

# Dual Output SDI+IP 4K PTZ Camera

## USER MANUAL

Part Two: IP Network Camera User Manual  
(Use for BC-9/BC-7/VCC-7-4K Series)

Version: SN-IP-M-02232022

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# Bolin 4K Dual Output PTZ camera IP web interface

## User Quick Notice Guide

This Quick Guide is for Bolin 4K Dual Output PTZ camera IP web interface use. Please read it carefully before you start using your camera and follow the instruction to properly use the camera, or check it when you are having some trouble with IP video streaming and IP control.

Please contact Bolin technical support team at [www.bolintechnology.com](http://www.bolintechnology.com) if you have more questions or having trouble that is not included in this guidance.

### Note:

- **Supports Edge, Chrome, Firefox and Safari. Internet Explorer 11 browser.**
- **When using Internet Explorer 11 browser.**
  - **It will be required to download the Controls (VideoPlugin) for the first-time login when using Internet Explorer, please click the download link and follow the prompts to download and install it.**
  - **After the VideoPlugin has been installed, you may be prompted to update the VideoPlugin, please uninstall the old version of Plugin before you download and install the new version of Plugin**
- **When using Edge, Chrome, Firefox and Safari etc, non-IE browsers,**
  - **HTML5 is supported.**
  - **Video Plugin is not needed.**
  - **Some of the features are limited, like Privacy Mask, Live View page's Record, Capture, and other function icons.**
  - **Live view latency may be 1-2 seconds longer than IE browser.**

**In this User Guide, illustration drawings and screen captures are taken from BC-9 camera's IP Web Interface, other applicable cameras have the same software. This User Guide can be also used for Bolin's BC-7 and VCC-4K series PTZ cameras.**

## Login

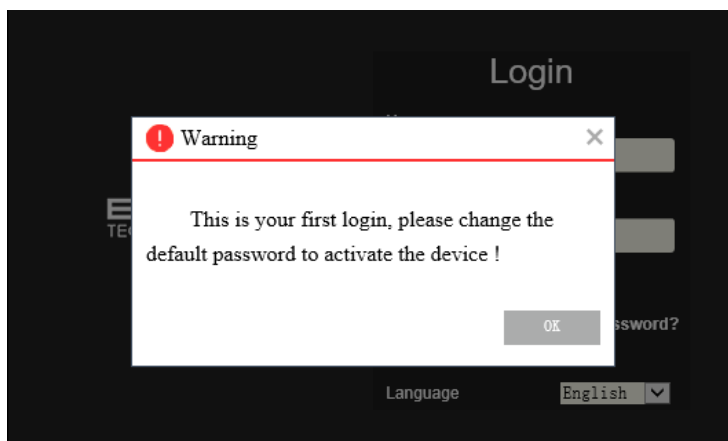
(Suitable for VCC-7-4K20S-3SMN / BC-7-4K20S-S6MN / BC-9-4K12S-S6MN / EX1030SHD-B-L5SN2AP1 / SD530SHD-B-RSN2PW)

The default static IP address of the camera is 192.168.0.13, and default subnet mask is 255.255.255.0. Please change your PC/laptop's IP address to be located within the same subnet as the camera.

The login procedure as following:

- Open the browser, running it as Administrator
- Enter the login page by typing: <http://192.168.0.13>
- By default, Username: admin, Password: admin
- The IP camera supports strong password function, it requires to change the password for the first-time login

NOTE: If the camera IP address has been modified, the login page URL should be <http://x.x.x.x> (x.x.x.x is the correct IP address of the camera)



## Hardware Decoding

(Suitable for VCC-7-4K20S-3SMN / BC-7-4K20S-S6MN / BC-9-4K12S-S6MN)

The camera supports 4K resolution on both HDMI/SDI and IP interface, so that compare to HD camera, it may consume more hardware performance of the PC/laptop when using the IP interface.

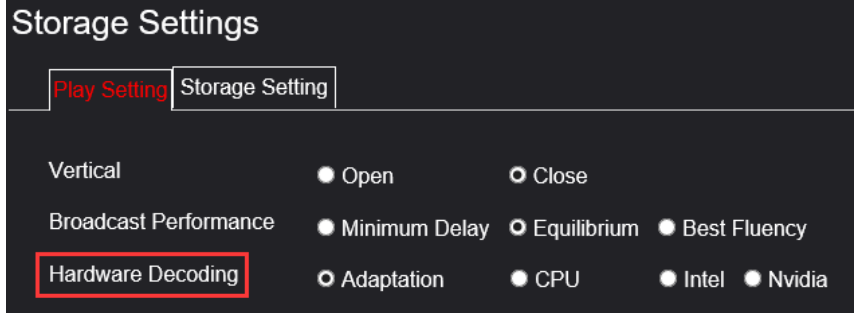
Hardware decoding supports Adaptation, CPU, Intel and Nvidia mode.

- Adaptation mode (default), a better strategy for decoding based on the PC/laptop hardware configuration will be automatically selected by system.
- CPU mode, using CPU to do decoding, it will consume a lot of CPU resources, only select it if there is no independent graphics card or the graphics card is poor.

- Intel mode, using the Intel graphics card to do decoding, select this mode if your PC/laptop graphics card is Intel.
- Nvidia mode, using Nvidia graphics card to do decoding, select this mode if your PC/laptop graphics card is Nvidia.

**NOTE:** The Default is Adaptation mode, and the decoding strategy is automatically selected by the system, if it is not satisfied, please select the actual graphics card to do decoding according to your PC/laptop hardware configuration. Or select the CPU mode if your PC/laptop without independent graphics card.

For more stable usage, the PC/laptop that equipped Intel or Nvidia independent graphics card are recommended.

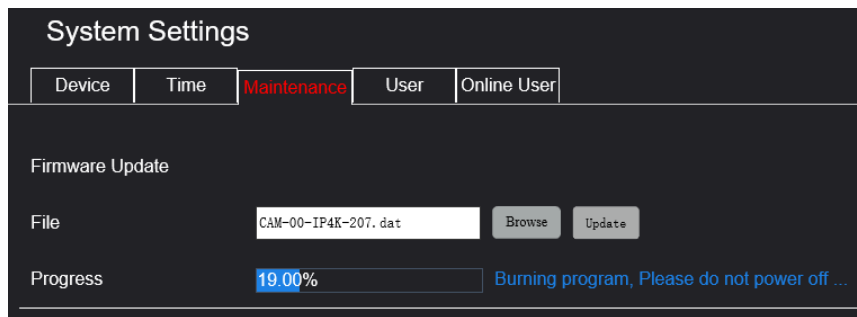
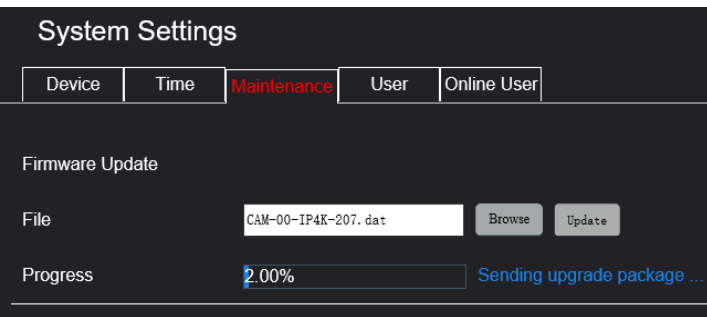


## IP Firmware Update

(Suitable for VCC-7-4K20S-3SMN / BC-7-4K20S-S6MN / BC-9-4K12S-S6MN / EX1030SHD-B-L5SN2AP1 / SD530SHD-B-RSN2PW)

The firmware update including two steps:

- The First step is to select the firmware file and upload it to the camera IP module, this step will be fast.
- The Second step is the firmware burning and updating, there will be a percentage progress bar display to indicate the burning and updating status on the page.
- the burning and updating process takes about 3 minutes, after the update is successful, the page will prompt “Upgrade is successful...”, please click OK button to reboot the camera.
- Please don’t power off or reboot the camera during the whole updating process, until the page prompt “Upgrade is successful...”



## FPGA Firmware Update

(Suitable for BC-7-4K20S-S6MN / BC-9-4K12S-S6MN)

The operations of FPGA firmware upgrade are same as IP firmware upgrade; the difference is that FPGA updating process takes more time, and after done the FPGA firmware upgrade, must power cycle the camera once manually.

## Codec Setting

(Suitable for VCC-7-4K20S-3SMN / BC-7-4K20S-S6MN / BC-9-4K12S-S6MN / EX1030SHD-B-L5SN2AP1 / SD530SHD-B-RSN2PW)

Video Compression supports H.264, H.265 and MJPG.

If video compression been selected MJPG mode, it will not support RTSP streaming features. For a better experience, it is recommended to choose the H.264 or H.265 encoding.

## IP Interface Restart

(Suitable for VCC-7-4K20S-3SMN / BC-7-4K20S-S6MN / BC-9-4K12S-S6MN)

The reboot action executed from IP interface will cause the camera go back to home position, but will not interrupt the HDMI/SDI output.

## Audio Input

(Suitable for VCC-7-4K20S-3SMN / BC-7-4K20S-S6MN / BC-9-4K12S-S6MN / EX1030SHD-B-L5SN2AP1 / SD530SHD-B-RSN2PW)

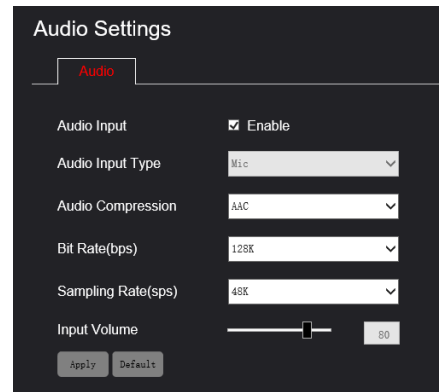
Audio Compression supports AAC, G.711a and G.711u.

Bit Rate adjustable from 32K, 48K, 96K and 128K when in AAC mode

Sampling Rate adjustable from 32K, 44.1K and 48K when in AAC mode

### NOTE:

- Bit rate is fixed as 64K and Sampling rate fixed as 8K when Audio Compression is set to G.711a and G.711u mode
- If audio compression been changed, you have to close the browser and re-login, otherwise, there will have noise of the audio output.



## IP Video Format

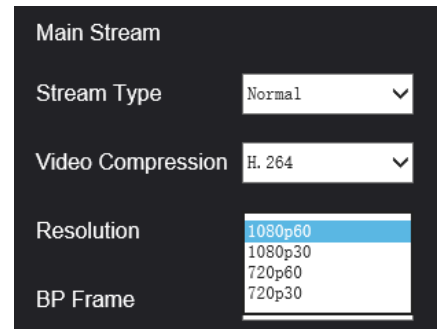
(Suitable for VCC-7-4K20S-3SMN / BC-7-4K20S-S6MN / BC-9-4K12S-S6MN / EX1030SHD-B-L5SN2AP1 / SD530SHD-B-RSN2PW)

IP video resolution and SDI/HDMI video resolution are bounded to PAL/NTSC format.

e.g. if SDI/HDMI video is set to 1080p60 resolution, then IP video can only be selected under the PAL format resolution, such as 1080p60, 1080p30, 720p60 and 720p30, etc.

At this moment, the IP video cannot be selected 1080p50, 1080p25 and 720p50, etc.

**NOTE:** According to the SDI/HDMI video resolution that has been set to, the IP resolution will only have available resolution displayed for you to select.



## Video Stream Connection

(Suitable for VCC-7-4K20S-3SMN / BC-7-4K20S-S6MN / BC-9-4K12S-S6MN / EX1030SHD-B-L5SN2AP1 / SD530SHD-B-RSN2PW)

### For RTSP:

Connection String: `rtsp://<IP address>:<RTSP port>/PSIA/Streaming/channels/0 <0 / 1>`

By default, IP address is 192.168.0.13, RTSP port is 554

Channels/0 indicates the main stream, channels/1 indicates the sub stream

To receive RTSP for main stream: `rtsp://192.168.0.13:554/PSIA/Streaming/channels/0`

To receive RTSP for sub stream: `rtsp://192.168.0.13:554/PSIA/Streaming/channels/1`

**NOTE:** \*Do not include brackets < > in connection URL strings

### For Multicast

Connection String: `udp://@<multicast IP address>:<multicast port>`

Multicast IP address and port can be configured on camera IP web interface>Network>Multicast page

For example, if set multicast IP address to 224.5.6.7, set multicast port to 9000

To receive multicast stream: `udp://@224.5.6.7:9000`

**Note:** \*Do not include brackets < > in connection URL strings

User can configure multicast IP address and port for Main stream, Second stream and Third stream separately.

### For RTMP

This camera supports RTMP protocol, can push RTMP streaming to others video streaming platform, e.g. YouTube etc.

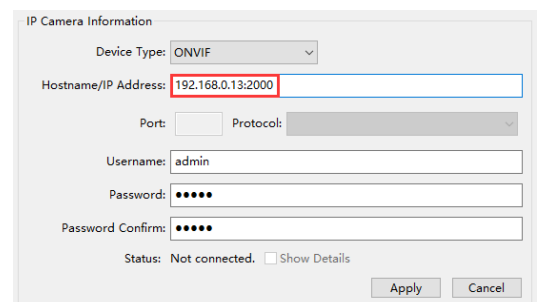
Connection String: **RTMP stream URL/key**

**NOTE:** User needs to login to the YouTube platform, get the RTMP stream URL and key, and then configure it to the RTMP setting page of the camera's IP web interface.

### For VMS Connection

When you use VMS (such as exacqVision) to connect the camera via ONVIF protocol, you must to include the port 2000 for VMS connection.

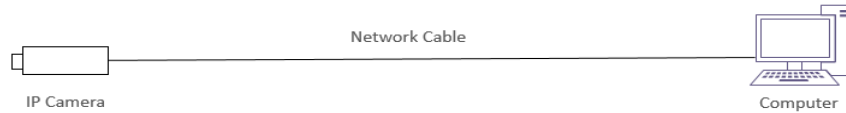
For example: if the camera IP address is 192.168.0.13, you need to enter 192.168.0.13:2000 on VMS configuration menu.



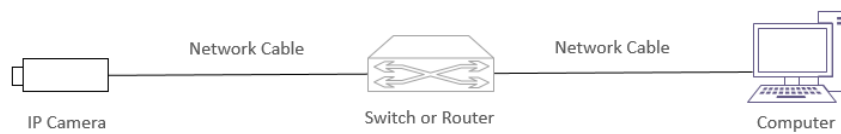
# Part Two: Network Camera User Manual

## Network Connection

Before accessing a network camera (also known as IP Camera or IPC) from a PC, you need to connect the network camera to the PC directly with a network cable or via a switch or router.



Use a Shielded Twisted Pair (STP) cable to connect the network interfaces of the network camera and the PC.



Use Shielded Twisted Pair (STP) cables to connect the network interfaces of the camera and the switch or router.

## Login Preparation

After you have completed the installation in accordance with the quick guide, connect the camera to power to boot it. After the camera is booted, you can access the camera from a PC client using or a Video Management System (VMS).

Browser Edge, Chrome, Firefox and Safari, Internet Explorer 11 browser is supported

The following uses Internet Explorer 11 on a Microsoft Windows 10 operating system as an example.

## Check before login

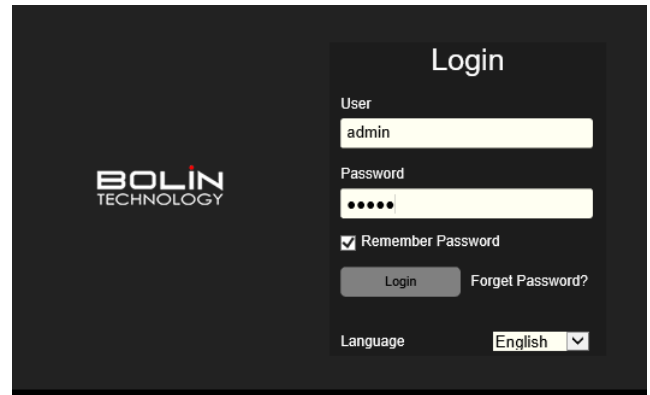
- The camera is powered on and connected to the network switch
- The camera's IP address is located within the same subnet as the PC
- The PC is connected to the network switch
- The PC's IP address is located within the same subnet as the camera
- The PC is installed with Browser (Edge, Chrome, Firefox, Safari and Internet Explorer 11)
- Use default video format setting or set the camera video format to 1080P30 or 1080P25 using RS485 keyboard (Refer to camera setting menu).

# Logging in to the Web Interface

The default static IP address of the camera is 192.168.0.13, and the default subnet mask is 255.255.255.0

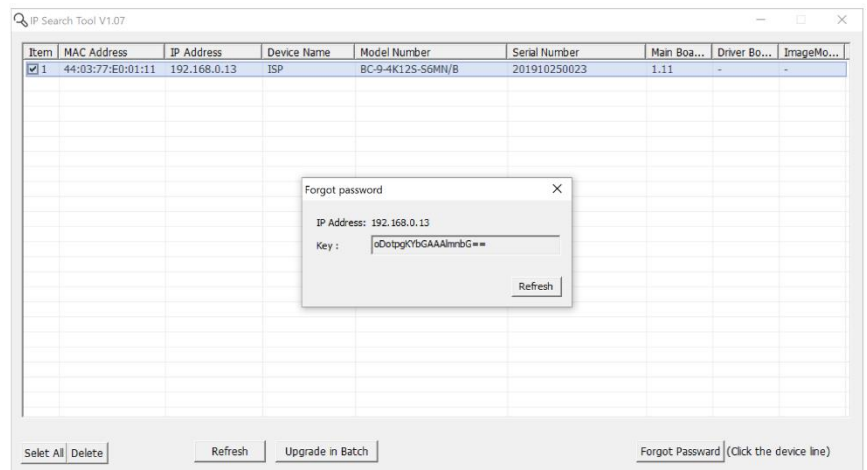
The following uses Internet Explorer as an example to describe the login procedure.

1. Browse to the login page by entering correct IP address (e.g. <http://192.168.0.13>) of your camera in the Internet Explorer address bar.
  2. The default username **admin** and password **admin**
  3. The camera supports strong password function, it requires to change the password to activate the camera for the first-time login
  4. If this is your first timing login in to the camera web interface, you have to download and install the Control plug-in, click "**Click Here To Download Controls**" link to start the download.
  5. Follow system prompts and install the "**VideoPlugin-win32-4.1.0.10541**". You need to close your browser and reopen it again to complete the installation.
  6. Click Allow to enable the plugin when you re-login after installed the "**VideoPlugin-win32-4.1.0.10541**"
  7. When using Edge, Chrome, Firefox and Safari etc. non-IE browsers;
    - HTML5 is supported
    - Video plugin is not needed
- *The default password is used for your first login. to activate the camera, please change the password after your first login. You are recommended to set a strong password (no less than eight characters).*
  - *VideoPlugin version may different in different camera version.*
  - *If you login with Remember Password selected, you do not need to enter the password each time when you login, to ensure security, you are not advised to select Remember Password.*



## NOTE: Forgot Password?

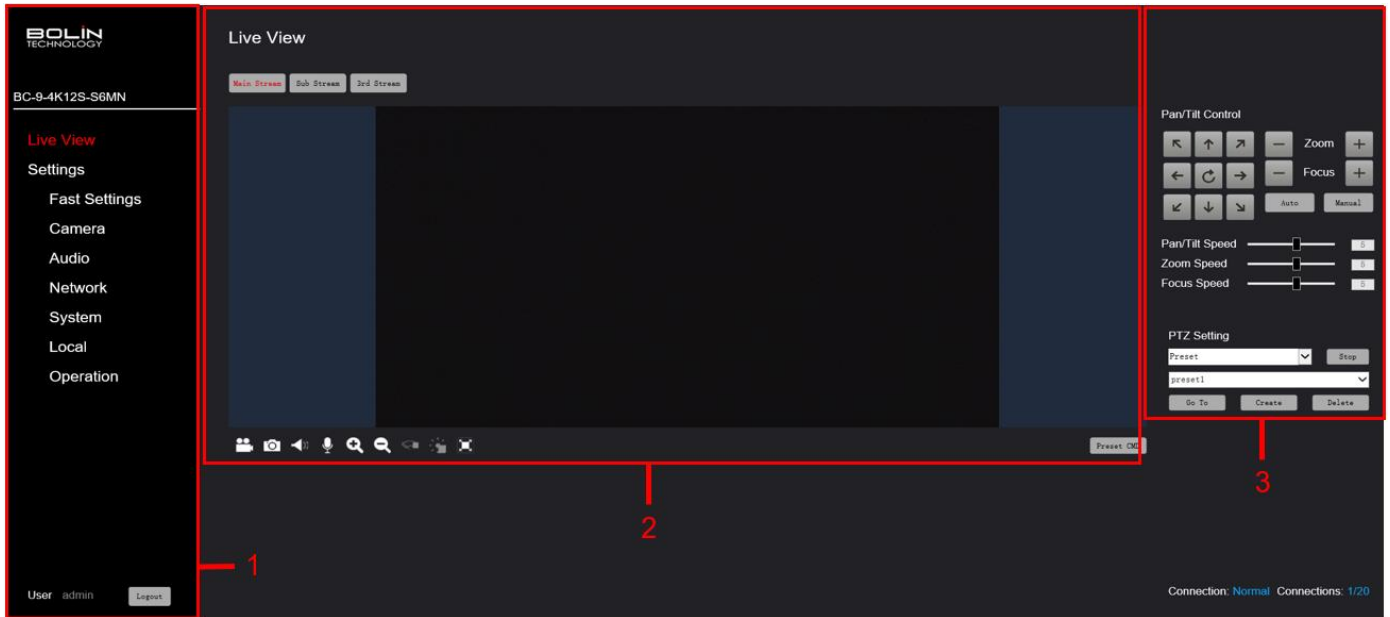
- *A message will pop up, which reads: "Please contact the manufacturer for disposal!"*
  - *You can download the IPCSearch tool from the [www.bolintechnology.com](http://www.bolintechnology.com)*
  - *Unzip the file and configure your laptop in the same subnet as camera's, run the IPCSearch tool and you will get the camera connection with your IPCSearch tool, click this camera bar (not to tick off the selection box) in the list, and then click Forgot Password button which is in the bottom right corner, a key number will display in the pop-up window*
  - *Please copy this key number and send it to us, you can contact us at: [support@bolintechnology.com](mailto:support@bolintechnology.com)*
  - *A BOLIN Technology Support team will provide a temporary password that is only valid for 24 hours, which can be used to log in to the camera to create a new password. Please use the temporary password within 24 hours, you will have to repeat the above process to get a new temporary password if it gets expired.*
- NOTE:** Please DO NOT power off the camera until use the temporary password for login to change the password, otherwise, the temporary password provided based on the Key number will be invalid.



## IP Search Tool:

- Running the IP Finder Tool on your laptop/pc, it will automatically get the list of all cameras that located in the same network.
- You can get the MAC address, IP address, Camera name, Camera model, Serial number etc. of the cameras.
- IP Finder Tool will help you to get the IP address when you forget the camera IP.

# Introduction to the Web Interface



After login to the web interface, you will locate at Live View page, there are three functional modules, as followings:

1. Menu Bar
  - Used to navigate between Live View, Fast Setting, Camera, Audio, Network, System, Local, Operation, as well as Log Out
2. Live View Panel
  - Used to select the way how the live stream is viewed
  - Used to switch between Main, Sub and 3<sup>rd</sup> Stream, as well as access / playback recorded files
  - Contains Record, Capture, Speaker, Mic, Enlarge, Shrink and Full Screen buttons
  - Contains Preset CMD, Camera Menu setting interface, where optional features can be configured
3. Camera Control Panel
  - Used for home position
  - Used for camera PTZ control, presets setting and recall
  - Used to create Patrol, Scanning, Power On Action etc.

## Live View

This setting page is to have the camera live preview, playback the recorded video files, also supports quick access recording, screenshot, full screen etc.

### Main Stream:

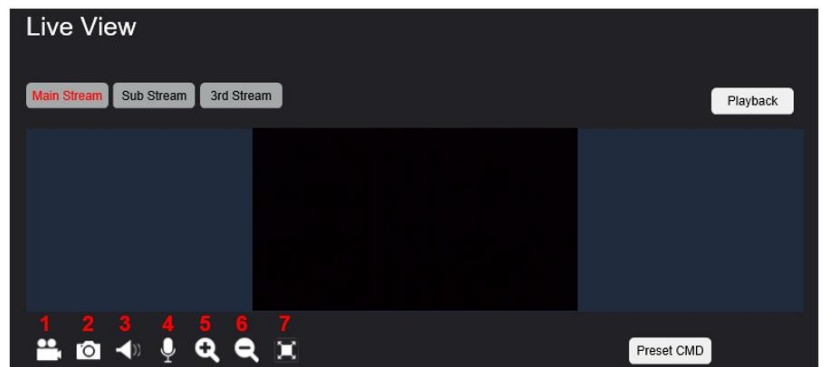
The main video stream, viewed by default on the live view panel, the main stream parameters can be configured on Camera>Codec page

### Sub Stream:

The sub video stream, you can click Sub Stream button to switch to watch the sub video stream on live view panel, the stream parameters can be configured on Camera>Codec page

### 3<sup>rd</sup> Stream:

The 3<sup>rd</sup> video stream, you can click 3<sup>rd</sup> Stream button to switch to watch 3<sup>rd</sup> stream on live view panel, the 3<sup>rd</sup> stream parameters also can be configured on Camera>Codec page.



The quick access buttons on the lower left corner of the live view panel from 1 to 7 is Record, Video Capture (take a screenshot), Speaker, Mic, Enlarge, Shrink, Full Screen.

**Record:** supports insert Micro SD card to the camera, to do record and save video in the SD card;

**Capture:** to take a screenshot of the camera video image;



**Speaker:** to turn on / off the preview audio on live view panel;

**Mic:** to enable/disable the Mic which built-in the camera;

**Enlarge:** to enlarge the camera preview image.

Click the Enlarge button, the button color will turn yellow, then you can click the preview image to zoom in, it supports for zooming in by 3 times;

**Shrink:** to shrink the camera preview image.

After the preview image has been zoomed in by 3 times, you can click the Shrink button to start zooming out. The function will available when this button been clicked and turn to yellow color, it supports for zooming out by 3 times;

**Full Screen:** to get full screen view of the camera image;

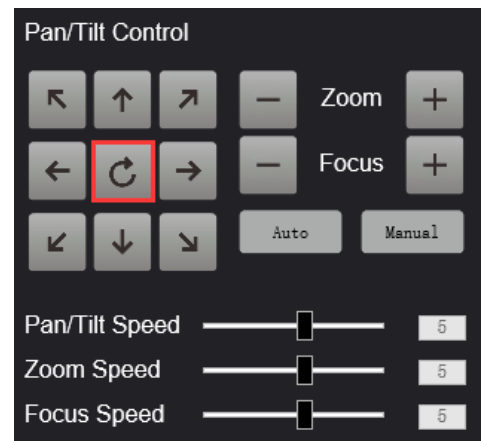
NOTE: Feature icons 1-7 are not supported in non-IE browsers, and these icons will not to be displayed in the interface

## Home Position:

- The first position where the camera will be in after initializing(rebooting)
- Once presets have been set up, one of the presets can be selected as the Home Position. (set preset 1 as the Home Position usually)

## Pan / Tilt

- Use the arrow button to control the camera.
- Pan/Tilt: pan and tilt, speed can be set from 1 to 8 by drag the Pan/Tilt Speed setting bar
- Zoom: zoom in and zoom out, zoom speed can be set from 1 to 8 by drag the Zoom Speed setting bar.
- Focus: supports Auto and Manual mode, focus speed can be set from 1 to 8 by drag the Focus Speed setting bar



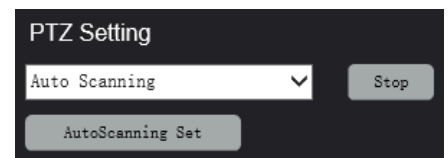
## PTZ Setting

This menu contains the section where the Auto Scanning, Preset, Trace, Scanning, Power On Action, Cruise can be configured.

### Auto Scanning:

Camera image (pan) can be set to move horizontally from left to right or from right to left continuously.

Moving speed can be programmed, speed level from 1-8 adjustable.



### Preset:

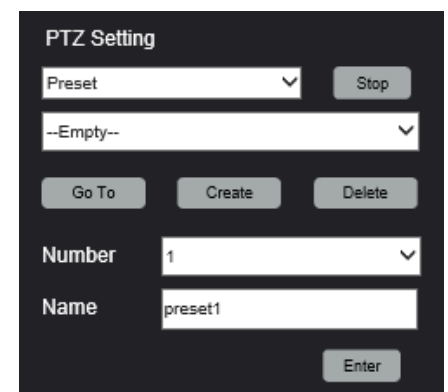
Presets are predetermined positions that the user can recall the camera to recall quickly, supports 255 presets at maximum.

To add a new preset:

1. Select Preset in the PTZ Setting bar.
2. Click Create button, it will extend preset number and name field.
3. Select a preset number and create a preset name, or just by default name preset 1.
4. Click Enter and the preset will be saved.

The table will populate with all of the created presets, you can select a preset and click Go To button, camera will recall this preset position quickly.

Any preset can be deleted by select the preset and clicking the Delete button.



## Trace:

A Trace is a series of presets, recalled in a given order. This causes the camera to iterate through the series, moving to each preset in the selected order, support create 8 traces at maximum.

To create a new trace:

1. Select Trace in the PTZ Setting bar
2. Click Create button, it will extend trace number and name field.
3. Select a number and create a name, or just by default name trace 1
4. Then click Start button

The screenshot shows the 'PTZ Setting' interface. At the top, there is a dropdown menu set to 'Trace' and a 'Stop' button. Below this is a text input field containing 'trace3' and another dropdown menu. There are three buttons: 'Go To', 'Create', and 'Delete'. Further down, there is a 'Number' dropdown menu set to '1' and a 'Name' text input field containing 'trace1'. At the bottom right, there is a 'Start' button.

## Scanning:

Left limit and right limit can be programmed, then camera image (pan) can be set to move horizontally from left limit to right limit or from right limit to left limit continuously.

Moving speed can be programmed, speed level from 1-8 adjustable.

The screenshot shows the 'PTZ Setting' interface. At the top, there is a dropdown menu set to 'Scanning' and a 'Stop' button. Below this is a text input field containing 'scanning1' and another dropdown menu. There are three buttons: 'Go To', 'Create', and 'Delete'. Further down, there is a 'Number' dropdown menu set to '2' and a 'Name' text input field containing 'scanning2'. At the bottom right, there is a 'Left' button.

## Power On Action:

To set actions that the camera will take after the camera is powered on. You can select the action as preset, patrol, scanning and cruise.

The screenshot shows the 'PTZ Setting' interface. At the top, there is a dropdown menu set to 'Power On Action' and a 'Stop' button. Below this is a dropdown menu with options: 'Off', 'Preset', 'Patrol', 'Scanning', and 'Cruise'. The 'Preset' option is highlighted. There is a 'Name' text input field. At the bottom right, there is an 'Enter' button.

## Cruise:

To record a series of camera movements that are pulled by an operator, this series of movements is called Cruise. You can recall the cruise that has been made, the camera will re-act all the movements within the cruise.

The screenshot shows the 'PTZ Setting' interface. At the top, there is a dropdown menu set to 'Cruise' and a 'Stop' button. Below this is a text input field containing 'Cruise2' and another dropdown menu. There are three buttons: 'GoTo', 'Create', and 'Delete'.

## Fast Setting

Fast setting page can quickly navigate to Device, Network, Video, Codec and User pages, to set corresponding parameters.

**Device:** The basic product information of the camera, you can get the model number, serial number as well as the IP firmware version information. The IP firmware version may be required when you submit a camera issue.

**Network:** The network tab is where the user is able to configure the camera IP network setting, DHCP or static IP, including IP address, mask, gateway and DNS server.

**Codec:** This interface allows user to configure the Main, Sub, Third video stream parameters, such as the resolution, bitrate and video compression.

**User:** This page allows the administrator to create/manage user accounts and passwords

The screenshot shows the 'Fast Settings' interface. At the top, there are five tabs: 'Device', 'Network', 'Video', 'Codec', and 'User'. The 'Device' tab is selected. Below the tabs, there are several rows of configuration fields:

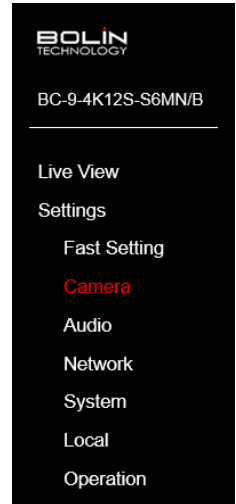
Field	Value
Device Name	4K PTZ DEMO
Model Number	BC-9-4K12S-S6MV/B
Product Serial Number	1908260010
Encoder Version	1.06
Mcu Version	15
Web Plugins Version	4.1.0.10512

At the bottom left, there is an 'Apply' button.

# Configuring the camera from the Menu Bar

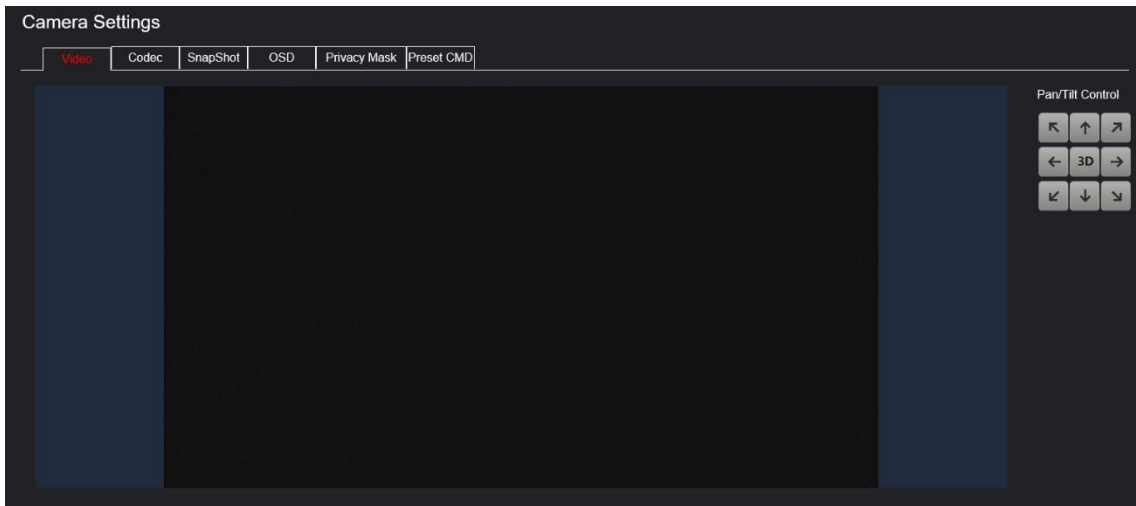
Camera Setting page can be accessed by clicking the Camera listed in the Menu Bar

Menu Bar is divided into tabs. Under each tab is a collection of settings and parameters that the user can configure. Please refer to the list of tabs below



## Camera-Camera Setting-Video

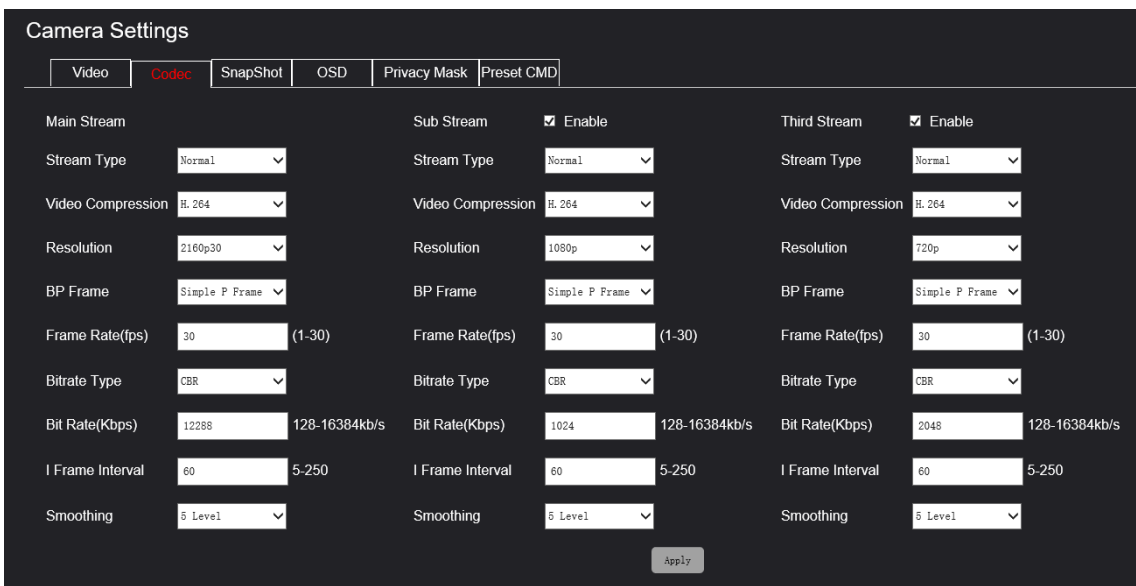
This setting page is to watch the camera live view image, Pan/Tilt control the camera.



**Pan/Tilt Control:** Use the arrow buttons to move the camera image position

## Camera-Camera Setting-Codec

This setting page is to configure the Main, Sub, Third video stream parameters.



- **Main Stream** – The main stream, viewed by default on the Live screen
  - **Video Compression:**
    - H.264
    - H.265
    - MJPEG
  - **Resolution:**
    - 4Kp30
    - 4Kp25
    - 1080p60
    - 1080p50
    - 1080p30
    - 1080p25
    - 1080p24
    - 720p60
    - 720p50
  - **BP Frame:** Simple P frame
  - **Frame Rate(fps):** Rate at which image frames are captured
    - 1~29.97 fps adjustable
  - **Bit Rate:** The amount of data transmitted per second. Measured in Kilobits Per Second (Kbps). 1000 kbps = 1Mbps
    - 128~16384kb/s adjustable
  - **Bitrate Type:**
    - CBR – Constant Bit Rate
    - VBR – Variable Bit Rate
  - **I Frame Interval:**
    - 5~250 adjustable
  - **Smoothing:**
    - 1~9 lever selectable
- **Sub Stream** – The sub video stream produced by the camera, this can be disabled by unchecking the box next to the title.
  - **Video Compression:**
    - H.264
    - H.265
    - MJPEG
  - **Resolution:**
    - 1080p
    - 720p
  - **BP Frame:** Simple P frame
  - **Frame Rate:** Rate at which image frames are captured
    - 1~29.97 fps adjustable
  - **Bit Rate:** The amount of data transmitted per second. Measured in Kilobits Per Second (Kbps). 1000 kbps = 1Mbps
    - 128~16384kb/s adjustable
  - **Bitrate Type:**
    - CBR – Constant Bit Rate
    - VBR – Variable Bit Rate
  - **I Frame Interval:**
    - 5~250 adjustable
  - **Smoothing:**
    - 1~9 lever selectable
- **Third Stream**—The third video stream produced by the camera, this can be disabled by unchecking the box next to the title.
  - **Video Compression:**
    - H.264
    - H.265
    - MJPEG
  - **Resolution:**
    - 720p
    - 360p
  - **BP Frame:** Simple P frame
  - **Frame Rate:** Rate at which image frames are captured
    - 1~29.97 fps adjustable
  - **Bit Rate:** The amount of data transmitted per second. Measured in Kilobits Per Second (Kbps). 1000

- kbps = 1Mbps
    - 128~16384kb/s adjustable
- **Bitrate Type:**
  - CBR – Constant Bit Rate
  - VBR – Variable Bit Rate
- **I Frame Interval:**
  - 5~250 adjustable
- **Smoothing:**
- 1~9 lever selectable

## True Dual Output video format setting

This camera supports Bolin True Dual Output functionality, means that you can have relevant IP streaming when SDI/HDMI video is set to any format you want to set to. It takes SDI/HDMI video format setting as priority.

The following table chart shows the relationship between SDI/HDMI video format and IP video format.

### NOTE:

*After you have set up the SDI video format to the camera, the IP format will be determined accordingly.*

*Within the Video Codec Resolution selection drop down menu, it will only have relevant IP video formats displayed for you to select from.*

True Dual Output Video Format			
SDI/HDMI	IP Resolution/Frame Rate		
<b>2160p29.97</b>	2160p30	1080p30	
<b>2160p25</b>	2160p25	1080p25	
<b>2160p23.98</b>	2160p24	1080p24	
<b>2160p24</b>	2160p24	1080p24	
<b>1080p60</b>	1080p60	1080p30	720p60
<b>1080p59.94</b>	1080p60	1080p30	720p60
<b>1080p50</b>	1080p50	1080p25	720p50
<b>1080p30</b>	1080p30		
<b>1080p29.97</b>	1080p30		
<b>1080p25</b>	1080p25		
<b>1080p23.98</b>	1080p24		
<b>1080p24</b>	1080p24		
<b>720p60</b>	720p60		
<b>720p59.94</b>	720p60		
<b>720p50</b>	720p50		
<b>1080i60</b>	1080p60	1080p30	720p60
<b>1080i59.94</b>	1080p60	1080p30	720p60
<b>1080i50</b>	1080p50	1080p25	720p50

## Camera-Camera Setting-SnapShot

This setting page is used to set the camera to capture the snapshot of the live view, and the snapshot can be uploaded to FTP server, this setting is work with FTP upload function together.

Channel 1: Main stream

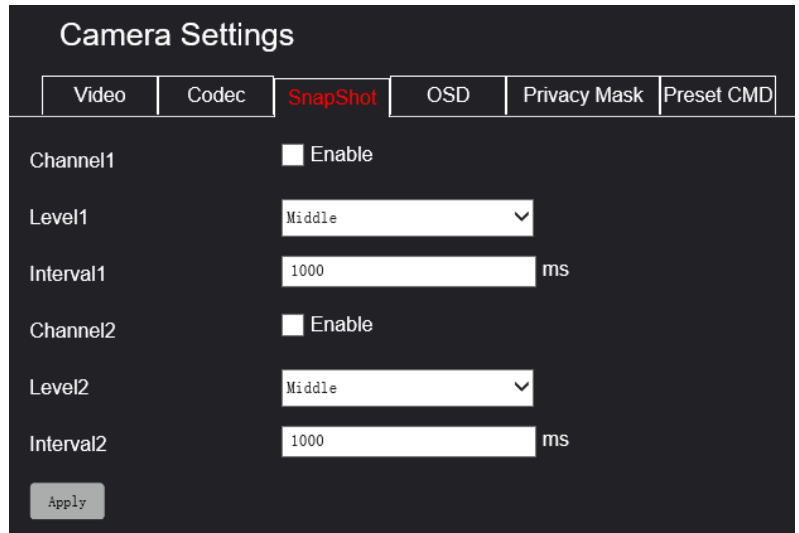
Level: Quality level of screenshots, supports Lower, Middle and High selectable

Interval: snapshot frequency, 1000ms by default

Channel 2: Sub stream

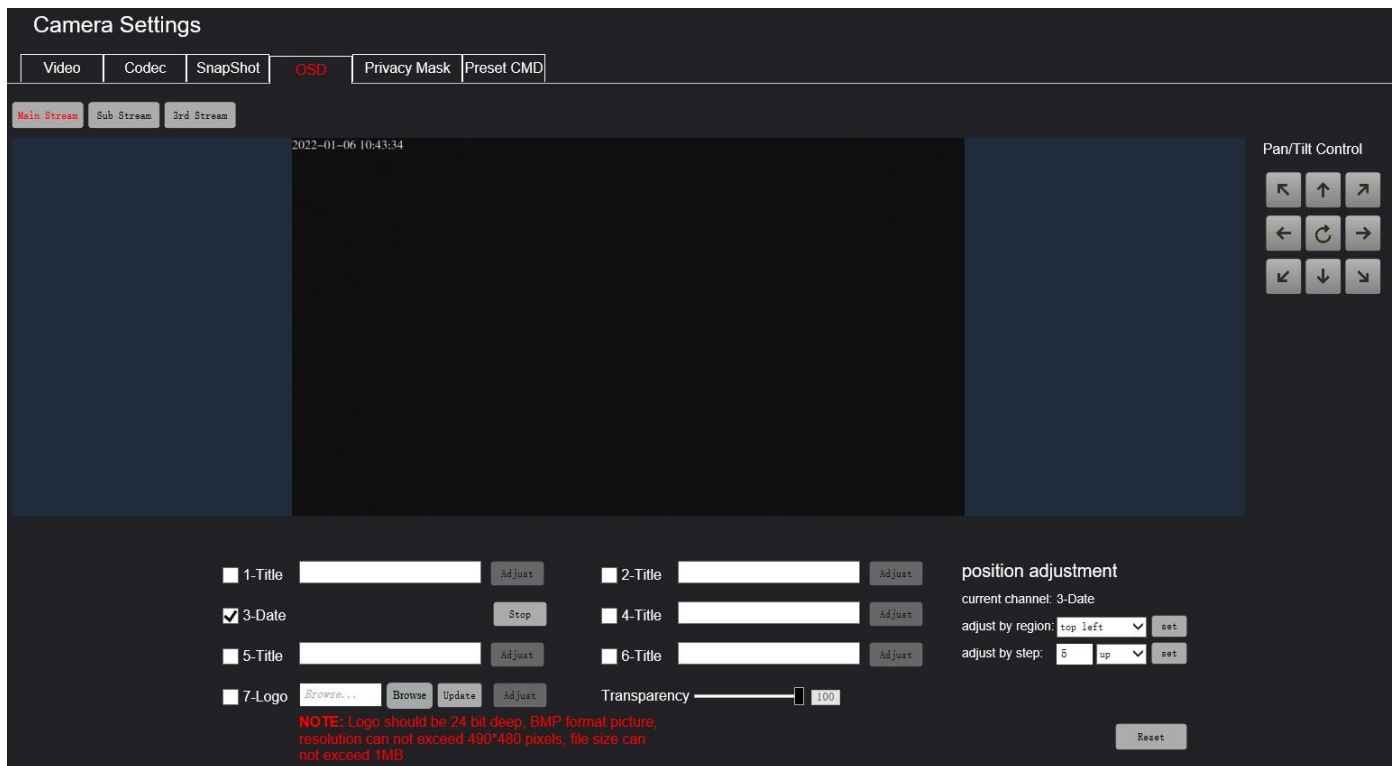
Level: Quality level of screenshots, supports Lower, Middle and High selectable

Interval: snapshot frequency, 1000ms by default



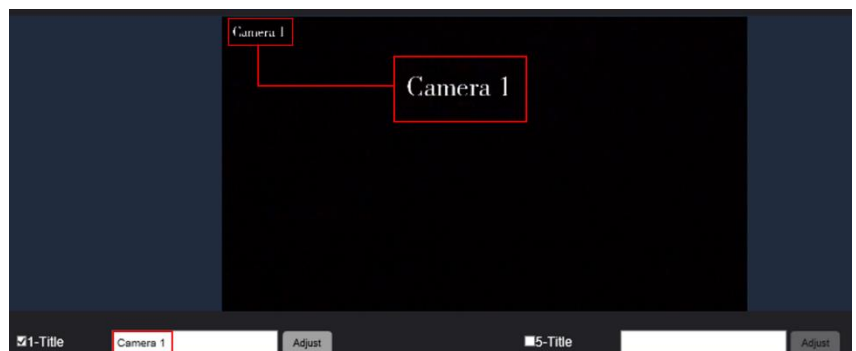
## Camera-Camera Setting-OSD

This setting page has the camera live preview, set up title and time display/overlay with the video stream, as well as Logo upload function.

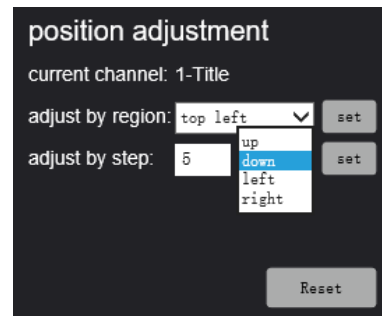
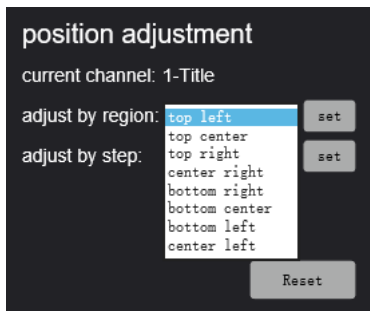


Title can be configured on Main, Sub and 3rd Stream at the same time, here take the 1-Title setting for example:

- Input the content that you want to be displayed as a Title on the video stream
- It can support 32 characters at maximum, for example, input content as Camera 1
- Check the 1-Title option checkbox, and now the Camera 1 will display on the IP video



- You can click Adjust button (the button will switch to displaying Stop), and then set the Title position by the right-side Position adjustment module.
- It supports two ways to adjust the Title position, by region or by step
- Adjust by region, you can select from top left, top center, top right, center right, bottom right, bottom center, bottom left and center left
- Adjust by step, you can configure a step in the rang from 1 to 100, select the direction, and then click set button to apply it.

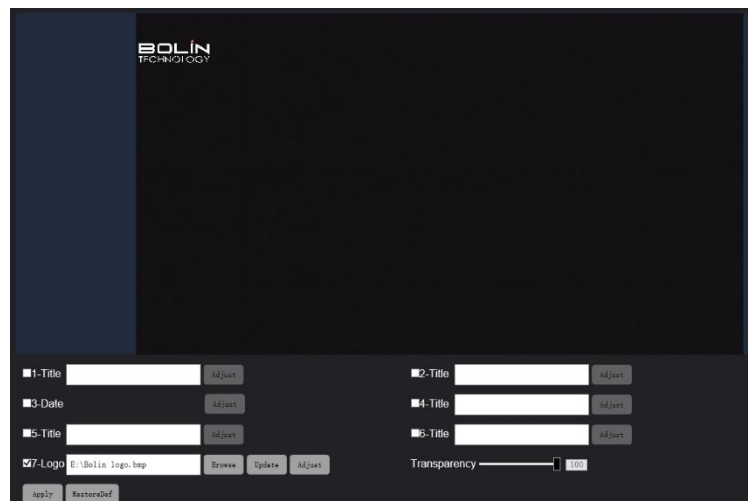


- After done, please click Stop button to close the 1-Title adjustment

A logo file can be uploaded and overlay onto the IP video.

1. logo file must be in bmp format;
2. logo file bit depth must be 24;
3. logo file with dimensions 490x480;
4. User can adjust the logo display position by click the “adjust” button which beside the logo update, and then use position adjustment module to adjust the Logo position, the operation is same as above Title position adjustment.
5. User can adjust the transparency of the logo display, support 1~100 adjustable percentage;

**NOTE:** 1 means fully transparent, 100 means completely opaque.



## Camera-Camera Setting- Privacy Mask

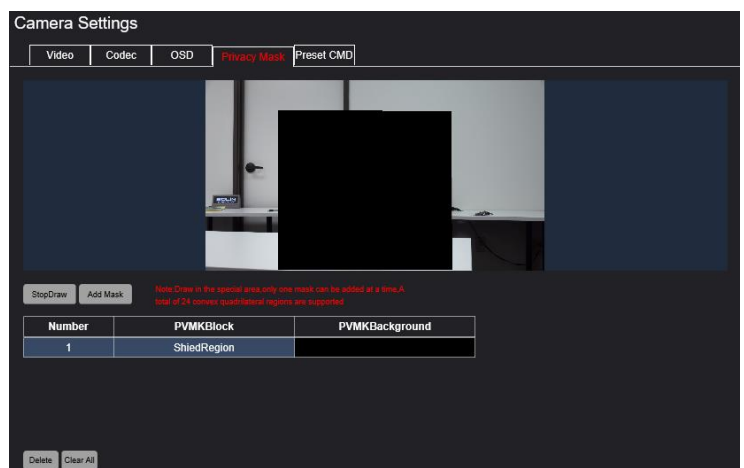
The Privacy Mask setting is for adding a Mask of the image pixels that you want to be covered, then the image portion that has been covered by a mask will not be seen by the viewer.

Only one mask can be added at a time, a total of 5 convex quadrilateral regions are supported.

**NOTE:** This feature only works with IP stream, will not affect the SDI, HDMI or other outputs.

You can set up a privacy mask by performing the followings

1. Click Start Draw button which under the image window
2. Move your mouse to the camera image window, select a point and left click mouse to start
3. Then move to a next point and left click mouse, do in this way multiple times until you can draw an area that you desire to have.
4. After finish the area drawing, click Add Mask button, it will be done.



This area will be covered in black color by default on the video, you can change the color by click PVMKBackground, there have 7 colors selectable.

Number	PVMKBlock	PVMKBackground
1	ShiedRegion	Black Purple Red Green Blue Yellow Gray

Any Privacy Mask can be deleted by clicking the Delete button or Clear All button.

NOTE: Privacy Mask function is not supported in non-IE browsers, and it will not to display this page in web interface

## Camera-Camera Setting- Preset CMD

The presets that shown on this page are the pre-programmed commands can be used directly by recalling the relevant preset numbers.

For example: When you want to turn on the camera Night Mode, just recall Preset No.64, if you want to turn on the camera day Mode, just set Preset No.64. As create a preset. (select number 64 and press PRESET button for 3 seconds)

Camera Settings					
Video	Codec	SnapShot	OSD	Privacy Mask	Preset CMD
CMD	Preset No			Set/Call Preset	
Night Mode	64			Set Preset	
Day Mode	64			Call Preset	
Auto Day/Night Mode	65			Call Preset	
Disable Image Rotation	63			Set Preset	
Enable Image Rotation	63			Call Preset	
Disable Image Freeze	62			Set Preset	
Enable Image Freeze	62			Call Preset	
Disable Backlight Compensation	55			Set Preset	
Enable Backlight Compensation	55			Call Preset	
Manual White Balance	61			Set Preset	
Auto White Balance	61			Call Preset	
Return to Home	54			Set Preset	
Auto Iris	60			Call Preset	
Manual Iris	60			Set Preset	
Menu	95			Call Preset	
Disable WDR	59			Call Preset	
Enable WDR	59			Set Preset	



## Audio-Audio Settings

This setting page is to select the audio compression parameters for the Audio input (microphone)

- Audio Compression Options:
  - **G.711A** – Pulse Code Modulation (PCM), often used to decode voice frequencies with regard to Telephony
  - **G.711U** – Standard for speech compression and decompression within digital transmission systems
  - **AAC** – Advanced Audio Coding
- Bit Rate
  - Bit rate supports 32K, 48K, 96K and 128K
- Sampling Rate
  - Sampling rate supports 32K, 44.1K and 48K
- Input Volume
  - 0 to 100 adjustable by drag the input volume bar, default is 80

### NOTE:

- Bit rate is fixed as 64K and Sampling rate fixed as 8K when Audio Compression is set to G.711a and G.711u mode

## Network-Network Setting-Network

The network tab is where the user is able to configure the following:

- DHCP options
  - DHCP – An IP address will be dynamically assigned to the camera from the gateway (router)
  - Static IP – The user will enter / define the IP address
- IP Address
  - Default IP address is 192.168.0.13
- Subnet Mask
  - Default mask is 255.255.255.0
- Default Gateway
  - Default gateway is 192.168.0.1
- Preferred DNS
- Alternate DNS
- MAC Address
  - Fixed, can't be modified.

## Network-Network Setting-Port

This setting page is to specify which ports the camera will use to communicate with the following protocols:

- TCP Port:
  - 1 to 65535 adjustable
- UDP Port:
  - 1 to 65535 adjustable
- RTSP: Default 554
  - RTSP is the protocol used to pull real-time video over the network (using VLC Player or other network video-compatible software)
  - Changing this port number will change the way the RTSP video can be viewed. Most

- RTSP streaming software uses port 554 by default, therefore it is not recommended that this port number be changed.
  - URL for receive RTSP streaming is: *rtsp://IP address:554/PSIA/Streaming/channels/0*
- VISCA Port (Visca over IP)
  - Default is 52381, it is match with Bolin Keyboard Controller
  - User can change the port number to others to match with third part keyboard controller
- HTTP: Default 80
  - HTTP is the protocol used to access the web interface.
  - Changing this port number will require the user to specify the port number when entering the IP address to the web browser.
  - For example, if it is changed to 85, the IP address will need to be entered as follows in order to access the web interface: *http://192.168.0.13:85*

**NOTE:**

**VMS Connection**

If you use VMS (such as exacqVision) to connect the camera via ONVIF protocol, you must to include the port 2000 for VMS connection.

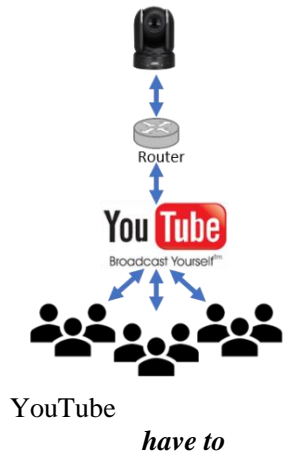
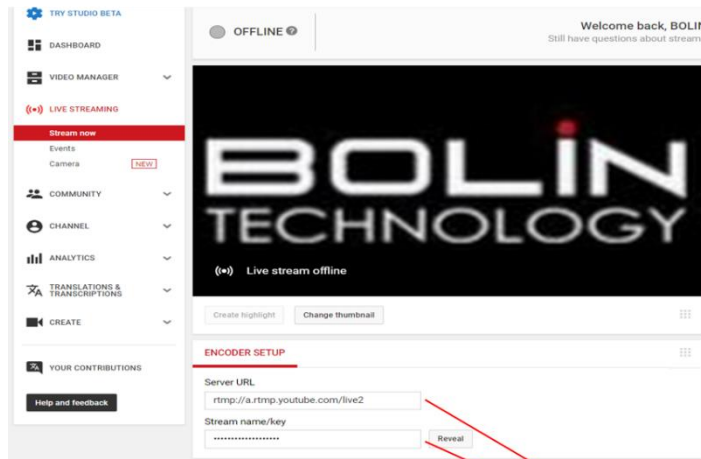
For example: If the camera IP address is 192.168.0.13, you need to enter 192.168.0.13:2000 on VMS configuration menu.

**Network-Network Setting-RTMP**

This camera supports RTMP protocol, it can push streaming to other CDN or cloud platform.

- Check the RTMP Enable checkbox
- Copy and paste the stream URL from the online platform
- Copy and paste the Stream Key (Also known as the Stream ID) from the online platform.

Example below shows where to copy the information from **URL+ Key is not meaning we put the plus sign “+”, just put “/” “and then put the key after the URL**



- Click Apply on camera RTMP page
- Allow a few minutes for the stream to connect. The status on your streaming platform (Such as YouTube) will change to Live. When this happens, the camera is streaming video Live to

NOTE: Similar steps can be followed to stream to any platform that supports RTMP, such as YouTube, Facebook, Twitter, Twitch, etc.)

## Network-Network Setting-SRT

To establish the communication flow, SRT employs a handshake mechanism in which each device is identified as a caller or listener. In some cases, two devices can negotiate an SRT session in rendezvous mode at the same time.

SRT Mode	What it can do?
Caller	Set the source or destination device as the initiator of the SRT streaming session The Caller device must know the IP address and port number of the Listener device
Listener	Set the device to wait for request to start an SRT streaming session The Listener device just needs to know that it should listen to the SRT streaming on a specific port
Rendezvous	Allows two devices to use the same port to start an SRT session Both source and destination must be in Rendezvous mode

Camera SRT is set to Off by default, click the drop-down menu of the Mode option to select a SRT mode.

**Mode:** User can select from Caller, Listener, Rendezvous mode, set to Off to disable SRT setting menu.

**Caller:** SRT Caller mode, the page will expand the caller mode settings menu, enable Main Stream or Sub Stream as you want, and configure the corresponding parameters.

- *IP Address:* The IP address configured on the Listener device (if you running a software on the PC as a Listener device, here to enter the PC's IP address);
- *Port:* Configure a port for SRT session, it must match the SRT port number of the Listener device (the range is 1~65535);
- *Stream ID:* SRT streaming ID, you can set one or keep it as default (please configure the same Stream ID on Listener device);
- *Latency:* Delay between the Caller device and Listener device, can be set from 20~5000ms;

NOTE: When camera set to Caller mode, then the camera can only send SRT stream to one receiver (configured in Listener mode).

**Listener:** SRT Listener mode, the page will expand the listener mode settings menu, enable Main Stream or Sub Stream as you want, and configure the corresponding parameters.

- *Port:* Configure a port for SRT session, it must match the SRT port number of the Caller device (the range is 1~65535);
- *Stream ID:* SRT streaming ID, you can set one or keep it as default (please configure the same Stream ID on Caller device);
- *Latency:* Delay between the Caller device and Listener device, can be set from 20~5000ms;

NOTE: When the camera set to Listener mode, multiple receives (configured in Caller mode) can be allowed to receive this SRT streaming.

**Rendezvous:** SRT Rendezvous mode, the page will expand the rendezvous mode settings menu, enable Main Stream or Sun Stream as you want, and configure the corresponding parameters.

- *IP Address:* The IP address of the other end SRT device (configured in Rendezvous mode)
- *Port:* Configure a port for SRT session, it must match the SRT port of the other end SRT device (configured in Rendezvous mode)
- *Stream ID:* SRT streaming ID, you can set one or keep it as default (please configure the same Stream ID on the other end SRT device)
- *Latency:* Delay between the two SRT device (configured in Rendezvous mode)

NOTE: When camera set to Rendezvous mode, then the camera can only send SRT stream to one receiver (configured in Listener mode).

**Network Setting**

Network GB28181 Port RTMP **SRT** FTP Multicast

Mode: Rendezvous

Main Stream:  Enable

IP Address: 192.168.2.190

Port: 5000 (1-65535)

Stream ID: live/channel/0

Latency: 50 ms (20-5000)

Sub Stream:  Enable

IP Address: 192.168.2.238

Port: 5000 (1-65535)

Stream ID: live/channel/1

Latency: 50 ms (20-5000)

Apply

## Network-Network Setting-FTP

1. Check the Enable option
2. Input the FTP server IP address into the Server IP option bar
3. Input the FTP port number into the Server Port option bar, the port must be same as configured on FTP server, it should be port 21 usually.
4. Input FTP server name and password into the Server username and Server password option bar, it must be same as configured on the FTP server
5. Select the Path Type and Path that you want the snapshot be saved on FTP server

NOTE: FTP function is work with snapshot function together, please make sure already enabled snapshot and configured the properly interval of uploaded time.

**Network Setting**

Network GB28181 Port RTMP SRT **FTP** Multicast

FTP:  Enable

Server IP: 192.168.2.34

Server Port: 21

Server username: admin

Server password: .....

Path Type: Default root

Path: picture

Apply

## Network-Network Setting-Multicast

This setting page is used to configure multicast for Main, Second and Third stream, for save bandwidth purpose in live streaming application. Here takes Main Stream for example:

- Following the Multicast address rang to configure a multicast IP address for Main Stream;
- Following the Multicast Port rang to configure a multicast port for Main Stream;
- Click the Apply button and restart camera once to make the settings take effect;
- After camera power cycle, click copy button to copy the multicast URL address

User can use VLC Media Player to receive the camera multicast stream, operation as below:

- Running VLC Media Player
- Click Media menu which on the upper left corner, and select Open Network Stream...

**Network Setting**

Network GB28181 Port RTMP SRT FTP **Multicast**

Main Stream

MultiCast Address: 234.5.6.7 (224.0.0.1 - 239.255.255.254)

MultiCast Port: 9500 (0-65535)

Access address: udp://@224.0.0.2:0 [Copy](#)

Second Stream

MultiCast Address: 224.0.0.3 (224.0.0.1 - 239.255.255.254)

MultiCast Port: 0 (0-65535)

Access address: udp://@224.0.0.3:0 [Copy](#)

Third Stream

MultiCast Address: 224.0.0.4 (224.0.0.1 - 239.255.255.254)

MultiCast Port: 0 (0-65535)

Access address: udp://@224.0.0.4:0 [Copy](#)

Apply

- Input the copied multicast URL address into the Network URL bar;
- Click Play button and now you can get the multicast of Main Stream

## System-System Setting- Device

This setting page is to get the basic product information of the camera.

- Device Name
  - You can set a name to this camera
- Model Number
  - The specific model of this camera
- Product Serial Number
  - The serial number of this camera, each serial number is unique and fixed, can't be modified.
- IP Encoder Version
  - The current encoder version running on this camera
- MCU Version
  - The current MCU version running on this camera
- Web Plugins Version
  - The current web interface plugin version running on this camera
  - Non-IE browsers login will not display this web plugins version

You may be asked to provide above information by Bolin technical team for any possible technical support cases.

Device	Time	Maintenance	User	Online User
Device Name	4K-PTZ-Camera			
Model Number	BC-9-4K12S-S6MN			
Product Serial Number	201910250015			
IP Encoder Version	2.07 Build20211120			
Mcu Version	13			
Web Plugins Version	4.1.0.10541			

Apply

## System-System Setting-Time

This interface allows user to configure the date / time settings of the camera

- System Time
  - You can check the Sync with Computer Time option and synchronize the camera operation time with your PC time system.
- Date Format
  - Two formats selectable
  - Y-M-D or D/M/Y
- Time Format
  - Two formats selectable
  - 24H or 12H standard
- Time Zone
  - WEST 12 to EAST 12 selectable
  - Please select the correct time zone for your location
- Network Time Sync
  - Check the Enable option
  - Input the time sync server address, port number
  - Select refresh time option, it has 10 Min, 30Min, 1 Hour, 1 Day selectable.

Device	Time	Maintenance	User	Online User
System Time	<input checked="" type="checkbox"/> Sync with Computer Time			
Date Format	Y-M-D			
Time Format	24 H			
Time Zone	EAST 8			
Network Time Sync	<input checked="" type="checkbox"/> Enable			
Time Sync Server	https://tf.nist.gov/tf-cgi/se			
Port	123			
Refresh	10 Min			

Apply Default Setting

After done the configuration, please remember to click Apply button to make the setting activated. You also can click Default Setting to restore settings to default if you want to.

## System-System Settings-Maintenance

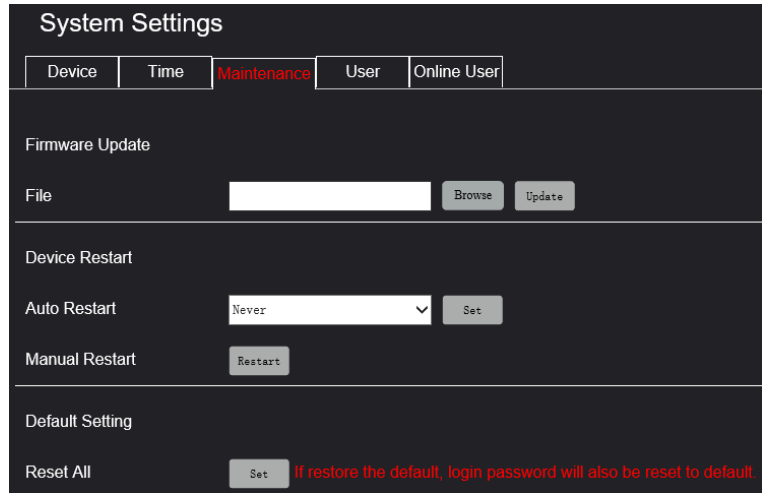
The Maintenance tab under the System Setting section can be used to perform the following functions:

- **Firmware Update**

You can upgrade IP Encoder software and FPGA software via this Firmware Update feature.

- ⊖ Two types of firmware can be upgraded from this section:
  - Firmware for IP encoder. The name of the file shown as “CAM-00-IP4K-xxx.dat”
  - Firmware for FPGA. The name of the file shown as “CAM-00-FPGA-xxx.dat”

- A firmware file can be obtained from BOLIN Technology website: [www.bolintechnology.com](http://www.bolintechnology.com)
- Click the **Browse** button, and navigate to the file (xx... .dat)
- Click **Remote Update**, and allow the camera to load the new firmware
- It takes a few minutes for the camera to finish the upgrade.
  - When upgrading IP Encoder FW, it takes about 3 minutes to finish the upgrade process, prompt shown to confirm the reboot, it takes about 1.5-2 minutes to complete the reboot. refresh the IE browser.
  - When upgrading FPGA FW, it takes about 3 minutes to finish the upgrade process, there is a prompt shown to confirm the system restart. After confirm the system restart, must do power cycle to the camera to complete the FPGA fw upgrade.

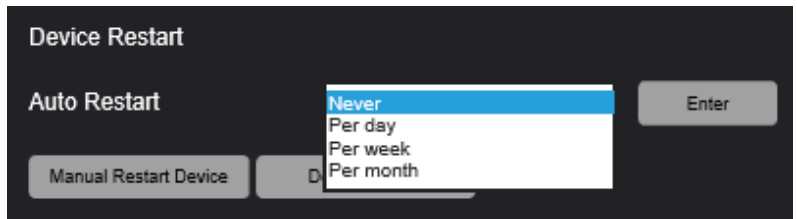


NOTE:

- For MCU version upgrade, please refer to “Upgrading MCU Firmware” in User Manual Part 1.

- **Device Restart**

- Soft reboot, only restart the IP encoding board. When there is a problem with the IP interface or the IP output, you can try to restart the encoding board;
- Supports auto restart and manual restart mode;
- Auto Restart can be configured as Never, Per day, Per week, Per month, what you have to do is just select an option and click Enter button to make it available.
- Manual Restart is just to click the Manual Restart Device button, and the camera encoding board will going to restart immediately.



- **Default Setting**

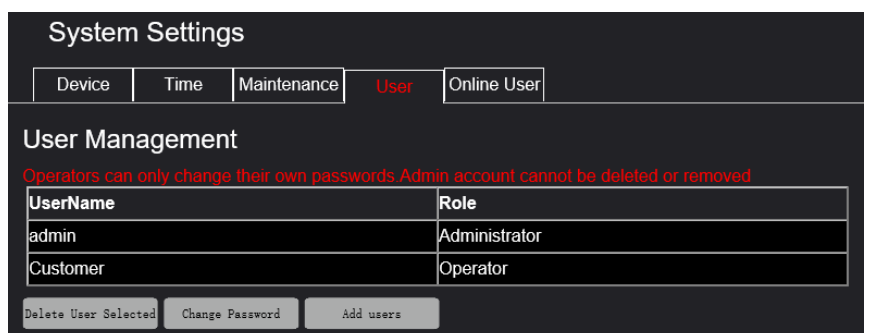
- Reset All, to restore all IP interface settings to default, login password will also be restored to default admin, but the network IP address will not be restored.

## System-System Setting-User

This setting page is to allow administrator to create / manage user accounts and passwords

To add a new user:

1. Click the **Add User** button
2. Enter the username
3. Enter the new password in the **Password** field
4. Re-enter the password in the **Repeat Password** field
5. Assign role to this account, it can be Administrator, or Operator.
6. Authorize to this account, you can

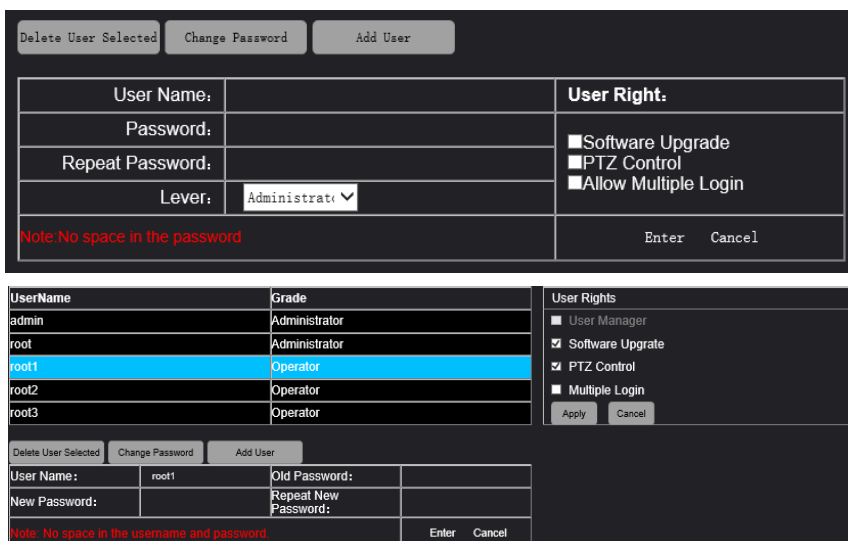


check the User Right option to allow this account to do this operation.

### Account modification:

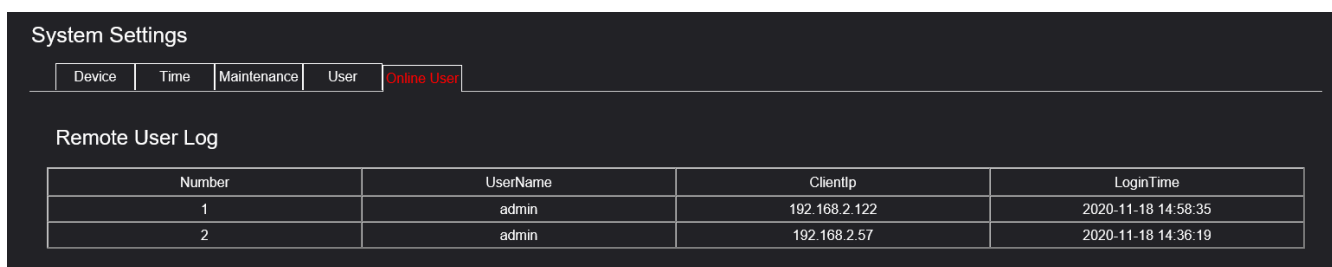
After created the user account, you also can modify the account details later

1. Select one account, it will extend the User Rights setting on the right side, you can modify.
2. You also can select one account, then click Change Password button to change the password, or click Delete User button to delete this account.



## System-System Setting-Online User

This setting page is to allow administrator to monitor all the user accounts that are online.



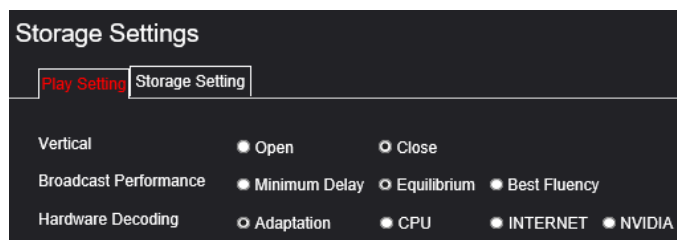
NOTE: non-IE browsers login will not display this page

## Local-Storage Setting-Play Setting

This setting page is to allow administrator to set the performance of camera live view:

NOTE: non-IE browsers login will not display this page

**Vertical:** Vertical sync, it is used to solve the image splitting/cracking issue that caused by the fast change of the video image when having massive movement of the PTZ image. It is enabled by default.



**Broadcast Performance:** Supports Minimum Delay, Equilibrium and Best Fluency mode.

- **Minimum Delay mode**, to ensure the real-time of the live view, less buffering of webpage playback, but in the case of having an unstable network, it may cause image frozen or frame dropping issue;
- **Best Fluency mode**, video streaming fluency priority mode. You can use this mode when the network is not good enough so that the video image can be smoother, but the latency of the image will be increased.
- **Equilibrium mode**, in this setting the result of the image latency and fluency is in between Minimum Delay mode and Best Fluency mode.

**Hardware Decoding:** Supports Adaptation, CPU, Intel and Nvidia mode.

- **Adaptation mode** (Default), a better strategy for decoding based on the computer hardware configuration will be automatically selected by system,
- **CPU mode**, using CPU to do decoding, it will consume a lot of CPU resources, only select it if there is no

independent graphics card or the graphics card is poor;

- **Intel mode**, using Intel graphics card to do decoding, select this mode if your PC graphics card is Intel;
- **Nvidia mode**, using Nvidia graphics card to do decoding, select this mode if your PC graphics card is Nvidia;

NOTE: The default is adaptation mode, and the decoding strategy is automatically selected by the program. If it is not satisfied, select the actual graphics card to do decoding according to your PC hardware configuration.

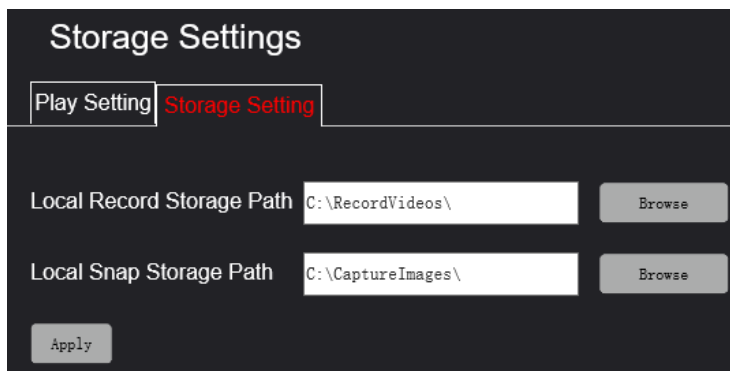
## Local-Storage Setting-Storage Setting

This setting page is to allow administrator to set record storage path and snap storage path.

Default path is *C:\RecordVideos\* for record, and *C:\CaptureImages\* for snap.

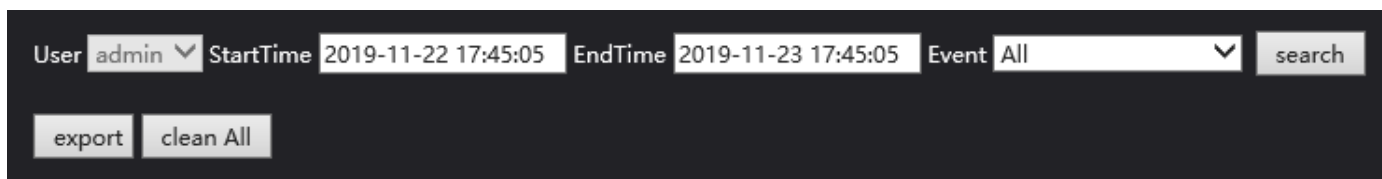
You can click Browse button to change the path for both record and snap storage.

NOTE: non-IE browsers login will not display this page

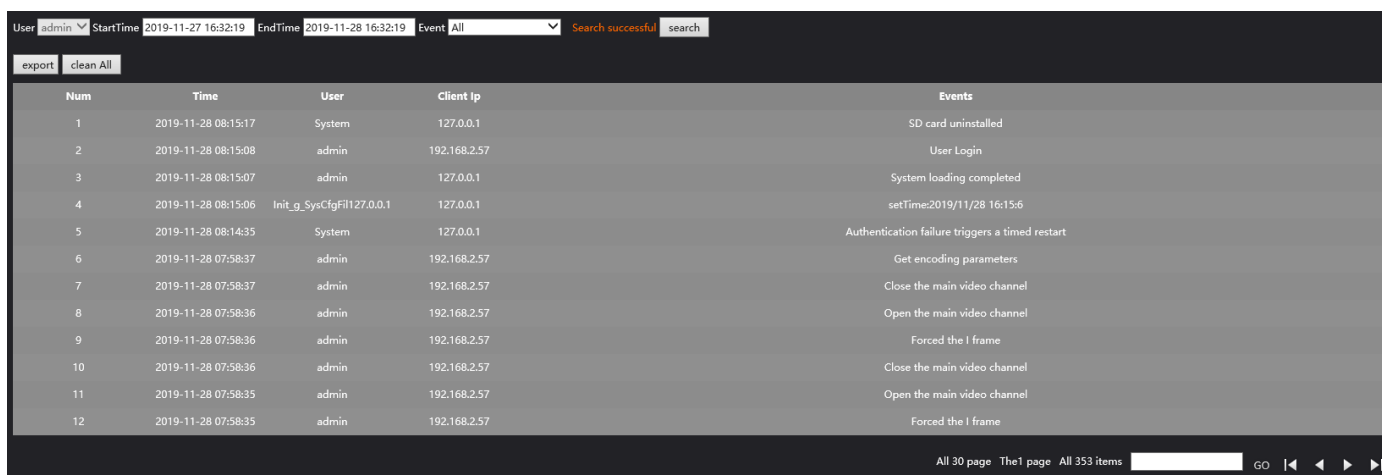


## Operation log

The Log is where the camera stores all actions that are performed by the camera.

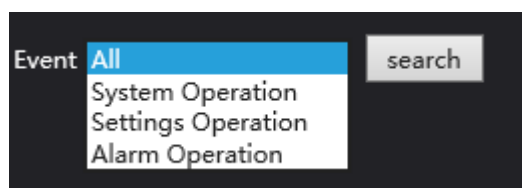


Select a Start Time and End Time, click search button, you will get all the log information of the camera during this period. This is for administrator to monitor and maintain the camera IP interface.



Log event can be System Operation, Setting Operation and Alarm Operation.

You can search all information by select All, or search the corresponding information individually by each operation option.





# Firmware Upgrade

There are 4 types of firmware with this camera can be upgradable. The latest camera firmware is available to be downloaded from Bolin website: [www.bolintechnology.com](http://www.bolintechnology.com).

1. MCU (Micro Control Unit) firmware upgrade via USB
2. IP encoder firmware upgrade via IP network
3. FPGA firmware upgrade via IP network
4. Resolution FHD to 4K firmware via IP network.

## NOTE:

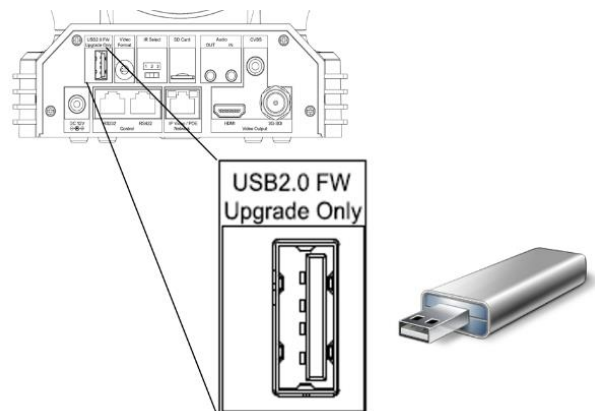
The firmware upgrade process is intended to be performed under the supervision of a BOLIN-Authorized repair technician. For assistance with this, please contact your authorized BOLIN Technology dealer, installer, or integrator. BOLIN Technology Technical Support can also be reached for assistance with this process

## Upgrading MCU Firmware

MCU Firmware can be upgraded by following these steps:

1. Load the .bin file onto a flash drive (Formatted as FAT32), and name the file "HD20.bin"
2. With the camera powered off, insert the flash drive to the USB port on the back panel of the camera
3. Apply power to the camera

The green indicator light above the lens will turn red for a few seconds while the upgrade takes place. Once the upgrade is finished, the light will turn green, and the camera will proceed through a normal boot cycle. Check the data on the OSD boot screen



## Upgrading IP encoder firmware

You can upgrade camera IP encoder module Firmware via IP network.

Connect and configure your camera with your local network successfully, log in the camera IP web interface, go to System, Maintenance section to upgrade the firmware.

How to make Firmware upgrade for IP Encoder, please refer to User Manual Part Two.

## Upgrading FPGA firmware

You can upgrade camera FPGA Firmware via IP network.

Connect and configure your camera with your local network successfully, log in the camera IP web interface, go to System, Maintenance section to upgrade the firmware.

How to make Firmware upgrade for FPGA, please refer to User Manual Part Two.

## Video resolution upgrade

If you bought the camera that is FHD version, now you decide to upgrade it to 4K version. We can make it for you, please contact your local dealer where you bought the camera from or Bolin technical support team for help.

The firmware for the FHD-To-4K upgrading is upgradable via IP network.

This firmware upgrade gives you following features added to the camera that you bought:

1. The camera you have bought is BC-7-4K20S-S3MNB with FHD resolution and 3G-SDI output.
2. By purchasing a license BC-7-4K20S-LS-4K, you can have following features added to the camera:
  - a. Resolution will be upgrade to 4K, 2160p30.
  - b. SDI video output will be upgraded to 6G-SDI.
  - c. Other features may be upgraded.

Connect and configure your camera with your local network successfully, log in the camera IP web interface, go to System, Maintenance section to upgrade the firmware.

How to make Firmware upgrade for FPGA, please refer to User Manual Part Two.



[www.bolintechnology.com](http://www.bolintechnology.com)

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