GEUTEBRÜCK

Excellence in Video Security

G-Cam/ESD-3160

Full HD Speed Dome IP Camera

G-Cam/ESD-3270

Full HD Speed Dome IP Camera

Webbrowser Manual

Table of Contents

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 allows users to access and remote the camera without at specific locations.

2. Menu Tree

There are five setting tabs, including <Home>, <System>, <Streaming>, <PTZ> and <Logout> on the Home Page.

Home

Users can monitor the live video of the targeted area.

System setting

The administrator can set host name, system time, root password, network related settings, etc. Further details will be interpreted in chapter System.

Streaming setting

The administrator can configure video format, video compression, video OCX protocol, video frame rate and audio compression in this page.

PTZ setting

This setting page is only available for the administrator and user accounts that have been granted the privilege of camera control. The administrator and users can 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), Backlight Compensation (BLC), Sharpness, Exposure Compensation, Digital Zoom, etc.

Logout

Click on the tab to re-login the camera with another username and password.

2.1 Home Page

Click on the tab <Home> to access the <Home> Page. There are several function buttons on this page. Detailed information of each item is as described in the following section.

2.1.1 Function Items on Home Page

Multiple Languages Support

Multiple languages are supported, including German, English, Spanish, French, Italian, Japanese, Korean, Portuguese, Russian, Simplified Chinese and Traditional Chinese 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.

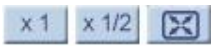
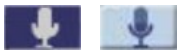
Screen Size Adjustment 

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

Talk button  (On / Off) (listen only is supported by GEUTEBRÜCK DVRs)

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 accounts who have been granted this privilege by the administrator.

Speaker button  (On / Off)

Click on the <Speaker> button to mute / activate the audio.

NOTE: This function is only available for user accounts who have been 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 section File Location of the next chapter for further details.

NOTE: With Windows 7 or Windows 8 operating system, to implement the Snapshot function, users must run IE as administrator. To run IE as administrator, right click on the IE browser icon and select “Run As Administrator” to launch IE.

Video Streaming Pause / Restart button  (Pause / Restart)

Click on the <Pause> button to disable video streaming, the live video will be displayed as black. Press the <restart> button to show the live video.

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 section File Location of the next chapter for further details.

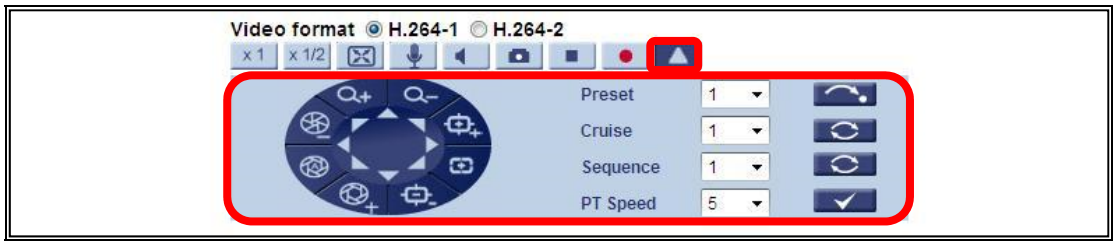
NOTE: With Windows 7 or Windows 8 operating system, to implement the Web Recording function, users must run IE as administrator. To run IE as administrator, right click on the IE browser icon and select “Run As Administrator” to launch IE.

Manual Trigger Button  (On / Off)

Click on the <Manual Trigger > button to turn on and off the manual trigger. Please refer to section Manual Trigger of the next chapter for further details.

Control Panel Button  (Close / Open)
Click on the <Control Panel> button to open and close the control panel.

After clicking the <Control Panel> Button, the control panel will be shown as the figure below.



- **Pan & Tilt Direction Control** 
  The <Pan and Tilt Direction Control> on the control panel allows users to control the camera with browser viewers other than IE.

- **Iris Control**  (Auto Iris / Iris+ / Iris-)
  Click on the buttons (Auto Iris / Iris+ / Iris-) to adjust the Iris parameters.

- **Zoom**  (Zoom In / Zoom Out)
  Click on the buttons to zoom in or zoom out.

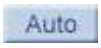
- **Focus**  (Auto Focus / Focus Near / Focus Far)
  Click on the buttons to adjust the focus as near, far or automatic.

Run Preset / Cruise / Sequence
After setup the Preset / Cruise / Sequence lines according to the PTZ Settings, select a Preset / Cruise / Sequence line and start it by clicking on the <Run> button ( /  / ).

PT Speed (1~10)
Set a number between 1 and 10 to determine the pan/tilt speed of the camera while using the Pan & Tilt Direction Control Panel. 1 is the slowest, 10 is the fastest.

Zoom Adjustment  (Wide / Tele)
Click on the buttons <Wide / Tele> to control zoom in / out. Or move the cursor to the zoom adjustment bar to adjust the 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 first, and users can adjust focus manually via <Near> and <Far> buttons. The status will also be displayed above the screen as shown below.

Pan/Tilt Control

Users can implement pan/tilt control by 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 moving the cursor to the live video pane and 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 section Camera- Misc 1 section for details. When the camera reaches the limit of its optical range, it will automatically switch to digital zoom.

Set Center Mode

Right click on the Live Video Pane and select <Set Center Mode>. Then users can position the interest area in the center of the Live Video Pane automatically by clicking on the point of interest. In <Set Center Mode>, right click on the Live Video Pane again and select <Set Emulated Joystick Mode> to return to control the camera direction by left clicking and dragging the pointer on the Live Video Pane.

2.2 System

Under the tab <**System**>, there are categories as the table below.

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

NOTE: The <System> configuration page is only accessible by the administrator.

2.2.1 System

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

Host Name

The name is for camera identification. If the alarm function (refer to section Application) is enabled and is set to send alarm messages by Mail / FTP, the host name entered here will be displayed in the alarm message.

Time Zone

Select the time zone from the drop-down menu according to the location of the camera.

Enable Daylight Saving Time

To enable DST, please check the item and then specify the time offset and the 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.

Time format

Choose a time format (yyyy/mm/dd or dd/mm/yyyy) from the drop-down menu. The format of the date and time displayed above the live video window will be changed according to the selected format.

Sync with Computer Time

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

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

Manual

The administrator can set video date, time and day manually. Entry format should be identical with the examples shown next to the enter fields.

Sync with NTP Server

Network Time Protocol (NTP) is an alternate way to synchronize the camera’s clock with a NTP server. Please specify the server that is wished to synchronize in the 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.

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

Click on <Save> to confirm the setting.

2.2.2 Security

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

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

2.2.2.1 User

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

Admin Password

This item is for the administrator to reset password. Enter the new password in <Admin password> and <Confirm password>. The maximum length is 14 characters. The input characters / numbers will be displayed as dots for security purposes. Click on <Save> to confirm the changes. After the changes are confirmed, the web browser will ask the administrator to re-login to the camera with the new password.

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

Add User

This item is for the administrator to add new users. Enter the new user's name in <User name> and the password in <User password>. Username can be up to 16 characters, and the maximum length of the password is 14 characters. Tick the boxes below to give privileges for functions, including "**Camera control**", "**Talk**" and "**Listen**". Click on <Add> to add the new user. The name of the new added user will be displayed in the <User name> drop-down list. There is a maximum of twenty user accounts.

- **I/O access**
  This item supports fundamental functions that enable users to view the live video when accessing to the camera.

- **Camera control**
  This item allows the appointed user to change camera parameters on the <PTZ> setting page.

- **Talk/Listen (listen only is supported by GEUTEBRÜCK DVRs)**
  This item allows the appointed user in the local site (PC site) to communicate with, for instance, the administrator in the remote site.

Manage User

- **Delete user**
  Pull down the <User name> drop-down list and select the username that is wished to delete. Click on <Delete> to remove the selected name.

- **Edit user**
  Pull down the <User name> drop-down list and select the username. Click on <Edit> and a popup window will appear. In the appeared window, enter the new user password and reset the privileges. Click on <Save> to confirm the changes. Then click on <Close> to complete the editing.

Streaming Authentication Setting

This item is for the administrator to activate the streaming authentication. Streaming authentication is to prevent the streaming from unauthorized access. Three options are provided: <disable>, <basic>, and <digest>, and the default setting is <disable>.

If the administrator selects <basic> from the drop-down list, any visitor / viewer will be asked to send the username and password in a plain text format.

If <digest> is selected, the authentication credentials (username and password) will be sent in an encrypted format.

Click on <Save> to confirm the setting.

2.2.2.2 HTTPS

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

<HTTPS> allows secure connections between the camera and the 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 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> under “Create self-signed certificate” and provide the requested information to install a self-signed certificate for the 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 section Provide the Certificate Information for more details.

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

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

Provide the Certificate Information

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

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

- **Country**
  Enter a two-letter combination code to indicate the country the certificate will be used in. For instance, type in “US” to indicate United States.
- **State or province**
  Enter the local administrative region.

- **Locality**
  Enter other geographical information.

- **Organization**
  Enter the name of the organization to which the entity identified in “Common Name” belongs.
- **Organization Unit**
  Enter the name of the organizational unit to which the entity identified in “Common Name” belongs.

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

- **Valid days**
  Enter the period in days (1 to 9999) to indicate the valid period of certificate.

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

2.2.2.3 IP Filter

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

With IP Filter, users can allow or deny specific IP addresses from accessing the camera.

- **Enable IP Filter**
  Check the box to enable the IP Filter function. Once enabled, the listed IP addresses (IPv4) in the <Filtered IP Addresses> list box will be allowed / denied to access the camera.
  Select <Allow> or <Deny> from the drop-down list and click on the <Apply> button to determine the IP filter behavior.

- **Add IP Address**
  Input IP address at the blank space below the <Filtered IP Address> list and click <Add>. The newly-added address will be shown in the list. Up to 256 IP address entries can be specified.

  In addition, to filter a group of IP addresses, enter an address at the blank space followed with a slash and a number ranging from 1 to 31, ex. 192.168.2.81/30. The number after the slash can define how many IP addresses will be filtered. For details, please refer to the following example.

  - **Example:** Filtering a group of consecutive IP addresses
    The steps below show what will be filtered when 192.168.2.81/30 is entered.

    Step 1: Convert 192.168.2.81 to binary numbers. The binary numbers are 11000000.10101000.00000010.01010001. Users can refer to Appendix B: IP Addresses from Decimal to Binary for converting the IP addresses to binary numbers. The number “30” after the slash is referring to the first 30 digits of the binary numbers.

    Step 2: Convert a few IP addresses before and after 192.168.2.81 to binary numbers. Then compare their first 30 digits to the binary numbers of 192.168.2.81.

    a. Convert 192.168.2.80 to binary numbers. The binary numbers are 11000000.10101000.00000010.01010000. The first 30 digits are the same with the binary numbers of 192.168.2.81, thus 192.168.2.80 will be filtered.

    b. Convert 192.168.2.79 to binary numbers. The binary numbers are 11000000.10101000.00000010.01001111. The first 30 digits are different with the binary numbers of 192.168.2.81, thus 192.168.2.79 will not be filtered. This also means the IP addresses before 192.168.2.79 will not be filtered. Therefore, users can stop converting the IP addresses before 192.168.2.79 to binary numbers.

c. Repeat the same procedure in “a” with the IP addresses after 192.168.2.81. Stop when the situation occurs in “b” happened. Namely, the 30th digit of the binary numbers of IP address 192.168.2.84 is different, and will not be filtered.

As a result, the IP addresses 192.168.2.80 to 192.168.2.83 will be filtered when entering 192.168.2.81/30. The following table clearly shows the 30th digit of the binary numbers of IP addresses 192.168.79 and 192.168.84 are different from the others. Therefore, these two IP addresses will not be filtered.

IP Addresses	Binary Numbers
192.168.2.79	**11000000.10101000.00000010.01001**11
192.168.2.80	**11000000.10101000.00000010.01010**00
192.168.2.81	**11000000.10101000.00000010.01010**01
192.168.2.82	**11000000.10101000.00000010.01010**10
192.168.2.83	**11000000.10101000.00000010.01010**11
192.168.2.84	**11000000.10101000.00000010.01010**100

- **Delete IP Address**
  To remove an IP address from the <Filtered IP Address> list, please select the address and click on <Delete>.

2.2.2.4 IEEE 802.1X

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

The 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 camera itself.

Settings

- **Identity**
  Enter the user identity associated with the certificate. Up to 16 characters can be used.

- **Private Key Password**
  Enter the password (maximum 16 characters) for user identity.

Enable IEEE 802.1X

Check the box to enable IEEE 802.1X.

Click on <Save> to save the IEEE 802.1X/EAP- TLS setting.

2.2.3 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>.

2.2.3.1 Basic

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

This setting page is for setting a new IP address for the camera, configuring other network-related parameters and activating IPv6 address (if the network supports it).

General

This setting menu is for configuring a new IP address for the camera. To setup an IP address, please find out the network type first. Contact the network provider for it. Then refer to the network type and follow the instructions to setup the IP address.

NOTE: If the network type is Point-to-Point Protocol over Ethernet (PPPoE), please obtain the PPPoE username and password from the network provider.

- **Get IP address automatically (DHCP)**
  Select the item and click <Save> to confirm the new setting. A note for camera system restart will appear. Click <OK> and the camera system will be restarted. The camera will be assigned with a new IP address. Close the web browser and search the camera through the installer program: DeviceSearch.exe, which can be found in “DeviceSearch” folder in the supplied CD. Refer to the steps below to connect the camera through “DeviceSearch” software.

  NOTE: Before searching the camera through DeviceSearch.exe, please record the camera’s MAC address, which can be found on the label or on the package container of the camera, for later use and identification in the future.

Step 1: Double click on the program DeviceSearch.exe.

Step 2: After its window appears, click on the <Device Search> button on the top. All the finding IP devices will be listed in the page.

Step 3: Find the camera by its MAC address.

Step 4: Then double click or right click and select <Browse> to access the camera directly by the web browser.

Step 5: A prompt window requesting for the username and the password will appear. Enter the username and the password to login to the camera.

- **Use fixed IP address**

  Select the item and insert the new IP address, ex. 192.168.7.123. Note that the inserted IP address should be in the same LAN as the PC's IP address. Then go to the Default gateway (explained later) blank and change the setting, ex. 192.168.7.254. Click on <Save> to confirm the new setting. A note for system restart will appear, click <OK> and the system will restart. Wait for 15 seconds. The camera's IP address in the URL bar will be changed, and users have to login again.

  When using a static IP address to connect the camera, users can access the camera by inputting the IP address in the URL bar and hit <Enter> on the keyboard. Alternatively, users can access the camera by the installer program: DeviceSearch.exe, which can be found in "DeviceSearch" folder in the supplied CD. Refer to the steps below to connect the camera through "DeviceSearch" software with a static IP address.

  Step 1: Double click on the program DeviceSearch.exe.

  Step 2: After its window appears, click on the <Device Search> button on the top. All the finding IP devices will be listed in the page.

  Step 3: Find the camera by its IP address.

Step 4: Then double click or right click and select <Browse> to access the camera directly by the web browser.

Step 5: A prompt window requesting for the username and the password will appear. Enter the username and the password to login to the camera.

- **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 enter fields, and click on the <Save> button to complete the setting.

Advanced

The following introduces the camera's Web Server port, RTSP port, MJPEG over HTTP port, and HTTPS port.

- **Web Server port**
  The default web server port is 80. With the default web server port '80', users can simply input the IP address of the camera in the URL bar of a web browser to connect the camera. When the web server port is changed to any number other than 80, users have to enter the camera's IP address followed by a colon and the port number. For instance, a camera whose IP address as 192.168.0.100 and web server port as 8080 can be connected by entering "http://192.168.0.100:8080" in the URL bar.

- **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: Please make sure the port numbers set above are not the same with each other, otherwise network conflict may occur.

IPv6 Address Configuration

If the network supports IPv6, users can check the box beside <Enable IPv6> and click <Save>. An IPv6 address will appear beside <Address>, and users can use it to connect to the camera.

2.2.3.2 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 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 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.

2.2.3.3 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 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 “private”.

SNMP v3

SNMP v3 supports an enhanced security system that provides protection against unauthorized users and ensures the privacy of the messages. Users will be requested to enter security name, authentication password and encryption password while setting the camera connections in the network management system. With SNMP v3, the messages sent between the cameras and the network management system will be encrypted to ensure privacy.

- **Enable SNMP v3**
  Enable SNMP v3 by checking the box.

- **Security Name**
  The maximum length of the security name is 32 characters.

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

- **Authentication Type**
  There are two authentication types available: MD5 and SHA. Select <SHA> for a higher security level.

- **Authentication Password**
  The authentication password must be 8 characters or more. The input characters / numbers will be displayed as dots for security purposes.

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

- **Encryption Type**
  There are two encryption types available: DES and AES. Select <AES> for a higher security level.

- **Encryption Password**
  The minimum length of the encryption password is 8 characters and the maximum length is 512 characters. The input characters / numbers will be displayed as dots for security purposes. The encryption password can also be left blank. However, the messages will not be encrypted to protect privacy.

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

Traps for SNMP v1 / v2 / v3

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

- **Enable Traps**
  Check the box to activate trap reporting.

- **Trap address**
  Enter the IP address of the management server.

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

Trap Option

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

Click on <Save> button when complete.

2.2.3.4 UPnP

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

UPnP Setting

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

NOTE: To enable this function, please make sure the UPnP component is installed on the computer. Please refer to Appendix A: Install UPnP Components for UPnP component installation procedure.

- **Enable UPnP port forwarding**
  When the UPnP port forwarding is enabled, the camera is allowed to open the web server port on the router automatically.

NOTE: To enable this function, please make sure that the router supports UPnP and it is activated.

- **Friendly name**
  Set a name for the camera for identity.

Click on <Save> when finished.

2.2.4 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.

2.2.5 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 the network service provider for more specific information.

2.2.6 FTP

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

The administrator can set the camera to send the alarm messages 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, username, password and remote folder, in the fields.

Click on <Save> when finished.

2.2.7 HTTP

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

A HTTP Notification server can listen for the notification messages from the cameras by triggered events. Enter the HTTP details, which include server name (for instance, http://192.168.0.1/admin.php), username, and password in

the fields. <Alarm> triggered and <Motion Detection> notifications can be sent to the specified HTTP server.

Click on <Save> when finished.

Please refer to Application> Send HTTP notification / Motion Detection for HTTP Notification settings.

2.2.8 Events (Alarm Settings)

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

Click on the <Events> category, there will be a drop-down menu with tabs including <Application>, <Motion Detection>, <Network Failure Detection>, <Periodical Event>, <Manual Trigger>, and <Audio Detection>.

2.2.8.1 Application

The Application setting can be found under this path:
System > Events > Application.

The camera equips four alarm inputs and two relay outputs for cooperating with the alarm system to catch events' images. Please refer to the Installation Manual in the supplied CD for alarm I/O pin definitions to connect the alarm devices.

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

- **Alarm Type**
  Select an alarm type, <Normal close> or <Normal open>, that corresponds with the alarm application.

Triggered Action (Multi-option)

The administrator can specify alarm actions that will take at an alarm occurrence. All options are listed as follows.

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

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

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

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

  NOTE: Normally the setting range of the <Pre-trigger buffer> is 1 to 20. However, the setting range will change accordingly if the frame rate of MJPEG on the <Video Frame Rate> setting page is 6 or smaller.

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

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

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

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

  NOTE: Normally the setting range of the <Pre-trigger buffer> is 1 to 20. However, the setting range will change accordingly if the frame rate of MJPEG on the <Video Frame Rate> setting page is 6 or smaller.

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

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

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

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

If the selected function is <Preset>, it is required to enter its dwell time (1 sec. to 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 <Preset> is selected. When the dwell time is up, the camera will go back to its trigger position and recheck the alarm pin status.

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

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

- **Record Video Clip**
  Check this item and select a video recording storage type, <SD Card> or <NAS> (Network-Attached Storage). The alarm-triggered recording will be saved into the microSD card or the NAS.

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

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

File Name

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

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

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

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

  The file name suffix will end at the number being set. For example, if the setting is up to "10", the file name will start from 00, end at 10, and then start all over again.
- **Overwrite**
  The original image in the FTP site will be overwritten by the new uploaded file with a static filename.

Save

Click on <Save> to save the settings.

2.2.8.2 Motion Detection

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

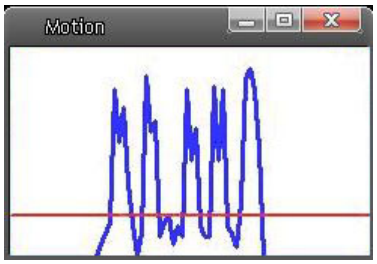
Motion Detection function allows the camera to detect suspicious motion and trigger alarms when motion volume in the detected area reaches / exceeds the determined sensitivity threshold value.

The function supports up to 4 sets of Motion Detection Settings. Settings can be chosen from the drop-down menu beside <Motion Detection>. In each set of setting, there is a **Motion Detection Window** (the **red frame** shown in the figure below) 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. To shift the window to the intended location, move the mouse cursor to the center of the window and click and drag.

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

If Motion Detection function is activated, the pop-up 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 is detected by comparing sampling pixels in the detection area of two consecutive live images.



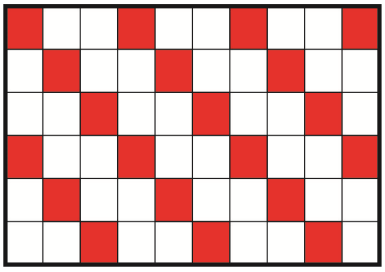
Motion Detection

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

Motion Detection Setting

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

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



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

- **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 value is the interval between each detected motion. The default interval is 10.

Triggered Action (Multi-option)

The administrator can specify alarm actions that will take when motion is detected. All options are listed as follows.

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

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

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

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

NOTE: Normally the setting range of the <Pre-trigger buffer> is 1 to 20. However, the setting range will change accordingly if the frame rate of MJPEG on the <Video Frame Rate> setting page is 6 or smaller.

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

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

- **Upload Image by E-Mail**
  Select this item and the administrator can assign an E-mail address and configure various parameters. When motion is detected, event images will be sent to the appointed E-mail address.

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

  NOTE: Normally the setting range of the <Pre-trigger buffer> is 1 to 20. However, the setting range will change accordingly if the frame rate of MJPEG on the <Video Frame Rate> setting page is 6 or smaller.

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

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

- **Send HTTP notification**
  Check this item, select the destination HTTP address, and specify the parameters for event notifications by <Motion Detection> triggered. When an alarm is triggered, the notification can be sent to the specified HTTP server.
  For instance, if the custom parameter is set as "action=1&group=2", and the HTTP server name is "http://192.168.0.1/admin.php", the notification will be sent to HTTP server as "http://192.168.0.1/admin.php?action=1&group=2" when alarm is triggered.

- **Record Video Clip**
  Check this item and select a video recording storage type, <SD Card> or <NAS> (Network-Attached Storage>. The Motion Detection recording will be stored in microSD / SDHC card or the NAS when motion is detected.
  Pre-trigger buffer recording function allows users to check what happened to cause the trigger. The pre-trigger buffer time range is from 1 sec. to 3 sec. Select <Upload for __ sec> to set the recording duration after motion is triggered. The setting range is from 1 sec. to 99999 sec. Select <Upload during the trigger active> to record the triggered video until the trigger is off.

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

File Name

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

Save

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

2.2.8.3 Network Failure Detection

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

Network Failure Detection allows the camera to ping another IP device (e.g. NVR, VSS, Video Server, etc.) within the network periodically and generates some actions in case of network failure occurs, for instance, a Video Server is somehow disconnected.
Being capable of implementing local recording (through microSD card) or the remote recording (with NAS) when network failure happens, the camera could be a backup recording device for the surveillance system.

Detection Switch

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

Detection Type

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

Triggered Action (Multi-option)

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

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

- **Record Video Clip**
  Check the item and select a video recording storage type, <SD Card> or <NAS> (Network-Attached Storage). The alarm-triggered recording will be saved into the microSD 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 sec. to 3 sec. Select <Upload for __ sec> to set the recording duration after alarm is triggered. The setting range is from 1 sec. to 99999 sec.

Select <Upload during the trigger active> to record the triggered video until the trigger is off.

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

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

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

2.2.8.4 Periodical Event

The Periodical Event setting can be found under this path: **System > Events > Periodical Event**.

With Periodical Event setting, users can set the camera to upload images periodically to an FTP site or an E-mail address. For example, if the time interval is set to 60 seconds, the camera will upload images to the FTP site or the E-mail address every 60 seconds. The images to be uploaded are the images before and after the triggered moment. Users can define how many images to be uploaded in the <Triggered Action> section of this setting page.

Periodical Event
The default setting for the Periodical Event function is <Off>. Enable the function by selecting <On>.

Time Interval
The default value of the time interval is 60 seconds. The setting range of the time interval is from 60 to 3600 seconds.

Triggered Action

- **Upload Image by FTP**
  Select this item and the administrator can assign an FTP site and configure various parameters. Images will be uploaded to the appointed FTP site periodically.

  The <Pre-trigger buffer> function can define how many images to be uploaded before the triggered moment. The <Post-trigger buffer> function can define how many images to be uploaded after the triggered moment.

  NOTE: Normally the setting range of the <Pre-trigger buffer> is 1 to 20. However, the setting range will change accordingly if the frame rate of MJPEG on the <Video Frame Rate> setting page is 6 or smaller.

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

- **Upload Image by E-Mail**
  Select this item and the administrator can assign an E-mail address and configure various parameters. Images will be uploaded to the appointed E-mail address periodically.

  The <Pre-trigger buffer> function can define how many images to be uploaded before the triggered moment. The <Post-trigger buffer> function can define how many images to be uploaded after the triggered moment.

  NOTE: Normally the setting range of the <Pre-trigger buffer> is 1 to 20. However, the setting range will change accordingly if the frame rate of MJPEG on the <Video Frame Rate> setting page is 6 or smaller.

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

File Name

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

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

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

- **Add sequence number suffix up to # and then start over**
  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

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

2.2.8.5 Manual Trigger

The Manual Trigger setting can be found under this path: **System > Events > Manual Trigger**.

With Manual Trigger setting, the current image(s) or video can be upload to the appointed destination, such as an FTP site or and E-mail address. The administrator can specify the triggered actions that will take when the users switched the Manual Trigger button to ON. All options are listed as follows.

Manual Trigger

The default setting for the Manual Trigger function is <Off>. Enable the function by selecting <On>. After the Manual Trigger function is enabled, click the Manual Trigger button on the Home page to start uploading data. Click again to stop uploading.

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 an FTP site and configure various parameters. When the alarm is triggered, event images will be uploaded to the appointed FTP site.

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

NOTE: Normally the setting range of the <Pre-trigger buffer> is 1 to 20. However, the setting range will change accordingly if the frame rate of MJPEG on the <Video Frame Rate> setting page is 6 or smaller.

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

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

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

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

  NOTE: Normally the setting range of the <Pre-trigger buffer> is 1 to 20. However, the setting range will change accordingly if the frame rate of MJPEG on the <Video Frame Rate> setting page is 6 or smaller.

  Check the box <Continue image upload> to upload the triggered images during certain time or keep uploading until the trigger is off.
  Select <Upload for __sec> and enter the duration in the blank.
  The images of the duration will be uploading by E-mail when the alarm input is triggered. The setting range is from 1 sec. to 9999 sec. Select

<Upload during the trigger active> to make the images keep being uploaded to E-mail during the trigger active until the alarm is released. Set the Image frequency as the upload frame rate.
The setting range is from 1 frame to 15 frames.

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

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

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

  If the selected function is <Preset>, it is required to enter its dwell time (1 sec. to 256 sec.) in the corresponding field. 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 <Preset> is selected. When the dwell time is up, the camera will go back to its trigger position and recheck the alarm pin status.

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

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

- **Record Video Clip**
  Check the item and select a video recording storage type, <SD Card> or <NAS> (Network-Attached Storage). The alarm-triggered recording will be saved into the microSD card or the NAS.

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

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

File Name

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

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

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

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

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

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

Save

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

2.2.8.6 Audio Detection

The Audio Detection setting can be found under this path:
System > Events > Audio Detection.

Audio Detection function allows the camera to detect audio and trigger alarms when audio volume in the detected area reaches / exceeds the determined sensitivity threshold value.

Audio Detection

In Audio Detection Setting, the default setting for the Audio Detection function is <Off>. Enable the function by selecting <On>.

Audio Detection Setting

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

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

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

Triggered Action (Multi-option)

The administrator can specify alarm actions that will take when audio 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 audio 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 audio is detected.

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

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

  NOTE: Normally the setting range of the <Pre-trigger buffer> is 1 to 20. However, the setting range will change accordingly if the frame rate of MJPEG on the <Video Frame Rate> setting page is 6 or smaller.

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

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

- **Upload Image by E-Mail**
  Select this item and the administrator can assign an E-mail address and configure various parameters. When audio is detected, event images will be sent to the appointed E-mail address.

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

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

NOTE: Normally the setting range of the <Pre-trigger buffer> is 1 to 20. However, the setting range will change accordingly if the frame rate of MJPEG on the <Video Frame Rate> setting page is 6 or smaller.

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

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

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

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

- **Record Video Clip**
  Check this item and select a video recording storage type, <SD Card> or <NAS> (Network-Attached Storage>. The Audio Detection recording will be stored in microSD / SDHC card or the NAS when audio is detected.

  Pre-trigger buffer recording function allows users to check what happened to cause the trigger. The pre-trigger buffer time range is from

1 sec. to 3 sec. Select <Upload for __ sec> to set the recording duration after audio is triggered. The setting range is from 1 sec. to 99999 sec. Select <Upload during the trigger active> to record the triggered video until the trigger is off.

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

File Name

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

- **Add date/time suffix**

  File name: imageYYMMDD_HHNNSS_XX.jpg

  Y: Year, M: Month, D: Day

  H: Hour, N: Minute, S: Second

  X: Sequence Number

- **Add sequence number suffix (no maximum value)**

  File name: imageXXXXXXX.jpg

  X: Sequence Number

- **Add sequence number suffix (limited value)**

  File Name: imageXX.jpg

  X: Sequence Number

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

- **Overwrite**

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

Save

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

2.2.9 Storage Management (Local Recording)

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

Click on the <Storage Management> category, there will be a drop-down menu with tabs including <SD Card> and <Network Share>.

2.2.9.1 SD Card

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

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

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

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

NOTE: It is not recommended to record with the microSD card for 24/7 continuously, as it may not be able to support long term continuous data read/write. Please contact the manufacturer of the microSD card for information regarding the reliability and the life expectancy.

Device information

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

When the memory card is successfully installed, the memory card status shall be shown at the <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 microSD / 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 microSD / 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. After the recording of the events are finished, the camera will return to the regular recording mode.

Users can search the recording files in a specified time range by setting the From / To time. In addition, two file formats (*.avi (video format) and *.jpeg (image format)) are provided for users to select to search files in what format.

- **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 / N / R / U appears in the very beginning of name denotes the sort of the recording: A stands for Alarm; M stands for Motion; N stands for Network Failure; R stands for Regular Recording; U stands for Audio Detection.

- **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.

2.2.9.2 Network Share (NAS)

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

Users can store the recording videos to a network share folder, or NAS (Network-Attached Storage). A NAS device is used for data storage and data sharing via network. This page displays the capacity information of the network device and a recording list with all the recording files saved on the network device. Users can also format the NAS and implement automatic recording cleanup through the setting page.

Device information

When a NAS is successfully installed, the device information such as the memory capacity and status will be shown at the <Device Information> section.

Storage setting

The administrator can set the camera to send the alarm messages to a specific NAS site when an alarm is triggered. Enter the network device details, which include host (the IP of the NAS), share (the folder name of the NAS), username, and password, in the fields.

Click on <Save> when finished.

Storage Tools

Click on the <Format> button to format the NAS.

Disk cleanup setting

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

Recording List

Each video file on the Network Share 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 NAS recording is also allowed to be enabled by events triggered, once events occur, the system will immediately implement events recording to the memory card. After the recording of the events are finished, the camera will return to the regular recording mode.

Users can search the recording files in a specified time range by setting the From / To time. In addition, two file formats (*.avi (video format) and *.jpeg (image format)) are provided for users to select to search files in what format.

- **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.

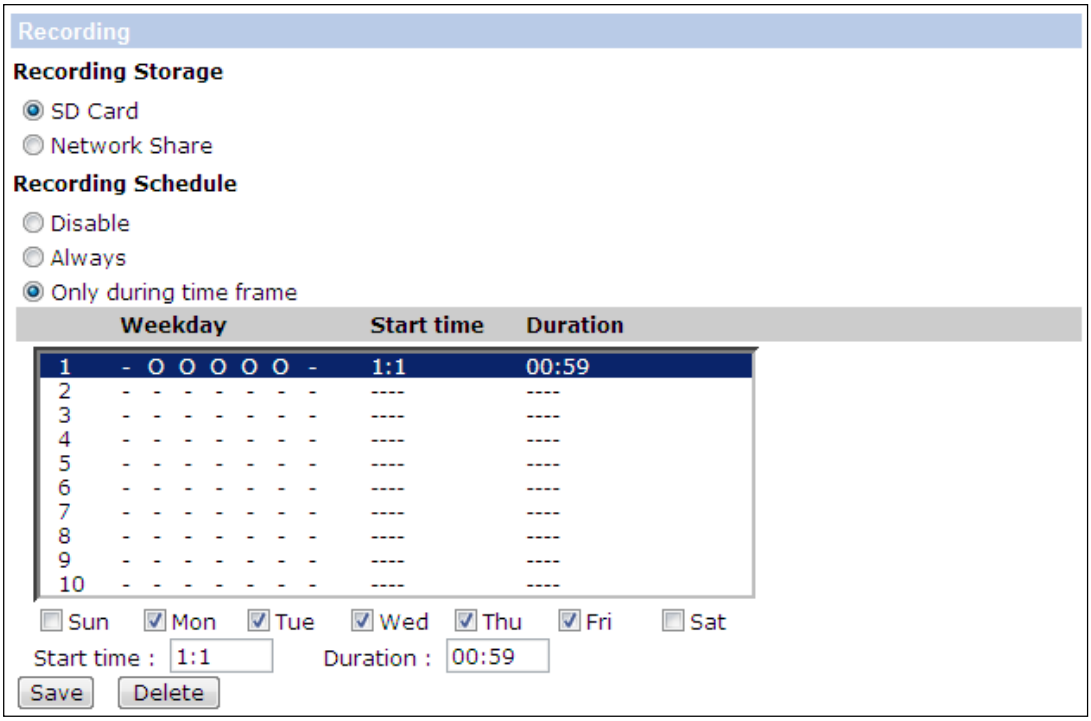
NOTE: The capital letter A / M / N / R / U appears in the very beginning of name denotes the sort of the recording: A stands for Alarm; M stands for Motion; N stands for Network Failure; R stands for Regular Recording; U stands for Audio Detection.

- **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.

2.2.10 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.



Recording Storage

Select a recording storage type, <SD Card> or <Network Share>.

Activating Recording Schedule

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

Select a recording schedule from the schedule list, and click <Delete> to delete the recording schedule.

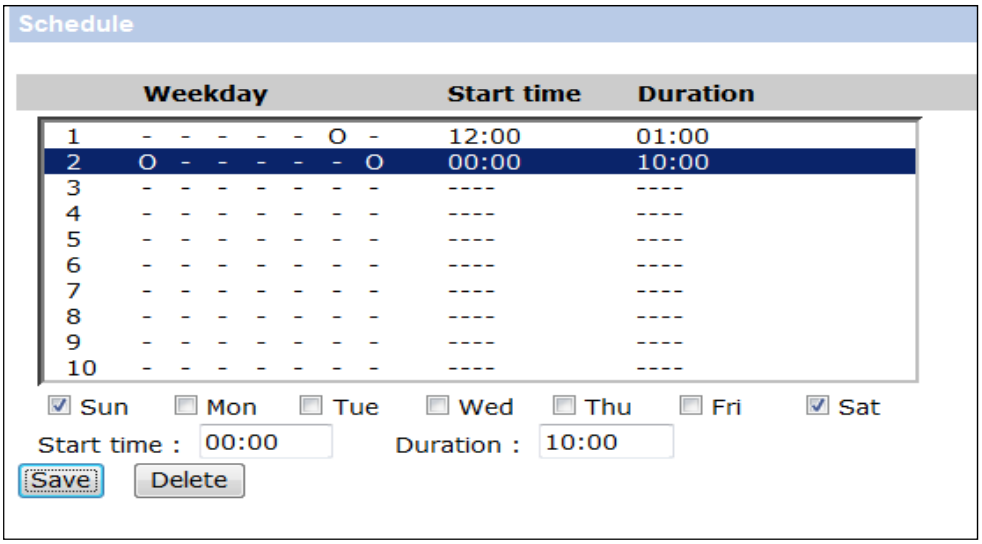
Terminating the Recording Schedule

Select <Disable> to terminate the recording function.

2.2.11 Schedule

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

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



Setting Schedules

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

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

2.2.12 File Location (Snapshots and Web Recording)

The File Location setting can be found under: **System > File Location**.

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

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

NOTE: With Windows 7 or Windows 8 operating system, to implement the Snapshot and Web Recording functions, users must run IE as administrator. To run IE as administrator, right click on the IE browser icon and select “Run As Administrator” to launch IE.

2.2.13 View Information

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

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

2.2.13.1 Log File

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

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

2.2.13.2 User Information

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

The administrator can view the login information and privileges of each added user (refer to section Security).

Get User Information

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

User: 4321

It indicates that one user's login username is "User", and the password is "4321".

Get User Privacy

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

User: 1:1:0:1

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

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

2.2.13.3 Parameters

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

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

2.2.14 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 camera to factory default settings if needed.

Full Restore

Click on <Full Restore> to recall the factory default settings. The camera system will restart in 30 seconds. The IP address will be restored to default. After the camera system is restarted, reconnect the camera using the default IP address. The default IP address is **192.168.0.250**.

Partial Restore

Click on <Partial Restore> to recall the factory default settings. The camera system will restart in 30 seconds. Refresh the browser page after the camera system is restarted.

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

Reboot

Click on <Reboot> and the camera system will restart without changing the current settings. Refresh the browser page after the camera system is restarted.

2.2.15 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.

2.2.16 Software Upgrade

The Software Upgrade setting can be found under:
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.

Step 1: Click on <Browse> and locate the upgrade file, for example “ulmage_userland”.

Step 2: Pick a file type from the drop-down list. In this case, select “ulmage+userland.img”.

Step 3: Click on the <Upgrade> button. Then the system will prepare to start the software upgrade. Subsequently, an upgrade status bar will be displayed on the page to show the current upgrade process. After the upgrade process is finished, the viewer will return to the <Home> page.

Step 4: Close the video browser.

Step 5: Click on <Start> and activate the <Control Panel>. In the appeared window, double click on <Add or Remove Programs>. A window with the <Currently install programs> list will popup. In the list, select <DCViewer> and click on <Remove> to uninstall the existing DC Viewer.

Step 6: Open a new web browser and re-login the camera. Users will be prompted to download the DC Viewer. Once the DC Viewer is downloaded and installed, the live video will be available.

2.2.17 Maintenance

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

Users can export configuration files to a specified location and retrieve data by uploading the configuration file to the camera.

Export

Users can save the system settings by exporting a 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 upload a configuration file to the camera, click on <Browse> to select the configuration file, and then click on the <Upload> button for uploading.

2.3 Streaming

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

In the Streaming submenu, 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.

NOTE: The <Streaming> setting page is only accessible by the administrator.

2.3.1 Video Format (Video Resolution and Rotate Type)

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

Video Resolution

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

Click on <Save> to confirm the 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. Refer to the following descriptions for the different video rotate type.

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

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

- **90 Degree Counter-/clockwise**
  Select <90 Degree Counter-/clockwise> to rotate the image by 90° counter-/clockwise.

- **180 Degree Rotate**
  Select <180 Degree> to rotate the image by 180°.

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. Less bandwidth is needed if the GOV length is set to a high value. However, the shorter the GOV length the better the video quality is. The setting range is from 2 to 64. The default value for H.264-1 / H.264-2 / H.264-3 / H.264-4 is 60 / 60 / 30 / 30 (NTSC) or 50 / 50 / 25 / 25 (PAL). Click on <Save> to confirm the GOV setting.

H.264 Profile

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

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

Click on <Save> to confirm the setting.

2.3.2 Video Compression

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

This setting page allows the administrator to adjust the bit rate of MJPEG and H.264. Higher value implies higher bit rate and higher visual quality.

MJPEG Q (Quality) factor
The default setting of MJPEG Q factor is 35; the setting range is from 1 to 70.

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

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

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

Click on <Save> to confirm the setting.

2.3.3 Video Text Overlay

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

In Video Text Overlay setting page, users can select the items to display data including date / time / text on the live video pane. The maximum length of the text string is 20 alphanumeric characters. Click on <Set> to confirm the Video Text Overlay setting.

Video Text Overlay setting options include:

- **Overlay Type**
  Users can decide to display which data on the live pane.

- **Text overlay setting**
  Users can decide to display the text in what color and which size.

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

Video OCX protocol setting options include:

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

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

2.3.5 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 / H.264-3 / H.264-4 Frame Rate
The default setting of MJPEG / H.264-1 / H.264-2 / H.264-3 / H.264-4 Frame Rate is 30 fps (NTSC) or 25 fps (PAL); the setting range is from 1 to 30 (NTSC) or 1 to 25 (PAL). The maximum range of MJPEG / H.264-1 / H.264-2 / H.264-3 / H.264-4 Frame Rate will change according to the selected video resolution on the <Video Format> page.

NOTE: Low frame rate will decrease video smoothness.

Click on <Save> to confirm the setting.

2.3.6 Audio (Audio Mode and Bit Rate Settings)

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

In this page, the administrator can adjust the sound transmission mode, the audio gain levels and the audio bit rate. Setting for enabling sound recording to the microSD card is also available.

Transmission Mode (listen only is supported by GEUTEBRÜCK DVRs)

- **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 the sound amplification. The audio input gain value is adjustable from 1 to 10.
The audio output gain value is 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.

Recording to Storage

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

NOTE: If the chosen bit rate is not compatible with the player, there will only be noise instead of audio during playback.

Click on <Save> to confirm the setting.

2.4 PTZ

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

2.4.1 Preset

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

The camera supports up to 256 Preset Points. 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 the PTZ controls to a desired position and adjust the fine zoom / focus ratio. Subsequently, assign a number for the current position from the drop-down Number List (click on <PrePage> or <NextPage> button to reach number 1 to 256), and enter its descriptive name. Click on <Set> to save the settings.

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 move to the target position.

2.4.2 Cruise

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

The camera supports up to 8 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 in full screen mode, please move the cursor onto the live view pane, right-click and left-click to select “fullscreen”. Then users can view the camera navigation in full screen.

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

2.4.3 Auto Pan

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

The camera supports 4 Auto Pan Paths. Please refer to the instructions below to set an Auto Pan Path.

Auto Pan Setting

To setup an Auto Pan Path, firstly, please select a path number from the drop-down list. Secondly, select the speed ratio from the <Speed> drop-down list; the speed ratio ranges from 0 (low) to 3 (fast). Thirdly, choose to run the Auto Pan Path in right / left direction from the <Direction> drop-down list.
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 <Set> of the <Start Point> and the current view will be automatically saved as the start point of the Auto Pan Path. Lastly, 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.

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

Auto Pan Run

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

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

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

2.4.4 Sequence

The Sequence Line Programming can be found under this path:
PTZ > Sequence.

The camera supports a total of 8 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 and entering both Dwell Time (0 to 255) and Speed (0 to 14) into the corresponding fields.

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

Sequence Run

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

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

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

2.4.5 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 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 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 camera will start to count down when it idles, and then execute the predefined action as time expires. The time period ranges from 1 min. to 128 min.; 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 button <Set> to save the Home settings.

2.4.6 Tilt Range

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

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

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

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

2.4.7 Privacy Mask

The Privacy Mask can be found under this path: **PTZ > Privacy Mask**.

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

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

Mask Setting

- **Activate / Disable Privacy Mask Function**
  The Privacy Mask function can be activated or disabled. Click on <Set> to save the setting.

- **Activate / Disable Transparency Mask**
  The Privacy Mask can be set as transparency if necessary.

- **Color Setting**
  Select a desired color from the <Color> drop-down list for the specified Privacy Mask. Click on <Set> to save the Privacy Mask's color properties.

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

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

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

Mask Clearing

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

PT Steps (1~30)

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

2.4.8 Camera- Exposure

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

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

Auto Mode

- **Max Gain**
  Maximum Gain can be set to reduce image noises. The Max Gain range is 1dB to 3dB. To disable the function, select <Off>. The default setting is 24dB.

- **Full Auto Mode**
  In this mode, the camera's shutter speed, iris and AGC (Auto Gain Control) control circuits work together automatically to get consistent video output level. The minimum shutter speed range is configurable from 1/15 sec. to 1 sec. (NTSC) or 1/12 sec. to 1 sec. (PAL).

  NOTE: This mode will not be shown when video format with "WDR" is selected under <TV System>.

- **Shutter Priority Mode**
  In this mode, it is the shutter speed that takes the main control of the exposure. The range of the shutter speed is from 1/10000 sec. to 1/30 sec. (NTSC) or 1/10000 sec. to 1/25 sec. (PAL).

  NOTE: This mode will not be shown when video format with "WDR" is selected under <TV System>.

- **P-Iris Mode**
  In this mode, the minimum iris opening is limited to affect the exposure. The minimum iris opening can be adjusted from F4.8 to F9.6.
  The minimum shutter speed range is configurable from 1/15 sec. to 1 sec. (NTSC) or 1/12 sec. to 1 sec. (PAL).

- **Iris Priority Mode**
  In this mode, it is the iris that has the premier priority in control of the exposure. The value of iris is adjustable from F1.6 to F28. The minimum shutter speed range is configurable from 1/15 sec. to 1 sec. (NTSC) or 1/12 sec. to 1 sec. (PAL).

Manual Mode

In this mode, users can change the Shutter Speed, Iris, and Gain manually. The shutter speed range is from 1/10000 sec. to 1 sec. (NTSC) or from 1/10000 sec. to 1/1.5 sec. (PAL). The range of the iris size is from F1.6 to F28. The gain value range is from 1dB to 15dB.

2.4.9 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 2700K to 7500K.

Indoor / Outdoor Mode

Select for indoor or outdoor mode.

ATW Mode (Auto Tracing White Balance)

With Auto Tracking White Balance function, the white balance in a scene will be automatically adjusted while temperature color is changing. The ATW Mode is suitable for environments with light source having color temperature in the range roughly from 2500K to 10000K.

One Push

With One Push function, white balance is adjusted and fixed according to the scene the camera sees at the moment. This function is best for situations with minimal scene changes and continuous lighting. The function is suitable for light sources with any kind of color temperature. Follow the steps below to set the white balance.

- Point the camera to the monitoring area.
- Select <One Push> in the White Balance setting menu and click <Set>.
- Click <Trigger> to adjust the white balance.

NOTE: In this mode, the value of white balance will not change as the scene or the light source varies. Therefore, users might have to re-adjust the white balance by clicking <Trigger> again when needed.

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.

2.4.10 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, Digital Zoom, Speed by Zoom and Day/Night Function. Each setting is specified as follows.

BLC

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

Sharpness

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

ExpComp

Users can define the value of Exposure Compensation;
the value ranges from 1 to 15. Click on <Set> to confirm the setting.

Flip

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

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

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

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

- **Image Mode**
  The Image mode (digital image flip mode) enables users to keep tracking the objects seamlessly. Under this mode, almost no delay occurs in comparing with that under the M.E. mode.

  Click on <Set> to confirm the setting.

Digital Zoom

Select <On> to enable the Digital Zoom function. Click on <Set> to confirm the setting.

Speed by Zoom

This function allows the camera to adjust the pan/tilt speed automatically by the internal algorithm when the zoom ratio is changed. The rotating speed will become slower as the zoom ratio gets larger. Click on <Set> to save the setting.

Day/Night Function

This setting menu allows users to set the IR cut filter to Auto / Night / Day mode for the camera to catch clear images at different light conditions.

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

- **Night**
  Select this item when the environment light level is low. The IR cut filter will be removed to allow the camera to deliver clear images in black and white.

- **Day**
  Select this item to turn on the IR cut filter. The IR cut filter can filter out the IR light and allows the camera to deliver high quality images in color.

2.4.11 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), Image Inverse, Auto Calibration, 2D Noise Reduction (2DNR), 3D Noise Reduction (3DNR), Image Stabilizer, OSD, Set Pan Zero and TV System.

Ultra WDR

The WDR function is for solving high contrast or light changing issues so that enhances the video display. It is especially effective in the environment with extreme contrast. Click on <Set> button to save the setting.

NOTE: The two shutter WDR function for Full HD Ultra-WDR Speed Dome IP Camera can be enabled by selecting any video format with “WDR” under <TV System>.

Inverse

When the Image Inverse function is activated, the image will be inversed vertically and horizontally. Click on <Set> to save the setting.

Auto Calibration

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

2DNR / 3DNR

With the 2D / 3D 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.
In comparison with 2DNR, 3DNR generates better de-noising effects. Click on <Set> to save the setting.

Stabilizer

With the Image Stabilizer function, the camera can digitally adjust the blurring images caused by external vibration. Select <ON> to turn on the function. Click on <Set> to confirm the setting.

NOTE: If the stabilizer is active and the camera moves, the image can move some seconds longer than the dome mechanically does.

OSD

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

Set Pan Zero

Click on <Set> to set the camera’s currently shooting position as the start point for panning (0 degree).

TV System

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

The following table shows the available video formats for different types of models. The supported video formats for each model are marked by “√”.

Video Format \ Model		Full HD Ultra-WDR 30x Zoom Speed Dome IP Camera
NTSC	WDR 30 fps	✓
	1080P 30 fps	-
	720P 60 fps	✓
PAL	WDR 25 fps	✓
	1080P 25 fps	-
	720P 25 fps	✓

NOTE: To enable the two shutter WDR function of the Full HD Ultra-WDR 30x Zoom Speed Dome IP Camera, the selected video format **MUST** include “WDR”.

2.4.12 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 by clicking on the <Set Default> button.

2.5 Logout

Click on the tab <Logout> on the top of the page, and the login window will pop up. This enables login with another username.

Appendix A: Install UPnP Components

Please follow the instructions below to install UPnP components on Windows Vista / Windows XP / Windows 7.

Step 1: In Windows, go to <Start>, click on <Control Panel>, and then double click on <Add or Remove Programs>.

Step 2: Click on <Add/Remove Windows Components> in the <Add or Remove Programs> page.

Step 3: Select <Networking Services> from the Components list in Components Wizard window of the Windows, and then click <Details>.

Step 4: Select <UPnP User Interface> in the Networking Services' subcomponents list and then click on <OK>.

Step 5: Click on <Next> in the Windows Components Wizard window.

Step 6: Click on <Finish> to complete installation.

Appendix B: IP Addresses from Decimal to Binary

Follow the example below to convert the IP addresses to binary numbers. Use the calculator on the computer for conversion. The calculator can be found under this path: **Start > All Programs > Accessories > Calculator**. For Windows XP and Windows Vista, click <View> on the calculator and click <Scientific>. For Windows 7 and Windows 8, click <View> on the calculator and click <Programmer>. Then follow the steps in the following example to convert the IP addresses.

The example below shows how to convert 192.168.2.81 to binary numbers.

Step 1: On the left of the calculator, select <Dec>. Then enter the first decimal number of the IP address, “192”. Select <Bin> and the number will be converted to binary number. Repeat the same procedure with the rest of decimal numbers. Remember to select <Dec> before entering the next decimal number. Otherwise a decimal number cannot be entered. The table below shows the binary number of each decimal number.

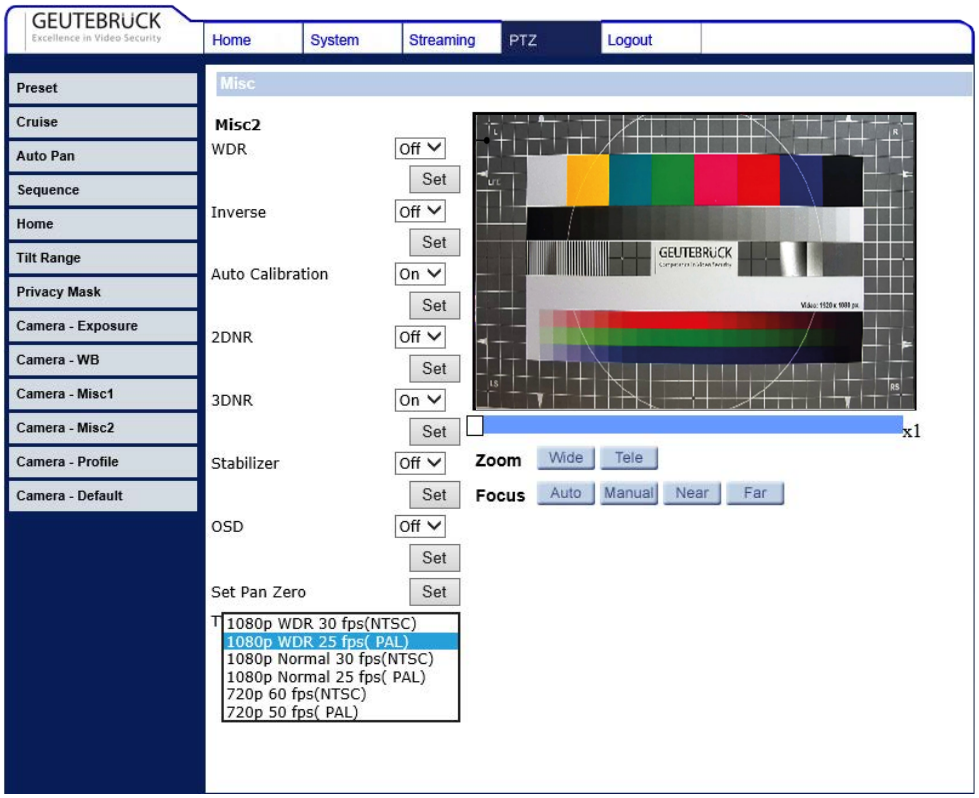
Decimal Numbers	Binary Numbers
192	11000000
168	10101000
2	10
81	1010001

Step 2: Each binary number should have eight digits. If a binary number does not have eight digits, please add 0 in front of it until it does. The binary number of each decimal number should be as follow.

Decimal Numbers	Binary Numbers
192	11000000
168	10101000
2	00000010
81	01010001

Step 3: Therefore, the binary numbers of IP address 192.168.2.81 is 11000000.10101000.00000010.01010001.

Appendix D: Video Resolution



720P- Dual Streams

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

BNC function is not supported.

720P- Single Stream

H.264 / MJPEG Only
1280 x 720 (60 fps) Low Latency*
1280 x 720 (60 fps)
800 x 600 (60 fps)
720 x 480 (60 fps)
640 x 480 (60 fps)
352 x 240 (60 fps)

*This resolution is for H.264 only.

BNC function is not supported.

WDR ON / 1080P- Dual Streams

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

BNC function is not supported.

WDR ON / 1080P- Single Stream

H.264/ MJPEG
1920 x 1080 (30 fps) Low Latency*
1920 x 1080 (30 fps)
1280 x 1024 (30 fps)
1280 x 720 (30 fps)
1024 x 768 (30 fps)
800 x 600 (30 fps)
720 x 480 (30 fps)
640 x 480 (30 fps)
352 x 240 (30 fps)

*This resolution is for H.264 only.

BNC function is not supported.

G-Cam/ESD-3160_3270_Webbrowser_Manual_EN 19.10.2015

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