

Speed Dome IP Camera Series

User Manual

Release 1.5



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Safety Precautions



Electric Shock Warning

This equipment may cause electric shocks if not handled properly.

- Access to this equipment should only be granted to trained operators and maintenance personnel who have been instructed of, and fully understand the possible hazardous conditions and the consequences of accessing non-field-serviceable units such as the power supplies.
- The system must be unplugged before moving, or in the even that it becomes damaged.



Reliable Grounding

Particular attention should be given to prepare reliable grounding for the power supply connection. It is suggested to use a direct connection to the branch circuit. Check for proper grounding before powering on the device.



Overloading Protection

The device should be installed according to specifications. Provide a suitable power source with electrical overload protection. Do not overload the AC supply branch circuit that provides power to the device.



ESD Precautions

Please observe all conventional anti-ESD methods while handling the device. The use of a grounded wrist strap and an anti-static work pad are recommended. Avoid dust and debris in your work area.

Device Installation/Site Selection

The device should be installed according to specifications. This device should be operated at a site that is:

- Clean, dry, and free of excessive airborne particles.
- Well-ventilated and away from heat sources such as direct sunlight and radiators.
- Clear of vibration or physical shock.
- Away from strong electromagnetic fields produced by other devices.
- Available with properly grounded wall outlet for power. In regions where power sources are unstable, apply surge suppression.
- Available with sufficient space behind the device for cabling.

Never install or use, unless waterproof or dust-resistant is listed as a feature, the device in the following locations:

- Areas where chemicals are used.
- Areas where dust, debris, or pollen is in excess.
- Areas where corrosive gas, sea water or high humidity is present.
- Areas where steam vapor or flammable environments is generated.
- Areas where radiation, X-rays, strong electric waves, or magnetism is generated.
- Areas outside of the allowable ambient operating temperature range.
- Areas subject to impact or rigorous vibration.

Chapter 1. Product Overview

1.1. Network Camera Introduction

Speed Dome Camera series are professional network cameras that use Internet Protocol (IP) to transmit video streams and control signals over networks. Capable of operating over both LANs and WANs, they provide a complete budget-conscious remote surveillance solution that are ultra clear and highly integrated. Speed Dome Camera series combine a user-friendly interface and simplified installation with a powerful feature set to provide users an easy upgrade path to new digital surveillance system in a virtual environment. These highlights make Speed Dome Camera series ideal choices for environments that require remote surveillance or video transmission.

1.2. Features and Benefits

Speed Dome IP camera is a cutting-edge digital video transmission device. It can compress and transmit real-time images of outstanding quality using a reasonable amount of bandwidth through a standard TCP/IP network. The following features make this IP camera an outstanding choice when building an intelligent IP surveillance system:

- **High Video Quality**

High image quality is essential in security surveillance applications. It is important to be able to clearly capture an incident in progress and identify persons or objects involved. A network camera gives exceptional video quality, even greater than that of traditional analog cameras, which means that more detail or larger areas can be covered.

- **H.264/MPEG-4/MJPEG Compression**

Motion JPEG, MPEG-4, and H.264 (also known as MPEG-4 Part 10/AVC), each employ different techniques to reduce the amount of data transferred and stored in a network video system. Network cameras that support multiple compression standards are ideal for maximum flexibility and integration possibilities.

- **Dual Streaming**

Dual-stream design enables simultaneous support of real-time video monitoring, video recording, or mobile viewing applications which require different resolutions, compression formats and frame rates.

- **MicroSD Card Slot**

IP surveillance relies on network connectivity, making it susceptible to attacks on the network between the camera and recording facilities. With onboard recording capability, our network cameras can truly be online 24/7. The microSD card slot design ensures sufficient recording capacity for an over-weekend period even at full frame rate and high resolution.

- Tampering Detection

This is an intelligent video analytics application available only in selected network cameras in the market. When a camera is manipulated in any way (e.g. accidental redirection, blocking, defocusing, spray-painted, covered or damaged), it can automatically trigger recording and alert notifications.

- Power-over-Ethernet

The built-in Power-over-Ethernet support reduces cabling and installation costs, and enables users to consolidate power facilities for higher reliability. With PoE, a camera can still operate in the event of a power failure if it is connected to a centralized backup power with an Uninterruptible Power Supply.

1.3. Technical Specifications

CAM6181	36x Zoom D/N Outdoor Speed Dome Network Camera
CAM6351	20x Zoom Full HD D/N Outdoor Speed Dome Network Camera
CAM6351A	20x Zoom True WDR D/N Outdoor Speed Dome Network Camera
CAM6351B	30x Zoom True WDR D/N Outdoor Speed Dome Network Camera
CAM6471EZ	3 Megapixel 30x Zoom D/N Outdoor Speed Dome Network Camera

Specifications for CAM6181

Model Name	CAM6181
Description	36x Zoom D/N Outdoor Speed Dome Network Camera
Image Sensor	1/4" D1 Sony CCD
Lens	3.4 - 122.4 mm autofocus lens, F1.6 (wide) - F4.5 (tele)
SNR	50dB
WDR	Yes
Day/Night ICR	Yes
IR LED	N/A
Min Illumination	0.001 Lux @ F1.6 (B/W) 0.01 Lux @ F1.6 (Color)
Iris Control	Automatic / Manual IRIS control
Viewing Angle	Diagonal: 68.6° ~ 2.23° Horizontal: 57.8° ~ 1.70° Vertical: 43.7° ~ 1.30°
Camera Angle Adjustment	Pan: 360° endless, 5° ~ 400° / s Tilt: -10° ~ +190°, 5° ~ 400° / s
Pan/Tilt/Zoom Functionalities	1. 180° Horizontal Instant Flip 2. 256 preset positions 3. Preset position auto scanning 4. 36x optical zoom and 12x digital zoom, total 432x zoom 5. Auto Tracking Function (Option)
Shutter Time	1/1 ~ 1/10,000 s
Video Compression	H.264/MJPEG
Resolution	Up to 720 x 480 650 TV Lines
Video FPS	30 fps at D1 (720 x 480) 30 fps at QVGA (352 x 240)
Video Control	AGC (Auto Gain Control), AWB (Auto White Balance), AES (Auto Electronic Shutter), BLC (Back Light Compensation), Image Adjustment
Video Stream	Dual stream at H.264 and MJPEG simultaneously

Bit Rate	64K ~ 10Mbps, VBR, CBR, controller frame rate and quality
Intelligent Video	Motion Detection
Video Jack	N/A
Audio	2 Way Audio
Audio Compression	G711/G.726, ADPCM
Audio Input / Output	Line In/Out, Terminal Block
Alarm In/Out	4/2 terminal block
Video Buffer	N/A
Event Action	Send snapshot or video clip by FTP or email, record to local storage, trigger DO
Supported Protocols	IPv4/v6, TCP/IP, UDP, RTP, RTSP, HTTP, ICMP, FTP, SMTP, DHCP, PPPoE, UPnP, IGMP, SNMP, QoS, DDNS, NTP
Ethernet	10/100 Base-T / RJ45
Local Storage	microSDHC x 1(Class 2/4/ 6)
RS-485	N/A
USB	N/A
SDK	SDK 2.0
OS	Microsoft Windows XP/Vista/7
Browser	Microsoft IE 6.0 or above
Software	VMS 2.4.8
Temperature	Operation: -40~ 50° C (-40~122° F)
Humidity	0 to 90%
Power	AC24V ; HPoE 60W
Power Consumption	Max. 20W (w/o Heater) Max. 50W (w/ Heater)
Dimension	ø192mm x 382mm (H) ø7.55" x 11.1" (H)
Weight	Net: 2.32kg / Gross: 3.55kg
Certification	Safety: LVD EMC: FCC, CE, GOST, KCC IP66

Specifications for CAM6351/6351A/6351B

Model Name	CAM6351	CAM6351A	CAM6351B
Description	20x Zoom Full HD D/N Outdoor Speed Dome Network Camera	20x Zoom True WDR D/N Outdoor Speed Dome Network Camera	30x Zoom True WDR D/N Outdoor Speed Dome Network Camera
Image Sensor	1/2.9" 2 megapixel SONY low light CMOS		
Lens	4.7 ~ 94 mm autofocus lens, F1.6 (wide) - F3.7 (tele)		4.3 ~ 129 mm autofocus lens, F1.6 (wide) - F3.7 (tele)
SNR	48dB	50dB	
WDR	Yes	True WDR >96dB	
Day/Night ICR	Yes		
IR LED	N/A		
Min Illumination	0.01 Lux @ F1.6 (B/W) 0.1 Lux @ F1.6 (Color)	0.1 Lux @ F1.6 (B/W) 0.5 Lux @ F1.6 (Color)	
Iris Control	Automatic / Manual IRIS control		
Viewing Angle	Diagonal: 68.6°~3.12° Horizontal: 57.8°~2.53° Vertical: 43.7°~1.83°		
Camera Angle Adjustment	Pan: 360° endless, 5°-400° /s Tilt: -10° ~ +190° , 5°-400° /s		
Pan/Tilt/Zoom Functionalities	1. 180° Horizontal Instant Flip 2. 256 preset positions 3. Preset position auto scanning 4. 20x optical zoom and 8x digital zoom, total 160x zoom 5. Auto Tracking Function (Optional)	1. 180° Horizontal Instant Flip 2. 256 preset positions 3. Preset position auto scanning 4. Preset / Sequence / Auto Pan / Cruise 5. 20x optical zoom and 12x digital zoom, total 240x zoom 6. Auto Tracking Function (Optional)	1. 180° Horizontal Instant Flip 2. 256 preset positions 3. Preset position auto scanning 4. Preset / Sequence / Auto Pan / Cruise 5. 30x optical zoom and 12x digital zoom, total 360x zoom 6. Auto Tracking Function (Optional)
Shutter Time	1/30~1/10,000 s	1/1 ~ 1/10,000 s	
Video Compression	H.264/MJPEG		
Resolution	Up to 1920 x 1080		
Video FPS	30 fps at 1080P (1920 x 1080) 30 fps at SXGA (1280 x 1024) 60 fps at HD720 (1280 x 720) 60 fps at D1 (720 x 480) 60 fps at VGA (640 x 480) 60 fps at QVGA (320 x 240)		

Video Control	AGC (Auto Gain Control), AWB (Auto White Balance), BLC (Back Light Compensation), Image adjustment, Privacy zone: On/Off (16 zones)	AGC (Auto Gain Control), AWB (Auto White Balance), BLC (Back Light Compensation), 2D/3D Noise Reduction, Digital Image Stabilization, Image Defog Feature, Image adjustment, Privacy zone: On/Off (16 zones)
Video Stream	Dual stream at H.264 and MJPEG simultaneously	
Bit Rate	64K ~ 10Mbps, VBR, CBR, controller frame rate and quality	
Intelligent Video	Motion Detection	
Video Jack	N/A	
Audio	2 Way Audio	
Audio Compression	G711/G.726, ADPCM/AAC	G711/G.726
Audio Input / Output	Line In/Out, Terminal Block	
Alarm In/Out	4/2, terminal block	
Video Buffer	N/A	
Event Action	Send snapshot or video clip by FTP or email, record to local storage, trigger DO	
Supported Protocols	IPv4/v6, TCP/IP, UDP, RTP, RTSP, HTTP, HTTPS, ICMP, FTP, SMTP, DHCP, PPPoE, UPnP, IGMP, SNMP, QoS, IEEE 802.1X, DDNS, NTP	IPv4/v6, TCP/IP, UDP, RTP, RTSP, HTTP, HTTPS, ICMP, FTP, SMTP, DHCP, PPPoE, UPnP, IGMP, SNMP, IEEE802.1x, QoS, ARP
Ethernet	10/100 Base-T / RJ45	
Local Storage	microSDHC x 1 (Class2/4/6)	
RS-485	N/A	
USB	N/A	
SDK	SDK 2.0	
OS	Microsoft Windows XP/Vista/7	
Browser	Microsoft IE 6.0 or above, Firefox, Chrome, Safari	

Software	VMS 2.5	
Temperature	Operation: -40~50°C (-40~122°F)	
Humidity	0 to 90%	
Power	24VAC 3A	802.3at PoE+ (60W) / AC 24V ± 10%
Power Consumption	Max. 20W (w/o Heater) Max. 60W (w/ Heater)	Max. 24W (w/o Heater) Max. 60W (w/ Heater)
Dimension	ø192mm x 282mm (H) ø7.55" x 11.1" (H)	
Weight	Net: 2.32kg Gross: 3.55kg	
Certification	Safety: LVD EMC: FCC, CE, GOST, KCC, IP66	CE, FCC, RoHS, IP66

Specifications for CAM6471EZ

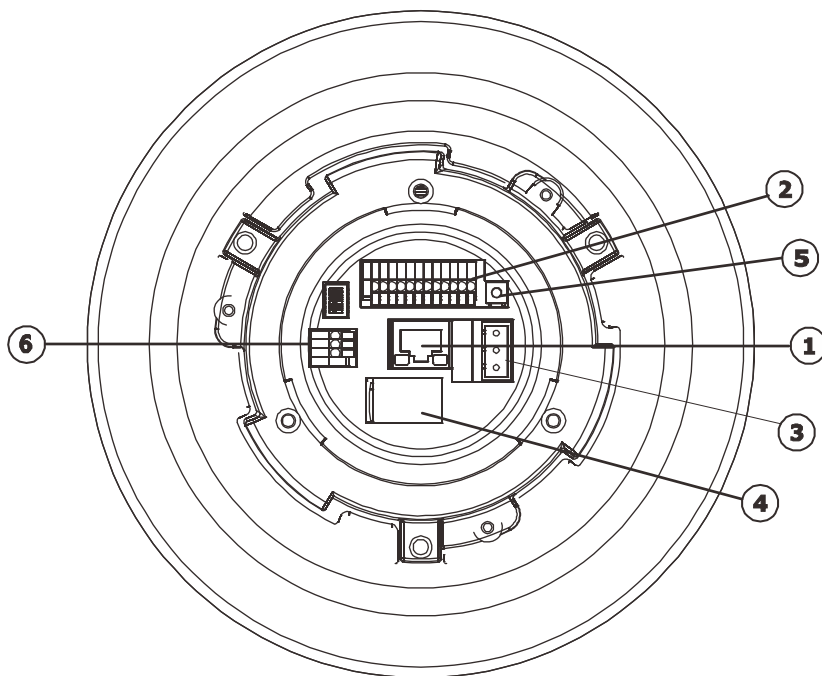
Model Name	CAM6471EZ
Description	3 Megapixel 30x Zoom D/N Outdoor Speed Dome Network Camera
Image Sensor	1/2.9" megapixel Sony Progressive CMOS
Lens	f4.4 - 132 mm autofocus lens, F1.4 (wide) - F4.7 (tele)
SNR	50dB
WDR	Yes
Day/Night ICR	Yes
IR LED	N/A
Min Illumination	0.009 lux @ F1.4 (B/W) 0.04 lux @ F1.4 (Color)
Iris Control	Automatic / Manual IRIS control
Shutter Time	1/1 ~ 1/10,000 s
Viewing Angle	57.02° (Wide); 2.15° (Tele)
Camera Angle Adjustment	Pan: 360° endless, 5°-400°/s Tilt: -10° ~ +190°, 5°-400°/s
Pan/Tilt/Zoom Functionalities	1. 180° Horizontal Instant Flip 2. 256 preset positions 3. Preset position auto scanning 4. 30x optical zoom and 10x digital zoom, total 300x zoom
Video Compression	H.264/MJPEG
Resolution	Up to 2048 x 1536

Video FPS	30 fps at QXGA (2048 x 1536) 60 fps at 1080P (1920 x 1080) 60 fps at SXGA (1280 x 1024) 60 fps at 720P (1280 x 720) 60 fps at D1 (720 x 480) 60 fps at VGA (640 x 480) 60 fps at QVGA (320 x 240)
Video Stream	Dual stream at H.264 and MJPEG simultaneously
Bit Rate	64K ~ 10Mbps, VBR, CBR, controller frame rate and quality
Video Control	AGC (Auto Gain Control), AWB (Auto White Balance), BLC (Back Light Compensation), 2D/3D Noise Reduction, Digital Image Stabilization, Image Defog Feature, Image adjustment, Privacy zone: On/Off (16 zones)
Intelligent Video	Motion detection
Video Jack	N/A
Built-in MIC	N/A
Audio Compression	G711/G.726
Audio Input / Output	Line In/Out, Terminal Block
Alarm In/Out	4/2, terminal block
Video Buffer	N/A
Event Action	Send snapshot or video clip by FTP or email, record to local storage, trigger DO
Supported Protocols	IPv4/v6, TCP/IP, UDP, RTP, RTSP, HTTP, HTTPS, ICMP, FTP, SMTP, DHCP, PPPoE, UPnP, IGMP, SNMP, QoS, ARP, IEEE 802.1x, DDNS, NTP
Ethernet	RJ-45, 1Gbps Ethernet
Local Storage	microSDXC (64GB)
RS-485	N/A
USB	N/A
SDK	Surveon SDK 2.0
OS	Microsoft Windows 7/8
Browser	IE 6.x or above, Firefox, Chrome, Safari
Software	Surveon VMS 2.5
Temperature	Operation: -40°C ~ 50°C (-40°F ~ 122°F)
Humidity	0 to 90%
Power	802.3at PoE+ (60W) / AC 24V ± 20%
Power Consumption	Max. 25W (w/o Heater) Max.57W (w/ Heater)
Dimension	ø192mm x 282mm (H) ø7.5" x 11.1" (H)
Weight	Net: 2.32kg Gross: 3.55kg
Certification	CE / FCC / RoHS / IP66

Chapter 2. Hardware Overview

2.1. Overview

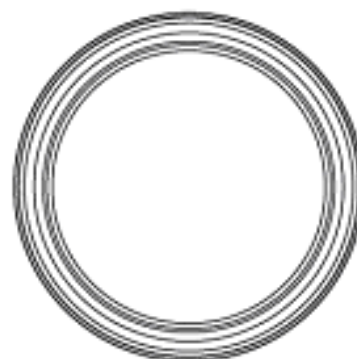
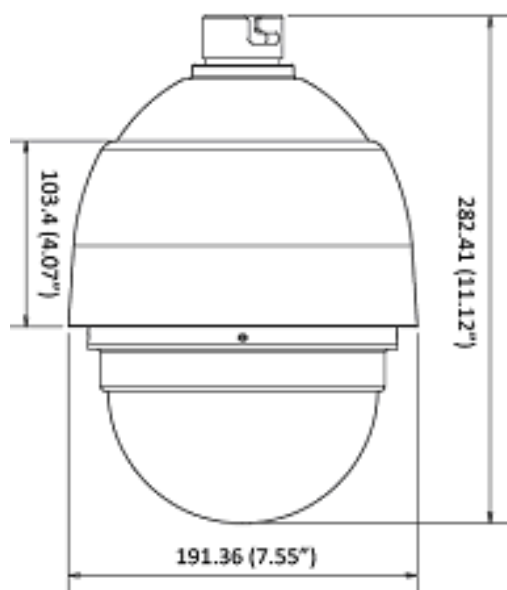
Bottom View



1. LAN Connector	2. Alarm In/Out Connector	3. Power Connector Slot
4. MicroSDHC Card Slot	5. Reset Button	6. Audio In/Out Connector

2.2. Dimensions

Unit: mm (inches)



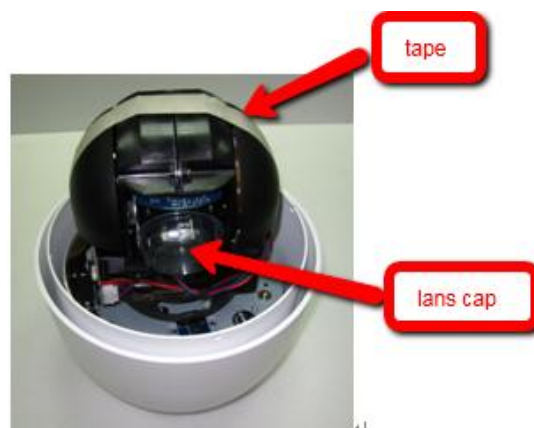
2.3. Camera Setup

Preparation for Dome Camera Setup

1. Unpack the dome package and take out the dome body.
2. Remove the plastic wrapping on the dome cover.
3. Remove the Styrofoam sheet from the inside of the dome cover.



4. Remove the tape and lens cap on the camera.



5. Remove the two screws on the dome cover.
6. Attach the dome cover. Before doing that, apply some lubricant on the cover's waterproof rubber to make the installation process smoother.



Note that the tiny protrusion on the dome cover must align with one of the four holes on the dome body.



7. Gently pressure the dome cover downward with two hands on the side of it.



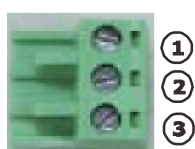
8. Use one M3 Screw and the original two screws to screw the dome cover and camera body together.



Camera Cable Connections

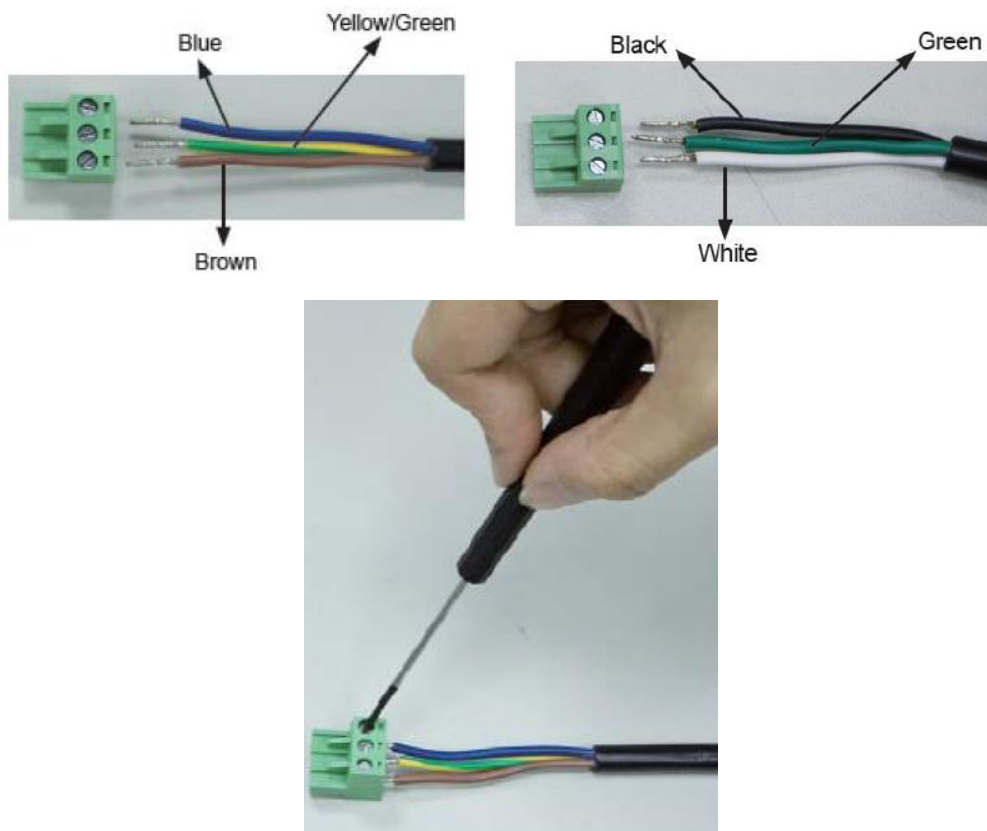
Connecting Power

Pin definitions of the power connector:



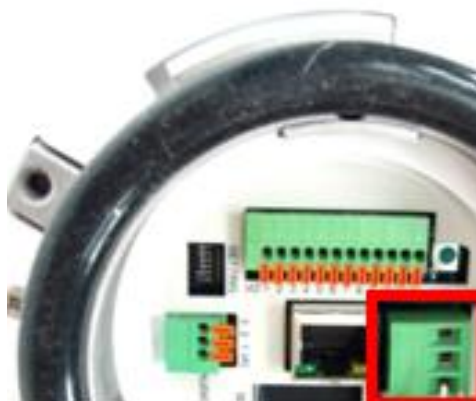
Pin	Definition	Color of Power Wire Connected
1	AC 24-	Blue or Black
2	FG	Yellow/Green or Green
3	AC 24+	Brown or White

1. Connect the power wires of AC adapter with the power connector. Please check the colors of the power wires carefully, and screw them with the connector properly.



Warning: When done connecting the cables to the connector, please check for LIVE WIRES! Do not leave “LIVE WIRES” out of the connector unconnected! Please cover up the LIVE WIRES with proper electrical tape to avoid short-circuiting the camera!

2. Insert the power connector into the power connector slot.



Connecting Power with Optional AC Adapter

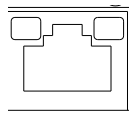
Adjust the power selector according to the practical local power voltage, and connect the power cord with the adapter and power outlet.



Note: Contact your dealer for purchasing the adapters.

Connecting LAN Cable

1. Connect one end of the LAN cable to the LAN connector of the network Speed Dome Camera, and the other end of the cable to the network switch or PC.
2. Check the status of the link indicator and activity indicator LEDs; if the LEDs are unlit, please check LAN connection.

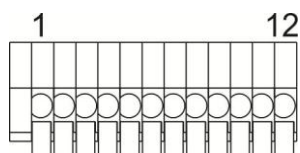


Green Link Light indicates good network connection.

Orange Activity Light flashes for network activity indication.

Applying Alarm I/O (Optional)

The network Speed Dome Camera 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. Please refer to the pin definition table below for alarm system wiring.

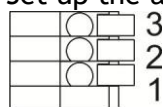


Pin	Definition
1	ALARM_OUT_NO_1
2	ALARM_OUT_NC_1
3	ALARM_OUT_COM_1
4	GND
5	ALARM_OUT_NO_2
6	ALARM_OUT_NC_2

Pin	Definition
7	ALARM_OUT_COM_2
8	GND
9	ALARM_IN_4
10	ALARM_IN_3
11	ALARM_IN_2
12	ALARM_IN_1

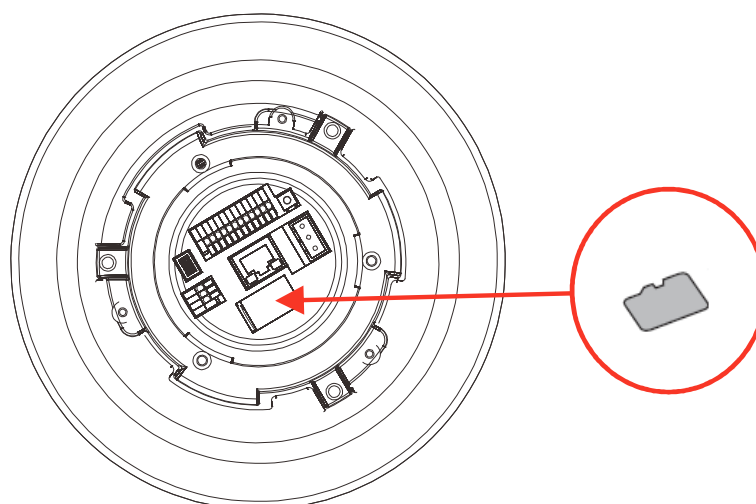
Applying Audio (Optional)

Set up the audio according to the audio pin definition.



Pin	Definition
1	LINE_OUT
2	GND
3	LINE_IN

Inserting and the Micro SDHC Card (Optional)



1. Make sure the golden finger of the Micro SDHC card is facing downwards.
2. Push the Micro SDHC card into the card slot until you hear a click sound.

Chapter 3. Installation

3.1. Ceiling Mounting

Package Contents of Ceiling Mounting Kit

M8x12 Screw x1

Spring Washer-8 x1

Pendant Tube Washer x1

Rubber Washer-8 x1

Sponge x2

Items Needed

Waterproof Rubber x1 (provided with the package of the camera)

M5 Screw x1 (provided with the package of the camera)

Screws and Screw Anchors for fixing the Straight Tube onto the ceiling (provided by users)

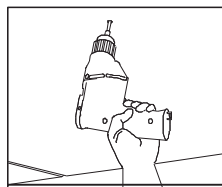
Tools Needed

Electric Drill

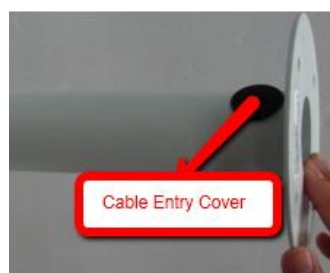
Screw Driver

Wrench Kit

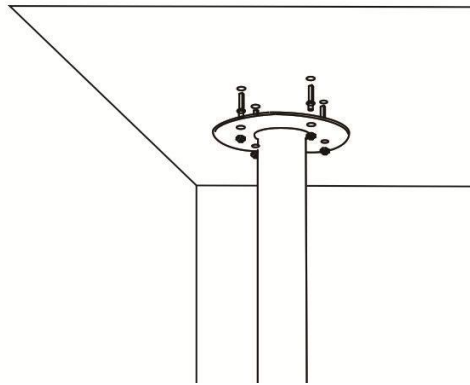
1. Ensure that the ceiling can support the weight of the Dome Camera and Straight Tube.
2. Make one cable entry hole and four screw holes on the ceiling with the electric drill.



Otherwise, users can remove the Cable Entry Cover on the Straight Tube to place the cables.



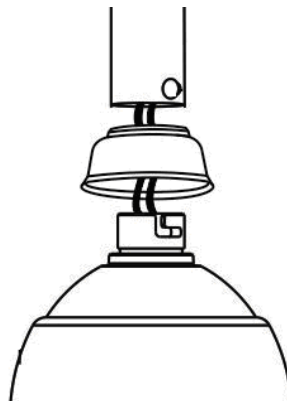
3. Fix the Straight Tube to the ceiling with screws and screw anchors.



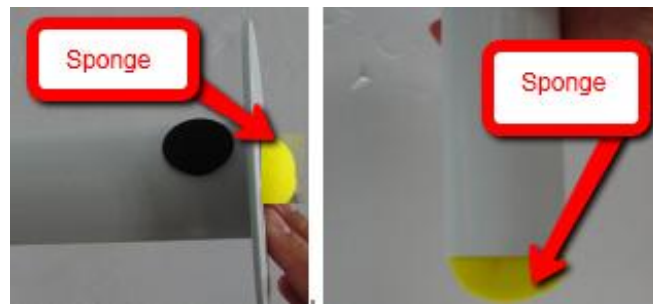
4. Fit the Waterproof Rubber to the Straight Tube. (You may turn the Waterproof Rubber inside out, which is shown in the picture below, to make the fitment easier.)



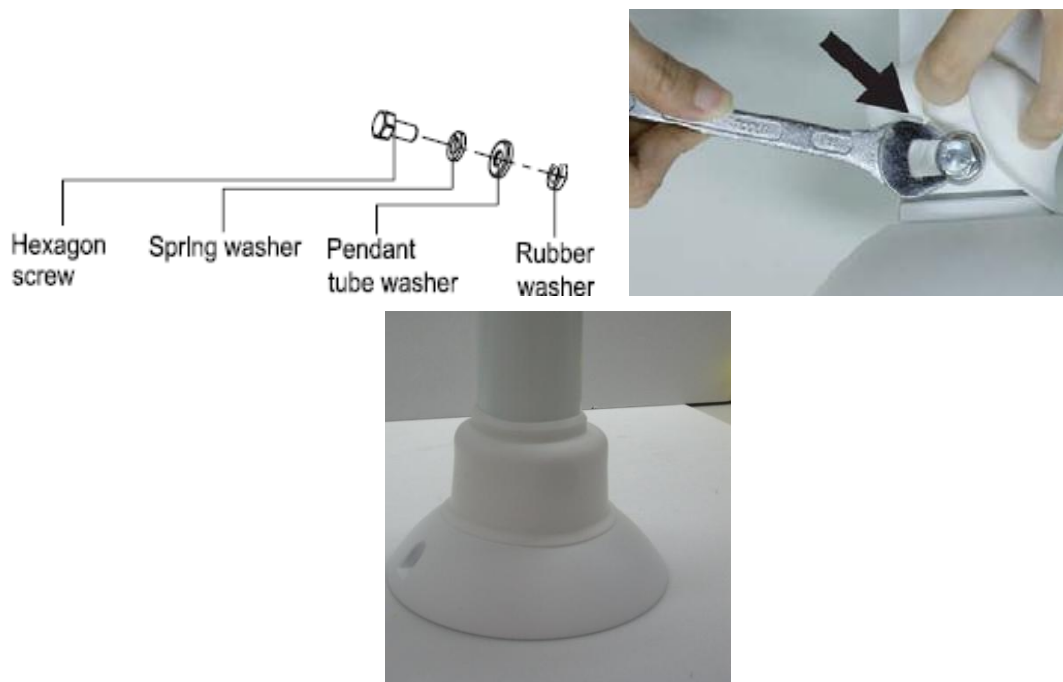
5. Thread the cables through the Straight Tube and the Outdoor Flange.



6. After threading the cables, please block the cable entry hole with the supplied sponge(s) to avoid insects entering the tube.



7. Fix the Outdoor Flange to the Straight Tube with the supplied screw (M8x12) and washers. Then adjust the Waterproof Rubber.



8. Mount the Dome Camera to the Outdoor Flange.

Rotate the dome body and make sure the thread holes on the Lock Screw Plate and Outdoor Flange are aligned. Then screw the M5 Screw.



3.2. Wall Mounting

Package Contents of Wall Mounting Kit

M8x12 Screw x1

Spring Washer-8 x1

Pendant Tube Washer x1

Rubber Washer-8 x1

Sponge x1

Items Needed

Waterproof Rubber x1 (provided with the package of the camera)

M5 Screw x1(provided with the package of the camera)

Screws and Screw Anchors for fixing the Pendant onto the wall (provided by users)

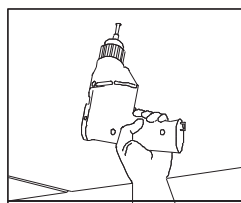
Tools Needed

Electric Drill

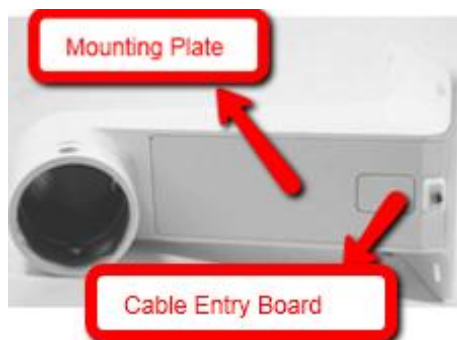
Screw Driver

Wrench Kit

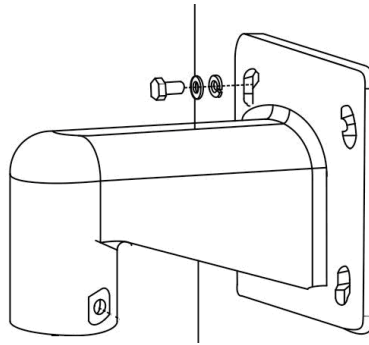
1. Make one cable entry hole and four screw holes on the wall with the electric drill.



Otherwise, users can remove the Cable Entry Board on the Pendant's Mounting Plate to place the cables.



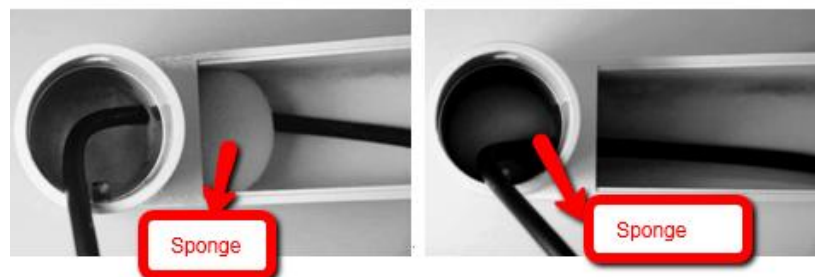
2. Fix the Pendant on the wall with screws and screw anchors.



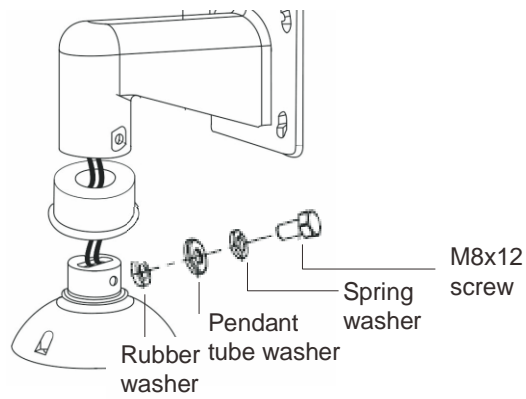
3. Fit the Waterproof Rubber to the Pendant. (You may turn the Waterproof Rubber inside out, which is shown in the picture below, to make the fitment easier.)



4. Run the cable(s) through the Pendant.
5. Please block the cable entry hole with the supplied sponge to avoid insects entering the Pendant. The sponge can be placed in two ways.



6. Thread the cable(s) through the Outdoor Flange and join the Outdoor Flange to the Pendant with the supplied screws (M8x12) and washers. Then adjust the Waterproof Rubber to the joint.

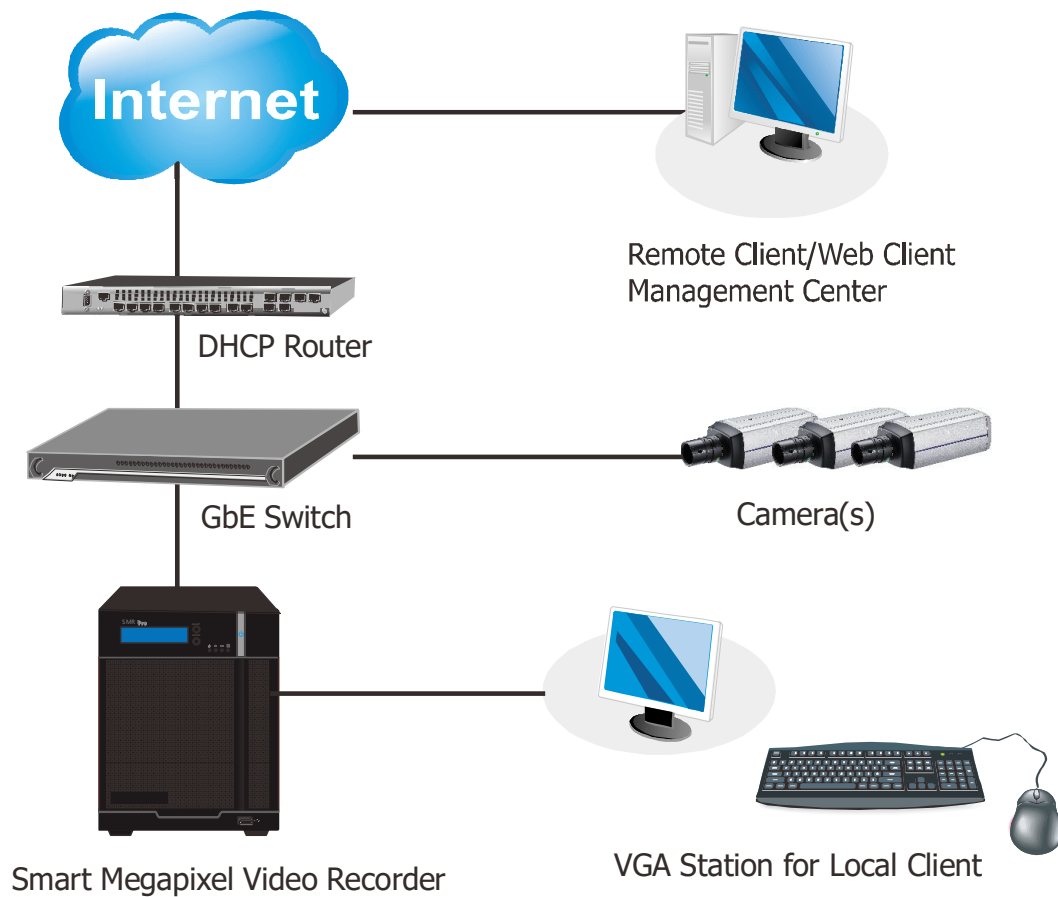


7. Mount the Dome Camera to the Outdoor Flange.

Rotate the dome body and make sure the thread holes on the Lock Screw Plate and Outdoor Flange are aligned. Then screw the M5 Screw.



3.3. Camera Deployment



3.4. Before You Start

Please prepare a PC with Windows (XP or above) and web browsers (Internet Explorer 6.0 or above) installed.

Chapter 4. Connecting to the Network Camera

4.1. Accessing the Camera

Setting the Camera's IP

The network speed Dome camera's default IP address is: **192.168.0.250**. Therefore, to access the camera for the first time, set the PC's IP address as 192.168.0.XXX; for example:

- **IP Address: 192.168.0.100**
- **Subnet Mask: 255.255.255.0**

Connecting to the Camera

1. Launch the web browser and enter the IP address of the network camera in the address bar of your browser and press enter.
2. Enter the default user name (admin) and password (admin) in the prompt request dialogue. (Please note that the user name and password are case sensitive.)

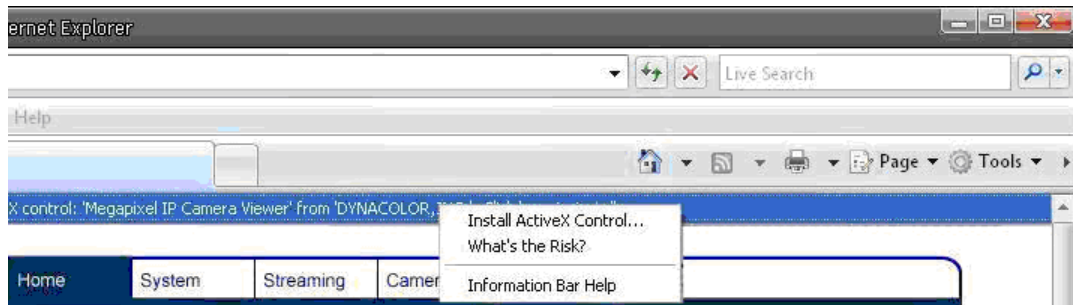
Once successfully logged in, live video displays in the center of your browser.



Note: If the live view does not display normally, please go to Installing ActiveX Components Section.

Installing Active X Components in Internet Explorer (Optional)

1. After connecting to the camera, the request for installing the ActiveX control will appear just below the URL bar.
2. Right Click on the information bar, and click **Install ActiveX Control...** to permit ActiveX control installation.

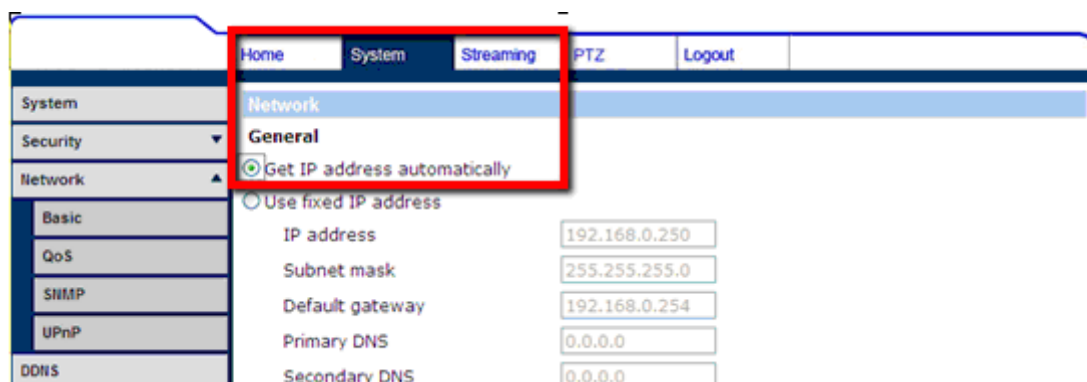


3. In the pop-up security warning window, click **Install** to start downloading DC Viewer software on the PC.
4. Click **Finish** after DC Viewer installation is complete.

Note: If the Live Video Pane on home page can not be shown for users who have installed the DC Viewer in the PC previously. Please refer to Upgrade the DC Viewer.

Network Configuration for DHCP Users (Optional)

For users of DHCP Server, please go to System > Network on the web interface after logging into the camera to change the setting to *Get IP Address Automatically*.



Chapter 5. Configuration through Viewer Window Interface

5.1. Overview

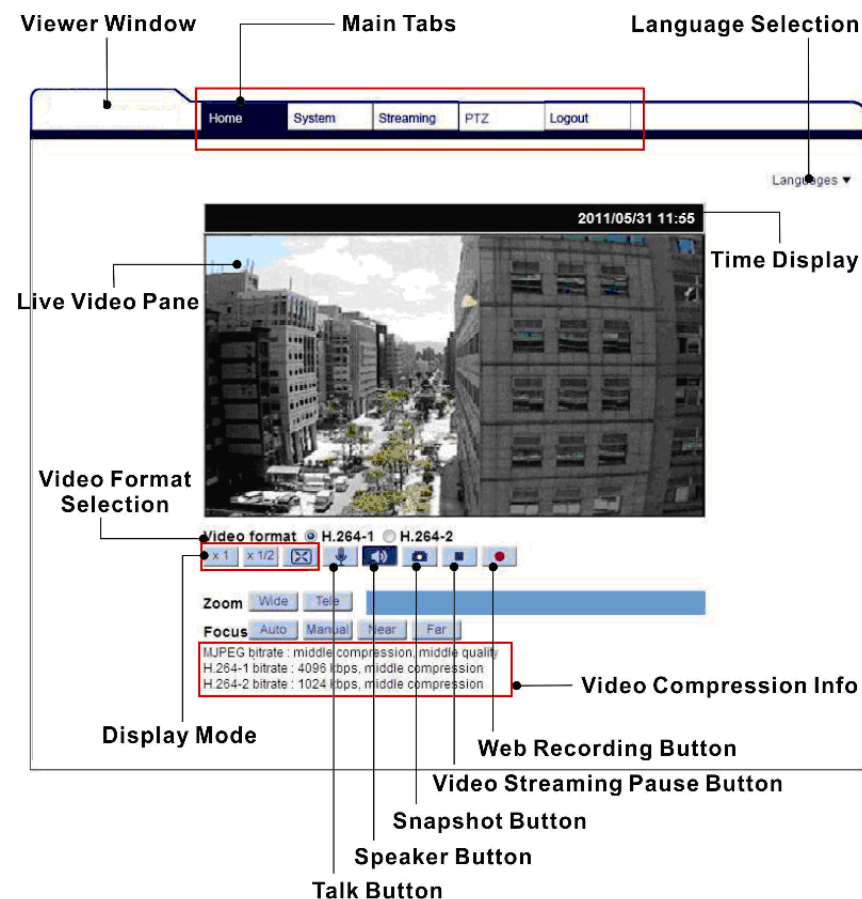
The Full HD Speed Dome IP Camera transmits digital video and audio data using wire connection. Live video can be monitored and recorded from window-based computer via network.

The video encoder supports real-time Main Profile H.264 Full HD resolution. Simultaneous dual streams, H.264/H.264 and H.264/MJPEG, are available for various network applications via speeding or limited bandwidth. Better image quality and high resolution are delivered by IP support. It eliminates the “combing” effect due to scene change and performs more stabilized image.

With IP solution, multiple and authorized users can view the immediate image from any location through network even using a standard web-browser. It enables users to access and remote the camera without at specific locations.

5.2. Interface Layout

This section demonstrates the layout of the network Speed Dome Camera's main interface.



The five setting tabs on the interface are:

1. **Home:** Users can monitor live video of the targeted area.
2. **System:** The Administrator can set host name, system time, root password, network related settings, etc. Further details will be interpreted in the section [System](#).
3. **Streaming:** The Administrator can modify video resolution and rotate type and select video compression mode in this page.
4. **PTZ:** Users are allowed to program Preset Point(s), Cruise Line(s), Auto Pan Path(s) and Sequence Line(s) via PTZ controls, and adjust various camera parameters including Auto Exposure (AE), White Balance (WB), Back Light Compensation (BLC), Sharpness, Exposure Compensation, Digital Zoom, etc.
5. **Logout:** Click on the tab to re-login the IP Camera with another username and password.

5.3. Home Page

Click on the tab **Home** to access the home Page. There are several function buttons on the Home page. Detailed information of each item is as described in the following chapter.

Function Items on the Home Page

Multiple Languages Support

Multiple languages are supported, including German, English, French, Italian, Korean, Simplified Chinese, Russian, etc. for the viewer window interface.

Digital 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

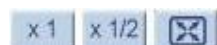


Image display size can be adjusted to x1/2 and full screen.

Talk Button



Talk function allows the local site talks to the remote site. Click on the button to switch it to on/off. Please refer to [Security: Add user > Talk/Listen](#) for further details.

Note: This function is only available for user who has granted this privilege by the Administrator.

Speaker Button



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.

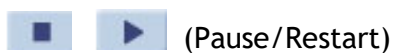
Snapshot Button



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, please refer to [File Location](#) for further details.

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:\. Please refer to [File Location](#) for further details.

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

Zoom Adjustment



(Wide/ Tele)

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

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 as shown below.

Manual Button




Click on the **Manual Button**, and users can adjust focus manually via **Near/Far Buttons**.

Near/Far Buttons



Click on the **Manual Button**, and users can adjust focus manually via **Near/Far Buttons**. The status will also be displayed above the screen as shown below.

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.

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*; refer to the Section [Camera—Misc 1](#) for details. When the camera reaches the limit of its optical range, it will automatically switch to digital zoom.

5.4. System

Under the **System** *tab*, there are categories as the table below:

System	System
	Security
	Network
	DDNS
	Mail
	FTP
	HTTP
	Application
	Motion Detection
	Tampering
	Storage Management
	Recording
	File Location
	View Log File
	View User Information
	View Parameters
	Factory Default
	Software Version
	Software Upgrade
	Maintenance

Note: The *System Configuration* page is only accessible by the Administrator.

System

The System Setting can be found under the path: **System > System**.

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.

Time Zone

Select the time zone you are in from the drop-down menu.

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.

Sync With Computer Time

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

Manual

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

Sync with NTP Server

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

Security

The Security Setting can be found under this path: **System > Security**.

Click the Security category, there will be a drop-down menu with tabs including *User*, *HTTPS*, *IP Filter*, and *IEEE 802.1X*.

User

The User setting can be found under this path: **System > Security > 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.

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 you would like to delete from the drop-down user list and then click on the **Delete Button** 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.

HTTPS

The HTTPS setting can be found under this path: **System > Security> 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: [Provide the Certificate Information](#) for more details.

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 your 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.

IP Filter

The IP Filter setting can be found under this path: **System > Security > 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**.

IEEE 802.1X

The IEEE 802.1X setting can be found under this path: **System > Security > 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 your 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.

Network

The Network setting can be found under this path: **System > Network**.

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

Basic

The Basic setting can be found under this path: **System > Network > Basic**.

Users can choose to connect to the IP Camera with fixed or dynamic (DHCP) IP address. The IP Camera also provides PPPoE support for users who connect to the network via PPP over Ethernet (PPPoE).

General

Get IP Address Automatically (DHCP)

The camera's default setting is *Use fixed IP address*.

If *Get IP Address Automatically* is selected, after the IP Camera restarts, users can search it through the Video Management Program: **autorun.exe**, which can be found 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 the Video Management Software 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.

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.

QoS

The QoS (Quality of Service) setting can be found under this path: **System > Network > 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.

SNMP

The SNMP (Simple Network Management Protocol) setting can be found under this path: **System > Network > 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

Traps are used by the IP Camera to send messages 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.

UPnP

The UPnP setting can be found under this path: **System > Network > 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 your computer. Please refer to Install UPnP components for UPnP component installation procedure.

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 your router supports UPnP and it is activated.

Friendly Name

Set the name for the IP Camera for identity.

DDNS

The DDNS setting can be found under this path: **System > DDNS**.

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.

Mail

The Mail setting can be found under this path: **System > Mail**.

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 your network service provider for more specific information.

FTP

The FTP setting can be found under this path: **System > 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.

HTTP

The HTTP setting can be found under this path: **System > 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.

Note: Please refer to *Application > Send HTTP Notification/Motion Detection* for HTTP Notification Settings.

Application (Alarm Settings)

The Application setting can be found under this path: **System > 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 which is to be configured from the *Alarm Pin Selection* field. Then click on the **Edit Button** below the field to carry on alarm programming.

Alarm Setting

Alarm Switch

The Administrator can enable or disable the alarm function.

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.

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.

Note: Make sure SMTP or FTP configuration has been completed. Please refer to section Mail and FTP 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 to Sequence 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](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 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 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 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

After complete all the settings mentions above, please click on the **Save Button** to save all the settings on this page.

Motion Detection

The Motion Detection setting can be found under this path: **System > 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.

In the Motion Detection setting page, there is a frame (**Motion Detection Window**) displayed on the Live Video Pane. 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.

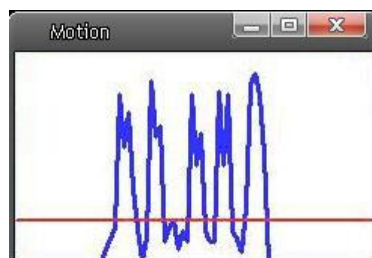


Up to 10 Motion Detection Windows can be set. Click on the **Add Button** under the Live Video Pane to add a Motion Detection Window. To cancel a Motion Detection Window, move the mouse cursor to the selected Window, and click on the **Delete Button**.

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

Users are able to turn on/off Motion Detection. Default setting is Off.

Motion Detection Setting

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

Sampling Pixel Interval [1-10]

The default value is 1, which means system will take one sampling pixel for every pixel.

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 for each sampling pixel.

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.

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.

Note: Make sure SMTP or FTP configuration has been completed. Refer to Mail and FTP 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](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.

Note: Please make sure the local recording (with Micro SD/ SDHC card) is activated so that this function can be implemented. Refer to 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.

Save

Click on the **Save Button** to save all the Motion Detection settings mentioned above.

Tampering

The Tampering setting can be found under this path: **System > Tampering**.

Tampering Alarm function helps the IP Camera against tampering such as deliberate redirection, blocking, paint spray, and lens cover, etc through video analysis and reaction to such events by sending out notifications or uploading snapshots to the specified destination(s).

Detection of camera tampering is achieved by measuring the differences between the older frames of video (which are stored in buffers) and more recent frames.

Tampering Alarm

Users are able to turn on/off Tampering Alarm function in Tampering Alarm setting page. The default setting is *Off*.

Tampering Duration

Minimum Tampering Duration is the time for video analysis to determine whether camera tampering has occurred. Minimum Duration could also be interpreted as defining the Tampering threshold; longer duration represents higher threshold. Settable Tampering Duration time range is from 10 to 3600 seconds.

Triggered Action (Multi-option)

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

Enable Alarm Output 1/2

Check the items and select the predefined type of alarm output to enable alarm relay outputs when tampering is detected.

Record stream to SD Card

Select this item and the Tampering Alarm recording will be stored in Micro SD/ SDHC card when tampering is detected.

Note: Please make sure the local recording (with Micro SD/ SDHC card) is activated so that this function can be implemented. Refer to 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 tampering is detected.

Upload Image by FTP

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

Upload Image by E-Mail

Select this item and the Administrator can assign an e-mail address and configure various parameters. When tampering is detected, event images will be sent to the appointed e-mail address.

Note: Make sure SMTP or FTP configuration has been completed. Refer to Mail and FTP for further details.

Send HTTP Notification

Check this item, select the destination HTTP address, and specify the parameters for HTTP notifications. When the Tampering Alarm is triggered, the HTTP notifications 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.

File Name

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

Save

Click on the **Save Button** to save all the Tampering Alarm settings mentioned above.

Storage Management (Local Recording)

The Storage Management setting can be found under this path: **System > 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.

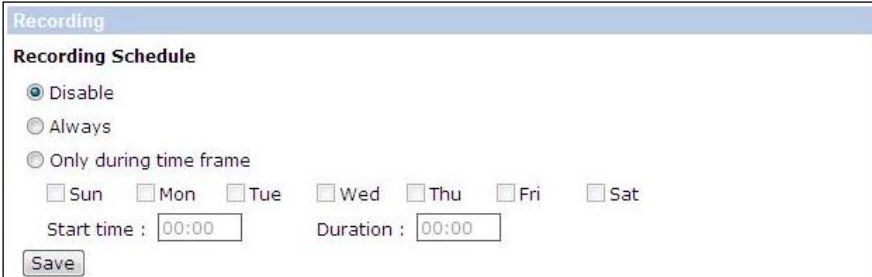
Download

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.

Recording (Local Recording)

The Recording setting can be found under this path: **System > Recording**.

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



The screenshot shows a window titled "Recording" with a sub-header "Recording Schedule". It contains three radio button options: "Disable" (selected), "Always", and "Only during time frame". Below the "Only during time frame" option, there are checkboxes for each day of the week: Sun, Mon, Tue, Wed, Thu, Fri, and Sat. At the bottom, there are two input fields: "Start time" with a value of "00:00" and "Duration" with a value of "00:00". A "Save" button is located at the bottom left of the window.

Activating Micro SD/SDHC Card Recording

Two types of schedule mode are offered: Always and Time Frame setting. Users can setup the time frame to fit the recording schedule or choose **Always** to activate Micro SD/SDHC Card Recording all the time.

Please click on the **Save Button** for confirming the schedule mode.

Terminating Micro SD/SDHC Card Recording

Select **Disable** to terminate the recording function.

File Location (Snapshots and Web Recording)

The Snapshot setting can be found under this path: **System > Snapshot**.

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: (1) Make sure the selected file path contains valid characters such as letters and numbers. (2) For users with Windows 7 operating system, it is required to log on as an Administrator to implement the Snapshot and Web Recording function.

View Log File

The View Log File function can be found under this path: **System > View Log File**.

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

View User Information

The View User Information function can be found under this path: **System > View User Information**.

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

View User Login Information

All the users in the network will be listed in the *User Information* zone, as “**User: 4321.**” It indicates that one user's login username is *User*, and password is 4321.

View User Privilege

Click on **Get User Privacy** at the bottom of the page, and the Administrator can view each user's privileges as “**User: 1:1:0:1.**”

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

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

View Parameters

The View Parameters function can be found under this path: **System > View Parameter**.

Click on this item to view the entire system's parameter setting.

Factory Default

The Factory Default setting can be found under this path: **System > Factory Default**.

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

Set Default

Click on the **Set Default Button** to recall the factory default settings. Then the system will restart in 30 seconds.

Note: The IP address will be restored to default.

Reboot

Click on the **Reboot Button**, and the system will restart without changing current settings.

Software Version

The Software Version can be found under this path: **System > Software Version**.

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

Software Upgrade

The Software Upgrade setting can be found under this path: **System > Software Upgrade**.

Note: Make sure the upgrade software file is available before carrying out software upgrade.

The procedure of software upgrade is as below:

1. Click on **Browse** and select the binary file to be uploaded, ex. userland.img.

Note: Do not change the upgrade file name, or the system will fail to find the file.

2. Pull down the upgrade binary file list and select the file you want to upgrade; in this case, select “userland.img.”
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 Homepage.
4. Close the video browser.
5. Go to **Start**, activate **Control Panel**, and then double click on **Add or Remove Programs**. In the *Currently Install Programs* list, select **DCViewer** and click on the **Remove Button** to uninstall the existing DC Viewer.
6. Open a new web browser, re-login the IP Camera, and then allow the automatic download of DC Viewer.

Maintenance

The Maintenance setting can be found under this path: **System > Maintenance**.

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

Export

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

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.

5.5. Streaming

Under the **Streaming** tab, there are categories including: *Video Format*, *Video Compression*, *Video OCX Protocol*, *Video Frame Rate*, and *Audio*.

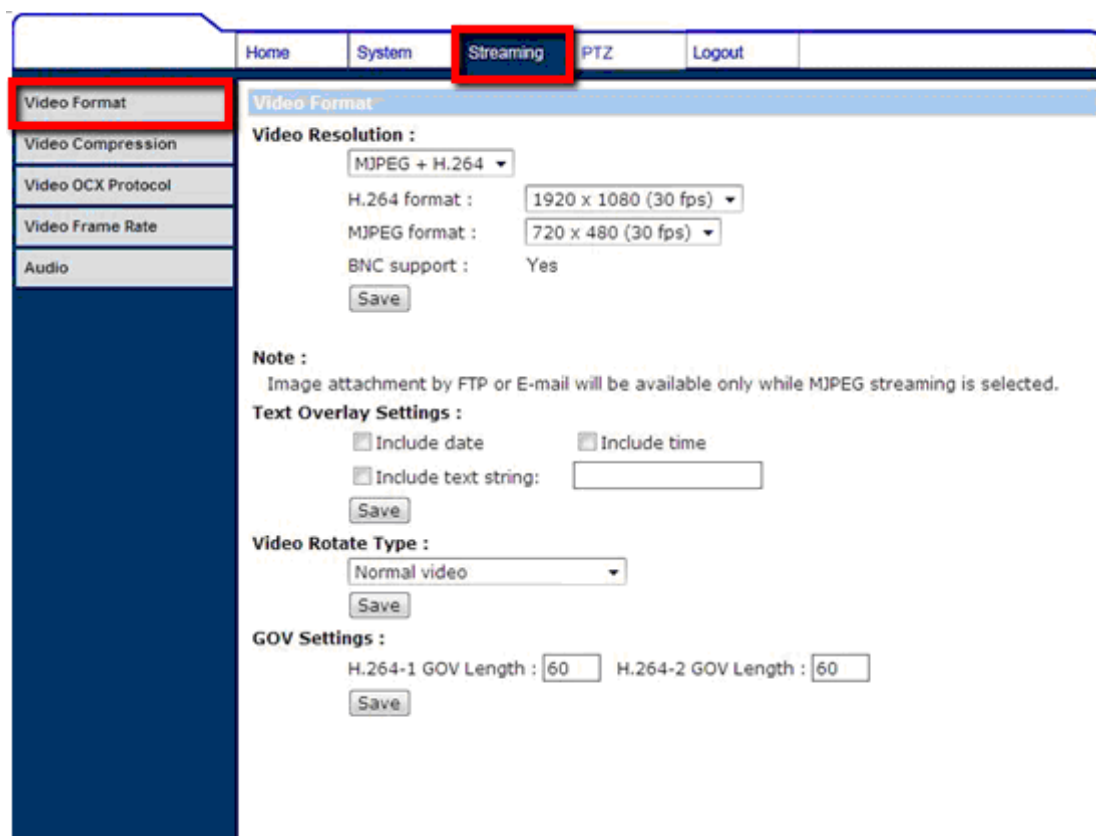
In Streaming, the Administrator can configure specific video resolution, video compression mode, video protocol, audio transmission mode, etc. Further details of these settings will be specified in the following sections.

Video Format (Video Resolution/ Video Deinterlace)

The Video Format setting can be found under this path: **Streaming > Video Format**.

Video Format

Users can setup Video Resolution on *Video Format* page of the user-friendly browser-based configuration interface.



The screenshot shows a web-based configuration interface. At the top, there is a navigation bar with tabs: Home, System, Streaming, PTZ, and Logout. The 'Streaming' tab is selected and highlighted with a red box. On the left side, there is a sidebar menu with options: Video Format, Video Compression, Video OCX Protocol, Video Frame Rate, and Audio. The 'Video Format' option is selected and highlighted with a red box. The main content area is titled 'Video Format' and contains several sections:

- Video Resolution :** A dropdown menu is set to 'MJPEG + H.264'. Below it, there are two rows of settings:
 - H.264 format : 1920 x 1080 (30 fps) (dropdown)
 - MJPEG format : 720 x 480 (30 fps) (dropdown)A 'BNC support : Yes' label is present, followed by a 'Save' button.
- Note :** A text block stating: 'Image attachment by FTP or E-mail will be available only while MJPEG streaming is selected.'
- Text Overlay Settings :** Three checkboxes are shown: 'Include date' (unchecked), 'Include time' (checked), and 'Include text string' (unchecked). A text input field is next to the 'Include text string' checkbox. A 'Save' button is at the bottom of this section.
- Video Rotate Type :** A dropdown menu is set to 'Normal video'. A 'Save' button is below it.
- GOV Settings :** Two input fields are shown: 'H.264-1 GOV Length : 60' and 'H.264-2 GOV Length : 60'. A 'Save' button is at the bottom of this section.

Under *Video Resolution* section, select a preferred resolution setting. The available Video Resolution for MJPEG & H.264 format includes:

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

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

MJPEG ONLY	
MJPEG	BNC SUPPORT
1920 x 1080 (30fps)	✓
1280 x 1024 (30fps)	✓
1280 x 720 (30fps)	✓
1024 x 768 (30fps)	✓
800 x 600 (30fps)	✓
720 x 480 (30fps)	✓
640 x 480 (30fps)	✓

H.264 ONLY	
H.264	BNC SUPPORT
1920 x 1080 (30fps)	✓
1280 x 1024 (30fps)	✓
1280 x 720 (30fps)	✓
1024 x 768 (30fps)	✓
800 x 600 (30fps)	✓
720 x 480 (30fps)	✓
640 x 480 (30fps)	✓

(*) Default

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.

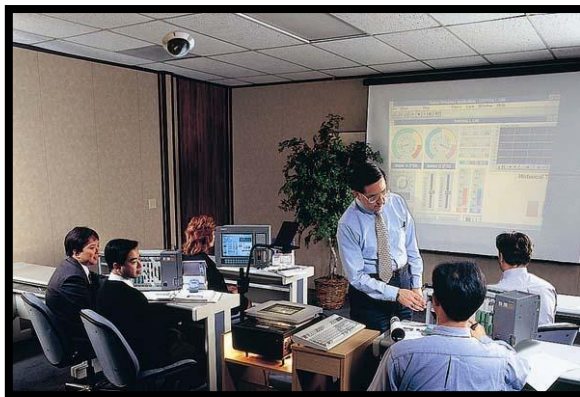
Video Rotate Type

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. Differences among these types are illustrated as below.

Suppose the displayed image of the IP Camera is shown as the figure below.



To rotate the image, users can select **Flip**, for instance. Then the displayed image will be reversed as shown below.



The following is descriptions for different video rotate type.

Flip

If **Flip** is selected, the image will be rotated vertically.

Mirror

If **Mirror** is selected, 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. Longer GOV means decreasing the frequency of I-frames. Click **Save** to confirm the GOV setting.

Video Compression

The Video Compression setting can be found under this path: **Streaming > Video Compression**.

Users can select a proper MJPEG/H.264 compression mode on the video compression page, depending on the application.

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.264-1/ H.264-2 Bit Rate

The default setting of H.264-1/ H.264-2 is 4096/1024 kbps; the setting range is from 64 to 8192 kbps.

Display Compression Information

Users can also decide whether to display compression information on the Home page.

CBR Mode Setting

The CBR (Constant Bit Rate) mode could be the preferred bit rate 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.

Video OCX Protocol

The Video OCX Protocol setting can be found under this path: **Streaming > 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.

Video OCX protocol setting options include:

RTP over UDP/ RTP over RTSP (TCP)/ RTSP over HTTP/ MJPEG over HTTP

Select a mode according to your data delivery requirements.

Multicast Mode

Enter all required data, including *Multicast IP Address*, *H.264 Video Port*, *MJPEG Video Port*, *Audio Port* and *TTL* into each blank.

Click on **Save** to confirm the setting.

Video Frame Rate

The Video Frame Rate setting can be found under this path: **Streaming > Video Frame Rate**.

Video frame rate is for setting the frames per second (fps) if necessary.

MJPEG/ H.264-1/ H.264-2 Frame Rate

The default setting of MJPEG Frame Rate is 30 fps; the setting range is from 1 to 30. Click on **Save** to confirm the setting.

Note: Lower frame rate will decrease video smoothness.

Audio (Audio Mode and Bit Rate Settings)

The Audio Mode setting can be found under this path: **Streaming > Audio**.

In the Audio page, the Administrator can select one transmission mode and audio bit rate.

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

Set the audio input/output gain levels for sound amplification. 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.

Click on **Save** to confirm the setting.

5.6. PTZ

Under the **PTZ** tab, there are categories including: *Preset*, *Cruise*, *Auto Pan*, *Sequence*, *Home*, *Tilt Range*, *Camera- Exposure*, *Camera- WB*, *Camera- Misc1*, *Camera- Misc2*, and *Camera- Default*.

Preset

The Preset Programming can be found under this path: **PTZ > 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 **Pre Page** or **Next Page Button** to reach number 1 to 256), and enter its descriptive name. Click on the **Set Button** 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.

Cruise

The Cruise Programming can be found under this path: **PTZ > 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 *Full Screen*. 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.

Auto Pan

The Auto Pan Programming can be found under this path: **PTZ > 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.

<p>Note: The room ratio of an Auto Pan's Start Point will persist throughout the whole path.</p>

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 *Full Screen*. 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.

Sequence

The Sequence Line Programming can be found under this path: **PTZ > 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 **Save Button** 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 *Full Screen*. 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.

Home

The Home Function can be found under this path: **PTZ > 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

Activate/Disable Home Function

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.

Action Type

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 **Set Button** to save the Home settings.

Tilt Range

The Tilt Range Setting can be found under this path: **PTZ > Tilt Range**.

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.

Video Mask

The Video Mask setting can be found under this path: **Streaming > Video Mask**.

Active Mask Function

Add a Mask

Set the Switch to "ON" and click on the "SET" button to confirm the setting. Use the options Transparency and Color to set the outlook of the Mask and use Hsize and Vsize to set the size of the mask from mask 1 to 6. After the mask setting, click on the "ADD" button to have the mask added in the list.

Note: It is suggested to set the Video Mask twice bigger than the object.

Cancel a Mask

Select the mask you'd like to clear from the dropdown list and click on the "Clear" button to delete the selected mask.

Camera - Exposure

The Exposure Setting can be found under this path: **PTZ > Camera - Exposure**.

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

Shutter Priority Mode

In this mode, it is shutter speed that takes main control of exposure. The range of shutter speed is from 1/10000 to 1.

Iris Priority Mode

In this mode, it is iris that has premier priority in control of 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), Iris (F1.6 to F28), and Gain (1 to 15) manually.

Camera - WB (White Balance)

The White Balance Setting can be found under this path: **PTZ > 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

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 2500 K to 10000 K.

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.

Camera - Misc 1 (Miscellaneous Setups Menu 1)

The Miscellaneous Setting Menu 1 can be found under this path: **PTZ > Camera- Misc 1**.

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 **Set Button** 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 **Set Button** to confirm the setting.

ExpComp

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.

Note: (1) 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 Flip function is turned off, the position cannot be reached anymore. (2) To make the Dome Camera tilt between a specific range, such as -10° to $+100^{\circ}$ or $-10^{\circ} \sim +190^{\circ}$, 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.

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 the **Set Button** to save the setting.

ICR 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.

On

Select the item to remove the IR cut filter.

Off

Select the item to disable IR function.

Camera - Misc 2 (Miscellaneous Setups Menu 2)

The Miscellaneous Setting Menu 2 can be found under this path: **PTZ > Camera - Misc 2**.

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 the **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 the **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 the **Set Button** to save the setting.

TV System

Select the video format that matches the present TV system. Click on the **Set Button** to save the setting.

Camera- Default

The Default Setting can be found under this path: **PTZ > 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**.

5.7. Logout

Click on the **Logout** tab on the top of the page, and the login window will pop up. This enables login with another user name.

5.8. Appendix

Appendix A: Install UPnP Components

Please follow the instructions below to install UPnP components.

1. Go to *Start*, click on **Control Panel**, and then double click on **Add or Remove Programs**.
2. Click on **Add/Remove Windows Components** in the *Add or Remove Programs* page.
3. Select **Networking Services** from the Components list in Components Wizard window of the Windows, and then click **Details**.
4. Select **UPnP User Interface** in the Networking Services' subcomponents list and then click on **OK**.
5. Click on **Next** in the *Windows Components Wizard* page.
6. Click on **Finish** to complete installation.

Appendix B: Deleting the Existing DC Viewer

For users who have installed the DC Viewer in the PC previously, please first remove the existing DC Viewer from the PC before accessing to the network Speed Dome Camera.

Deleting the DC Viewer

Activate **Control Panel**, and then double click on **Add or Remove Programs**. In the *Currently installed programs* list, select **DCViewer** and click on the **Remove Button** to uninstall the existing DC Viewer.

Deleting Temporary Internet Files

To improve browser performance, it is suggested to clean up the all the files in the Temporary Internet Files.

The procedure is as follows:

1. Click on the **Tools** tab and select the *Internet Options* option.
2. Click on the **Delete Button** under *Browsing History* section. Then click on the **Delete Files Button** under the *Temporary Internet files* section.

A confirmation window will pop up. Click on **Yes** to start deleting the files.

Appendix C: Setup Internet Security

If ActiveX control installation is blocked, please either set Internet security level to default or change ActiveX controls and plug-ins settings.

Internet Security Level: Default

1. Start the Internet Explorer (IE).
2. Click on the **Tools** tab on the menu bar and select <Internet Options>.
3. Click on the **Security** tab, and select **Internet** zone.
4. Down the page, click on the **Default Level Button** and click on **OK** to confirm the setting. Close the browser window, and restart a new one later to access the network Speed Dome Camera.

ActiveX Controls and Plug-ins Settings

1. Repeat **Step 1~3** of the previous section above.
2. Down the page, click on the **Custom Level Button** to change ActiveX controls and plug-ins settings. The Security Settings window will pop up.
3. Under *ActiveX Controls and Plug-ins*, set **ALL** items (as listed below) to **Enable** or **Prompt**. Please note that the items vary by IE version.

ActiveX Controls and Plug-ins Settings:

1. Allow previously unused ActiveX controls to run without prompt.
2. Allow Scriptlets.
3. Automatic prompting for ActiveX controls.
4. Binary and script behaviors.
5. Display video and animation on a webpage that does not use external media player.
6. Download signed ActiveX controls.
7. Download unsigned ActiveX controls.
8. Initialize and script ActiveX controls not marked as safe for scripting.
9. Run ActiveX controls and plug-ins.
10. Script ActiveX controls marked safe for scripting.

4. Click on **OK** to accept the settings and close the *Security Settings* window.
5. Click on **OK** to close the *Internet Options* screen.

Close the browser window, and restart a new one later for accessing the camera.