

# Dual Output SDI+IP PTZ Camera

## USER MANUAL

### Part Two: Network Camera User Manual

Version: SN-IP-02202021



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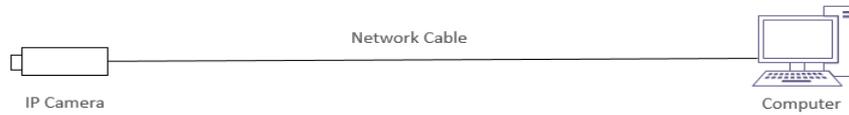
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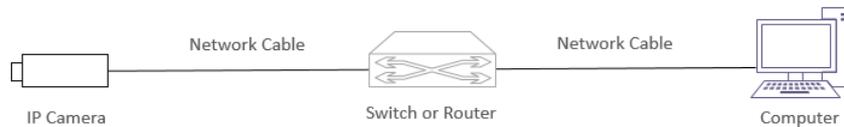
# Part Two: Network Camera User Manual

## 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.

### 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 Internet Explorer or a Video Management System (VMS).

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 Internet Explorer 8.0 or higher (Internet Explorer 11 recommended)
- Use default video format setting or set the camera video format to 1080P30 or 1080P25 using RS485 keyboard (Refer to camera setting menu).

### Supported browser

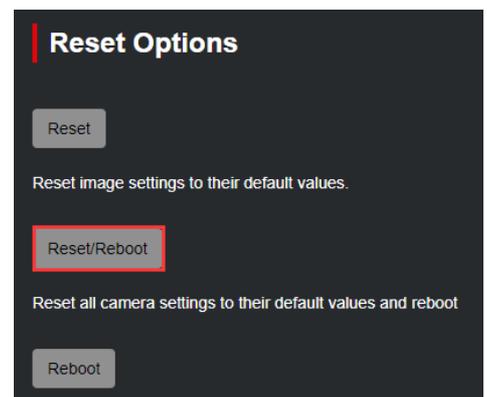
This camera support cross-system multi-browser access, like to watch live preview, camera PTZ control, configure the audio and video parameters and other settings.

Supported Browsers list:

- Internet Explorer (IE11 recommended)
- Google Chrome
- Mozilla Firefox
- Safari

NOTE: If you can't watch live preview on other browsers except Internet Explorer, you can try to do as followings:

- Make sure App version is V920 and above
- Do a reset on camera IP web interface>Reset Options page;
- Clear browser cache

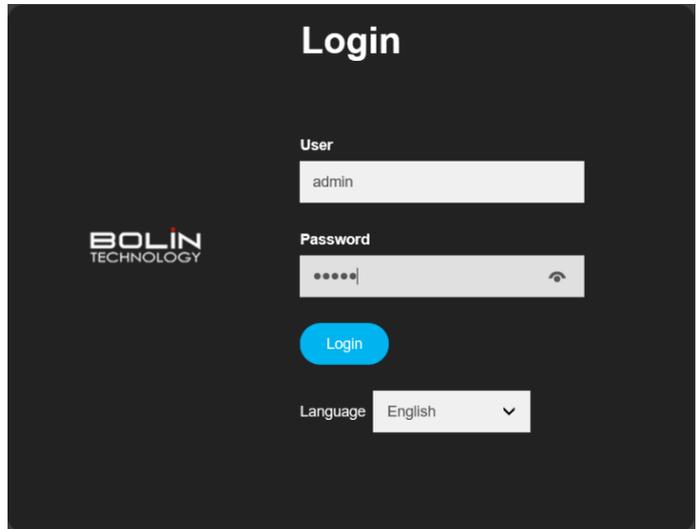


# Logging in to the Web Interface

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

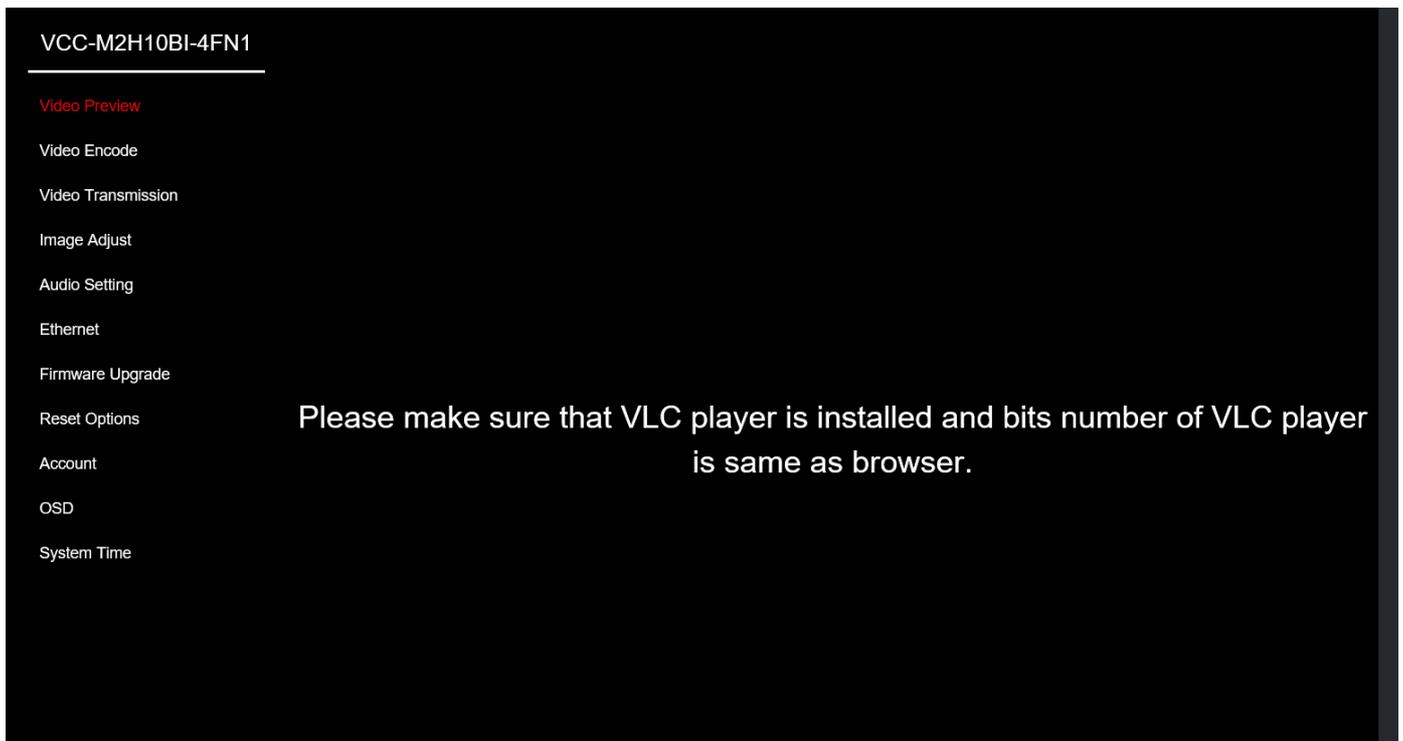
The following uses Internet Explorer 11 as an example to describe the login procedure.

1. Browse to the login page by entering the correct IP (default IP is 192.168.0.13) address of your camera in the address bar.
2. Enter the username and password, and then click **Login**. For the first login, use the default username **admin** and password **admin**.
  - 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).
  - The camera protects itself from illegal access by limiting the number of failed login attempts. If login fails six times consecutively, the camera locks automatically for ten minutes.

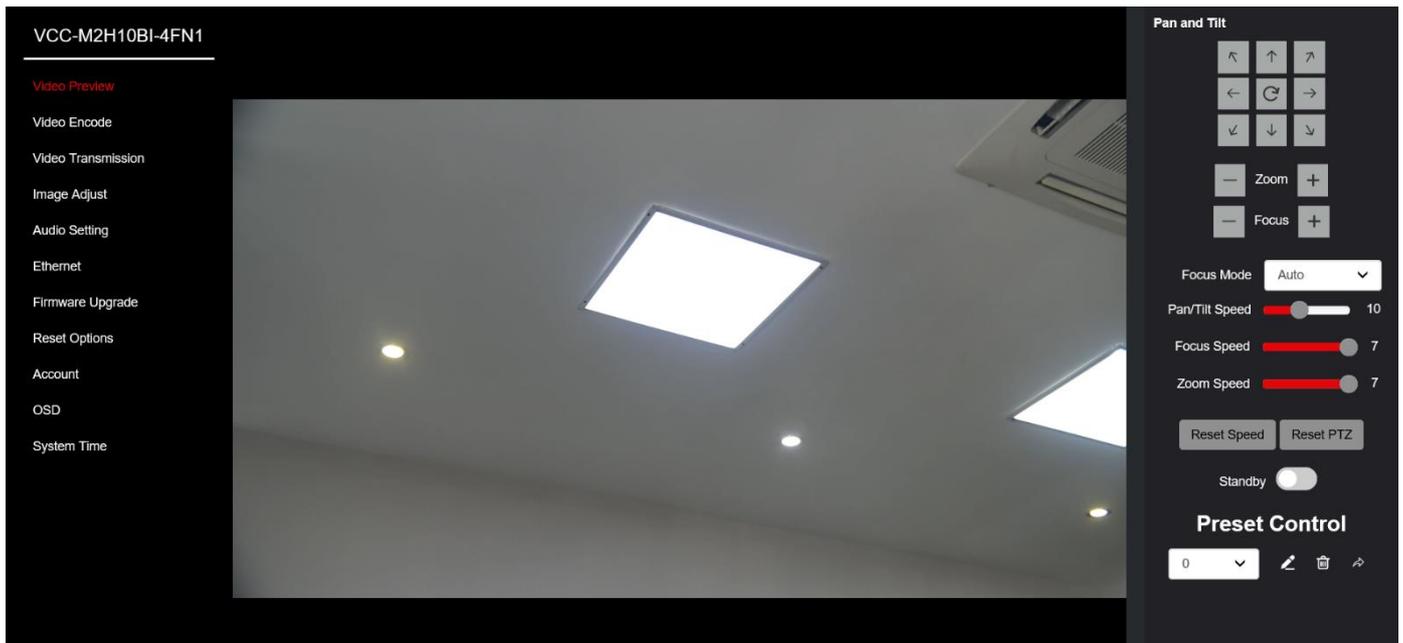


*NOTE: If your PC/laptop already installed VLC player, you can watch live preview directly after logged in. If your PC/laptop haven't installed VLC player yet, you may be prompted to install the VLC player.*

*Please download and install the correct version of VLC player (it means if your PC/ laptop operating system is 64 bit, you have to download the 64 bit version VLC, if your PC/laptop is 32 bit, so you have to download the 32 bit version VLC), after done the installation, user can re-login to the IP interface and watch the live preview.*



# Introduction to the Web Interface



## 1. Preview

- Used to monitor the camera video image
- Used to do camera PTZ control and preset setting

## 2. Video Encode

- Used to configure the camera video Main and Sub streams video parameter, such as encode mode, resolution, bit rate, frame rate, I Frame Interval and so on

## 3. Video Transmission

- Used to configure the camera RTMP streaming, to push the RTMP streaming to the third-party video platform, like the Youtube, Facebook and so on

## 4. Image Adjust

- Used to configure the camera image parameter, such as focus, exposure, white-balance, image, image setting, noise reduction

## 5. Audio Setting

- Used to configure the camera audio parameter, such as the Encoder Mode, Sample rate and Bitrate

## 6. Ethernet

- Used to configure the camera network parameter, can be static IP or DHCP, as well as HTTP port and RTSP port configuration

## 7. Firmware Upgrade

- Used to display the camera current version information
- Used to do firmware upgrade

## 8. Reset Options

- Used to reset the camera image parameter/all parameter to default
- Used to reboot the camera

## 9. Account

- Used to modify the admin account password

## 10. OSD

- Used to overlay the time, camera name, logo and text content on the IP video

## 11. System Time

- Used to setting the time zone and synchronize camera system time with the NTP server

## Preview

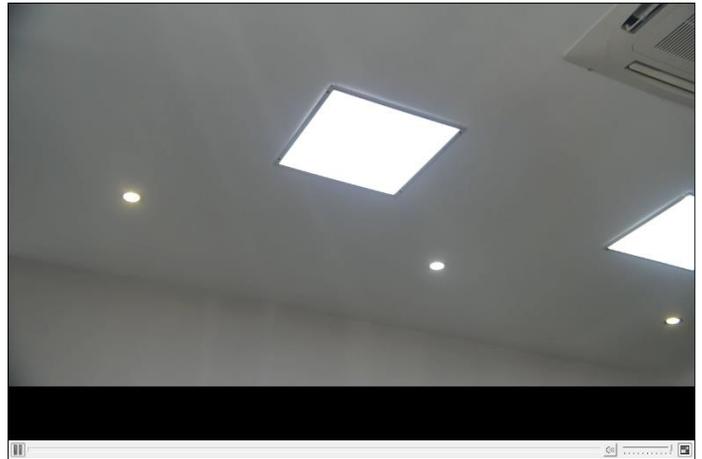
The preview page is used to watch the live preview of the camera.

### Play/stop Live Preview:

User can click the  button which on the bottom toolbar, to watch live video or stop the live video.

### Mute:

User can enable or disable the audio of live preview by click the  button on bottom toolbar, while enabled audio, user can drag the volume bar to adjust the audio.



### Fullscreen:

User can click the  button to enlarge the live preview window to full screen, then click  button again to back to normal size, or press PC/laptop "Esc" button to switch back to normal size while in full screen.

## Pan and Tilt

Pan and Tilt menu is used to do:

- Camera PTZ control,
- Adjust the pan / tilt / zoom speed
- Set focus mode

**Pan/Tilt Speed:** to adjust the pan/tilt speed, support 0-24 level selectable

**Focus Speed:** to adjust the focus speed, support 0-7 level selectable

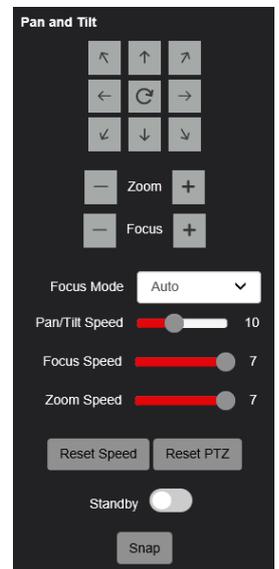
**Zoom Speed:** to adjust the zoom speed, support 0-7 level selectable

**Speed Reset:** To reset the zoom and focus speed to default

**PTZ Reset:** To reset the PTZ control to default

**Standby:** If turn on standby switch, the camera will go to standby status, it is not power off, you can get it back immediately by turn off the standby.

**Snap:** to capture the snapshot of the live view.

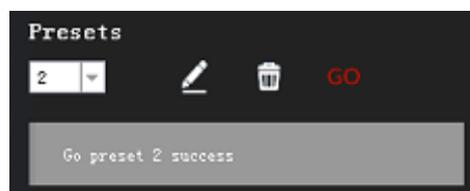
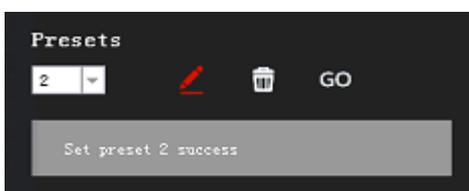
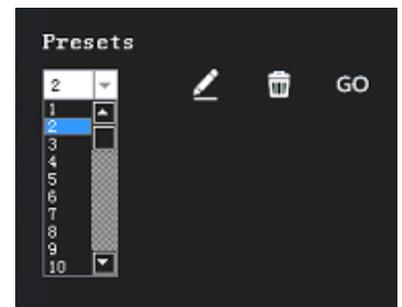
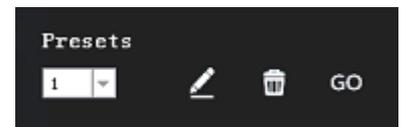


## Presets

Presets are predetermined positions that the user can command the camera to recall quickly.

To add a new preset:

1. Use the control panel and image viewer to pan to the desired Pan, Tilt, Zoom, and Focus position
2. Click the triangle symbol which in the drop-down list, select a number for this position (here we select 2 as example)
3. Click the pencil symbol and it will save this position as preset 2
4. Select a preset number and click Go button, the camera will to recall the position quickly
5. Select a preset number and click Delete button, it will delete this preset and you can not recall it quickly by GO button



## Video Encode

The video encode page is used to configure settings for the compression, format, and data rates for all video streams produced by the camera

Definitions:

- **Encode Mode:** The encoding standards that are available for use (H.264 / H.265)
- **Profile:** Support baseline, MP and HP mode
- **RTSP Address:** The RTSP streaming URL of both main stream and sub stream
- **Resolution:** (W x H) The number of Pixels that make up the width of the image (W) by the number of horizontal lines that make up the height of the image (H)
- **Bitrate:** The amount of data transmitted per second. Measured in Kilobits Per Second (Kbps). 1000 kbps = 1Mbps
- **Framerate:** Rate at which image frames are captured
- **Bitrate Control:**
  - CBR – Constant Bit Rate
  - VBR – Constrained Variable Bit Rate.
- **I Frame Interval:** The shorter the Interval, the better chance you have of video being of better quality.

I Frame also can be called "Key Frame", a "Key Frame" is an entire and complete and total image, that is used as a reference for other frames ("images") that the camera generates

	Main	Sub
Stream	Main	Sub
Enable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Encode Mode	H.264	H.264
Profile	MP	MP
RTSP Address	rtsp://192.168.2.143:554/stream/main	rtsp://192.168.2.143:554/stream/sub
Resolution	1920x1080	1280x720
Bitrate (kbps) (1024-10240)	4096	2048
Framerate	30	30
Bitrate Control	CBR	CBR
I Frame Interval (3-120)	30	30

- **Main Stream** – The main stream, viewed by default on the preview page
  - **Encode Mode:**
    - H.264
    - H.265
  - **RTSP Address:**
    - RTSP main stream address
    - Automatically generated based on the current IP address of the camera
    - You can copy this address and using VLC or other network video compatible player to receive the RTSP main stream and watch the video.
  - **Resolution:**
    - 1920x1080
    - 1280x720
    - 1024x576
  - **Bitrate:**
    - The amount of data transmitted per second. Measured in Kilobits Per Second (Kbps). 1024 kbps = 1Mbps
    - 1024-10240 selectable
  - **Framerate:**
    - Rate at which image frames are captured
    - 3-60 selectable
  - **Bitrate Control:**
    - CBR – Constant Bit Rate
    - VBR – Constrained Variable Bit Rate.
  - **I Frame Interval**
    - 3-120 selectable
- **Sub Stream** – The sub video stream produced by the camera; this can be disabled by unchecking the box at the top of this stream's settings we can switch to sub stream on the top bar of preview page
  - **Encode Mode:**
    - H.264
    - H.265
  - **RTSP Address:**
    - RTSP sub stream address

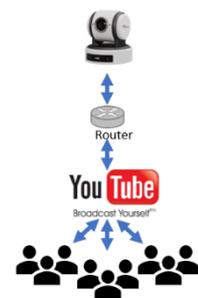
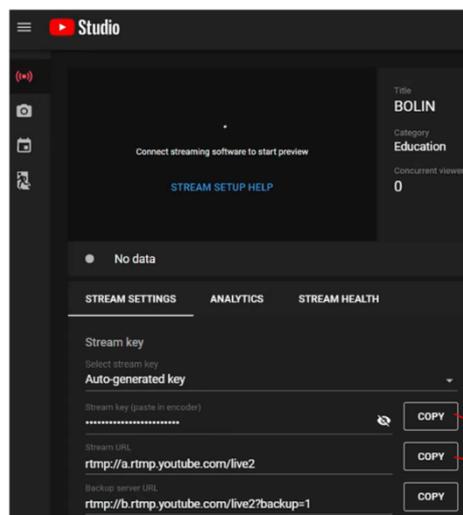
- Automatically generated based on the current IP address of the camera
- You can copy this address and using VLC or other network video compatible player to receive the RTSP sub stream and watch the video
- **Resolution:**
  - 1280x720
  - 1024x576
  - 640x360
- **Bitrate:**
  - 1024-10240 selectable
- **Framerate:**
  - Rate at which image frames are captured
  - 3-60 selectable
- **Bitrate Control:**
  - CBR – Constant Bit Rate
  - VBR – Constrained Variable Bit Rate.
- **I Frame Interval:**
  - 3-120 selectable

## Video Transmission

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

- Check the RTMP State Main or Sub Enable button
- 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 shows where to copy the information from YouTube



### For Example

**URL/Key:** `rtmp://a.rtmp.youtube.com/live2/6yeu-mg8p-txtm-mvp9-35eb`

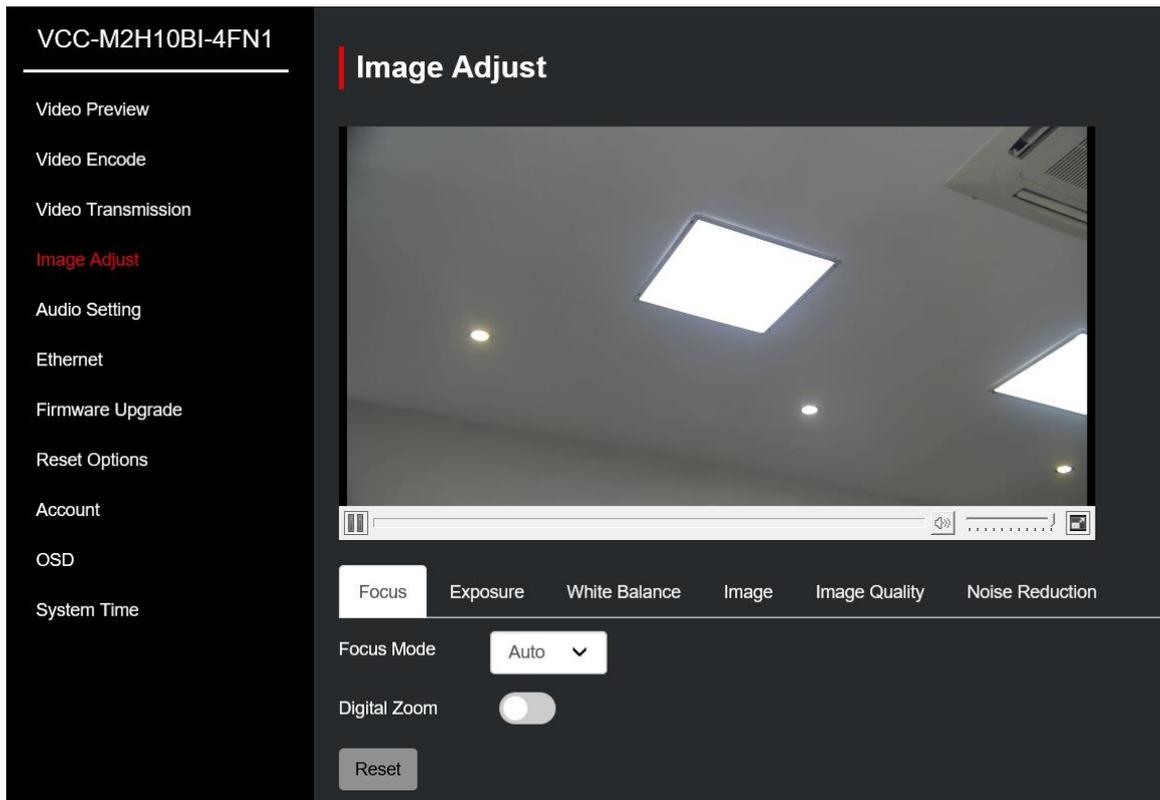
- Click Save button on camera RTMP page
- Allow a few minutes for the stream to connect. The status on your streaming platform (Such as YouTube) will change to Live. When this happens, the camera is streaming video Live to

### NOTE:

- **Must enable audio** on Audio Setting page before setup RTMP streaming, otherwise, RTMP streaming may without audio source.
- Similar steps can be followed to stream to any platform that supports RTMP, such as Facebook, Twitter, Twitch, etc.)

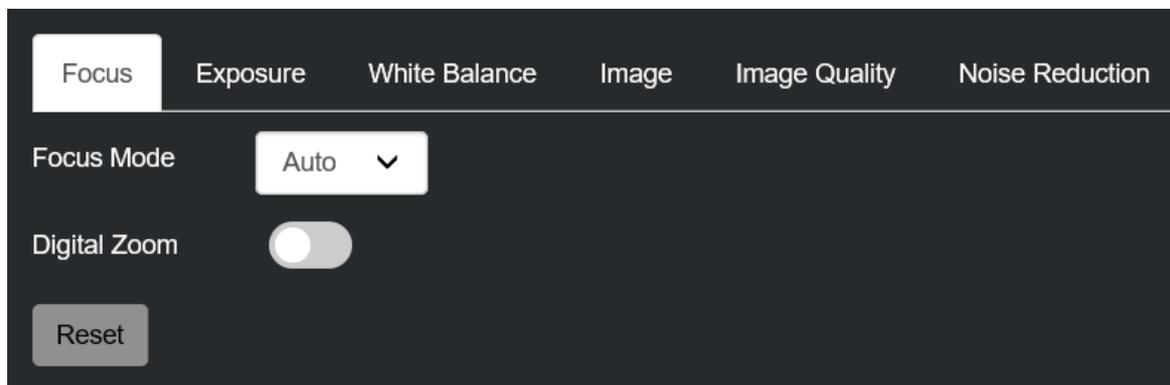
## Image Adjust

Image parameters can be adjusted to control the way the image is captured and displayed



## Focus

The Focus menu is used to set the items related to focus



### Focus Mode:

You can set to Manual or Auto mode

### Digital Zoom:

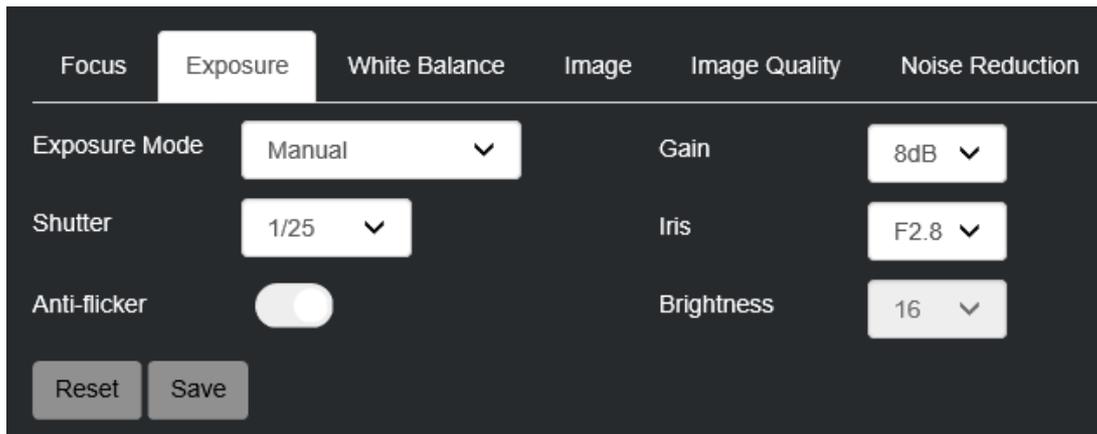
Turn Digital Zoom ON, 2x digital zoom is activated.

You can set digital zoom to ON or OFF. When turn to OFF, digital zoom does not operate, and only optical zoom is available. When turn to ON, digital zoom takes over after optical zoom reaches MAX (20x). Up to 40x can be zoomed digitally.

When digital zoom is available, the resolution decreases

## Exposure

The Exposure menu is used to set the items related to exposure.



### Exposure Mode

**Auto:** The exposure is adjusted automatically using the values set for EX-COMP (Exposure Compensation).

**Manual:** Adjust the GAIN, electronic shutter speed (SPEED), iris (IRIS) manually.

**Iris Priority:** Iris Priority mode. The exposure is adjusted automatically using the values manually set for iris (IRIS) and EX-COMP.

**Shutter Priority:** Shutter Priority mode. The exposure is adjusted automatically using the values manually set for electronic shutter speed (SPEED) and EX-COMP.

**Brightness Priority:** Bright Priority mode. The exposure is adjusted automatically using the values manually set for electronic brightness level.

When you select one from various exposure modes, some of the following setting items that can be adjusted.

**GAIN:** Select the gain from the following:

0dB, 2dB, 4dB, 6dB, 8dB, 10dB, 12dB, 14dB, 16dB, 18dB, 20dB, 22dB, 24dB, 26dB, 28dB, 30dB

**NOTE:** not available in Auto, Iris, Shutter, Brightness mode

**SHUTTER:** Select the electronic shutter speed from the following:

When video format is set to 720P25, 1080P50, 1080i50, 1080P25, 720P50, Speed can be selected from the following:

1/25, 1/50, 1/75, 1/100, 1/120, 1/150, 1/215, 1/300, 1/425, 1/600, 1/1000, 1/1250, 1/1750, 1/2500, 1/3500, 1/6000, 1/10K.

When video format is set to 720P30, 1080i59.94, 1080P29.97, 720P59.94, 1080P59.94, 1080i60, 1080P30, 1080P60,

720P60, Speed can be selected from the following:

1/30, 1/60, 1/90, 1/100, 1/125, 1/180, 1/250, 1/350, 1/500, 1/725, 1/1000, 1/1500, 1/2000, 1/3000, 1/4000, 1/6000, 1/10K.

**NOTE:** not available in Auto, Iris, Brightness mode

**IRIS:** Select the iris the following: CLOSE, F14, F11, F9.6, F8.0, F6.8, F5.6, F4.8, F4.0, F3.4, F2.8, F2.4, F2.0, F1.6

**Anti-flicker:** Enable it before you to select, 50Hz and 60 Hz selectable

**Brightness:** Adjustable from 0 to 27 by drag the setting bar (not available in Auto, Manual, Iris, Shutter mode)

## White-Balance

The White-Balance menu is used to set the items related to white balance.



## White Balance Mode

**Auto:** This mode computes the white balance value output using color information from the entire screen. It outputs the proper value using the color temperature radiating from a black subject based on a range of values from 2500K to 7500K. This mode is the initial setting.

**Indoor:** 3200K Base Mode

**Outdoor:** 5800K Base Mode

**One Push:** The One Push White Balance mode is a fixed white balance mode that may be automatically readjusted only at the request of the user (One Push Trigger), assuming that a white subject, in correct lighting conditions, and occupying more than 1/2 of the image, is submitted to the camera. One Push White Balance data is lost when the power is turned off. If the power is turned off, reset One Push White Balance.

**NOTE: When you select the One Push**

Perform the following operations:

1. Place an image of white subject (For example: A piece of white paper) in the center of the screen.
2. Press the HOME button of the infrared remote controller.

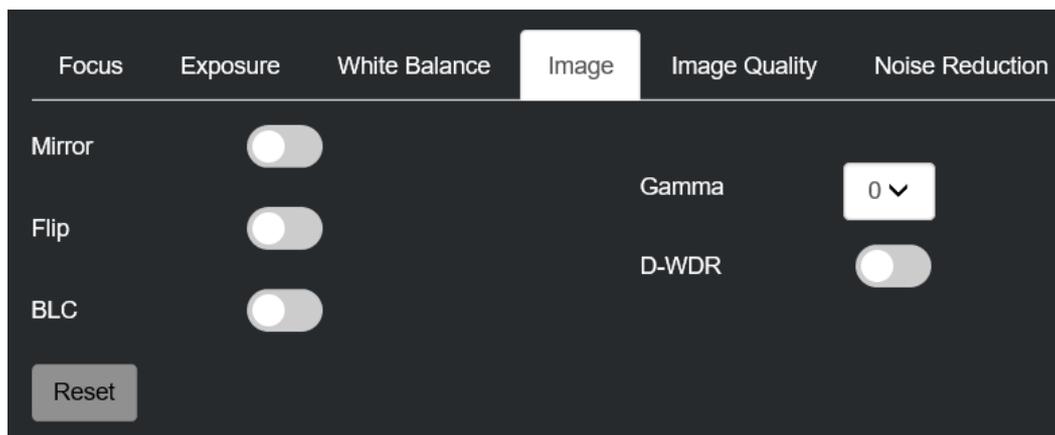
The one-push white balance adjustment is activated.

**Auto tracking:** Auto Tracking White balance (2000K to 10000K), allows the camera to adjust the tone according to the temperature of the light source illuminating the subject

**Manual:** This is a mode that enables you to manually set the control of Red and Blue gain from 0 to 255

## Image

The Image menu is used to set the items related to image



**Mirror:** You can have the image as seen in a mirror, with the right side as though it were the left.

**Flip:** Image E-Flipper – Used when ceiling mounting or upright mounting. Set to OFF is upright mode, set to ON is for ceiling mount.

**BLC (Backlight compensation):**

When the background of the subject is too bright, or when the subject is too dark, back light compensation will make the subject appear clearer.

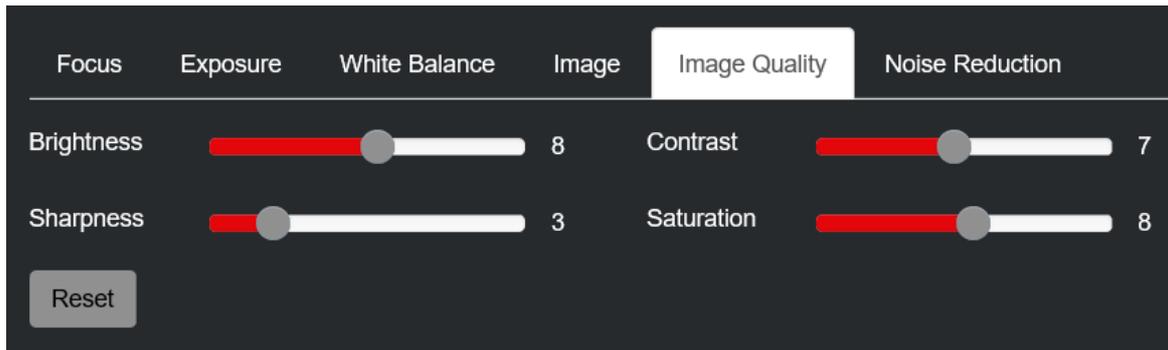
**Gamma:** The gamma can be set to value from 0 to 4

**D-WDR (Wide Dynamic Range):** Wide Dynamic: ON, OFF. The camera distinguishes light and dark areas within the same scene, adjusts the brightness for dark areas, and also controls the blown-out highlights.

You can select the wide dynamic range mode between ON and OF

## Image Setting

The Image Setting menu is used to set the items related to image quality



**Brightness:** You can adjust the values manually for electronic brightness level from 0 to 15

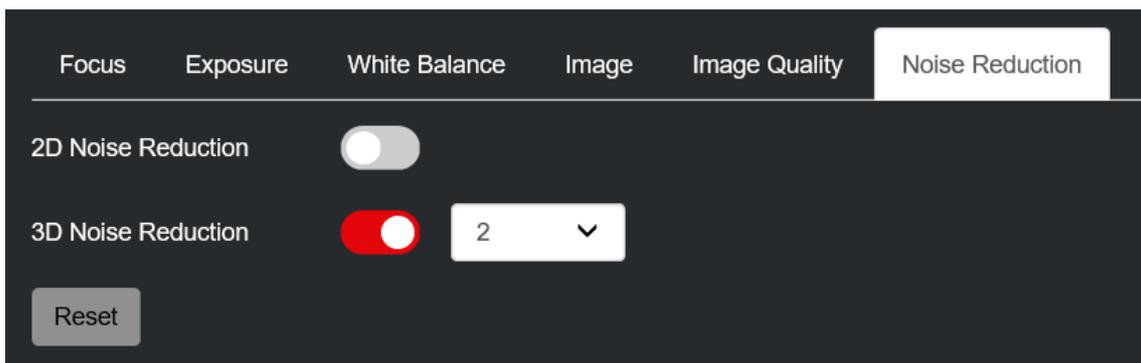
**Sharpness:** Picture sharpness value ranges from 0 to 15. You can enjoy emphasized edge and high-resolution images.

**Contrast:** You can adjust the contrast level in the range from 0 to 15. The smaller the value is, the lower the contrast becomes, and the larger the value is, the higher the contrast becomes.

**Saturation:** You can configure the color gain from 0-15. Use this setting when bright color is particularly important.

## Noise-reduction

The Noise-reduction is used to set the items related to noise, it supports 2D and 3D mode noise reduction.



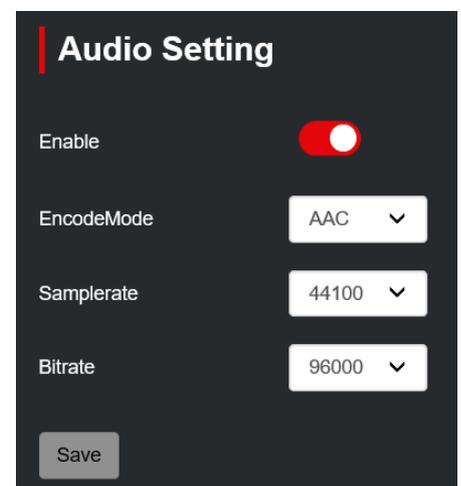
You can enjoy clearer images by removing unnecessary noise.

For 3D mode, you can select Auto, or set value from 1 (MIN) to 4 (MAX).

## Audio Setting

This section contains the ability to select the audio Encode Mode, Sample rate and Bitrate.

- Encode Mode:
  - AAC
  - LPCM
- Sample rate:
  - Selectable from 11050, 22050, 44100
- Bitrate (Kbps):
  - Selectable from 32000, 48000, 64000, 96000, 128000



## Ethernet

The Ethernet settings page 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
- Netmask
- Gateway
- DNS (Domain Name System)
- MAC (MAC address of the camera)
  - Media Access Control address, is a unique identifier assigned to a network interface controller of the camera, it comes with camera by default, can't be changed.
- HTTP port: 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 8080, the IP address will need to be entered as follows in order to access the web interface: `http://192.168.0.13:8080`
- RTSP Port: 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:  
**Main stream – `rtsp://IP:554/stream/main`**  
**Sub stream – `rtsp://IP:554/stream/sub`**

**Ethernet**

DHCP

IP Address

Netmask

Gateway

DNS

MAC

HTTP Port

RTSP Port

## Firmware Upgrade

This page allows the user to get the camera current version information, camera name, serial number and to do upgrade.

- Control version
  - To display the camera current control version
- Device Name
  - The name of this camera model, you also can see it on the top left corner of any page.
- Serial Number
  - The unique serial number after the camera is produced, each camera serial number is different, and can't be changed.
- Bootloader Version
  - To display the camera current bootloader version
- System Version
  - To display the camera current system version
- App version
  - To display the camera current App version
- Upgrade
  - You can upgrade the camera version when there has new firmware available.
  - New firmware file can be obtained from BOLIN Technology
  - Click "Click to upload files" button, navigate to the file (.bin), select and then can start upgrade
  - It takes a few minutes for the camera to come back online

**Firmware Upgrade**

Control Version 1.0.0.1

Device Name FHD Video Conference Camera

Serial Number 5e899370711e

Bootloader Version V1.0.0

System Version V1.0.0

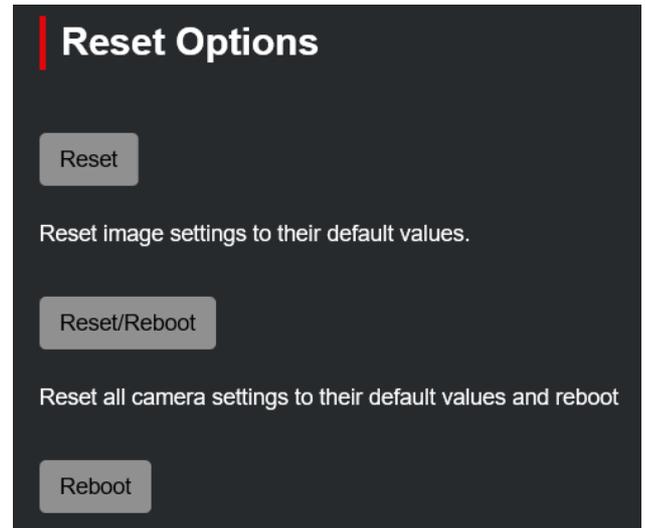
App Version V920

Upgrade

## Reset Options

This page allows user to reset parameter to default, you can just reset image parameter or reset all parameters, Also supports to reboot the camera

- Reset
  - Will reset the camera's image parameter to factory default values
- Reset/Reboot
  - Will reset all settings / parameters to factory default values and camera will auto reboot
- Reboot
  - This button performs a soft reboot (camera will restart without needing to disconnect power)



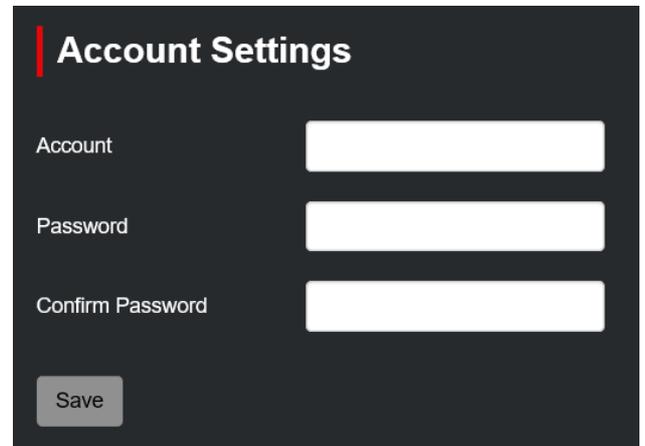
## Account

This page allows user to modify admin account password, the default password is admin;

User can login to the web interface, access to Account page, to modify the password;

Input the new password in Password option bar, then input the password once again in Confirm Password option bar;

After done, click Save button to make it take effect, then you can login the web interface with the new password.



## OSD

There are On Screen Display (OSD) sections within the IP video image, each OSD section can be individually configured to display configurable data.

### Camera Name:

User can define a name for the camera.

### Background:

Background of the OSD, can be configured as Translucent or Transparent.

### Color:

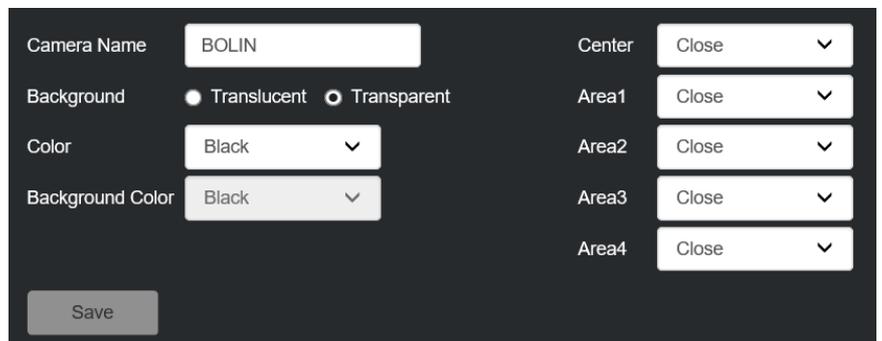
Color of the OSD content, selectable from Black, Blue, Red, Green, Magenta, Cyan, Yellow and White color.

### Background Color:

Background color of the OSD content, only available while Background selected Translucent mode. Selectable from Black, Blue, Red, Green, Magenta, Cyan, Yellow and White color.

### Area (Center, Area1, Area2, Area3, Area4):

OSD position on the IP video image



Any of the 5 areas (Center and Area 1 ~ Area 4) can be configured to contain one of the following:

- Close** – The area will not be used, and will not display anything;
- Datetime** – The internal Date and Time settings will be used to fill the area;
- Camera Name** – The user will define a name for the camera;
- Logo** – An image, such as a company logo can be uploaded to be displayed within the IP video image;
- Text** – User can enter the text that they wish to be displayed



## System Time

The interface allows user to configure the time zone and synchronize camera system time with the NTP server.

### Time Zone:

Support 24 time zones, users can choose the corresponding time zone according to their country.

### NTP Enable:

To enable and disable NTP server

### NTP Update Interval:

Update interval of time synchronization between camera and the NTP server, selectable from 30 minutes, and 1 hour to 24 hours.

### NTP Server Address

To configure the address of the NTP Server

### NTP Port

Port setting for NTP Server, default setting is 80

## System Time Settings

Time Zone	<input type="text" value="UTC-8:00"/>
NTP Enable	<input checked="" type="checkbox"/>
NTP Update Interval	<input type="text" value="3h"/>
NTP Server Address	<input type="text" value="cn.ntp.org.cn"/>
NTP Port	<input type="text" value="80"/>



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