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ORIVISION EH404 HDMI IP Video Streaming Encoder User Guide

2023
4/8 Channels HDMI Video Encoder
User Guide
EH404&EH408
LIU JOYCE

Contents

Overview

1.1 product description
EH404 is a professional hardware video and audio encoder. Which designed to meet the 4CH 4K@30HZ HDMI Video transmission applications. It supports H.264 high-performance encoding. Also, it supports the most protocols including HTTP/RTMP/RTMPS/HLS/UDP/RTSP/Onvif, etc.

It's high integration and cost-effective design make this device widely used in the variety of field such as CATV digital head-end, hotel IPTV system, live streaming broadcast, streaming media server etc. Also, the encoder works with the online live broadcast platform, such as YouTube, Ustream, Twitter, WOWZA, Facebook Live, etc.

1.2 product picture

▲ZY-EH404

▲ZY-EH408

1.3 Product's Parameter

Video	
Input interface	EH404: 4 channels HDMI Input EH408: 8 Channels HDMI Input
Frame Rate	5-60hz
HDCP	HDCP 1.4
Output interface	EH404:1X Ethernet Port(RJ45) EH408:2X Ethernet Port(RJ45)
Video Encoding	H.264/Baseline Profile/Main profile/High Profile
Max bitrate	16kbps-12Mbps
Rate control	CBRNBR
Audio	
Input Interface	EH404: 4X External audio and HDMI built-in Audio EH408: 8X External audio and HDMI built-in Audio
Audio encoding	ACC,G711
Audio Encoder type	LCAAC,EAAC,EAACPLUS
Bit-rate	48k,64k,96k,128k,160k,192k,256k
Sampling Accuracy	24Bit
Audio Data-rate	64kb/s to 384kb/s
Network	
RJ45	1000M Ethernet
Protocols	HTTP/RTSP/RTMP/RTMPS/HLS/FLV/ONVIF/Multicast/SRT
Firmware	Enable by uploading files
General	
Temperature	0-45°C for woking -20~60°C for storing
Humidity	<90%, non-condensing
Voltage	EH404:DC 12V/2A EH408: DC 220V

Initial installation connection

2.1 Connect power
Use the standard power adaptor (DC12V/2A) connected to the device(EH404). The power light will be always on after the device is powered on.
EH408 using 220V Power.
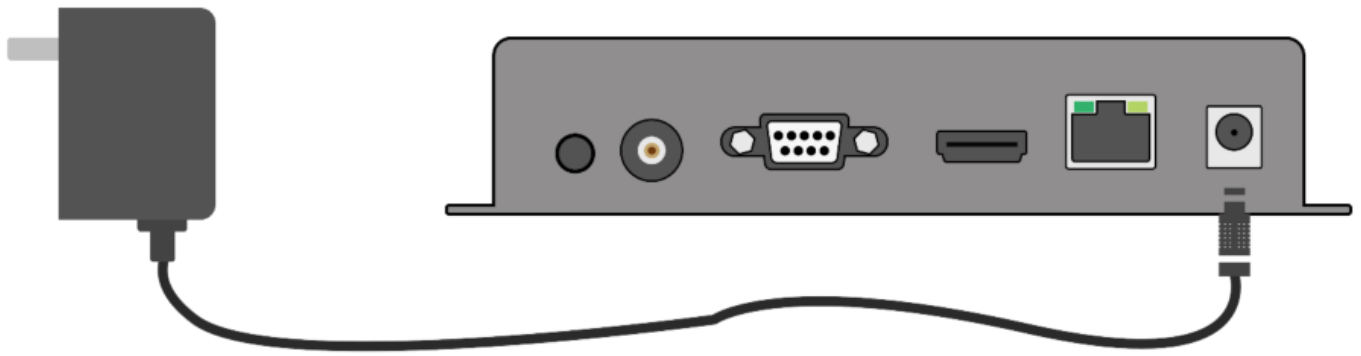
⚠ **Note**
Please use the standard power adaptor provided. Using other unqualified power supplies may damage the device.

2.2 Connect displayer
Connect the HDMI/VGA/CVBS or SDI cable to one end of the display device such as a monitor and an electronic screen (DH931&DH921 doesn't support simultaneous output of HDMI, VGA or CVBS, the user can choose one of them to output).
▼ Using HDMI cable to connect HDMI output interface with HDMI display.
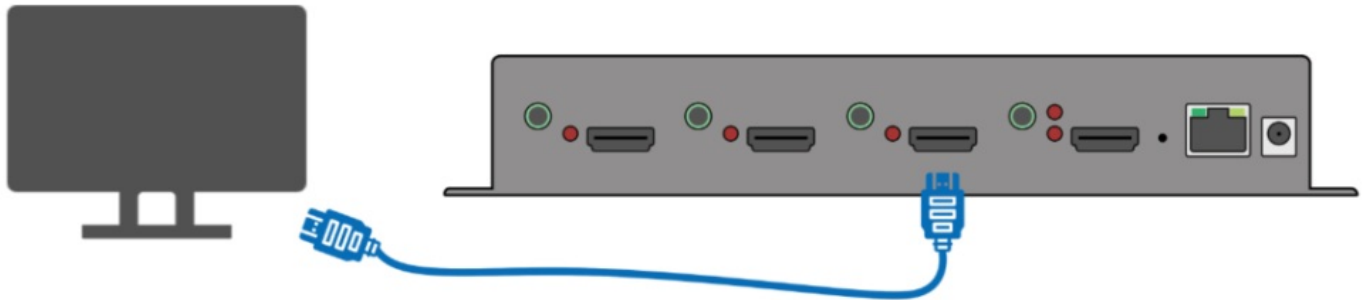
2.3 Connect the encoder to user's computer
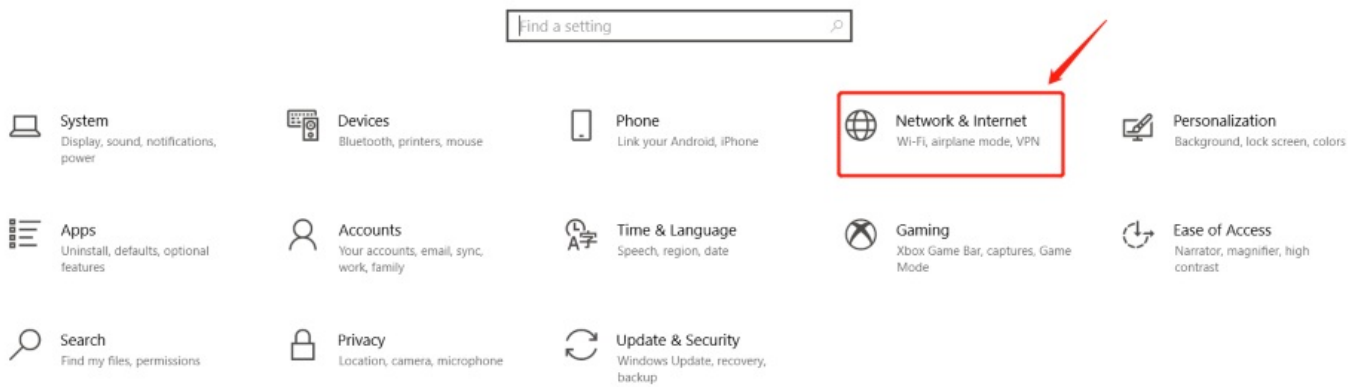Connect the encoder and the computer directly through the network cable.
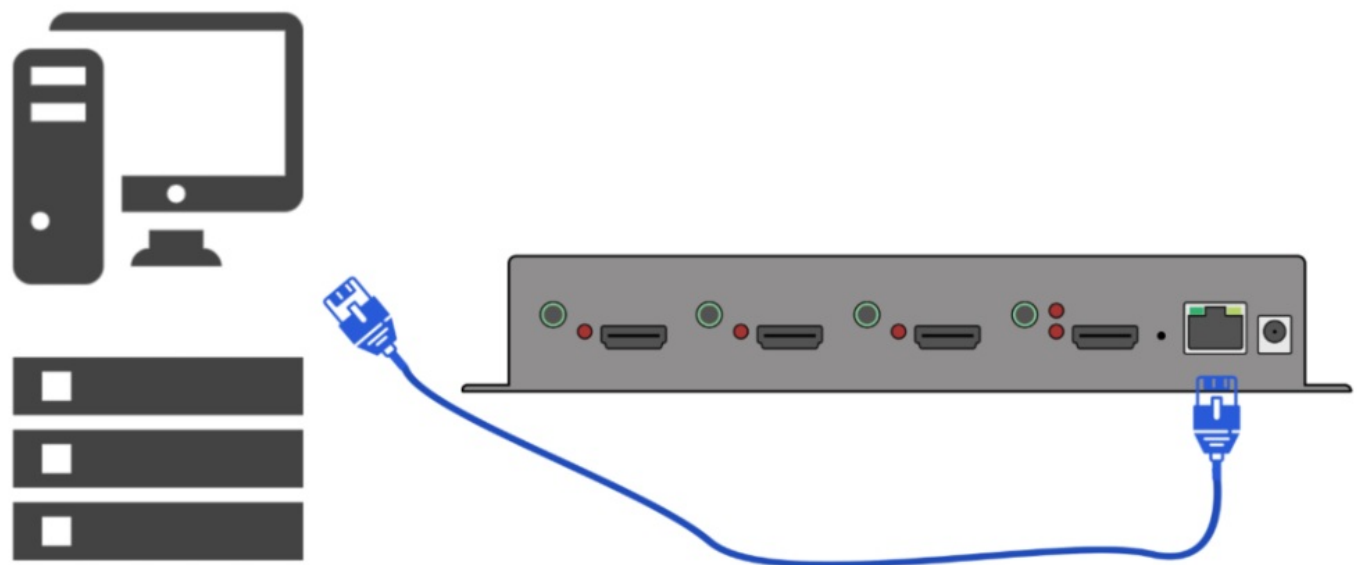
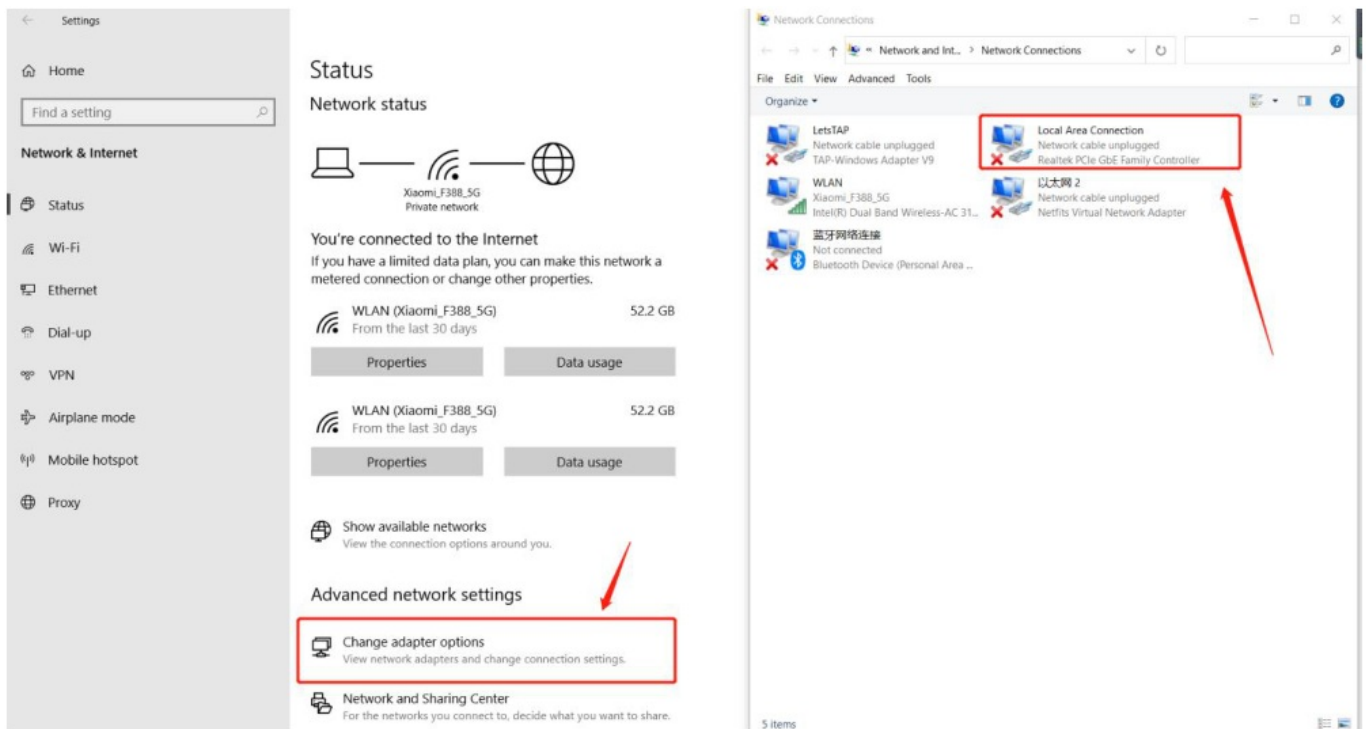## 2.4 Log in the control web with 192.168.0.31
According to the above steps, after connecting the decoder to the computer with a network cable.
▼ Setp1: find the "Network & Internet Settings"

Windows Settings

Find a setting

System
Display, sound, notifications, power

Devices
Bluetooth, printers, mouse

Phone
Link your Android, iPhone

Network & Internet
Wi-Fi, airplane mode, VPN

Personalization
Background, lock screen, colors

Apps
Uninstall, defaults, optional features

Accounts
Your accounts, email, sync, work, family

Time & Language
Speech, region, date

Gaming
Xbox Game Bar, captures, Game Mode

Ease of Access
Narrator, magnifier, high contrast

Search
Find my files, permissions

Privacy
Location, camera, microphone

Update & Security
Windows Update, recovery, backup

▼ Step2: "change adapter options"——"Local Area Connection"

▼ Step3: "Properties"——"Internet Protocol Version (TCP/IPv4)"
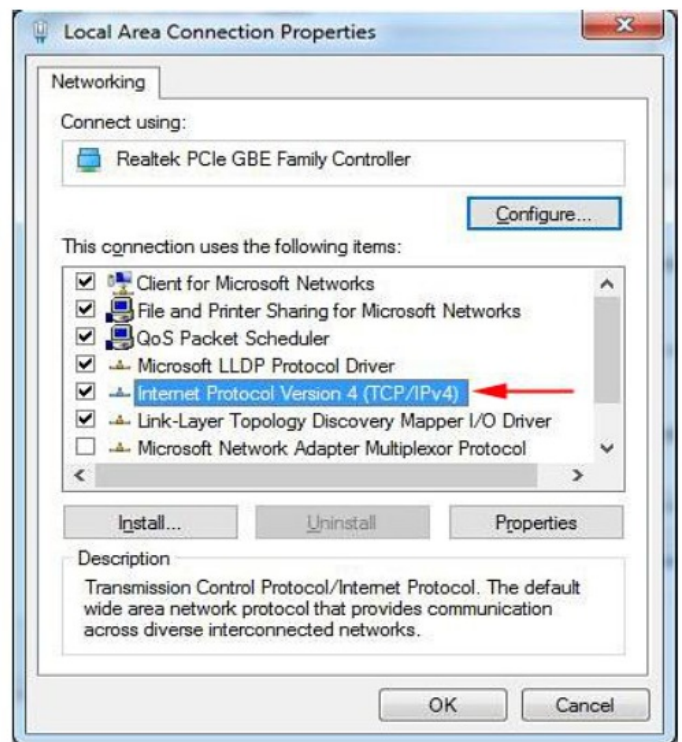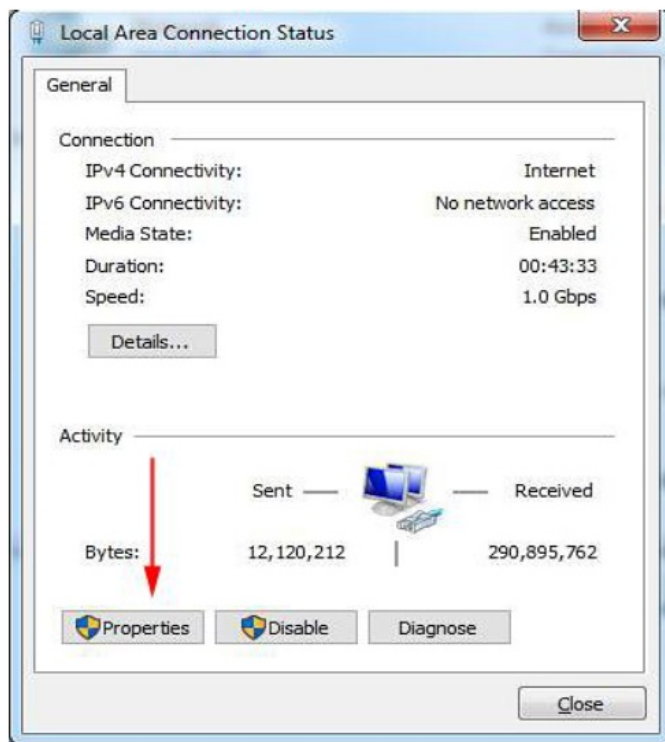
▼ Step4: change the IP to 192.168.0.XXX——— "OK"
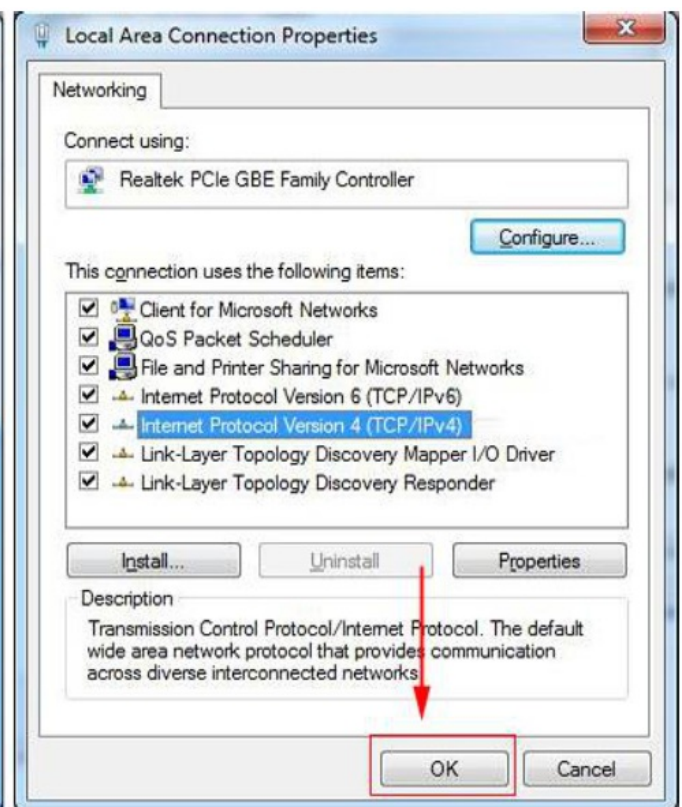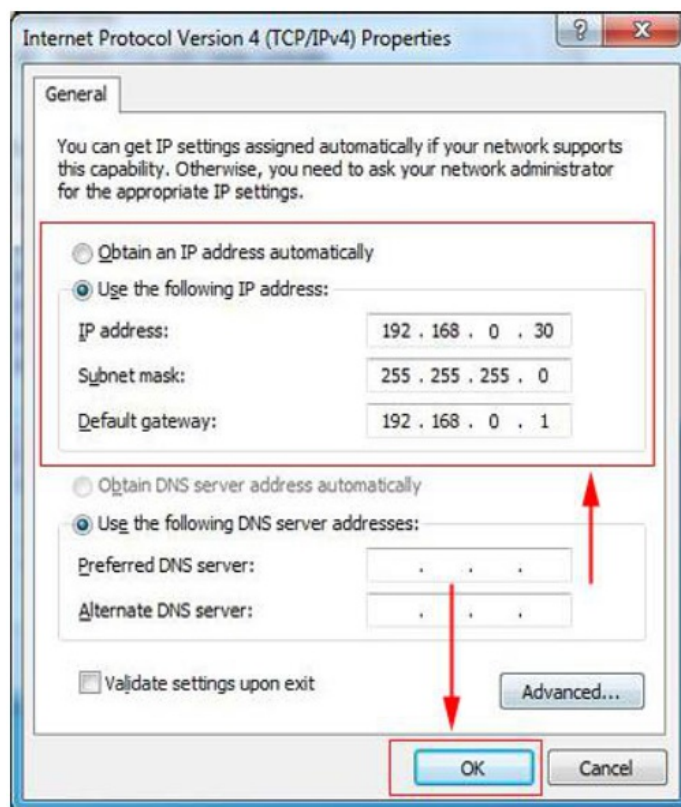
▼ Step5: Open the WEB browser, and enter the IP address of the decoder directly (the default is 192.168.0.31) to open the login interface of the decoder. The default username and password of the decoder is admin/admin and then click "Login".
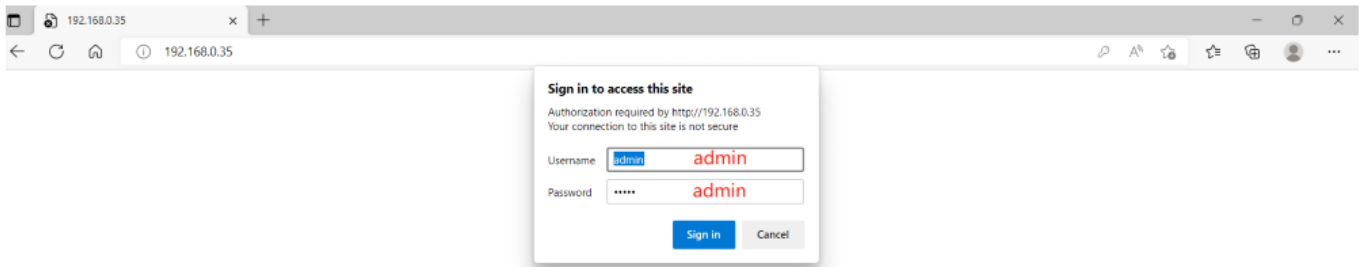
Introduction to the control page of the encoder

3.1 Status
▼ Status Showing the status information of input and output from Group1~8.

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H.264 | MPEG-4/AVC

HD Encoder System
Platform

Service and Support   Language: English

System Status

Group 1

Input: 1920 x 1080P @60 - 48000

Output0: 1920 x 1080 @30 H264 - 48000 AAC
http0: http://192.168.10.38:8000/main1
rtsp0: rtsp://192.168.10.38:554/main1 (TS)
hls0: http://192.168.10.38:8100/main1.m3u8
udp0: udp://@232.255.42.41:1100
rtmp0: rtmp://a.rtmp.youtube.com:1935/live2/7thy-519k-6yux-cubs-3c1a disconnected

Output1: 1920 x 1080 @30 H264 - 48000 AAC
http1: http://192.168.10.38:8000/ext1
rtsp1: rtsp://192.168.10.38:554/ext1 (TS)
hls1: http://192.168.10.38:8100/ext1.m3u8
udp1: udp://@232.255.42.41:1101
rtmp1: rtmp://192.168.0.4:1935/live/ext disconnected

Group 2

Input: No signal

Output0: closed
rtsp0: rtsp://192.168.10.38:554/main2 (TS)

Output1: closed

Group 3

Input: No signal

Output0: closed
rtsp0: rtsp://192.168.10.38:554/main3 (TS)

Output1: closed

Input: No signal

Output0: closed
rtsp0: rtsp://192.168.10.38:554/main4 (TS)

Output1: closed

System information

cpu: 56 %
mem: 26 %
net: internet ready

Status	Network	Media	OSD	System	

HD ENCODER CONFIGURATION PLATFORM

Each group displays two output status information, and the resolution of the input signal is automatically recognized and displayed.

3.2 Network

▼ Network: Users can modify the network IP and DNS here

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H.264 | MPEG-4/AVC

HD Encoder System Platform

Service and Support   Language: English

Network Settings

Network settings

Net type:	Ethernet
DHCP:	Disable
IP address:	192.168.0.31
Netmask:	255.255.255.0
Gateway:	192.168.0.1
DNS0:	192.168.0.1
DNS1:	192.168.0.1
MAC address:	F4:69:D5:D0:39:C5

Set up

DHCP When the DHCP function is enabled, you also need to access the switch that automatically assigns an IP

address. While the encoder IP address is dynamically assigned by the switch. You need to view the encoder IP from the switch. If you cannot view it, you can contact the manufacturer to provide IP inquiry software.

DNS0 DNS1 Please set the DNS in the encoder network settings correctly, when using RTMP live streaming. You can find out the DNS parameters of your network through the network connection details of your computer. Or log in to the router to check the status of the WAN port.

3.3 Media Setting

▼ Channels Setting

Set 1~4 channels input signals by switching the Group 1~4;

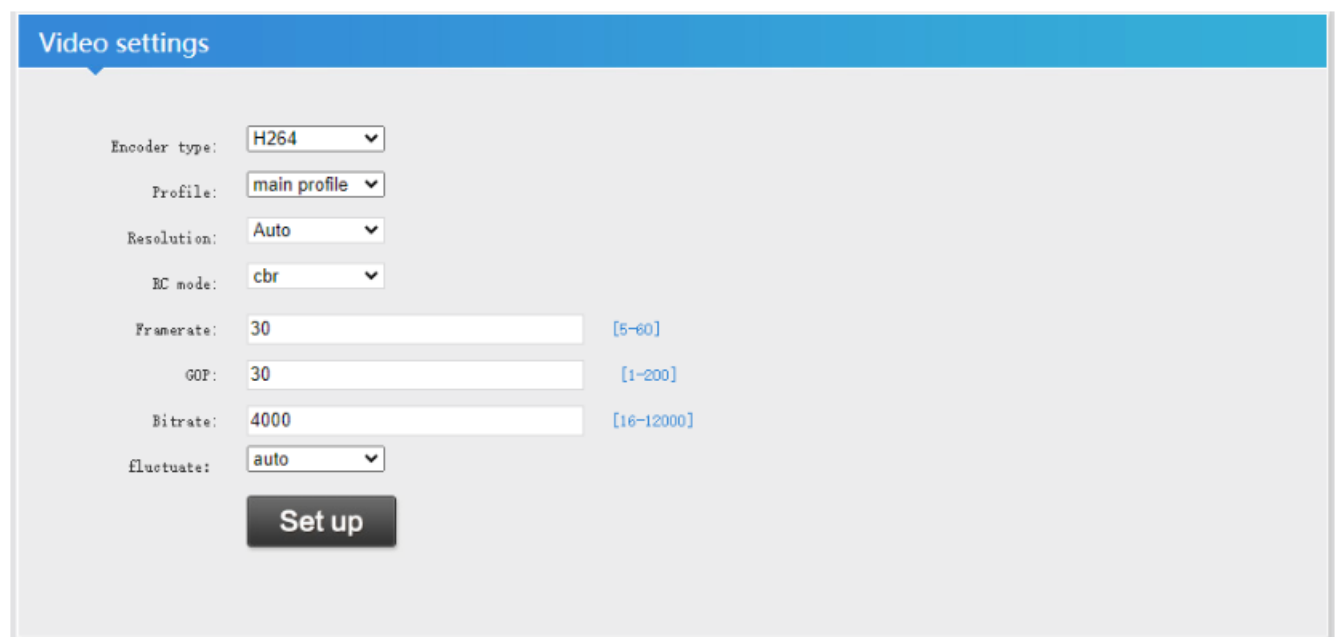Group 1 represent input interface 1;Group 2 represent input interface 2;

Group 3 represent input interface 3;Group 4 represent input interface 4;

Supports two output streams each group

Chanel 1 represent main-stream output; Chanel 2 represent Secondary- stream output

▼ Video Setting

Encoder type: Only support H.264

Profile: baseline profile/main profile/ high profile Optional

Output Resolution:

3840*2160,1920*1080,1920*960,1680*1200,1600*900,1440*1050,1440*900,1360*768,1280*720,1280*800,1280*768,1024*768,

1024*576,960*540,850*480,800*600,720*576,720*540,720*480,720*404,704*576,640*480,640*360,480*270,Auto

When you choose auto, the input and output resolutions are the same.

RC Model: VBR/CBR Optional

Frame rate: 5-60fps (when the input resolution is 720i/50,1080i50, the frame rate will choose 25)

GOP: 1-200, it shows picture quality, default setting is advisable.

If your input a 30hz video, it recommend that the GOP should be smaller than 30;

If your input a 60hz video, it recommend that GOP should be smaller than 60

Bitrate: 16-1200K (Network bandwidth setting)

The higher the bit rate, the larger the data transmitted

Fluctuate: recommend auto

Note: Modifying the above parameters does not need to reboot the encoder

▼ Audio Setting

Audio input mode: Analog- External audio; Digital- HDMI built-in audio

Audio type: LCAAC/EAAC/EAACPLUS

Audio bitrate: 48k, 64k, 96k,128k, 160k, 192k, 256k

▼ Server Setting

Enable the corresponding protocols according to the requirements.

3.4 Protocol Setting

HTTP Protocol

HTTP:	TS ⌄	**Disable** / TS / FLV
HTTP port:	8000	[1-65535]
HTTP path:	/main1	EX:/main

RTSP Protocol

RTSP:	TS ⌄	Disable / **TS** / ES
RTSP port:	554	[1-65535]
RTSP path:	/main1	格式如:/main(以"/"开头再加上字母数字下划线任意组合)
Authentication:	Enable ⌄	
User name:	admin	
Password:	admin	

RTSP Push

RTSP push:	Enable ⌄
Server url:	3A Shevchenko Str,Apt 59

Multicast Protocol

Multicast:	UDP ⌄	Disable / **UDP** / RTP
Multicast port:	1100	[1-65535]
Multicast path:	232.255.42.41	
TTL:	7	[1-255]
UDP package size:	1316 ⌄	

HLS Protocol

HLS:	Enable ⌄	
HLS port:	8100	[1-65535]
HLS path:	/main1.m3u8	EX:/main

RTMP Protocol

RTMP:	Enable ▾
RTMP mode:	rtmp ▾
RTMP server ip:	a.rtmp.youtube.com
RTMP server port:	1935 [1-65535]
RTMP app name:	live2
RTMP stream name:	7thy-519k-6yux-cubs-3c1a
RTMP user:	
RTMP password:	

SRT Protocol

SRT:	Listener ▾
Port:	7120 [1 - 65535]
Delay:	120
Stream id:	
Key:	

SRT:	Caller ▾
Server ip:	
Port:	7120 [1 - 65535]
Delay:	120
Stream id:	
Key:	

3.5 OSD

▼ OSD: User can upload the station logo, picture, etc. through the OSD, and it supports the JPG format.

Note: Insert two groups of text and two pictures at the same time for each group

Tex1 X: 0-1920 is optional, display the left and right position of the text

Tex1 Y: 0-1080 is optional, display the up and down position of the text

Tex1 size: 8-72 is optional

Tex1 Alpha: 0-128 is optional,

Tex1 Color: choose the color you want to display

Tex1 Bg Color: choose background color of the text on the video

Content1: input the content of the text you want

TEX2 is the same as TEX1

Pictures Setting

Picture1: disable/ enable (disable: no images enable: display the images)
Picture1 X: 4-1920 is optional to set the left and right position of the picture
Picture1 Y: 4-1080 is optional to set the up and down position of the picture
Alphal: 0-128 is optional
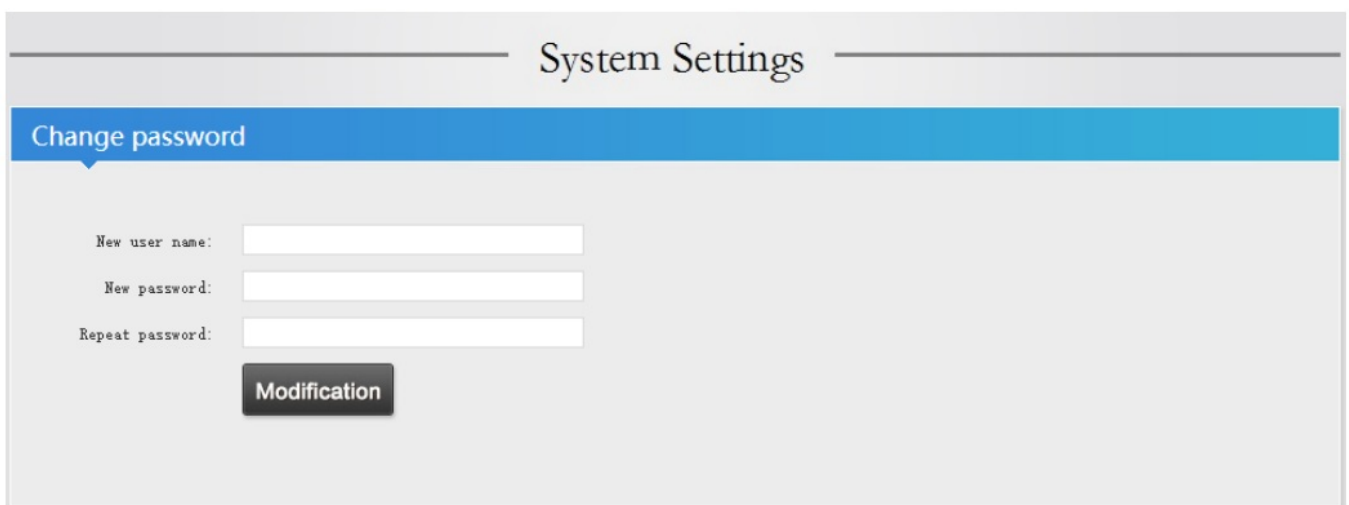Name: display the name of the picture1
Upload: choose to upload the image(support *.bmp format of the picture and the file size less than 1M
Picture 2 is the same as Picture 1

Explanation 1 The set of the three pictures that can be inserted are the same . 2 Transparent background of the picturesetting: R 177 G 204 B 233	TEST

3.6 System Setting

▼ Change password: It's used for modifying the login password of WEB

▼ System information: used to check the serial number of device, software version number, and hardware version number;

▼ Auto reboot: It can be set to restart after a few hours, if you don't need it, you can choose to disable it.

▼ NTP settings

If the user needs to enable the NTP function, The encoder must be linked to the WAN; or have an NTP server on the LAN.

Enable- When this mode is enabled and if the encoder does not get NTP information, the encoder also works.

Must- It means must enable mode. When this mode is enabled, all protocols are unavailable when the encoder does not get NTP information

Zone sle-Customers choose the correct time zone according to their own time zone, if the list does not have what you want, please contact us

▼ Parameter bakup

This function allows the user to save the setup parameters locally Or restore the parameter settings by uploading the parameter file.

▼ Firmware upgrade

Contact us (**support@orivision.com**) to get the newest firmware. After getting the file, pls don't decompress it, upload it directly. Reboot the decoder after uploaded successfully.
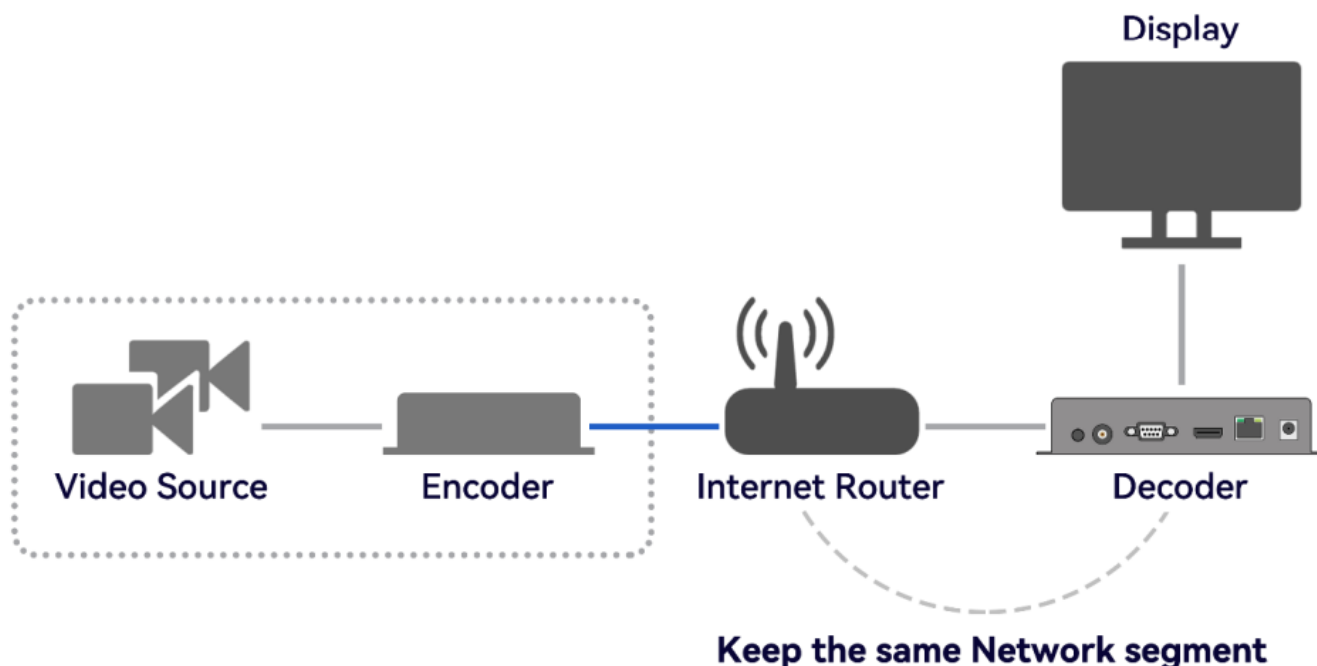
Firmware upgrade

Firmware upgrade: 选择文件 未选...何文件   (do not power off or refresh the page before succeed)

Upload

▼ System settings:
Reset button is used for initialization operation of the system.
Reboot button is used for remote restarting of the decoder.

System settings

Reboot   Reset

How to connect the Encoder to the internet

Display

Video Source   Encoder   Internet Router   Decoder

Keep the same Network segment

Step1: Check the IP of the signal source connected to the Network or router. For example: the router's network IP is 192.168.10.128
Step2: Change the default IP of the decoder 192.168.0.31 to 192.168.10.XXX; The user needs to confirm that the decoder and encoder or network signal source (Such as IP camera) are in the same network segment.
Step3: Connect the decoder with the user's PC with cable directly. And log in to the control page through the default IP 192.168.0.35. Please refer to 3.4 for operation steps
Step4: Find the Network set and change the IP to 192.168.10.XXX and the gatway to 192.168.10.1, then press the "Setup" button and reboot the encoder.

Step5: wait for a minute, then you can refresh the web and login with the new IP.

⚠ **Note:**

If user can't log in by new IP, Pls check the DNS of the router. Then reset the encoder and re-login to the web according to the above steps, modify the IP, gateway, and DNS.

How to streaming to YouTube/Facebook via RTMP/RTMPS

Step1: Before making live broadcast, you will need to check the following.

- Play the stream address in the encoder with the VLC player and confirm that it can play normally.
- Make sure you have upgraded the newest firmware for RTMPS.
- Canon camera don't have audio output, you will need to input an external audio.
- Microphone is not an audio source.

Step2: Login Your YouTube or Facebook account and find "Go Live". User can get a stream Key and URL
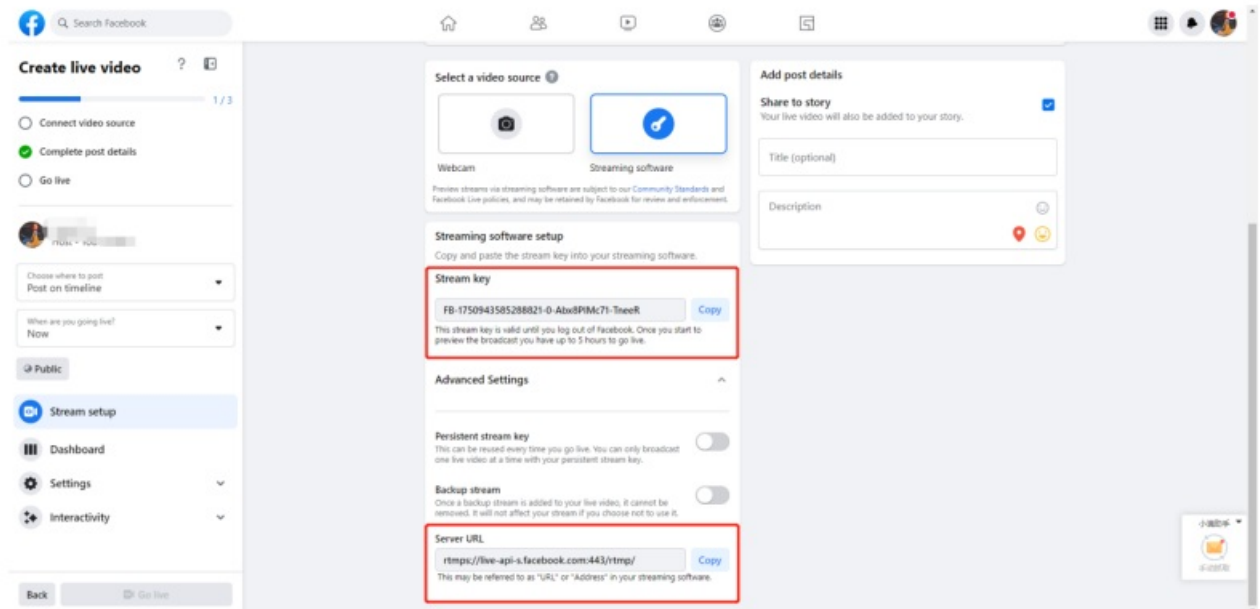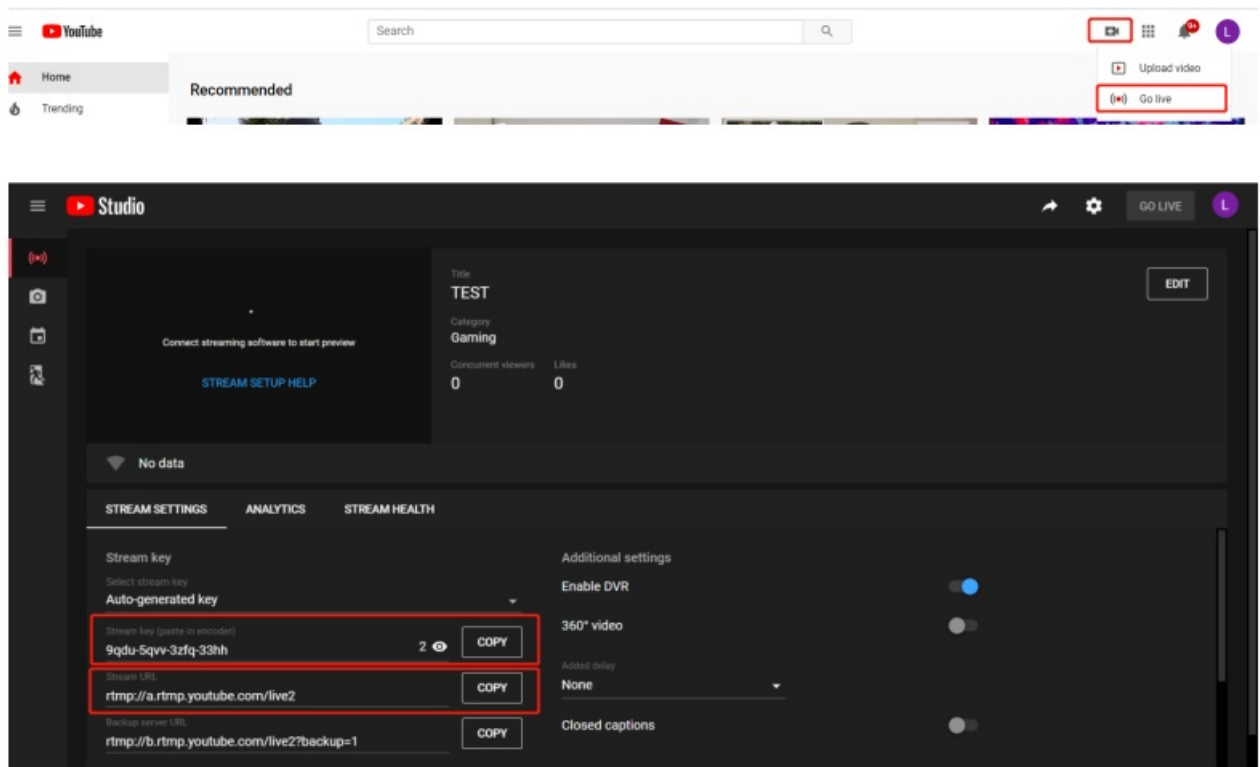
Step3: Log in the control web of the video encoder. Find the "Media" Page, enable the RTMP protocol as bellow:

RTMP:	Enable ∨
RTMP mode:	rtmp ∨
RTMP server ip:	a.rtmp.youtube.com
RTMP server port:	1935 [1~65535]
RTMP app name:	live2
RTMP stream name:	9qdu-5qvv-3zfq-33hh
RTMP user:	
RTMP password:	

For Example of Youtube:

YouTube Server URL is "rtmp://a.rtmp.youtube.com/live2"

YouTube stream Key is "9qdu-5qvv-3zfq-33hh"

RTMP/RTMPS of Encoder could be set as bellow:

RTMP Mode: rtmp

RTMP server Ip: a.rtmp.youtube.com

RTMP server port: 1935

RTMP app name: live2

RTMP stream name: 9qdu-5qvv-3zfq-33hh

For Example of Facebook:

Facebook Server URL is "rtmps://live-api-s.facebook.com:443/rtmp/"

Facebook Stream Key is "FB-1750965301953316-0-Abx2KCfmOXVcEbbq"

RTMPS of Encoder could be set as bellow:

RTMP Mode: rtmps

RTMP server Ip: live-api-s.facebook.com

RTMP server port: 443

RTMP app name: rtmp

RTMP stream name: FB-1750965301953316-0-Abx2KCfmOXVcEbbq

RTMP:	Enable ∨
RTMP mode:	rtmps ∨
RTMP server ip:	live-api-s.facebook.com
RTMP server port:	443 [1~65535]
RTMP app name:	rtmp
RTMP stream name:	FB-1750965301953316-0-Abx2KCfmOX
RTMP user:	
RTMP password:	

Step4: After set the RTMP pls press the "SET UP" button on the bottom of the page. Then press "REBOOT" button in the system page.

Note: If you streaming failed on Facebook and Youtube.

>> Pls check your DNS setting. The value of DNS0 and DNS1 is the DNS of the router.

How to set the SRT protocol in the encoder

There are two modes are available: caller and Listener

6.1 Listener mode

1. SRT Port: 7120 is default. But customers can modify it and suggest to set it more than 1024.
2. SRT delay: 120 is default.
3. SRT Key: set a password of at least 10 digits if the user need.
4. Press the "set up" butter and reboot the encoder after any change the parameter.
5. After reboot the encoder, the user can use the SRT address: **srt://ip:port** to pay it VLC Player to make it working or paste the address into the video decoder

E.g: the ip of the encoder is 192.168.8.31; the port is 7120 . Then the address should be srt://192.168.8.31:7120

If the user wants to encrypt the SRT

Then the encrypt SRT address format: **srt://ip:port?passphrase=passwords**

E.g: **srt://192.168.8.31:7120?passphrase=1234567890**

6.2 Caller mode

1. SRT Port: 7120 is default. But customers can modify it and suggest to set it more than 1024.

2. SRT delay: 120 is default.

3. SRT Key: set a password of at least 10 digits if the user need

4. Press the "set up" butter and reboot the encoder after any change the parameter.

5. After reboot the encoder, the user can use the SRT address: **srt://@:port?mode=listener** to pay it VLC

6. Player to make it working or paste the address into the video decoder

If the user wants to encrypt the SRT

Then the encrypt SRT address format: **srt://@port?mode=listenser&passphrase=passwords**

E.g **srt://@:7120?mode=listener&passphrase=1234567890**

Description of decoder stream address:

1. Video Encoder choose "listener" mode, the SRT address format in Video Decoder:

   srt://ip:port

   srt://ip:port?passphrase=passwords

2. Video Encoder choose "caller"mode, the SRT address format in Video Decoder:

   srt://@:port?mode=listener

   srt://@port?mode=listenser&passphrase=passwords

How to reset/reboot the encoder

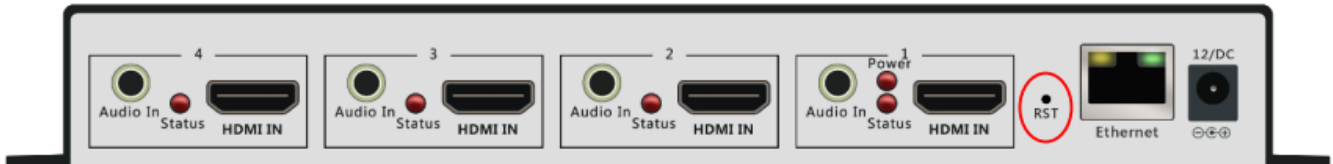**Solution1:** find the system settings, click the Reboot or Reset button.


Reboot: Restart the encoder
Reset: Restore factory settings
Solution2: There is an RST button on the top of the device's panel. Insert a pin into this hole and hold it for about 10 seconds. The reset is successful when the status light is no longer flashing

How to upgrade the firmware

1. Once the user has obtained the firmware, do not unzip it and upload it directly
2. During the upgrade process, don't refresh or close the webpage and don't turn off the encoder.
3. When the system prompts that the upgrade is successful, Pls reboot your encoder to finish installing update.
4. If you are prompted that the upgrade failed, pls don't reset it, just reboot it
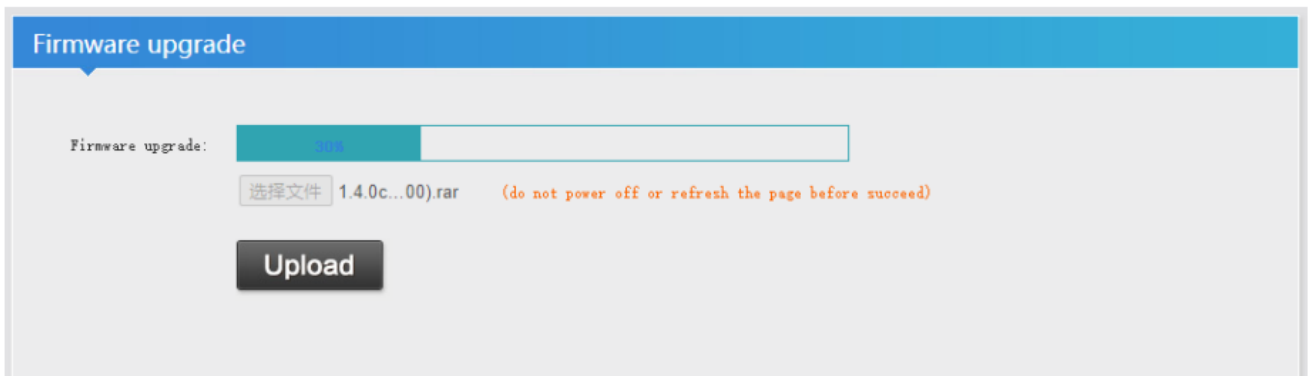
Choose the correct the firmware — Upload it — "prompts that the upgrade is successful"— Reboot Encoder
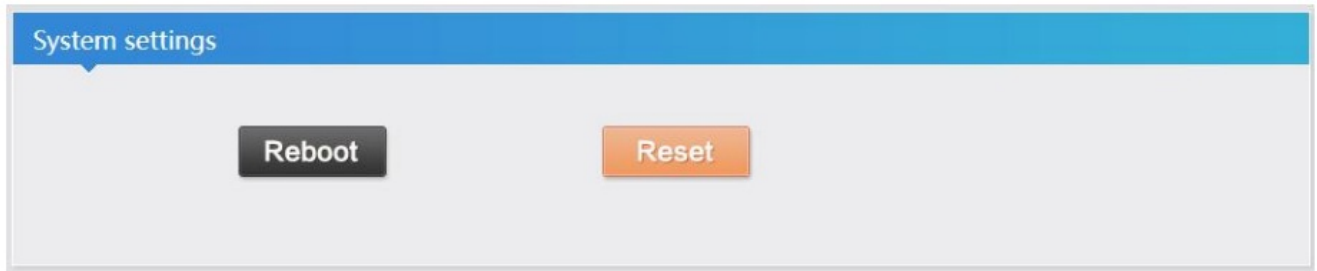
If the upgrade prompt fails, refresh the page and show the upgrade page, the user can try to upload again.

If the user fails to upgrade, you cannot log in to the control page, but it can be pinged.

You can contact us to guide you to restore your system (**support@orivision.com**)

Documents / Resources

	ORIVISION EH404 HDMI IP Video Streaming Encoder [pdf] User Guide EH404 HDMI IP Video Streaming Encoder, EH404, HDMI IP Video Streaming Encoder, IP Video Streaming Encoder, Video Streaming Encoder, Streaming Encoder

References

- **User Manual**