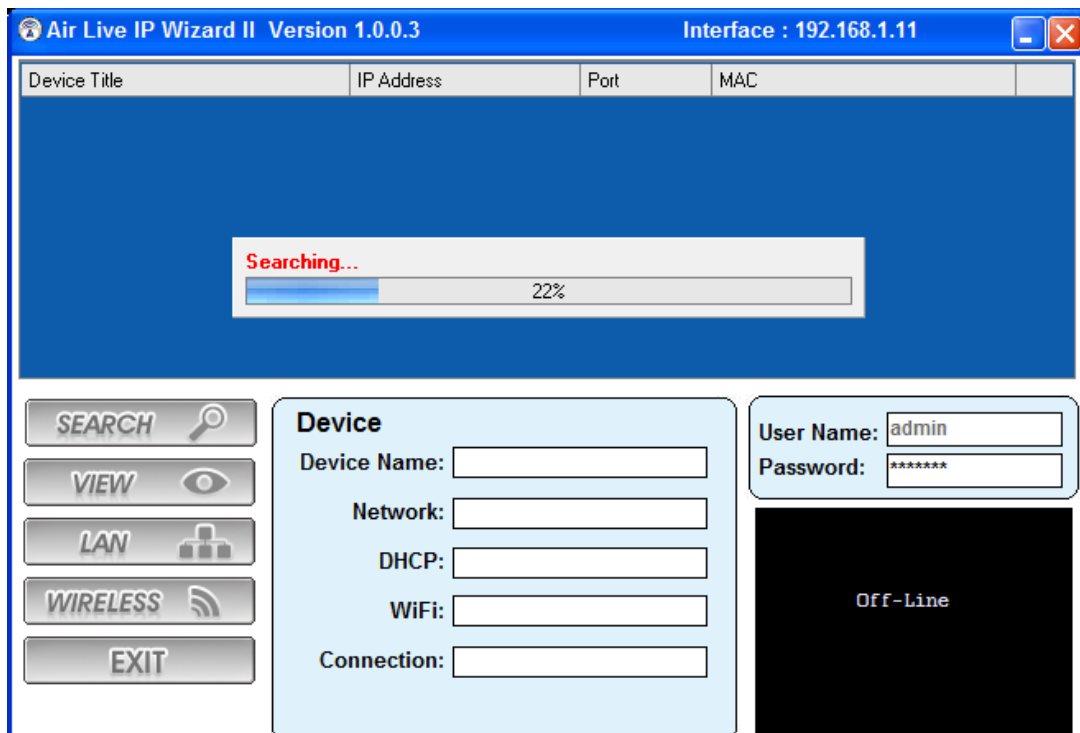
4. Adjusting Zoom in/out and focus for the camera

You can adjust the camera as picture below.

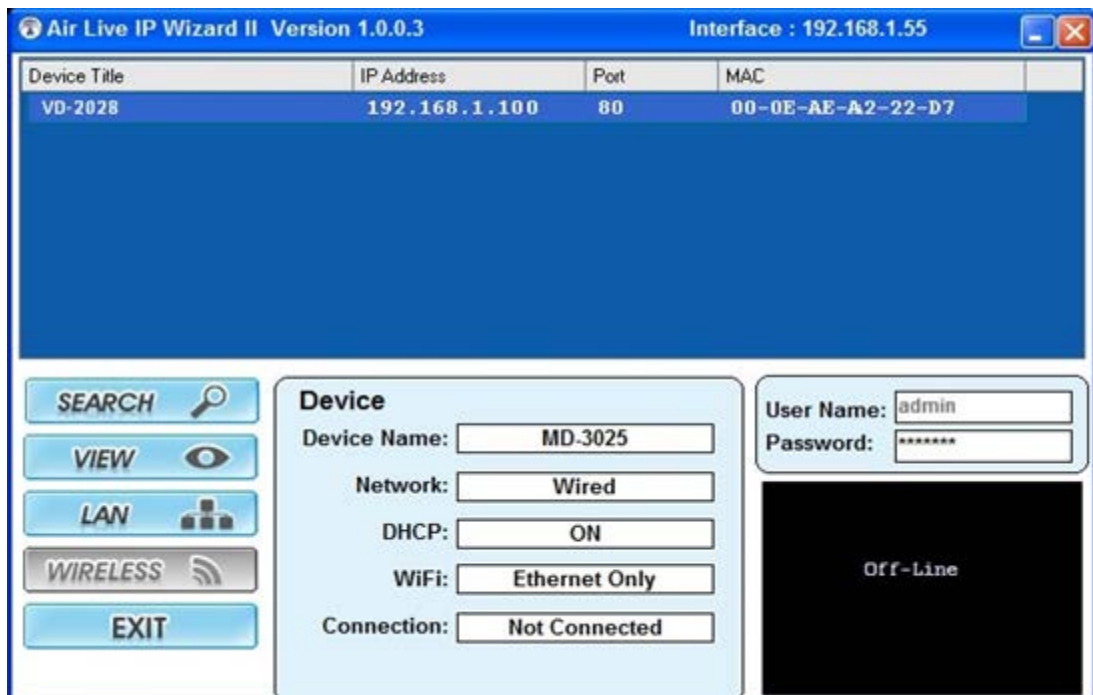


2.4 Connect to IP Camera

1. Download the Airlive IPWizard from <http://fs.airlive.com/firmware/AirLive%20IP%20Wizard%20II%20version1.0.0.3.zip>.
2. Install Software → "AirLive IP Wizard II" to install the configuration tool.
3. After completed the installation, run the "Air Live IP Wizard II" to start to search the IP camera.



4. The entire detected IP camera will be listed out.



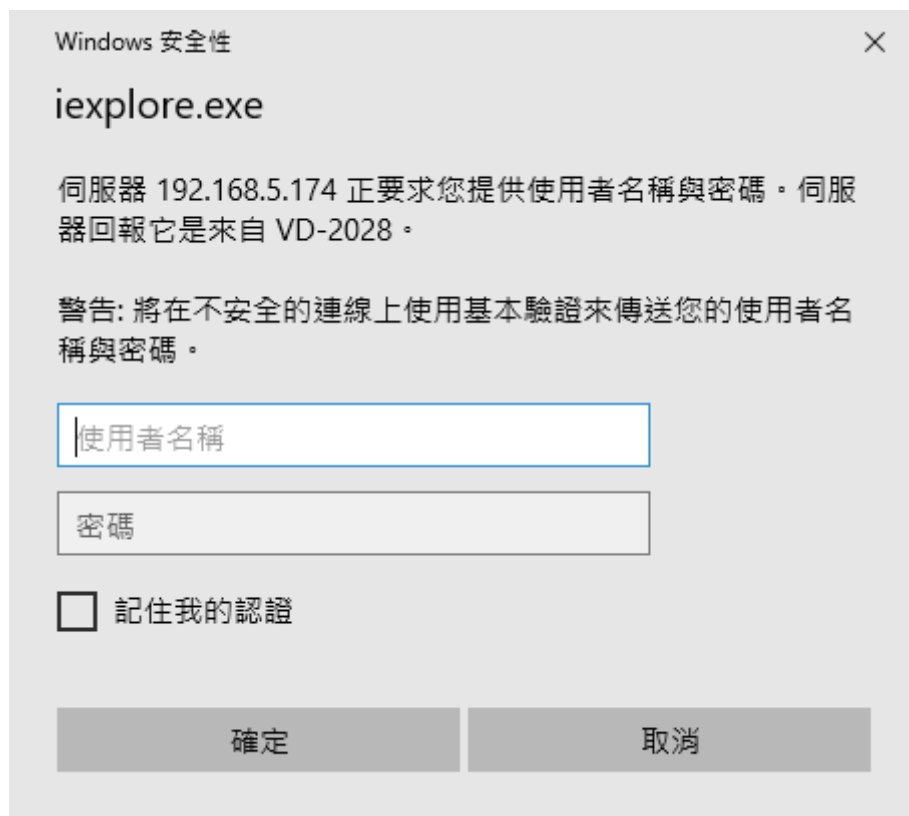
5. If the Camera's IP address is in the same IP segment as your LAN, select the founded IP Camera and double click on the item. Then, the default browser will show up and connect to the IP camera's Web automatically.

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

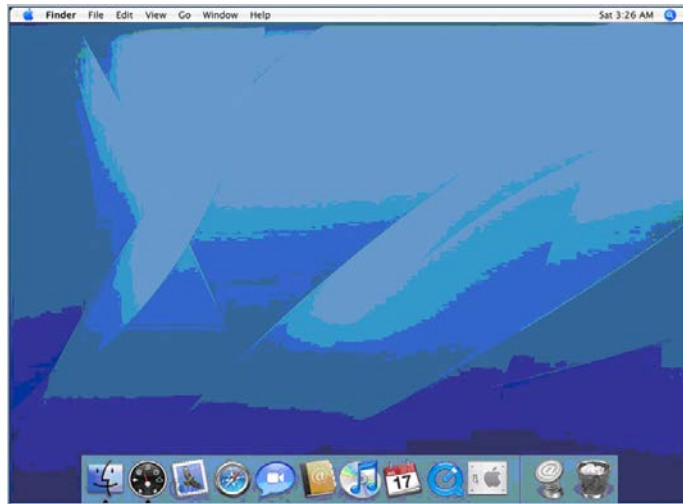


Note: The default user name “**admin**” and the password “**airlive**” are the default values. You can change them in the Account Menu. (Please check “Configuration → Basic → Account”)

3. The monitor image will be displayed in your browser. In the main window, you can configure the settings you want. For more details, please refer to the following chapters.

3.2 MAC OS using Safari Browse.

1. Select **Safari Icon**.



2. Click **Bonjour function** and select the camera you wish to access.

3. Enter name and password to login to the IP camera.
(Default is admin / airlive)



4. Live video will display in the center of your web browser.


4


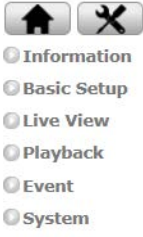









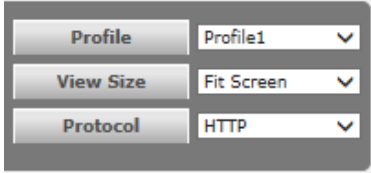
Operating the Network Camera

Start-up screen will be shown once you access into the IP camera. In the left side, you can control Live View function as below:



4.1 Live View

Toolbar	Function
	Click this button to take you back to the camera home page where you can live view the video

	<p>Click this button to open the administrator menu page, which can set up all the configuration</p> 
	<p>Click this button to pause or resume from pause the live video stream. The function is also available in VLC mode when you use non-IE browser</p>
	<p>Clicking this button will stop the video stream and the video display turns black (off). The function is also available in VLC mode when you use non-IE browser</p>
	<p>Click on the Record button, if you wish to record the live video to your computer's hard drive. When selected, a prompt will request you to specify the folder in which you want to store the video. Click OK to begin the recording. The Record button starts flashing, indicating that the recording is active. Click it again to stop the recording. Note: This function is only available in MS Internet Explorer on Windows systems.</p>
	<p>Use this button to take a snapshot of the video. Clicking the button opens up a window showing the captured frame. Save the image by clicking on the Save Image button. The function is also available in VLC mode when you use non-IE browser</p>
	<p>The digital zoom function allows magnification of certain areas of the video. After you click on the magnification icon, a window appears as an overlay on top of the image. See below. You can drag the box over the image, and you can adjust the magnification by moving the slider toward "T" (tele-zoom) or "W" (wide-angle). The more you move the slider toward "T," the further you zoom in and details appear larger. It is normal behavior that the image quality is reduced when using the digital zoom function. Digital Zoom is only available in MS Internet Explorer Web browsers. Note: This function is only available in MS Internet Explorer on Windows systems.</p> 
	<p>Click this button to view the video in full screen mode. In full screen mode, the video is stretched to fit the entire screen and all control graphics and window elements are no longer displayed. To return from full screen mode, press the ESC key on your keyboard. You can also right- or left-click any part of the image with your mouse. The function is also available in VLC mode when you use non-IE browser</p>
	<p>Returns the user to the main live video page.</p>
	<p>Click this button and the client settings dialog will open. Profile- Select your preferred profile from the drop-down list. The network camera can store different profiles that provide different video settings. You can define these profiles in the administrator menu, e.g. one profile is for low bandwidth environment whereas another profile is for maximum quality.</p> 

View Size- There are two choices here. "Fit Screen" will keep the video small so that it will always fit into the view port of the live video page. "Full Screen" is actually not full screen at all, but it displays the video stream at its original size. So, if you select a profile that displays 1080p contents and select full screen for the view size, the video will be rendered at 1920 x 1080 pixels on your screen.

Protocol- Select the transfer protocol here.

4.2 Configuration

Click "Configuration" for the camera detail settings. For more information, please refer to Chapter 5.

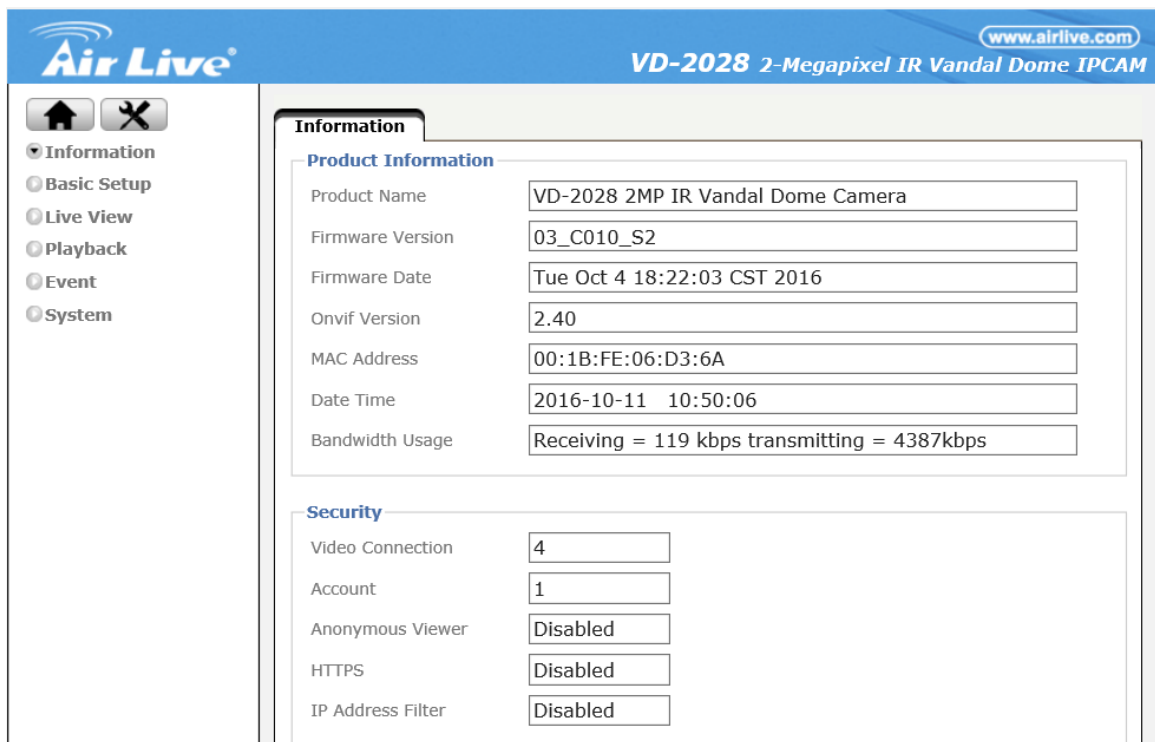


5

Configuration

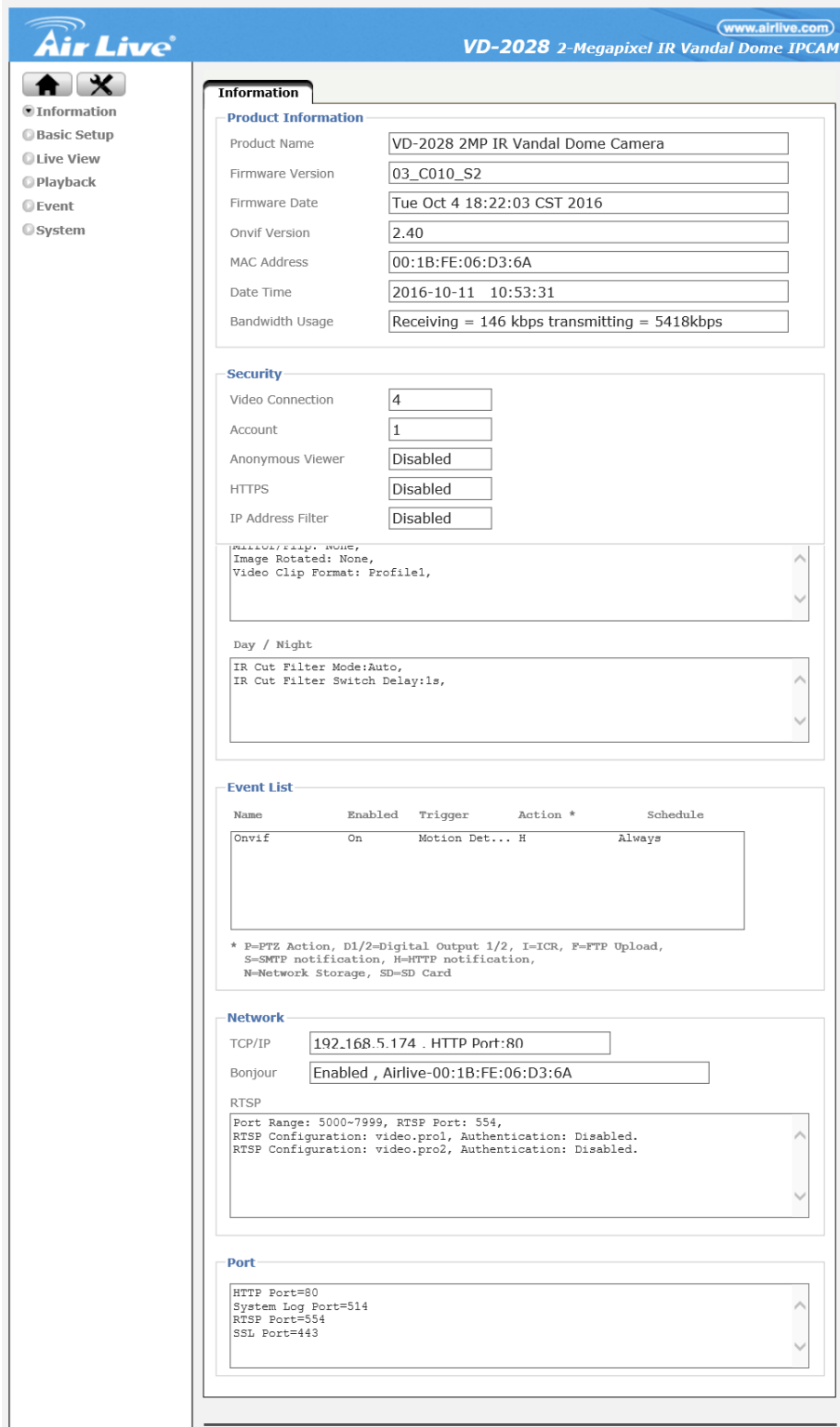
Click the “**Configuration**” to display sub-menus included:

Information / Basic Setup / Live View / Playback / Even / System.



5.1 Information

The camera's administrator menu allows you to configure all aspects of your network camera. This page provides a complete overview of the status of your network camera



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VD-2028 2-Megapixel IR Vandal Dome IPCAM

- Information (selected)
- Basic Setup
- Live View
- Playback
- Event
- System

Information

Product Information

Product Name	VD-2028 2MP IR Vandal Dome Camera
Firmware Version	03_C010_S2
Firmware Date	Tue Oct 4 18:22:03 CST 2016
Onvif Version	2.40
MAC Address	00:1B:FE:06:D3:6A
Date Time	2016-10-11 10:53:31
Bandwidth Usage	Receiving = 146 kbps transmitting = 5418kbps

Security

Video Connection	4
Account	1
Anonymous Viewer	Disabled
HTTPS	Disabled
IP Address Filter	Disabled

rtsp://ip: none,
 Image Rotated: None,
 Video Clip Format: Profile1,

Day / Night

IR Cut Filter Mode:Auto,
 IR Cut Filter Switch Delay:1s,

Event List

Name	Enabled	Trigger	Action *	Schedule
Onvif	On	Motion Det... H		Always

* P=PTZ Action, D1/2=Digital Output 1/2, I=ICR, F=FTP Upload,
 S=SMTP notification, H=HTTP notification,
 N=Network Storage, SD=SD Card

Network

TCP/IP

Bonjour

RTSP

Port Range: 5000~7999, RTSP Port: 554,
 RTSP Configuration: video.pro1, Authentication: Disabled.
 RTSP Configuration: video.pro2, Authentication: Disabled.

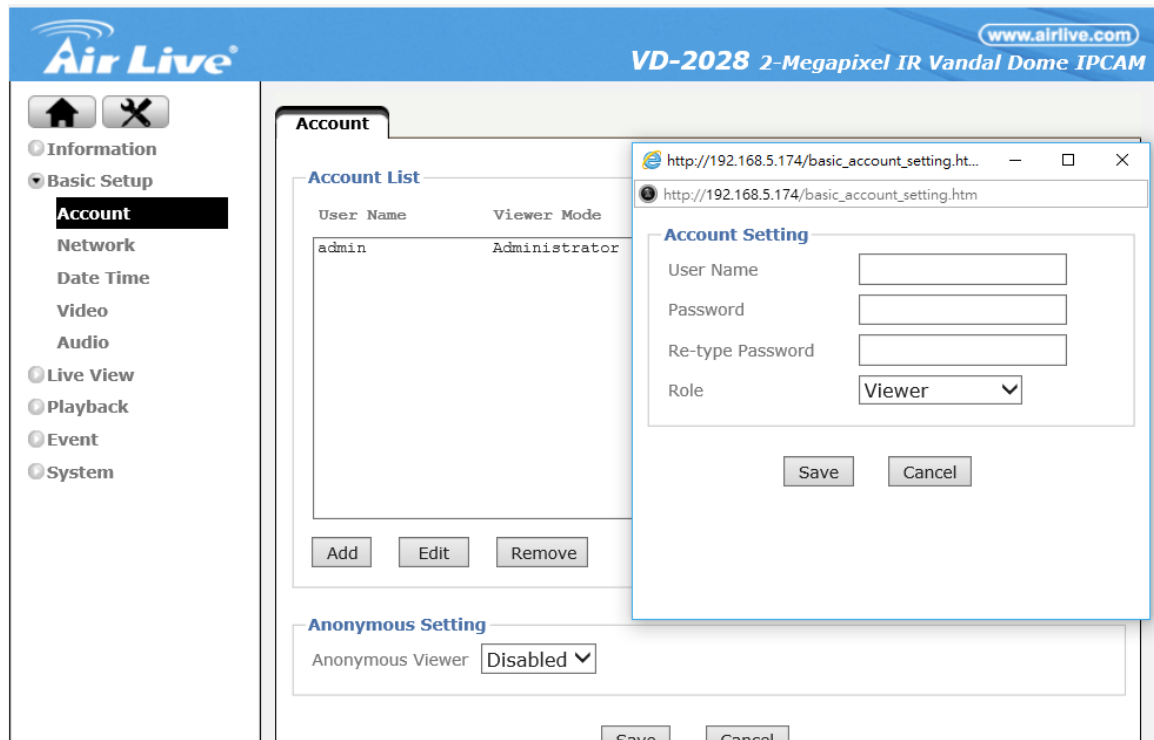
Port

HTTP Port=80
 System Log Port=514
 RTSP Port=554
 SSL Port=443

5.2 Basic Setting

The basic setup allows you to manage the user accounts of your network camera, define the network parameters, set up the date and time settings and most importantly, the video settings.

1. Account



The network camera allows the creation of different user accounts with different levels of access to the camera. There are three main user levels. The Viewer account only allows viewing the live video page of the camera. The Operator account allows viewing the live video as well as changing the image setup settings, such as brightness, contrast, etc. Only the Administrator account has full access to all camera settings, including the Settings menu.

You can define up to nine additional user accounts. The user name and password must be between 4 and 16 characters in length. For each account you can also specify different user authority (Viewer, Operator or Administrator).

Account List:

Click the Add button to create a new user account. A popup window will open up. Here you type in a user name and a password for the new account. Also, you must define the role of the new user account. The example shows how we create a guest account that only has viewing rights, but cannot change any settings.

Click Save to create the new user account.
 Highlight an account to either edit or remove it.
 Note that the admin user account cannot be removed.

Anonymous Settings:

Enabling this will allow any user to view the live video from the camera live video page without entering a user name or password. If you do not want to allow this to happen, be sure to set this option to “Disabled.”

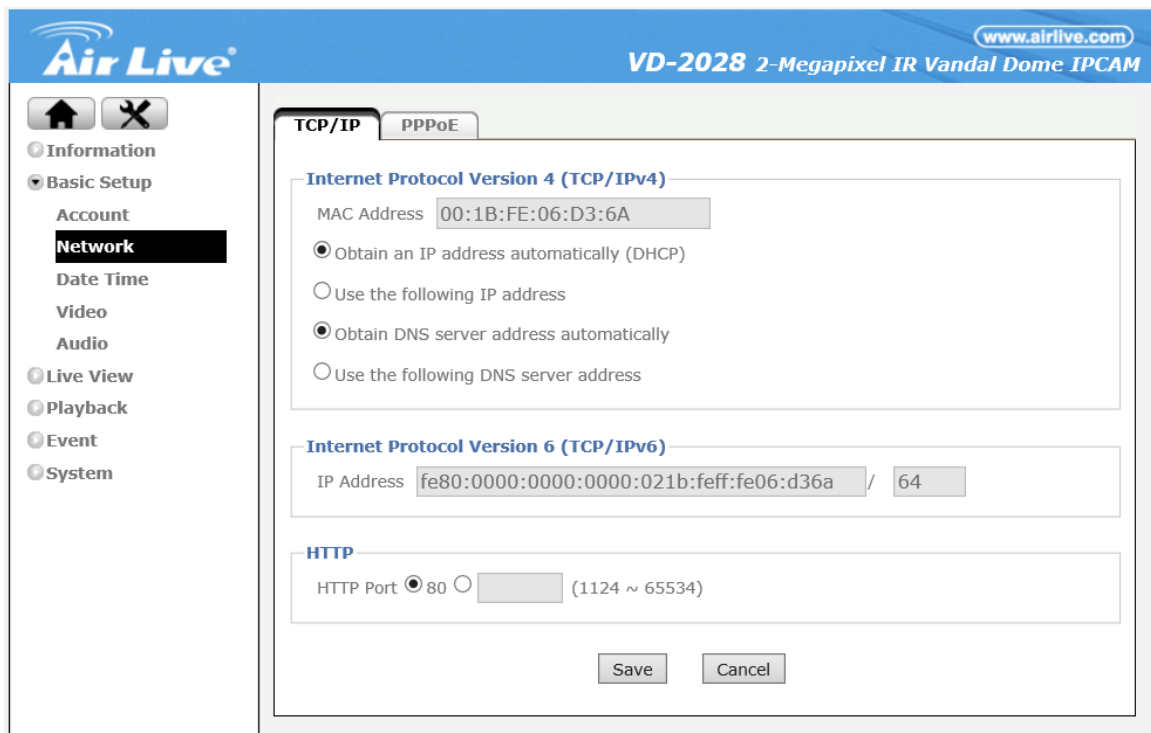
Anonymous Setting

Anonymous Viewer

2. Network

On this page you can define the network settings of the camera. By default the camera is set up to automatically obtain the necessary IP information from the DHCP server (e.g., the router) in your network. You can, however, set up the IP address and related settings manually.

● **TCP/IP:**



- **Internet Protocol Version 4(TCP/IPv4):**

MAC address- MAC address stands for Media Access Control address. This is the unique hardware address of the camera’s network interface.

Obtain an IP address automatically (DHCP)- This is the default setting. In this mode the camera obtains the IP information from the DHCP server in your network.

Use the following IP address- Activate this option in order to assign a static IP address to the camera. You need to enter a valid IP address, subnet mask and default gateway address in the corresponding fields.

Obtain DNS server address automatically - automatically use the DNS server settings provided by the DHCP server.

Use the following DNS server address- When you disable DHCP, you also need to provide the camera with valid DNS settings. The Primary DNS server must be filled out. It is often the same IP address as the Gateway address.

- **Internet Protocol Version 6(TCP/IPv6):**

IP address- The IPv6 IP address of camera is automatically assigned by converting the MAC address of the IP camera. User is not able to modify it..

- **HTTP:**

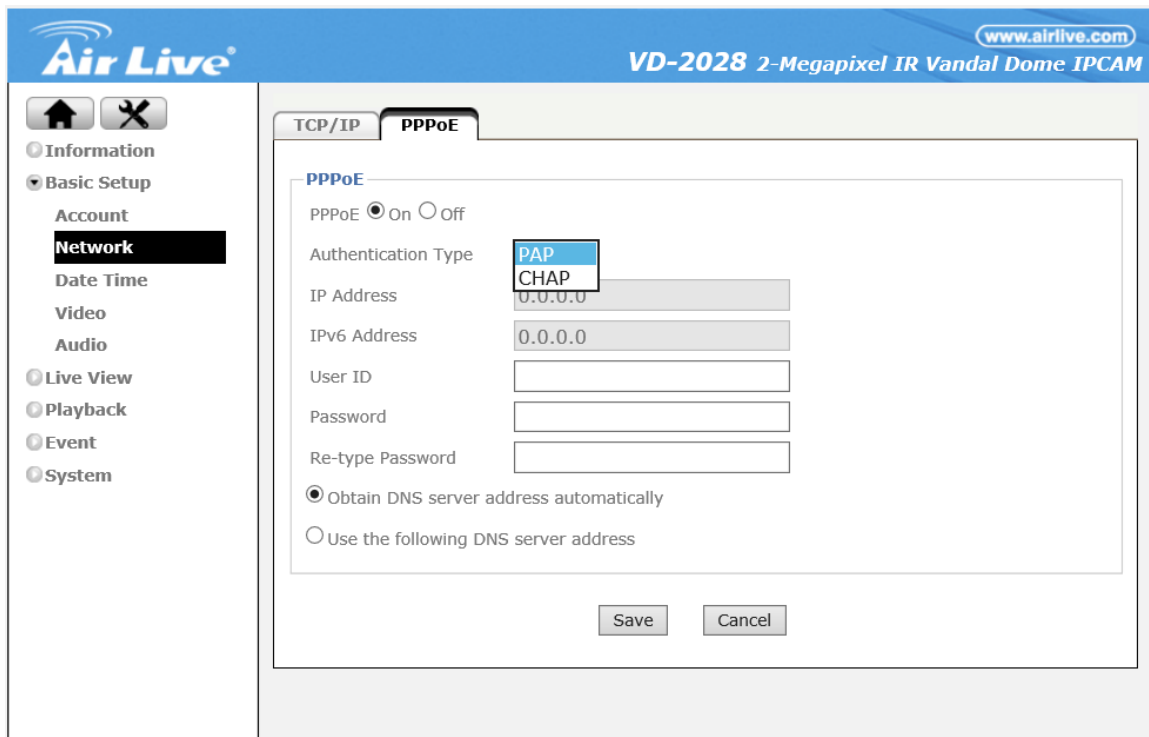
HTTP port number- The default value is 80 and normally there is no need to change it.

If you decide to change the http port to a different value; e.g., 1024, you need to do two things.

First, after saving the settings you need to reboot the camera via the System -> Initialize menu.

Secondly, after the reboot is completed you need to connect to the camera using the URL http://camera_ip:portnumber.

● **PPPoE:**



PPPoE is the most common form of connection for DSL-based Internet service.

You can use this function to connect the camera directly to a DSL modem. A common application for this is where the network camera is installed in a remote location where no network is present. In the location is a DSL Internet connection (DSL modem), but no router or any other network infrastructure. You can connect the camera to the DSL modem and enter your DSL account information in the fields below.

- **PPPoE:**

PPPoE- On.

Authentication Type- PAP or CHAP.

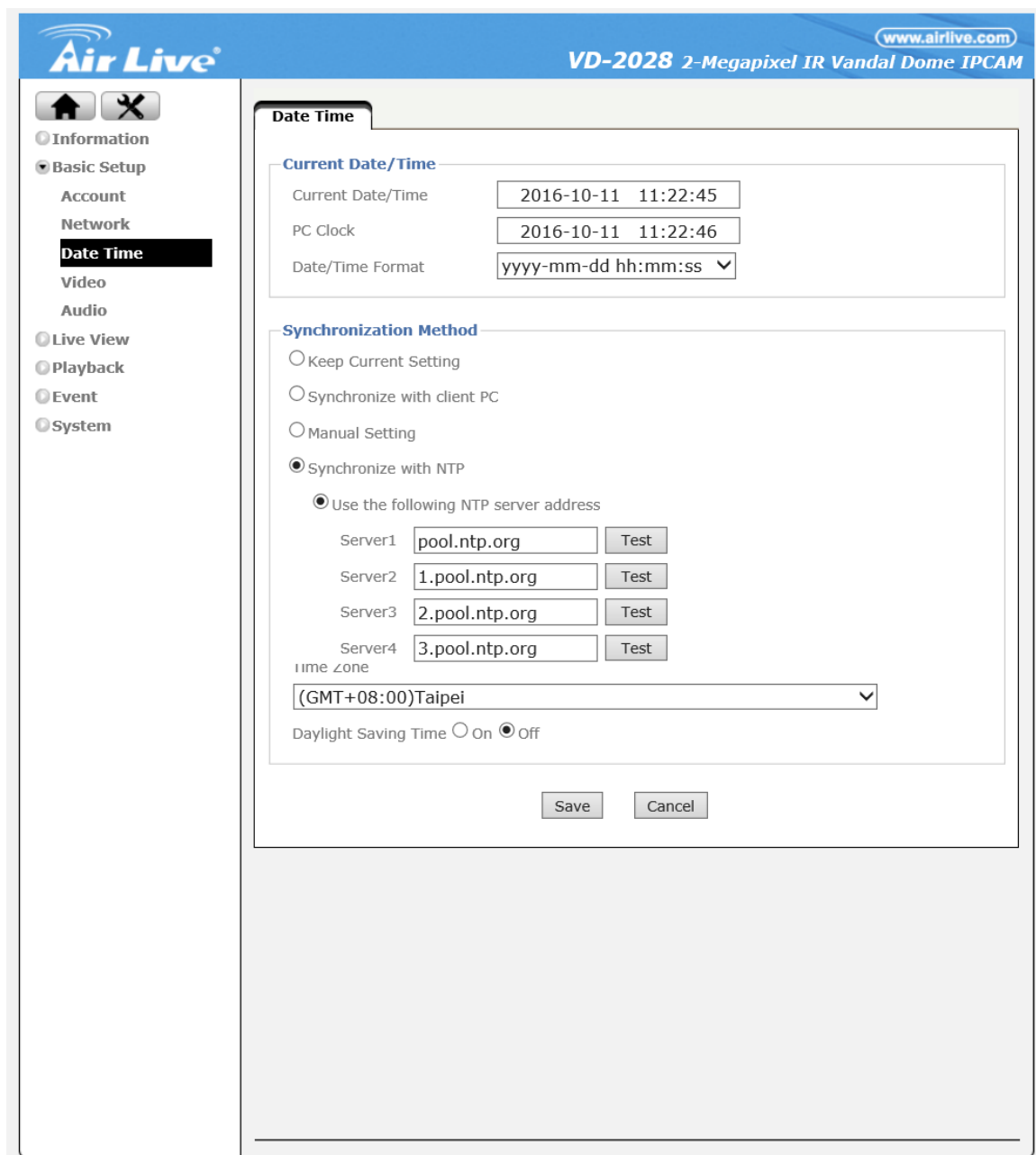
IP address- Displays the current IP address obtained from the Internet Service Provider (ISP). It displays 0.0.0.0 if the camera is not connected to the Internet via PPPoE.

User ID- Enter the user ID for your DSL service here. The user ID has been given to you by your ISP.

Password- The password for the DSL account goes here. Re-type the password in the field.

DNS Server- Typically, your ISP will send DNS Server information to the camera when it connects. Some ISPs, however, require entering specific DNS servers manually. In that case you can activate the option “Use the following DNS server address” and enter the primary and secondary DNS servers in the fields below (not shown on the screen shot).

3. Date Time



Current Date/Time

Current Date/Time: 2016-10-11 11:22:45

PC Clock: 2016-10-11 11:22:46

Date/Time Format: yyyy-mm-dd hh:mm:ss

Synchronization Method

Keep Current Setting

Synchronize with client PC

Manual Setting

Synchronize with NTP

Use the following NTP server address

Server1: pool.ntp.org [Test]

Server2: 1.pool.ntp.org [Test]

Server3: 2.pool.ntp.org [Test]

Server4: 3.pool.ntp.org [Test]

Time Zone: (GMT+08:00)Taipei

Daylight Saving Time: On Off

[Save] [Cancel]

On this page you can define the time settings of the camera.

- **Current Date/Time:**

Current Date/Time- Displays the camera's current time.

PC Clock- This is the date and time of the computer you are currently using to connect to the camera.

Date/Time Format- The format determines how the date/time is displayed on the live video.

- **Synchronization Method:**

Keep current setting- You don't want to change the date and time.

Synchronize with client PC- It means to adjust the camera time to your PC. Be aware of the fact that this option sets the time only one time. From that point forward, the camera time will start to differ from your PC time as time progresses, and occasional re-synchronization will be necessary.

Manual Setting- Lets you manually enter the time and date. As with the previous option, the camera's time will become inaccurate as time passes and you will need to re-synchronize the time periodically.

Synchronize with NTP- This option is the recommended setting. In this mode, the camera will synchronize its time settings based on the interval setting (ranging from once per hour to once per day). The camera obtains the time from the NTP server. You can use the default value unless your camera is not connected to the Internet, or if a firewall in your network blocks the outgoing NTP request of the camera. Select "Manual" and you can enter a different NTP server; e.g., a server in your local network.

- **Time Zone:**

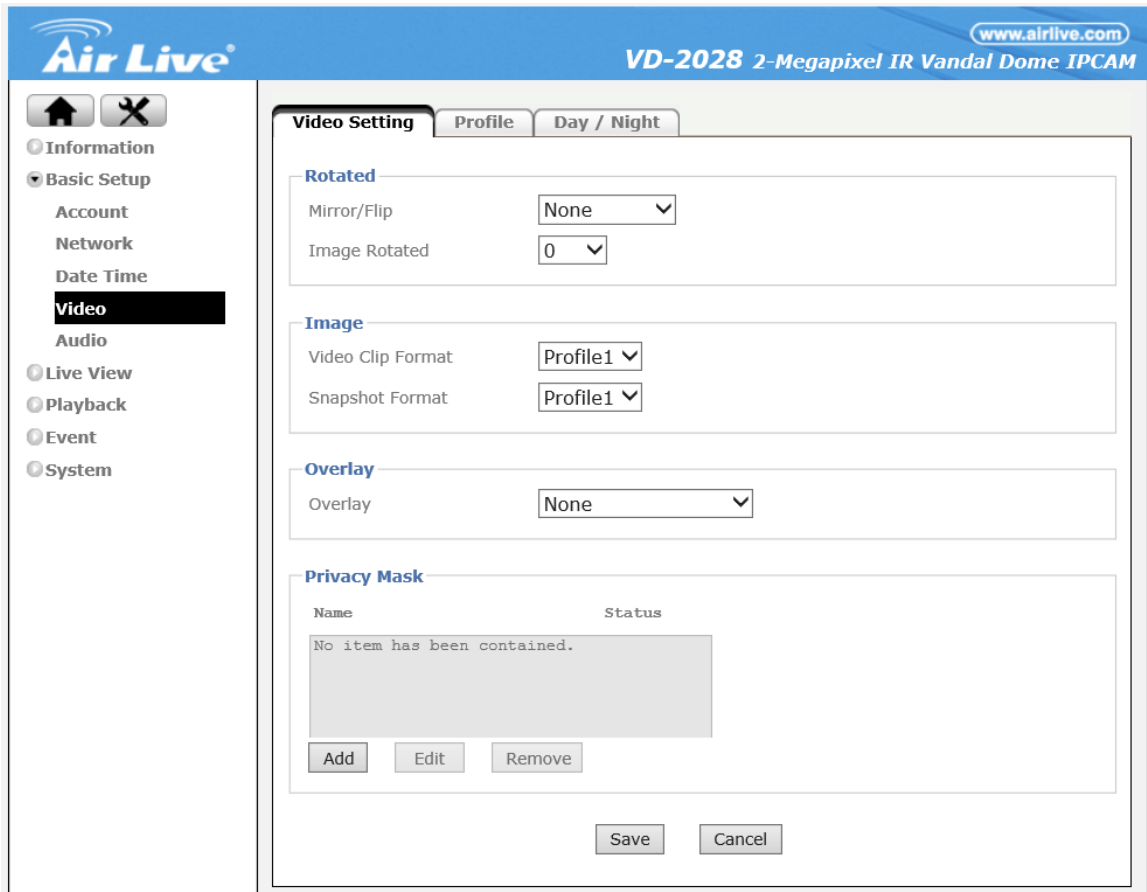
Time zone- Select the correct time zone for your location.

Daylight Saving Time- You can define the range of Daylight Saving Time by activating this option. The camera will adjust the time (move the clock forward or backward by one hour) depending on the programmed start and end time. If your camera is not equipped with this feature, you can adjust the time zone manually for Daylight Saving Time.

4. Video

The following three menus: Video Setting, Profile and Day/Night, allowing defining all video-related parameters. Note that the Day/Night option as well as other parameters may not be available on all models.

- **Video Setting:**



- **Rotated:**

Mirror/Flip- Allows to mirrors and flip the image.

Image Rotated- Allows 90°/180°/270° rotating the image

- **Image:**

Video Clip Format- Select which video profile the camera should be using for video clips it records in such as the network storage device, or SD card.

Snapshot Format- Select the video profile used for snapshots (e.g., for JPG upload to a FTP server).

- **Overlay:**

Overlay- Define what kind of an overlay you want for the live video.

Text Color- Choose between black and white.

Background color- Select from black, white or transparent.

Display Position- Define where the overlay should appear on the live image.

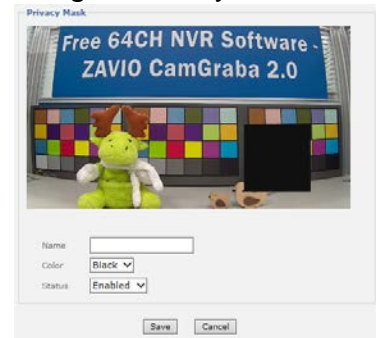
- **Privacy mask:**

Privacy masking is the ability of the camera to back out (censor) certain parts of the live video.

Example: The camera is installed in your company; for example, overlooking the warehouse. In one corner of the warehouse is the break room, where the employees go for their lunch breaks. In many countries it is not permitted to monitor the workers during their break. To comply with laws and regulations, you can define a privacy mask in the break area to ensure that this area is not being monitored or recorded by the camera.

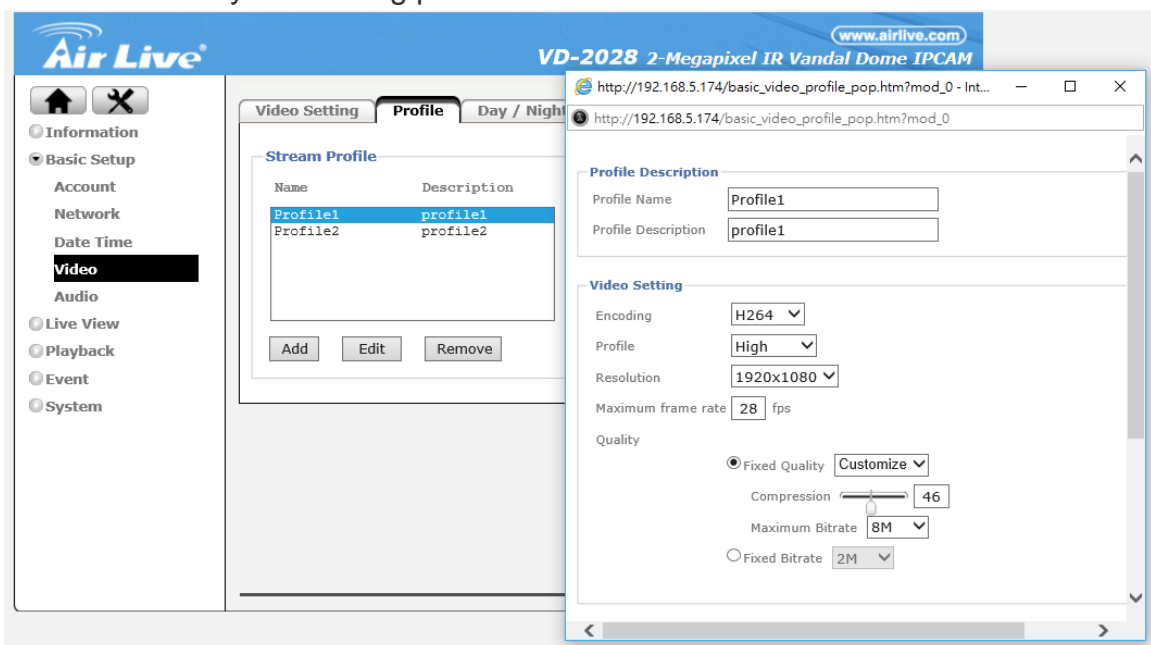
Click “Add” to create a new privacy mask.

As you can create multiple masks, you need to provide a name for the mask, and you can define which color you want to overlay to be. Finally, set the status to “Enabled” and click “Save” to create and activate the privacy mask



- **Profile:**

The network camera allows the creation of video streaming profiles. For each profile you can define the video resolution, the viewing area and the video codec that is to be used. Click “Add” to create a new profile, “Remove” to delete a profile or “Edit” to modify an existing profile.



- **Video Setting:**

Encoding- Your network camera can encode video in two different formats. H.264 is the most advanced and efficient codec delivering excellent image quality and a small video stream size at the same time. Normally, this is your preferred choice. However, you can also select MJPEG, e.g., for compatibility reasons.

Profile- Encoding application offers you three choices- High, Main and Baseline profiles.

Resolution- Here you define the video resolution for the profile. Which choices you have depends on your camera model. Some HD models offer image resolutions of up to 1920 x 1080 pixels whereas standard definition cameras are limited to 640 x 480 pixels.

Maximum frame rate- Type in the number of frames the camera should generate per second of video. The higher the value, the smoother the video, but the more bandwidth is going to be required. Valid entries are 1 to 30.

Quality- You can control the image quality of the video by selecting “Fixed Quality”(or refers to VBR) and defining the image quality by selecting one of the following values “Medium,,” “Standard,,” “Good,,” “Detailed” and “Excellent.” Or you can choose to specify the bit rate (fixed bitrate or CBR) of the video the camera must not exceed. In this mode the camera varies the image quality automatically to not exceed the specified maximum. With setting fixed quality plus maximum bitrates, the camera would try to meet the quality requirement without exceed the certain bitrates.

- **Audio Setting:**

Audio Stream- You can select “On” or “Off”.

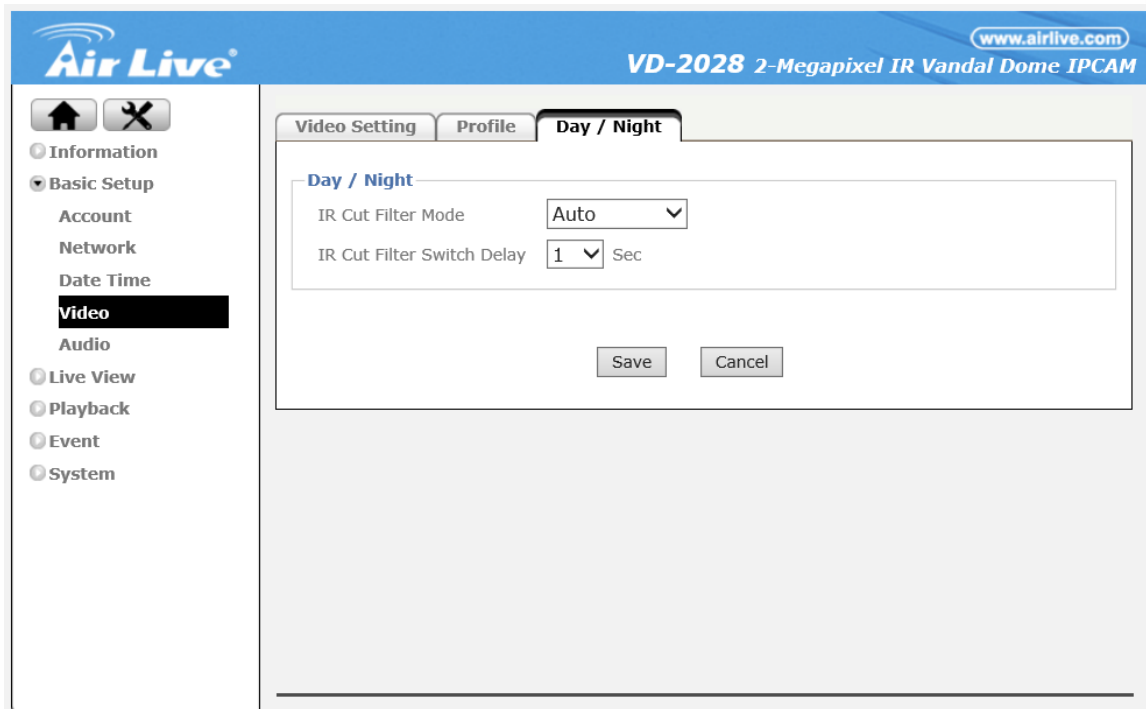
Audio Setting

Audio Stream	<input type="button" value="On ▼"/>
Current Audio Setting	
Audio Mode	<input type="text" value="Full Duplex"/>
Audio Input	<input type="text" value="0db / g.711_u-law"/>
Audio Output	<input type="text" value="6db"/>

- **Day/Night:**

Some network cameras are equipped with active IR LEDs providing the ability to capture video in complete darkness. Note, that if your camera is not equipped with IR LEDs, this menu will not be available. Also note that some menu items will vary depending on your camera model.

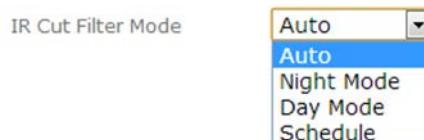
Infrared cut-off filters are designed to reflect or block mid-infrared wavelengths while passing visible light. They are often used in network video cameras to block IR due to the high sensitivity of many camera sensors to near-infrared light. With the filter in place before the image sensor, the camera will not be able to pick up IR light, but it generates true color video. Once the IR cut filter is removed, the camera becomes IR light sensitive and will generate a black and white image – and it does that even in complete darkness if the IR LEDs are active.



- **Day/Night:**

IR Cut Filter Mode-

Auto-- The camera decides when to remove the IR cut filter based on the IR Cut Filter Threshold you can specify. The switch delay ensures that the camera only switches the IR Cut Filter after the specified amount of time has passed.



Night Mode-- This is the opposite of the day mode. If this mode is enabled, the camera always removes the IR cut filter. As a result, the camera will always be IR sensitive, regardless of the actual light levels, and the image will be rendered in B/W mode. Using night mode in day light conditions is not recommended as it leads to a poor image quality with false and washed out colors.

Day Mode-- In this mode the camera does not remove the IR Cut Filter from the image sensor regardless of any other settings. So only visible light will pass through and the image will be in color mode.

Schedule-- Select this option, if you wish to control exactly when you want the camera to engage the night mode. You can use the internal scheduler to define a time pattern for each day of the week, e.g., no night mode on the weekends, but night mode from MON to FRI from 21.00 hours to 06.00 hours. The scheduler is explained in detail later on.

IR Cut Filter Switch Delay- For user to define the time duration (how many seconds) between IR being turned on or off from the current status.

IR Cut Filter Threshold- Here we use an example to explain how IR cut filter threshold works. If you set Dark as 30 lux and Bright as 70 lux, that means when luminance is less than 30 lux, the camera switches to night mode (B/W), and when luminance is more than 70 lux, the camera switches to day mode (color), if the luminance is between 30 lux and 70 lux, the camera stays in current mode.

IR Mode-

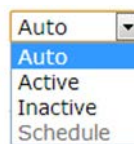
Auto-- This ensures that the IR lights go on whenever the IR cut filter has been removed.

Active-- Keeps the IR LEDs illuminated regardless of the state of the IR cut filter. To ensure maximum life of the IR LEDs, this option shouldn't be used, unless your camera is installed in a dark environment which requires IR lighting at all times.

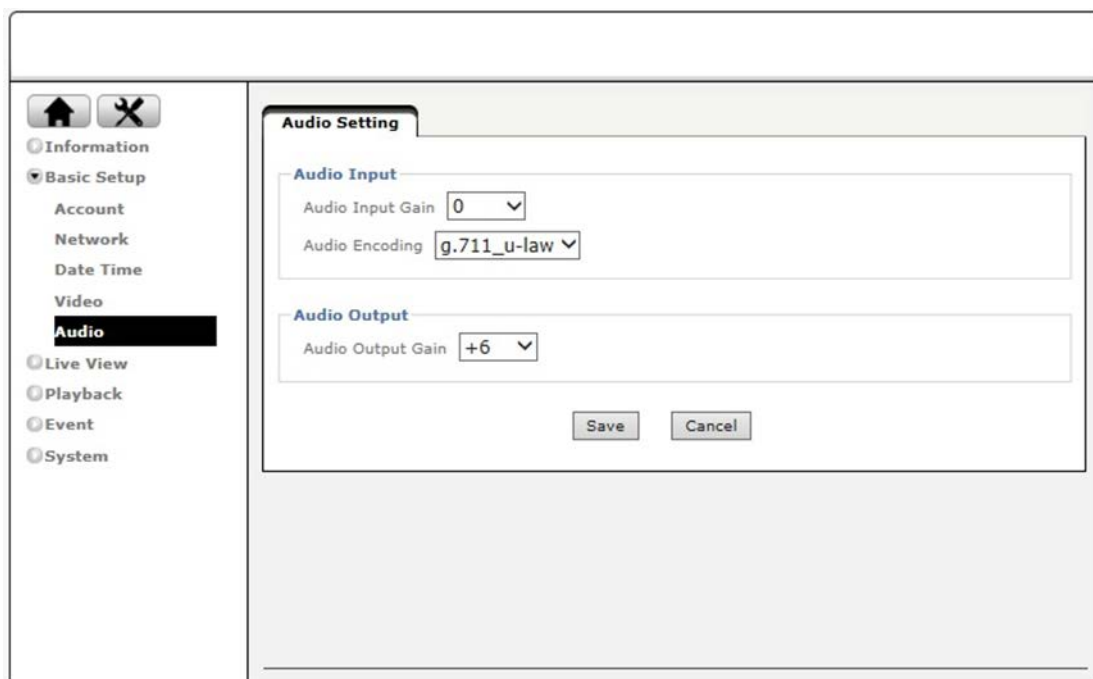
Inactive-- When this is selected, the camera will never activate its IR LEDs, even if the night mode is enabled (the IR Cut Filter has been removed). If you have your own 850nm IR lighting in place already, then you will not need to use the camera's integrated IR LEDs and can therefore turn the IR LEDs off.

Schedule-- Select this option, if you wish to control exactly when IR LED turning on and off by following a certain schedule setting.

IR Mode



5. Audio:



- **Audio Setting:**

- **Audio Input:**

Audio Input Gain- Select the microphone input gain value you wish in the drop-down menu, and based on your region to select the proper codec and save all setting.

Audio Encoding-

g.711 u-law-- One codec for “Computer Audio”, used in North America & Japan areas.

g.711 a-law-- Another codec for “Computer Audio”, used in Europe and the rest for the world.

AMR-- An audio codec of the third generation communication for mobile PHONE. While the option selected, your mobile phone will receive the audio file from IP Camera. And you can choose the bit rate from 4.75k to 12.2k. However, the usage of this codec will cause frame-rate decreasing.

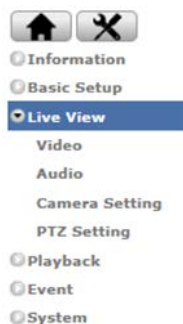
- **Audio Output:**

Audio Output Gain- Select the speaker output gain value you wish in the drop-down menu and save it.

Note: The camera does not support echo cancelling, using the full duplex mode may cause audio feedback

5.3 Live View

The Live View menu provides access to the video settings, which are exactly the same as described in the last section 5.4 & 5.5. It also provides access to advanced image settings and allows configuring the view areas that we discussed in the previous section. Note that depending on your camera model, the options on the screen may differ from the screen shots in this user manual.



- 1. Video:**

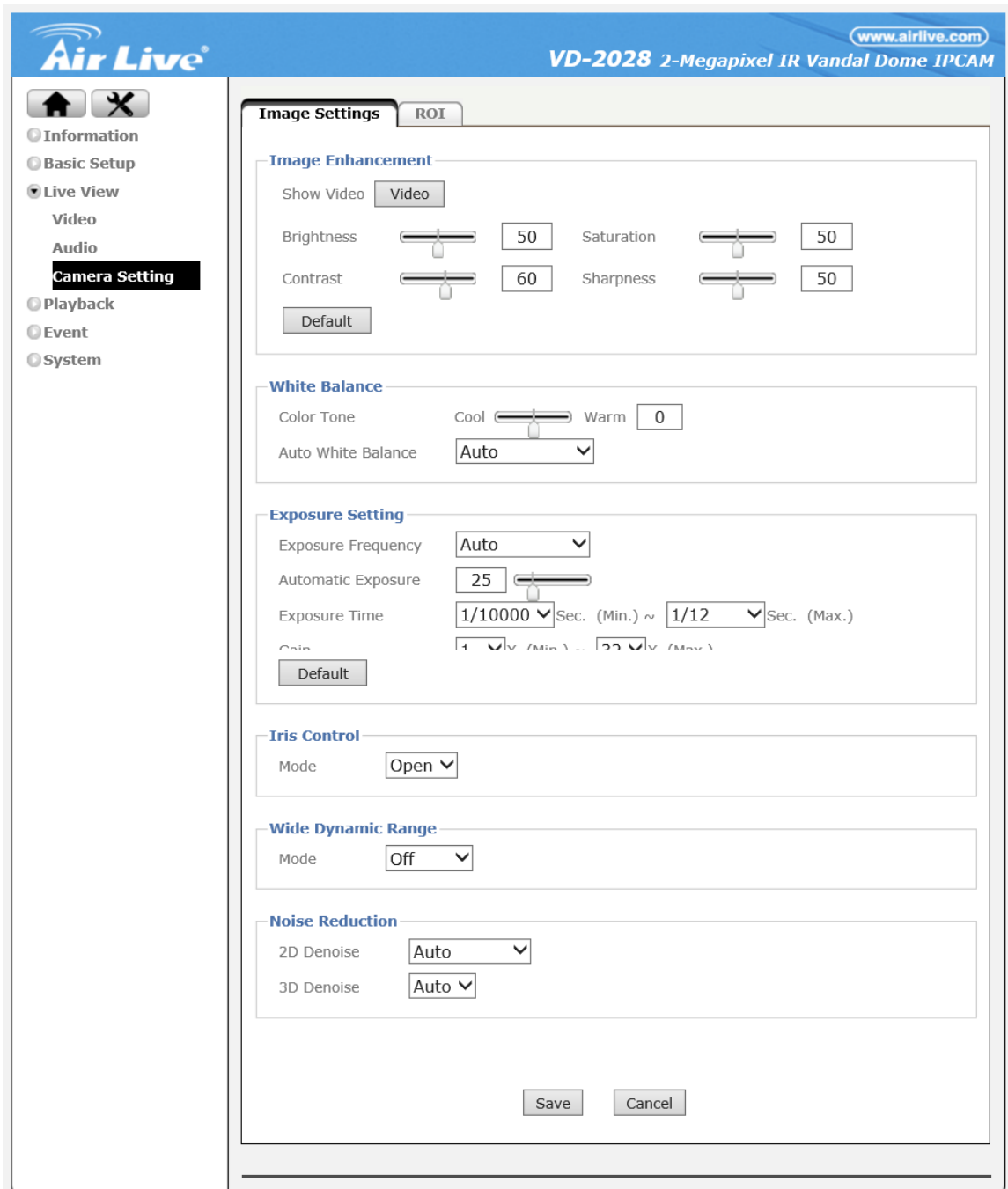
- The same as described in the last section 5.2 item 4.

2. Audio

- The same as described in the last section 5.2 item 5.

3. Camera Setting:

- Image Setting.



- Image Enhancement:

The image enhancement controls consist of standard video settings, which you know from a great variety of products. Click on “Video” to see the camera live video while you adjust the settings to your liking.

- **White Balance:**

Color Tone- Choose between “Cool” and “Warm”. Normally you want to set this to real as it provides the best representation of natural colors.

Auto White Balance- This parameter controls how the camera interprets colors. You can choose from the following values: “Auto,” “Hold Current”, “Fluorescent,” “Incandescent,” “Sunny,” “Cloudy”, “Sun Shade” and “Manual” You should select the value that best represents the environment the camera is installed in. You can also leave the default value “Auto,” as it typically delivers very good results.

- **Exposure Setting:**

Exposure Frequency- There are four values: “Auto,” “50Hz,” “60Hz” and “Hold Current.” If your camera is installed so that it’s facing outside, you should select “Auto.” If your camera is installed indoors, you must select the appropriate light frequency (either 50 or 60 Hz; e.g., in the US select 60 Hz, in Germany, Poland or Italy select 50 Hz). The hold current option fixes the current exposure settings.

Automatic Exposure- You can manually set the exposure value, which ranges from 0-100 (dark to bright). The default value is 25 and typically provides good results.

Exposure Time- You can define the minimum and maximum exposure time of the camera’s shutter here. We recommend using the smallest exposure time (e.g., 1/10000 sec) for the min value as it ensures the camera will generate crisp images during day time conditions in which even moving objects appear sharp and in focus. As for the max value, the bigger the value, the longer the camera keeps the shutter open in low light conditions allowing more light to fall onto the image sensor. As a result, the camera can capture images even in very dark environments. The downside is that moving objects will appear blurred as they move while the camera’s shutter is open.

Gain- The camera is equipped with an electronic gain mechanism which helps capture image in dark conditions. The higher the gain, the brighter the image, but the downside is that the image contains more noise.

Low Light Behavior- When enabled, this opens additional control over the camera when it is running in night mode.

Backlight Compensation (BLC)- In images where a bright light source is behind the subject of interest, the subject would normally appear in silhouette. BLC allows the camera to adjust the exposure of the entire image to properly expose the subject in the foreground. The resulting image may appear overexposed in the background; however, the object of interest is now properly lit.

- **White Dynamic Range:**

WDR stands for Wide Dynamic Range and allows the network camera to capture video in areas with high contrasting objects; e.g., extremely bright and extremely dark. Activate WDR by setting it to “Auto” and then adjust the level that controls the amount of WDR enhancement.

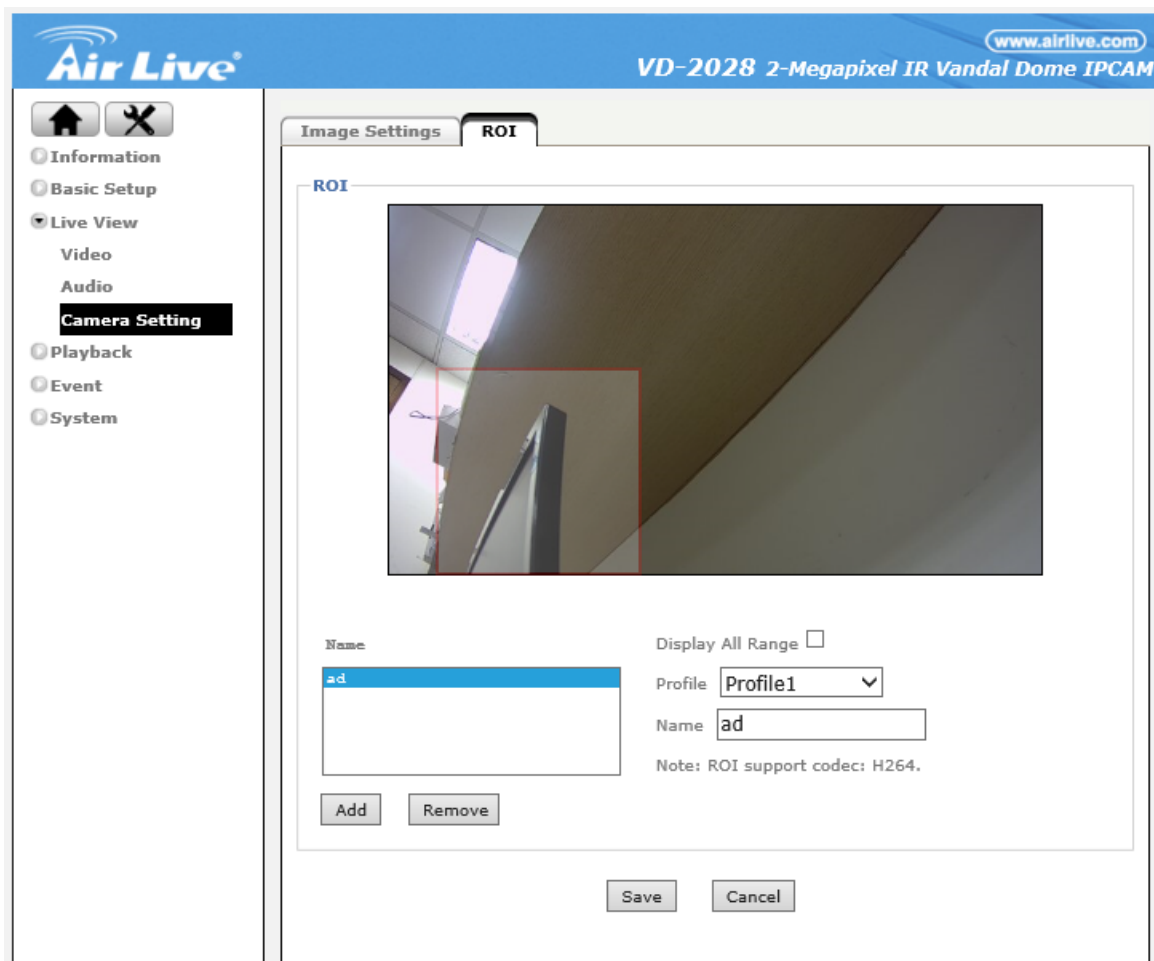
- **Noise Redudction:**

Your camera features a noise reduction algorithm, which helps reduce the graining in the video, which occurs under low light conditions. Set this parameter to “Night Mode” to only activate noise reduction when the camera is operating in night mode. You can also select “Schedule”, “On” (activates noise reduction permanently) or “Off” (deactivated noise reduction permanently)

- **3D Denoise:**

Improves video noise reduction to deliver sharper, more accurate images.

● **ROI.**



- **ROI:**

ROI is an application for strengthening the image clarity in key regions of a scene. Please refer to the picture below. The framed regions are clearer than the other region. First, please fill in a name and click add, and then you’ll see a rectangle frame on the live-view screen. Select a region which you want the view to be clearer, and then click save. If you want to see the regions you have set, please click Display All Range. Note: For each profile, the ROI sets are limited to 3, and ROI only support codec

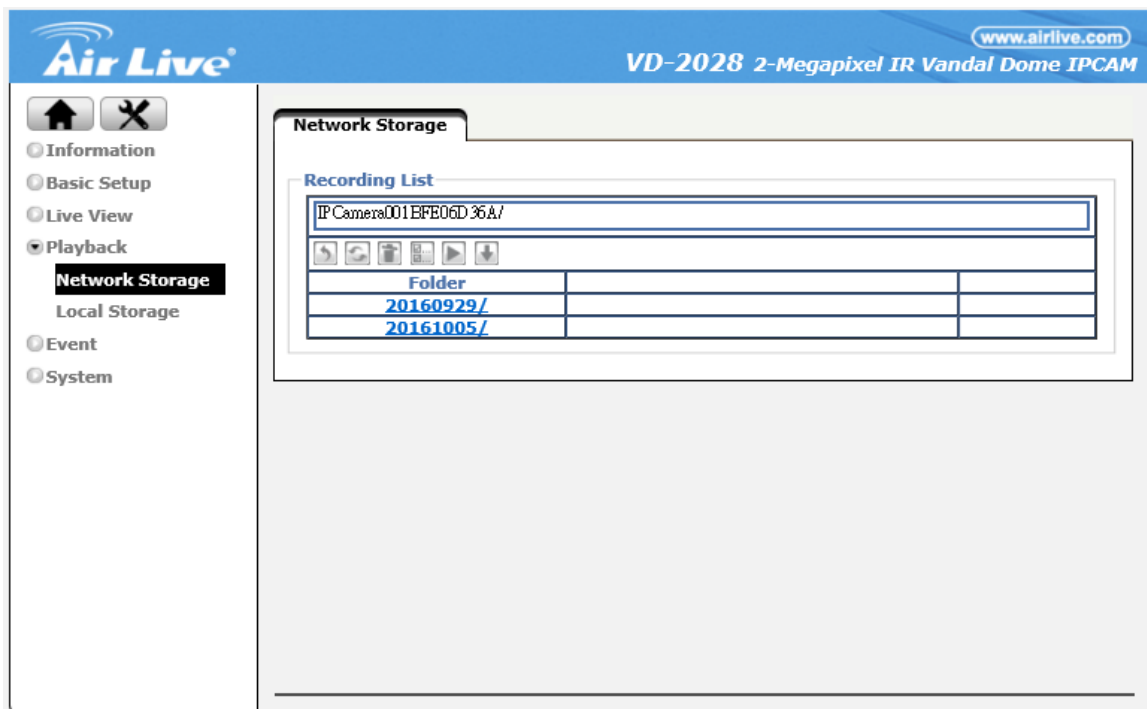
H.264.

5.4 Setting Playback

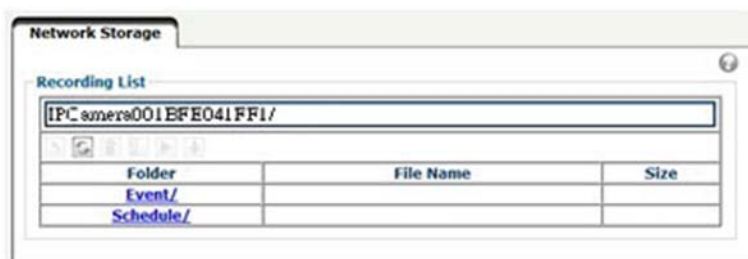
The network camera offers an integrated playback feature, from a network storage server or the optional SD storage card

1. Network Storage

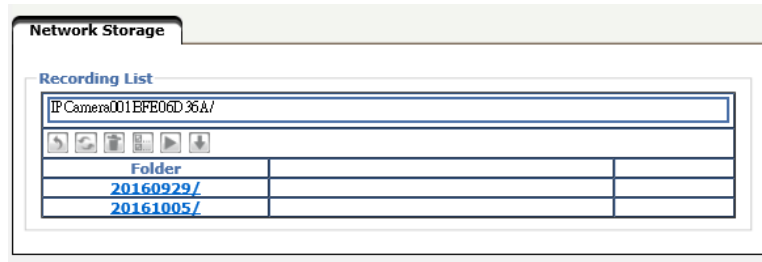
In the event settings you can define a local network storage drive (NAS) as a location for the camera to save videos. The video player allows locating recordings quickly and conveniently on the network storage drive and play back the files right in your web browser.



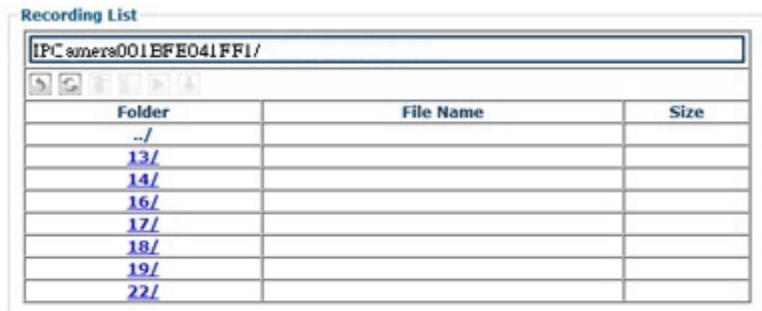
There are two folders: “Event” which is for event-triggered recordings, e.g., motion detection alerts, and “Schedule” which contains recordings that the camera recorded if scheduled recording is enabled.



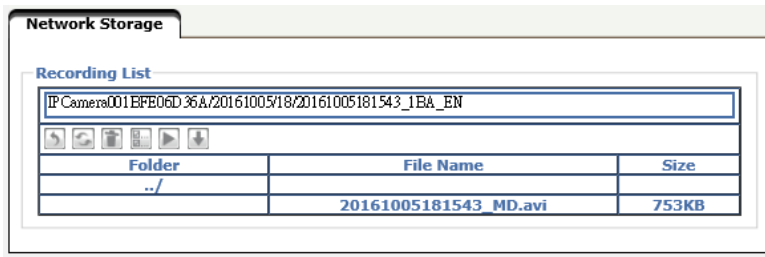
Refer to the section 6.5 “Event” for more details on the setup.



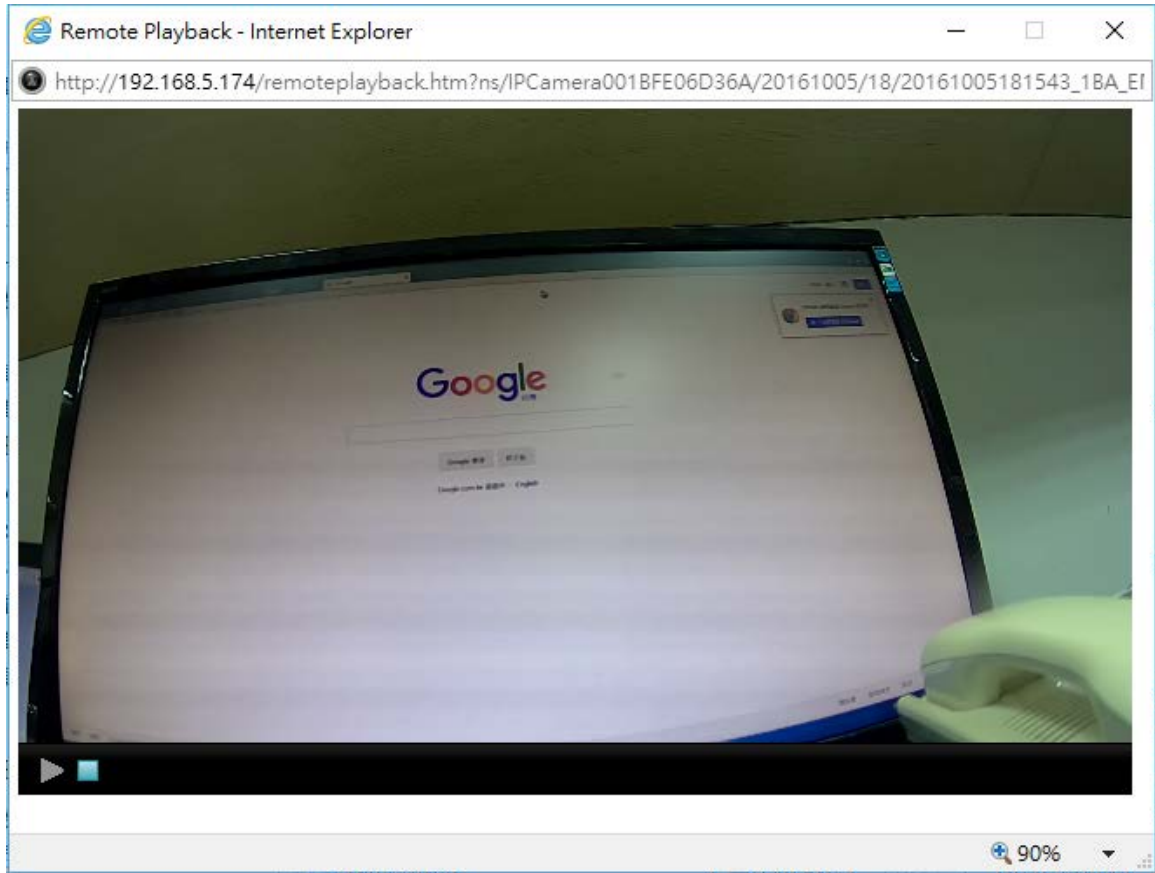
Above: Each day has its own folder.









Above: Each hour of the day has its own folder.



Above: Individual videos can be played back by selecting them and clicking the play button.

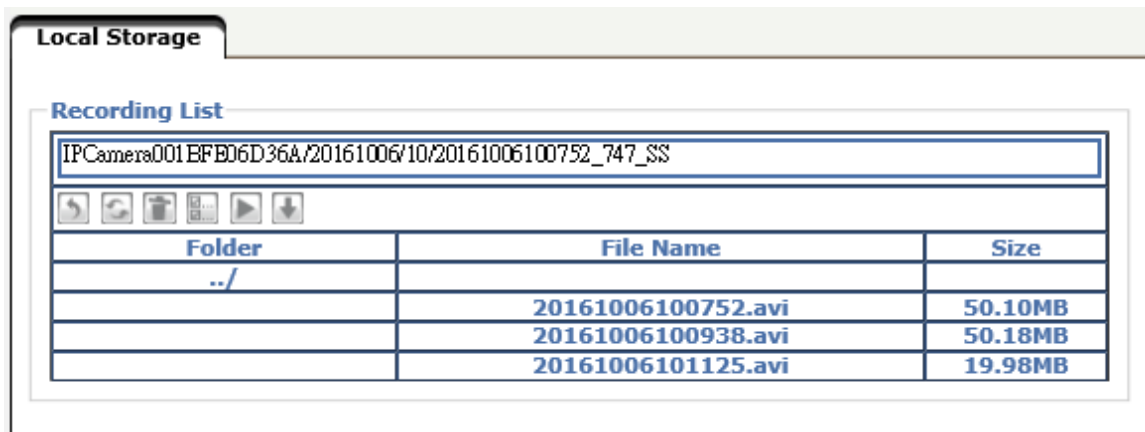
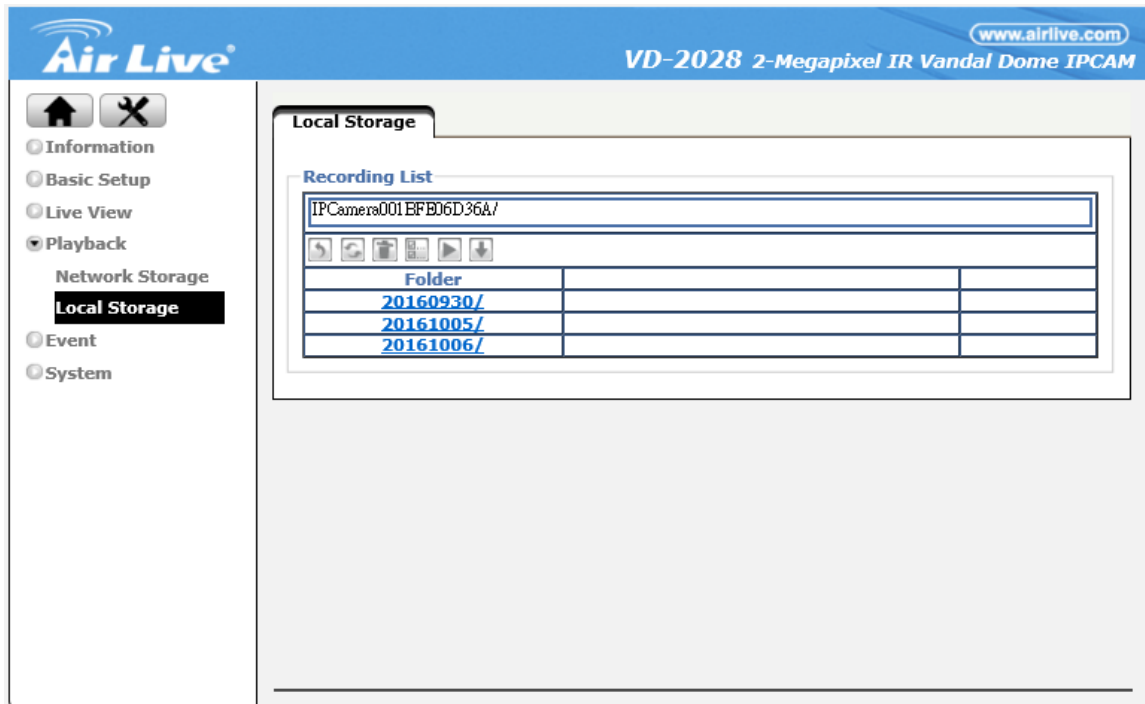


Above: Playback of one event recording in the web browser (MSIE only).

Item	Description
	Move one folder up
	Refresh the view
	Delete the selected file
	Select all items in the folder
	Playback the selected video
	Download selected item to your computer's hard drive.

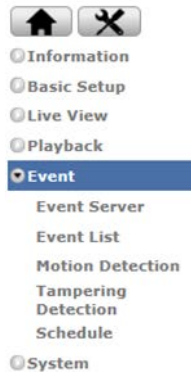
2. Local Storage

If your camera is equipped with a local storage option (recording on an SC card) you can access the recordings from here. It functions similarly to the access of files on the network storage device.



5.5 Event

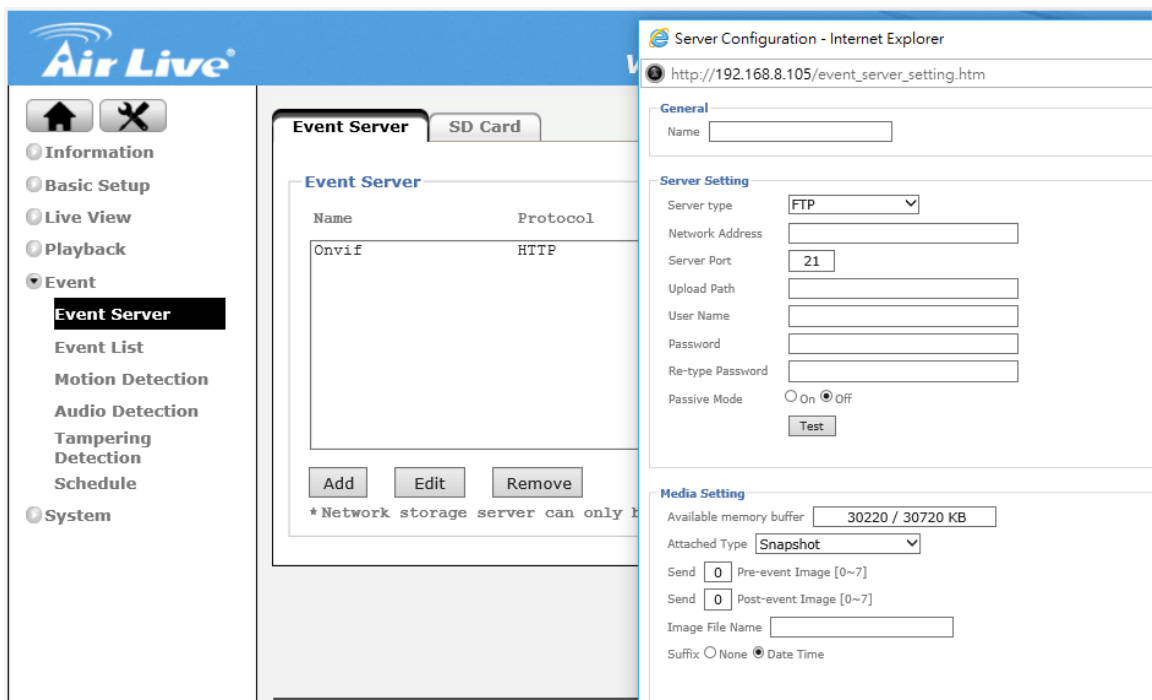
Your network camera supports so-called events. When an event occurs, you can have the camera perform an action, e.g., record a video to a remote location. This section describes how to set up event servers, events, motion detection and the scheduler.



1. Event Server.

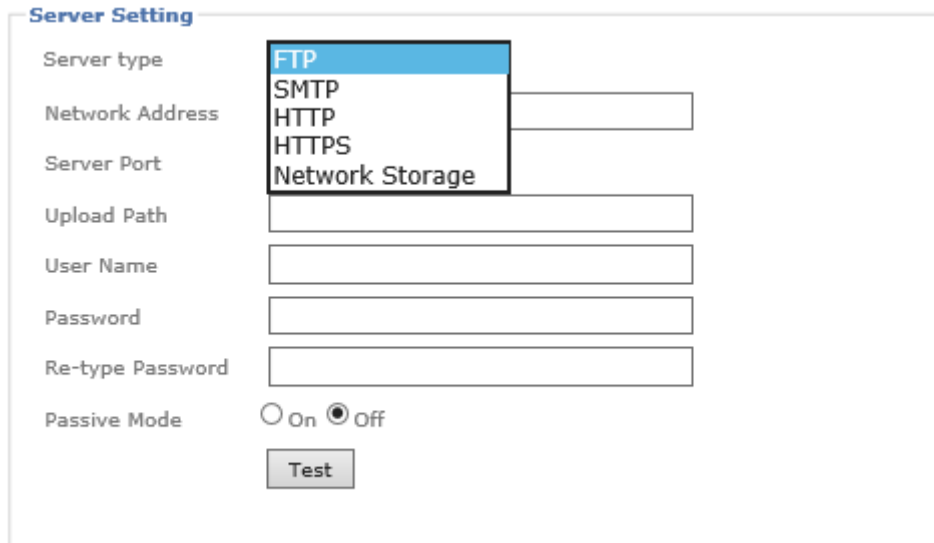
First you need to set up an event server, or multiple event servers.

- **Even Server:**



Click "Add" to create a new event server.

- **General:**
Name- Provide a name for the server.
- **Server Setting (FTP):**



Server Type- FTP.

Network Address - Type in the address of your FTP server

Server Port - Leave at 21, unless your FTP server uses a different port.

Upload path - Upload path.

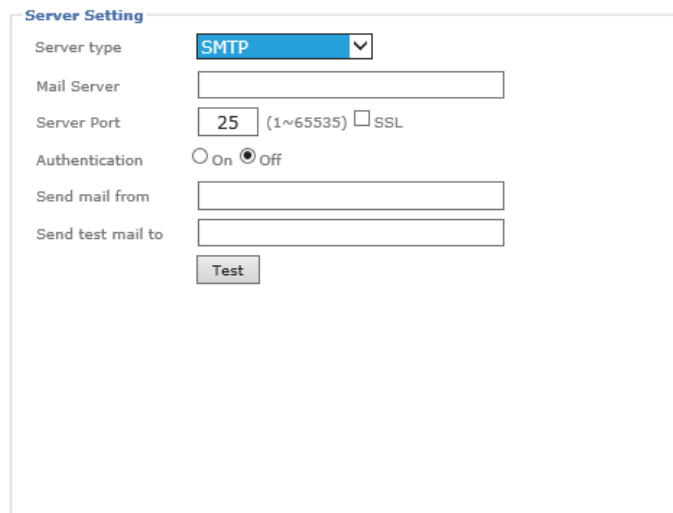
User Name and password - Provide valid login credentials for the FTP server.

Re-type Password - type password again.

Passive Mode - Select “On” if your FTP server utilizes passive FTP, which is the most common method.

Test - Press on Test button to make sure the FTP server information is all correct.

- Server Setting (SMTP):



Server Type - SMTP.

Mail Server - Type in the address of your mail server.

Server Port - Adjust the server port if necessary. Port 25 is standard, but your server may be using different values (not so uncommon these days as an anti-spam measure).

Authentication - If your mail server requires authentication in order to send email, and most servers do these days, set authentication to “On” and define the type of authentication below.

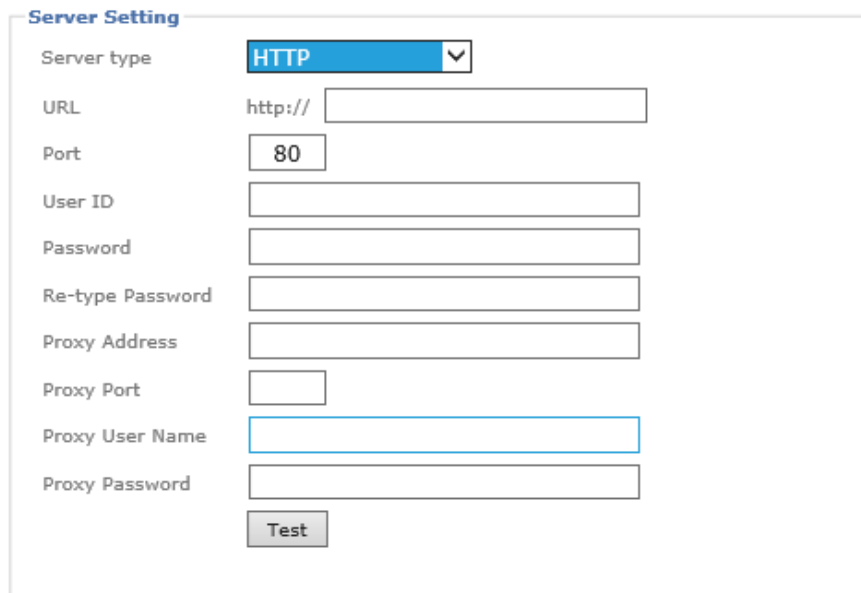
Username and password - Provide valid login credentials for the email server.

Send mail from - The camera will use this address as its own email address. This email address does not necessarily need to be a valid address.

Send test mail to - Enter the email address to which you want the camera to send the images and click on Test. If the test succeeds you can provide the information for the media settings and click “Save”. The actual target email address is defined when you set up an event in the next section.

- Server Setting (HTTP):

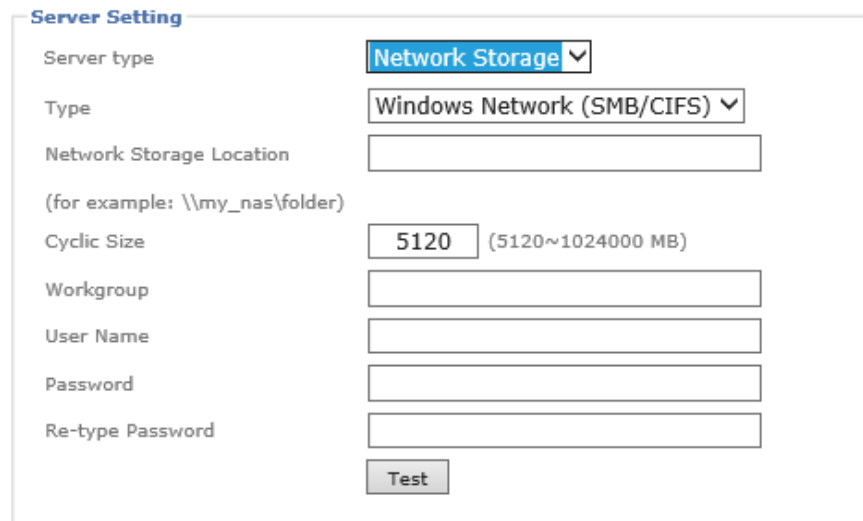
A HTTP server can be used by the camera to trigger a script on a remote server if an event occurs. User name, password and proxy fields are all optional.



The screenshot shows the 'Server Setting' form for HTTP configuration. It includes the following fields and controls:

- Server type:** A dropdown menu set to 'HTTP'.
- URL:** A text input field with 'http://' pre-filled.
- Port:** A text input field containing '80'.
- User ID:** An empty text input field.
- Password:** An empty text input field.
- Re-type Password:** An empty text input field.
- Proxy Address:** An empty text input field.
- Proxy Port:** An empty text input field.
- Proxy User Name:** An empty text input field.
- Proxy Password:** An empty text input field.
- Test:** A button at the bottom of the form.

- Server Setting (Network storage):



The screenshot shows the 'Server Setting' form for Network Storage configuration. It includes the following fields and controls:

- Server type:** A dropdown menu set to 'Network Storage'.
- Type:** A dropdown menu set to 'Windows Network (SMB/CIFS)'.
- Network Storage Location:** An empty text input field.
- (for example: \\my_nas\folder)**: A note below the location field.
- Cyclic Size:** A text input field containing '5120' with a range '(5120~1024000 MB)' to its right.
- Workgroup:** An empty text input field.
- User Name:** An empty text input field.
- Password:** An empty text input field.
- Re-type Password:** An empty text input field.
- Test:** A button at the bottom of the form.

Server Type – Network Storage.

Type - Select a valid type for your network storage (either Windows SMB or Linux NFS).

Network Storage Location - Enter the address of your local storage server as shown on the right.

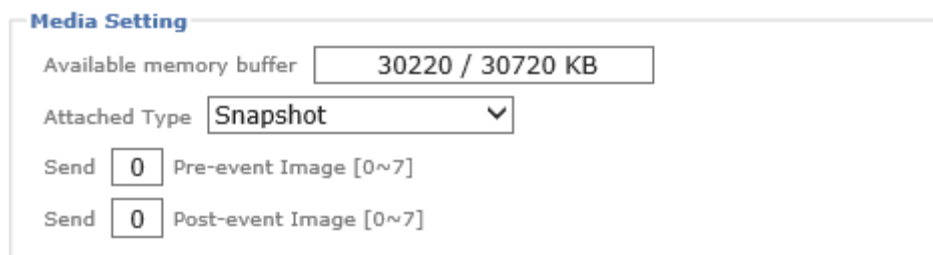
User name and Password- Provide valid login credentials for the network storage server..

Create folder - Type in a folder name in which you want the camera to store files. This field is optional.

Test - Press on Test button to make sure the NAS information is all correct.

- Media Setting :

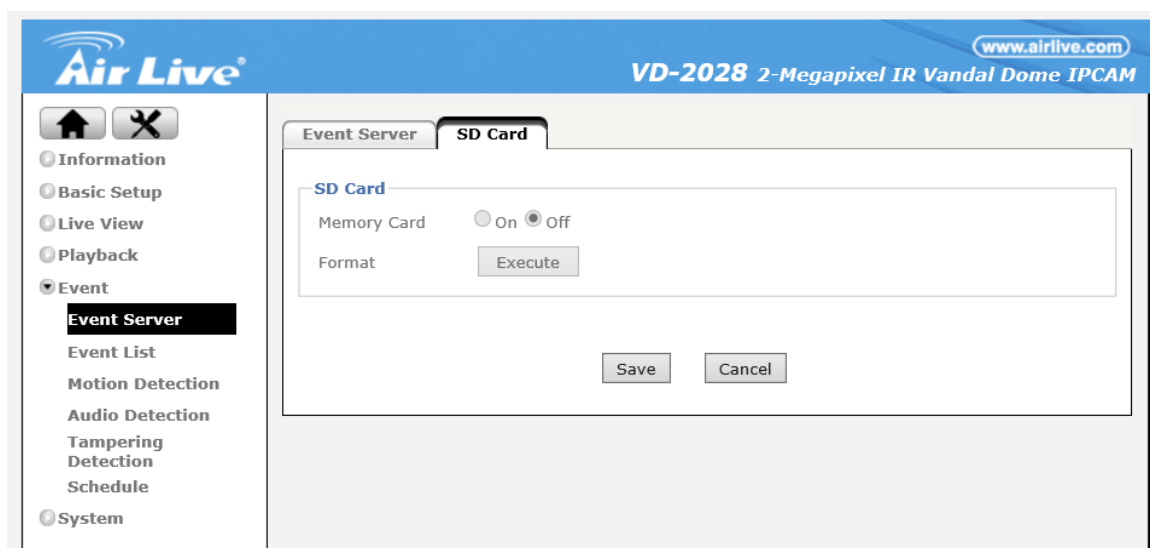
Here you define what kind of media you wish to upload (snapshot, video), how many images pre and post event you wish to upload, the image file name and the suffix.



The screenshot shows a 'Media Setting' window with the following fields:

- Available memory buffer: 30220 / 30720 KB
- Attached Type: Snapshot (dropdown menu)
- Send Pre-event Image [0~7]
- Send Post-event Image [0~7]

● **SD Card:**



The screenshot shows the 'SD Card' configuration window in the Air Live interface. The window title is 'VD-2028 2-Megapixel IR Vandal Dome IPCAM'. The left sidebar shows a navigation menu with 'Event' expanded and 'Event Server' selected. The main content area has two tabs: 'Event Server' and 'SD Card'. The 'SD Card' tab is active and contains the following options:

- Memory Card: On Off
- Format:
- Buttons:

If you want to record video footage on a local SD card, you first must insert the SD card (see hardware installation guide for details), and then you must set the Memory Card to “on” and format the card by clicking “Execute”.

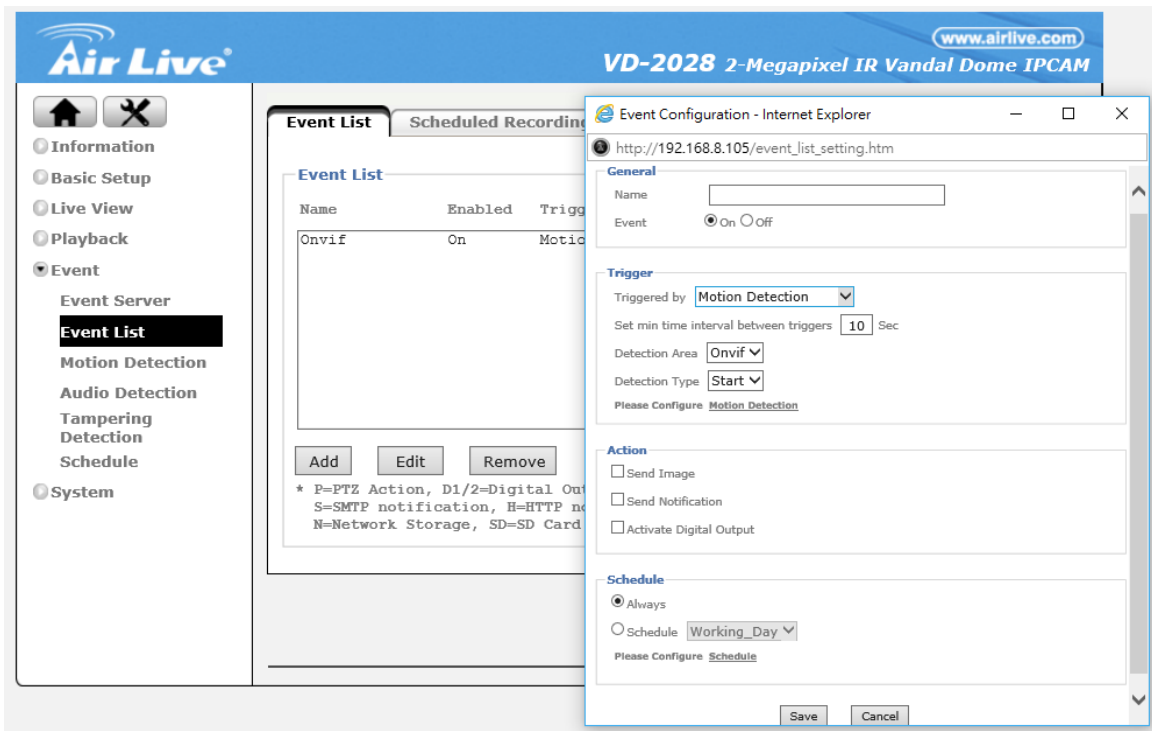
Noted: Only FAT32 is supported, please do not format the SD card to other format.

Noted: Please power off the camera before taking off memory card

2. Event List.

Now that we have created an Event Server, we can proceed with setting up actual events.

- **Event List:**



Click “Add” to create a new even list.

- **General:**

Name- Provide a name for the server.

Event- On/Off the event.

- **Trigger:**

You need to specify the trigger type. The drop-down list below shows the available options. Note that depending on your camera model, the options will vary.

Motion Detection- The camera monitors the video image for movements and triggers an alert when it detects motion. Motion detection needs to be configured first for that to work.

Tampering Detection- The camera can detect if it’s being tampered with, e.g., if someone covers the lens, and triggers an alert when this happens. Tampering detection needs to be configured for that to work.

Digital Input- If your camera is equipped with digital inputs (see hardware installation guide), then you can use them as a trigger mechanism. A common example would be to use 3rd party motion detection sensors that trigger the camera to start a recording.

Periodical- This trigger type can be used if you want the camera to perform the same action over and over again, based on a time period. A typical application would be to have the camera refresh an image on your web site every 60 seconds.

- Action:

After you have selected the trigger type, you now have to define the action(s). In other words, what do you want the camera to do if the event occurs?

Action

Send Image

Event Server

Name	Type	Media
Please Configure Event Server or SD Card		

Send Notification

HTTP(S) Onvif ▼

Custom Parameters

Please Configure [HTTP Server](#) [HTTPS Server](#)

Activate Digital Output

Digital Output1

Send Image- Instructs the camera to send out images. When selected, you need to specify whether you want to use FTP, network storage or SD card. You may need to set up these servers first (see previous section) in order to use them here.

Send Notification- This action type uses the HTTP event server. You can use this to have the camera trigger a script on a server.

Activate Digital Output - If your camera is equipped with digital outputs, then you can use them to perform an action. You can specify how long you want the camera to trigger the event once you have selected Digital 1.

PTZ Action - This action type will make the camera to move to/point at a certain preset position or start run a certain predefined tour when the event occurs.

- Schedule:

Here you can define when you want this action to be active. You can choose between “Always” or a schedule that you have defined (see “Schedule” a few pages down).

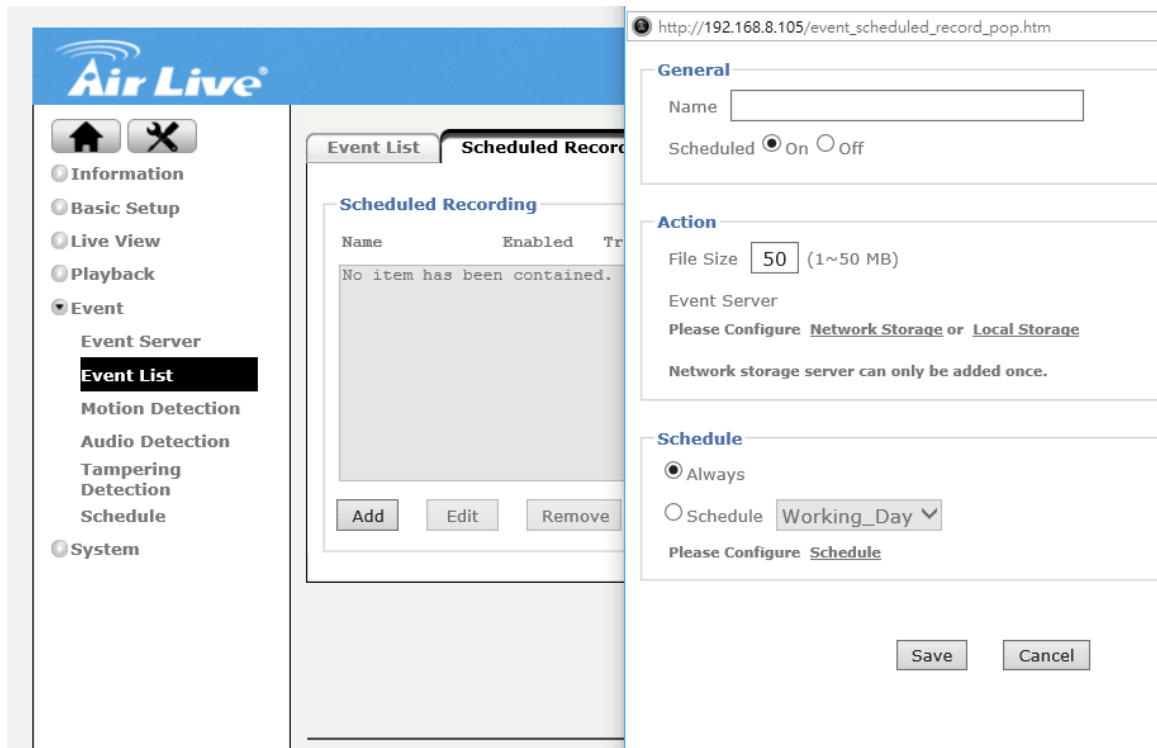
Schedule

Always

Schedule Working_Day ▾

Please Configure [Schedule](#)

● **Schedule Recording:**



This feature is allowing the camera to record the video by following a certain schedule such as always record or record the video during the weekend.

- **General:**

Name- Provide a name for the server.

Event- On/Off the event.

- **Action:**

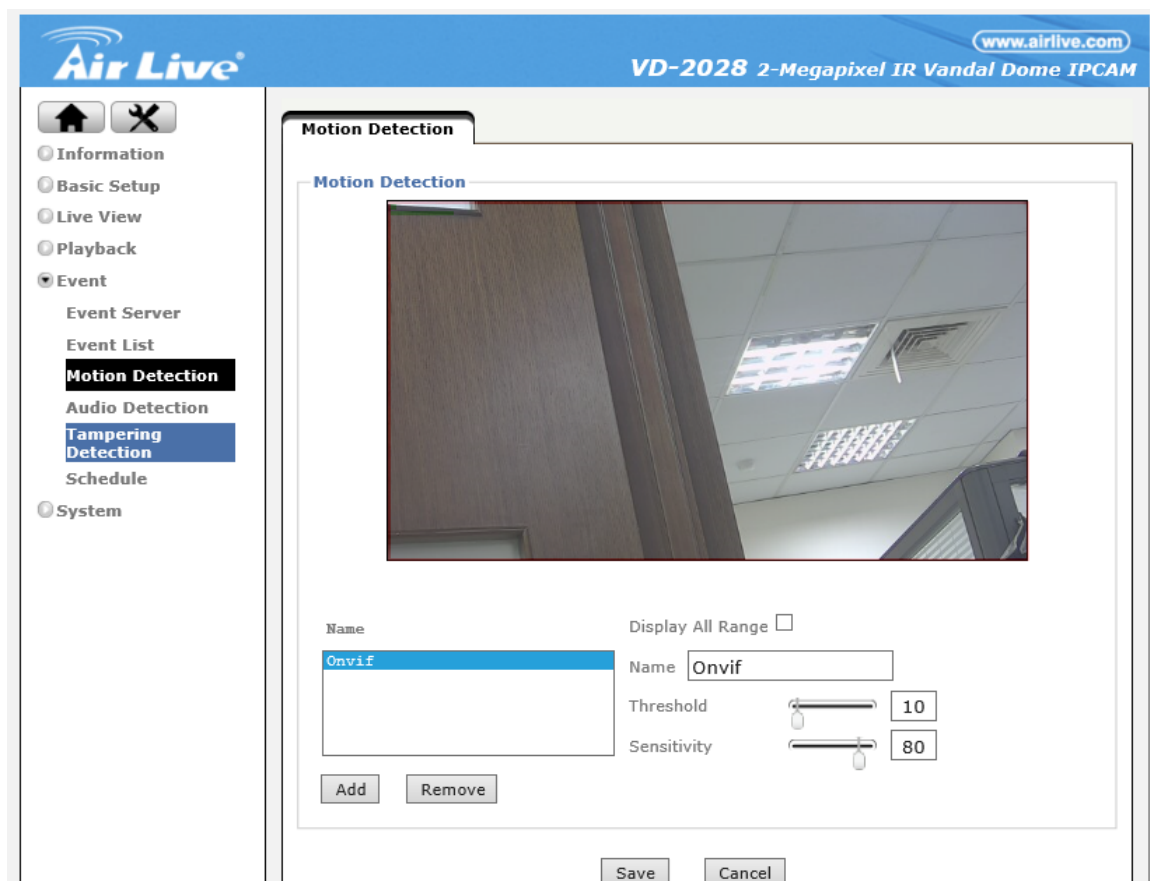
Define each recorded video file size to save. You can choose to store the video to NAS or SD card, which need to be pre-configured in event server.

3. Motion Detection.

The network camera is able to monitor the video footage for movements and trigger an alert if motion has been detected. This motion detection does not utilize passive infrared, but instead it relies on a frame by frame comparison of the video footage the camera captures.

You can define more than one motion detection area. The example above shows that so-called hotspot has been created for the area of the window. When you set up an event for motion detection, you can select which motion detection area you wish to monitor.

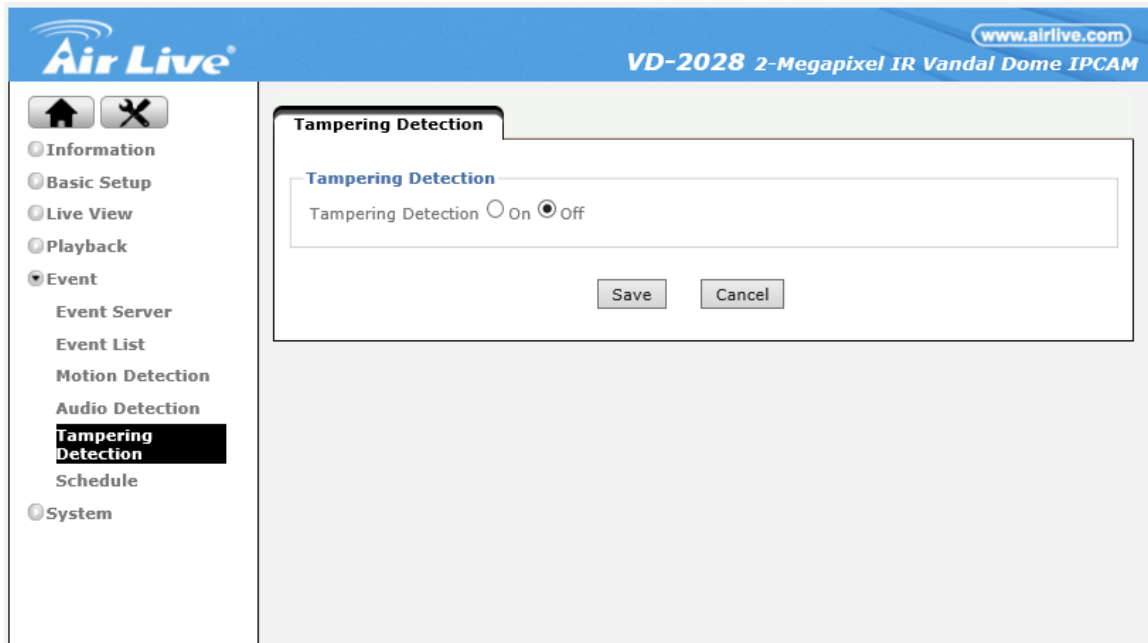
Threshold and sensitivity will need to be set up so that you don't miss important events and are not flooded by false alarms either. Finding the right values will require some trial and error. There are no standard values that simply "will work" as it depends very much on the actual location and light levels. Generally speaking, increasing the sensitivity while lowering the threshold will generate more false alarms but it ensures that you will not miss an important event. Doing the opposite will of course have the opposite effect: Fewer false alarms at an increased risk or missing an important event.



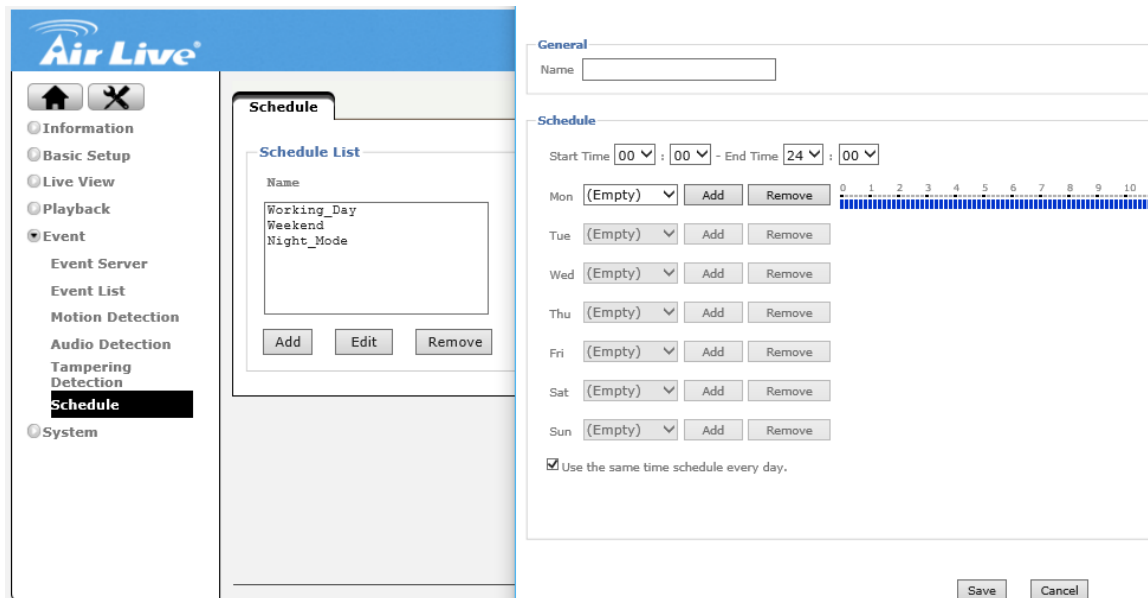
The screenshot displays the Air Live web interface for the VD-2028 2-Megapixel IR Vandal Dome IPCAM. The interface is divided into a left-hand navigation menu and a main configuration area. The navigation menu includes options like Information, Basic Setup, Live View, Playback, Event (selected), and System. Under the Event menu, sub-options include Event Server, Event List, Motion Detection (highlighted), Audio Detection, Tampering Detection, and Schedule. The main configuration area is titled "Motion Detection" and features a video feed showing a room with a window. Below the video feed, there are configuration fields: a "Name" field containing "Onvif", a "Display All Range" checkbox, a "Threshold" slider set to 10, and a "Sensitivity" slider set to 80. "Add" and "Remove" buttons are located below the configuration fields. At the bottom of the page, "Save" and "Cancel" buttons are visible.

4. Tampering Detection.

If the image of the camera is obstructed, e.g., because someone covers up the lens or moves the image out of focus, the camera notices this and generates a trigger alert. You can define how long you want the alert state to remain active after the event has occurred.

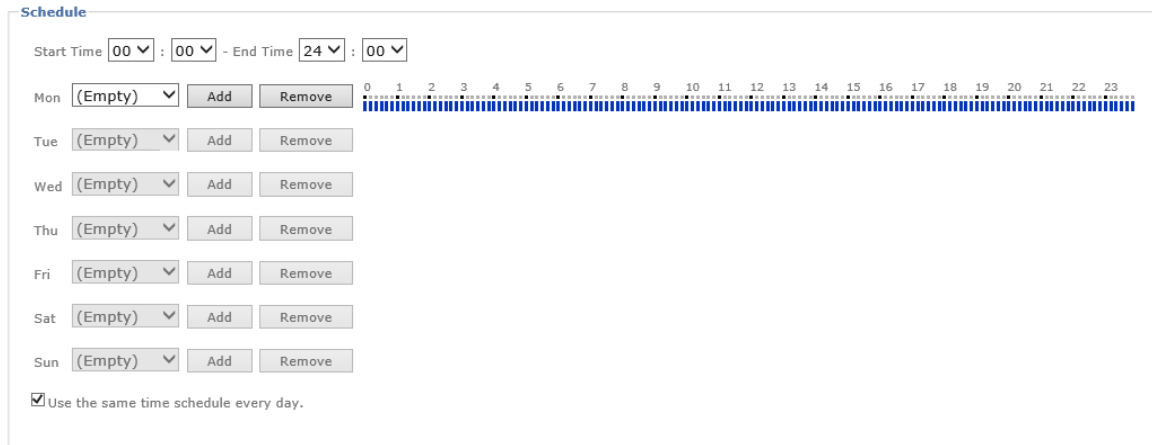


5. Schedule.



The Network Camera supports event trigger actions that can be based on a schedule. This can be used, as an example, to only activate motion detection between 9 pm and 6 am during business days and around the clock on the weekends. You can set up individual schedules for each event type, so that motion detection is activated between 7 pm and 7 am, but tampering detection is only activated between 10 pm and 4 am.

Depending on your camera model, the screen layout will vary slightly. There are three default schedules which you cannot delete, but you can modify them. You can create a new schedule by clicking “Add.”





The screenshot shows a configuration window titled "Schedule". At the top, there are two time selection fields: "Start Time" with a dropdown set to "00" and "End Time" with a dropdown set to "24". Below this is a horizontal timeline from 0 to 23, with each hour represented by a small blue bar. Underneath the timeline, there are seven rows, one for each day of the week: Mon, Tue, Wed, Thu, Fri, Sat, and Sun. Each row contains a dropdown menu currently set to "(Empty)", followed by "Add" and "Remove" buttons. At the bottom of the form, there is a checked checkbox with the text "Use the same time schedule every day."

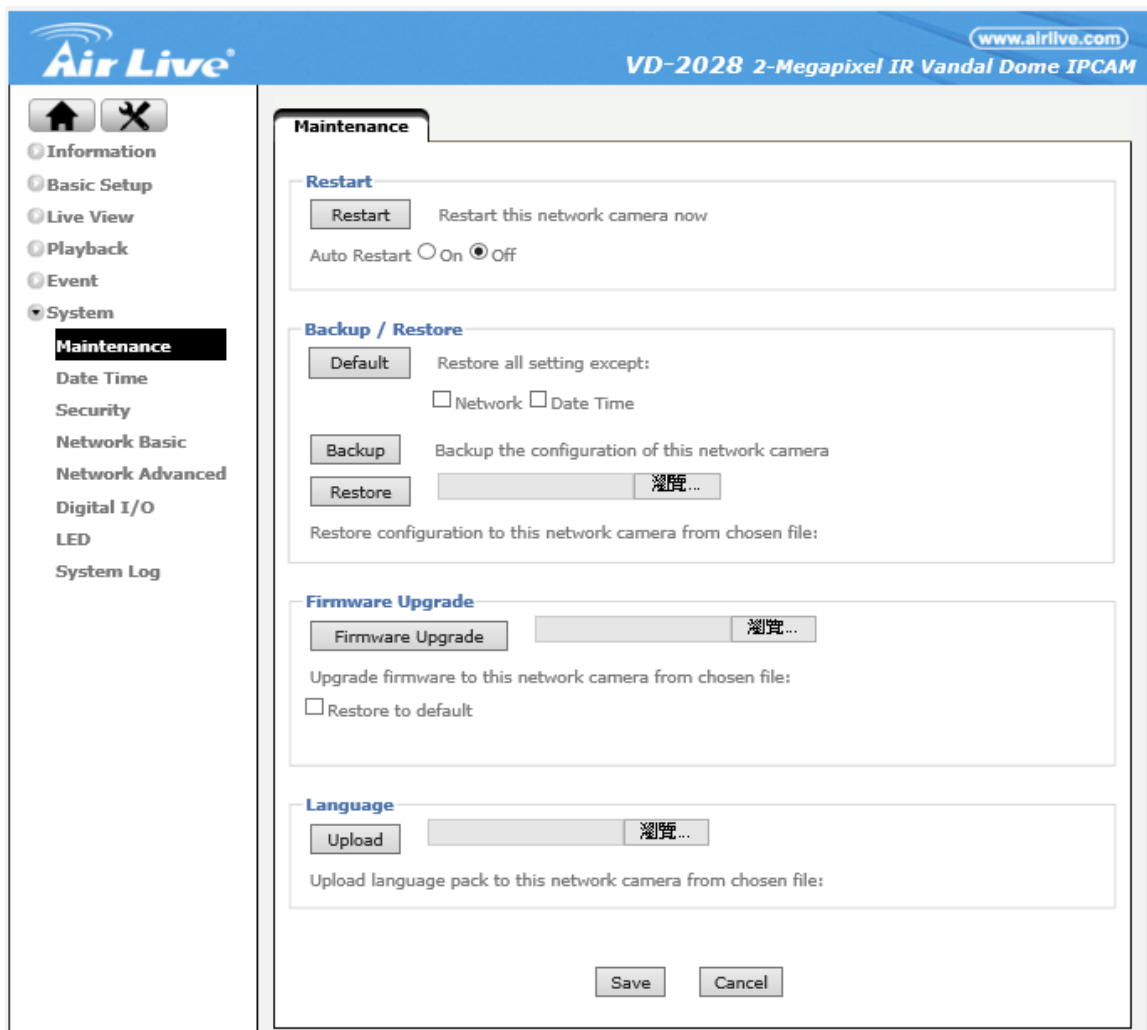
First you need to provide a name for the schedule (not shown on image). Then select a start and end time and click on “Add” for the day of the week the schedule is supposed to be active. As soon as you add a schedule, the timeline turns red, indicating the active schedule. If the schedule is the same for every day of the week, you can activate the option “Use the same time schedule every day.”

5.6 Setting Playback

The system menu provides access to a variety of system settings of your network camera

-  
- Information
- Basic Setup
- Live View
- Playback
- Event
- System**
 - Maintenance
 - Date Time
 - Security
 - Network Basic
 - Network Advanced
 - Digital I/O
 - PoE
 - LED
 - System Log

1. Maintenance



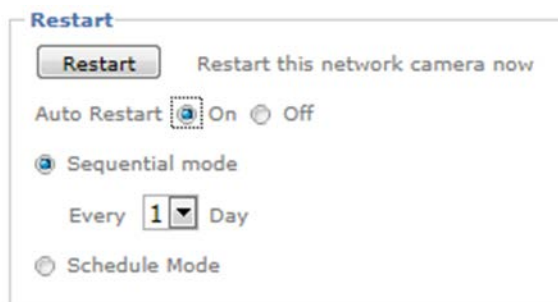
The screenshot displays the 'Maintenance' configuration page for an Air Live VD-2028 2-Megapixel IR Vandal Dome IPCAM. The interface includes a top navigation bar with the Air Live logo and the model name. A left sidebar contains a menu with options: Information, Basic Setup, Live View, Playback, Event, and System (selected). Under 'System', 'Maintenance' is highlighted. The main content area is divided into several sections:

- Restart:** Features a 'Restart' button and a text label 'Restart this network camera now'. Below it, 'Auto Restart' is set to 'Off' (radio button).
- Backup / Restore:** Includes a 'Default' button with the text 'Restore all setting except:'. There are checkboxes for 'Network' and 'Date Time'. A 'Backup' button is followed by a file selection field and a '瀏覽...' (Browse) button. A 'Restore' button is followed by another file selection field and a '瀏覽...' button. Below this, it says 'Restore configuration to this network camera from chosen file:'.
- Firmware Upgrade:** Features a 'Firmware Upgrade' button, a file selection field, and a '瀏覽...' button. Below it, it says 'Upgrade firmware to this network camera from chosen file:' and has a checkbox for 'Restore to default'.
- Language:** Includes an 'Upload' button, a file selection field, and a '瀏覽...' button. Below it, it says 'Upload language pack to this network camera from chosen file:'.

At the bottom of the page, there are 'Save' and 'Cancel' buttons.

- **Maintenance:** .

- **Restart:** You can restart the network camera by hitting the restart button. Set Auto Restart to “On” if you wish to reboot the camera automatically, and then you specify the reboot mode. Select “Sequential mode” and specify after how many days of uptime you want the camera to reboot. Select “Schedule Mode” to control when the reboot is to occur in a much more detailed way.



- **Backup/Restore:**

After you have selected the tripper type, you now have to define the action(s). In other words, what do you want the camera to do if the event occurs?

Default - Click this button to restore the factory default settings in this camera. You can choose to exclude the IP and date & time settings.

Backup - This function allows saving the current configuration of the camera to a file on your computer’s hard drive. Saving the configuration is useful in case you ever want to reload a specific configuration; e.g., in order to set up another camera of the same model and firmware version with the exact same configuration. Since the IP address configuration is also part of the setting date, you must be careful not to restore the same settings to two or more cameras when all of them are connected to the same network. Otherwise, you would be creating an IP conflict in your network.

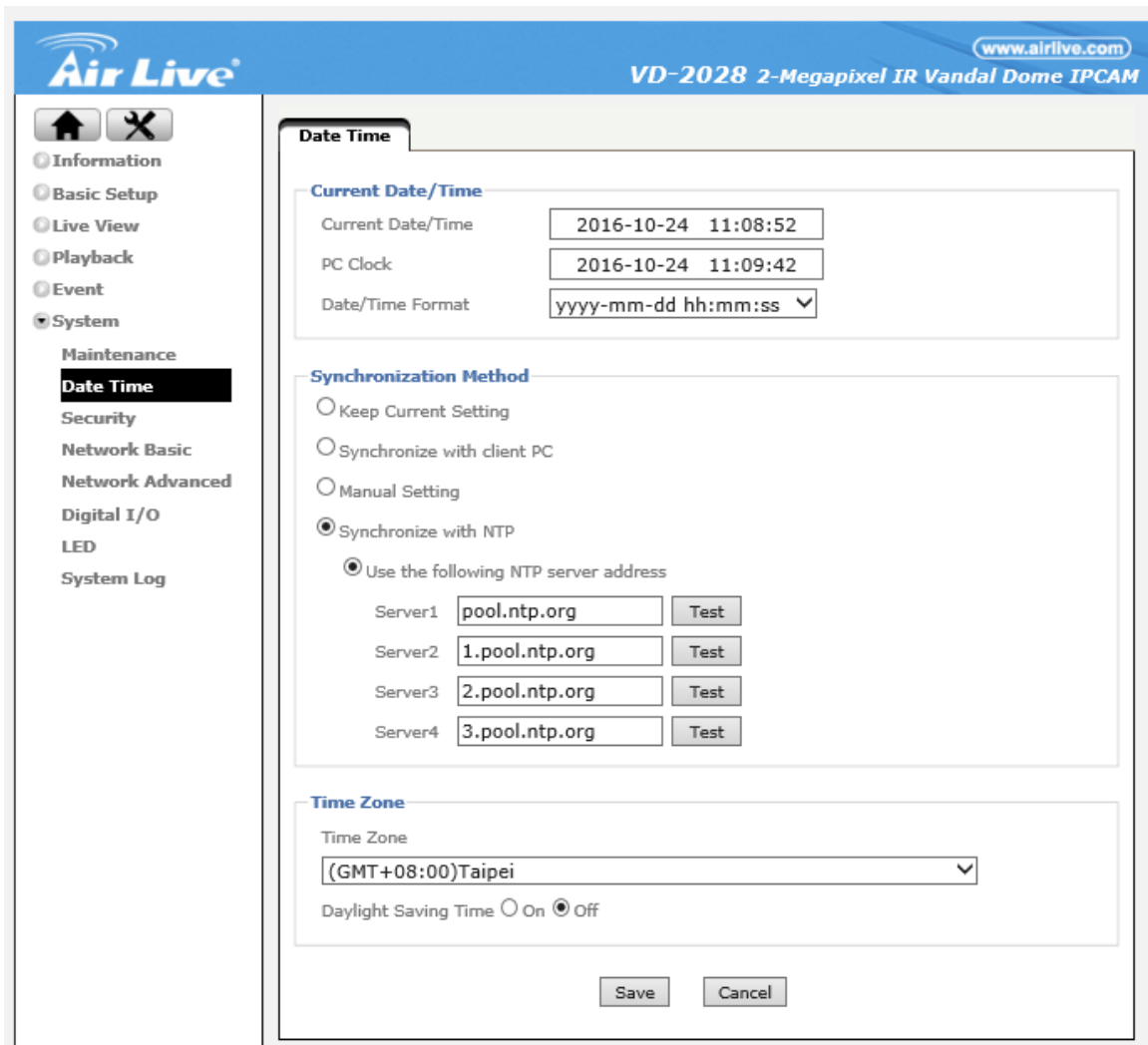
Restore - With this function, you can reload a previously saved configuration back into your camera. Click Browse to locate the configuration file and OK to begin the process. The camera will perform a reboot at the end of the procedure and the new settings will become effective.

- **Firmware Upgrade:** From time to time, there will be a new firmware version available for your camera. New firmware versions can enhance the functionality of the camera, or they can fix problems. Before you begin, make sure that you have obtained a proper firmware from the web site. If you are not 100% sure about this, do not proceed. Instead, contact the technical support team to verify the firmware version. Also, do not perform the upgrade from a computer that is connected to the network wirelessly, as the connection is inherently less stable than a cable-based

connection. If you have the correct firmware file, make sure that you un-compress the ZIP file first (if the firmware file is an archive) and you end up with a file that has an extension *.bin. Click on Browse and select the *.bin file. Click on OK to begin the upgrade process.

- **Language:** You can replace the language in the user interface of your network camera. On the Installation CD are different language files starting with “LNG_” and ending with “.lang.” Click on Browse, select the language you wish to install and then click on OK to begin the process.

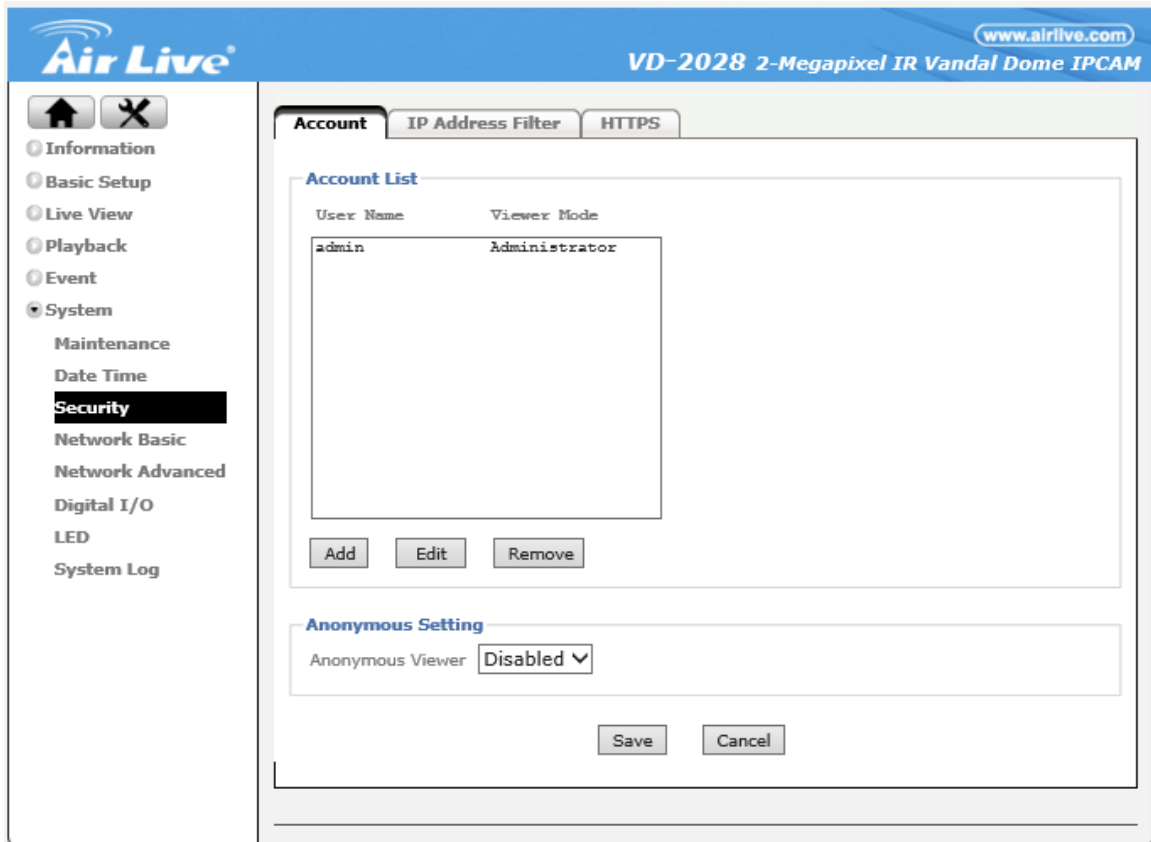
2. Date Time



- **Date Time:** .

- **Current Date/Time:** Reference section 5.2 item 3.

2. Security.

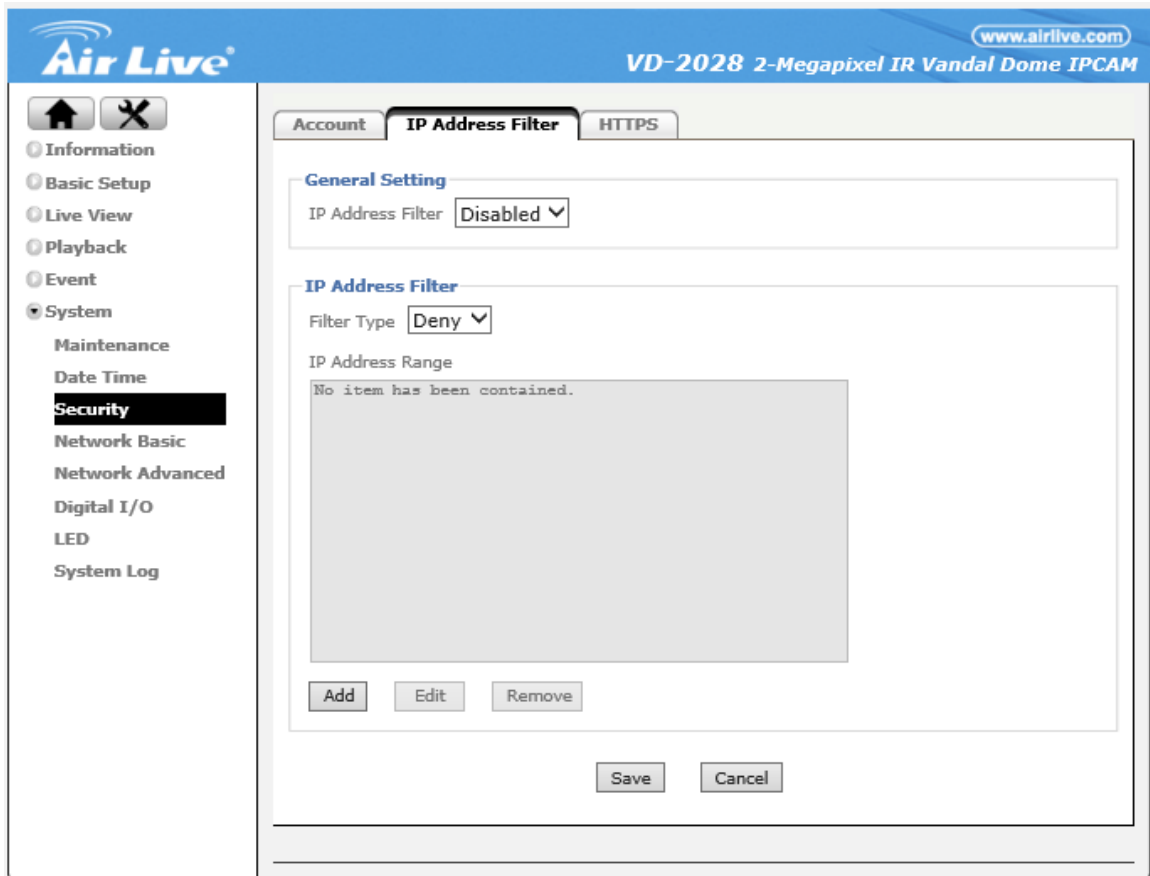


- **Account:**

Please reference section 5.2 item 1

- **IP Address Filter:**

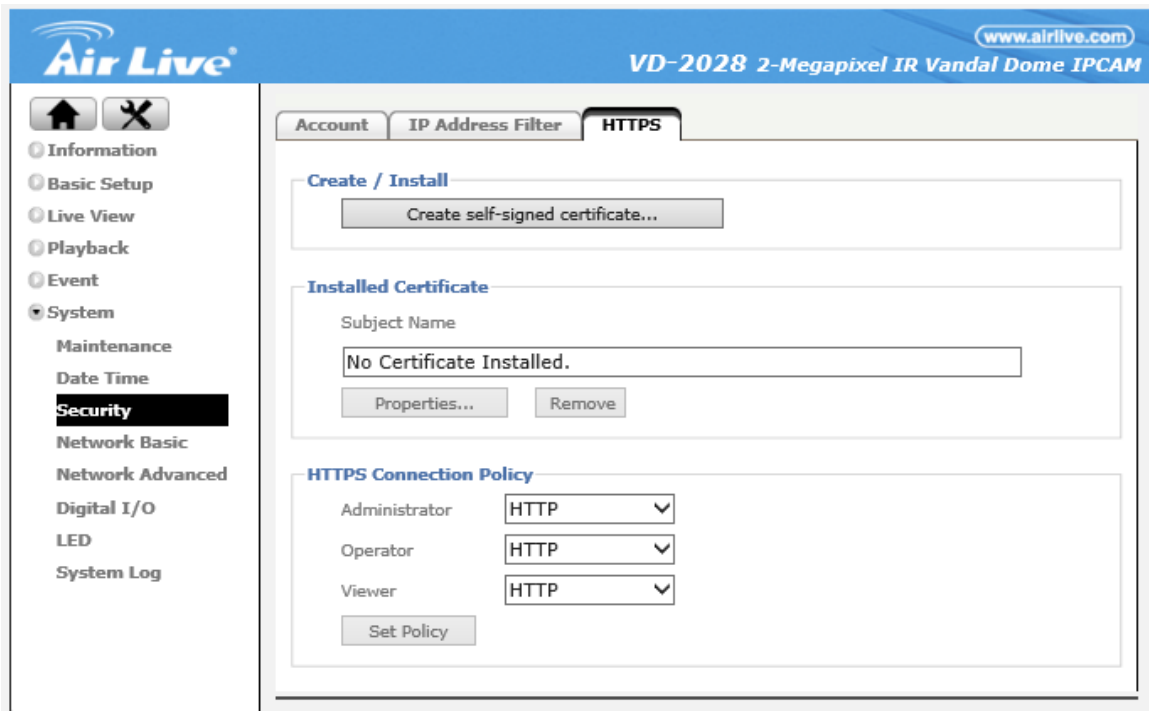
Once you enabled it, the listed IP address are allowed or denied access to the network camera. Add the IP address that you'd like to allow or deny, select allow or deny from the list and save it.



- **HTTPS:**

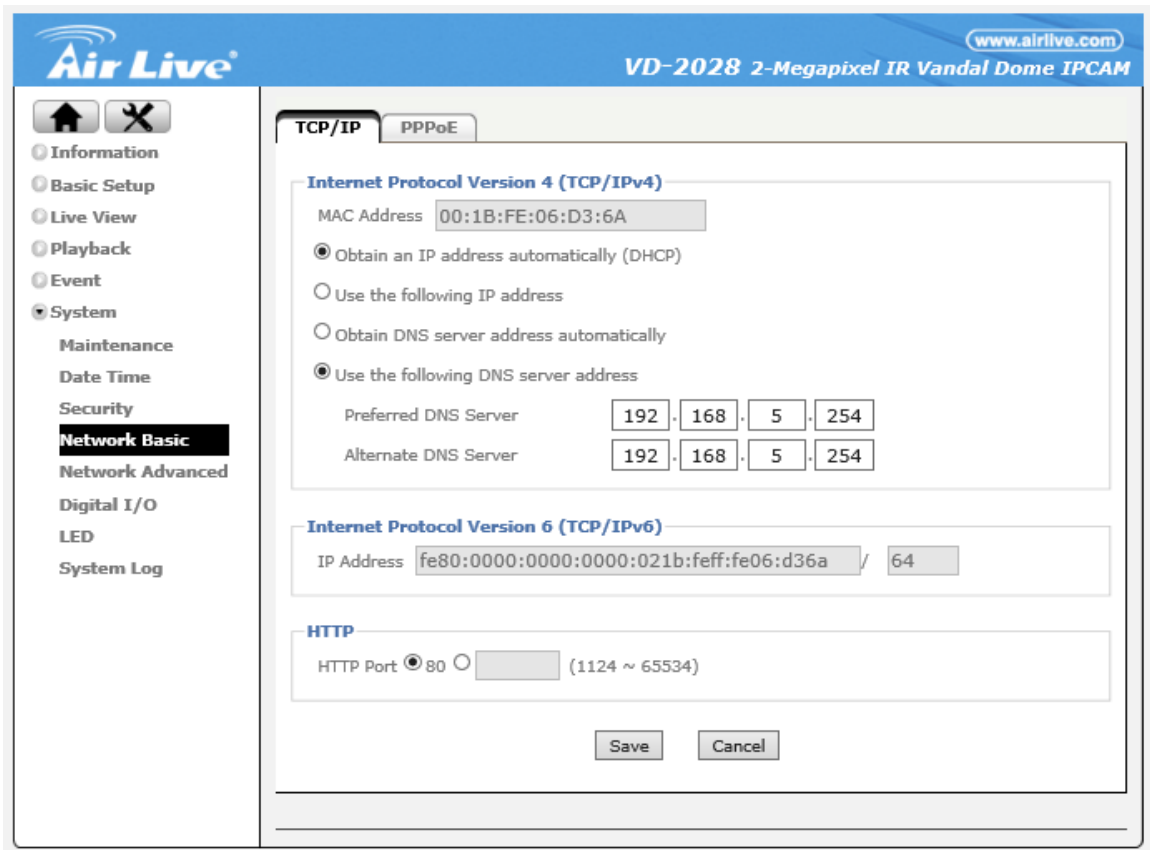
Secure Sockets Layer (SSL) is a cryptographic protocol that provides security for communications over networks such as the Internet.

HTTPS is a URI scheme used to indicate a secure HTTP connection (SSL encrypted). It is syntactically similar to the http:// scheme that is normally used for accessing resources using HTTP. The differences are that SSL-encrypted connections always begin with https:// instead of http://. HTTPS connections use TCP port 443 by default, compared to standard HTTP connections, which use port 80.



- **Create/Install:** Create a self-signed certificate for HTTPS to recognize
 - **Installed Certificate:** Display or remove the properties of the installed certificate.
 - **HTTPS Connection Policy:** Set HTTPS connection policy for different level of users. To use the HTTPS encryption, please set up “Create self-signed certificate” for the first time you use the HTTPS function, and then set up the connection policy for different users.
- Note:** When enable HTTPS with RTSP on mode, the IP Camera only protect the setting such as username and password and do not protect video and audio. When enable HTTPS with RTSP off mode, the IP Camera will protect all setting including video and audio

3. Network basic.



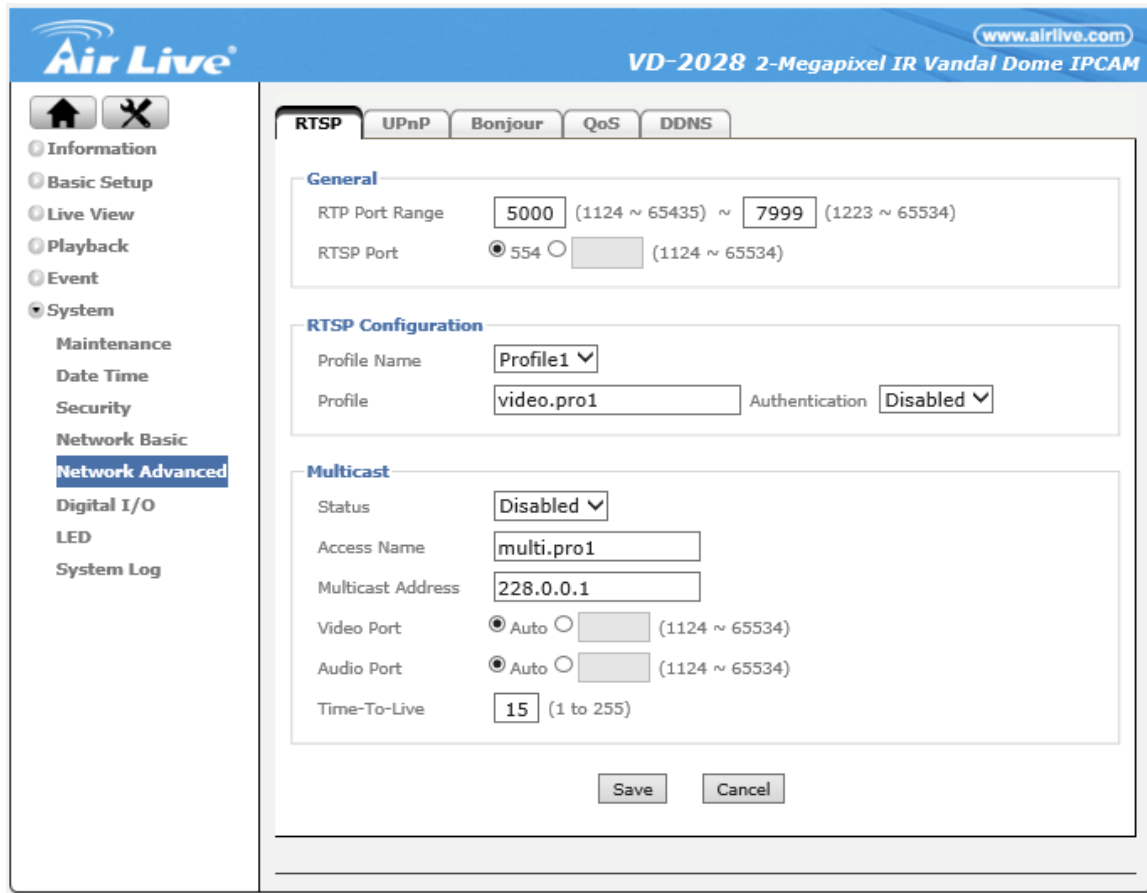
- **TCP/IP:**

Please reference section 6.2 item 2.

- **PPPoE:**

Please reference section 6.2 item 2.

4. Network Advance.



- **RTSP:**

- **General:**

RTP Port Range - The default value of port range is 5000 ~ 7999 and can be changed from 1124 to 65534.

RTP Port - RTSP stands for Real Time Streaming Protocol. RTSP is supported by most media clients, such as Real Player, VLC and QuickTime. If you only plan to view the camera video with your Web browser or with one of the provided software utilities, you do not need to activate this option. The default value is 554 and can be changed from 1124 to 65534.

- **RTSP Configuration:**

This option allows you to set up the URL for each profile and define whether or not you want to enable or disable authentication. By default, the video URL and profile number are related, e.g., profilex = video.prox, but you change it any way you like. Based on the default URLs, access to the RTSP streams would be done like this:

```
rtsp://camera_address:554/video.pro1
rtsp://camera_address:554/video.pro2
rtsp://camera_address:554/video.pro3
```

rtsp://camera_address:554/video.pro4

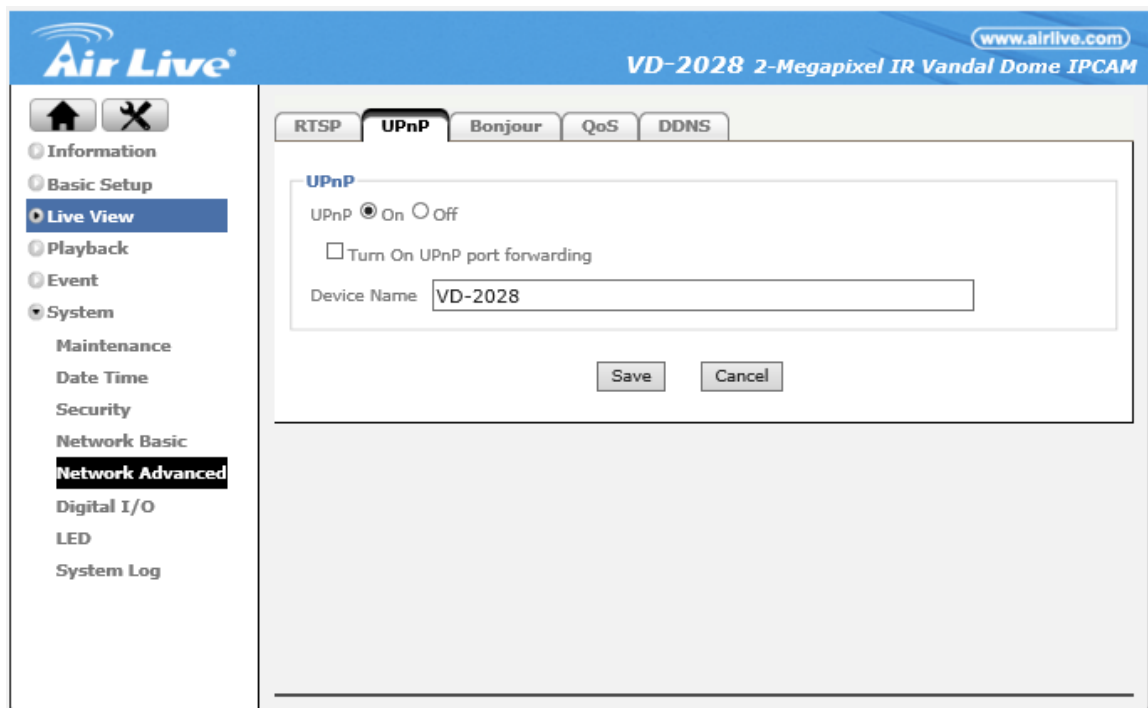
If authentication is enabled, the URLs will change as follows:

rtsp://username:password@camera_address:554/video.pro1

[...]

rtsp://username:password@camera_address:554/video.pro4.

- **UPnP:**



- **UPnP:**

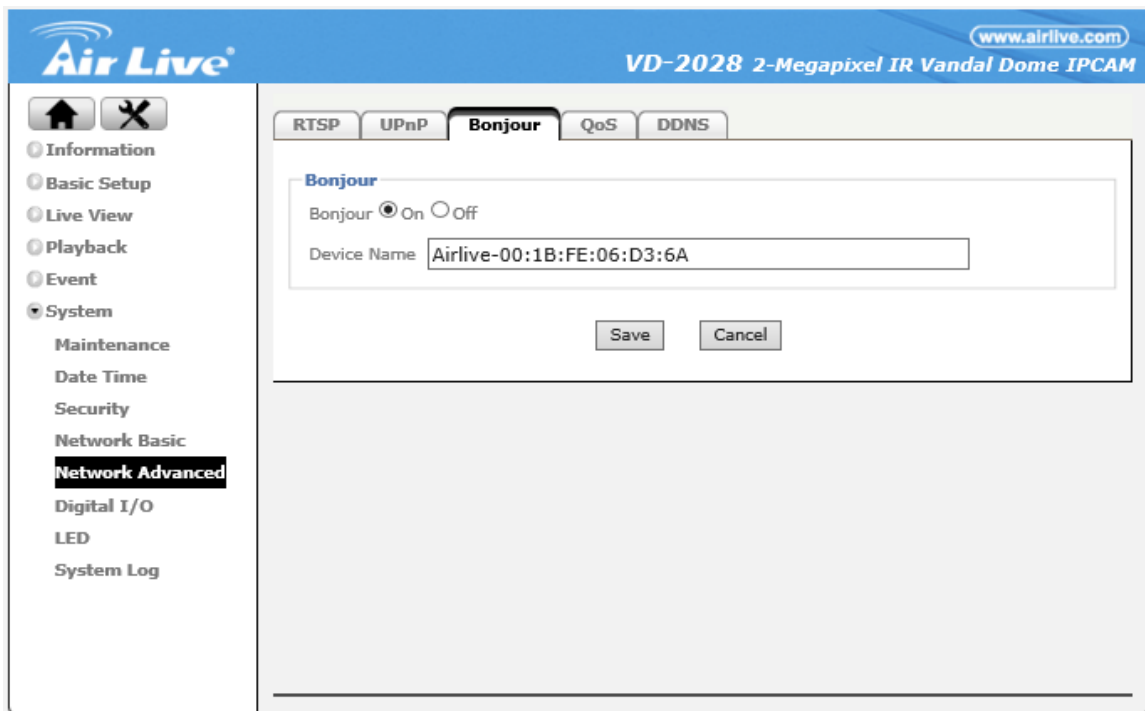
UPnP stands for Universal Plug and Play. A UPnP-enabled device, such as your network camera, announces its presence in the local network to other computers that support UPnP as well. The operating systems Windows XP, Windows Vista and Windows 7/8 support UPnP. When the network camera is connected to the network, Windows will alert the computer user of the presence of the new device (a new icon will be added to your My Network Places folder) and lets the user connect to the device instantaneously.

Furthermore, UPnP has the ability to instruct the router or firewall to open certain ports, so that a party from the outside world can contact a device on the local network, such as the network camera.

UPnP port forwarding is not supported by all routers, however. So, depending on your router or firewall, you may or may not be able use this function, also, opening ports in any router or firewall increases the risk of an intruder successfully breaking in to your network. UPnP automates this task and leaves it to the devices to negotiate which ports to open. Since this is done without any form of authentication, enabling UPnP port forwarding in your router is not necessarily a good idea in a security-sensitive environment. You can always open individual ports in your router or firewall manually.

In the camera UPnP is enabled by default. UPnP port forwarding is disabled by default. When you enable UPnP port forwarding, the screen will reveal additional options. These are the ports the camera will instruct the router to open. Depending on the camera model, you may see different ports. The new H.264 Megapixel cameras have a simpler port model and require fewer ports than the other models. Normally there is no need to change any of these ports, unless you know that a port is already in use by a different device or application.

- **Bonjour:**



UPnP Bonjour is a service that, just like UPnP, helps to find the network camera on the network. Bonjour is available for Windows, but is more commonly used for MacOS.

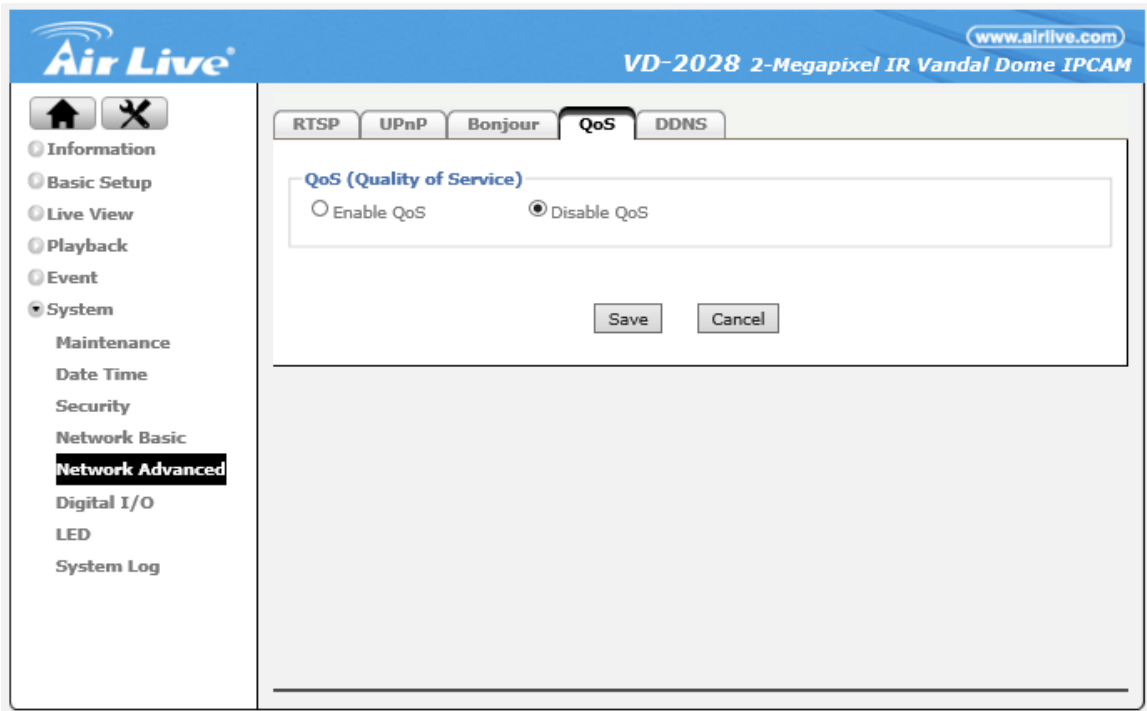
- **Bonjour:**

Bonjour on - Enables the service (on by default).

Bonjour off - Disables the service.

Device Name - Enter the name of your camera here. This is the name the Bonjour service will display. If you have more than one camera installed in your network, this is an easy way to differentiate among the cameras.

- **QoS:**



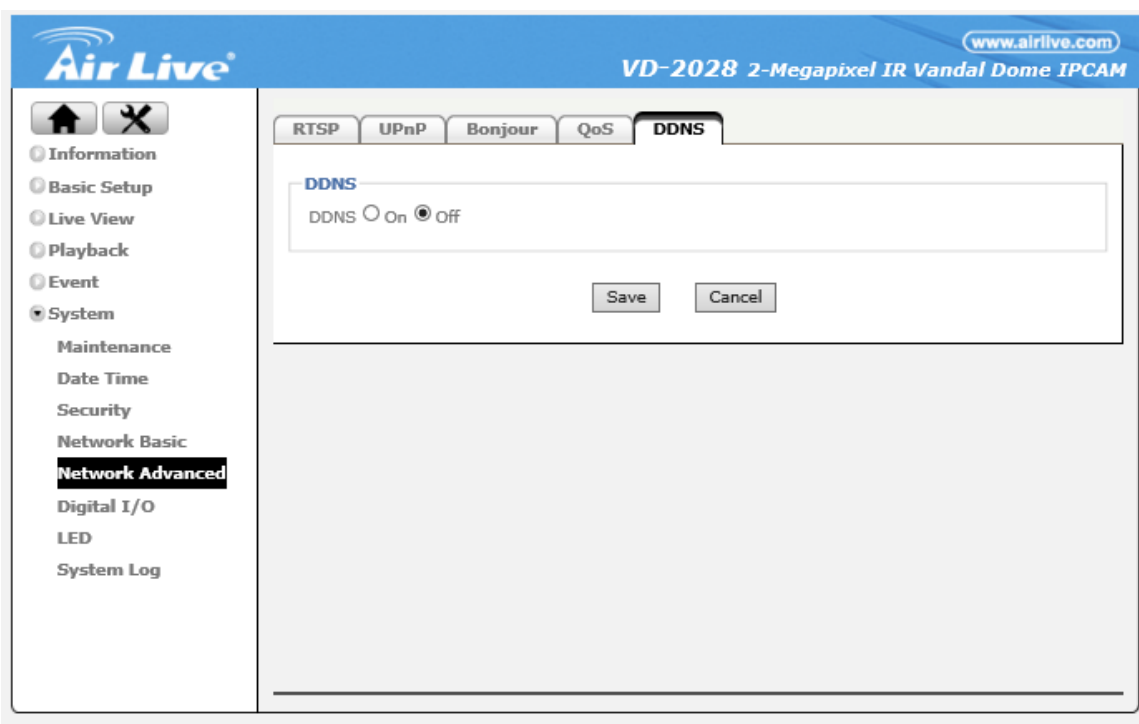
Quality of Service (QoS) for networks is an industry-wide set of standards and mechanisms for ensuring high-quality performance for critical applications. By using QoS mechanisms, network administrators can use existing resources efficiently and ensure the required level of service without reactively expanding or over-provisioning their networks.

- **QoS(Quality of Service):**

QoS on - Enables the service (on by default).

QoS off - Disables the service.

- **DDNS:**



If you are not planning on connecting to the network camera over a remote connection, but only in your local network, you can skip this section.

Dynamic DNS is a network service that provides the capability for a networked device, such as a router or computer system, to notify a domain name server to change, in real time (ad-hoc) the active DNS configuration of its configured host names, addresses or other information stored in DNS.

In simpler terms: Users of private Internet services are often faced with a problem: The ISP typically changes the IP address assigned to the user based on a time interval. This may be as often as once every 24 hours or as seldom as once every 30 days. For the average user this is not a problem. However, if you want to be able to connect to the local camera (e.g., in your house) from a remote location (e.g., the office), you need to know under which Internet address the camera can be reached. However, you don't know what the current Internet IP address is. So you are beginning to see the problem.

DDNS solves this problem by allowing you to create a domain name for your home network, which you can always use to access the camera. To use the DDNS function, you will need to do the following two things.

First, create a DDNS hostname with a DDNS service provider

Secondly, set up a DDNS client in the home network that contacts the DDNS service provider and updates the IP information.

If the router in your home network is equipped with a DDNS client, we recommend using the router instead of the camera. Most SOHO routers are equipped with a DDNS client and since the router is in direct control of handling the Internet connection, it's the device best suited for the DDNS task.

- DDNS:

Server Name - Select the DDNS provider of your choice. In our example we use no-ip.com.

User ID - Enter the same user name here that you use to log in to your account settings on www.dyndns.org. Do not enter your DSL user account information here.

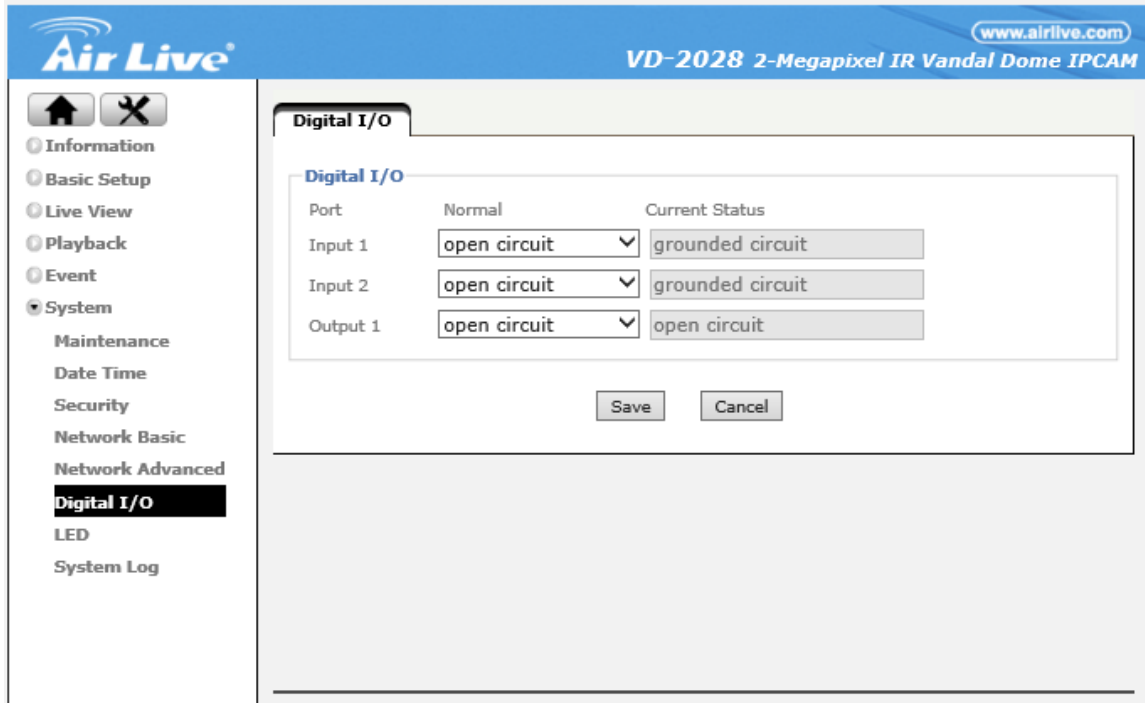
Password - Enter the password for your no-ip.com user account here. Re-type the password in the field below.

Host name - You need to enter the full host name that you have created in your no-ip.com account here.

Periodic Update - You can either specify the time in minutes after which the camera will update its IP information with the DDNS provider, or you can leave the setting as “Auto”, which is recommended.

Click “Save” to activate the settings. Reboot the camera to activate the DDNS settings. After a reboot you may need to wait for a few minutes before you can access the camera with the new domain name

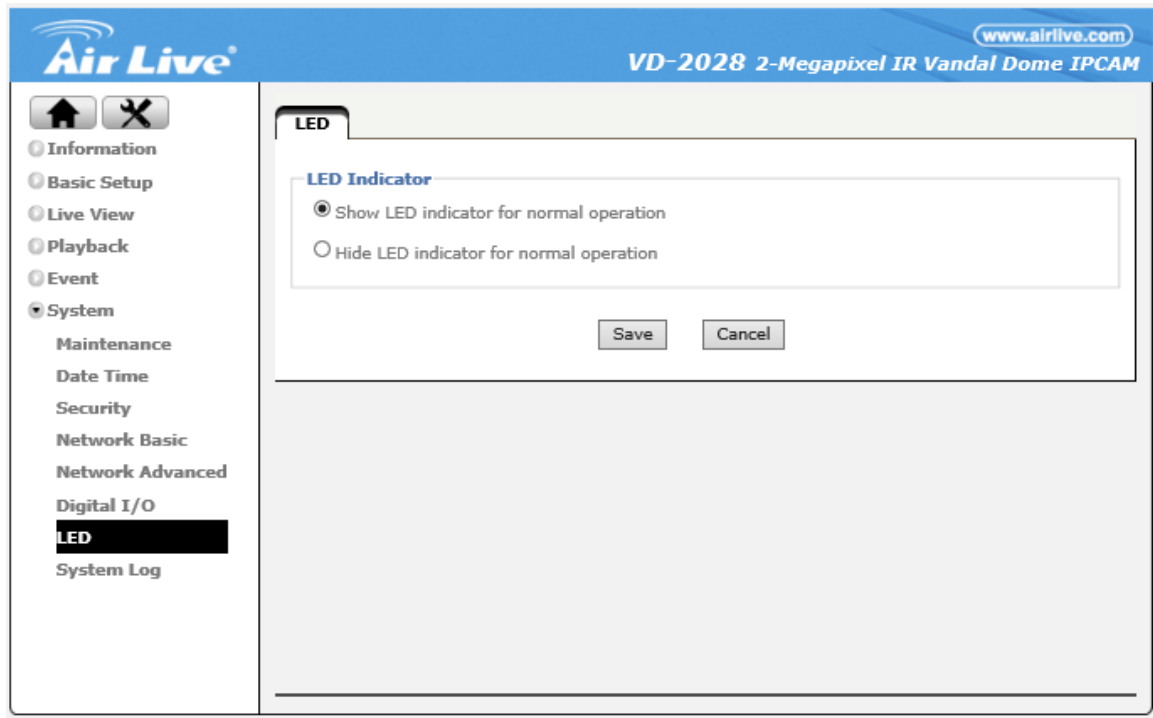
5. Digital I/O.



- **Digital I/O:**

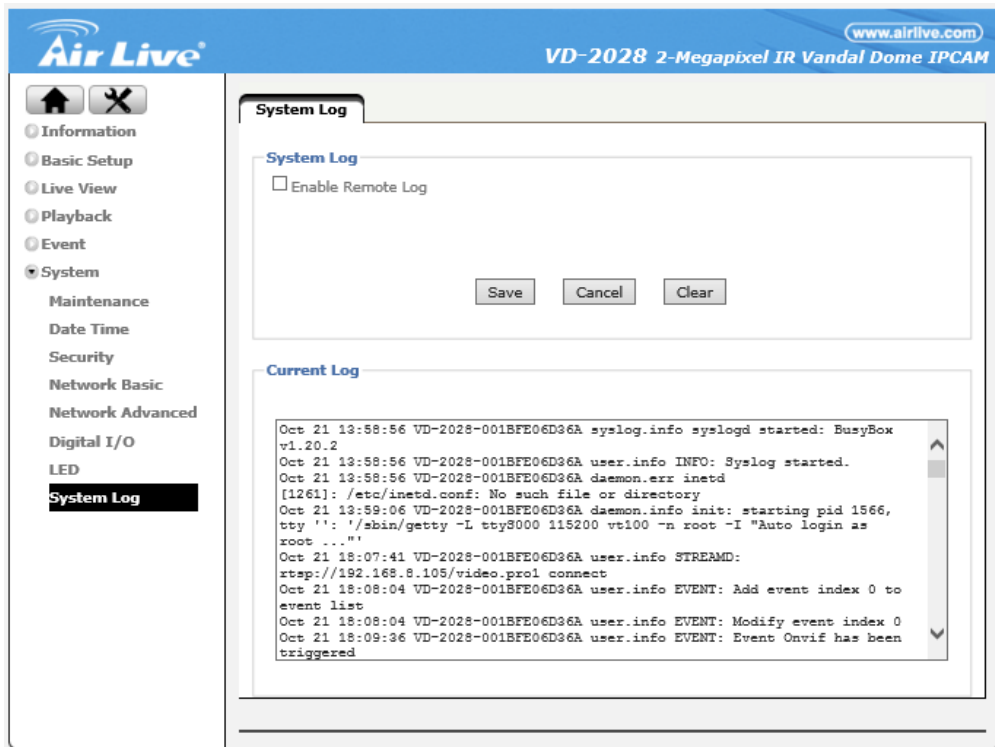
If your network camera is equipped with a digital I/O interface, you can configure the connections on this page. The screen shows the current status of input 1/ input 2 and output 1/ output 2. The screen also allows you to define the “normal” state of the port. The normal state can be viewed as the “non-alert-state.”

6. LED.



- **LED:**
You can enable or disable the operation LEDs on your network camera. Hiding the LED indicator will make the camera appear to be offline while in fact it is operational and captures video.

- **System Log:**



The Network Camera features a log function for system messages. These are system messages about the camera start-up procedure, e-mail deliveries, FTP uploads, motion detection and more. The camera stores the messages in its internal memory and displays them on the system log screen. Since memory is limited, the messages will eventually be truncated. If you need to log all the system messages on a remote server (e.g., for permanent record keeping of alarm events or for troubleshooting purposes), you can utilize the remote log functionality.

- **System Log:**

Server Name - Type in the network address of the system log server. Enter the address without any leading characters, such as http://.

Server Port - The standard port for this protocol is 514. If your system log server is set up differently, you can change the value here.

- **Current Log:**

This text box displays the real-time log of the camera messages. The remote log function uses the System Log Protocol, which is a standard for forwarding log messages in an IP network. System Log is a client/server protocol. The System Log sender (the Network Camera) sends a small (less than 1KB) textual message to the System Log server.