BOLiN TECHNOLOGY EX1000 Series Dual Output SDI+IP FHD PTZ Camera User Manual

Dual Output SDI+IP
FHD PTZ Camera
Part Two: IP Network Camera User Manual
(For EX1000/SD500 Series)
Version: SN-IP-M-EX/SD-02232022

This Quick Guide is for Bolin FHD 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 ww.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 the Internet Explorer 11 browser.
  o 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.
  o After the VideoPlugin has been installed, you may be prompted to update the VideoPlugin, please uninstall the old version of the Plugin before you download and install the new version of the Plugin
- When using Edge, Chrome, Firefox, and Safari, etc, non-IE browsers,
  o HTML5 is supported.
  o Video Plugin is not needed.
  o Some of the features are limited, like Privacy Mask, Live View page's Record, Capture, and other function icons.
  o Live view latency maybe 1-2 seconds longer than IE browser.

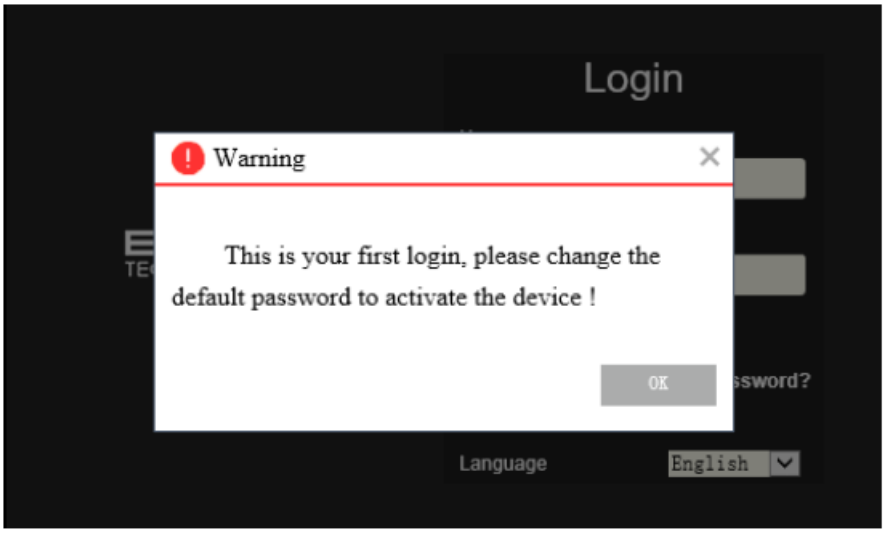
In this User Guide, illustration drawings and screen captures are taken from the SD500 camera's IP Web Interface, other applicable cameras have the same software. This User Guide can be also used for Bolin's EX1000 series PTZ cameras.

Login

The default static IP address of the camera is 192.168.0.13, and the 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 follows:

- 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 changing the password for the first-time login

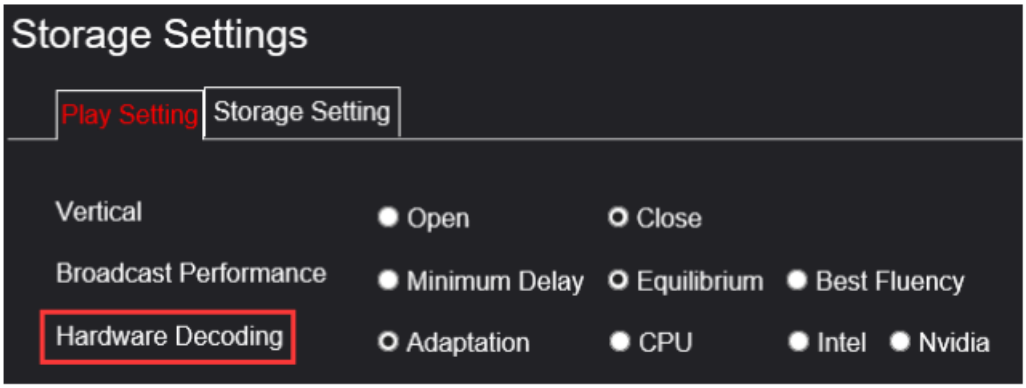
NOTE: If the camera IP address has been modified, the login page URL should be http://x.x.x.(x.x.x.x is the correct IP address of the camera)



Hardware Decoding
The camera supports FHD resolution on both HDMI/SDI and IP interface, it may consume more hardware performance of the
PC/laptop when using the IP interface.

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

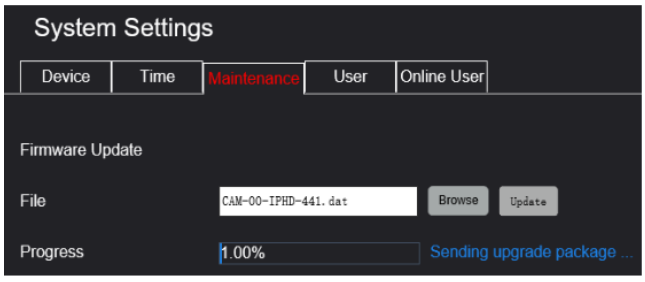
- Adaptation mode (default), a better strategy for decoding based on the PC/laptop hardware configuration will be automatically selected by the system.
- CPU mode, using CPU to do decoding, it will consume a lot of CPU resources, only select it if there is no independent graphics card or the graphics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

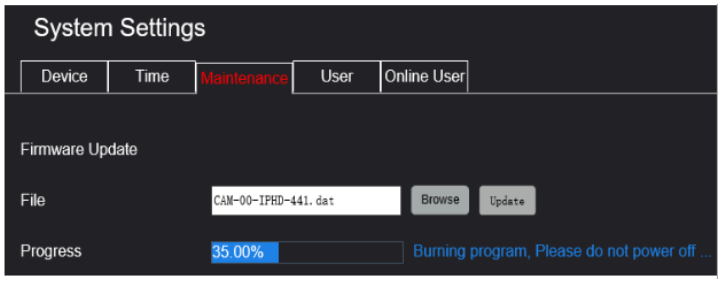


NOTE: The Default is Adaptation mode, and the decoding strategy is automatically selected by the system, if is it not satisfied, please select the actual graphics card to do decoding according to your PC/laptop hardware configuration. Or select the CPU mode if your C/laptop is without an independent graphics card. For more stable usage, the PC/laptop that is equipped with Intel or Nvidia independent graphics card is recommended.

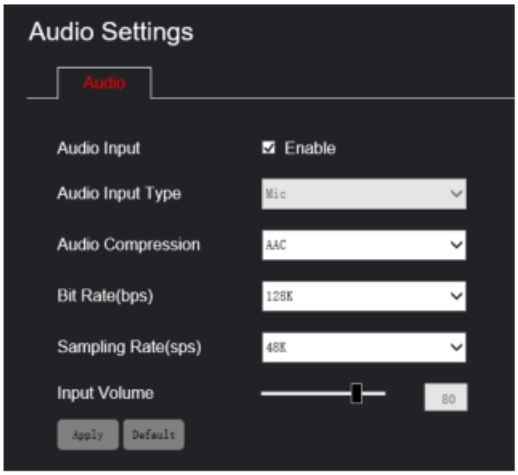
IP Firmware Update
The firmware update includes two steps:

- 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…”





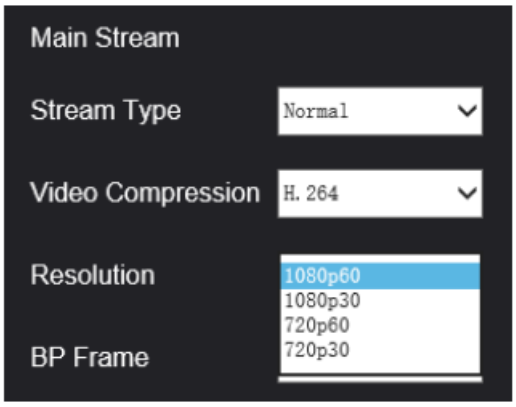
Codec Setting
Video Compression supports H.264, H.265, and MJPG.
If video compression has been selected in MJPG mode, it will not support RTSP streaming features. For a better experience, it is recommended to choose the H.264 or H.265 encoding.
IP Interface Reboot
The reboot action executed from IP interface will cause the camera to go back to the home position, but will not interrupt the HDMI/SDI output.
Audio Input
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 has been changed, you have to close the browser and religion, otherwise, there will have noise of the audio output.

IP Video Format
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.

Contents

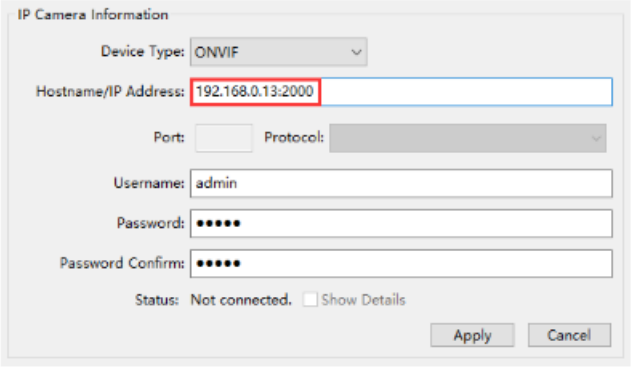
Video Stream Connection

For RTSP:
Connection String:**rtsp://<IP address>**:<RTSPport>/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 the multicast IP address to224.5.6.7, set the multicast port to 9000 To receive multicast stream:
udp://@224.5.6.7:9000
Note: *Do not include brackets < > in the connection URL strings User can configure the multicast IP address and port for the Mainstream, Second stream, and the Third stream separately.

For RTMP
This camera supports RTMP protocol and can push RTMP streaming to other video streaming platforms, e.g. YouTube, etc. Connection String: RTMP stream URL/key
NOTE: The 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 the VMS configuration menu.



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

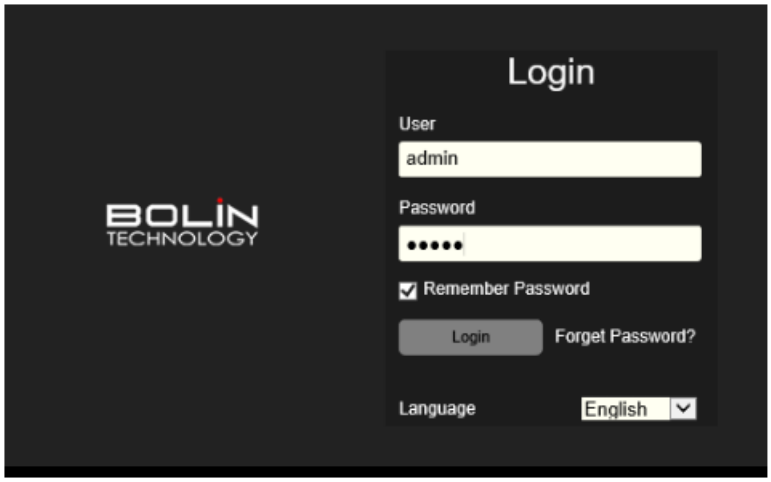
After you have completed the installation in accordance with the quick guide, connect the camera to power to boot it. After the camera is booted, you can access the camera rom a PC client using or a Video Management System (VMS).
Browser Edge, Chrome, Firefox, and Safari, Internet Explorer 11 browser 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 the default video format setting or set the camera video format to 1080P30 or 1080P25 using the 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.

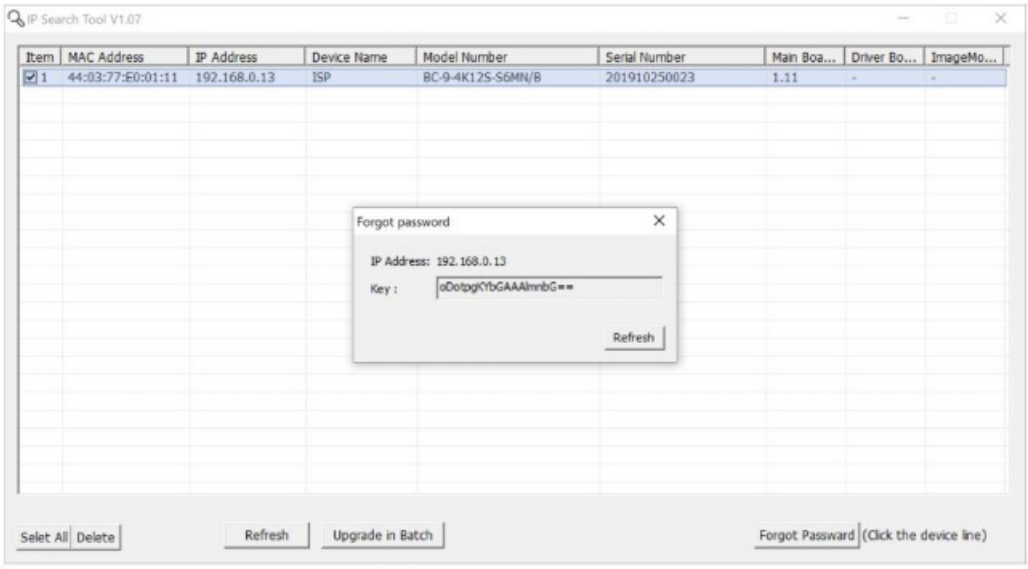
1. Browse to the login page by entering the correct IP address (e.g. **http://192.168.0.13**) of your camera in the Internet Explorer address bar.
2. The default username admin and password admin
3. The camera supports a strong password function, it requires changing the password to activate the camera 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 the “Click Here To Download Controls” link to start the download.
5. Follow the system prompts and install the “VideoPluginwin32-4.1.0.10541”. 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 installing the “VideoPlugin-win32-4.1.0.10541”
7. When using Edge, Chrome, Firefox, Safari, etc. non-IE browses;

- HTML5 is supported
- A video plugin is not needed
- The default password is used for your first login. To ensure account security, please change the password after your first login. You are recommended to set a strong password (no less than eight characters).
- VideoPlugin version may differ in different camera versions.
- If you log in 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 www.bolintechnology.com
- Unzip the file and configure your laptop in the same subnet as the camera, run the IPCSearch tool and you will get the camera connected with your IPCSearch tool, click this camera bar (not o 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

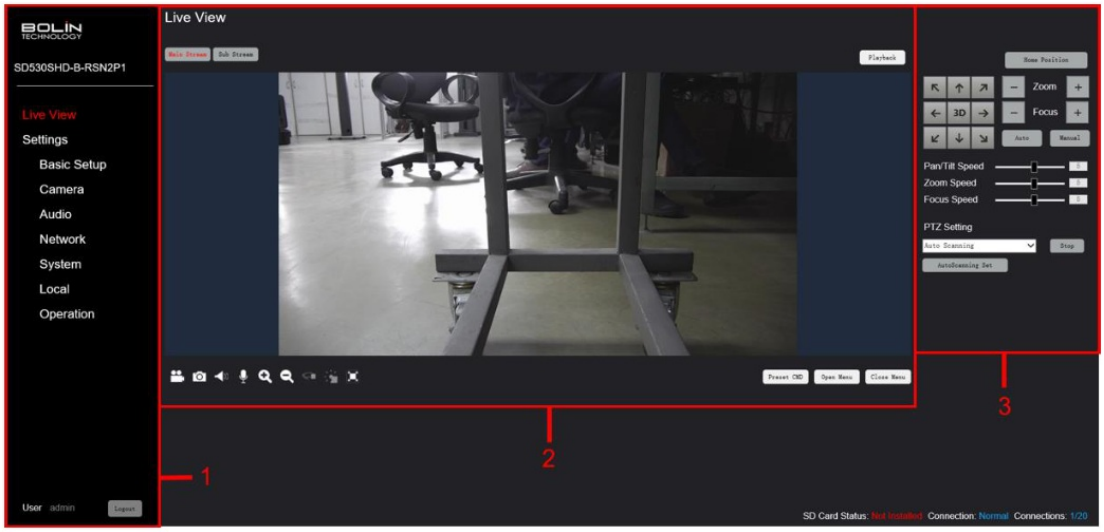
- Please copy this key number and send it to us, you can contact us at: **support@bolintechnology.com**
- A BOLIN Technology Support team will provide a temporary password that is only valid for 24 hours, which can be used to log in to the camera to create a new password. Please use the temporary password 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.

P Search Tool:

- Running the IP Finder Tool on your laptop/pc, it will automatically get the list of all cameras 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.

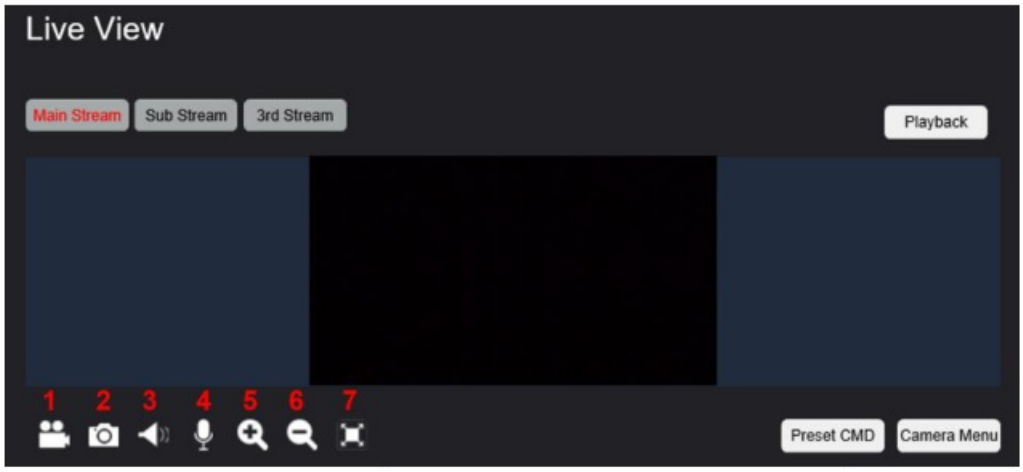
Introduction to the Web Interface



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 rd 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, preset 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 support quick access recording, screenshot, full screen etc.

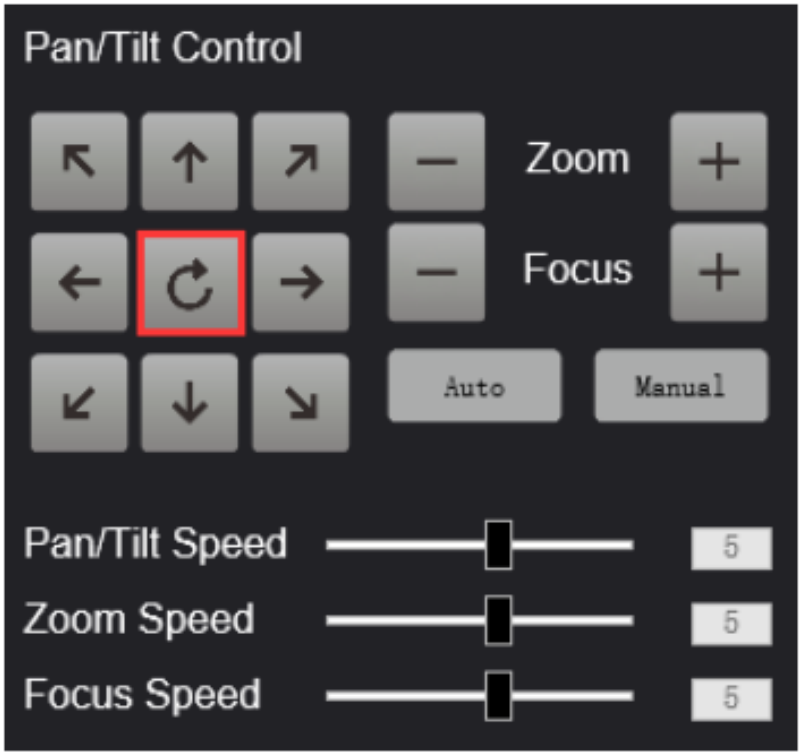


Main Stream:
The main video stream, viewed by default on the live view panel, the mainstream parameters can be configured on the Camera>Codec page
Sub Stream:
For the sub video stream, you can click the Sub Stream button to switch to watch the sub video stream on the live view panel, the stream parameters can be configured on Camera>Codec age 3 rd Stream: The 3 rd video stream, you can click 3 rd Stream button to switch to watch 3 rd stream on live view panel, the 3 rd stream parameters also can be configured on amera>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, and Full Screen.
Record: supports inserting Micro SD card to the camera, to-do record and save the video in the SD card;
Capture: to take a screenshot of the camera video image;
Speaker: to turn on / off the preview audio on the live view panel;
Mic: to enable/disable the Mic which is built-in into 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 review 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 licked 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:

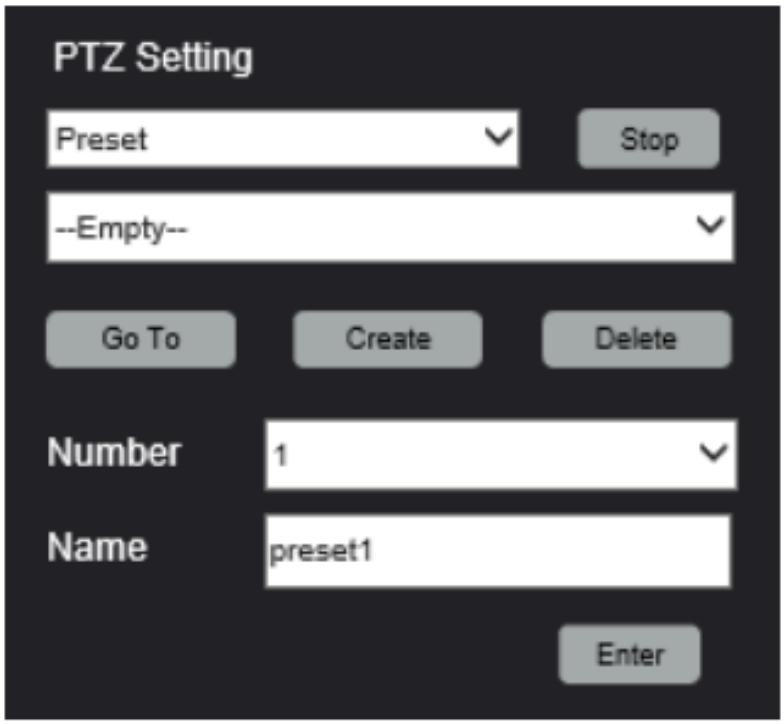
- The first position where the camera will be in after initializing(rebooting)
- Once presets have been set up, one of the presets can be selected as the Home Position. (set preset 1 as the Home Position usually)

Pan / Tilt



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

PTZ Setting
This menu contains the section where the Auto Scanning, Preset, Patrol, Scanning, Power On Action, and Cruise can be configured.



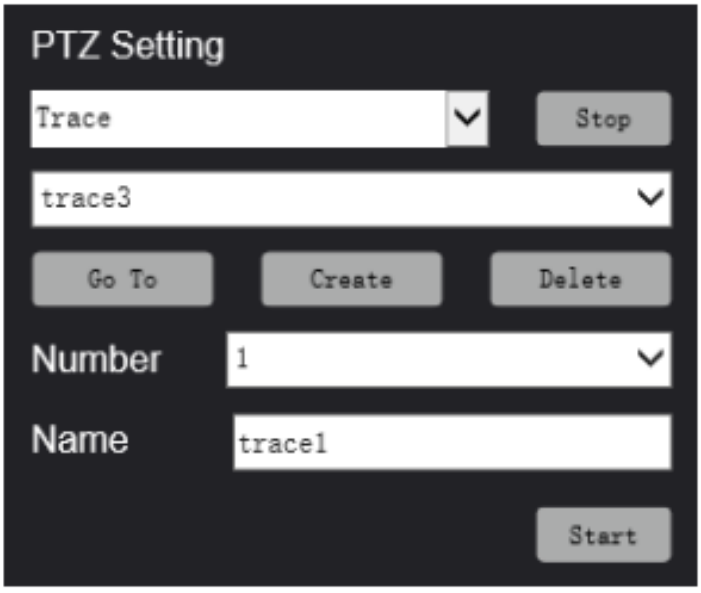
Auto Scanning:
The camera image (pan) can be set to move horizontally from left to right or from right to left continuously. Moving

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, supporting 255 presets at maximum. To add a new preset:

1. Select Preset in the PTZ setting bar.
2. Click Create button, it will extend the 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 nd 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, the camera will recall this preset position quickly. Any preset can be deleted by selecting the preset and clicking the Delete button.

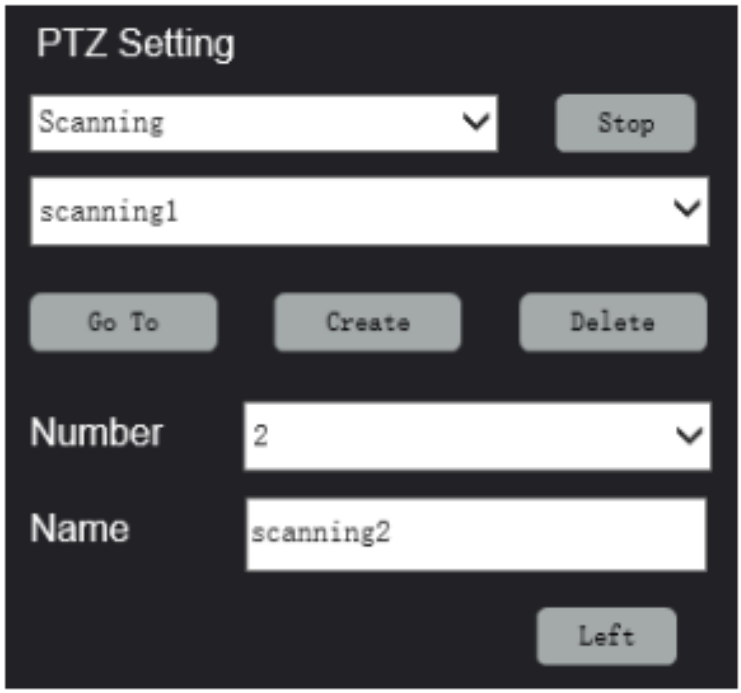
Trace:A Trace is a series of presets, recalled in a given order. This causes the camera to iterate through the series, moving to each preset in the selected order, support create
8 traces at maximum.



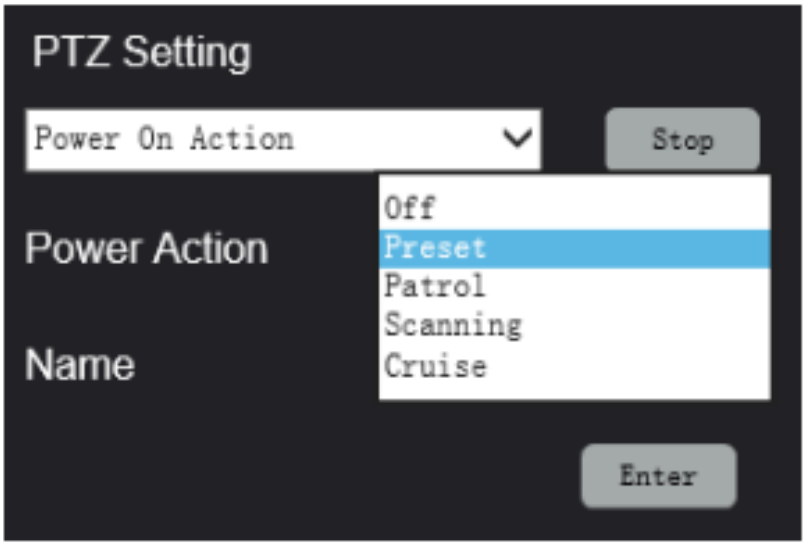
To create a new trace:

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

Scanning:
left limit and right limit can be programmed, then the 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.

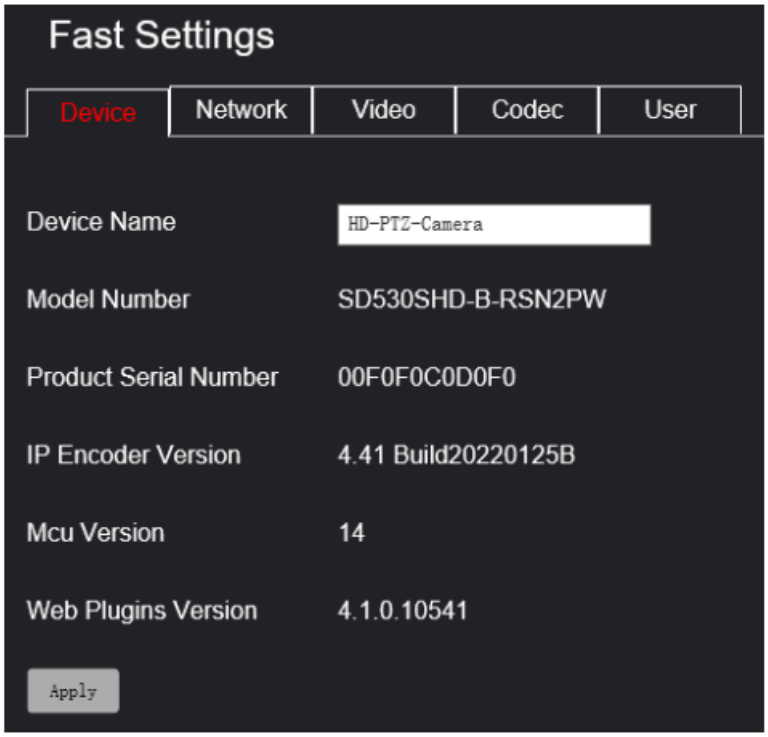


Power On Action:
To set actions that the camera will take after the camera is powered on. You can select the action as preset, patrol, scanning, and cruise.



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.

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

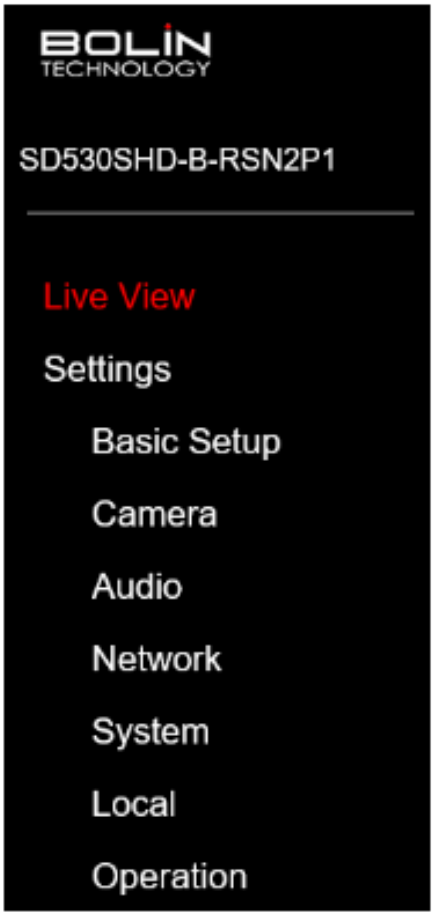


Device: The basic product information of the camera, you can get the model number, and serial number as well as the IP firmware version information. The IP firmware version ay is required when you submit a camera issue.
Network: The network tab is where the user is able to configure the camera IP network setting, DHCP, or static IP, including IP address, mask, gateway, and DNS server.
Codec: This interface allows users to configure the Main, Sub, and 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

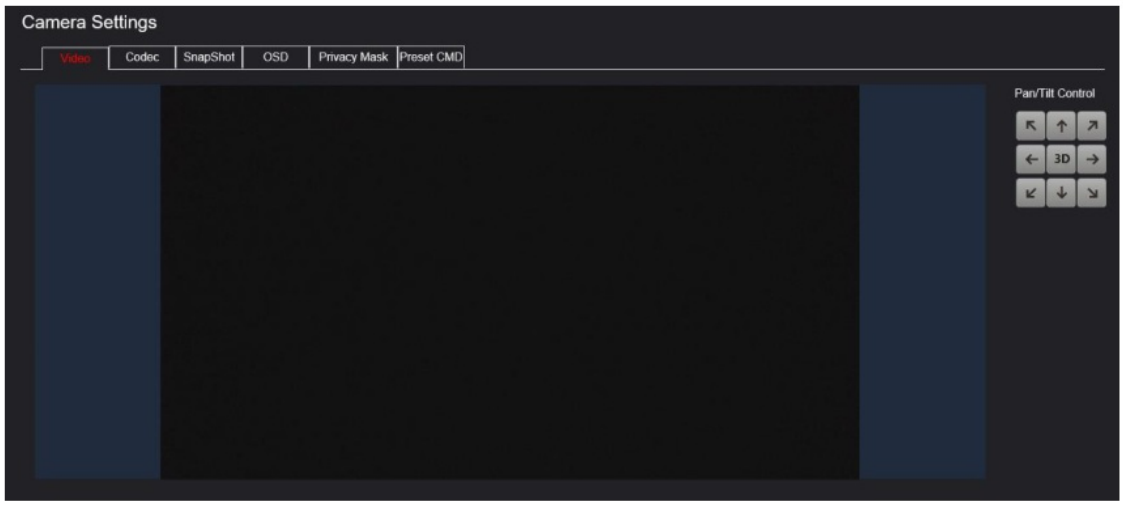
Configuring the camera from the Menu Bar

The 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, and Third video stream parameters.

- **Main Stream –** The mainstream, viewed by default on the Live screen
- **Video Compression:**
- H.264
- H.265
- MJPEG
- **Resolution**
- 1080p60
- 1080p50
- 1080p30
- 1080p25
- 720p60
- 720p50
- **BP Frame**: Simple P frame
- **Frame Rate**(fps): Rate at which image frames are captured 1~60 fps adjustable
- **Bit Rate**: The amount of data transmitted per second. Measured in Kilobits Per Second (Kbps). 1000kbps = 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 tothe title.
- **Video Compression:**
  - H.264

- H.265
- MJPEG

- **Resolution:**
  - D1
  - CIF
- **BP Frame:** Simple P frame
- **Frame Rate:** The rate at which image frames are captured
  - 1~60 fps adjustable
- **Bit Rate:** The amount of data transmitted per second. Measured in Kilobits Per Second (Kbps). 1000kbps = 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

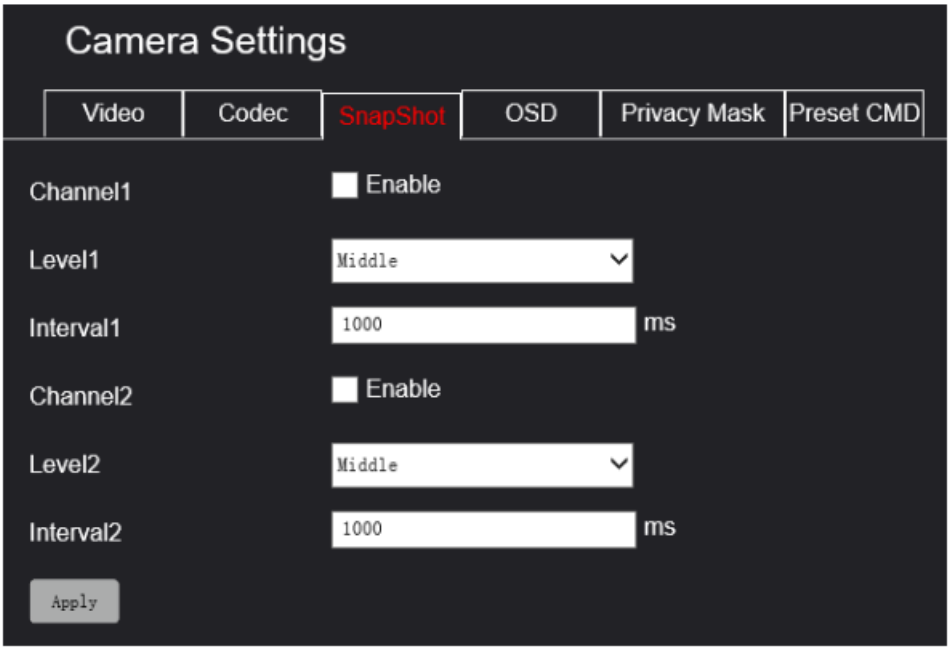
True Dual Output video format setting
This camera supports Bolin True Dual Output functionality, which means that you can have relevant IP streaming when SDI/HDMI video is set to any format you want to set. It takes SDI/HDMI video format setting as a priority.

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 nly have relevant IP video formats displayed for you to select from.

True Dual Output Video Format				
SDI	IP Resolution/Frame Rate			
1080p60	1080p60	1080p30	720p60	720p30
1080p59.94	1080p60	1080p30	720p60	720p30
1080p50	(108000	1080p25	720p50	720p25
1080p30	1080p60	1080p30	720p60	720p30
1080p29.97	1080p60	1080p30	720p60	720p30
1080p25	1080p50	1080p25	720p50	720p25
720p60	1080p60	1080p30	720p60	720p30
720p59.94	1080p60	1080p30	720p60	720p30
720p50	1080p50	1080p25	720p50	720p25
1080160	1080p60	1080p30	720p60	720p30
1080160.	1080p60	1080p30	720p60	720p30
1080150	1080p50	1080p25	720p50	720p25
720p30	1080p60	1080p30	720p60	720p30
720p25	1080p50	1080p25	720p50	720p25

Camera-Camera Setting-Snapshoot



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 the FTP upload function together.

Channel 1: Mainstream

Level: Quality level of screenshots, supports

Lower, Middle, and High selectable

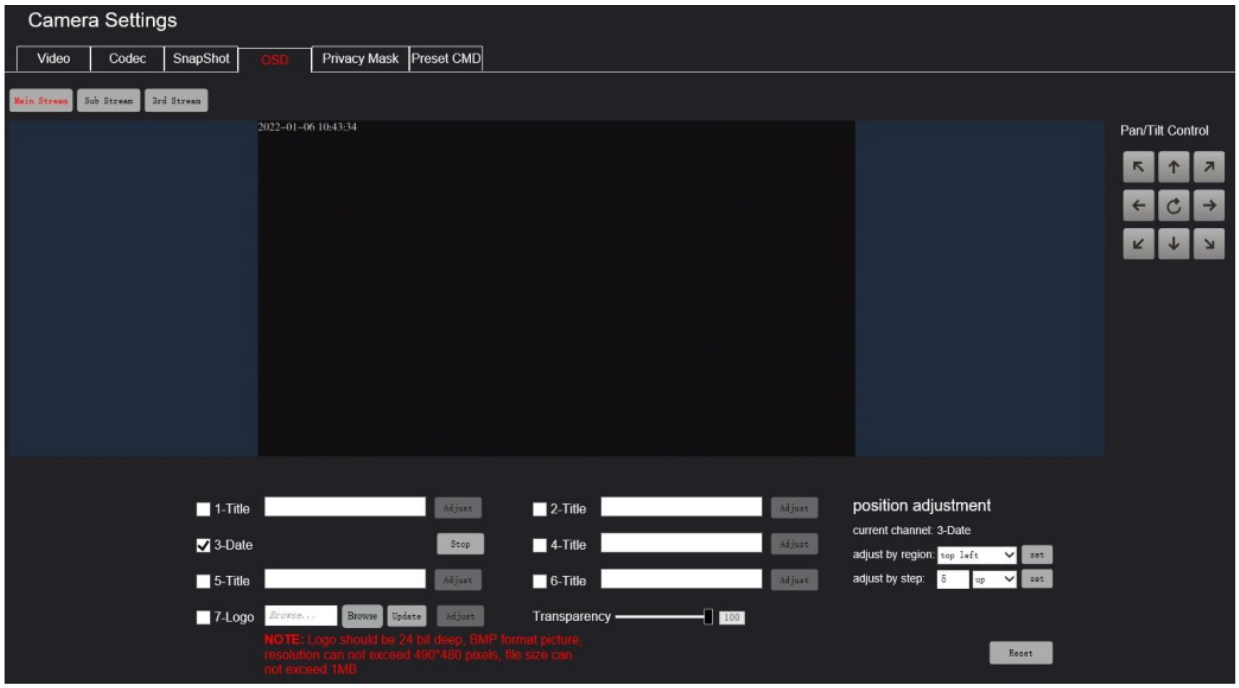
Interval: snapshot frequency, 1000ms by default

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.

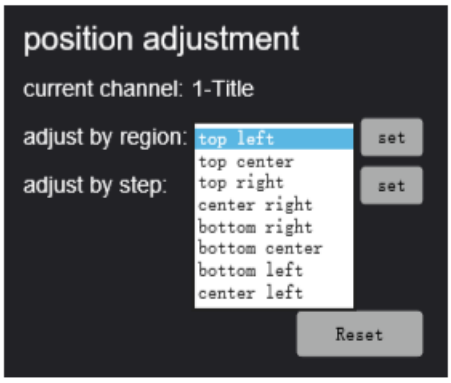


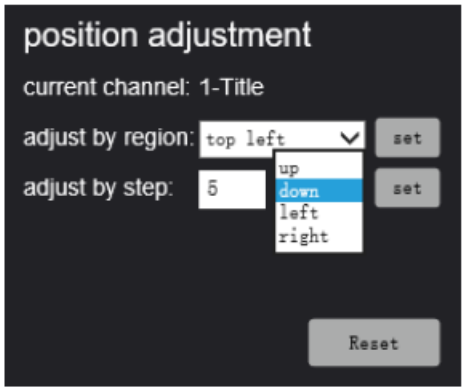
The title can be configured on Main, Sub, and 3rd Stream at the same time, here take the 1- Title setting for example:

- 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 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 theright-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 leftAdjust by step, you can configure a step in the rang from 1 to 100, select the

direction, and then click set buttonto apply it.





- After done, please click the Stop button to close the 1-Title adjustment
- A logo file can be uploaded and overlaid 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 490×480;
4. Users can adjust the logo display position by clicking the “adjust” button which besides the logo update, and then use the position adjustment module to adjust the Logo position, the operation is the same as the above Title position adjustment.
5. . Users can adjust the transparency of the logo display, and support a 1~100 adjustable percentage;

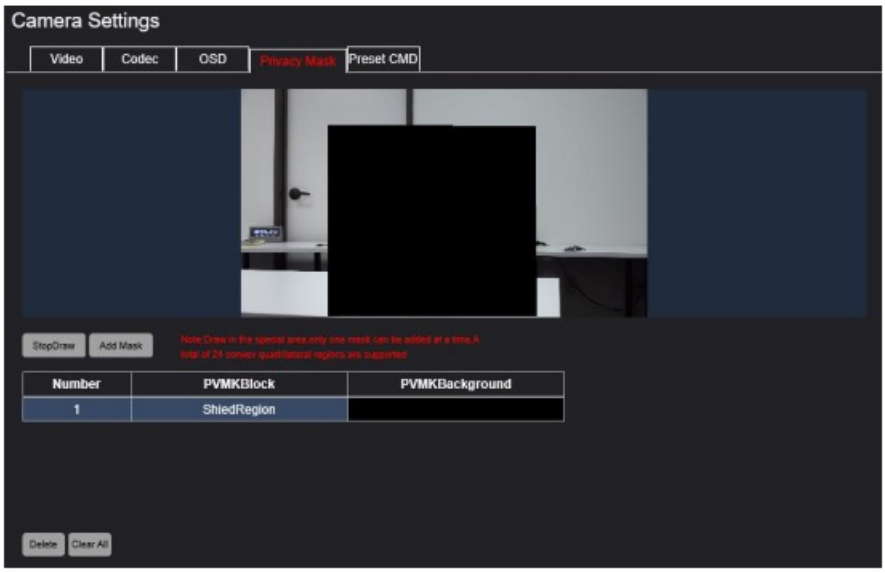
NOTE: 1 means fully transparent, and 100 means completely opaque.

Camera-Camera Setting- Privacy Mask

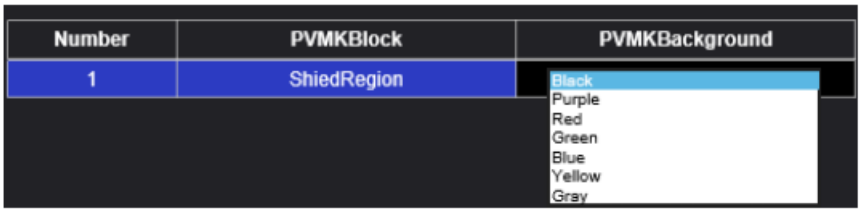
The Privacy Mask setting is for adding a Mask of the image pixels that you want to be covered, then the image portion that has been covered by a mask will not be seen by the viewer.
Only one mask can be added at a time, and a total of 24 convex quadrilateral regions are supported.
NOTE: This feature only works with IP stream, and will not affect the SDI, HDMI, or other outputs.
You can set up a privacy mask by performing the following

1. Click the Start Draw button which is under the image window

2. Move your mouse to the camera image window, select a point, and left-click the mouse to start
3. Then move to the 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 finishing the area drawing, click Add Mask button, and it will be done.



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



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

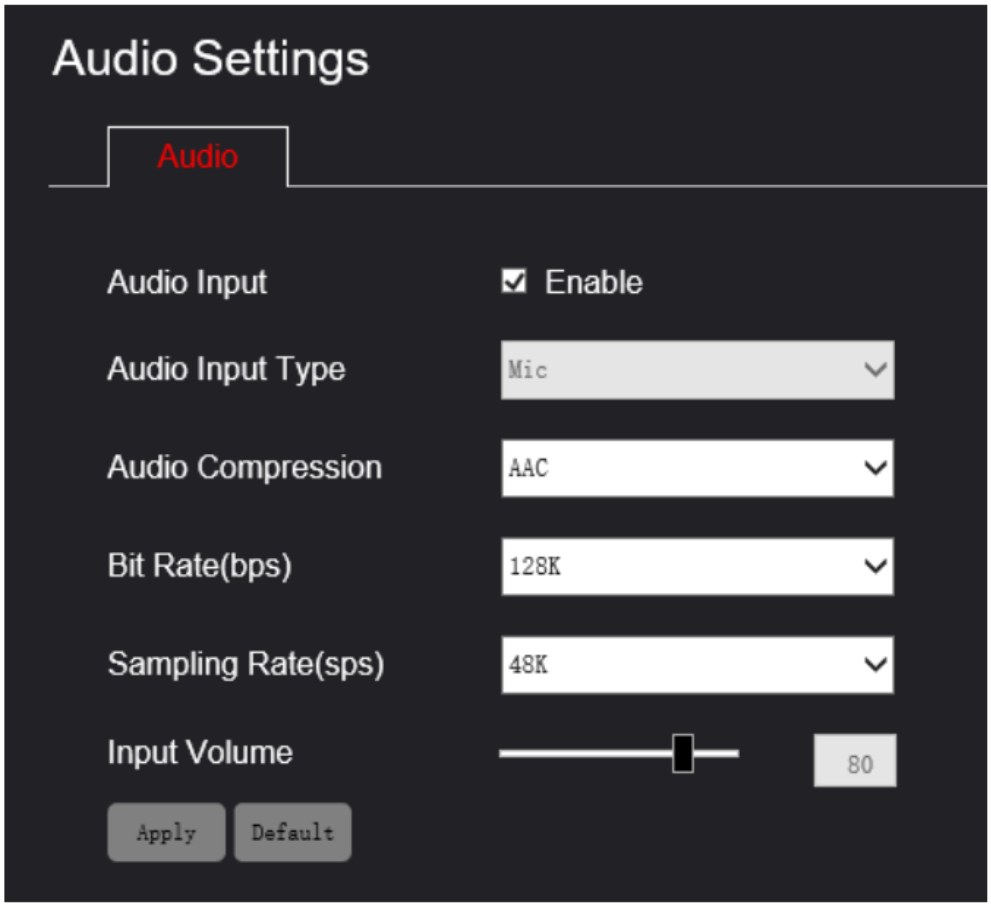
NOTE: The privacy Mask function is not supported in non-IE browsers, and it will not display this page in the web interface

Camera-Camera Setting- Preset CMD

The presets shown on this page are the pre-programmed commands that 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. To create a preset. (select number 64 and press the PRESET button for 3 seconds)

Audio-Audio Settings

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



- **Audio Compression Options:**

  o G.711A – Pulse Code Modulation (PCM), often used to decode voice frequencies with regard to Telephony

  o G.711U – Standard for speech compression and decompression within digital transmission systems

o AAC – dvanced Audio Coding

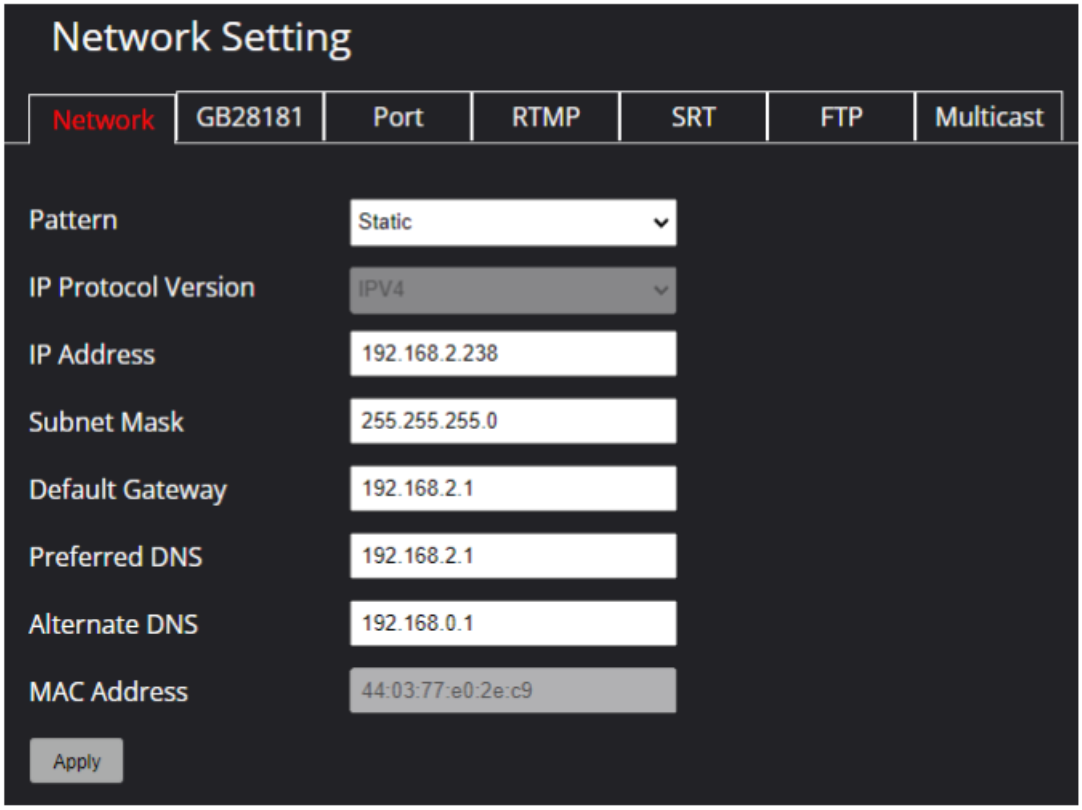
- **Bit Rate**
  o Bit rate supports 32K, 48K, 96K and 128K
- **Sampling Rate**
  o Sampling rate supports 32K, 44.1K and 48K
- Input Volume
  o 0 to 100 adjustable by drag the input volume bar, default is 80

NOTE:

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

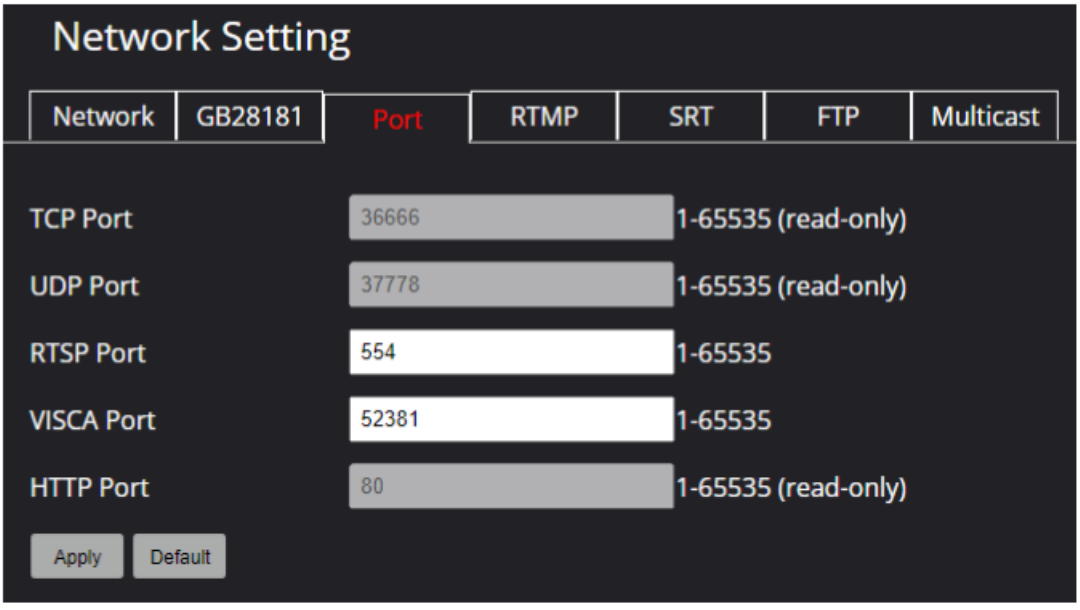
Network-Network Setting-Network
The network tab is where the user is able to configure the following:

- DHCP options
  o DHCP – An IP address will be
  dynamically assigned to the camera from the gateway (router)
  o Static IP – The user will enter / define the IP address
- IP Address
  o Default IP address is 192.168.0.13
- Subnet Mask
  o Default mask is 255.255.255.0
- Default Gateway
  o Default gateway is 192.168.0.1
- Preferred DNS
- Alternate DNS
- MAC Address
  o 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:

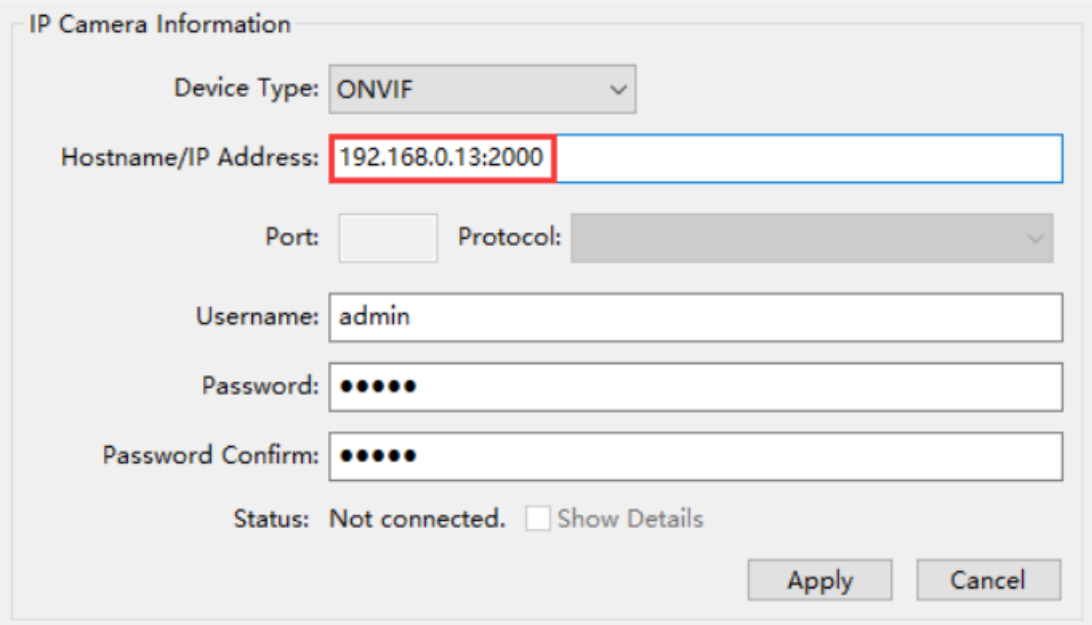
- TCP Port: o 1 to 65535 adjustable
- UDP Port: o 1 to 65535 adjustable
- RTSP: Default 554 o RTSP is the protocol used to pull real-time video over the network (using VLC layer or another network video-compatible software) o Changing this port number will change the way the RTSP video can be viewed. Most RTSP streaming software uses ort 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
- Users can change the port number to others to match with the 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**

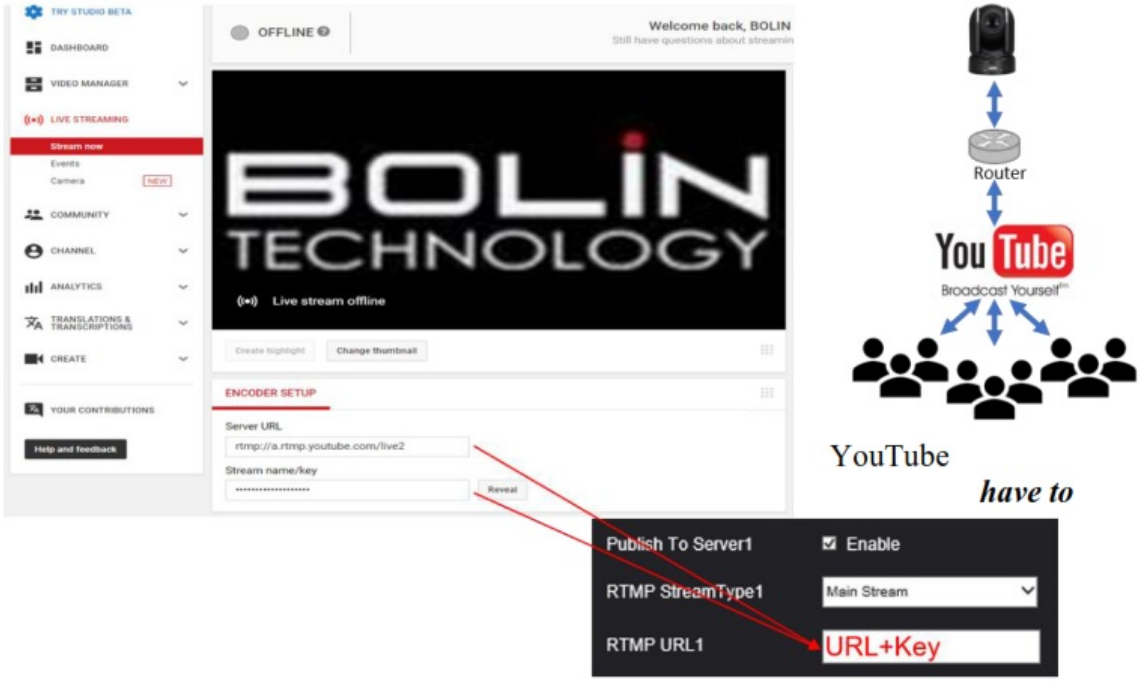


NOTE:
VMS Connection
If you use VMS (such as exacqVision) to connect the camera via ONVIF protocol, you must to include the port 2000 for VMS connection.
For example: If the camera IP address is 192.168.0.13, you need to enter 192.168.0.13:2000 on VMS configuration menu.

Network-Network Setting-RTMP

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

- 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 YouTube URL+ Key is not meaning we have to put the plus sign “+”, just put “/ “and then put the key after the R

- Click Apply on the 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

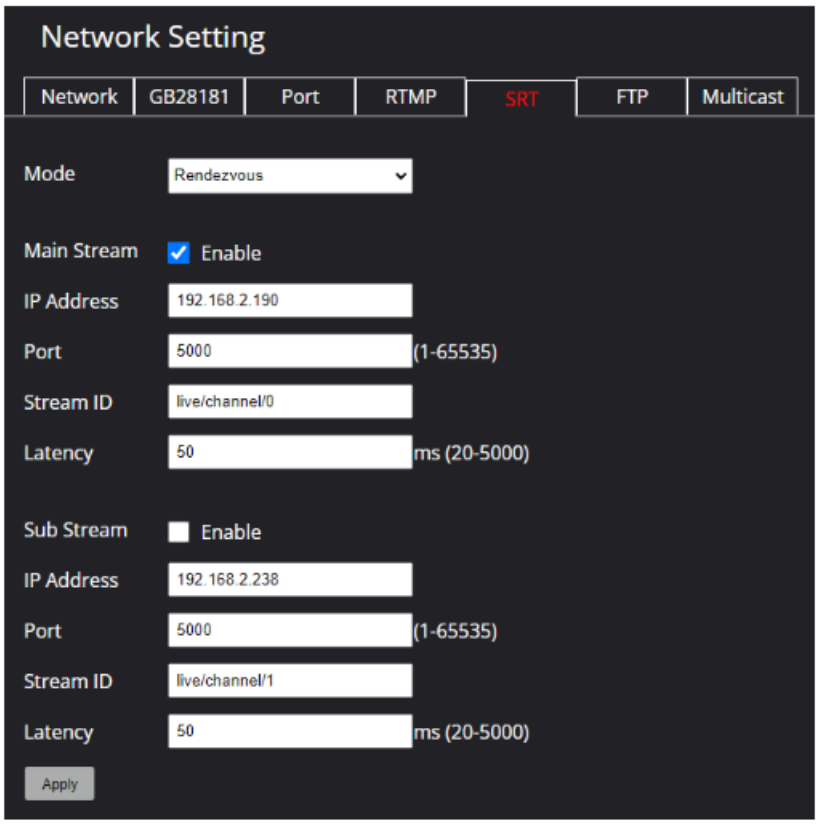
To establish the communication flow, SRT employs a handshake mechanism in which each device is identified as a caller or listener. In some cases, two devices can negotiate an SRT session in rendezvous mode at the same time.

SRT Mode	What it can do?
Caller	Set the source or destination device as the initiator of the SRT streaming session The Caller dev mber of the Listener device
Listener	Set the device to wait for the request to start an SRT streaming session The Listener device just SRT streaming n a specific port
Rendezvous	Allows two devices to use the same port to start an SRT session Both source and destination m

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);

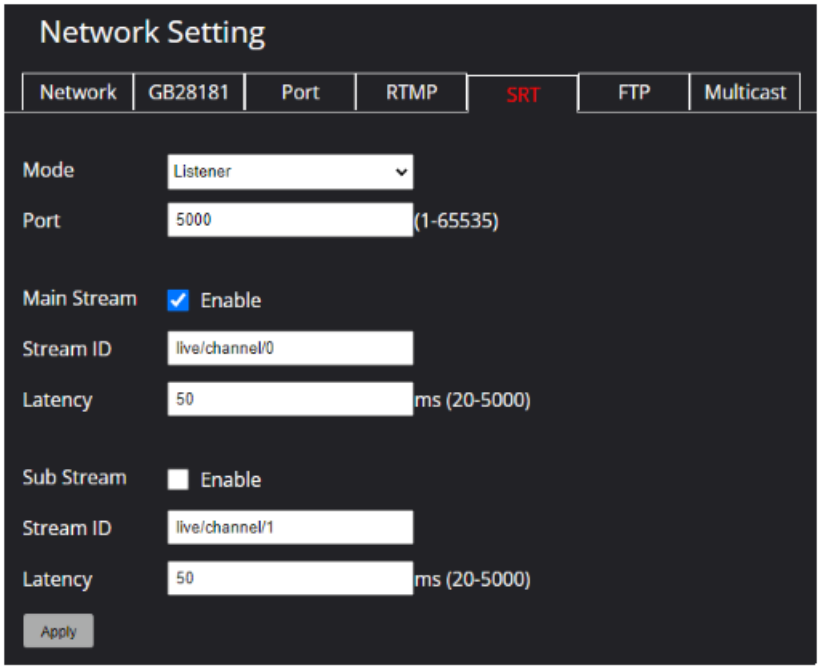
- Port: Configure a port for SRT session, it must match the SRT port number of the Listener device (the range is 1~65535);
- Stream ID: SRT streaming ID, you can set one or keep it as default (please configure the same Stream ID on the Listener device);
- Latency: Delay between the Caller device and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



NOTE: When the camera is set to Caller mode, then the camera can only send the 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 the 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.

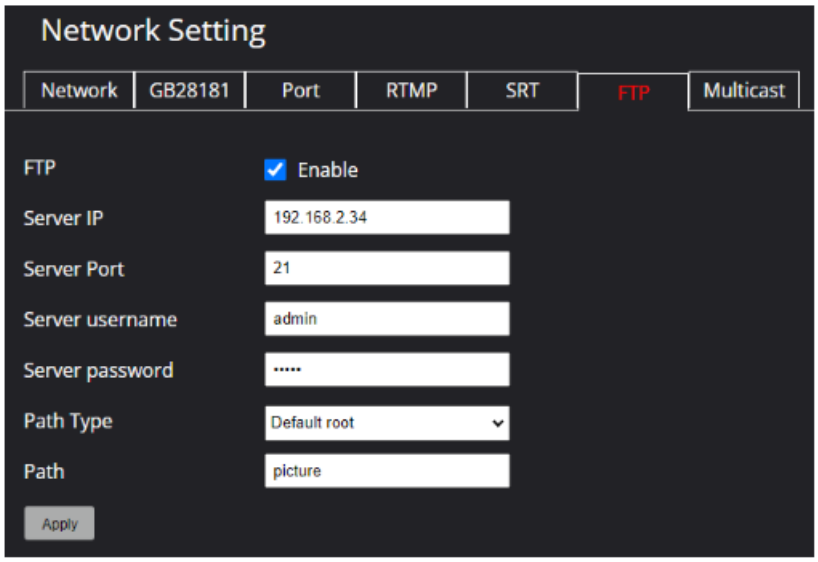


- IP Address: The IP address of the other end SRT device (configured in Rendezvous mode)
- Port: Configure a port for SRT session, it must match the SRT port of the other end SRT device (configured in Rendezvous mode)
- Stream ID: SRT streaming ID, you can set one or keep it as default (please configure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

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

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 the same as configured on FTP server, it should be port 21 usually.



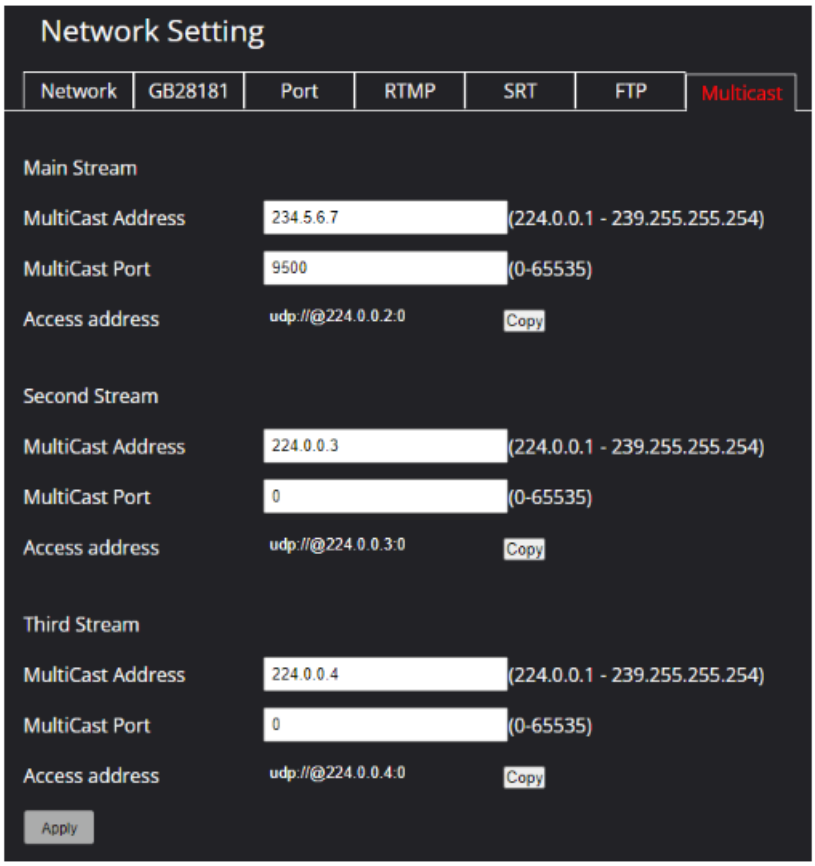
4. Input FTP server name and password into the Server username and Server password option bar, it must be the same as configured on the FTP server
5. Select the Path Type and Path that you want the snapshot to be saved on FTP server

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

Network-Network Setting-Multicast

This setting page is used to configure multicast for Main, Second and Third streams, to save bandwidth purposes in live streaming applications. 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 the camera once to make the settings take effect;
- After the camera power cycle, click the copy button to copy the multicast URL address



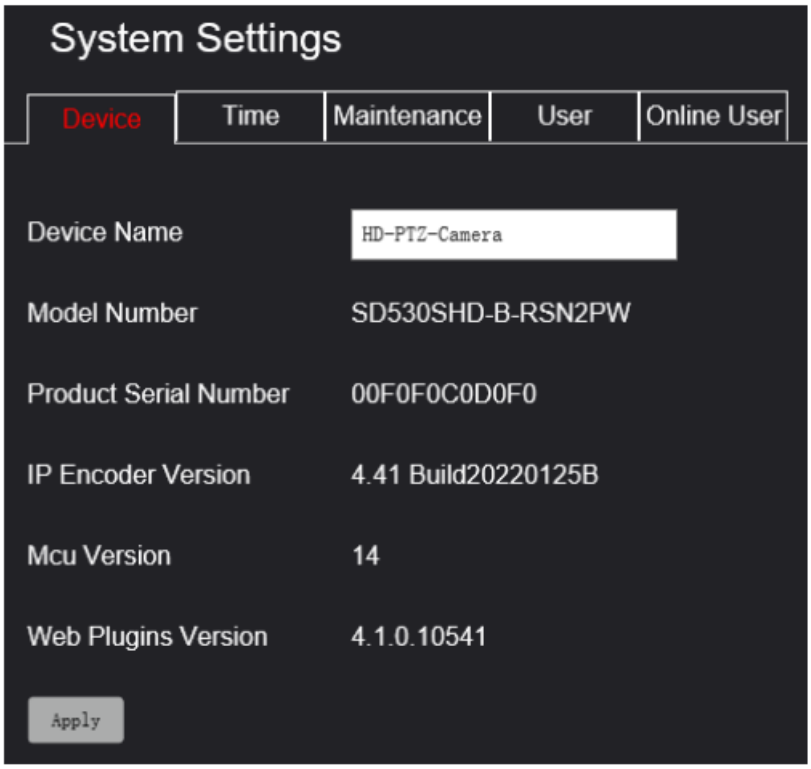
User can use VLC Media Player to receive the camera multicast stream, operation as below:

- Running VLC Media Player
- Click the Media menu which in the upper left corner, and select Open Network Stream…
- Input the copied multicast URL address into the Network URL bar;
- Click the 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.

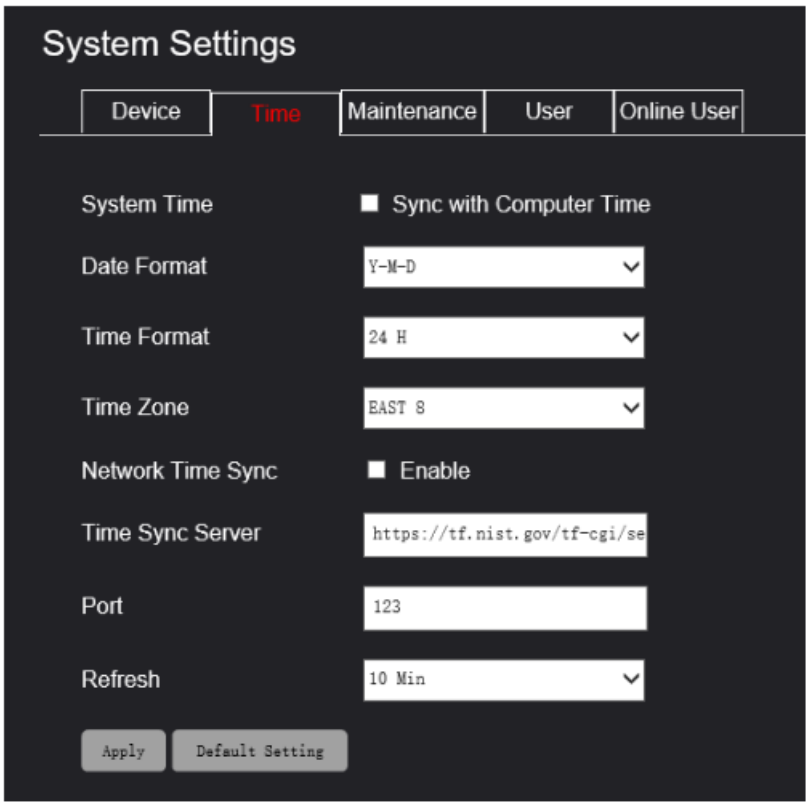
- Device Name o You can set a name to this camera
- Model Number o The specific model of this camera
- Product Serial Number o The serial number of this camera, each serial number is unique and fixed, and can't be modified.
- Encoder Version o The current encoder version running on this camera
- MCU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

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



System-System Setting-Time
This interface allows the user to configure the date/time settings of the camera

- System Time o You can check the Sync with Computer Time option and synchronize the camera operation time with your PC time system.
- Date Format o Two formats selectable o Y-M-D or D/M/Y
- Time Format o Two formats selectable o 24H or 12H standard
- Time Zone o WEST 12 to EAST 12 selectable o Please select the correct time zone for your location



- Network Time Sync o Check the Enable option o Input the time sync server address, port number o Select refresh time option, it has 10 Min, 30Min, 1 Hour, 1 Day selectable.

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.

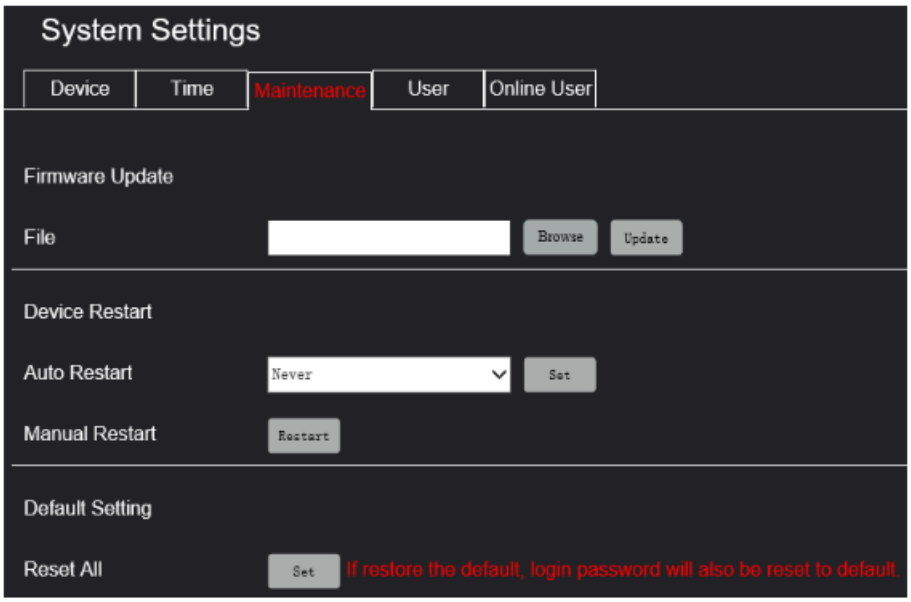
System-System Settings-Maintenance
The Maintenance tab under the System Setting section can be used to perform the following functions:

- **Firmware Update**

  You can upgrade IP Encoder software and FPGA software via this Firmware Update feature.o Two types of firmware can be upgraded from this section:

  ▪ Firmware for IP encoder. The name of the file is shown as “CAM-00-IP4Kxxx.dat”

  ▪ Firmware for FPGA. The name of the file is shown as “CAM-00-FPGA-xxx.dat”o A firmware file can be obtained from the BOLIN Technology website: www.bolintechnology.com o Click the Browse button, and navigate to the file (xx… .dat) o Click Remote Update, and allow the camera to load the new firmware o It takes few minutes for the camera to finish the upgrade.

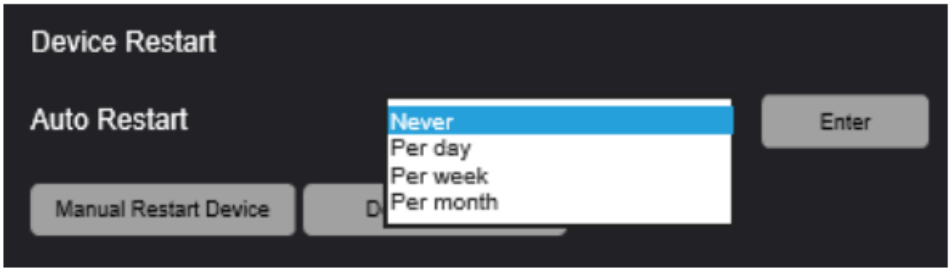


  ▪ When upgrading IP Encoder FW, it takes about 3 minutes to finish the upgrade process, prompt shown to confirm the reboot, it takes about 1.5-2 minutes to complete the reboot. refresh the IE browser.

  ▪ When upgrading FPGA FW, it takes about 3 minutes to finish the upgrade process, here is a prompt shown to confirm the system restart. After confirming the system restart, must do a power cycle to the camera to complete the FPGA fw upgrade.

NOTE:o For MCU version upgrade, please refer to “Upgrading MCU Firmware” in User Manual Part 1

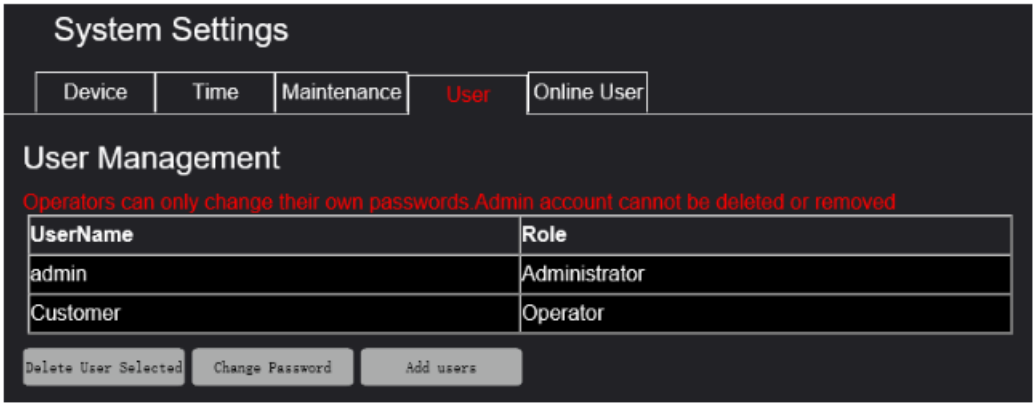
- **Device Restart**



- Soft reboot, only restarts 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 o Reset All, to restore all IP interface settings to default, the login password will also be restored to the default admin, but the network IP address will not be restored. **System-System Setting-User**
  This setting page is to allow administrators to create/manage user accounts and passwords

To add a new user:

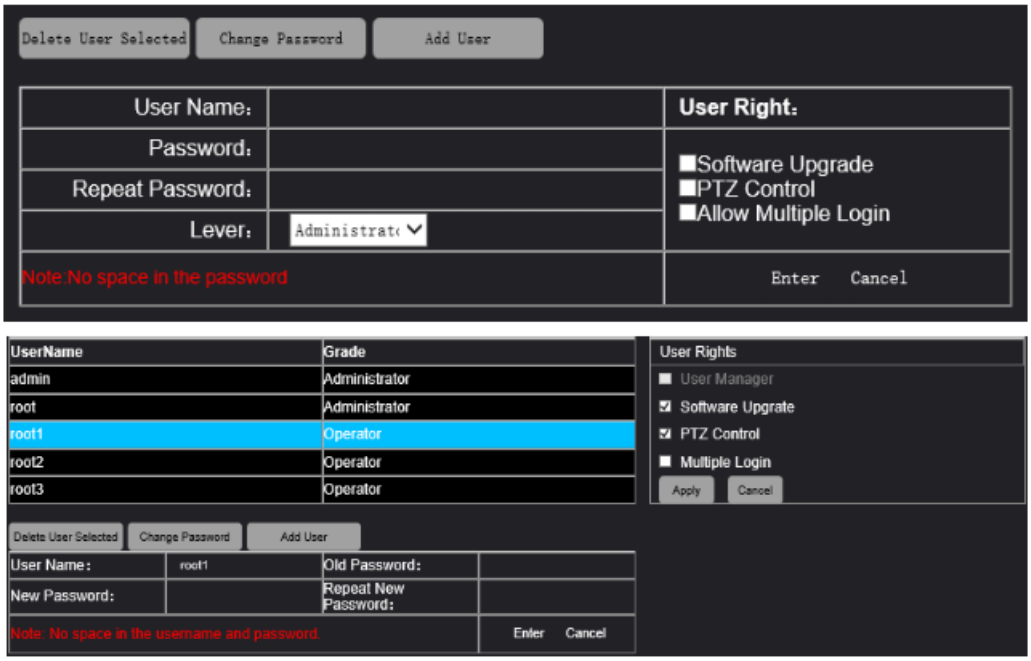


1. Click the Add User button
2. Enter the username
3. Enter the new password in the Password field
4. Re-enter the password in the Repeat Password field
5. Assign a role to this account, it can be Administrator or Operator.
6. Authorize to this account, you can check the User Right option to allow this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

Account modification:

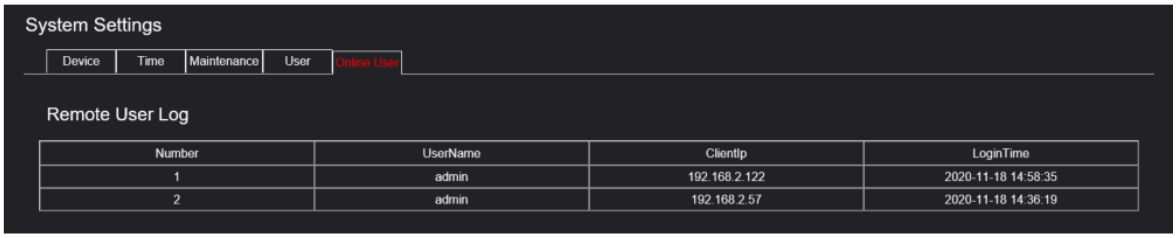
After created the user account, you also can modify the account details later

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 the administrator to monitor all the user accounts that are online.

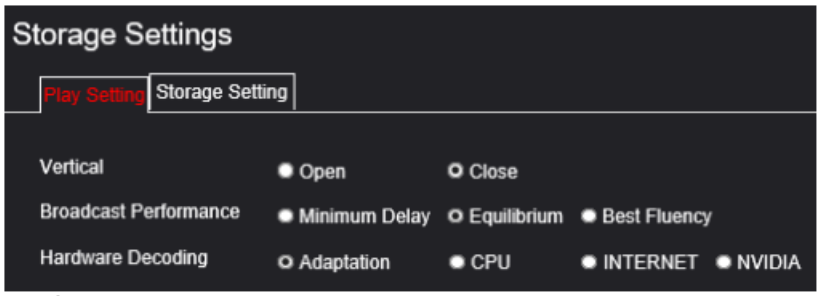


NOTE: non-IE browsers' login will not display this page

Local-Storage Setting-Play Setting

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

Vertical: Vertical sync, is used to solve the image splitting/cracking issue 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 an increase
- In equilibrium mode, n 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 the system,

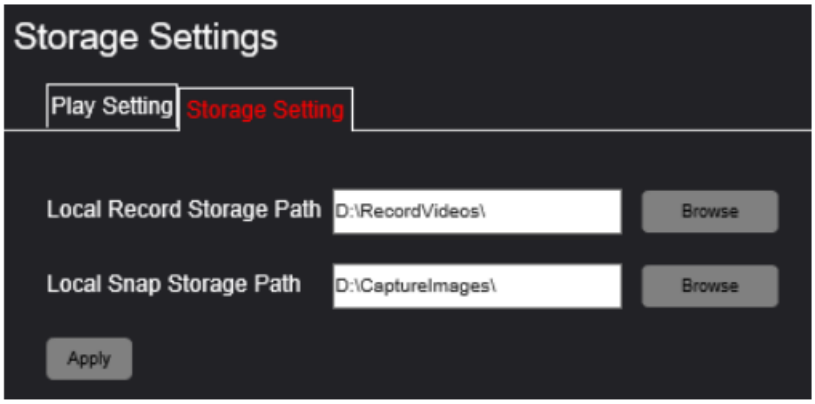
- CPU mode, using CPU to do decoding, it will consume a lot of CPU resources, only select it if there is no independent graphics card or the graphics card is poor;
- Intel mode, using Intel graphics card to do decoding, select this mode if your PC graphics card is Intel;
- Nvidia mode, using Nvidia graphics 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 administrators to set record storage paths and snap storage paths.

The default path is D:\RecordVideos\ for the record and D:\CaptureImages\ for the snap.

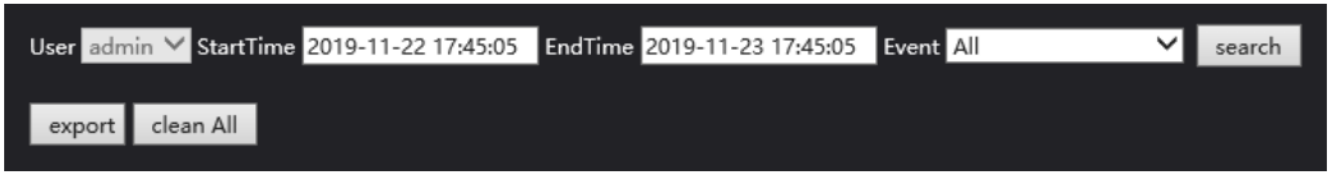


You can click the Browse button to change the path for both record and snap storage.

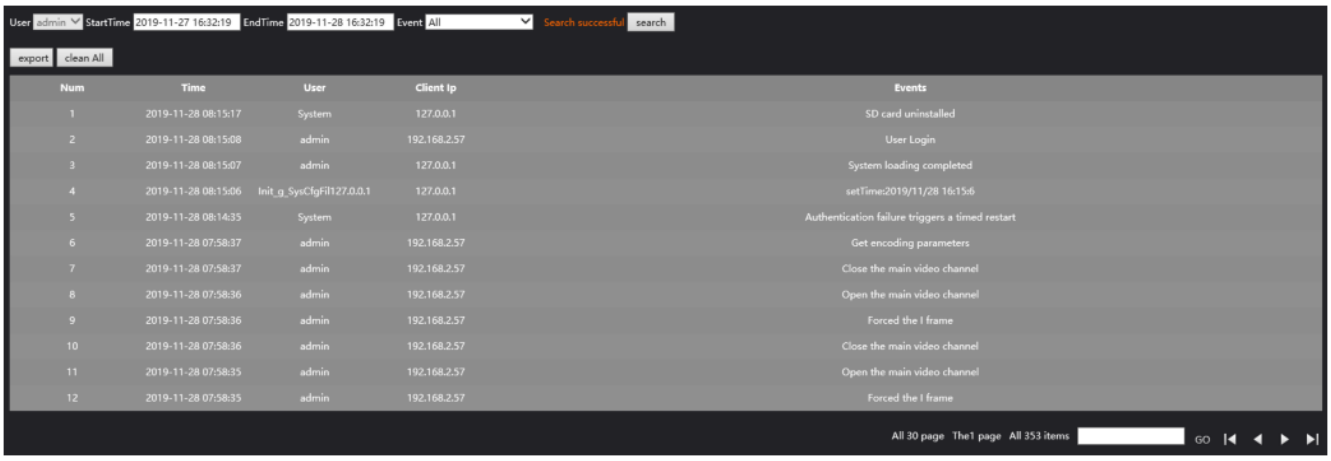
NOTE: non-IE browsers' login will not display this page

Operation log

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

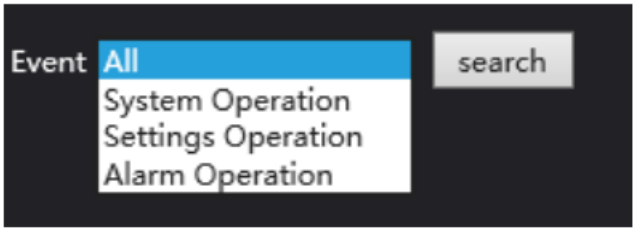


Select a Start Time and End Time, click search button, you will get all the log information of the camera during this period. This is for the administrator to monitor and maintain the camera IP interface.



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

You can search all information by selecting 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**.

1. MCU (Micro Control Unit) firmware upgrade via USB
2. IP encoder firmware upgrade via IP network

NOTE:

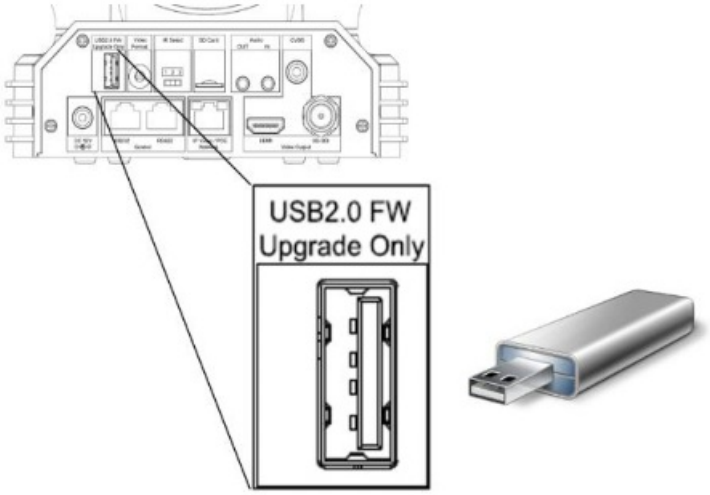
The firmware upgrade process is intended to be performed under the supervision of a BOLIN-Authorized repair technician. For assistance with this, please contact your uthorized BOLIN Technology dealer, installer, or integrator. BOLIN Technology Technical Support can also be reached for assistance with 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 the camera IP encoder module Firmware via IP network. Connect and configure your camera with your local network successfully, log in to the camera IP web interface, and go to System, Maintenance section to upgrade the firmware. How to make Firmware upgrade for IP Encoder, please refer to User Manual Part Two.

www.bolintechnology.com

2082 TECHNOLOGY LLC
dba
BOLIN TECHNOLOGY

Documents / Resources

	BOLiN TECHNOLOGY EX1000 Series Dual Output SDI+IP FHD PTZ Camera [pdf] User Manual EX1000 Series, Dual Output SDI IP FHD PTZ Camera, EX1000 Series Dual Output SDI IP FHD PTZ Camera, SD500 Series

References

- Home - BolinTechnology