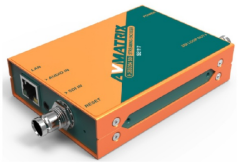

AVMATRIX SE1117 H.265 or H.264 SDI Streaming Encoder User Manual

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AVMATRIX SE1117 H.265 or H.264 SDI Streaming Encoder

Product Information

H.265/ H.264 SDI Streaming Encoder

The H.265/ H.264 SDI Streaming Encoder is a high-definition audio and video encoder that compresses and encodes SDI video and audio sources into IP streams. The encoded streams can then be transmitted to a streaming media server via a LAN port for live broadcasting on platforms such as Facebook, YouTube, Ustream, Twitch, Wowza, etc. The encoder supports various network protocols such as HTTP, RTSP, RTMP, RTP, UDP, Multicast, Unicast, SRT, and offers web configuration and remote upgrade options.

Main Features

- HD audio and video encoding
- Compresses and encodes SDI video and audio sources into IP streams
- Transmits encoded streams to a streaming media server via a LAN port
- Supports various network protocols such as HTTP, RTSP, RTMP, RTP, UDP, Multicast, Unicast, SRT
- Offers web configuration and remote upgrade options

Interfaces

- LAN Port for Streaming
- AUDIO Input
- SDI Input
- LED Indicator/ RESET hole (Long press 5s)
- SDI Loopout
- DC 12V In

Product Specifications

The specifications of the H.265/ H.264 SDI Streaming Encoder are as follows:

Connections	Video	Analog Audio	Network	Standards
SDI In Format Support	Video Coding	Video Bitrate	Audio Coding	Audio Bitrate
Encoding Resolution	Encoding Frame Rate	Systems	Network Protocols	Configuration Management
Others	Consumption	Temperature	Dimension (LWD)	Weight Accessories

Product Usage Instructions

H.265/ H.264 SDI Streaming Encoder

Using the Unit Safely

Before using the unit, please read the warning and precautions provided in the user manual. To ensure that you have a good grasp of every feature of the unit, read the manual carefully. The manual should be saved and kept on hand for further reference.

Operations Guide

Network Configuration and Login (Part 3.1)

To configure the encoder, connect it to a network via a network cable. The default IP address of the encoder is 192.168.1.168. The encoder can automatically obtain a new IP address when using DHCP on the network, or disable DHCP and configure the encoder and computer's network in the same network segment. The default IP address is:

- **IP Address:** 192.168.1.168
- **Subnet Mask:** 255.255.255.0
- **Default Gateway:** 192.168.1.1

To access the encoder's web page for setting up, visit the IP address 192.168.1.168 through an internet browser. The default username and password are both "admin".

Management Web Page (Part 3.2)

The encoding settings can be set on the encoder management web page.

Language Settings (Part 3.2.1)

- There are three language options available on the top-right corner of the encoder management web page: Chinese, Japanese, and English.

Device Status (Part 3.2.2)

- The status of MAIN STREAM and SUB STREAM can be checked on the web page, and a preview of the streaming video can be seen from PREVIEW VIDEO.

Network Settings (Part 3.2.3)

- The network can be set to dynamic IP (DHCP Enable) or static IP (DHCP Disable). The default IP information can be checked in Part 3.1.

Main Stream Settings (Part 3.2.4)

The main stream can be set to mirror image and upside-down image from MAIN PARAMETER tab. Configure main stream network protocol RTMP/ HTTP/ RTSP/ UNICAST/ MULTICAST/ RTP/ SRT accordingly. Note that only one of HTTP/ RTSP/ UNICAST/ MULTICAST/ RTP can be enabled at the same time.

Sub Stream Settings (Part 3.2.5)

Configure sub stream network protocol RTMP/ HTTP/ RTSP/ UNICAST/ MULTICAST/ RTP/ SRT accordingly. Note that only one of HTTP/ RTSP/ UNICAST/ MULTICAST/ RTP can be enabled at the same time.

Audio and Extension (Part 3.2.6)

Audio Settings (Part 3.2.6.1)

The encoder supports audio embedding from external analog input. Therefore, the audio can be from SDI embedded audio or analog Line in audio. Besides, Audio Encode Mode can be ACC/ MP3/ MP2.

USING THE UNIT SAFELY

Before using this unit, please read below warning and precautions which provide important information concerning the proper operation of the unit. Besides, to assure that you have gained a good grasp of every feature of your new unit, read below manual. This manual should be saved and kept on hand for further convenient reference.

Warning and Cautions

- To avoid falling or damage, please do not place this unit on an unstable cart, stand, or table.
- Operate unit only on the specified supply voltage.
- Disconnect power cord by connector only. Do not pull on cable portion.
- Do not place or drop heavy or sharp-edged objects on power cord. A damaged cord can cause fire or electrical shock hazards. Regularly check power cord for excessive wear or damage to avoid possible fire / electrical hazards.
- Ensure unit is always properly grounded to prevent electrical shock hazard.
- Do not operate unit in hazardous or potentially explosive atmospheres. Doing so could result in fire, explosion, or other dangerous results.
- Do not use this unit in or near water.
- Do not allow liquids, metal pieces, or other foreign materials to enter the unit.
- Handle with care to avoid shocks in transit. Shocks may cause malfunction. When you need to transport the unit, use the original packing materials, or alternate adequate packing.

- Do not remove covers, panels, casing, or access circuitry with power applied to the unit!
- Turn power off and disconnect power cord prior to removal. Internal servicing / adjustment of unit should only be performed by qualified personnel.
- Turn off the unit if an abnormality or malfunction occurs. Disconnect everything before moving the unit.

Note: due to constant effort to improve products and product features, specifications may change without notice.

BRIEF INTRODUCTION

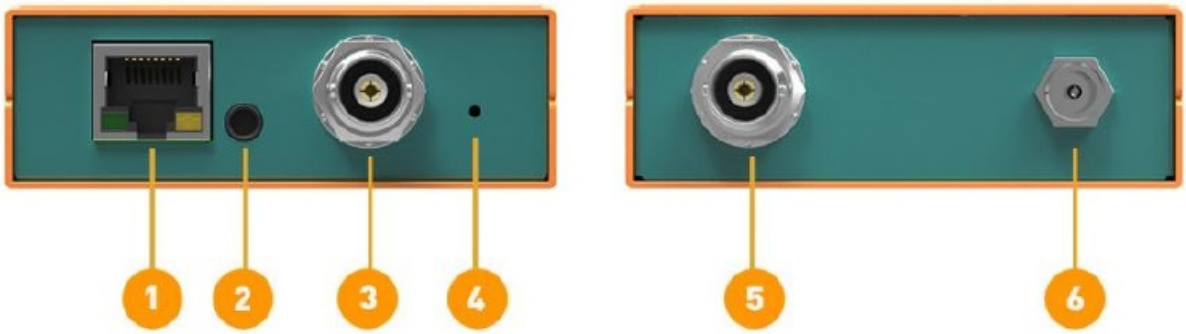
Overview

SE1117 is a HD audio and video encoder which can encode and compress SDI video and audio source into IP stream, and then transmit it to streaming media server via network IP address to live broadcast on platforms like Facebook, YouTube, Ustream, Twitch, Wowza etc.

Main Features

- 1×SDI input, 1×SDI loop out, 1×Analog audio input
- Supports H.265/ H.264 stream encode protocol, up to 1080p60hz
- Dual-stream (main stream and sub stream)
- RTSP, RTP, RTMPS, RTMP, HTTP, UDP, SRT, unicast and multicast
- Video and audio streaming or single audio streaming
- Image and text overlay
- Mirror image & upside-down image
- Live stream with no need for connecting a computer

Interfaces



1	LAN Port for Streaming
2	AUDIO Input
3	SDI Input
4	LED Indicator/ RESET hole (Long press 5s)
5	SDI Loopout
6	DC 12V In

SPECIFICATIONS

CONNECTIONS	
Video	Input: SDI Type A ×1; Loop Out: SDI Type A ×1
Analog Audio	3.5mm line in ×1
Network	RJ-45×1(100/1000Mbps self-adaptive Ethernet)
STANDARDS	
SDI In Format Support	1080p 60/59.94/50/30/29.97/25/24/23.98/23.976, 1080i 50/59.94/60, 720p 60/59.94/50/30/29.97/25/24/23.98, 576i 50, 576p 50, 480p 59.94/60, 480i 59.94/60
Video Coding	H.265/ H.264
Video Bitrate	16Kbps ~ 12MKbps
Audio Coding	ACC/ MP3/ MP2/ G711

Audio Bitrate	24Kbps ~ 320Kbps
Encoding Resolution	1920×1080, 1680×1056, 1280×720, 1024×576, 960×540, 850×480, 720×576, 720×540, 720×480, 720×404, 720×400, 704×576, 640×480, 640×360
Encoding Frame Rate	5-60fps
SYSTEMS	
Network Protocols	HTTP, RTSP, RTMP, RTP, UDP, Multicast, Unicast, SRT
Configuration Management	Web configuration, Remote upgrade
OTHERS	
Consumption	5W
Temperature	Working temp: -10℃~60℃, Storage temp: -20℃~70℃
Dimension (LWD)	104×75.5×24.5mm
Weight	Net weight: 310g, Gross weight: 690g
Accessories	12V 2A power supply; Mounting bracket for optional

OPERATIONS GUIDE

Network Configuration and Login

Connect the encoder to network via a network cable. The default IP address of the encoder is 192.168.1.168. The encoder can auto obtain a new IP address when it is using DHCP on the network, Or disable DHCP and configure the encoder and computer's network in the same network segment. The default IP address as below.

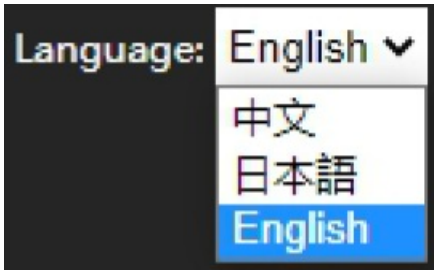
- **IP Address:** 192.168.1.168
- **Subnet Mask:** 255.255.255.0
- **Default Gateway:** 192.168.1.1

Visit encoder's IP address 192.168.1.168 through an Internet browser to login the WEB page for setting up. The default Username is admin, and password is admin.

Management Web Page

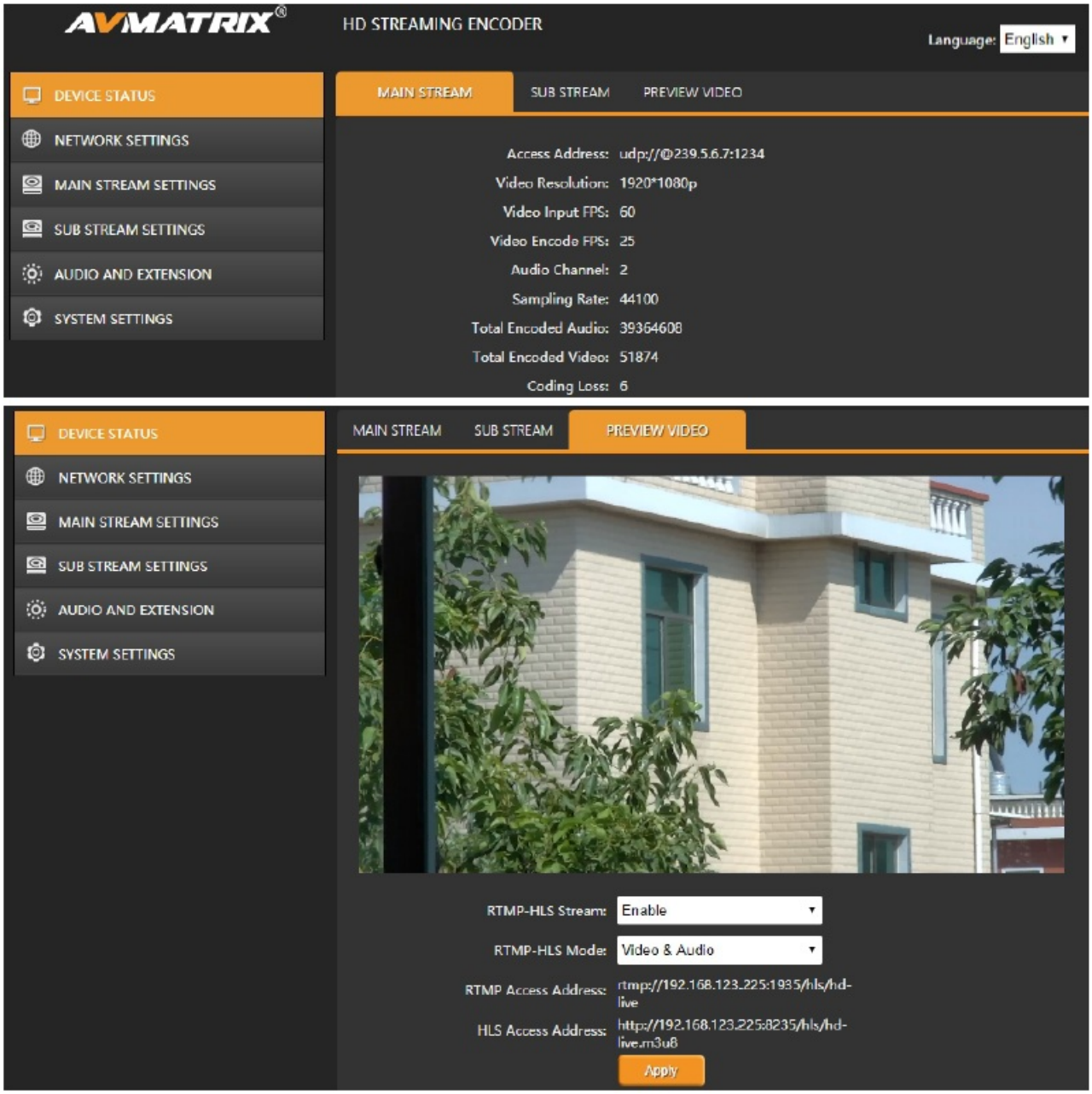
- The encoding settings can be set on the encoder management web page.

Language Settings



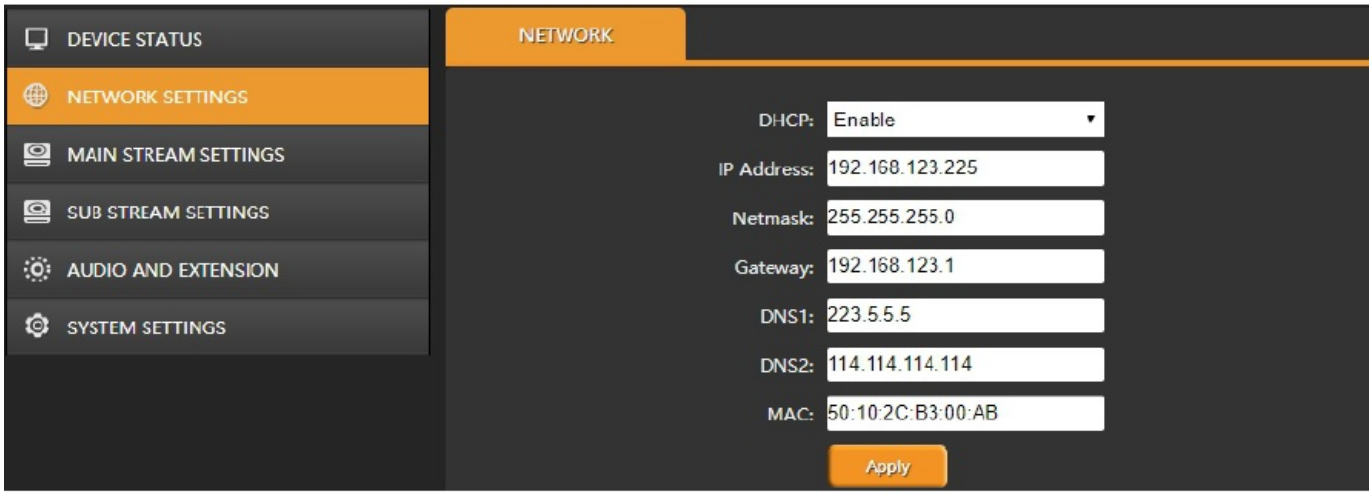
- There are languages of Chinese, Japanese and English for option on the top-right corner of the encoder management web page.

Device Status



- The status of MAIN STREAM and SUB STREAM can be checked on the web page. And we also can have a preview on the streaming video from PREVIEW VIDEO.

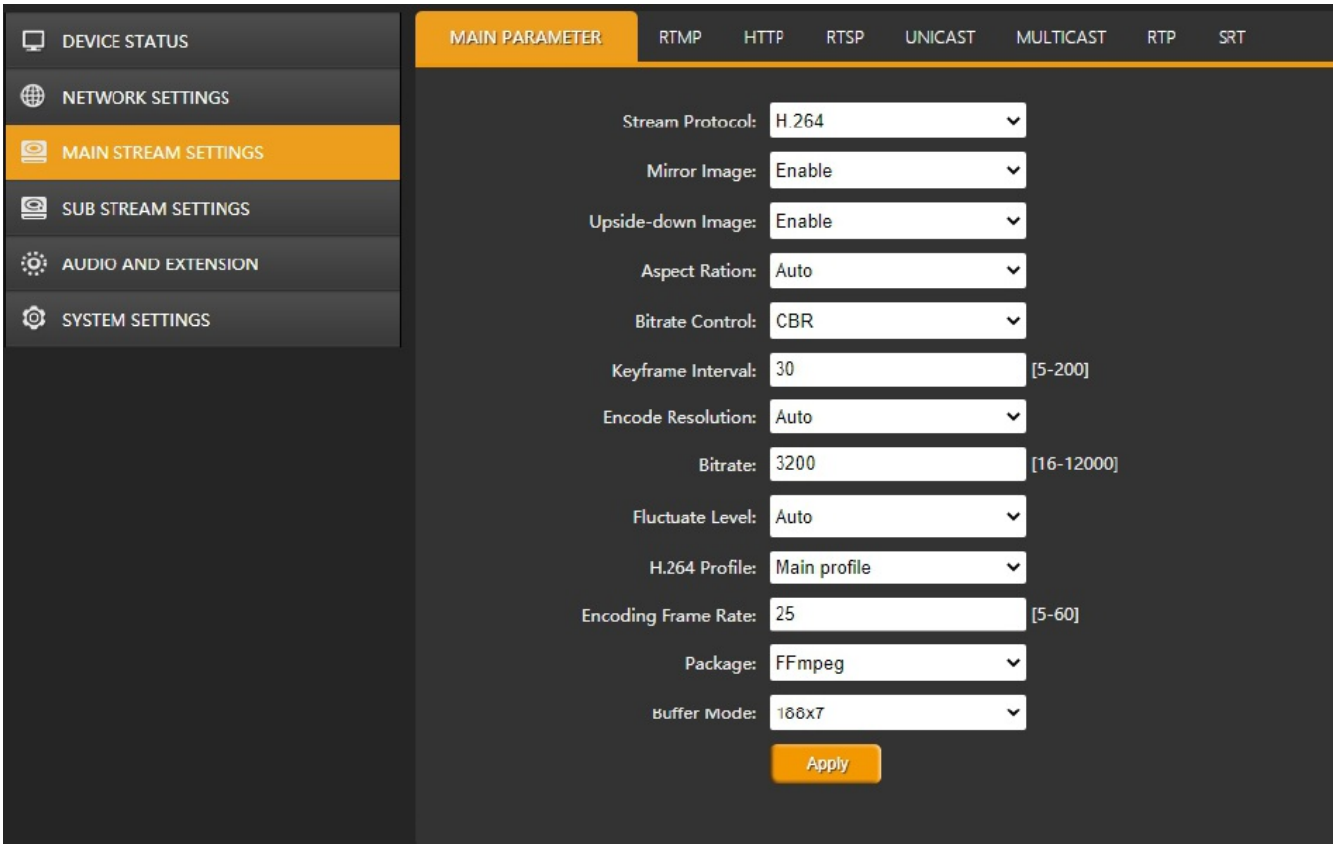
Network Settings

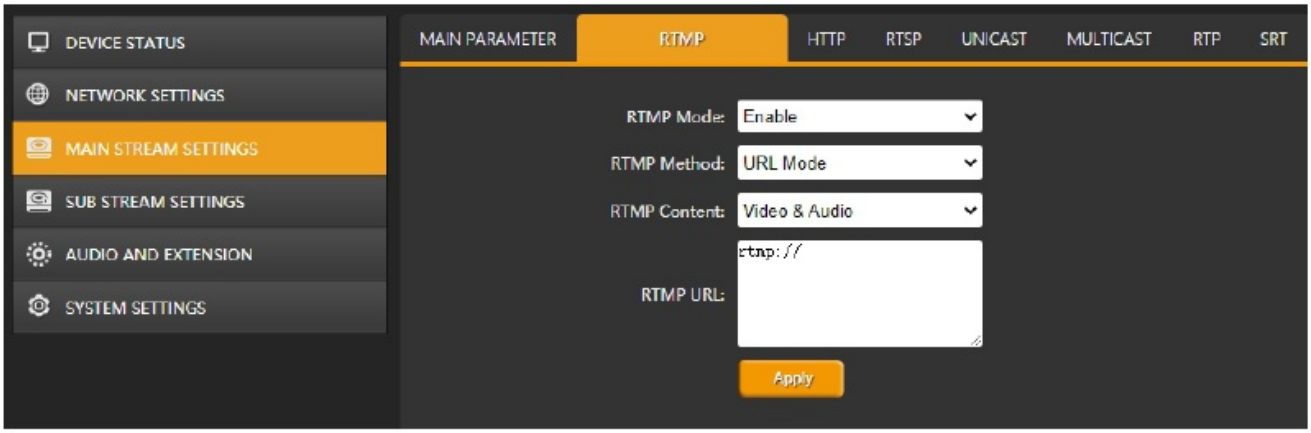


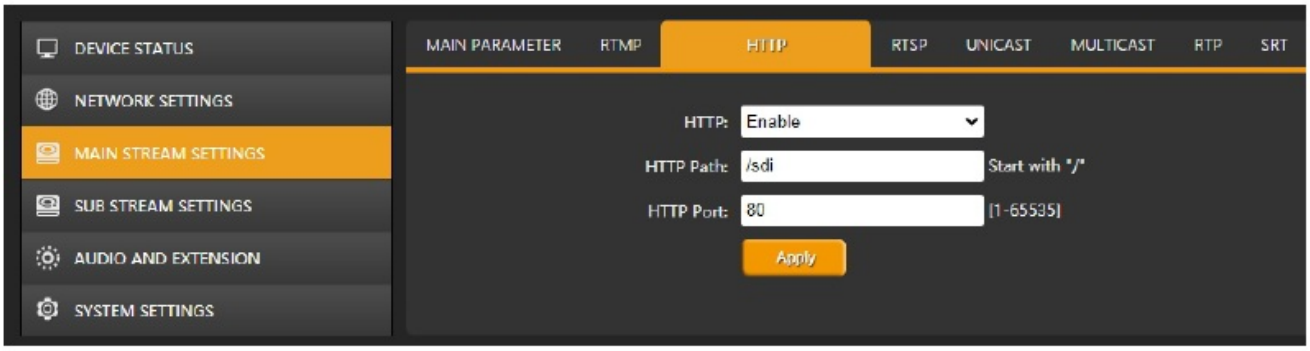
- The network can be set to dynamic IP (DHCP Enable) or static IP (DHCP Disable). The default IP information can be checked in Part 3.1.

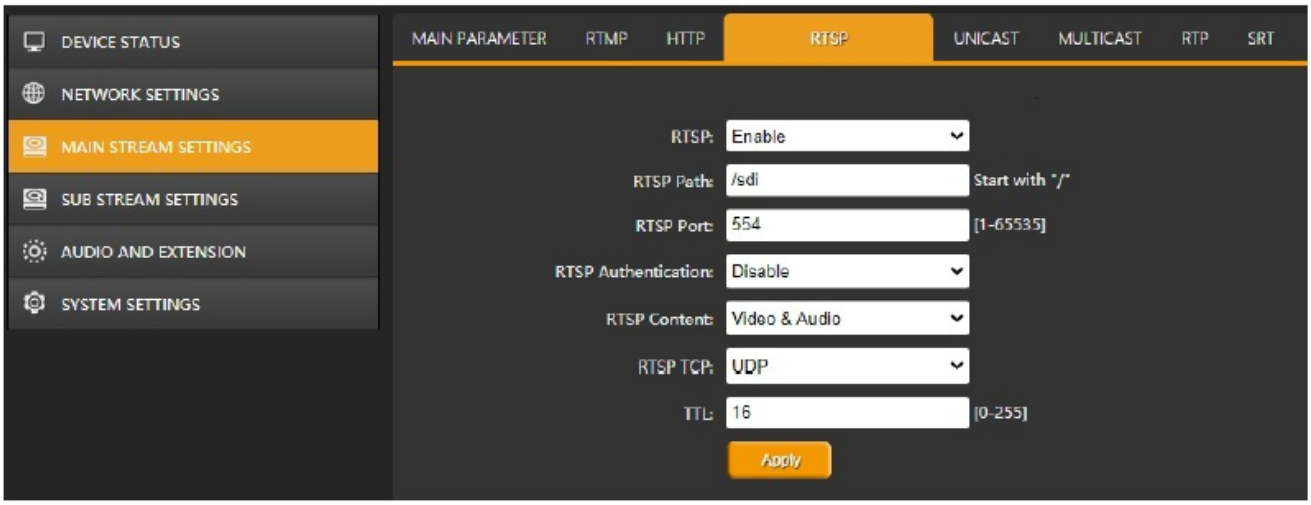
Main Stream Settings

The main stream can be set to mirror image and upside-down image from MAIN PARAMETER tab. Configure main stream network protocol RTMP/ HTTP/ RTSP/ UNICAST/ MULTICAST/ RTP/ SRT accordingly. Please note that only one of HTTP/ RTSP/ UNICAST/ MULTICAST/ RTP can be enabled at same time.

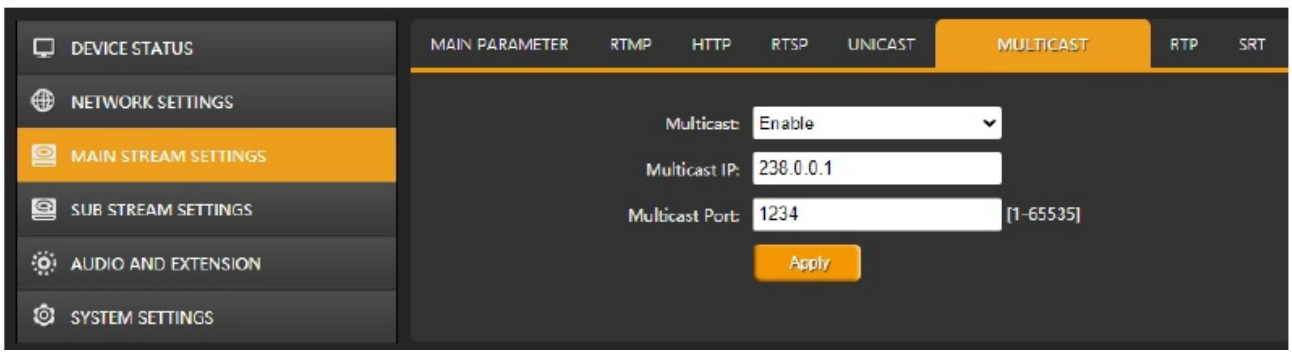


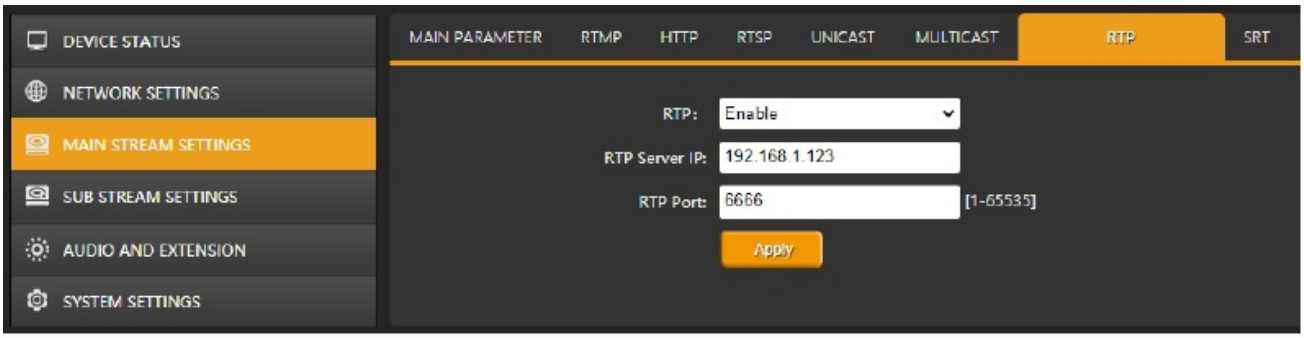

DEVICE STATUS
NETWORK SETTINGS
MAIN STREAM SETTINGS
SUB STREAM SETTINGS
AUDIO AND EXTENSION
SYSTEM SETTINGS
MAIN PARAMETER
RTMP
HTTP
RTSP
UNICAST
MULTICAST
RTP
SRT
RTMP Mode: Enable
RTMP Method: URL Mode
RTMP Content: Video & Audio
RTMP URL: rtmp://
Apply


DEVICE STATUS
NETWORK SETTINGS
MAIN STREAM SETTINGS
SUB STREAM SETTINGS
AUDIO AND EXTENSION
SYSTEM SETTINGS
MAIN PARAMETER
RTMP
HTTP
RTSP
UNICAST
MULTICAST
RTP
SRT
HTTP: Enable
HTTP Path: /sdi Start with "/"
HTTP Port: 80 [1-65535]
Apply


DEVICE STATUS
NETWORK SETTINGS
MAIN STREAM SETTINGS
SUB STREAM SETTINGS
AUDIO AND EXTENSION
SYSTEM SETTINGS
MAIN PARAMETER
RTMP
HTTP
RTSP
UNICAST
MULTICAST
RTP
SRT
RTSP: Enable
RTSP Path: /sdi Start with "/"
RTSP Port: 554 [1-65535]
RTSP Authentication: Disable
RTSP Content: Video & Audio
RTSP TCP: UDP
TTL: 16 [0-255]
Apply

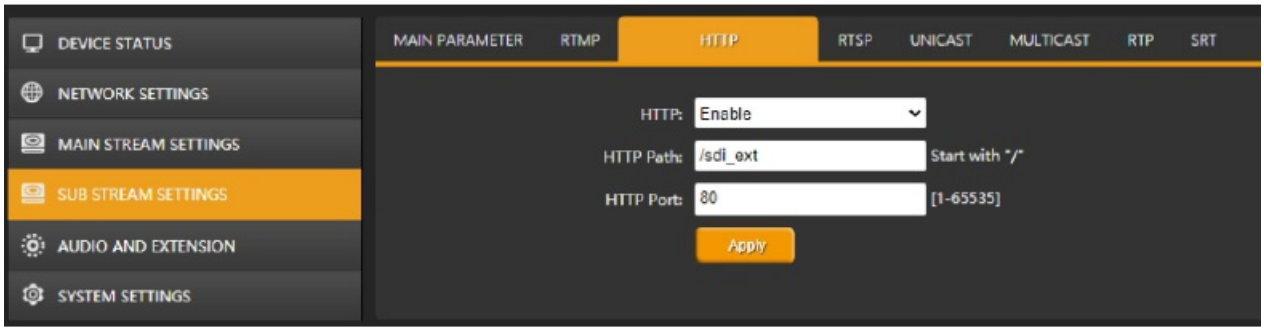

DEVICE STATUS
NETWORK SETTINGS
MAIN STREAM SETTINGS
SUB STREAM SETTINGS
AUDIO AND EXTENSION
SYSTEM SETTINGS
MAIN PARAMETER
RTMP
HTTP
RTSP
UNICAST
MULTICAST
RTP
SRT
Unicast: Enable
Unicast IP: 192.168.1.200 [Support domain or IP format]
Unicast Port: 1234 [1-65535]
Apply

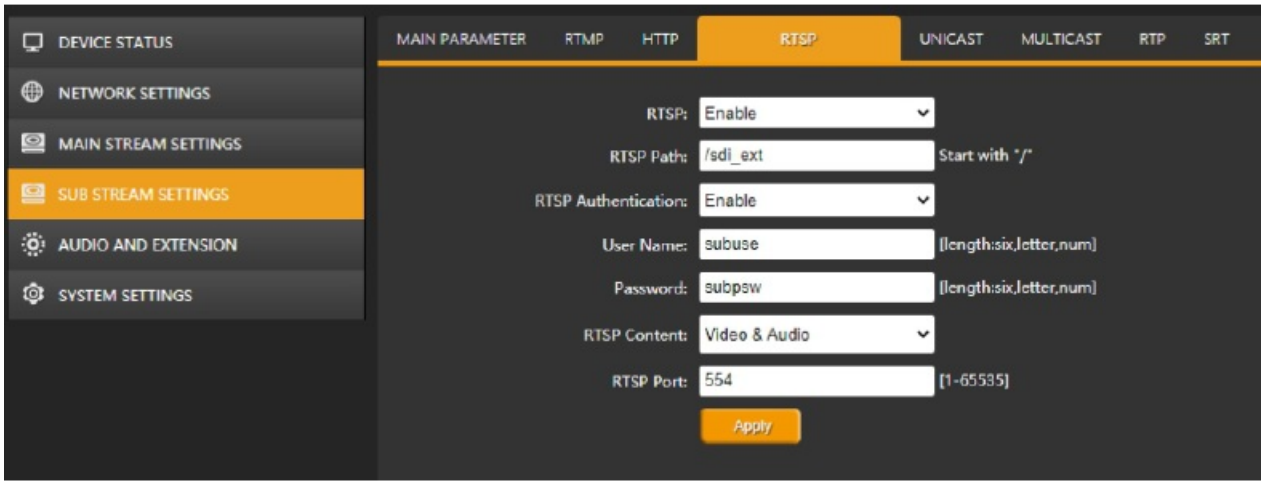

DEVICE STATUS
NETWORK SETTINGS
MAIN STREAM SETTINGS
SUB STREAM SETTINGS
AUDIO AND EXTENSION
SYSTEM SETTINGS
MAIN PARAMETER
RTMP
HTTP
RTSP
UNICAST
MULTICAST
RTP
SRT
Multicast: Enable
Multicast IP: 238.0.0.1
Multicast Port: 1234 [1-65535]
Apply

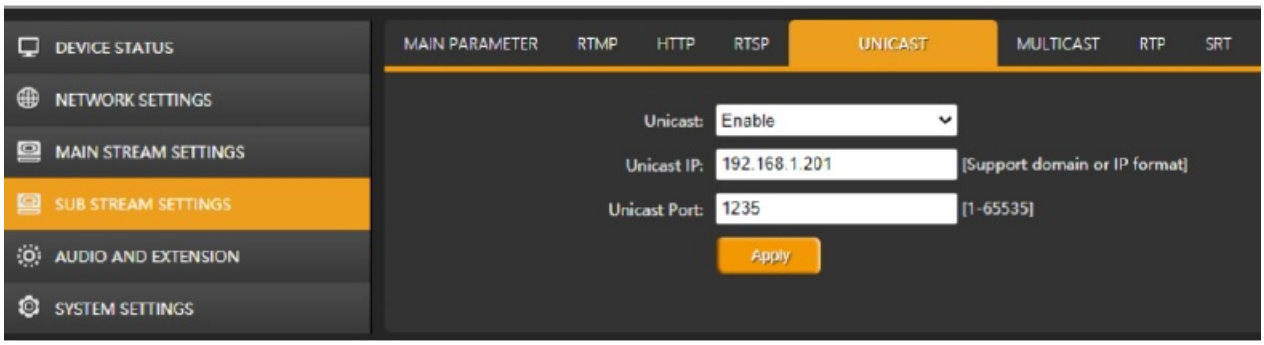


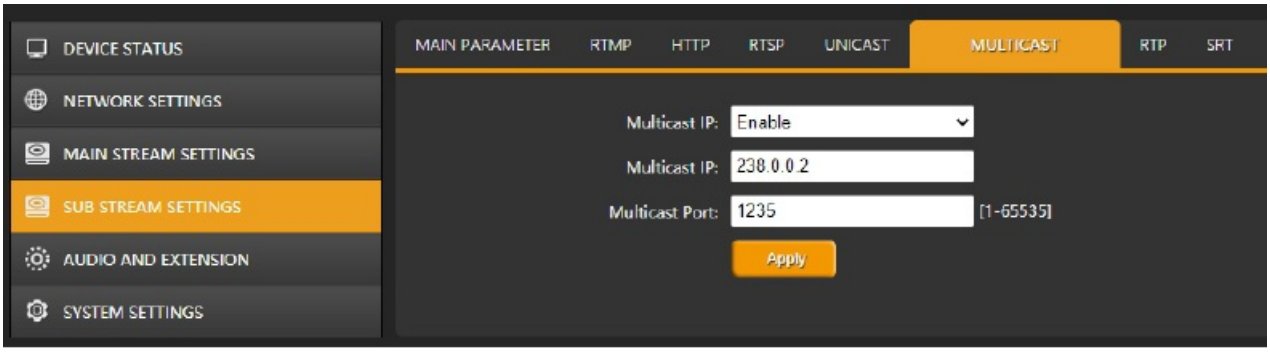
Sub Stream Settings

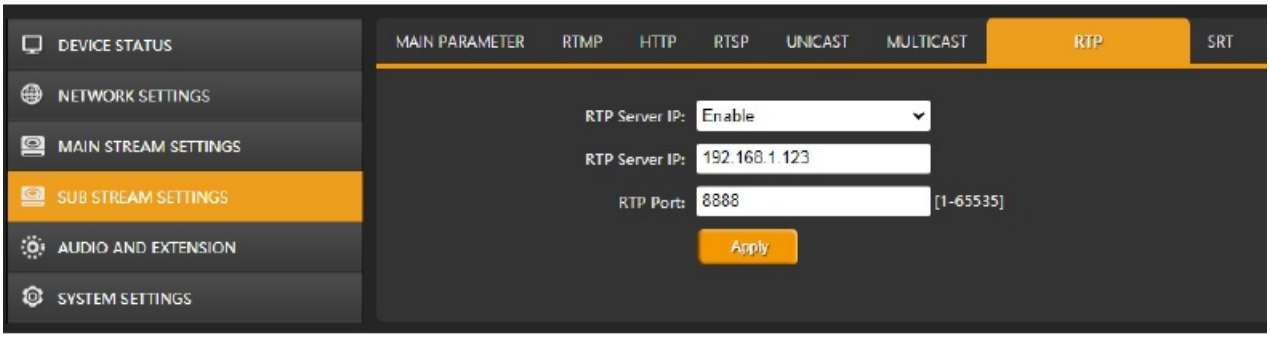
Configure sub stream network protocol RTMP/ HTTP/ RTSP/ UNICAST/ MULTICAST/ RTP/ SRT accordingly. Please note that only one of HTTP/ RTSP/ UNICAST/ MULTICAST/ RTP can be enable at same time.

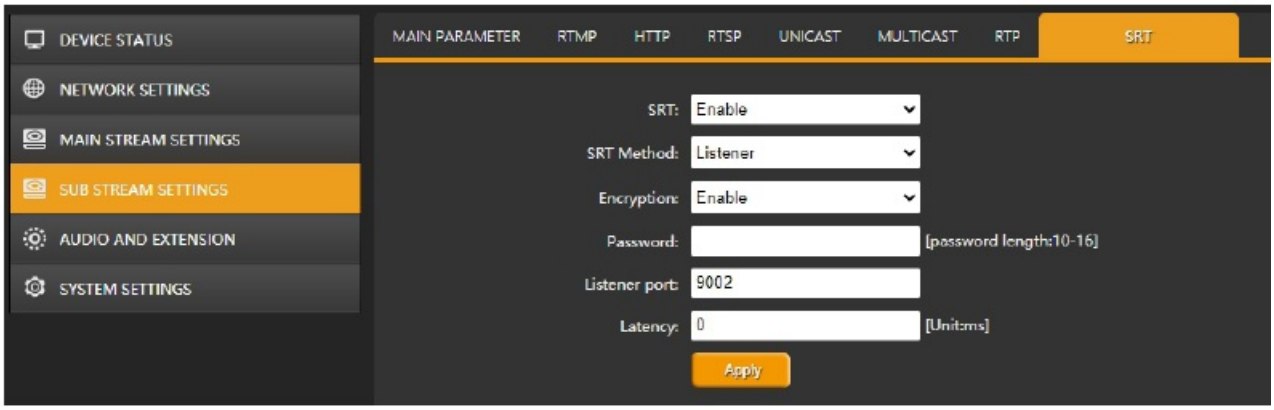

DEVICE STATUS
NETWORK SETTINGS
MAIN STREAM SETTINGS
SUB STREAM SETTINGS
AUDIO AND EXTENSION
SYSTEM SETTINGS
MAIN PARAMETER
RTMP
HTTP
RTSP
UNICAST
MULTICAST
RTP
SRT
HTTP:
Enable
HTTP Path:
/sdi_ext
Start with "/"
HTTP Port:
80
[1-65535]
Apply


DEVICE STATUS
NETWORK SETTINGS
MAIN STREAM SETTINGS
SUB STREAM SETTINGS
AUDIO AND EXTENSION
SYSTEM SETTINGS
MAIN PARAMETER
RTMP
HTTP
RTSP
UNICAST
MULTICAST
RTP
SRT
RTSP:
Enable
RTSP Path:
/sdi_ext
Start with "/"
RTSP Authentication:
Enable
User Name:
subuse
[length:six,letter,num]
Password:
subpsw
[length:six,letter,num]
RTSP Content:
Video & Audio
RTSP Port:
554
[1-65535]
Apply


DEVICE STATUS
NETWORK SETTINGS
MAIN STREAM SETTINGS
SUB STREAM SETTINGS
AUDIO AND EXTENSION
SYSTEM SETTINGS
MAIN PARAMETER
RTMP
HTTP
RTSP
UNICAST
MULTICAST
RTP
SRT
Unicast:
Enable
Unicast IP:
192.168.1.201
[Support domain or IP format]
Unicast Port:
1235
[1-65535]
Apply

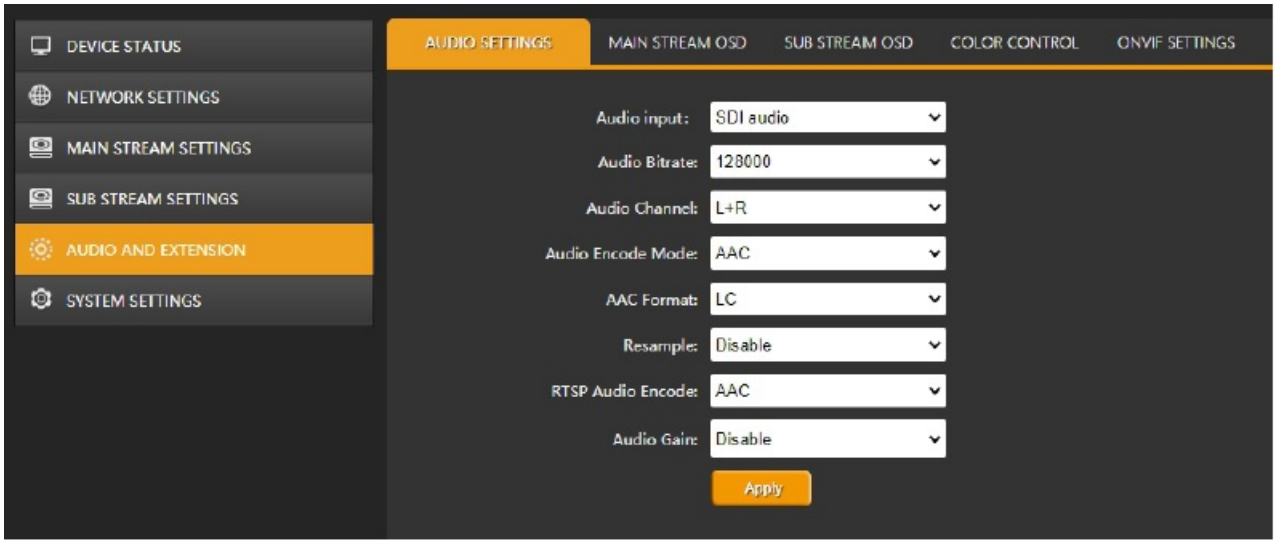

DEVICE STATUS
NETWORK SETTINGS
MAIN STREAM SETTINGS
SUB STREAM SETTINGS
AUDIO AND EXTENSION
SYSTEM SETTINGS
MAIN PARAMETER
RTMP
HTTP
RTSP
UNICAST
MULTICAST
RTP
SRT
Multicast IP:
Enable
Multicast IP:
238.0.0.2
Multicast Port:
1235
[1-65535]
Apply


DEVICE STATUS
NETWORK SETTINGS
MAIN STREAM SETTINGS
SUB STREAM SETTINGS
AUDIO AND EXTENSION
SYSTEM SETTINGS
MAIN PARAMETER
RTMP
HTTP
RTSP
UNICAST
MULTICAST
RTP
SRT
RTP Server IP:
Enable
RTP Server IP:
192.168.1.123
RTP Port:
8888
[1-65535]
Apply



Audio and Extension

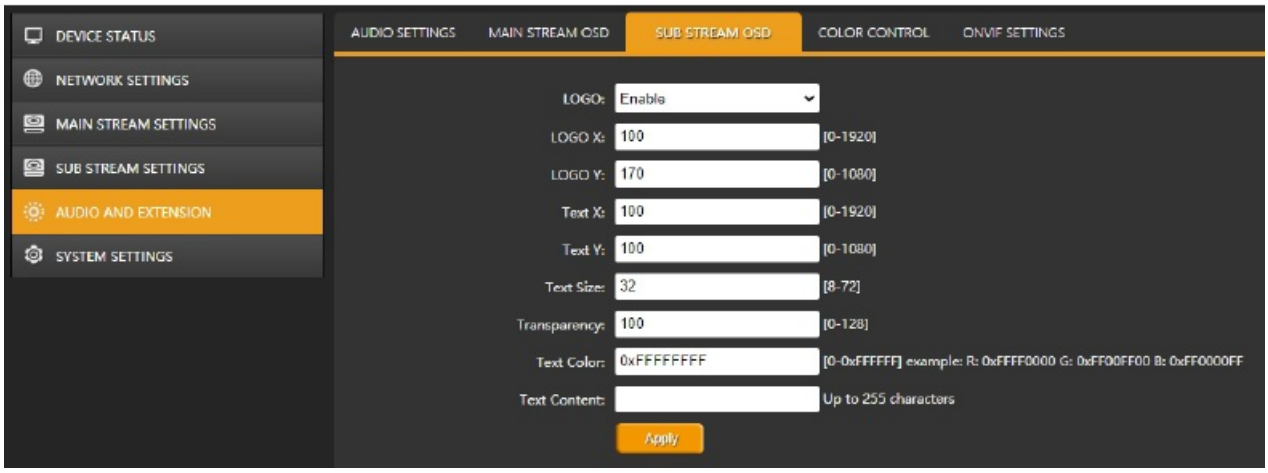
Audio Settings



The encoder support audio embedding from external analog input. Therefore, the audio can be from SDI embedded audio or analog Line in audio. Besides, Audio Encode Mode can be ACC/ MP3/ MP2.

OSD Overlay

The encoder can insert logo and text to the Main Stream / Sub Stream video at same time. The logo file should be named logo.bmp and resolution below 1920×1080 as well as less than 1MB. Text content overlay support up to 255 characters. The size and color of the text can be set on the web page. And user also can set the position and transparency of the logo and text overlay.

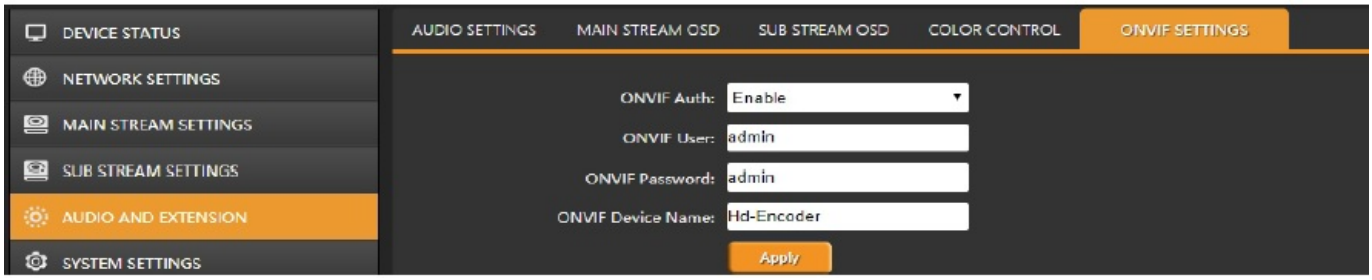


Color Control

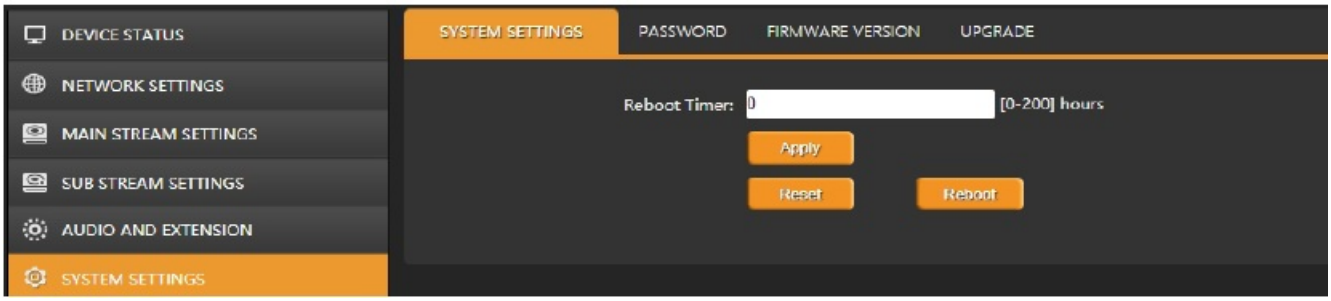
- User can adjust the brightness, contrast, hue, saturation of streaming video through the web page.

ONVIF Settings

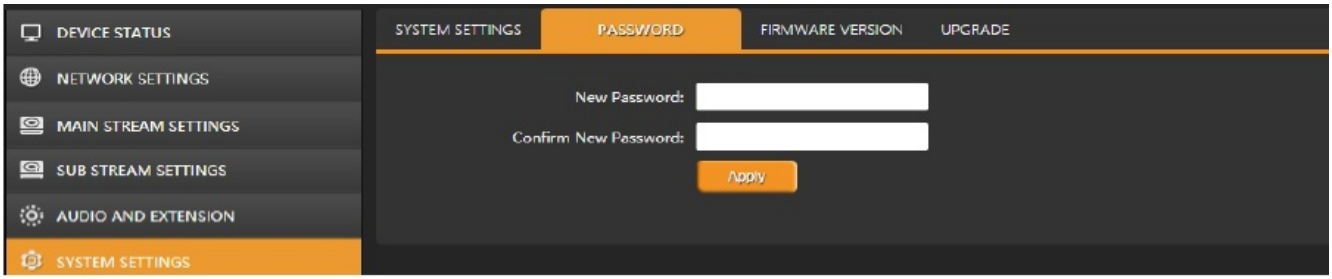
The settings of ONVIF as below:



System Settings



- User can set the encoder reboot after 0-200 hours for some applications.



- The default password is admin. User can set new password through below web page.

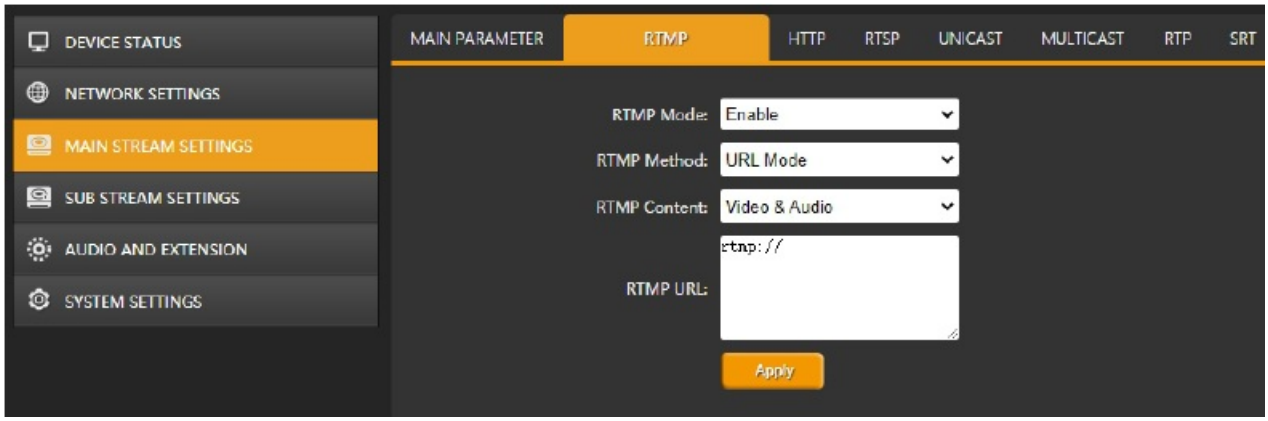
- The firmware version information can be checked the web page as below.

- Upgrade new firmware through the web page as below. Please note that don't turn off the power and refresh web page when upgrading.

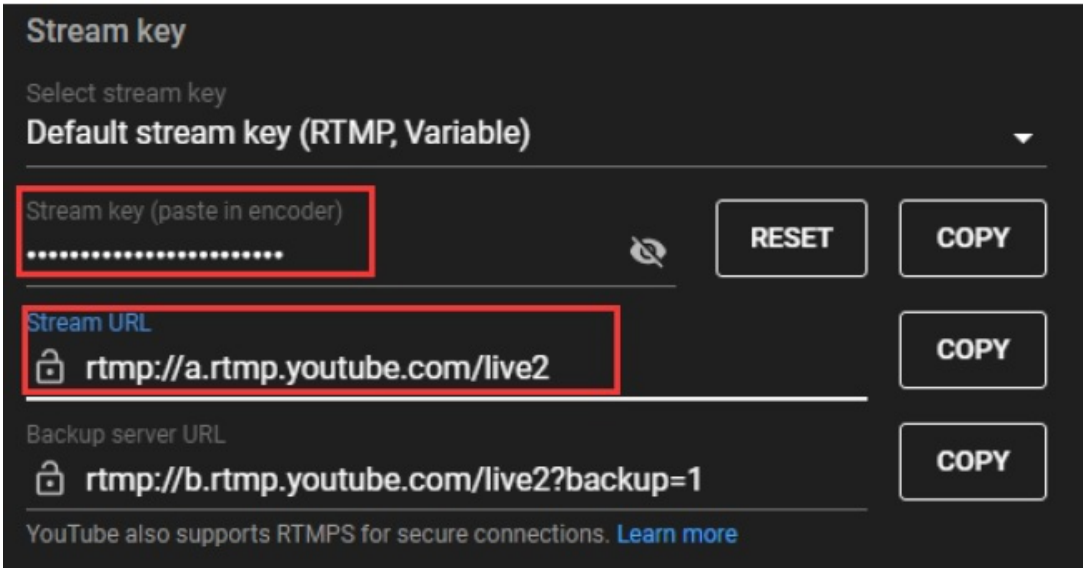
LIVE STREAM CONFIGURATION

Configure the encoder to live stream on platforms like YouTube, facebook, twitch, Periscope, etc. Following is an example to show how to configure the encoder to live stream on YouTube.

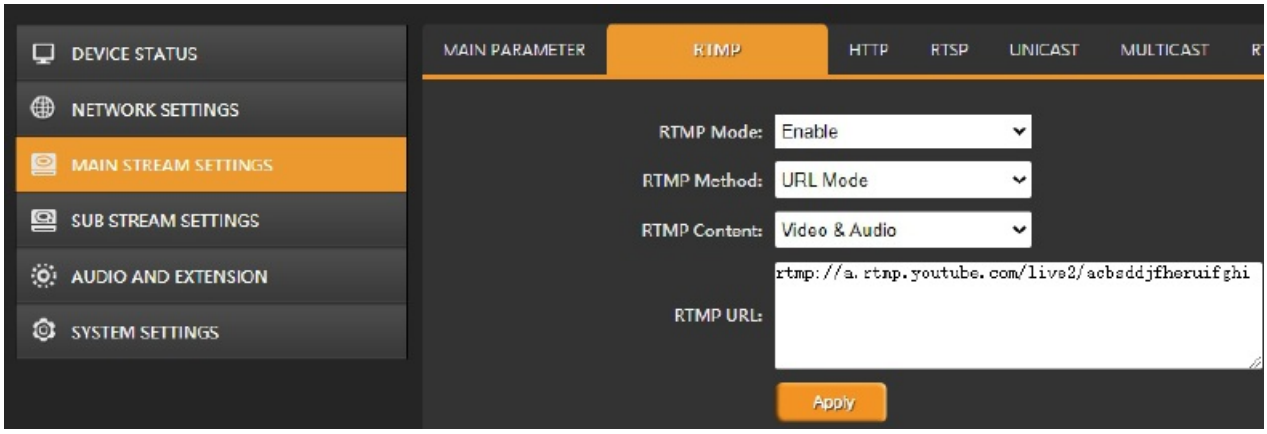
- **Step 1:** Set the main parameters of Stream Protocol to the H.264 mode, and other options are recommended to be the default configuration. In some occasion, they can be adjusted according to the actual situation. For example, if the network speed is slow, the Bitrate Control can be switched from CBR to VBR and adjust the Bitrate from 16 to 12000.
- **Step 2:** Setting the RTMP options as follow image:



- **Step 3:** Enter the stream URL and stream key in the RTMP URL, and connect them with"/".



  - For example, the stream URL is "rtmp://a.rtmp.youtube.com/live2".
  - The Stream key is "acbsddjfheruifghi".



  - Then the RTMP URL will be "Stream URL"+ "/" + "Stream Key":
  - "rtmp://a.rtmp.youtube.com/live2/acbsddjfheruifghi". See below image.
- **Step 4:** Click"Apply"to live stream on YouTube.

For Sales and Product information contact

- **Australia:** NSW: +61 2 8213 0200
  - **VIC:** +61 3 8691 5210
  - **QLD:** +61 7 3607 3785
  - **WA:** +61 8 8120 3203
- **New Zealand:** AKL: +64 9 271 4000

- **WLG:** +64 4 499 3888

- **E-mail:** Sales@avw.com.au
- Sales@avw.co.nz

Documents / Resources

	AVMATRIX SE1117 H.265 or H.264 SDI Streaming Encoder [pdf] User Manual SE1117 H.265 or H.264 SDI Streaming Encoder, SE1117, H.265 or H.264 SDI Streaming Encoder, H.264 SDI Streaming Encoder, SDI Streaming Encoder, Streaming Encoder, Encoder