


AVMATRIX SE1117 Sdi Streaming Encoder Instructions

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SE1117 SDI STREAMING ENCODER Instructions



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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

1.1. Overview

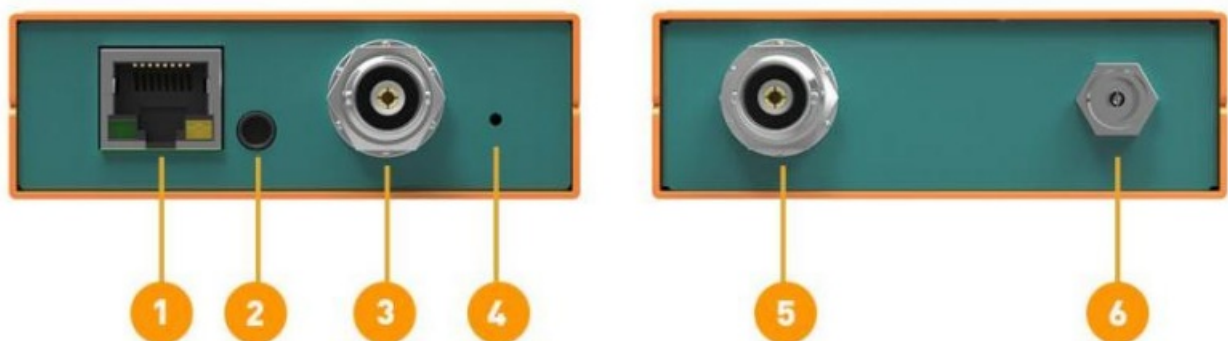
SE1117 is a HD audio and video encoder which can encode and compress SDI video and audio source into IP stream, and then transmit it to streaming media server via network IP address to live broadcast on platforms like Facebook, YouTube, Ustream, Twitch, Wowza etc.



1.2. Main Features

- 1×SDI input, 1×SDI loop out, 1×Analog audio input
- Supports 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

1.3. 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 x1; Loop Out: SDI Type A x1
Analog Audio	3.5mm line in x1
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, 576i50, 576p 50, 480p 59.94/60, 480i 59.94/60
Video Coding	Stream encode protocol
Video Bitrate	16Kbps — 12Mbps
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℃~55℃, Storage temp: -20℃~70℃
Dimension (LWD)	104×75.5×24.5mm
Weight	Net weight: 310g, Gross weight: 690g
<u>Accessories</u>	12V 2A power supply; Mounting bracket for optional

OPERATIONS GUIDE

3.1. 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

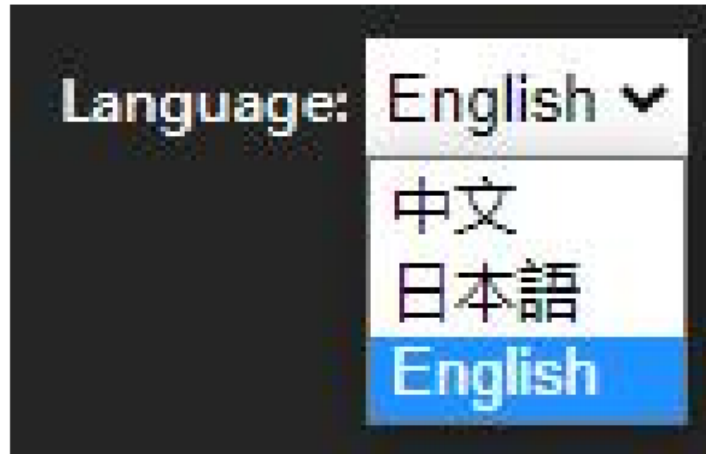
Visit encoder's IP address 192.168.1.168 through an Internet browser to login the WEB page for setting up. The default Username is admin, and password is admin.

3.2. Management Web Page

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

3.2.1. Language Settings

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



3.2.2. 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.

AVMATRIX®

HD STREAMING ENCODER

Language: English

DEVICE STATUS

NETWORK SETTINGS

MAIN STREAM SETTINGS

SUB STREAM SETTINGS

AUDIO AND EXTENSION

SYSTEM SETTINGS

MAIN STREAM

SUB STREAM

PREVIEW VIDEO

Access Address: udp://@239.5.6.7:1234

Video Resolution: 1920*1080p

Video Input FPS: 60

Video Encode FPS: 25

Audio Channel: 2

Sampling Rate: 44100

Total Encoded Audio: 39364608

Total Encoded Video: 51874

Coding Loss: 6

DEVICE STATUS

NETWORK SETTINGS

MAIN STREAM SETTINGS

SUB STREAM SETTINGS

AUDIO AND EXTENSION

SYSTEM SETTINGS

MAIN STREAM

SUB STREAM

PREVIEW VIDEO

RTMP-HLS Stream: Enable

RTMP-HLS Mode: Video & Audio

RTMP Access Address: rtmp://192.168.123.225:1935/hls/hd-live

HLS Access Address: http://192.168.123.225:8235/hls/hd-live.m3u8

Apply

3.2.3. 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.

DEVICE STATUS

NETWORK SETTINGS

MAIN STREAM SETTINGS

SUB STREAM SETTINGS

AUDIO AND EXTENSION

SYSTEM SETTINGS

NETWORK

DHCP: Enable

IP Address: 192.168.123.225

Netmask: 255.255.255.0

Gateway: 192.168.123.1

DNS1: 223.5.5.5

DNS2: 114.114.114.114

MAC: 50:10:2C:B3:00:AB

Apply

3.2.4. 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 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

Stream Protocol:

H.264

Mirror Image:

Enable

Upside-down Image:

Enable

Aspect Ration:

Auto

Bitrate Control:

CBR

Keyframe Interval:

30

[5-200]

Encode Resolution:

Auto

Bitrate:

3200

[16-12000]

Fluctuate Level:

Auto

H.264 Profile:

Main profile

Encoding Frame Rate:

25

[5-60]

Package:

FFmpeg

Buffer Mode:

188x7

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

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

	MAIN PARAMETER	RTMP	HTTP	RTSP	UNICAST	MULTICAST	RTP	SRT
DEVICE STATUS								
NETWORK SETTINGS								
MAIN STREAM SETTINGS								
SUB STREAM SETTINGS								
AUDIO AND EXTENSION								
SYSTEM SETTINGS								
	Multicast: <input type="text" value="Enable"/>							
	Multicast IP: <input type="text" value="238.0.0.1"/>							
	Multicast Port: <input type="text" value="1234"/> [1-65535]							
	<input type="button" value="Apply"/>							

	MAIN PARAMETER	RTMP	HTTP	RTSP	UNICAST	MULTICAST	RTP	SRT
DEVICE STATUS								
NETWORK SETTINGS								
MAIN STREAM SETTINGS								
SUB STREAM SETTINGS								
AUDIO AND EXTENSION								
SYSTEM SETTINGS								
	RTP: <input type="text" value="Enable"/>							
	RTP Server IP: <input type="text" value="192.168.1.123"/>							
	RTP Port: <input type="text" value="6666"/> [1-65535]							
	<input type="button" value="Apply"/>							

	MAIN PARAMETER	RTMP	HTTP	RTSP	UNICAST	MULTICAST	RTP	SRT
DEVICE STATUS								
NETWORK SETTINGS								
MAIN STREAM SETTINGS								
SUB STREAM SETTINGS								
AUDIO AND EXTENSION								
SYSTEM SETTINGS								
	SRT: <input type="text" value="Enable"/>							
	SRT Method: <input type="text" value="Listener"/>							
	Encryption: <input type="text" value="Enable"/>							
	Password: <input type="text"/> [Password length:10-16]							
	Listener Port: <input type="text" value="9000"/>							
	Latency: <input type="text" value="0"/> [Unit:ms]							
	<input type="button" value="Apply"/>							

3.2.5. 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.

	MAIN PARAMETER	RTMP	HTTP	RTSP	UNICAST	MULTICAST	RTP	SRT
DEVICE STATUS								
NETWORK SETTINGS								
MAIN STREAM SETTINGS								
SUB STREAM SETTINGS								
AUDIO AND EXTENSION								
SYSTEM SETTINGS								
	Stream Protocol: <input type="text" value="H.264"/>							
	Aspect Ratio: <input type="text" value="Auto"/>							
	Bitrate Control: <input type="text" value="CBR"/>							
	Encode Resolution: <input type="text" value="704x576"/>							
	Bitrate: <input type="text" value="3200"/> [16-12000]							
	Fluctuate Level: <input type="text" value="Auto"/>							
	H.264 Profile: <input type="text" value="Main Profile"/>							
	Encoding Frame Rate: <input type="text" value="25"/> [5-60]							
	Buffer Mode: <input type="text" value="188x7"/>							
	<input type="button" value="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

RTMP: 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_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

The screenshot shows the 'RTP' settings page. On the left is a sidebar with menu items: DEVICE STATUS, NETWORK SETTINGS, MAIN STREAM SETTINGS, SUB STREAM SETTINGS (highlighted), AUDIO AND EXTENSION, and SYSTEM SETTINGS. The top navigation bar includes: MAIN PARAMETER, RTMP, HTTP, RTSP, UNICAST, MULTICAST, RTP (highlighted), and SRT. The main content area contains the following settings:

- RTP Server IP: Enable (dropdown)
- RTP Server IP: 192.168.1.123 (text input)
- RTP Port: 8888 (text input) [1-65535]
- Apply (button)

The screenshot shows the 'SRT' settings page. The sidebar and top navigation bar are identical to the RTP page. The main content area contains the following settings:

- SRT: Enable (dropdown)
- SRT Method: Listener (dropdown)
- Encryption: Enable (dropdown)
- Password: (text input) [password length:10-16]
- Listener port: 9002 (text input)
- Latency: 0 (text input) [Unit:ms]
- Apply (button)

3.2.6. Audio and Extension

3.2.6.1. 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.

The screenshot shows the 'AUDIO SETTINGS' page. The sidebar and top navigation bar are identical to the previous screenshots. The main content area contains the following settings:

- Audio input: SDI audio (dropdown)
- Audio Bitrate: 128000 (dropdown)
- Audio Channel: L+R (dropdown)
- Audio Encode Mode: AAC (dropdown)
- AAC Format: LC (dropdown)
- Resample: Disable (dropdown)
- RTSP Audio Encode: AAC (dropdown)
- Audio Gain: Disable (dropdown)
- Apply (button)

3.2.6.2. 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.

DEVICE STATUS
NETWORK SETTINGS
MAIN STREAM SETTINGS
SUB STREAM SETTINGS
AUDIO AND EXTENSION
SYSTEM SETTINGS

AUDIO SETTINGS **MAIN STREAM OSD** SUB STREAM OSD COLOR CONTROL ONVIF SETTINGS

Upload LOGO: Main/Sub stream OSD LOGO file must be named (logo.bmp logo_ext.bmp)

LOGO:

LOGO X: [0-1920]

LOGO Y: [0-1080]

Text X: [0-1920]

Text Y: [0-1080]

Text Size: [8-72]

Transparency: [0-128]

Text Color: [0-0xFFFFFFFF] example: R: 0xFFFF0000 G: 0xFF00FF00 B: 0xFF0000FF

Text Content: Up to 255 characters

DEVICE STATUS
NETWORK SETTINGS
MAIN STREAM SETTINGS
SUB STREAM SETTINGS
AUDIO AND EXTENSION
SYSTEM SETTINGS

AUDIO SETTINGS MAIN STREAM OSD **SUB STREAM OSD** COLOR CONTROL ONVIF SETTINGS

LOGO:

LOGO X: [0-1920]

LOGO Y: [0-1080]

Text X: [0-1920]

Text Y: [0-1080]

Text Size: [8-72]

Transparency: [0-128]

Text Color: [0-0xFFFFFFFF] example: R: 0xFFFF0000 G: 0xFF00FF00 B: 0xFF0000FF

Text Content: Up to 255 characters

3.2.6.3. Color Control

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

DEVICE STATUS
NETWORK SETTINGS
MAIN STREAM SETTINGS
SUB STREAM SETTINGS
AUDIO AND EXTENSION
SYSTEM SETTINGS

AUDIO SETTINGS MAIN STREAM OSD SUB STREAM OSD **COLOR CONTROL** ONVIF SETTINGS

Brightness: [0-100] Default Value: 50

Contrast: [0-100] Default Value: 50

Hue: [0-100] Default Value: 50

Saturation: [0-100] Default Value: 50

3.2.6.4. ONVIF Settings

The settings of ONVIF as below:

DEVICE STATUS
NETWORK SETTINGS
MAIN STREAM SETTINGS
SUB STREAM SETTINGS
AUDIO AND EXTENSION
SYSTEM SETTINGS

AUDIO SETTINGS MAIN STREAM OSD SUB STREAM OSD COLOR CONTROL **ONVIF SETTINGS**

ONVIF Auth:

ONVIF User:

ONVIF Password:

ONVIF Device Name:

3.2.6.5. System Settings

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

The screenshot shows the 'SYSTEM SETTINGS' page. On the left sidebar, 'SYSTEM SETTINGS' is highlighted. The main content area has tabs for 'SYSTEM SETTINGS', 'PASSWORD', 'FIRMWARE VERSION', and 'UPGRADE'. Under 'SYSTEM SETTINGS', there is a 'Reboot Timer' field set to '0' with a range of '[0-200] hours'. Below the field are three buttons: 'Apply', 'Reset', and 'Reboot'.

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

The screenshot shows the 'PASSWORD' page. The left sidebar remains the same. The main content area has tabs for 'SYSTEM SETTINGS', 'PASSWORD', 'FIRMWARE VERSION', and 'UPGRADE'. Under 'PASSWORD', there are two input fields: 'New Password:' and 'Confirm New Password:'. Below these fields is an 'Apply' button.

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

The screenshot shows the 'FIRMWARE VERSION' page. The left sidebar remains the same. The main content area has tabs for 'SYSTEM SETTINGS', 'PASSWORD', 'FIRMWARE VERSION', and 'UPGRADE'. Under 'FIRMWARE VERSION', the following information is displayed: 'Version: v2.2.16_20200831_80_1_release' and 'ONVIF Version: version 2.6.24'.

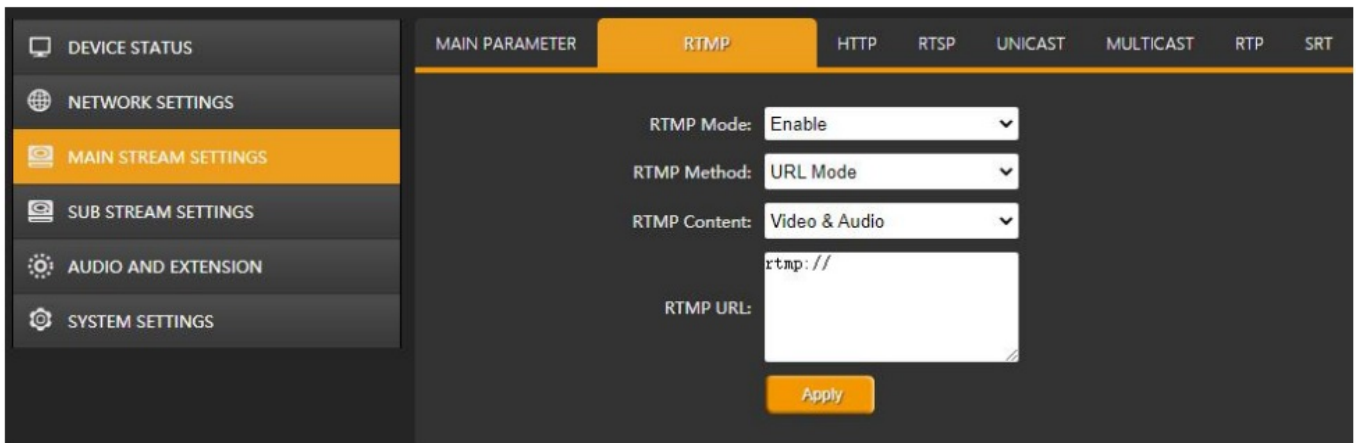
Upgrade new firmware through the web page as below. Please note that don't turn off the power and refresh web page when upgrading.

The screenshot shows the 'UPGRADE' page. The left sidebar remains the same. The main content area has tabs for 'SYSTEM SETTINGS', 'PASSWORD', 'FIRMWARE VERSION', and 'UPGRADE'. Under 'UPGRADE', there is an 'Upgrade Settings' section with a file selection button labeled '选择文件' (Select File) and a status indicator '未选择任何文件' (No file selected). Below this is an 'update' button. A note in parentheses says '(named upgrade.bin, do not cut off the electricity or refresh web page!!!)'.

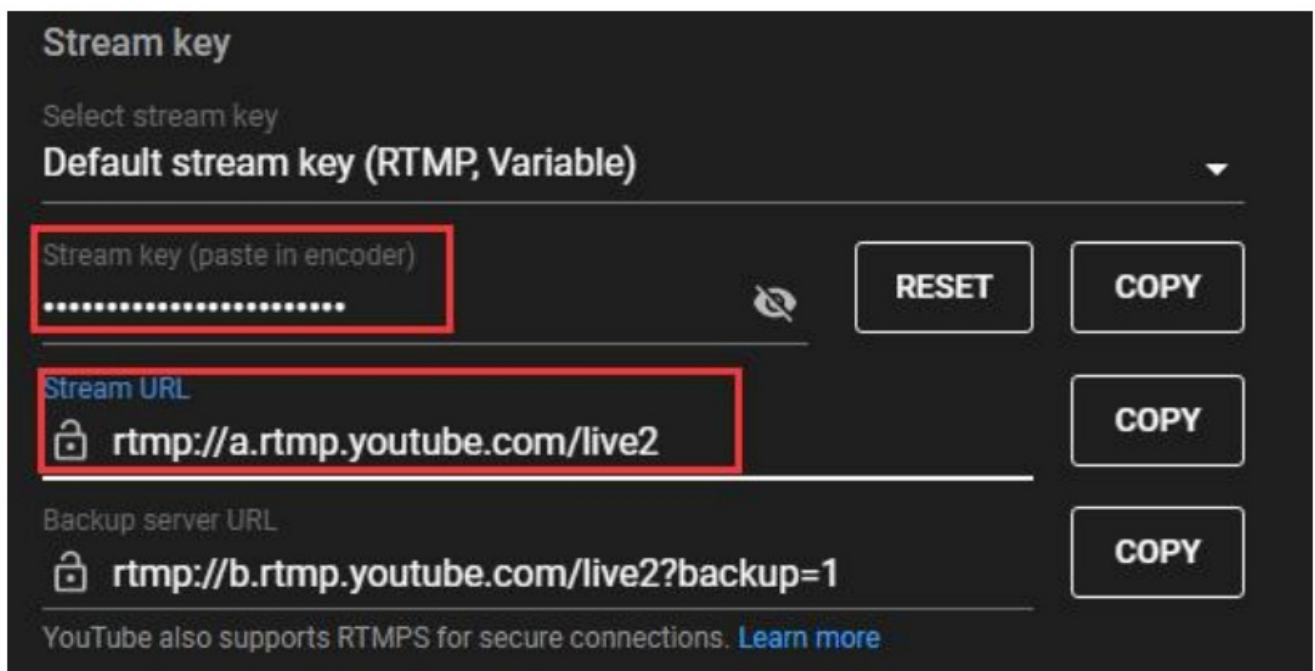
LIVE STREAM CONFIGURATION

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.

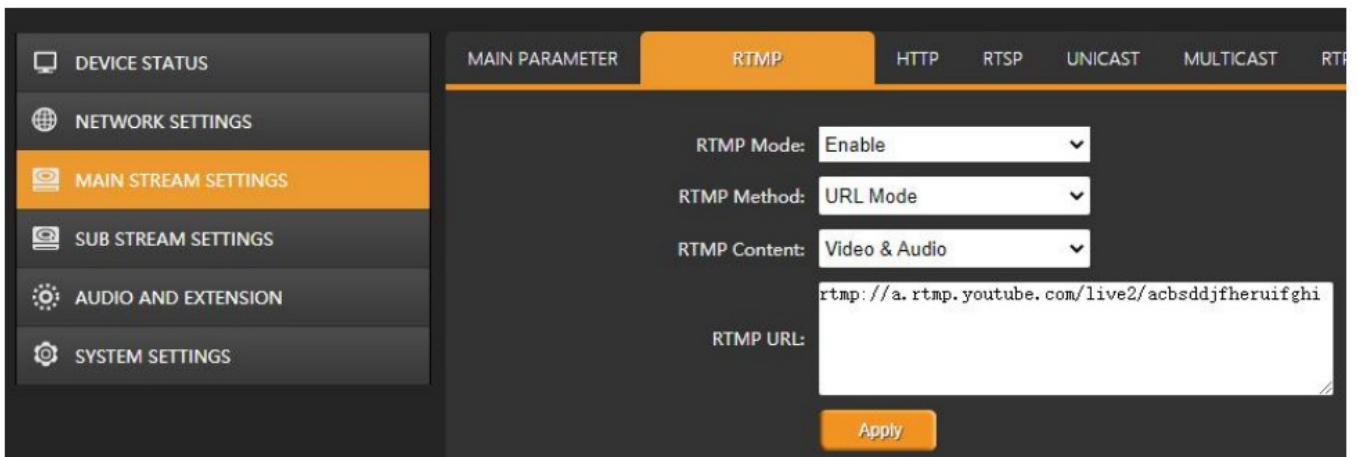
Step 1. Set the main parameters of Stream Protocol to the H.264 mode, and other options are recommended to be the default configuration. In some occasion, they can be adjusted according to the actual situation. For example, if the network speed is slow, the Bitrate Control can be switched from CBR to 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](https://a.rtmp.youtube.com/live2)".
 The Stream key is "acbsddjferuifghi".




Then the RTMP URL will be "Stream URL" + "/" + "Stream Key":
["rtmp://a.rtmp.youtube.com/live2/acbsddjferuifghi"](https://a.rtmp.youtube.com/live2/acbsddjferuifghi). See below image.



Step 4. Click "Apply" to live stream on YouTube.

Documents / Resources

 <p>SE1117 SDI STREAMING ENCODER</p>	<p>AVMATRIX SE1117 Sdi Streaming Encoder [pdf] Instructions SE1117 Sdi Streaming Encoder, SE1117, Sdi Streaming Encoder, Streaming Encoder, Encoder</p>
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References

- [User Manual](#)