Network Speed Dome Camera

Indoor/Outdoor

User Manual

Ver1.1

BD75-5

Table of Contents

1. Overview 3

1.1 Package Contents 4

1.2 Switch/Connector Definition 6

2. Preparations for Dome Camera Setup 7

2.1 System Requirements 7

2.2 Cable Connection 8

3. Accessing IP Camera 10

4. Configuration & Operation 17

4.1 Browser-based Viewer Introduction 17

4.2 Home Page 19

4.3 System Related Settings 23

4.3.1 Host Name and System Time Setting 24

4.3.2 Security 25

4.3.3 Network 27

4.3.4 DDNS 30

4.3.5 Mail 31

4.3.6 FTP 32

4.3.7 Application (Alarm Settings) 33

4.3.8 Snapshot 40

4.3.9 View Log File 41

4.3.10 View User Information 42

4.3.11 View Parameters 44

4.3.12 Factory Default 45

4.3.13 Software Version 46

4.3.14 Software Upgrade 47

4.4 Video and Audio Streaming Settings 50

4.4.1 Video Resolution and Video Deinterlacing Function 50

4.4.2 Video Compression 51

4.4.3 Video OCX Protocol 52

4.4.4 Video Frame Skip 53

4.4.5 Audio Mode and Bit Rate Settings 54

4.5 PTZ Settings 56

4.5.1 Preset Programming 56

4.5.2 Cruise Programming 57

4.5.3 Auto Pan Programming 58

4.5.4 Sequence Line Programming 60

4.5.5 Home Function 62

4.5.6 Tilt Angle Settings 63

4.5.7 Privacy Mask Settings 64
4.5.8 Camera—AE Mode 66
4.5.9 Camera—WB Mode 67
4.5.10 Camera—Miscellaneous Setups Menu 1 69
4.5.11 Camera—Miscellaneous Setups Menu 2 71
4.5.12 Default Settings 73
4.6 Logout 73
5. CMS Software Introduction 74

1. Overview

The network Speed Dome 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 D1 resolution which compresses the image size up to 40% off. 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. Additionally, 3D de-interlaced technology provides superior image quality. It eliminates the “combing” effect due to scene change and performs more stabilized image.

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

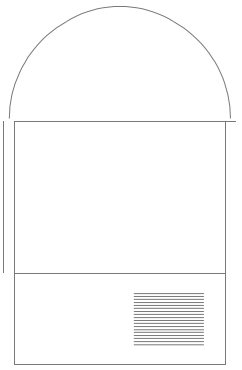
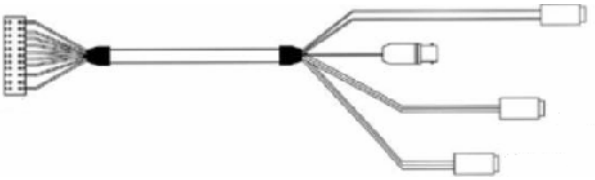
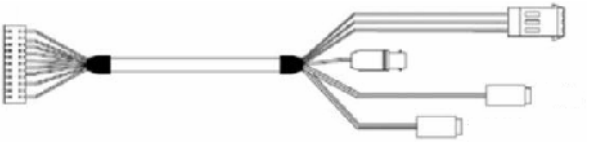
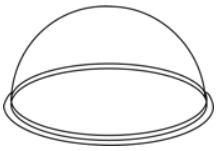
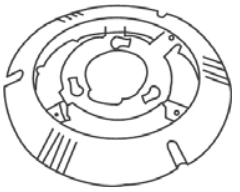
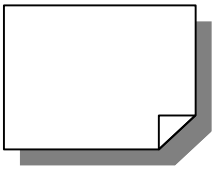
Features

- 18x, 22x, 23x, 26x, 30x, 35x, 36x Optical Zoom
- 12x Digital Zoom
- Simultaneous dual streams: H.264 and MJPEG
- D1 Real-time Resolution
- 3D de-interlaced video image
- Two-way audio support
- Removable IR Cut Filter; optional
- Motion Detection; optional
- Wide Dynamic Range (WDR); optional
- 2D/3D Noise Reduction; optional

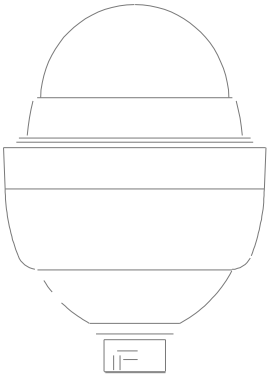
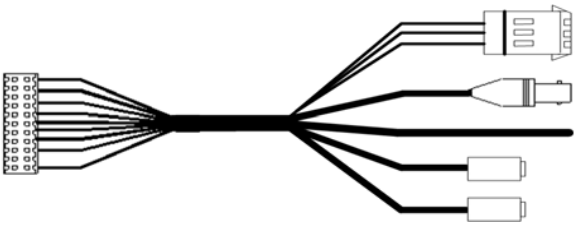
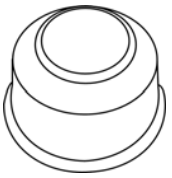
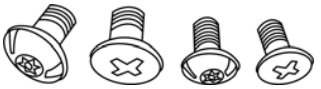
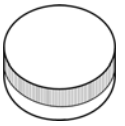
1.1 Package Contents

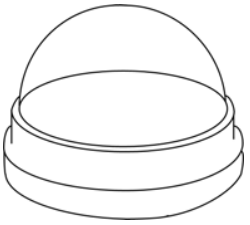
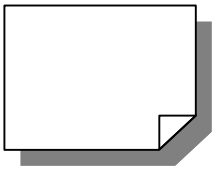
Please check the box contains the items listed here. If any item is missing or has defects, DO NOT install or operate the product and contact your dealer for assistance.

Indoor Dome Camera Package

<table>
<tr><td rowspan="2"> 
Camera Body</td><td> 
Data Cable for Power Supply, Video and Audio (DC 12V)</td></tr>
<tr><td> 
Data Cable for Power Supply, Video and Audio (AC 24V)</td></tr>
<tr><td> 
Optical Cover</td><td> 
Hard Ceiling Mount and Decoration Ring</td><td>
M3 Screw, Fixing Plate</td></tr>
<tr><td>
Power Adaptor & Power Cord (DC model only)</td><td> 
Quick Guide</td><td>
CD: Operation Manuals</td></tr>
</table>

Outdoor Dome Camera Package

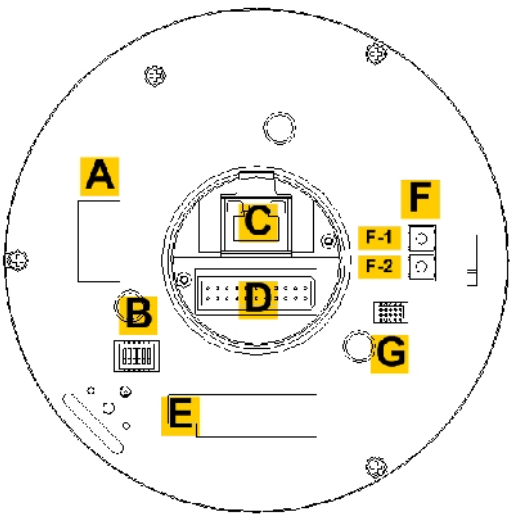
<table>
<tr><td> 
Dome Camera with Outdoor Mount Kit</td><td colspan="2"> 
Data Cable for Power Supply, Video, Audio and Alarm (AC 24V)</td></tr>
<tr><td> 
Waterproof Rubber</td><td> 
M3 Standard Screw (x1)
M3 Security Screw (x1)
M5 Standard Screw (x1)
M5 Security Screw (x1)</td><td> 
Lubricant

Security Torx</td></tr>
<tr><td> 
Optical Cover</td><td> 
Quick Guide</td><td>
CD: Operation Manuals</td></tr>
</table>

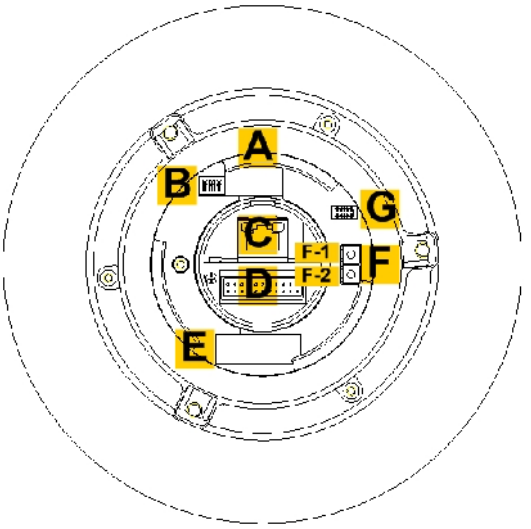
1.2 Switch/Connector Definition

There are various switches and connectors located on the Dome Camera's back plate as shown in the figures below.

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



Indoor



Outdoor

A	None	
B	Communication Switch (Reserved)	
C	RJ45 Connector	
D	22-Pin Connector	
E	None	
F	F-1	Reboot Button
	F-2	Factory Reset Button
G	ISP Connector (for FW upgrade)	

NOTE: DO NOT change the network Speed Dome Camera's Communication Switch factory default settings.

2. Preparations for Dome Camera Setup

Before logging in, please complete power, alarm (if available) and network connections and check system requirements. For further details and instructions on cable connection, please refer to the following sections.

2.1 System Requirements

To perform the network Speed Dome Camera via web browser, please ensure your PC is in good network connection, and meet system requirement as described below.

Items	Minimum Requirement
Personal Computer	1. Intel Pentium IV, 3 GHz or higher, Intel Core2 Duo, 2 GHz or higher 2. 1 GB RAM or more 3. AGP graphics card 64 MB RAM, DirectDraw
Operating System	Windows VISTA or Windows XP
Web Browser	Microsoft Internet Explorer 6.0 or later
Network Card	10Base-T (10 Mbps) or 100Base-TX (100 Mbps) operation
Viewer	ActiveX control plug-in for Microsoft IE

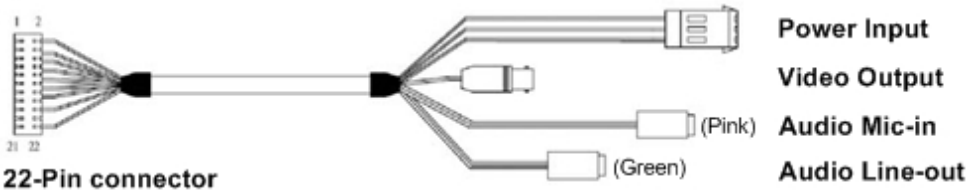
2.2 Cable Connection

Data Cable Connection

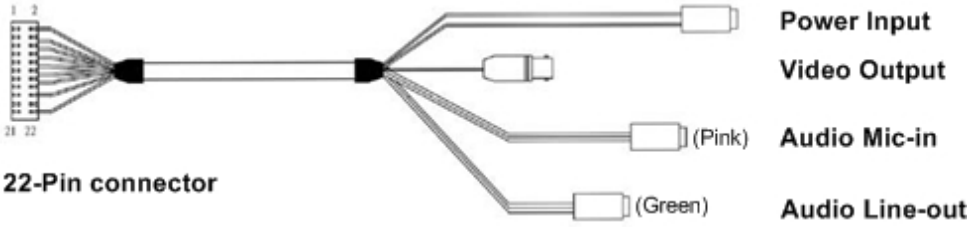
For the indoor Dome Camera, it is supplied with a DC 12V or an AC 24V Data Cable for a quick installation for demo or testing usage, while the outdoor model is only supplied with an AC 24V Data Cable. All of the Data Cables for different types of camera are shown as follows:

- **Indoor Dome Camera**

AC 24V Data Cable

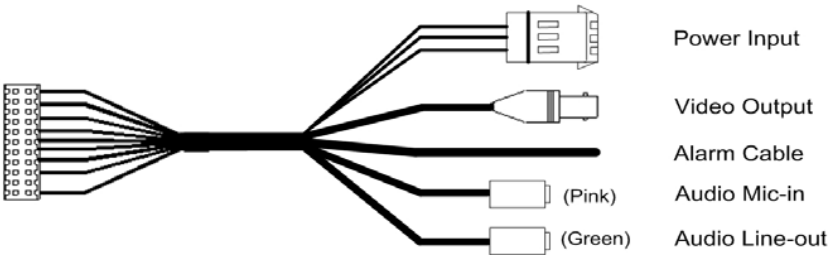


DC 12V Data Cable

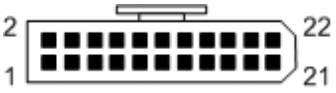


- **Outdoor Dome Camera**

AC 24V Data Cable



The network Speed Dome Camera's 22-pin connector definition is listed as shown below.



Pin	Definition	Cable
1	AC 24-1/DC (+)	20AWG/18AWG
2	ALM NC	
3	AC 24-2/DC (-)	20AWG/18AWG
4	ALM NO	
5	FG	20AWG18AWG
6	ALM COM	
7	Audio in	24AWG
8	Audio out	
9	Audio GND	
10	Audio GND	
11	ISOG	

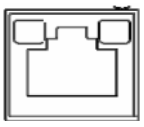
Pin	Definition	Cable
12	ALM-1	
13	ALM-3	
14	ALM-2	
15	ALM-4	
16	Reserved	
17	Reserved	
18	Reserved	
19	Reserved	
20	ALM GND	
21	VGND	20AWG
22	Video	

Ethernet Cable Connection

Use of Category 5 Ethernet cable is recommended for network connection; to have best transmission quality, cable length shall not exceed 100 meters. Connect one end of the Ethernet cable to the RJ45 connector on the Dome Camera's back plate, and the other end of the cable to the network switch or PC.

NOTE: In some cases, you may need use an Ethernet crossover cable when connecting the IP Camera directly to the PC.

Check the status of the link indicator and activity indicator LEDs; if the LEDs are unlit, please check LAN connection.



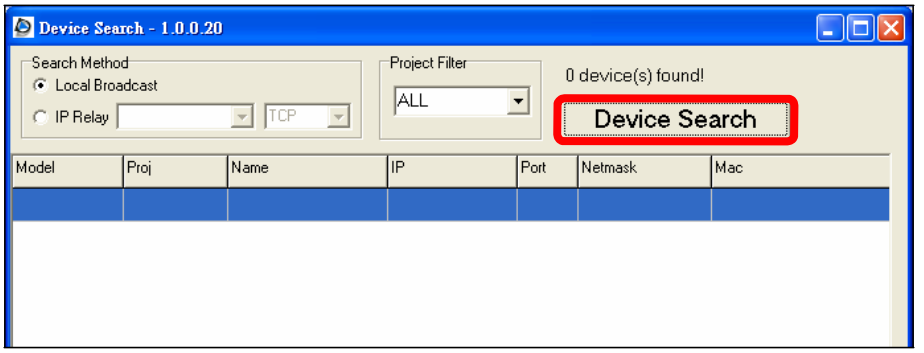
Green Link Light indicates good network connection.
Orange Activity Light flashes for network activity indication.

3. Accessing IP Camera

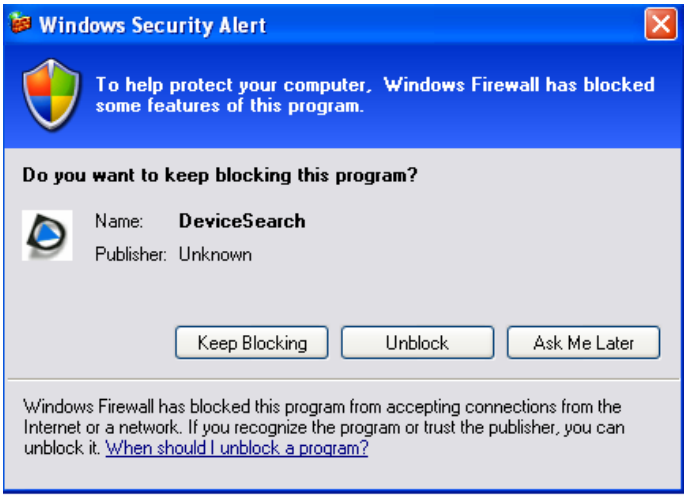
For initial access to the network Speed Dome Camera, users can search the camera through the installer program: DeviceSearch.exe, which can be found in “DeviceSearch” folder in the supplied CD.

Device Search Software Setup

Step 1: Double click on the program Device Search.exe (see the icon below); its window will appear as shown below. Then click the “Device Search” button.

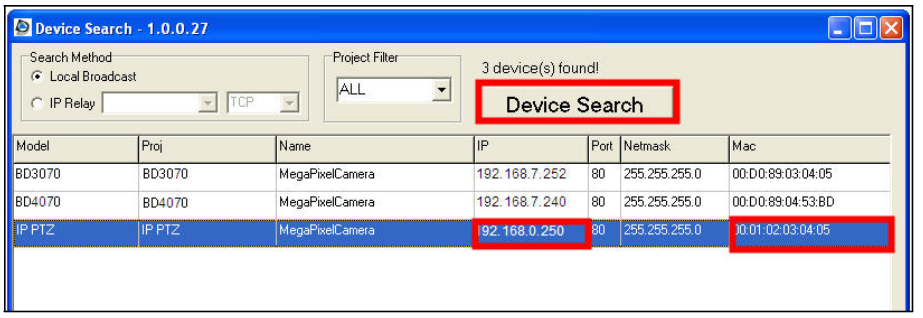


Step 2: The security alert window will pop up. Click “Unblock” to continue.

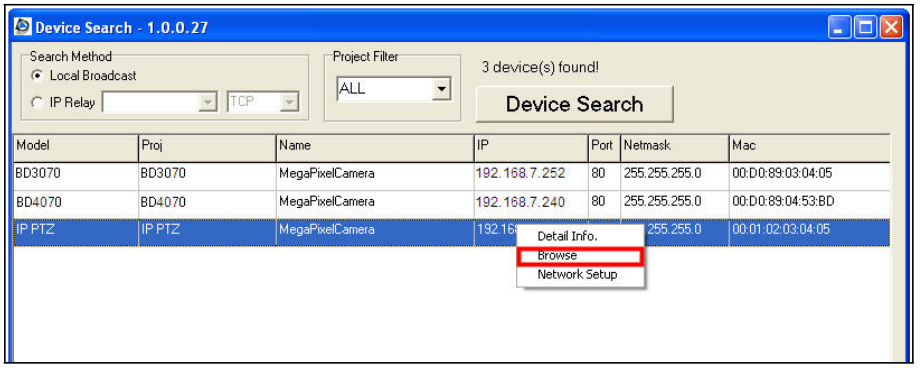


Device Search

Step 3: Click “Device Search” again, and all the finding IP devices will be listed in the page, as shown in the figure below. The network Speed Dome Camera’s default IP address is: **192.168.0.250**.



Step 4: Double click or right click and select “Browse” to access the camera directly via web browser.



Step 5: Then the prompt window of request for entering default username and password (as shown below) will appear for login to the network Speed Dome Camera.

The default login ID and password for the Administrator are:

Login ID	Password
Admin	1234

NOTE: ID and password are case sensitive.

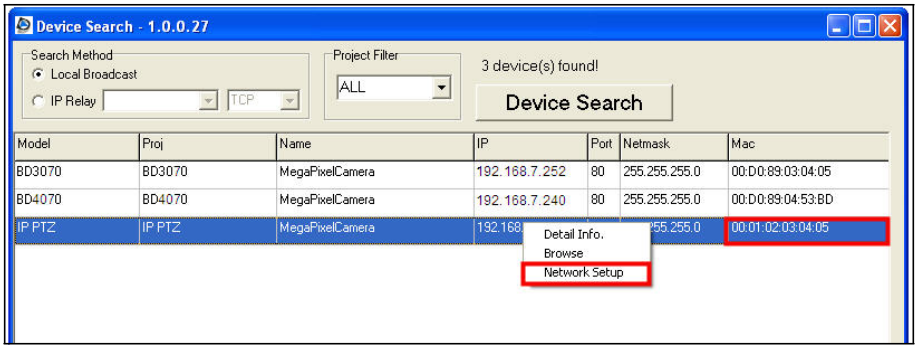
NOTE: It is strongly advised that administrator's password be altered for the security concerns. Refer to section 4.3.2 Security for further details.

Additionally, users can change the network Speed Dome Camera's network property, either DHCP or Static IP directly in the device finding list. Refer to the following section for changing the network Speed Dome Camera's network property.

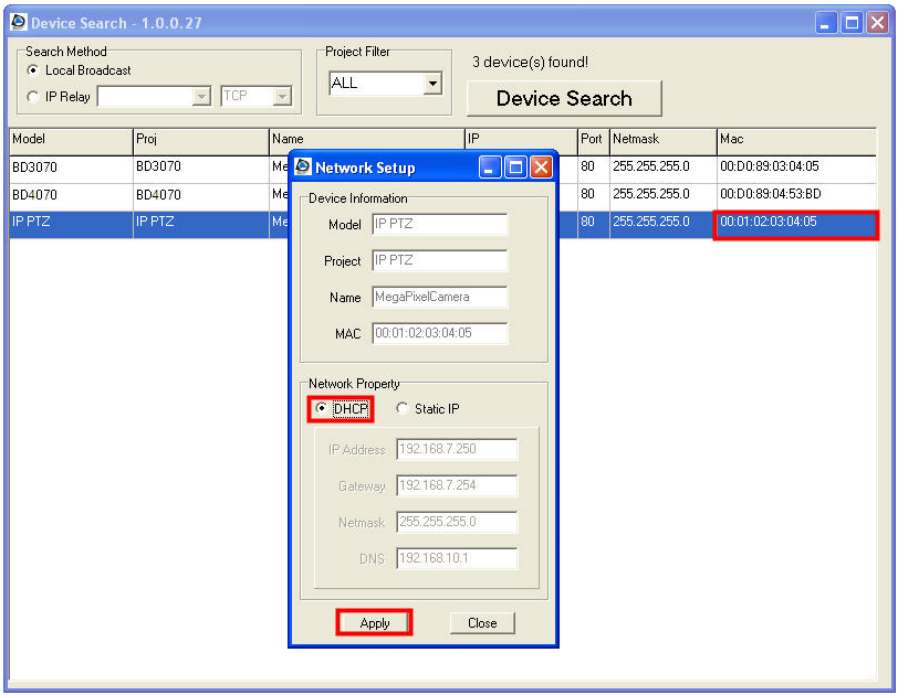
Example of Changing IP Camera's Network Property

Users can directly change an Network Speed Dome Camera's network property, ex. from static IP to DHCP, in the finding device list. The way to change the camera's network property is specified below:

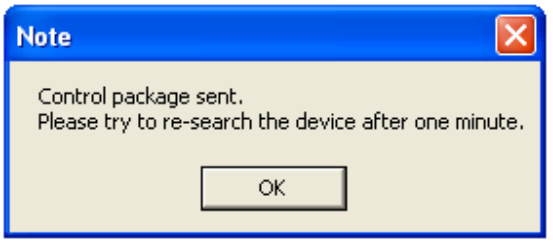
Step 1: In the finding device list, click on the network Speed Dome Camera that you would like to change its network property. On the selected item, right click and select "Network Setup." Meanwhile, record the network Speed Dome Camera's MAC address, for future identification.



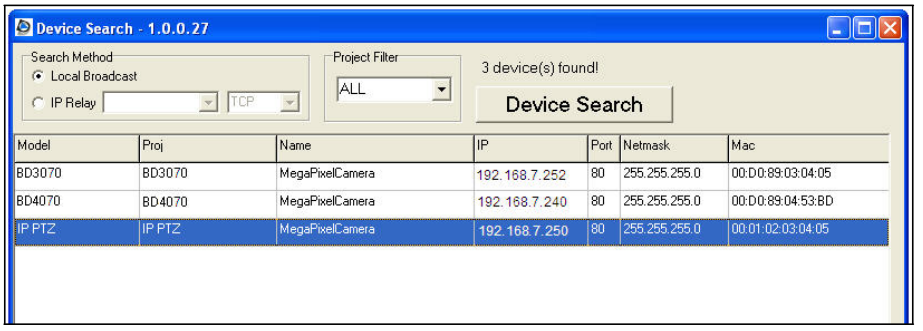
Step 2: The "Network Setup" page will come out. Select "DHCP", and press "Apply" button down the page.



Step 3: Click “OK” on the Note of setting change. Wait for one minute to re-search the network Speed Dome Camera.



Step 4: Click the “Device Search” button to re-search all the devices. Then select the network Speed Dome Camera with the correct MAC address. Double click on the IP Camera, and the login window will come out.



Step 5: Enter User name and Password to access the network Speed Dome Camera.

Installing DC Viewer Software Online

For the initial access to the network Speed Dome Camera, a client program, DC Viewer, will be automatically installed to your PC when connecting to the IP Camera.

If the Web browser doesn't allow DC Viewer installation, please check the Internet security settings or ActiveX controls and plug-ins settings (see Appendix B: Internet Security Settings) to continue the process.

The Information Bar (just below the URL bar) may come out and ask for permission to install the ActiveX Control for displaying video in browser (see the figure below). Right click on the Information Bar and select "Install ActiveX Control…" to allow the installation.

Then the security warning window will pop up. Click "Install" to carry on software installation.

Click "Finish" to close the DC Viewer window when download is finished. For the detailed software download procedure, please refer to Appendix C: DC Viewer Download Procedure.

Once login to the network Speed Dome Camera, users will see the Home page as shown below:

Administrator/User Privileges

“Administrator” represents the person who can configure the network Speed Dome Camera and authorize users access to the camera; “User” refers to whoever has access to the camera with limited authority, i.e. entering Home and Camera setting pages.

For further details about the configurations on the Home page, please refer to section 4.2 Home Page.

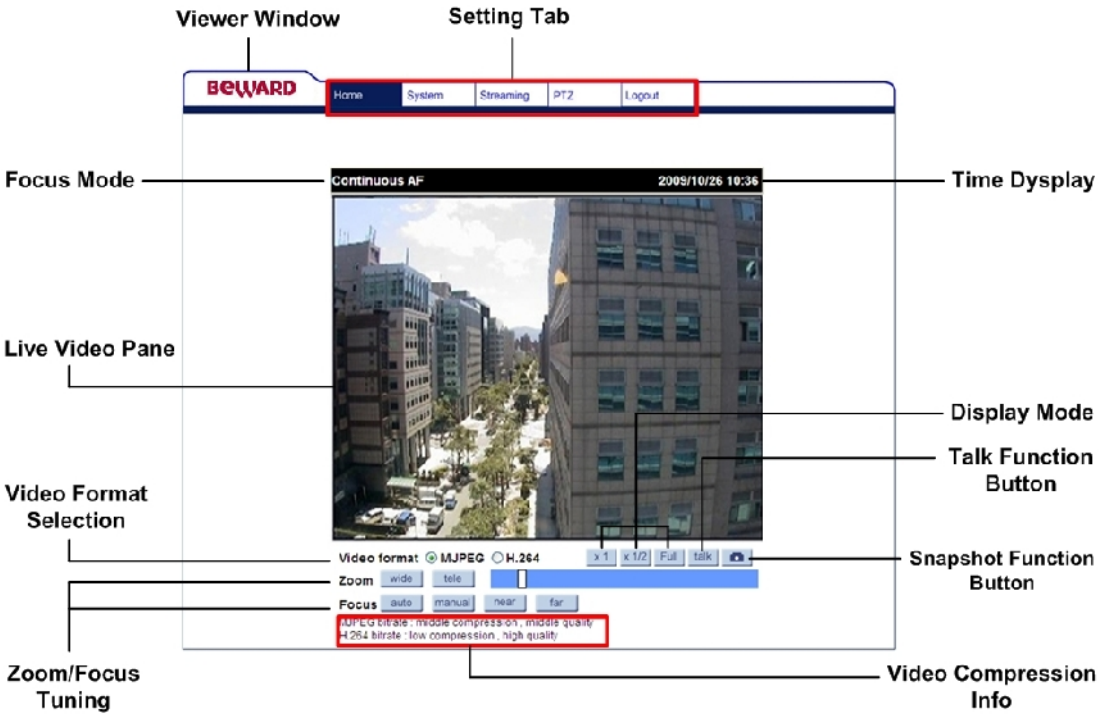
4. Configuration & Operation

The network Speed Dome Camera is provided with a user-friendly browser-based configuration interface, and a free bundled CMS (Central Management System) for record and playback video. In this chapter, information about Home page overview, system related settings and camera settings will be described in detail.

For further information about CMS software, please refer to Chapter 5: CMS Software Introduction and CMS user manual.

4.1 Browser-based Viewer Introduction

The figure below shows the Home page of the network Speed Dome Camera's viewer window.



There are five setting tabs: Home, System, Streaming, PTZ and Logout on the top of the viewer window.

Home

Users can view live video from the live video pane.

System setting

The Administrator can set host name, system time, root password, network related settings, etc.

Streaming setting

The Administrator can modify video resolution, set video streaming protocol and select video/audio compression mode in this page.

PTZ setting

Users can adjust various camera parameters such as Exposure, White Balance, Backlight Compensation, etc., and program functions including Preset, Cruise, Auto Pan, Sequence, etc.

Logout

Click on the tab to relogin into the network Speed Dome Camera with another username and password.

4.2 Home Page

On the Home Page, users can view live video and operate Pan/Tilt/Zoom (PTZ) function. Additionally, users can select a video display format and image display size and adjust zoom ratio/focus length through related function buttons. All of these functions are described as follows:

Screen Size Adjustment

Image display size can be adjusted to x1/2 and full screen via the related buttons. To switch between the normal view mode and full screen view mode, users can also move the cursor to the live video pane and right-clink; then the tab Normal View / fullscreen will display over the video pane as shown in the figure below. Left click on either the “Normal View” or “Fullscreen” tab for setting image display mode.

Pan/Tilt Control

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

Optical/Digital Zoom Control

In Normal View display mode, users can implement zoom in/out by first moving the cursor to the live video pane and then rotating the mouse wheel. As in Full Screen mode, users can directly rotate the mouse wheel to zoom in/out on the image. Digital zoom is only available when the function is activated and which is set in “Camera-Misc1” page under the “PTZ” tab; see section 4.5.10 Camera—Miscellaneous Setups Menu 1 for details. When the camera reaches the limit of its optical range, it will automatically switch to digital zoom.

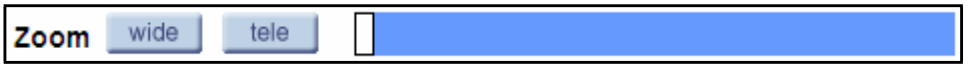
Talk

Talk function allows the local site talks to the remote site. Please refer to section 4.3.2 Security: Add user > Talk/Listen for further details. This function is only open to “User” who has been granted this privilege by the Administrator.

Snapshot

Press the “Snapshot” 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 4.3.8 Snapshot for further details.

Zoom Adjustment



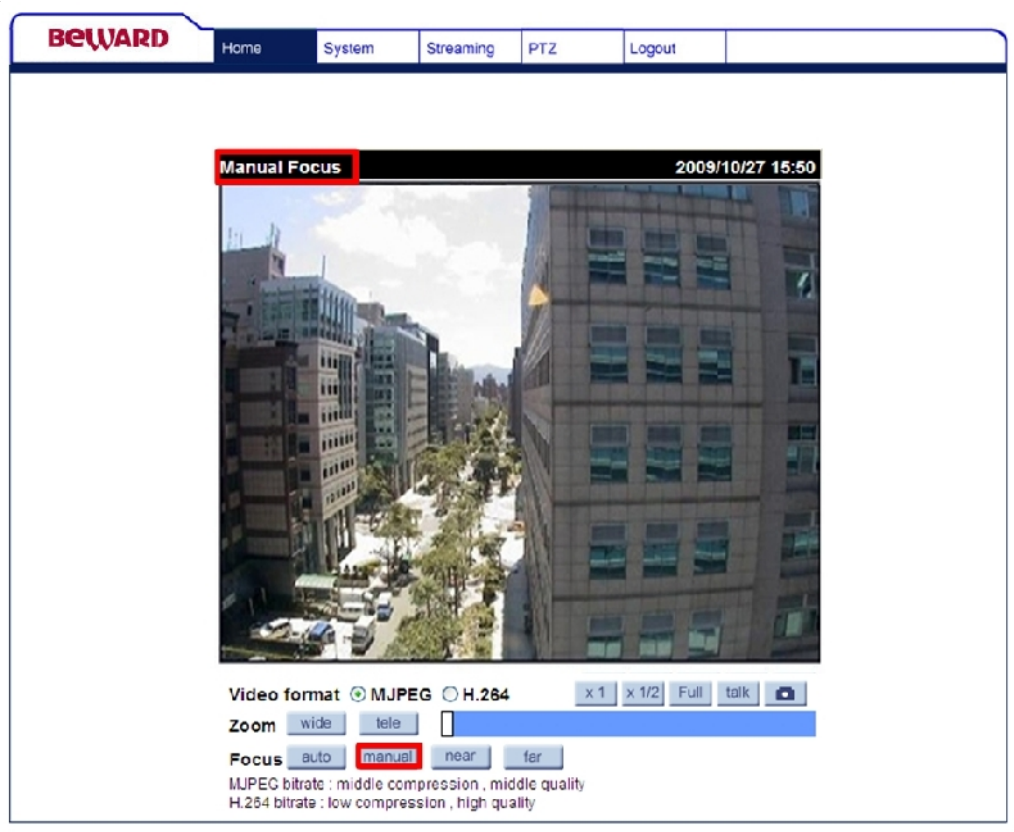
Click on the buttons wide/tele to control zoom in/out. Move the cursor closely onto the zoom adjustment bar and click on the desired position to change the room ratio.

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.

z **Manual Focus:**

Click on the “manual” button, and users can adjust focus manually via “near” and “far” buttons. The status will also be displayed above the screen as shown below.



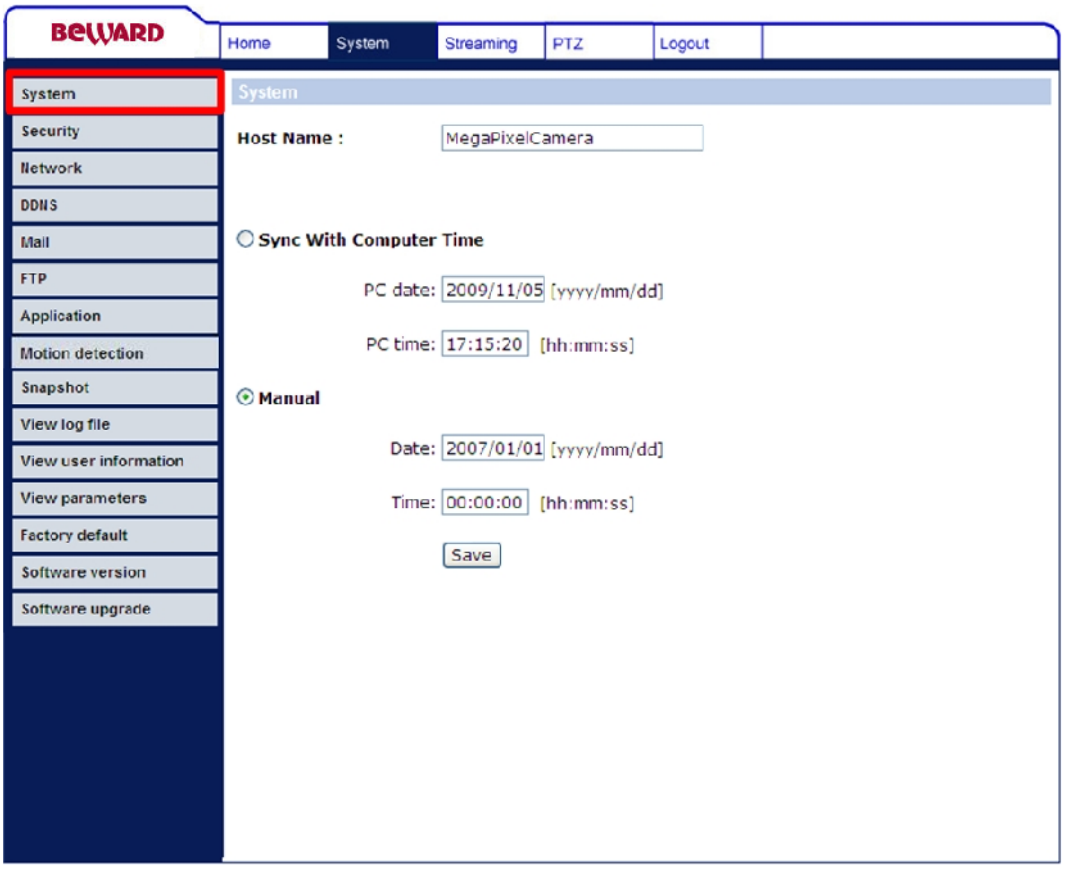
4.3 System Related Settings

The figure below shows all categories under the “**System**” tab. Each category in the left column will be explained in the following sections.

NOTE: The “System” configuration page is only accessible by Administrator.

4.3.1 Host Name and System Time Setting

Press the first category: <System> in the left column; the page is shown as below.



Host Name

The name is for camera identification. If alarm function (see section 4.3.7 Application) is enabled and is set to send alarm message by Mail/FTP, the host name entered here will display in the alarm message.

Sync With Computer Time

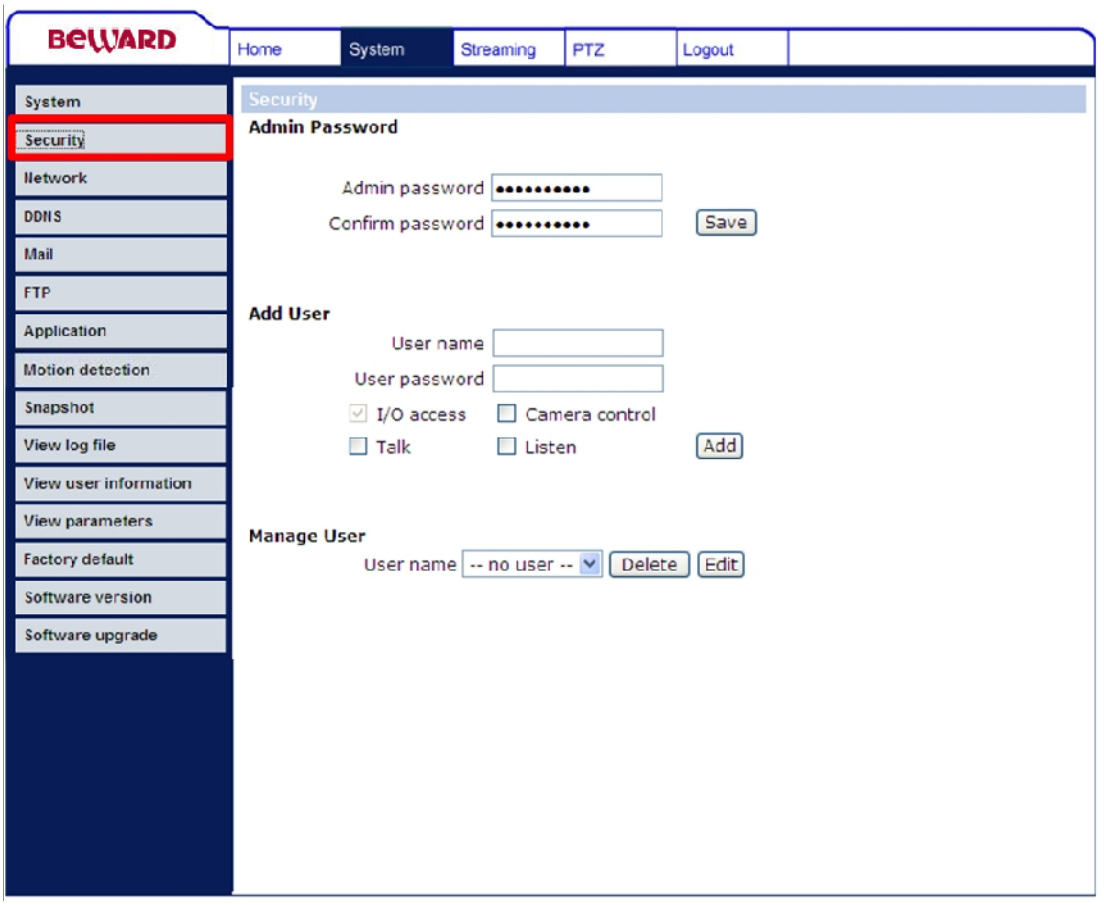
Select the item, and video date and time display will synchronize with the PC's.

Manual

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

4.3.2 Security

Click the category: <Security>, and the page is shown as the figure below.



Root password

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

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

Add user

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

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

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

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

Manage User

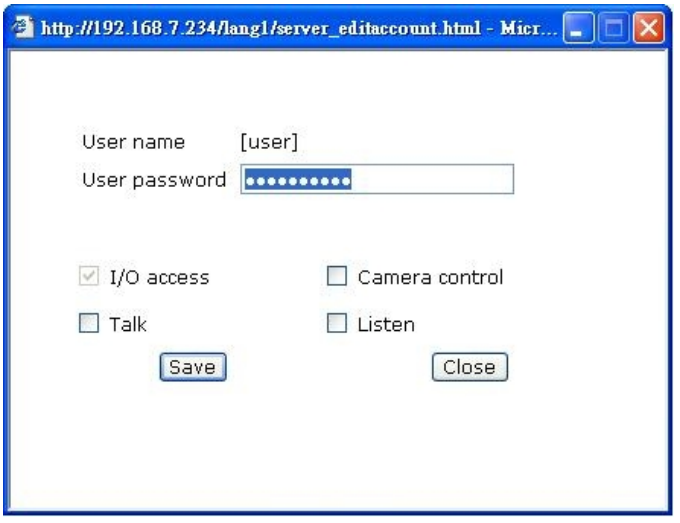
Delete user

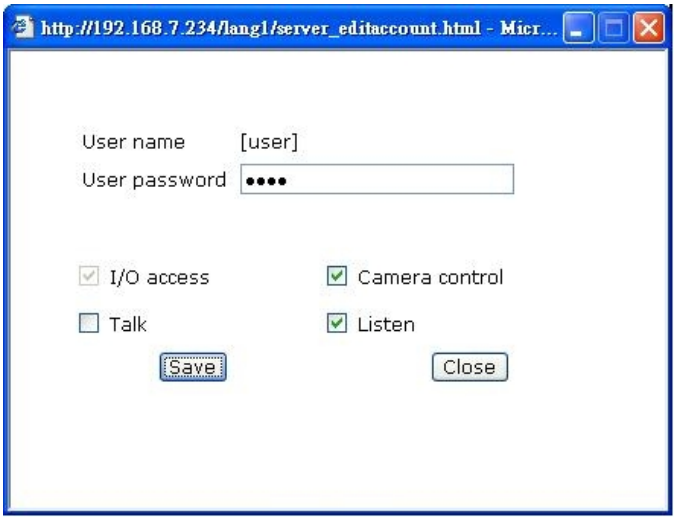
To delete a user, pull down the user list, and select the user name you wish to delete. Then click <Delete> to remove it.

Edit user

Pull down the user list and select a user name. Click <Edit> to edit the user's password and privilege.

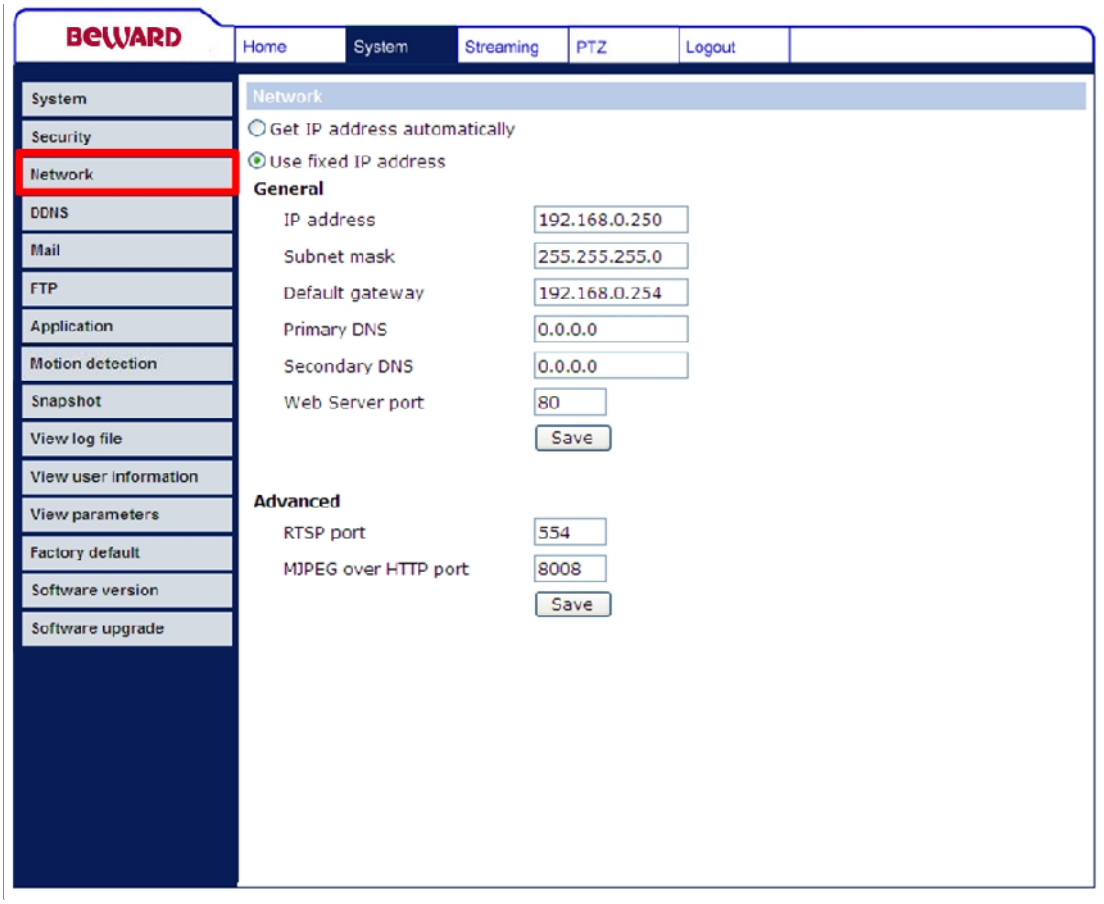
NOTE: It is required to enter the User password as well as select the function open to the user. When finished, click <Save> to modify the account authority.





4.3.3 Network

Click <Network> in the left column, and the page will display as shown below.



Users can choose to use fixed IP address or dynamic (DHCP) IP address. The following is descriptions for the two ways of setting IP address.

Get IP address automatically (DHCP)

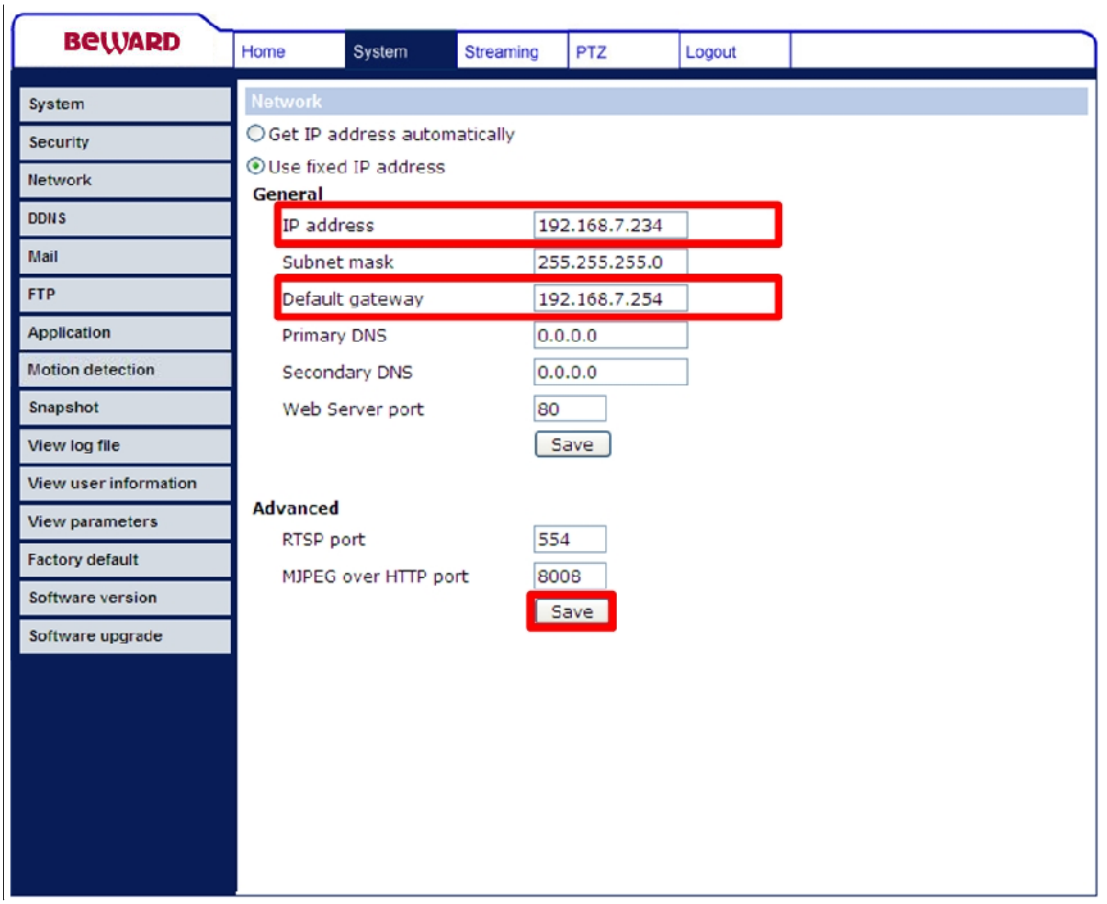
The camera's default setting is "**Use fixed IP address**". Please refer to the previous section 3. Accessing IP Camera for login with the default IP address.

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

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

Use fixed IP address

To setup static IP address, select "**Use fixed IP address**" and move the cursor to the IP address blank (as indicated below) and insert the new IP address, ex. 192.168.7.234; then go to the Default gateway (explained latter) blank and change the setting, ex. 192.168.7.254. Press "Save" to confirm the new setting.



When using static IP address to login into the network Speed Dome Camera, users can access it either through “DeviceSearch” software (see 3. Accessing IP Camera) or input the IP address in the URL bar and press “Enter”.

General

- **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.

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

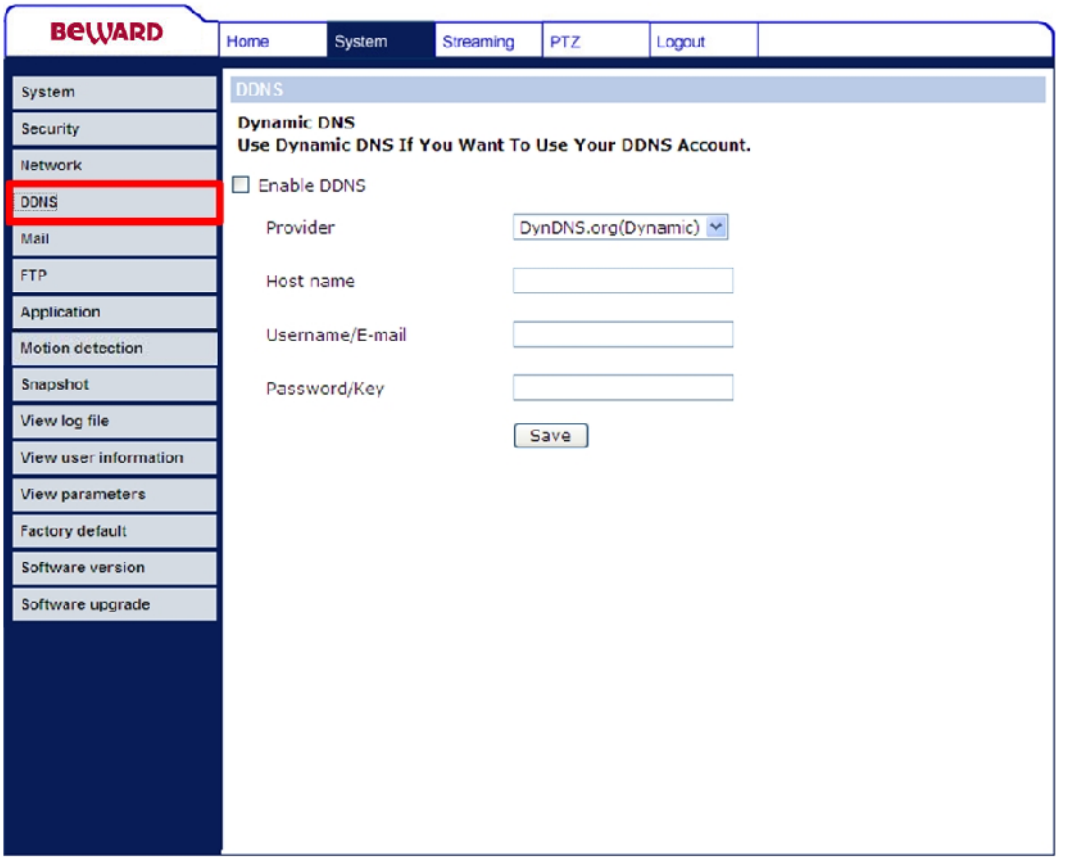
Advanced

- **RTSP port**
  The default port number of RTSP protocol is 554.

- **MJPEG over HTTP port**
  The default port number for MJPEG over HTTP is 8008.

4.3.4 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

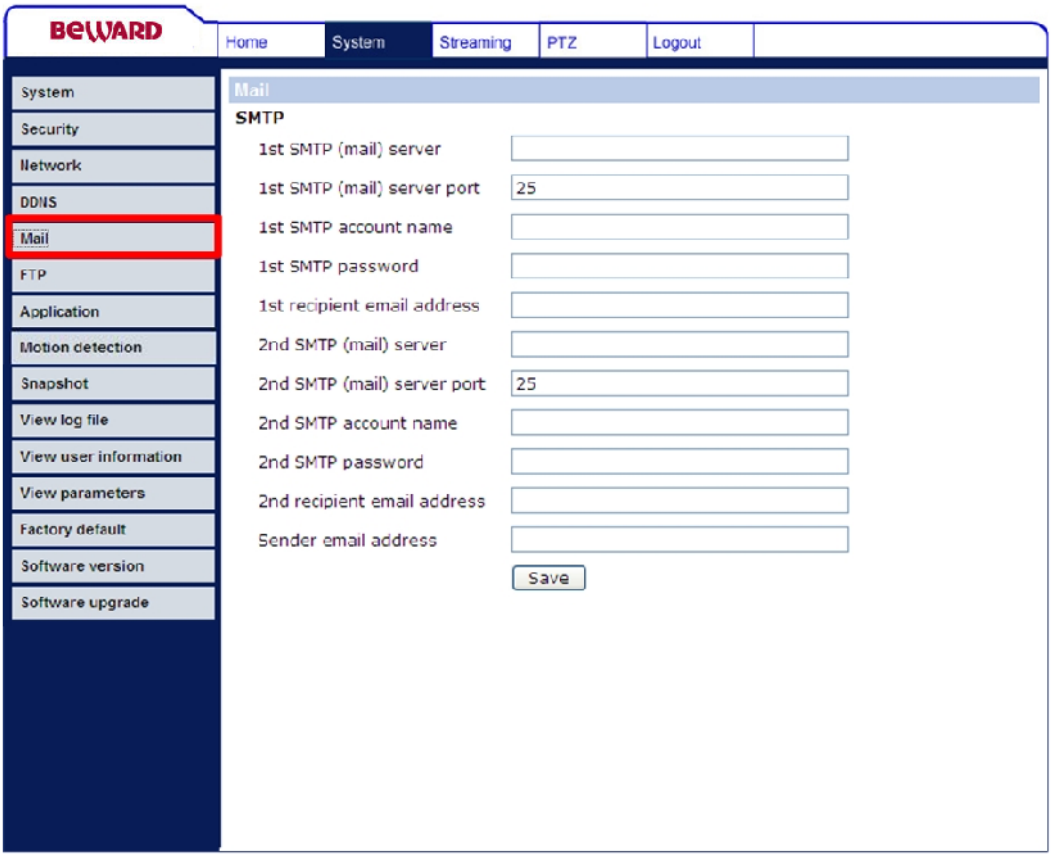
Enter the username or e-mail required by the DDNS provider for authentication.

Password/Key

Enter the password or key required by the DDNS provider for authentication.

4.3.5 Mail

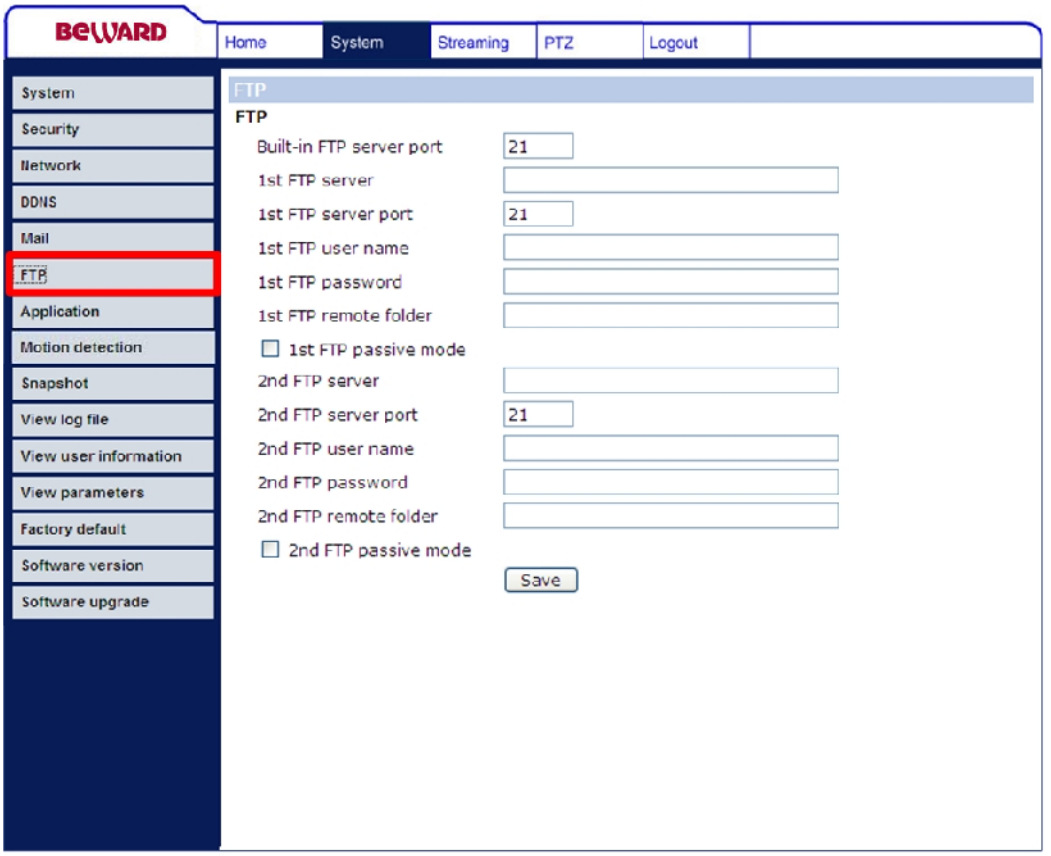
The Administrator can send an e-mail via Simple Mail Transfer Protocol (SMTP) when an alarm is triggered. SMTP is a protocol for sending e-mail messages between servers. SMTP is a relatively simple, text-based protocol, where one or more recipients of a message are specified and the message text is transferred.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



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

4.3.6 FTP

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

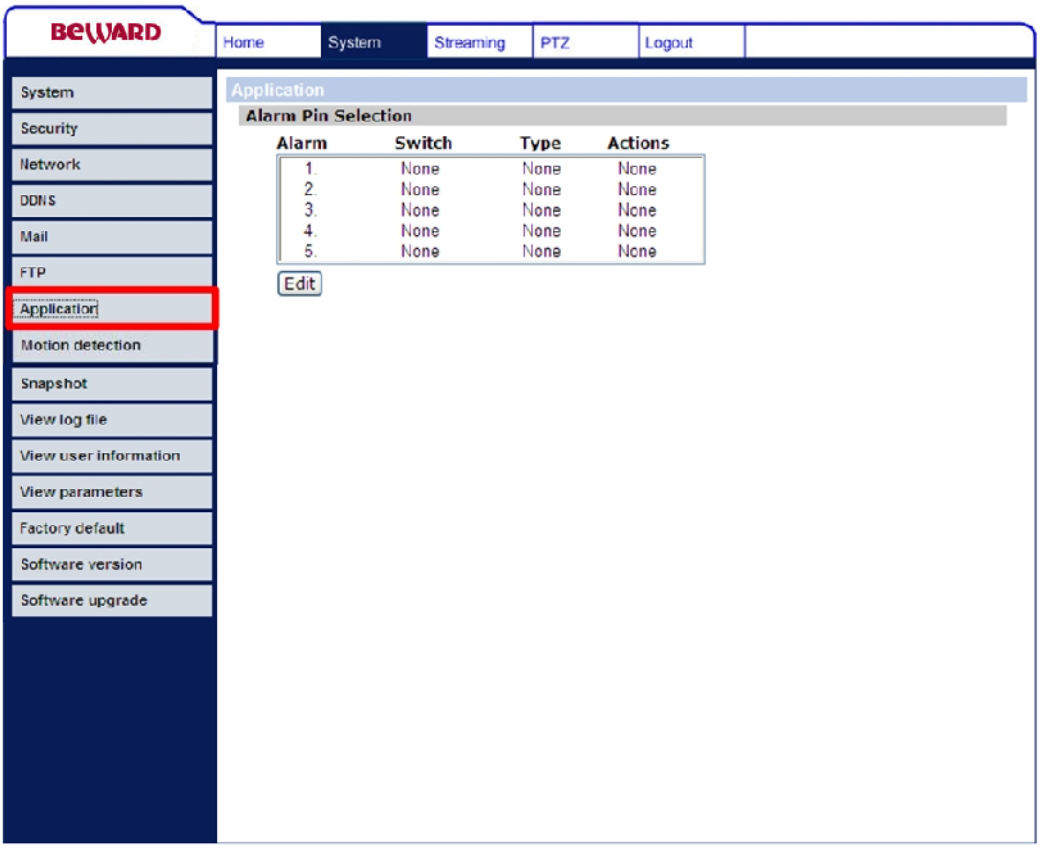


4.3.7 Application (Alarm Settings)

The network Speed Dome Camera supports 5 alarm inputs and 1 alarm output. Please make sure the alarm connections are properly wired before starting to configure alarm related settings on this “Application” page. Please refer to the pin definition table below for alarm system wiring.

Pin	Definition	Cable
1	AC 24-1/DC (+)	20AWG/18AWG
2	ALM NC	
3	AC 24-2/DC (-)	20AWG/18AWG
4	ALM NO	
5	FG	20AWG18AWG
6	ALM COM	
7	Audio in	24AWG
8	Audio out	
9	Audio GND	
10	Audio GND	
11	ISOG	

Pin	Definition	Cable
12	ALM-1	
13	ALM-3	
14	ALM-2	
15	ALM-4	
16	Reserved	
17	Reserved	
18	Reserved	
19	Reserved	
20	ALM GND	
21	VGND	20AWG
22	Video	

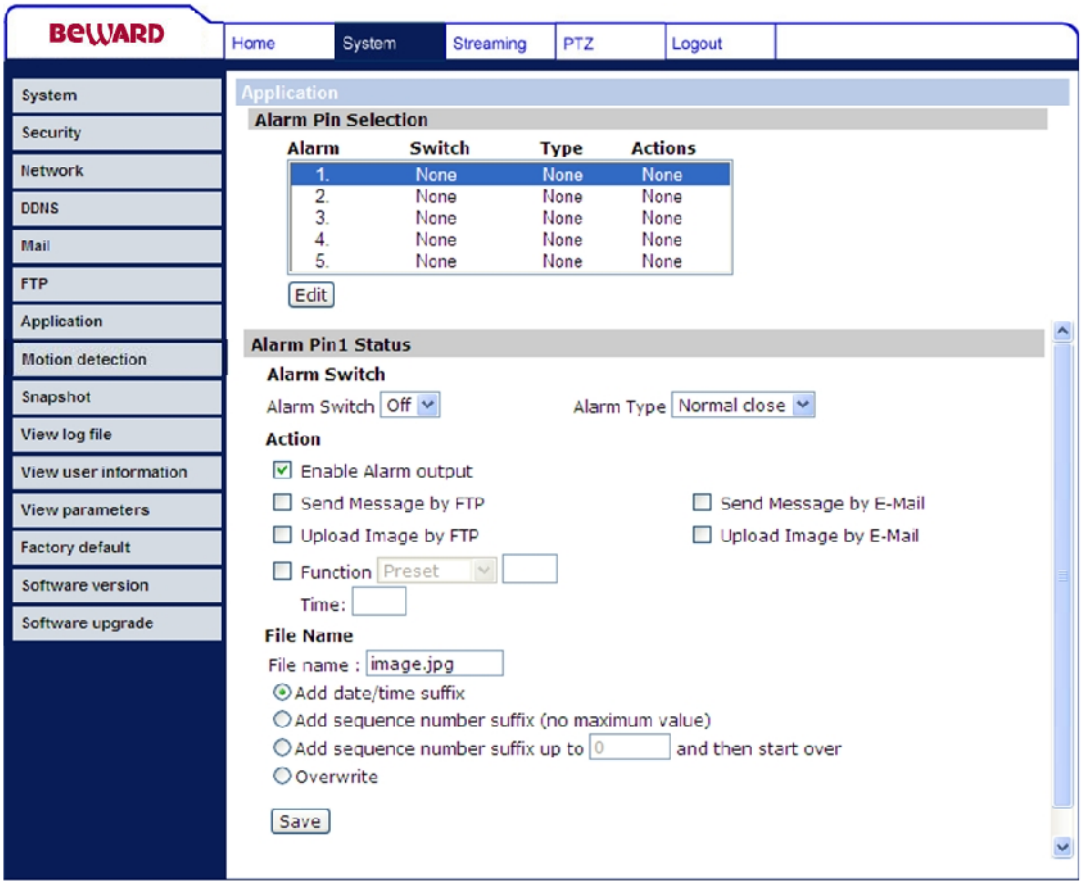


Alarm Pin Selection

Select an alarm pin which is to be configured from the “Alarm Pin Selection” field. Then press the button “Edit” below the field to carry on alarm programming.

Alarm Status Settings

The specific alarm pin's property can be programmed in this section as shown below.



Alarm Switch

- **Alarm Switch**

  The Administrator can enable or disable the alarm function.

- **Alarm Type**

  Select an alarm type, "Normal close" or "Normal open," that corresponds with the alarm application.

Alarm 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**

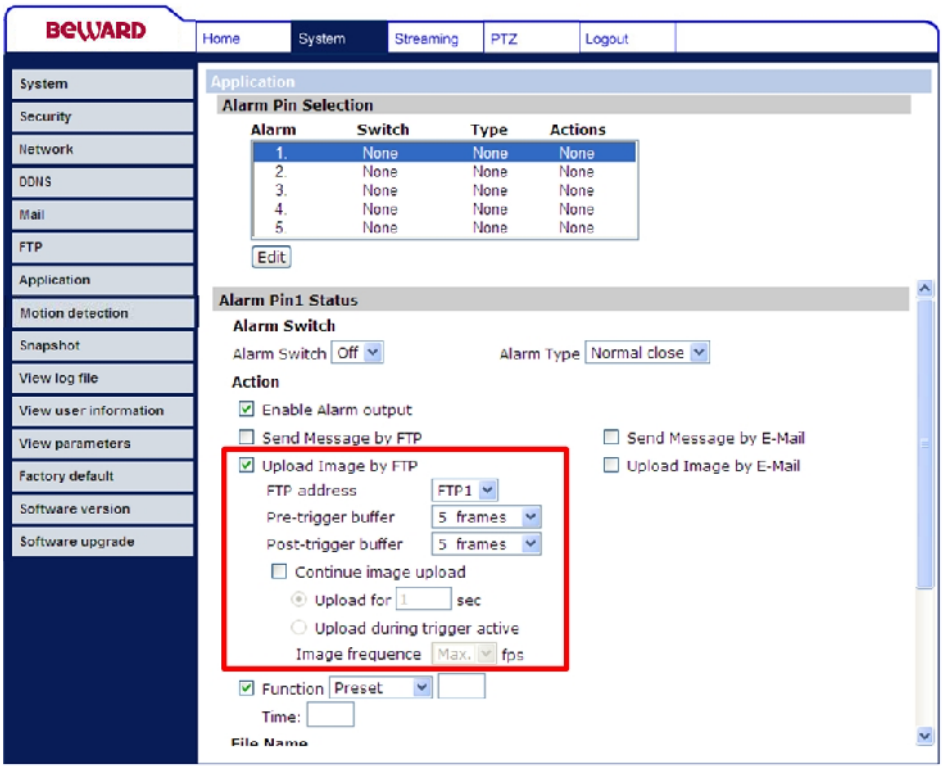
  Select this option to activate the alarm output.

- **Send Message by FTP/E-Mail**

  The Administrator can select whether to send an alarm message by FTP and/or E-Mail when this specific alarm is detected.

- **Upload Image by FTP**

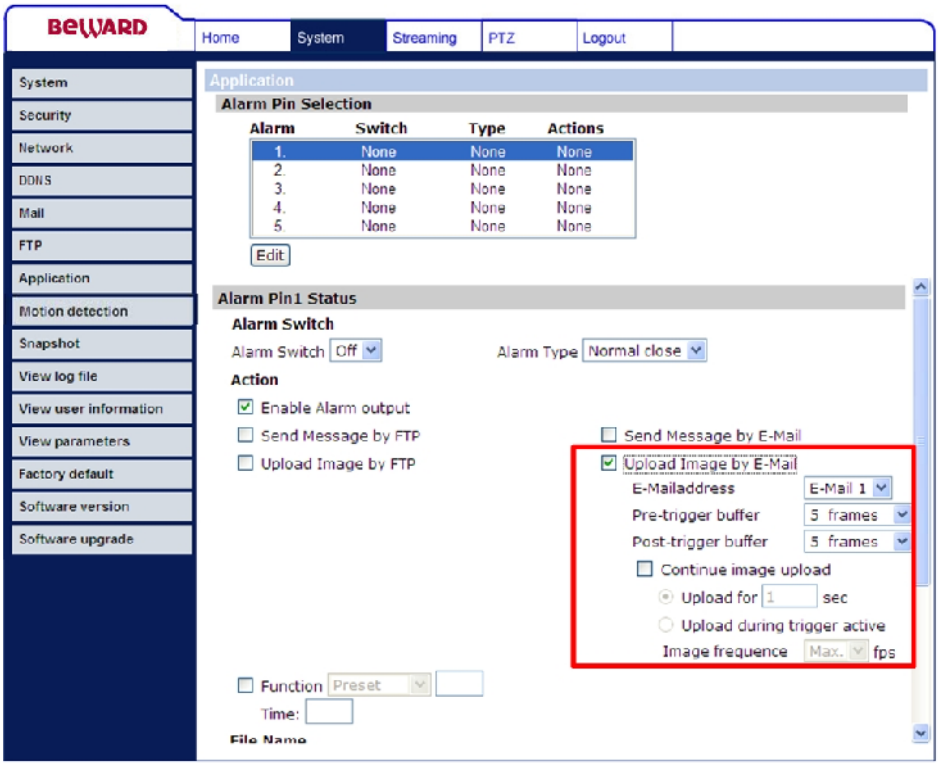
  Select this item, and the Administrator can assign a FTP site and configure various parameters as shown in the figure below. When the alarm is triggered, event images will be uploaded to the appointed FTP site.



- **Upload Image by E-Mail**

  Select this item, and the Administrator can assign an e-mail address and configure various parameters as shown in the figure below. When the alarm is triggered, event images will be sent to the appointed e-mail

address.



NOTE: Make sure SMTP or FTP configuration has been completed. Please refer to section 4.3.5 Mail and 4.3.6 FTP for further details.

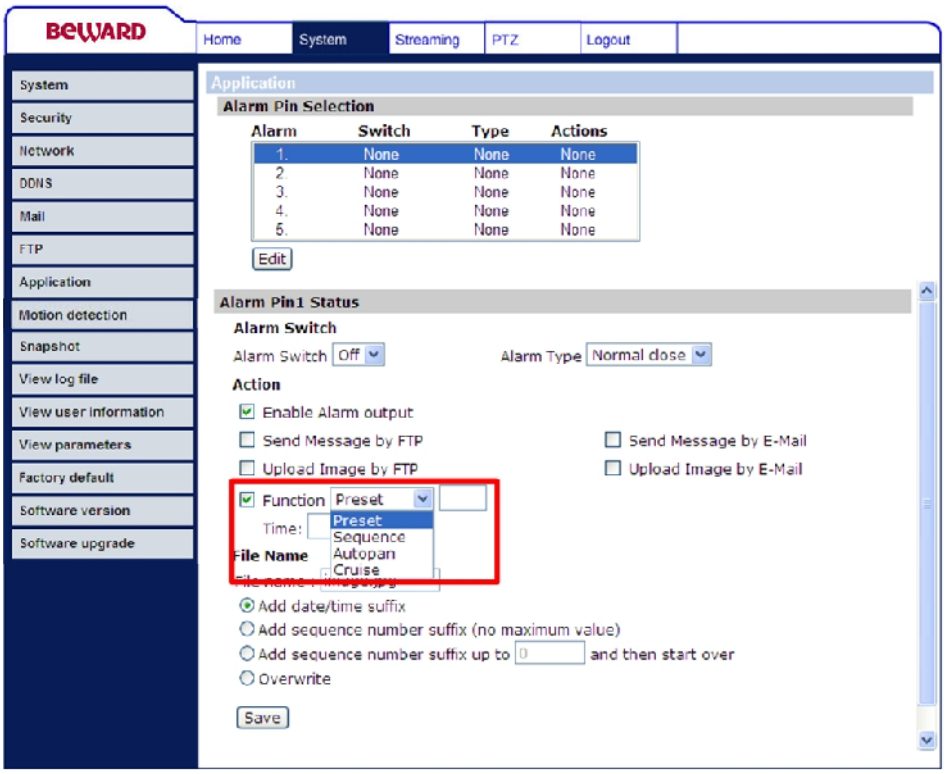
- **Function**

  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 4.5.1 Preset Programming to 4.5.4 Sequence Line Programming for details of Preset Point / Sequence Line / Autopan Path / Cruise Line setups.

  If the selected function is “Preset,” it is required to enter its dwell time (1 ~ 256 sec.) in the corresponding field as shown below. When the alarm is triggered, the camera will go to the selected Preset Point and stay there for a user-defined period of time. As for other function modes, the

camera will keep executing the specified function; to stop the performance, simply change the camera's status.



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

File Name

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

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

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

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

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

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

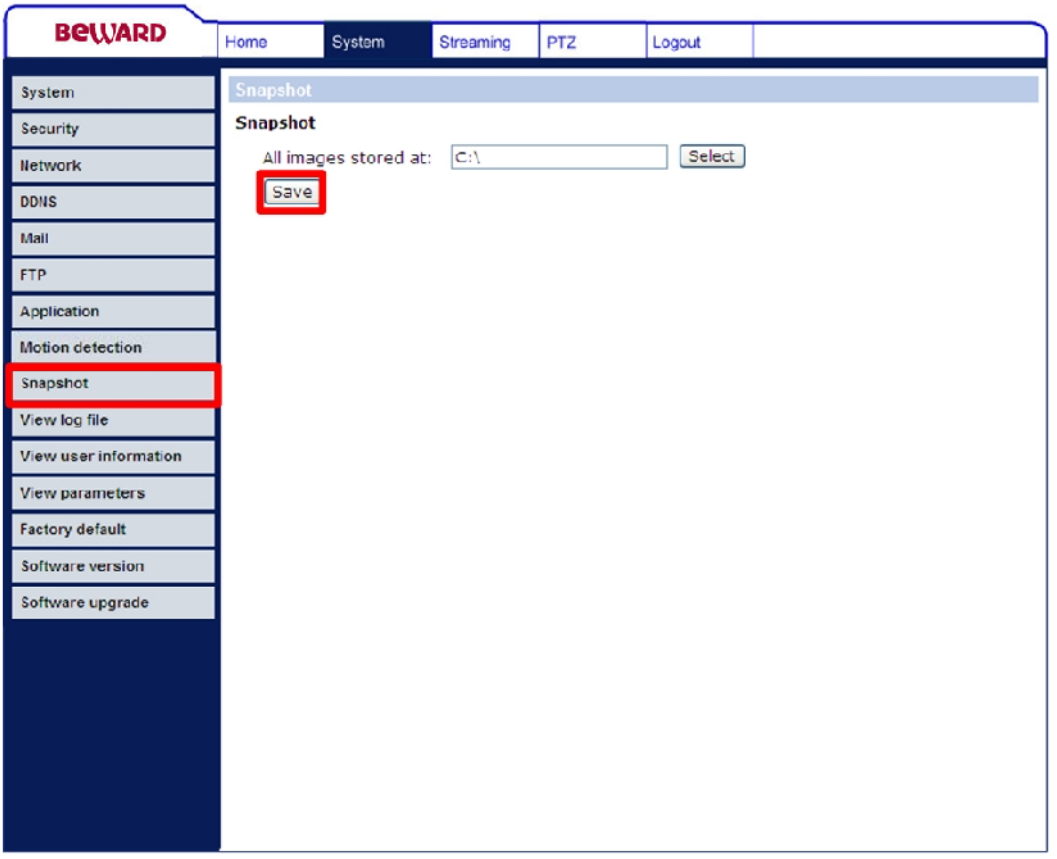
Save

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

4.3.8 Snapshot

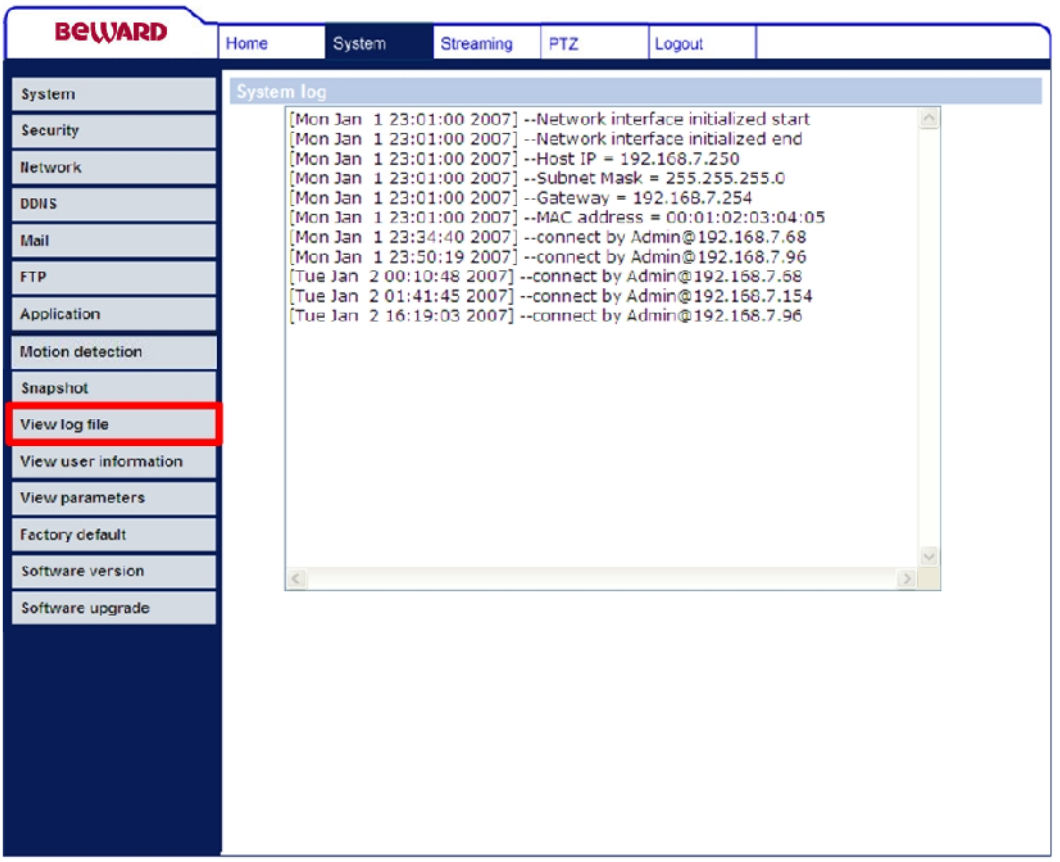
The network Speed Dome Camera supports JPEG snapshot function. Users can specify a storage location for the snapshots. The default setting is: C:\. Once confirm the setting, press “Save,” and all the snapshots will be saved in the designate location.

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



4.3.9 View Log File

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



4.3.10 View User Information

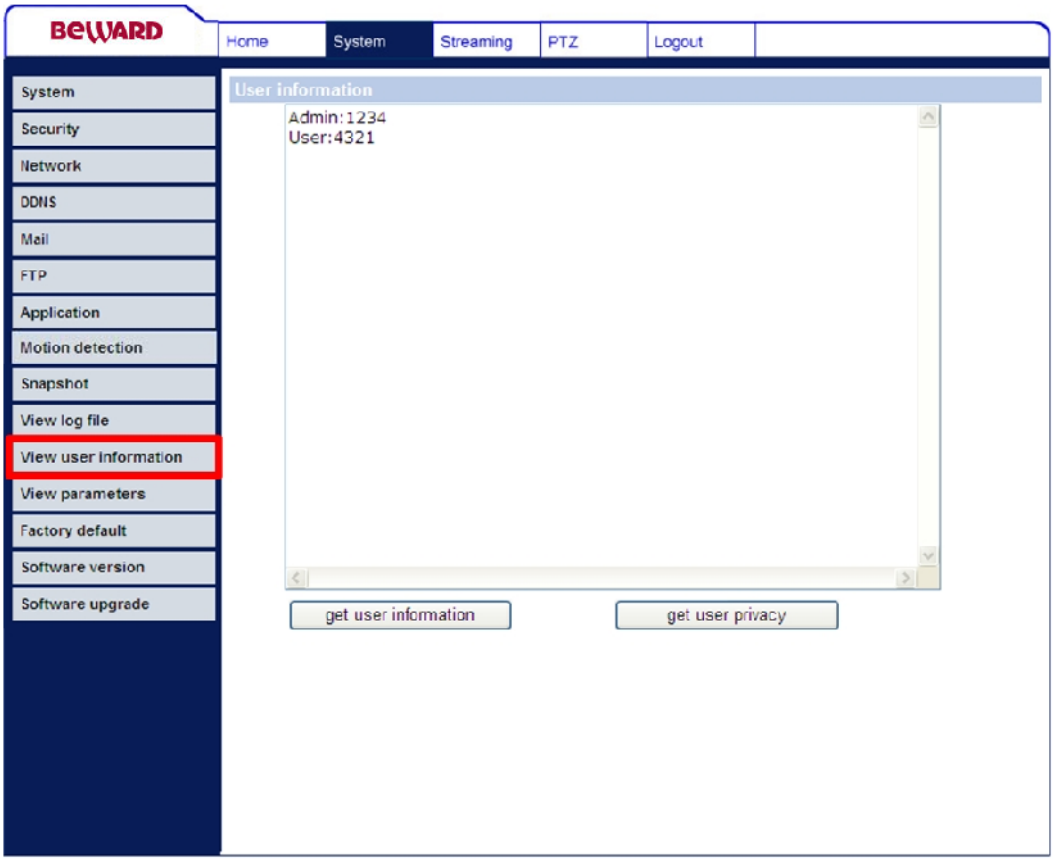
The Administrator can view each added user's login information and privileges (see 4.3.2 Security).

View User Login Information

All the users in the network will be listed in the "User information" zone, as shown below. As the figure below shows:

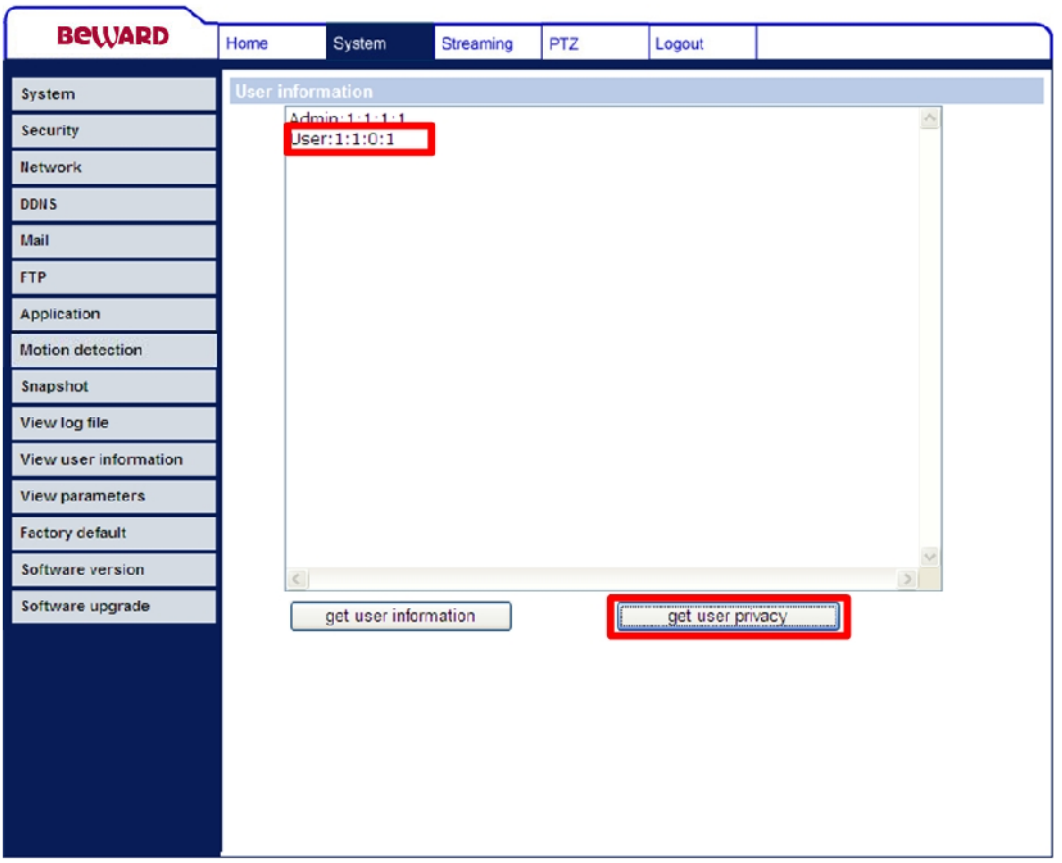
User: 4321

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



View User Privilege

Press "get user privacy" down the page, and the Administrator can view each user's privileges.



As the figure above shows:

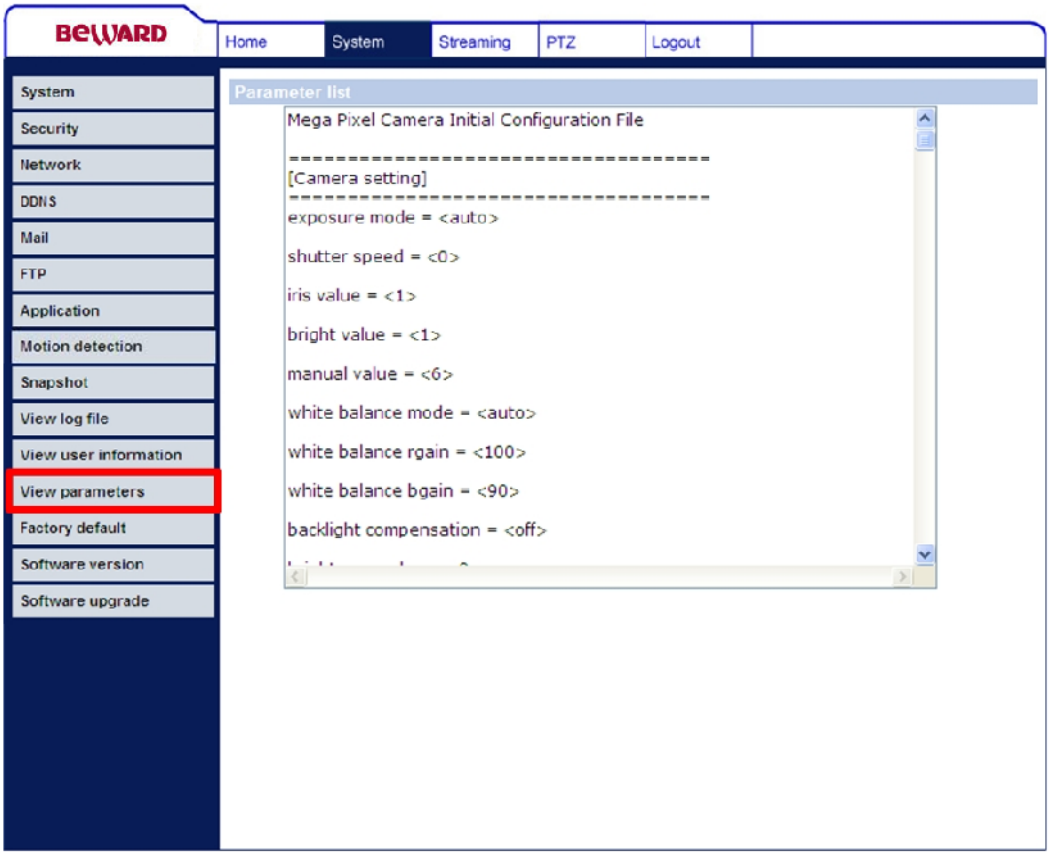
User: 1:1:0:1

1:1:0:1= I/O access : Camera control : Talk : Listen (see 4.3.2 Security)

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

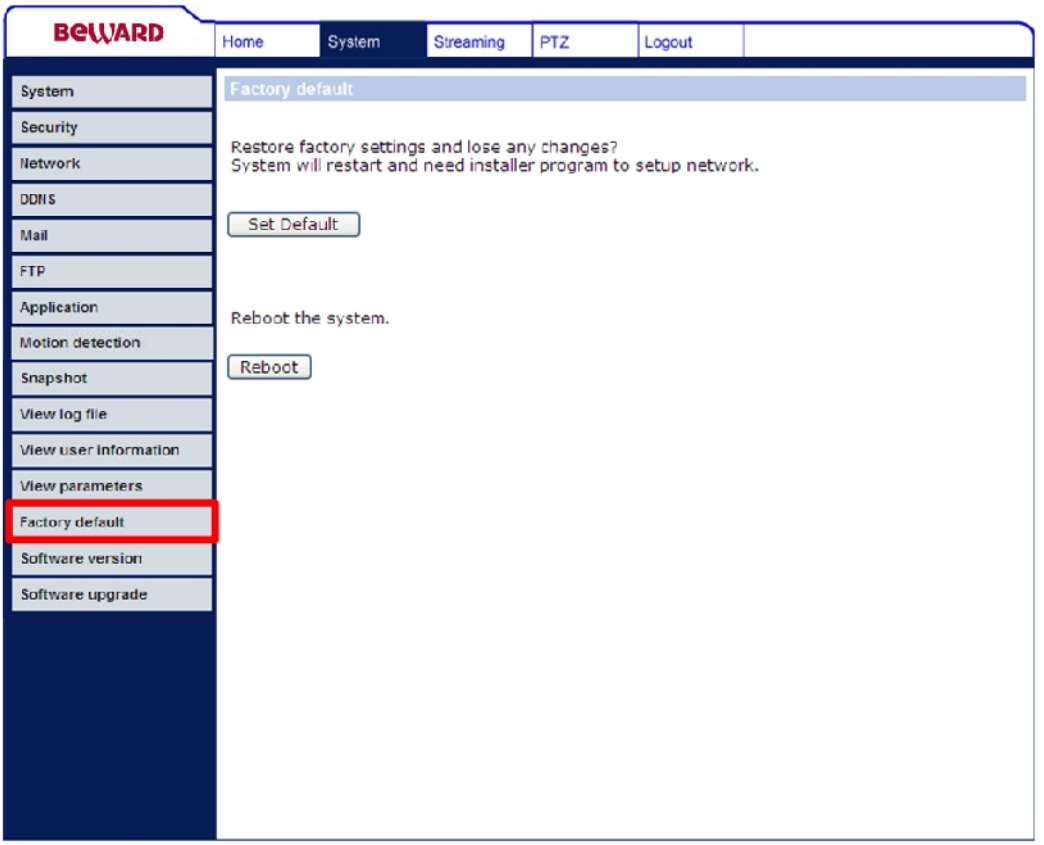
4.3.11 View Parameters

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



4.3.12 Factory Default

The factory default setting page is shown as below. Follow the instructions to reset the network Speed Dome Camera to factory default settings if needed.



Set Default

Click on the “Set Default” button to recall the factory default settings. Then the system will restart in 30 seconds.

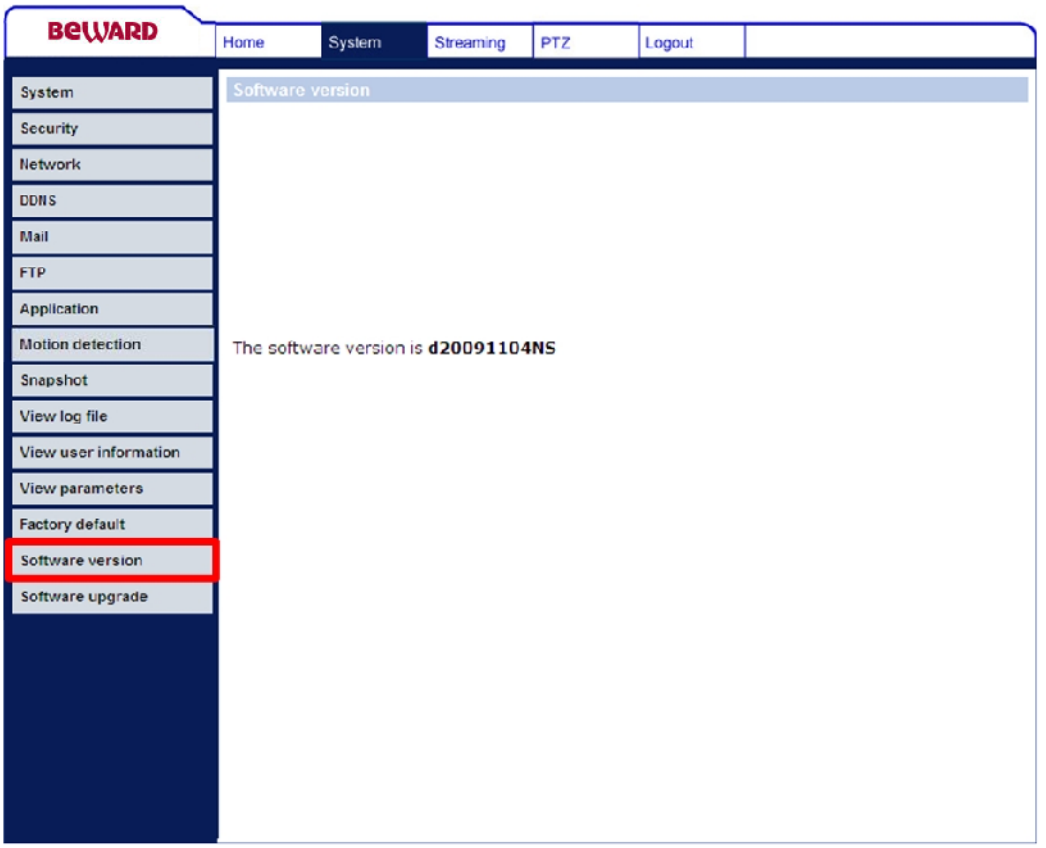
NOTE: The IP address will be restored to default.

Reboot

Click on the “Reboot” button, and the system will restart without changing current settings.

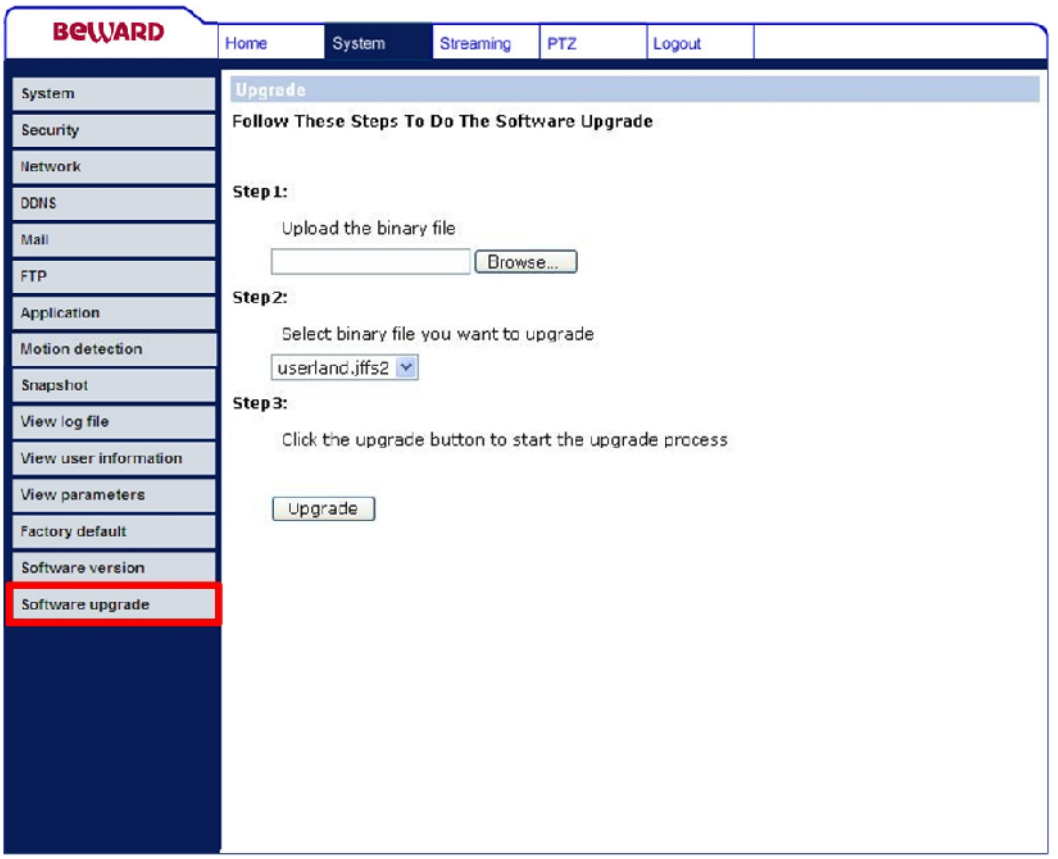
4.3.13 Software Version

The current software version is displayed in the software version page, which is shown as the figure below.



4.3.14 Software Upgrade

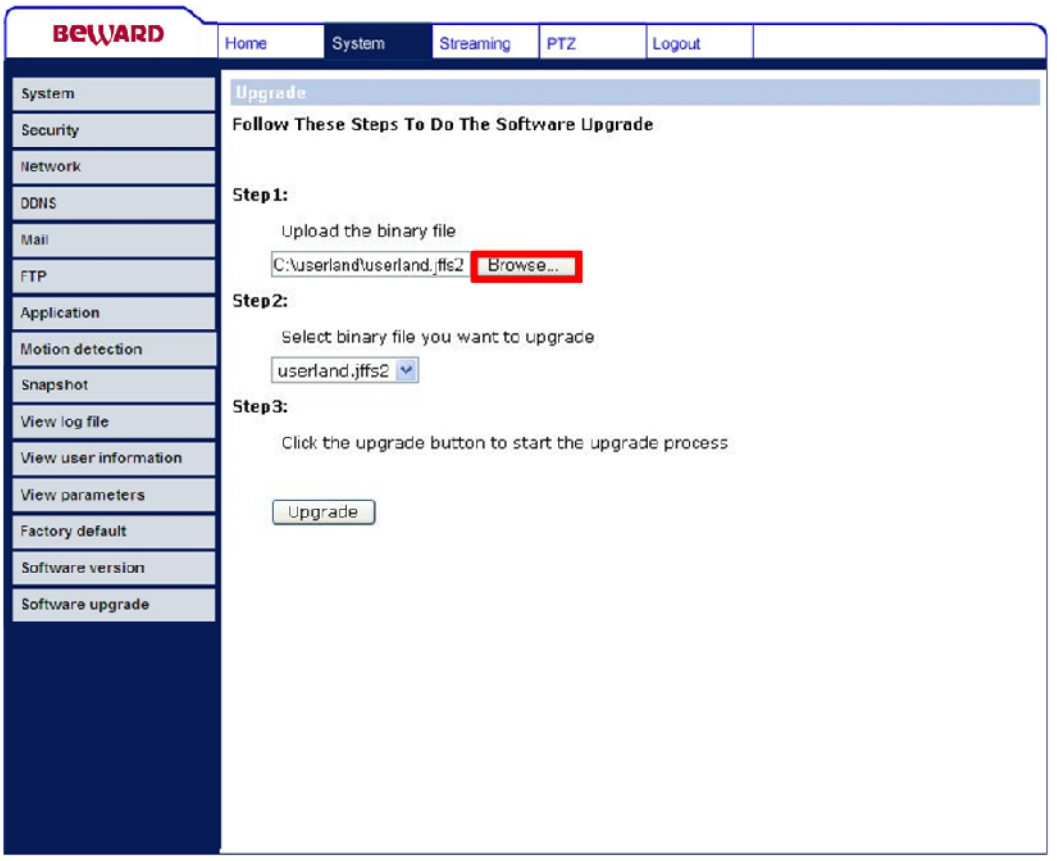
Software upgrade can be carried out in the “Software Upgrade” page, as shown below.



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

The procedure of software upgrade is like the following:

Step 1: Click “Browse” and select the binary file to be uploaded, ex. userland.jffs2.



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

Step 2: Pull down the upgrade binary file list and select the file you want to upgrade; in this case, select “userland.jffs2.”

Step 3: Press “Upgrade”. The system will first check whether the upgrade file exists or not, and then begin to upload the upgrade file. Subsequently, the upgrade status bar will display on the page. When it runs to 100%, the upgrade process is finished.

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

Step 4: Close the video browser.

Step 5: Click “Control Panel”, and then double click “Add or Remove Programs.” In the “Currently install programs” list, select “DCViewer” and click the button “Remove” to uninstall the existing DC Viewer.

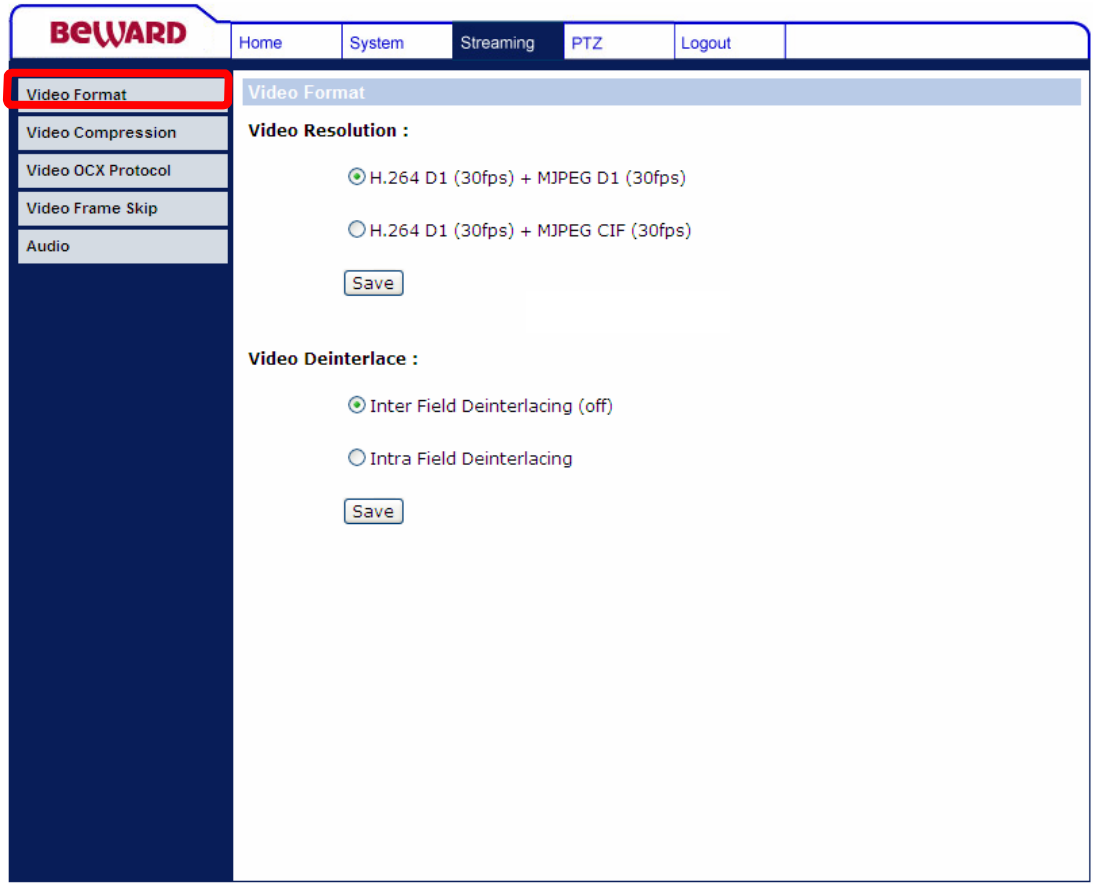
Step 6: Open a new web browser, re-login the IP Camera, and then allow the automatic download of DC Viewer.

4.4 Video and Audio Streaming Settings

Press the tab ”Streaming” in the top of the viewer window, and the configurable video and audio items will display in the left column. Configuration under the “Streaming” category include video resolution, video compression mode, video protocol, audio transmission mode, etc. Further details of these settings will be specified in the following sections.

4.4.1 Video Resolution and Video Deinterlacing Function

On the Video Format page, users can set video resolution and activate intra field de-interlacing function.



Video Resolution

The network Speed Dome Camera provides two sets of video dual streaming formats like the following:

- H.264 D1 (30fps) + MJPEG D1 (30fps)
- H.264 D1 (30fps) + MJPEG CIF (30fps)

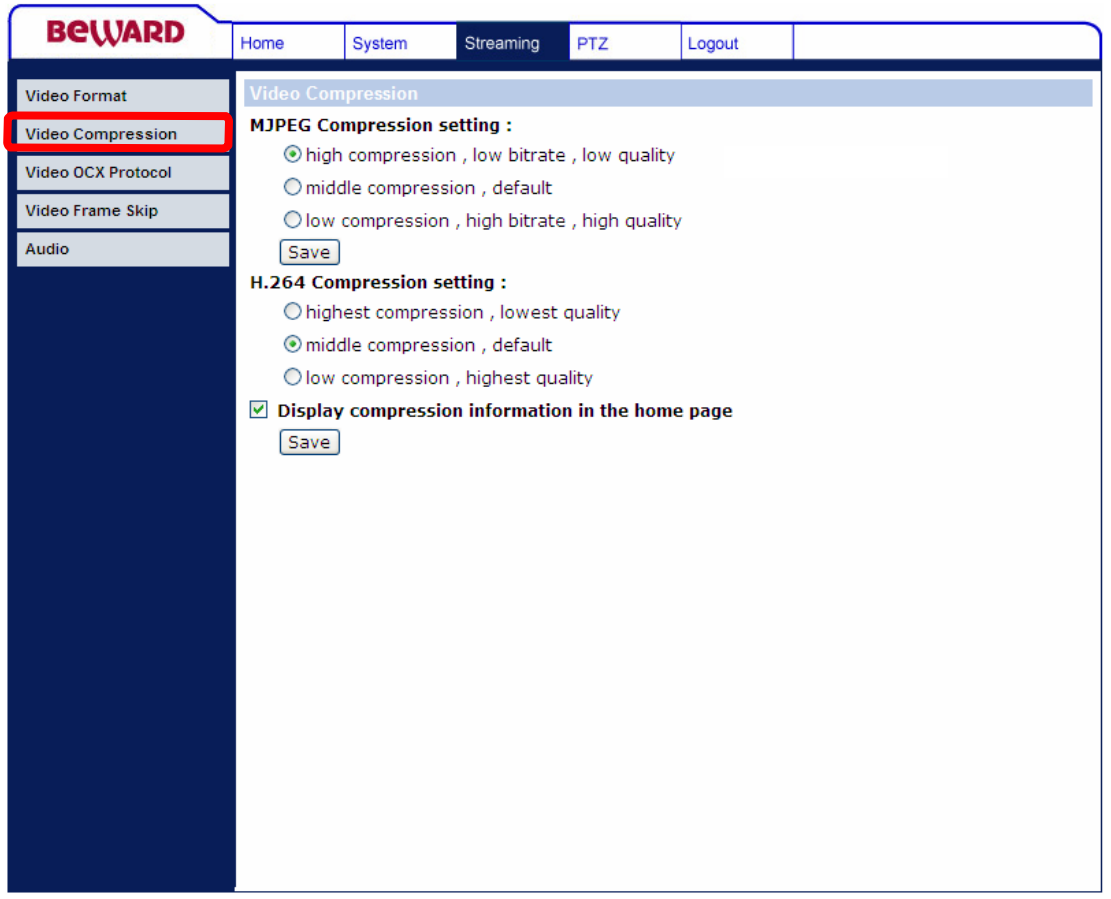
Video Deinterlace

The network Speed Dome Camera supports de-interlacing function. Users can either choose to activate de-interlacing function or disable the function by selecting a mode from the list as shown below:

- Inter Field Deinterlacing (off)
- Intra Field Deinterlacing

4.4.2 Video Compression

Users can select a proper MJPEG/H.264 compression mode on the video compression page (see the figure below), depending on the application.



MJPEG compression settings include:

- high compression, low bitrate, low quality
- middle compression, default
- low compression, high bitrate, high quality

H.264 compression settings include:

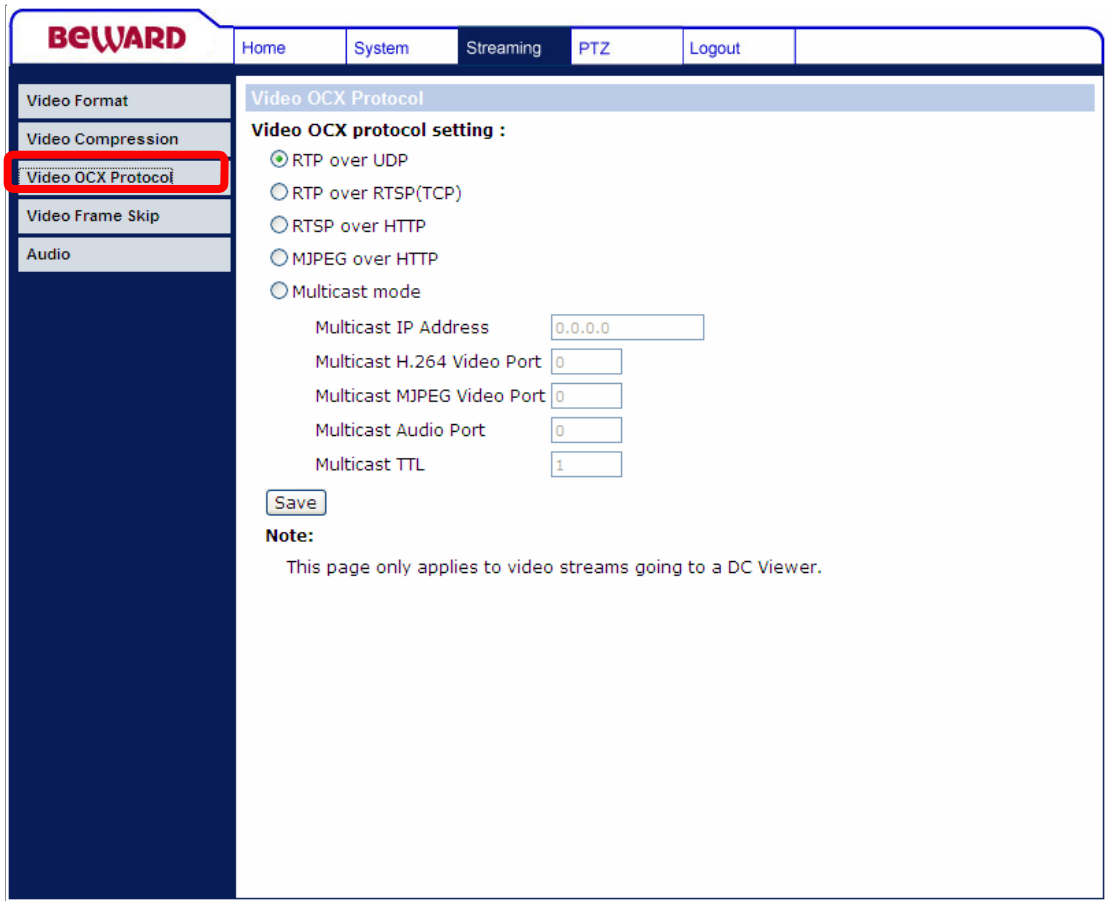
- highest compression , lowest quality
- middle compression, default
- low compression , highest quality

Users can also choose whether to display compression information in Home page.

Click “Save” to confirm the setting.

4.4.3 Video OCX Protocol

In the Video OCX protocol setting page, users can select RTP protocol using UDP or TCP transport, for streaming media over the network. In the case of multicast networking, users can select the Multicast mode. The page is shown as follows.



Video OCX protocol setting options include:

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

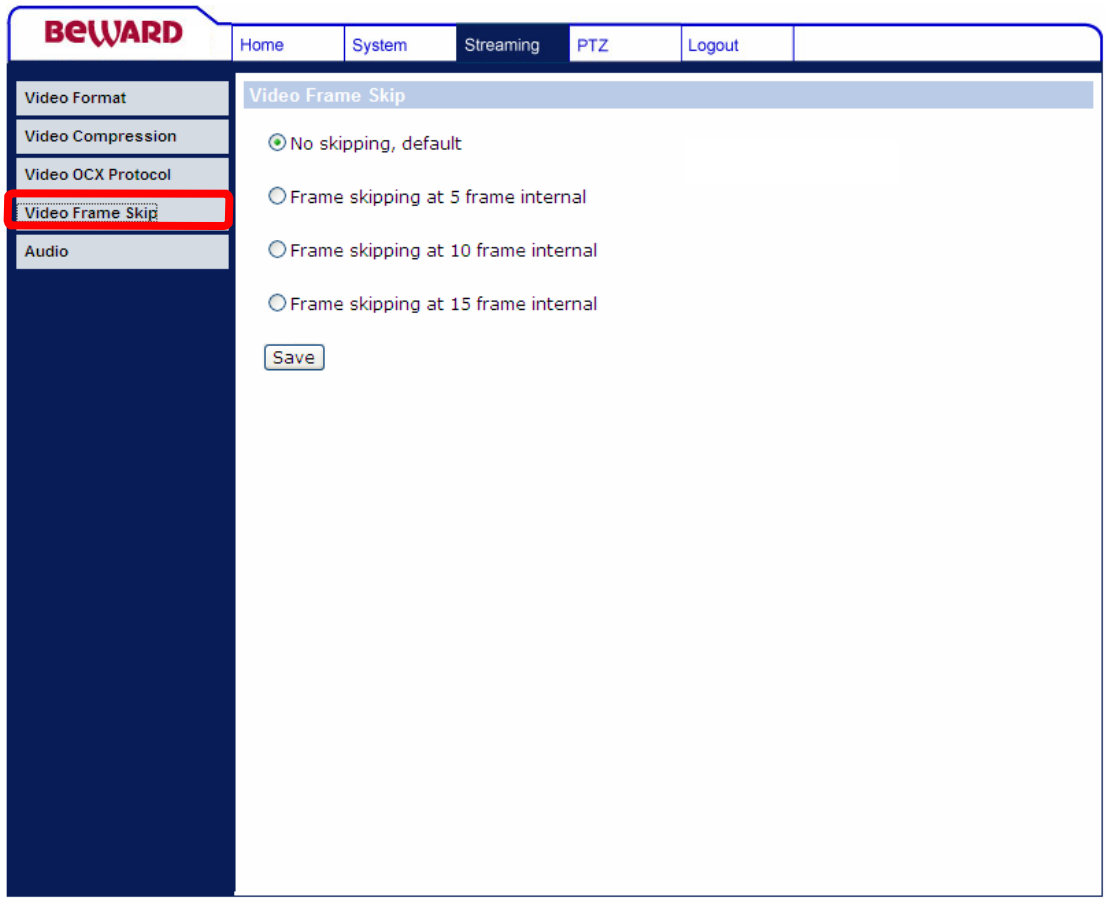
Select a mode according to your data delivery requirements.

- Multicast Mode
  Enter all required data, including multicast IP address, H.264 video port, MJPEG video port, audio port and TTL into each blank.

Click “Save” to confirm the setting.

4.4.4 Video Frame Skip

Video frame skipping is for saving bandwidth, if necessary. The setting page is as shown below.



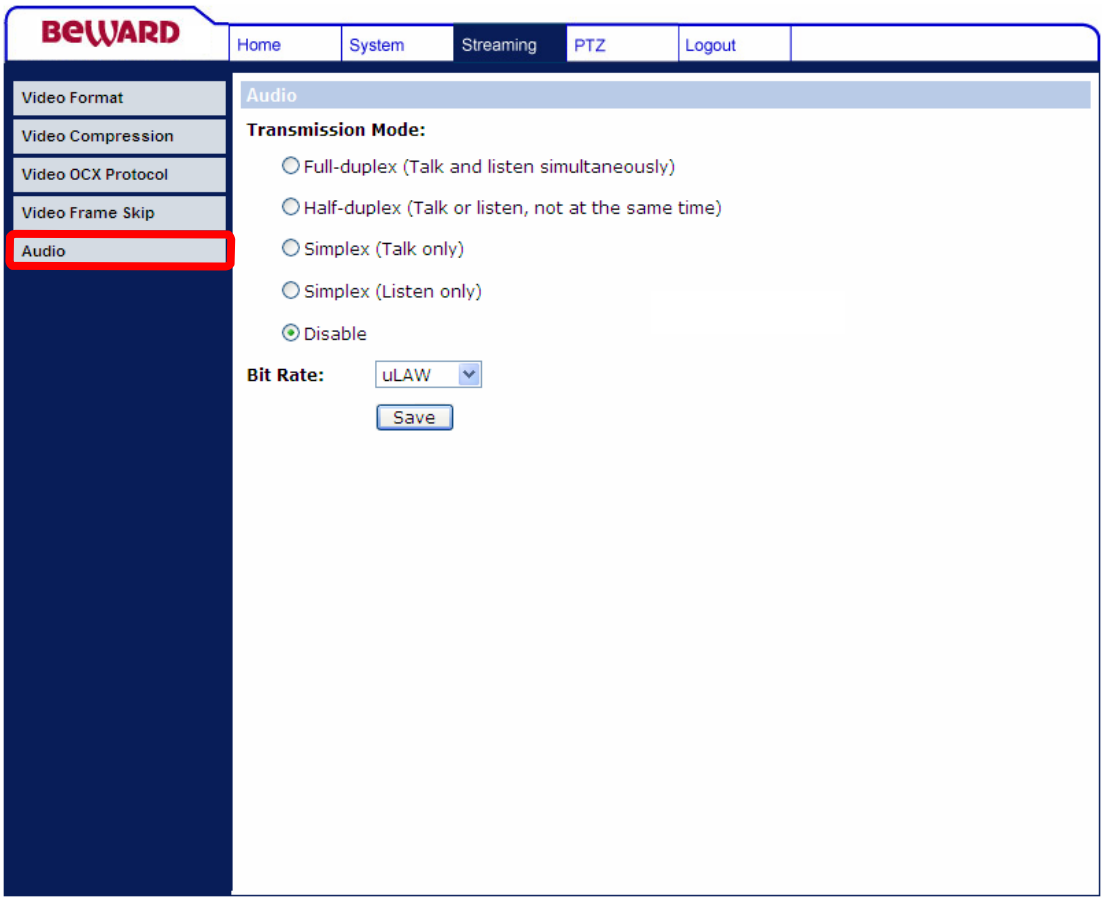
MJPEG/MPEG-4 Frame Skip options include:

- No skipping, default
- Frame skipping at 5 frame internal (lowest frame loss rate)
- Frame skipping at 10 frame internal
- Frame skipping at 15 frame internal (highest frame loss rate)

NOTE: Higher frame skipping rate will decrease video smoothness.

4.4.5 Audio Mode and Bit Rate Settings

The audio setting page is show as below. In the Audio page, the Administrator can select one transmission mode and audio bit rate.



Transmission Mode

- **Full-duplex (Talk and Listen simultaneously)**
  In the Full-duplex mode, the local and remote sites can communicate with each other simultaneously, i.e. both sites can speak and be heard at the same time.

- **Half-duplex (Talk or Listen, not at the same time)**
  In the Half-duplex mode, the local/remote site can only talk or listen to the other site at a time.

- **Simplex (Talk only)**
  In the Talk only Simplex mode, the local/remote site can only talk to the other site.

- **Simplex (Listen only)**
  In the Listen only Simplex mode, the local/remote site can only listen to the other site.

- **Disable**
  Select the item to turn off the audio transmission function.

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 “Save” to confirm the setting.

4.5 PTZ Settings

Under the “PTZ” category, users are allowed to program Preset Point(s), Cruise Line(s), Auto Pan Path(s) and Sequence Line(s) via PTZ controls. Additionally, various camera settings including Auto Exposure (AE), White Balance (WB), Back Light Compensation (BLC), Sharpness, Exposure Compensation, Digital Zoom, etc. also can be set here.

Details of each camera related settings are described in the following sub-sections.

4.5.1 Preset Programming

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

Preset Setting

To setup a Preset Point, please first move the cursor to the live view pane. Then left click and drag the red pointer with PTZ controls to a desired position. Subsequently, assign a number for the current position from the drop-down

Number List, and enter its descriptive name. Press the button “Set” to save the settings mentioned above.

Preset Go

To have the camera move to a specified Preset position, please select the Preset Point from the drop-down Presetlist. Then the camera shall readily move to the target position.

4.5.2 Cruise Programming

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

Cruise Setting

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

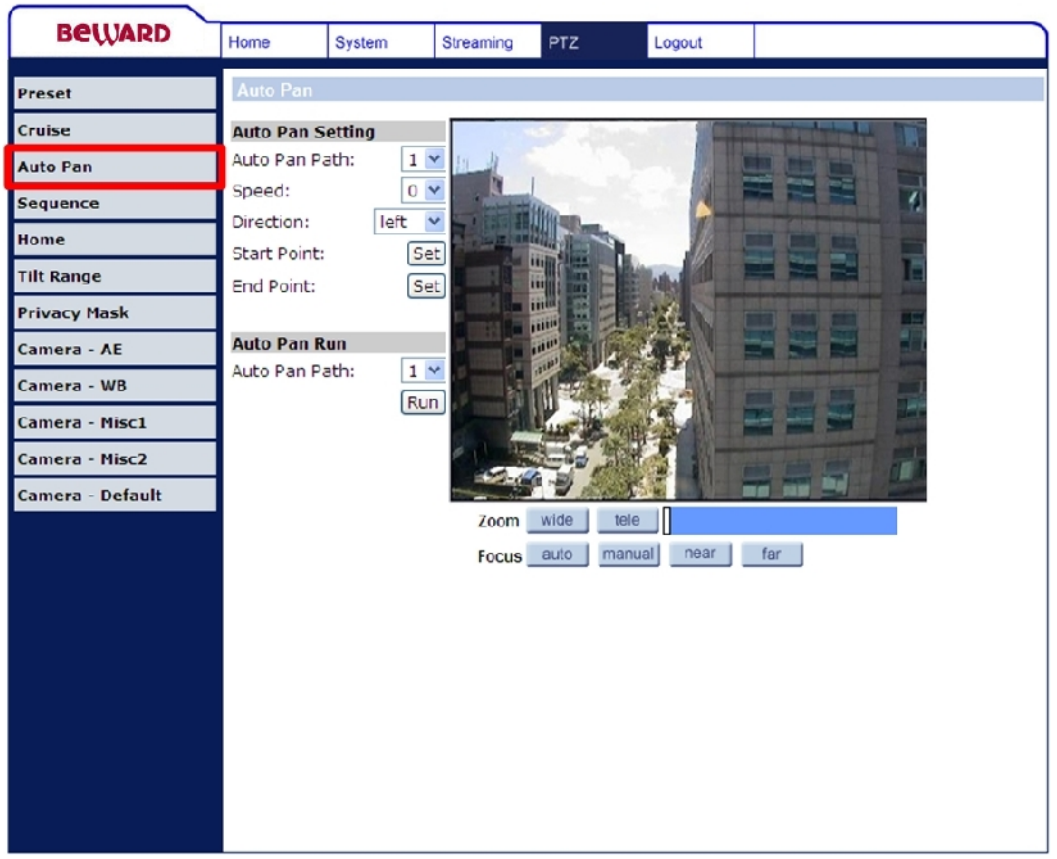
Cruise Run

Select the specified Cruise Path from the drop-down list, press the “Run” button, and then the camera will start touring around as recorded.

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

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

4.5.3 Auto Pan Programming



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

Auto Pan Setting

To setup an Auto Pan Path, please 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 as the Start Point of an Auto Pan Path. Click the “Set”

button of the “Start Point”, and the current view will be automatically saved as the start point of the Auto Pan Path.

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

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

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

Auto Pan Run

Select the specified Auto Pan Path from the drop-down list, press 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.

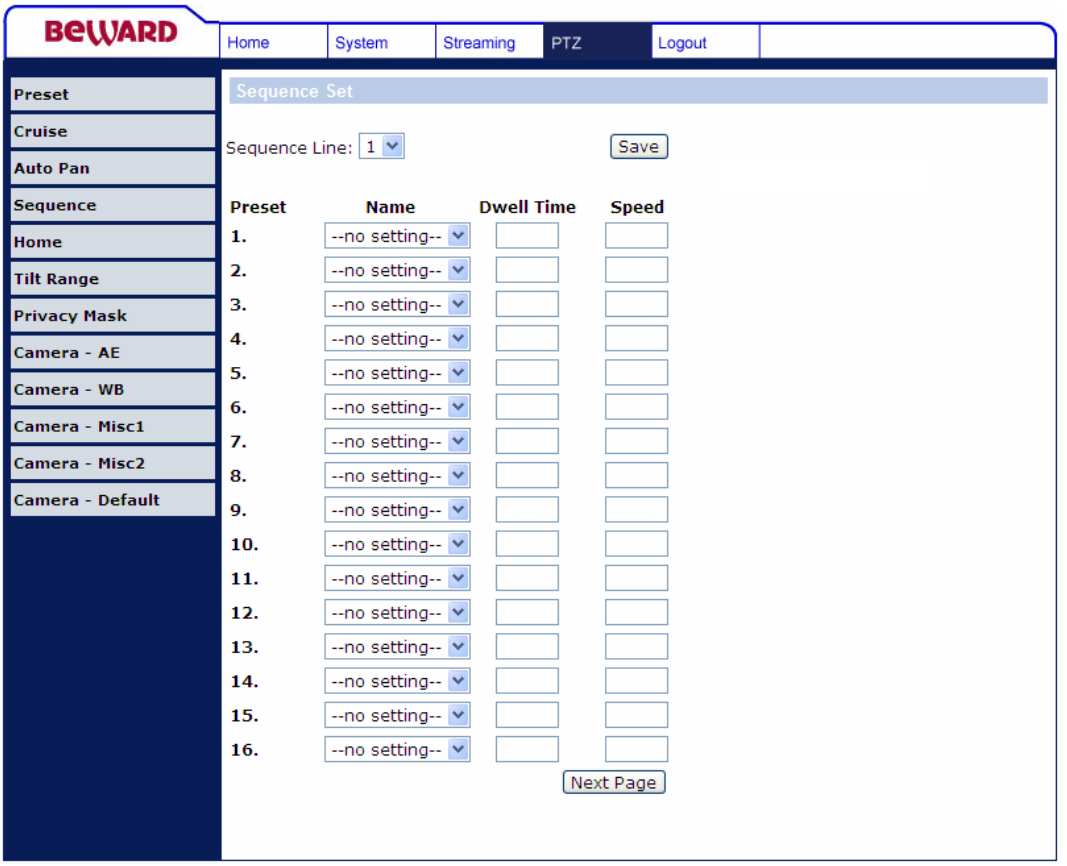
4.5.4 Sequence Line Programming

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

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

Sequence Setting

Please press the “Edit” button in “Sequence Setting” section to enter the Sequence setting menu as shown in the next page.



- **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 (0~225) and Speed (0~20) into the corresponding fields.

When finishing the sequential Preset Points setting, please click the button “Save” in the top of the Sequence setting menu.

Sequence Run

Select the specified Sequence Line from the drop-down list, press 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.

4.5.5 Home Function

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

Home Setting

- **Activate/Disable Home Function**
  Select “On” or “Off” to activate or disable the Home function. Then press the “Set” button to save the setting.

- **Time**

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

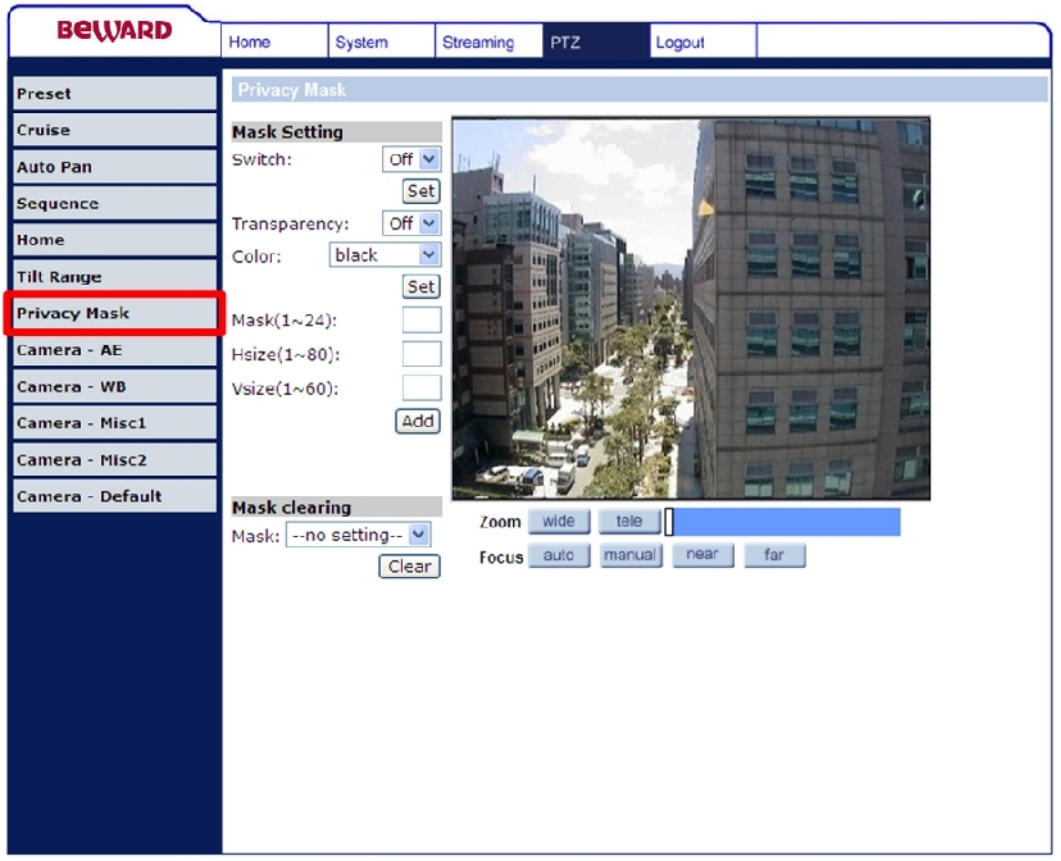
- **Action Type**

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

4.5.6 Tilt Angle Settings

The network Speed Dome Camera’s tilt angle is adjustable from minimum -10° to maximum 100°. Please enter the desired min. and max. tilt angle into the corresponding fields respectively. Press the “Set” button to save the tilt angle settings.

4.5.7 Privacy Mask Settings



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

NOTE: The Image Flip function (see section 4.5.10 Camera—Miscellaneous Setups Menu 1) and the Image Inverse function (see section 4.5.11 Camera—Miscellaneous Setups Menu 2) will be disabled automatically while the Privacy Mask function is enabled.

Mask Setting

- **Activate/Disable Privacy Mask Function**
  The Privacy Mask function can be activated or disabled. Press the button “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.

  Press the button “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 ~80, while that of “Vertical Size” ranges from 1 ~60.

  After finishing the setup of a Privacy Mask, press 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 press the button “Clear”. Then the selected Privacy Mask will readily disappear.

4.5.8 Camera—AE Mode

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

Shutter Priority Mode

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

Iris Priority Mode

In this mode, it is iris that has premier priority in control of exposure. The value of iris is adjustable from 1 ~ 17.

Bright Priority Mode

The bright value ranges from 1 ~ 15.

4.5.9 Camera—WB Mode

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

In this mode, white balance works within its color temperature range and calculates the best-fit white balance.

Indoor/outdoor Mode

Select for indoor or outdoor mode.

ATW Mode (Auto Tracing White Balance)

The Dome Camera takes out the signals in a screen in the range from 2000 K to 10000 K.

Manual Mode

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

4.5.10 Camera—Miscellaneous Setups Menu 1

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

BLC

Users can choose to activate or disable the BLC function. Press 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. Press the button <Set> to confirm the setting.

ExpComp

Users can define the value of Exposure Compensation; the value ranges from 1 to 15.

Freeze

Freeze function allows to hold the image while the camera is moving between preset positions such as in Preset mode and Sequence mode. Users can choose to activate or disable the function. Press the button “Set” to save the setting.

Flip

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

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

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

- **M.E. Mode**

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

- **Image Mode**

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

  NOTE: The Privacy Mask function will be automatically disabled if the Image Flip function is enabled.

Digital Zoom

The network Speed Dome Camera can supports up to 12× Digital Zoom. Press the button “Set” to save the setting.

ICR Function

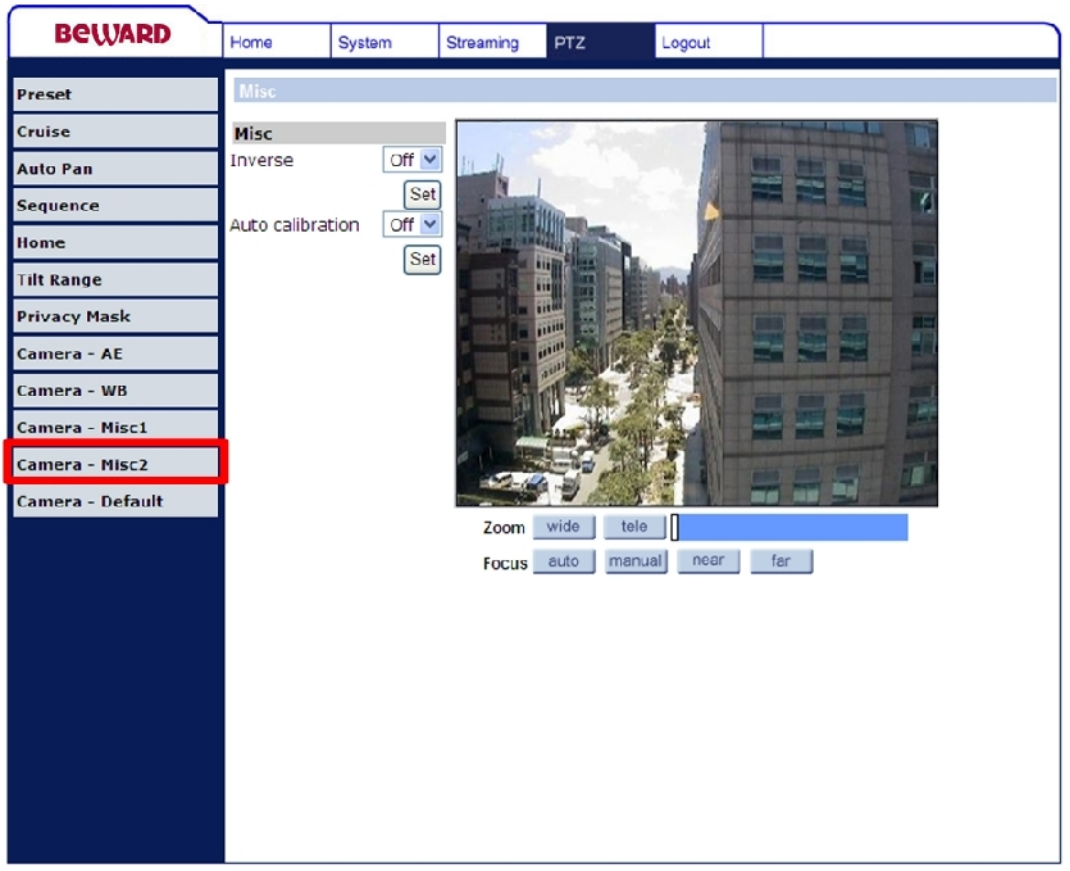
With the IR cut filter, the camera can still catch clear image at night time or in low light conditions.

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

- **On**
  Select the item to remove the IR cut filter.

- **Off**
  Select the item to disable IR function.

4.5.11 Camera—Miscellaneous Setups Menu 2



In the Camera—Misc (Miscellaneous) Setups Menu 2, users can setup various functions such Image Inverse, Auto Calibration, Wide Dynamic Range (WDR; optional), Image Stabilizer (optional) and 2D/3D Noise Reduction (2DNR/3DNR; optional).

Inverse

When the Image Inverse function is activated, the image will be inversed vertically and horizontally. Press the button “Set” to save the setting.

Auto Calibration

With the Auto Calibration function, the network Speed Dome Camera calibrates when the deviation of dome pivot is detected. Press the button “Set” when finishing setting.

WDR

The WDR function is especially effective in environment with extreme contrast. Press the button “Set” when finishing the setting.

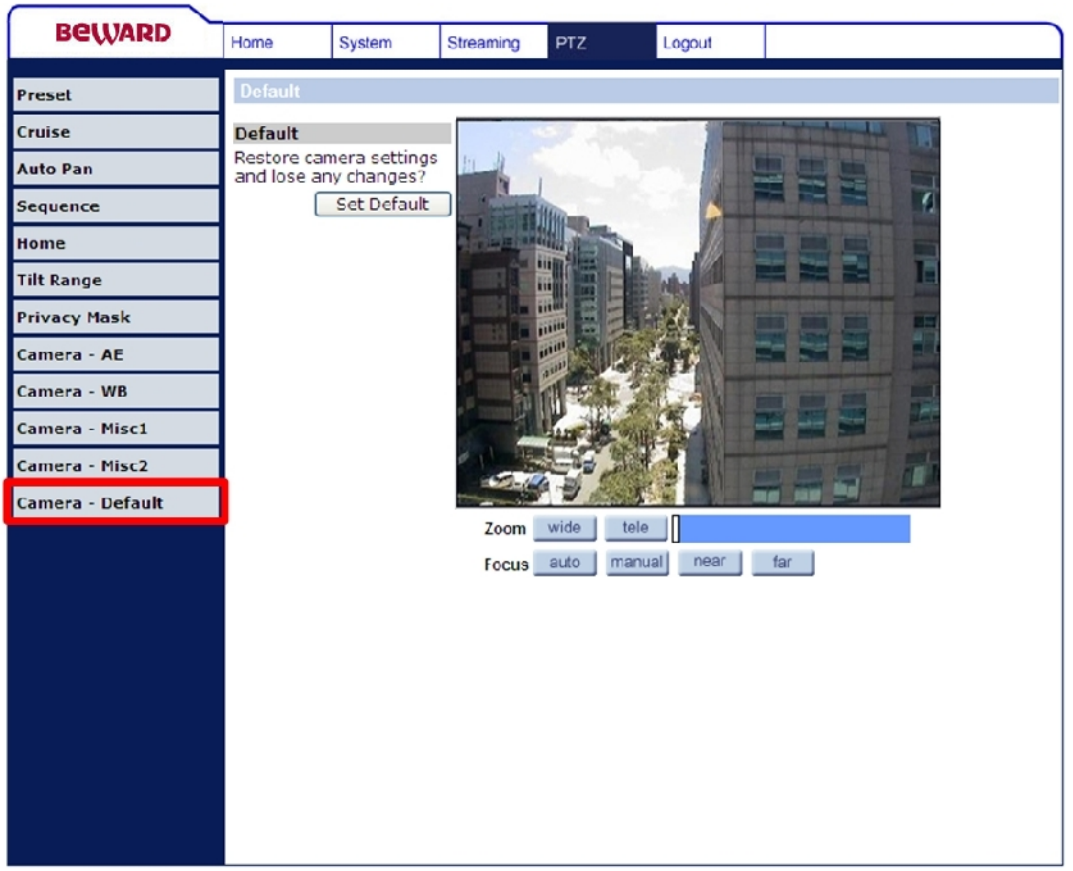
Stabilizer

With the Image Stabilizer Function, the network Speed Dome Camera can capture images that would otherwise be blurred due to the vibration. Press the button “Set” when finishing setting.

2D/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. Press the button “Set” when finishing setting.

4.5.12 Default Settings



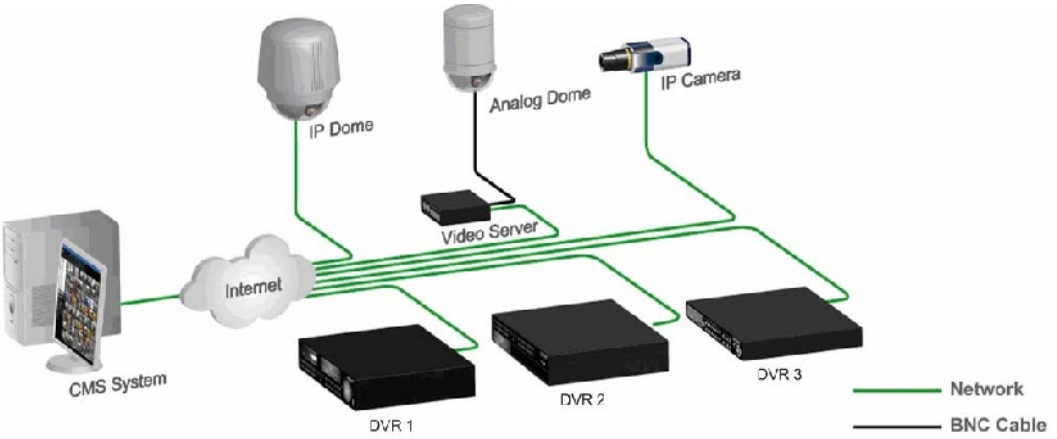
In the Camera Default page, users can set the camera back to factory default settings simply by pressing the “Set Default” button.

4.6 Logout

Press the tab “Logout” in the top of the page, and the login window will pop up. This enables login with another user name.

5. CMS Software Introduction

The IP camera bundles Central Management System (CMS) software. Offering powerful functionalities via intuitive interface, it is a centralized monitoring solution of your video surveillance equipments.

It gives the user access to monitor multiple IP cameras and Digital Video Recorders (DVRs), and allows the user to simultaneously monitor 64 sites per group (up to 10 groups) within several clicks.

For further information on CMS software, please refer to the supplied CD.