Box Studio Lite

Model : YS-SW41H

User Manual



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1. PRODUCT INTRODUCTION

1.1. Product Brief

YS-SW41H HDMI provides 4 x HDMI input for HDMI multiviewer and PGM feature in one device, it can reception 4 HDMI inputs and 2 HDMI outputs. For 1st HDMI output, it can provide commercial interface for local monitor usage; for 2nd HDMI Multiview/PGM output, it can provide PGM feature and transfer it to broadcasting equipments. It also provides 4 x 3.5mm analog audio input for audio embedded and a 3.5mm analog audio output for audio deembedded.



Front panel

In front panel, YS-SW41H provides PGM / feature button for user to control it locally. USB3.0 interface provides user to record input in various format. It also provides record / snapshot / stream / connectivity button in front panel.



Back panel

In back panel, YS-SW41H provides RJ45 for internet connectivity. It also provides RS232 and 2 USB2.0 for user to connect with industrial / commercial controlling method. User can connect USB keyboard and mouse to access YS-SW41H internal control interface.

1.2. Specification

Model	YS-SW41H
Max. FPS	1920×1080p@300fps(4 HDMI + 1 PGM Channels)
Recording Mode	Hardware Compression
Product Photo	
Input Interfaces	● Video ➢ 4×HDMI ● Audio ➢ 4×3.5mm
Output Interface	● Video ➢ 1×HDMI (Multiview / PGM) ➢ 1×HDMI (PGM) ● Audio ➢ 1×3.5mm
Video Feature	● H.264 baseline/main/high profile ● Support input / output resolutions ➢ 1920×1080 (P60/P50/P30/P25/P24/i60/i50) ➢ 1280×720 (P60/P50), 1280×1024 (P60), 1280×960 (P60) ➢ 1024×768 (P60), 800×600 (P60), 720×480 (P60/i60) ➢ 640×480 (P60), 720×576 (P50/i50)
Audio Feature	● AAC-LC ● Configurable bit rate range from 32Kbps to 384Kbps ● Sample rate : 48KHz, 16bit
Network Feature	● 1×RJ45 for 10/100/1000Mbps Ethernet ● DHCP client
Support Streaming protocol	● RTSP over UDP/TCP/Multicast/HTTP ● RTMP (Publish) ● TS over IP ● HLS
Misc. Features	● Web UI for system configuration ● Firmware upgradable ● LED indicator

	● Remember the latest setting after reboot ● Main function switch ➢ Record ➢ Snapshot ➢ Stream ● PGM mode switch ➢ Full screen ➢ Quadview ➢ Picture by picture ➢ Picture in picture ➢ PGM Loop ● Full screen switch ➢ Channel 1 ➢ Channel 2 ➢ Channel 3 ➢ Channel 4 ● 2×USB2.0 (For Keyboard and mouse usage) ● 1×USB3.0 (For external storage usage) ● 1×RS232 + 1×RS485
Record Format	MP4 / TS / AVI / MOV

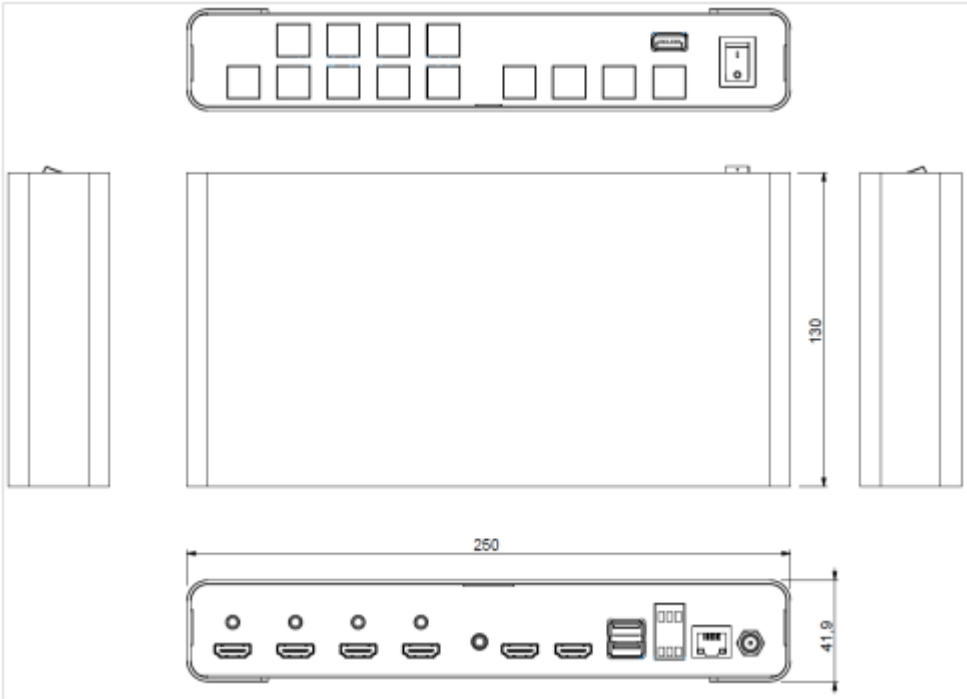
2. HARDWARE INSTALLATION

2.1. Package Contents

Item	Amount
YS-SW41H	1
Adapter	1

2.2. Device Size

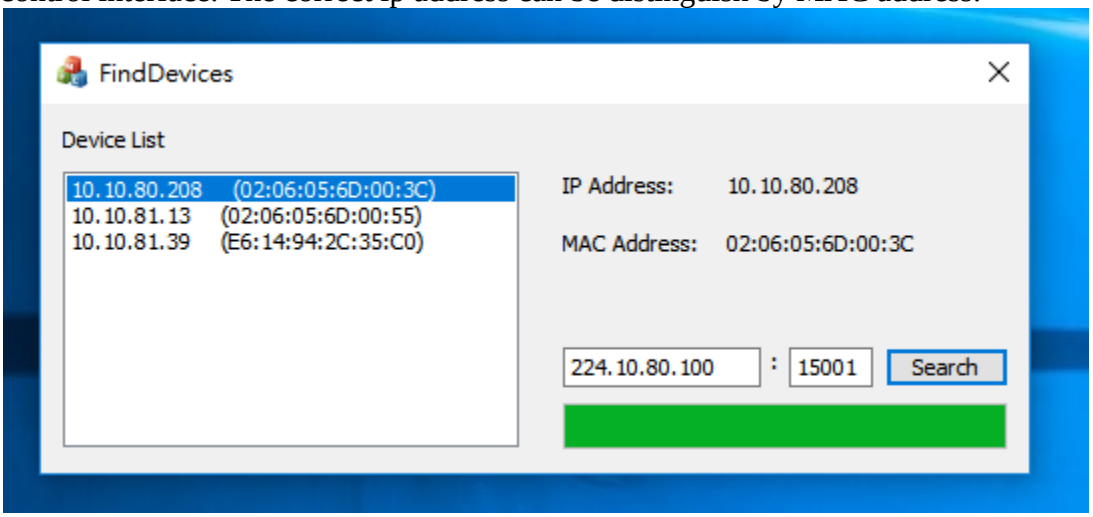
Figure below is the device size of YS-SW41H.



Device Size Diagram

3. IP Finder

For using YS-SW41H Web UI, please open IP finder and search for the ip address to open control interface. The correct ip address can be distinguish by MAC address.



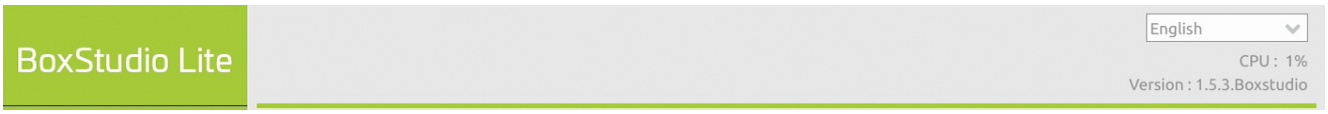
4. WEB UI

Web UI is the internet interface for user to control YS-SW41H more convenient, users can control them via normal PC or portable devices (EX: Android, iPhone, iPad…etc.)



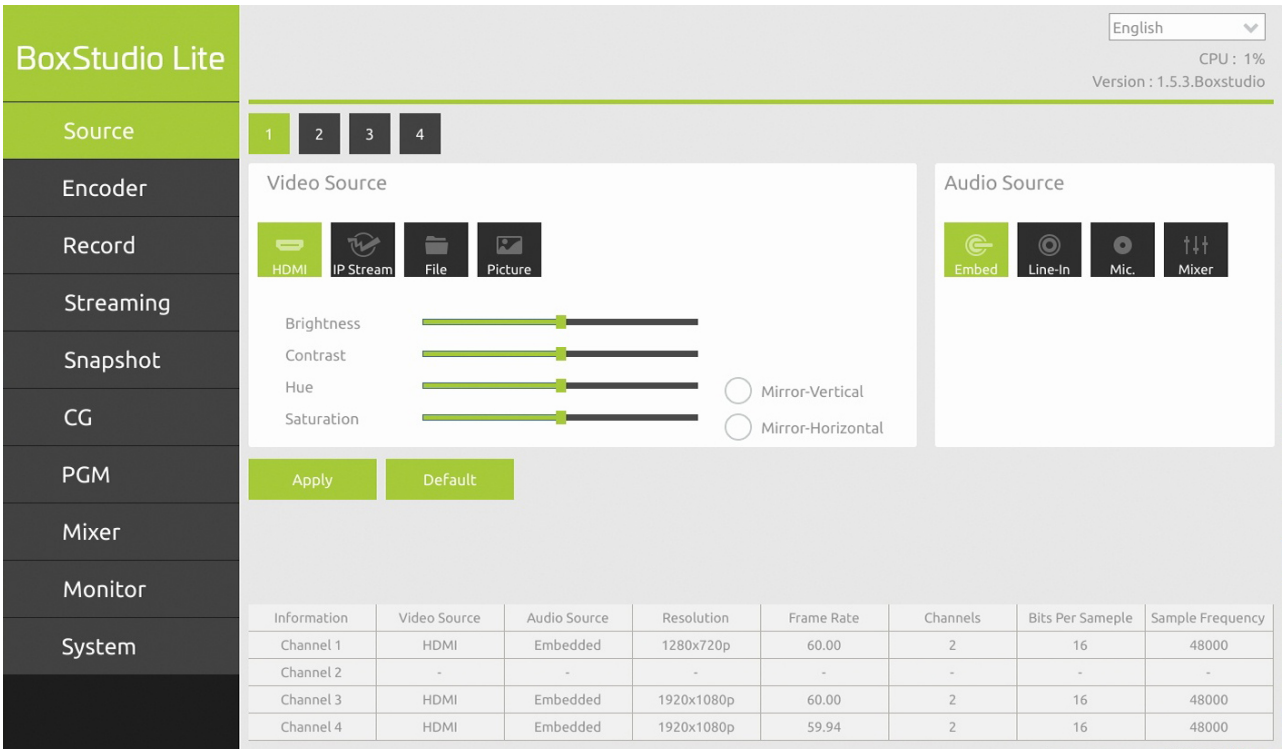
Username: admin
Password: 0000

4.1. Language / Firmware



On the top, here are web UI language selection and Firmware version / MCU version. User can change Web UI language here.

4.2. Source



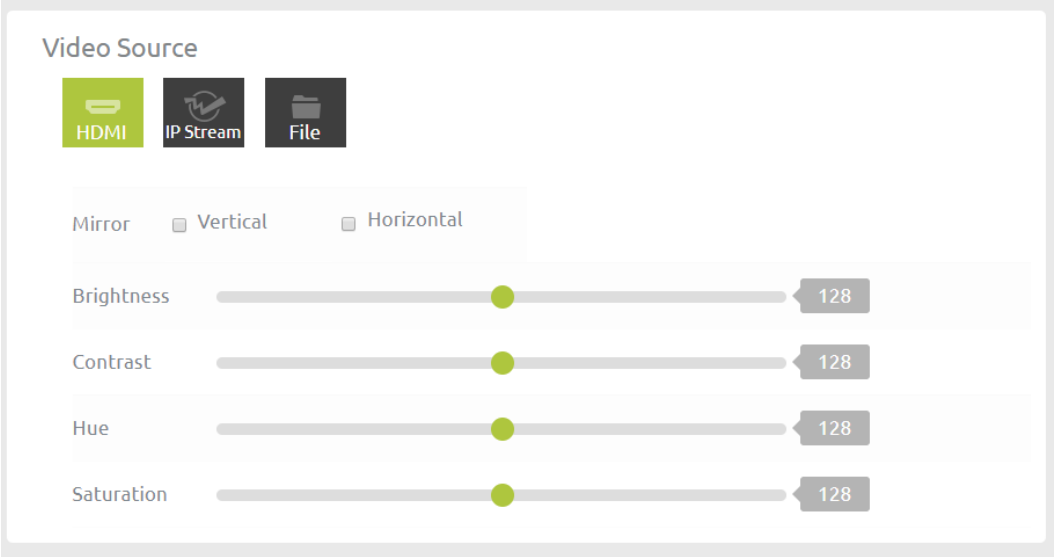
This page contains **input signal status**, input **Video Source** and **Audio Source** selection. Users can change input video property, source and check input video information here. User can select on the top 1/2/3/4 icons to change the channel that willing to adjust.

4.2.1. Video Source



User can change video source here. YS-SW41H can receive locally HDMI signal, IP streaming and internal file playing.

4.2.2. Video Source (HDMI)

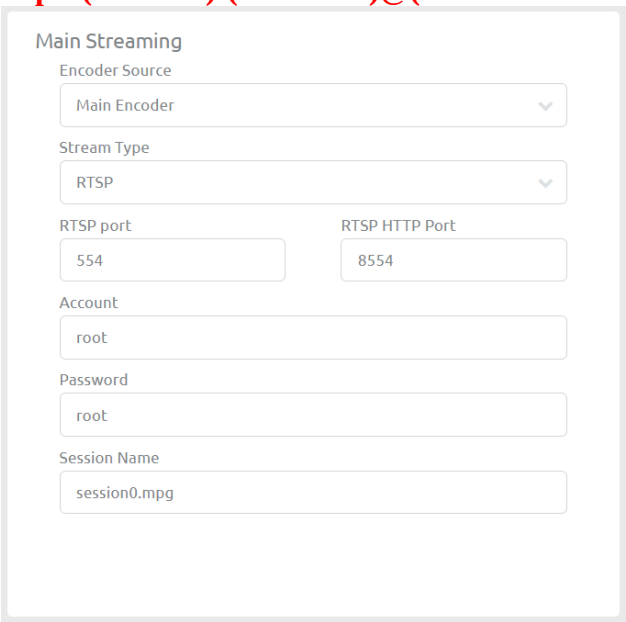


User can change video quality (Brightness, Contrast, Hue and Saturation) and mirror input (Vertical or Horizontal) here.

4.2.3. Video Source (Streaming)

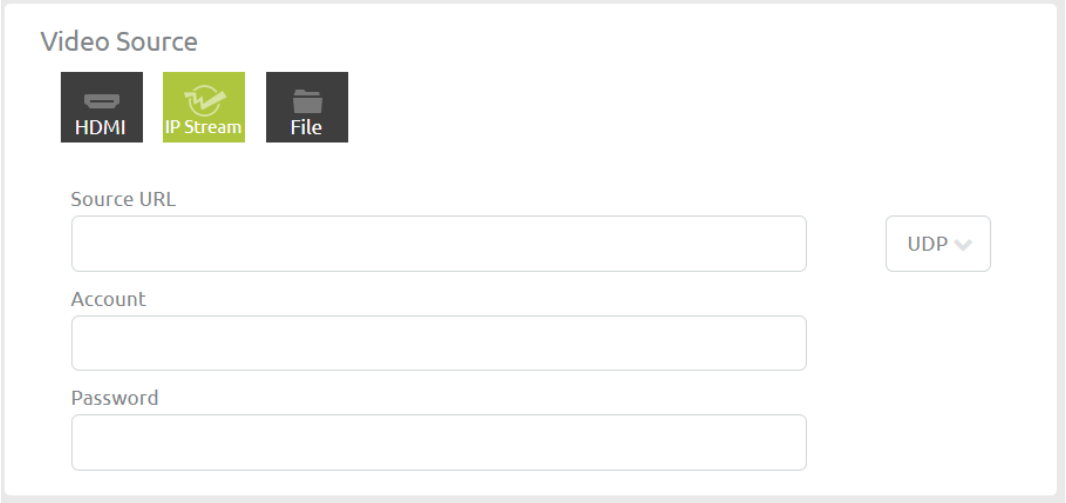


For YS-SW41H up streaming, please enter the **Streaming** page and follow the following information (The IP address will vary by environment, please check IP finder to make sure the IP address.).
RTSP format listed as below.
rtsp://(Account):(Password)@(YS-SW41H IP address):(RTSP port)/(Session name)



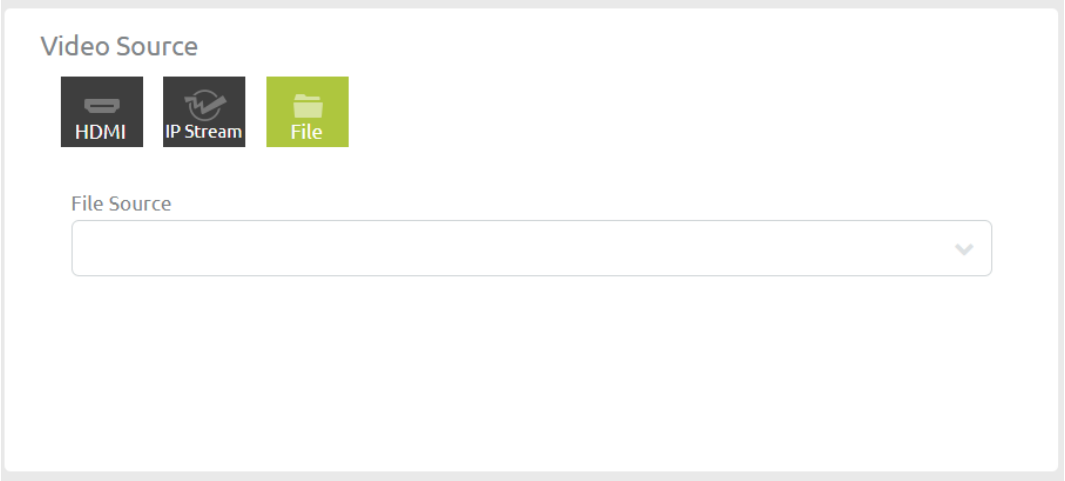
After the setting as above, the streaming address will be
rtsp://root:root@192.168.1.200:554/session0.mpg

For down streaming side, please enter **source->video source->IP Stream**



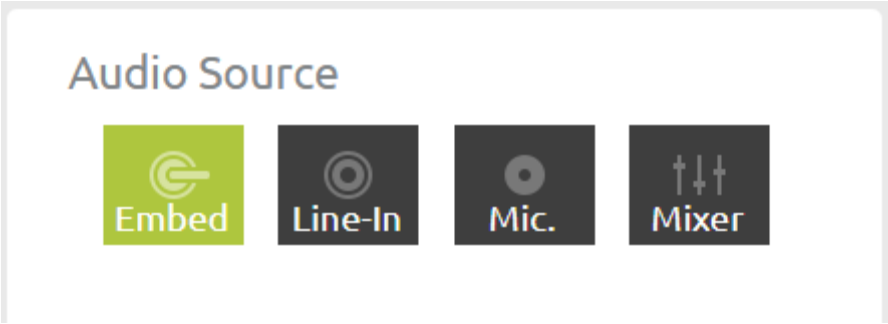
After enter the Web UI, please setting as below (The IP address will vary by environment, please check IP finder to make sure the IP address.).
Source URL : rtsp://192.168.1.200:554/session0.mpg
Account : root
Password : root

4.2.4. Video Source (File)



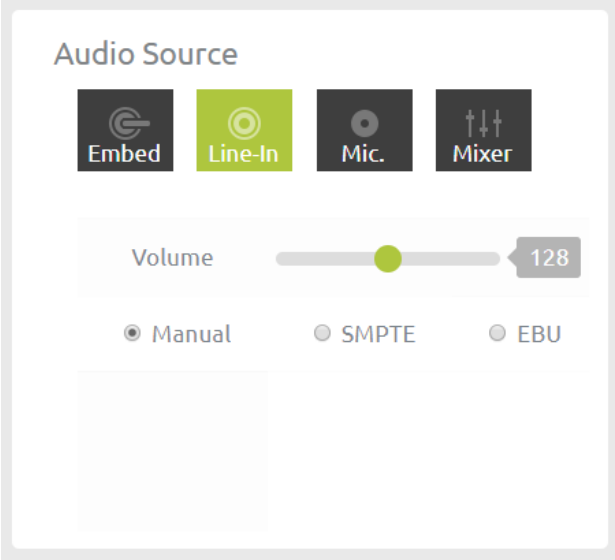
YS-SW41H can also play files inside flash disk, please attach the flash disk and select the file to play it.

4.2.5. Audio Source



In audio source block, user can select audio input source from **Embedded** SDI audio, 3.5mm audio **Line-in**, **Microphone** input or **Mixer**.

When select Line-In as an audio source, user can adjust audio standard and volume.

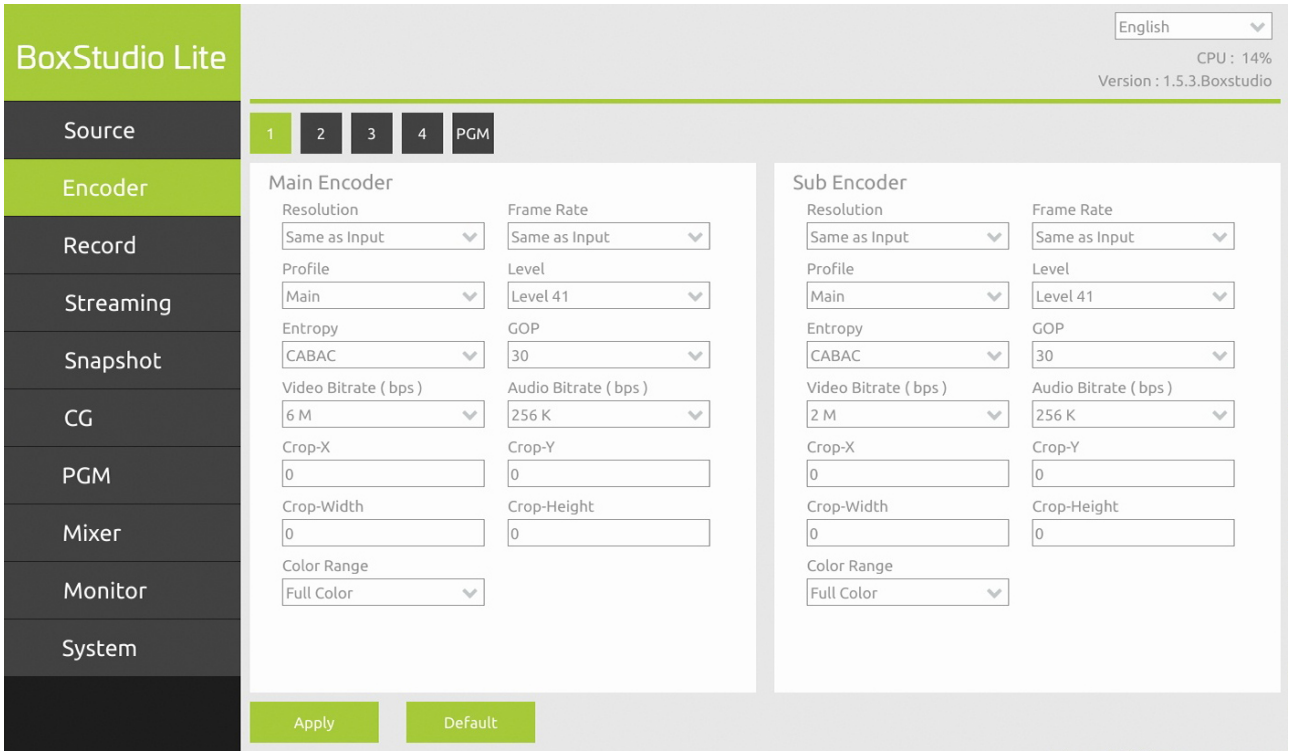


4.2.6. Input Signal Status

Input Information	Video Source	Audio Source	Resolution	Framerate	Channels	Bits Per Sample	Sample Frequency
Channel 1	SDI	Embedded	1920x1080p	60	2	16	48000
Channel 2	SDI	Embedded	1920x1080p	60	2	16	48000
Channel 3	SDI	Embedded					
Channel 4	SDI	Embedded					

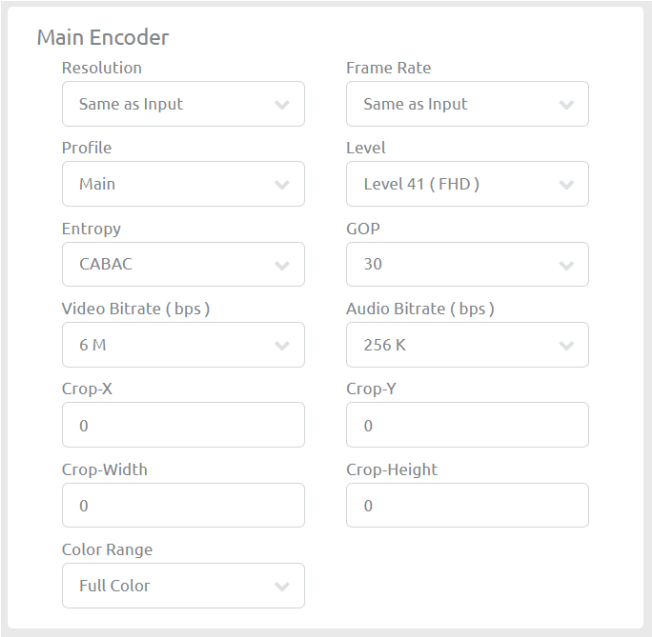
In input information block, user can check signal status and signal format.

4.3. Encoder

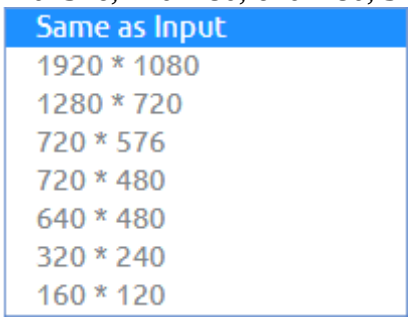


Encoder page contains **Main Encoder** and **Sub Encoder** 2 parts, which allows user to change video and audio encode, this page also provides user to change sub streaming encoder.

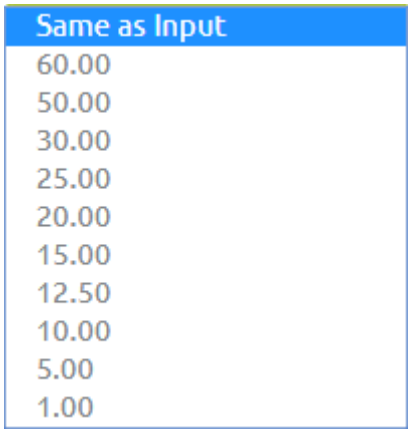
4.3.1. Main Encoder/Sub Encoder



Resolution: For encoders here, we provide Same as input, 1920*1080, 1280*720 and 720*576, 720*480, 640*480, 320*240, and 160*120 resolutions



Frame Rate: YS-SW41H have Same as input, 60, 50, 30, 25, 20, 15, 12.5, 10, 5, and 1 framerates for user to select



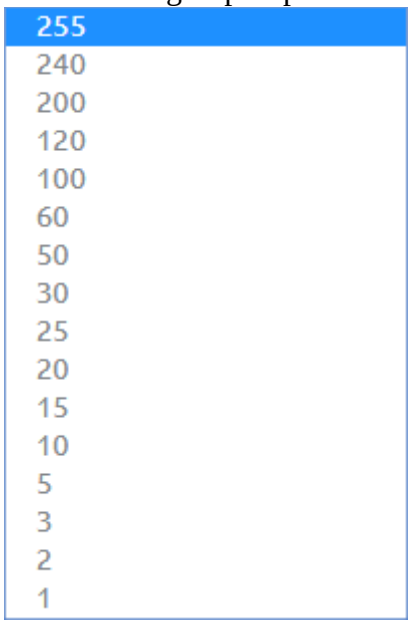
Profile: User can adjuse here for H.264 profile selection, it supports high, main and baseline.

Level: H264 level support, YS-SW41H provides 41, 40, 32, 31, 30, 22, 21, 20, 13, 12, 11, 10, and 1b.

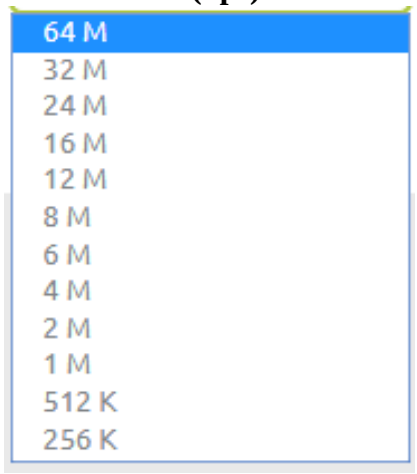


Entropy: Entropy encoding selection, YS-SW41H can support both CAVLC and CABAC.

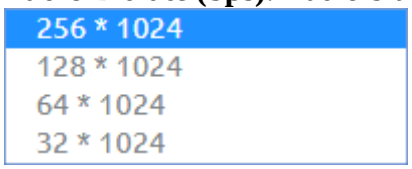
GOP: H264 group of pictures setting (from 255~1).



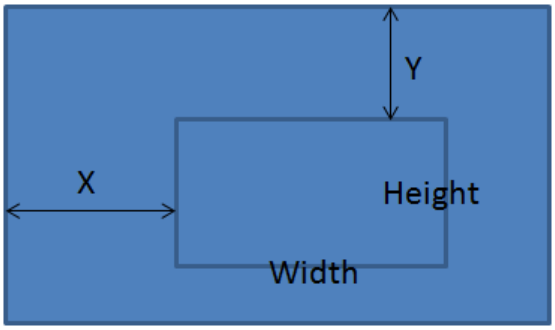
Video Bitrate (bps): Video bitrate select (512K~64M)



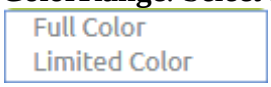
Audio Bitrate (bps): Audio bitrate select (from 256*1024~32*1024)



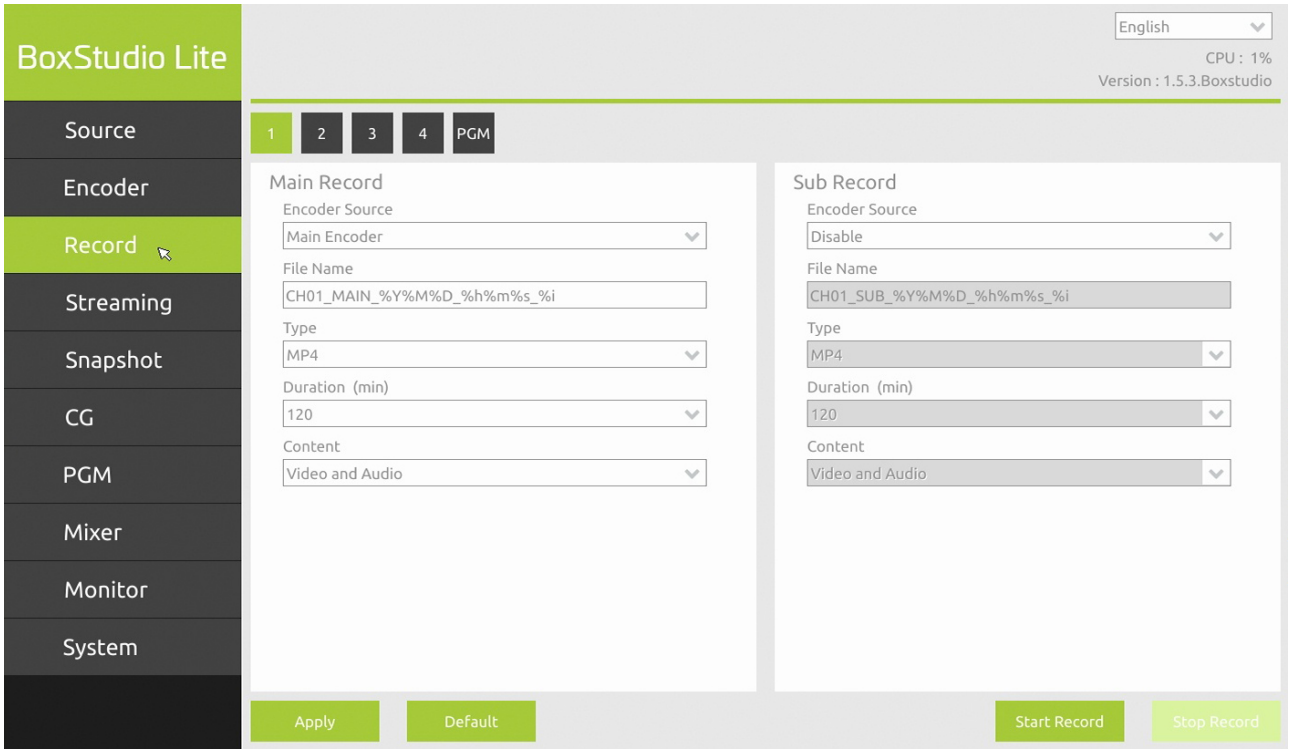
Crop-X/Y/Width/Height: Crop the needed video and display.



ColorRange: Select between Full Color or Limited Color.

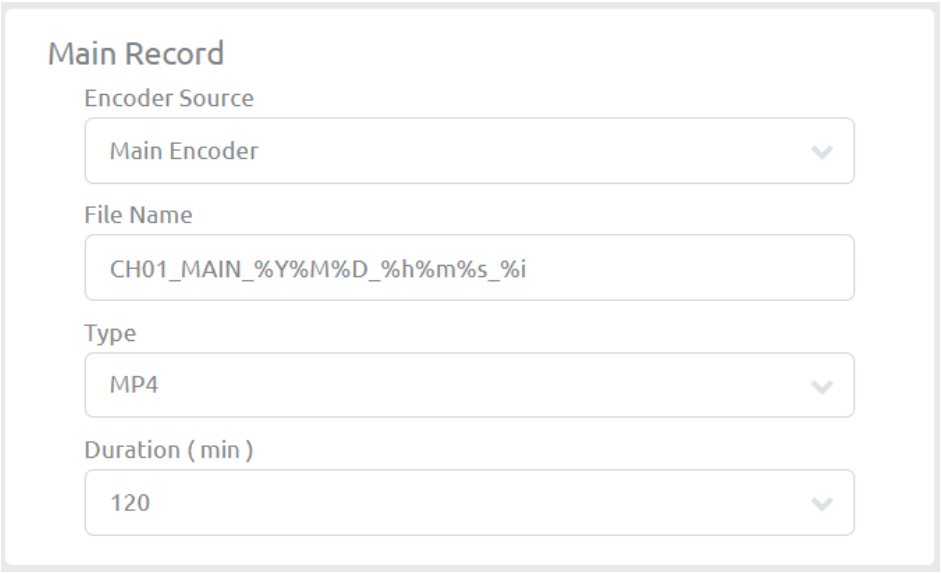


4.4. Record



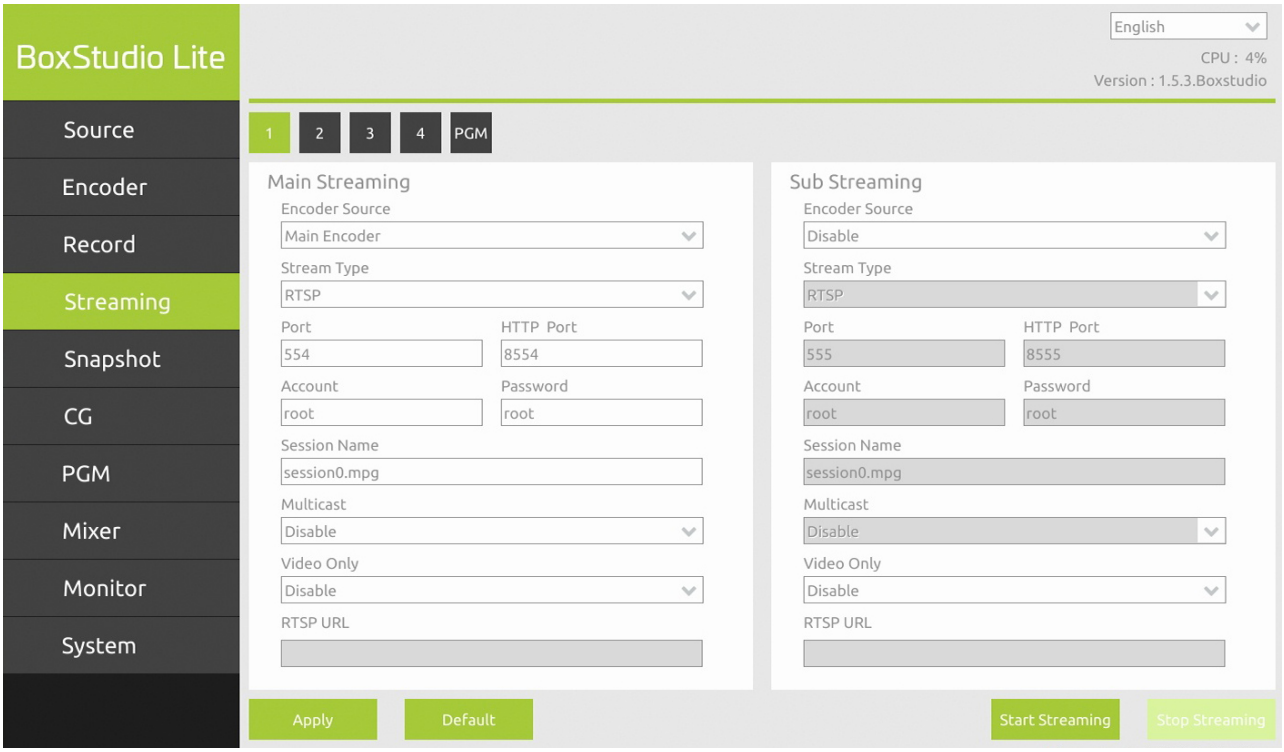
Record page allows user to change the video format that recorded to USB3.0 disk drive.
On the top 1/2/3/4/PGM is the channel that desired to record; and the 2 block in the middle is the main/sub record format.

4.4.1. Main Record/Sub Record



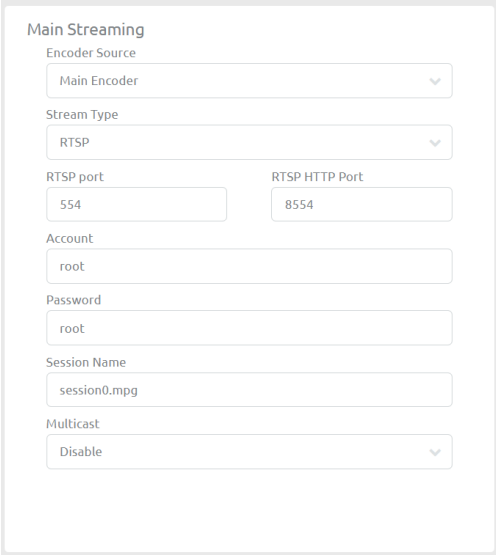
Here are the parameters that allow user to adjust their record format.
Encoder source: Select the encoder that willing to record, here are Main Encoder, Sub Encoder and disable selections.
File name: The file name setting, this would be the file name recorded.
Type: Decide needed file type, we offer MP4, TS, MOV and AVI at present time
Duration: Setting recording time. Recording will automatically stopped when the time is up.

4.5. Streaming



This page contains YS-SW41H streaming settings; user can decide which encoder's stream will send out and select streaming type here.
On the top 1/2/3/4/PGM is the channel that desired steaming; and the 2 block in the middle is the main/sub streaming format.

4.5.1. Main Streaming/Sub Streaming

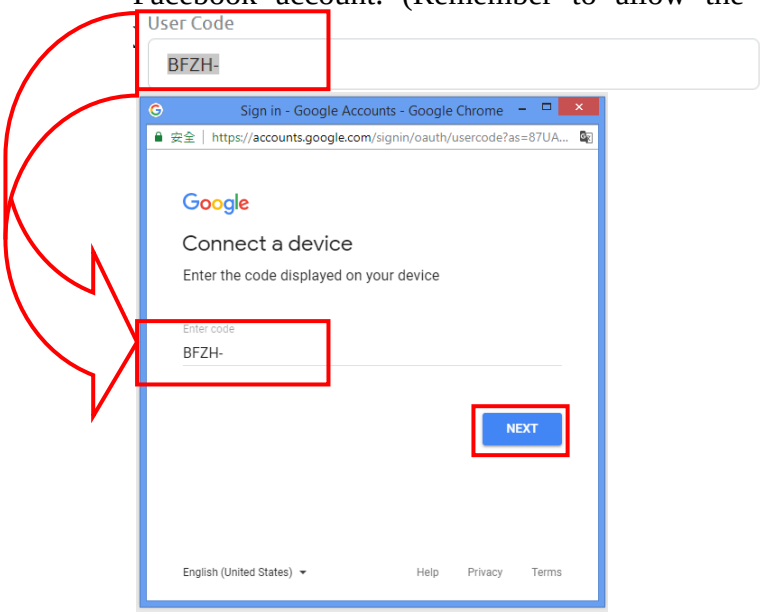


Encoder Source: User can select between main encoder and sub encoder.
Streaming Type: Here are RTSP, RTMP, TS and HLS streaming type YS-SW41H available. **RTSP port**: RTSP server port
RTSP HTTP Port: RTSP HTTP server port
Account: RTSP account, setting this for other users to link with RTSP mode.
Password: RTSP password, setting this for other users to link with RTSP mode.
Session Name: RTSP Session name.

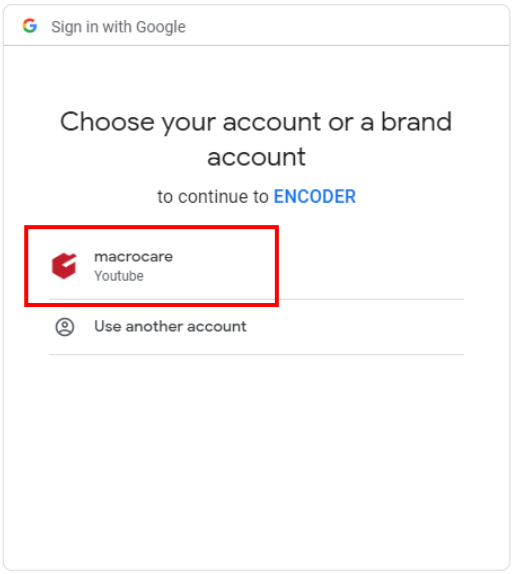
4.5.2. Streaming to YouTube/Facebook

Besides RTMP, YS-SW41H also provides a simple way for user to streaming their Live video to YouTube or Facebook.

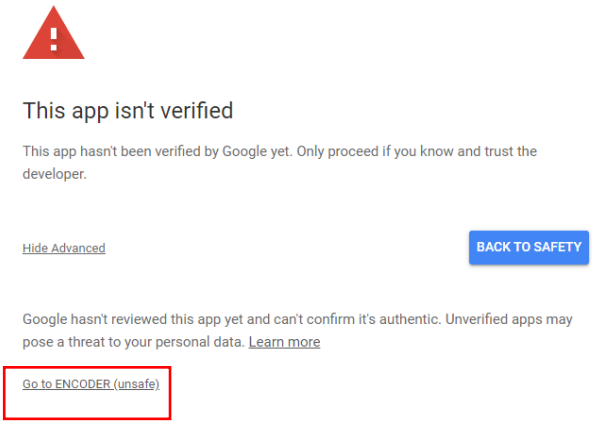
After select **Streaming Type** to **YouTube/Facebook** and press start streaming, YS-SW41H will automatically generate USER CODE for user to connect with YouTube/ Facebook account. (Remember to allow the browser popup window for connecting



After press NEXT, the connectable user account will appear for user to select.

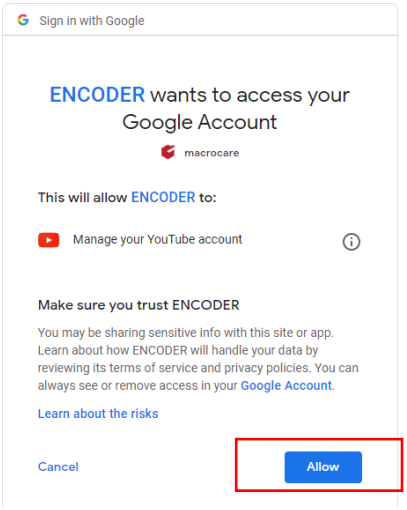


Click Advance and Go to ENCODER (unsafe)

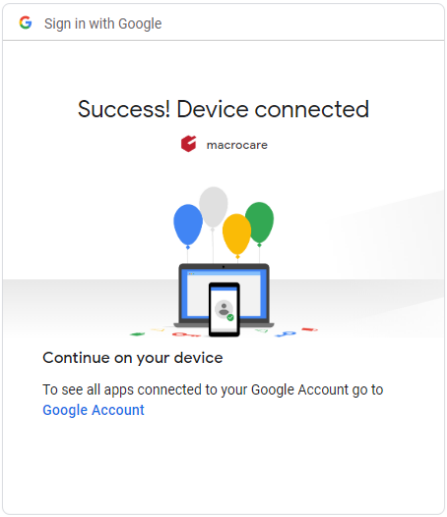


After the account is connected, the video will automatically live streaming to youtube/facebook; User can also check the connected YS-SW41H inside the popup window.

1

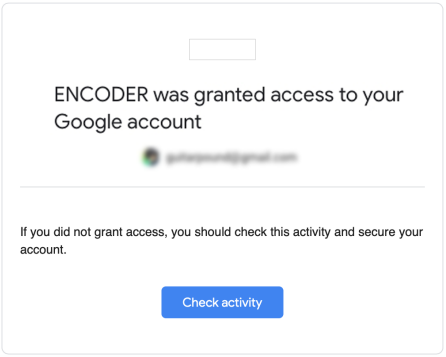


2

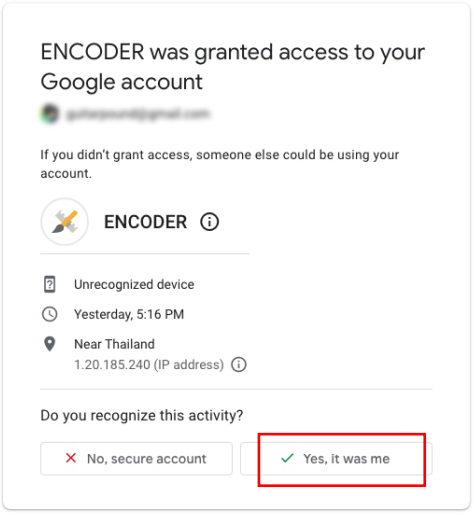


Check your email, In the email click "Check Activity" button

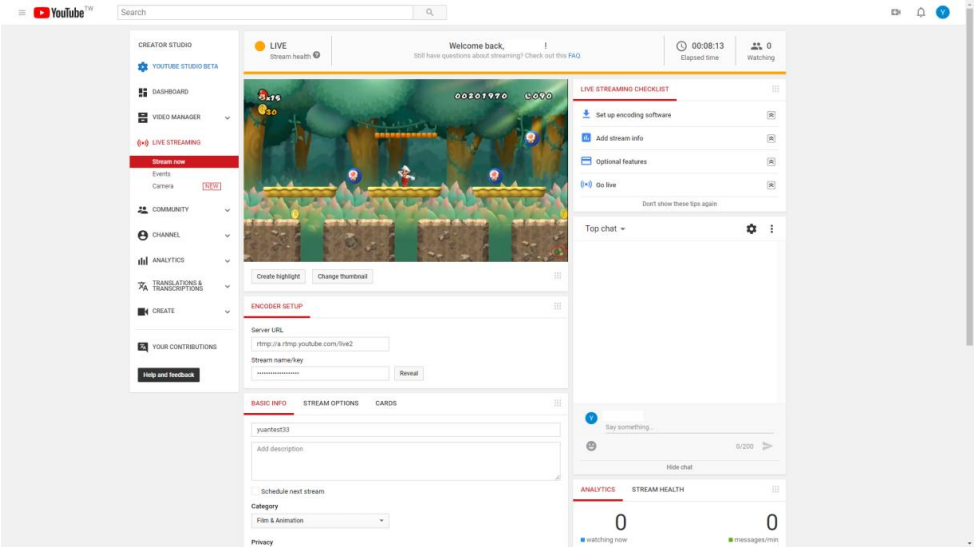
3



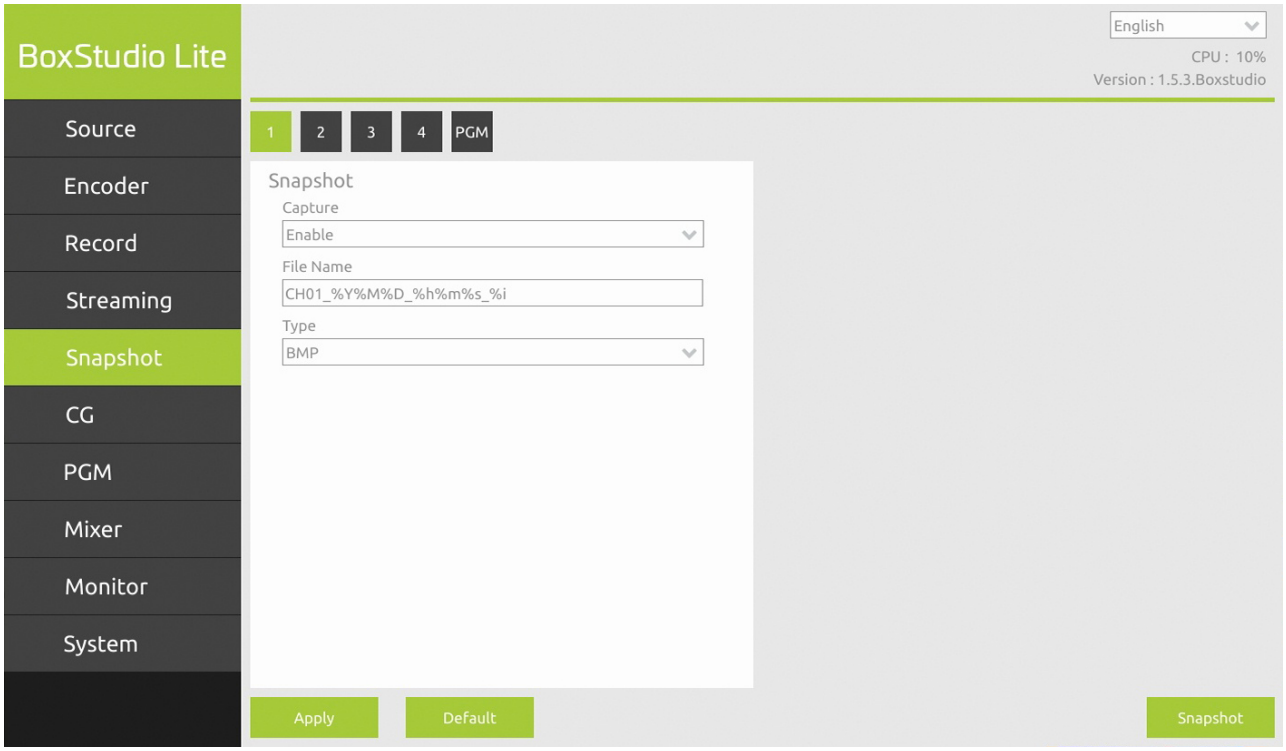
4



Youtube live video streaming will automatically generates after the setting is completed.



4.6. Snapshot

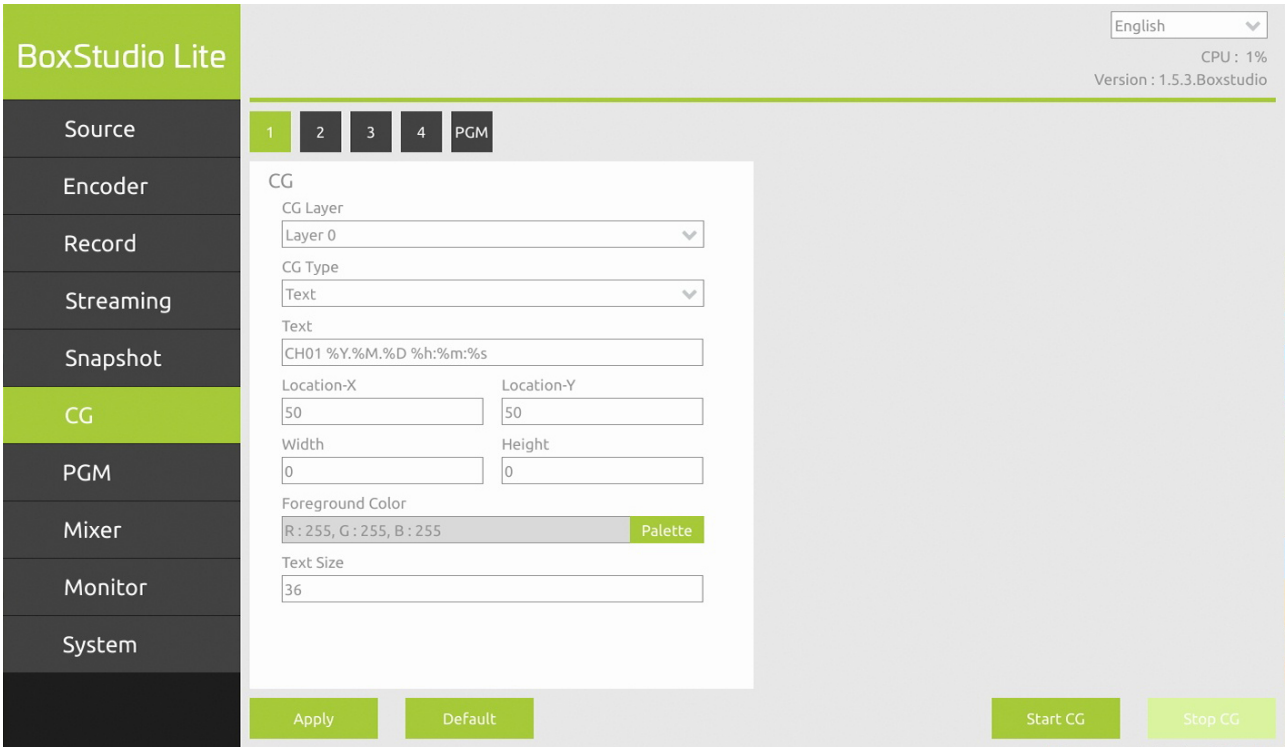


4.6.1. Snapshot



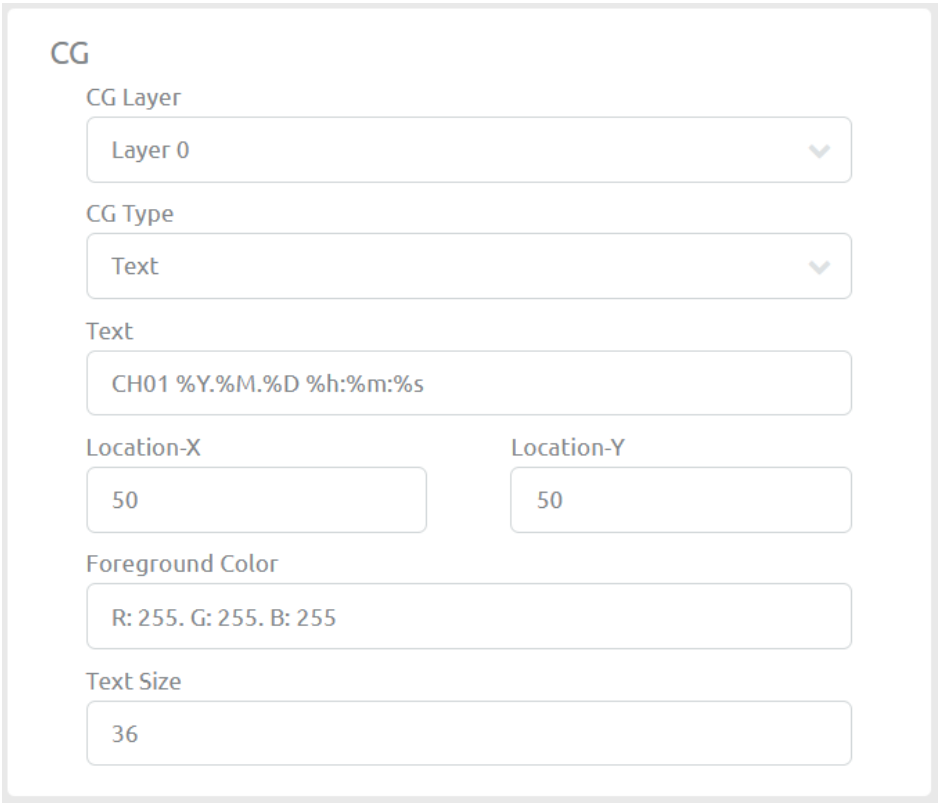
Capture: Select Enable or Disable capture feature.
File Name: User may decide willing capture file name.
Type: Select snapshot file format, YS-SW41H provides BMP and JPEG for user to select

4.7. CG



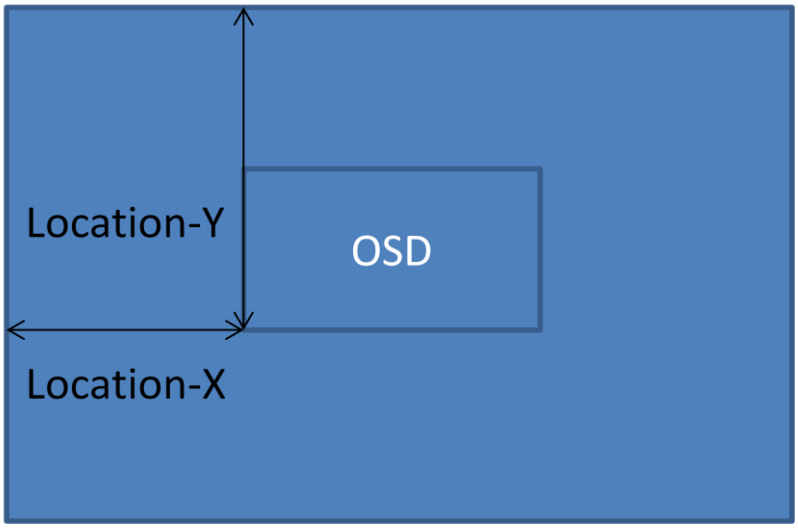
User can change OSD contents here, including **Text** label, place (**Location-X**, **Location-Y**) and color (**Background Color**, **Foreground Color**).

4.7.1. OSD Setting



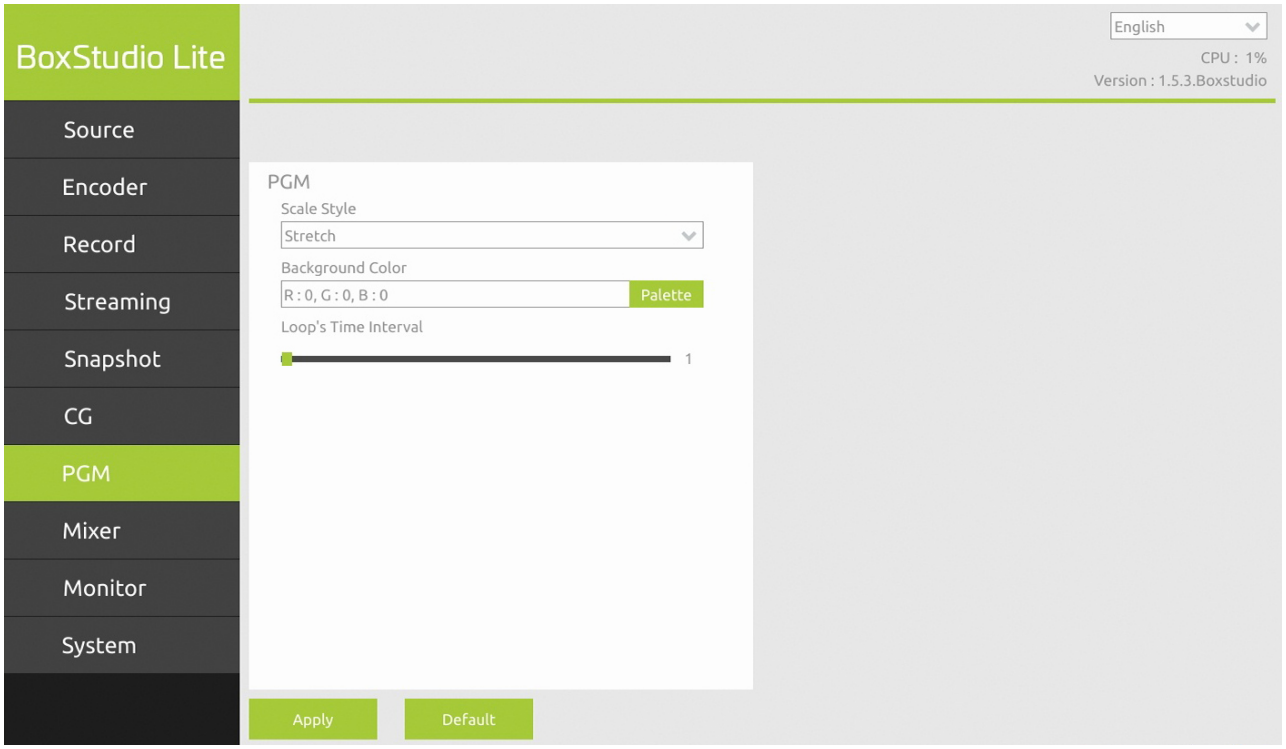
OSD Layer: Select willing modify OSD layer (YS-SW41H has 4 OSD layers) **OSD Type**: Type of OSD, user can select between picture and text.

Text: Text label for channel 1~4 and PGM

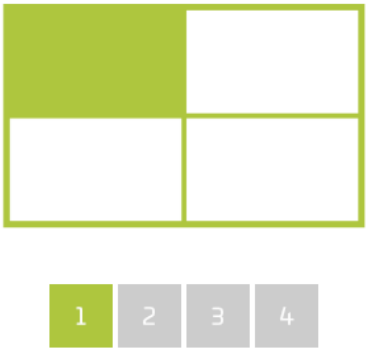
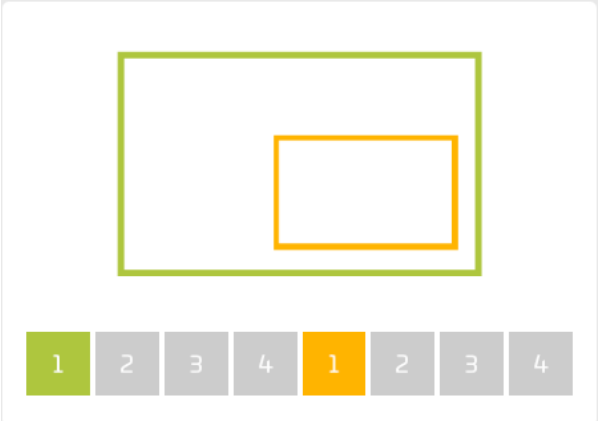


Location-X: OSD offset of X axis.
Location-Y: OSD offset of Y axis.
Foreground Color: OSD foreground color.
Text Size: OSD text size.

4.8. PGM



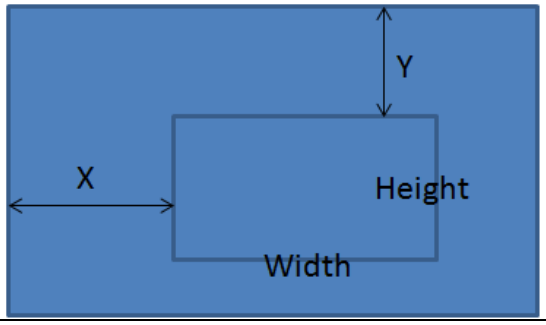
This page contains PGM port video output layout selections.

Full Screen Mode	 Full screen mode will display whole input video into one PGM output.
Picture in Picture Mode	 For picture in picture mode, first channel select is the main

channel, the second channel selection is the minor channel.
This mode also provide PGM Advance mode for user to adjust their video layout.



The PGM Advance layout is listed as below.

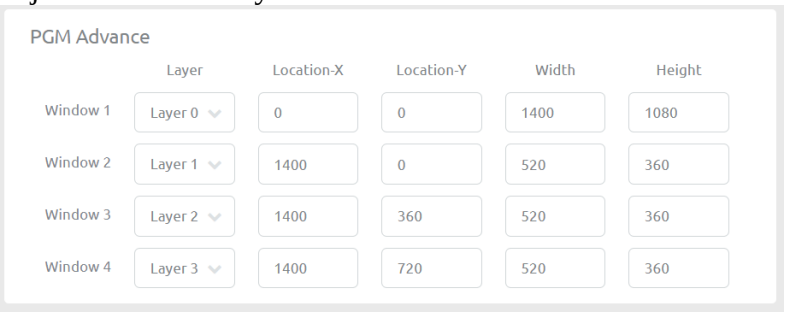


Picture by Picture Mode

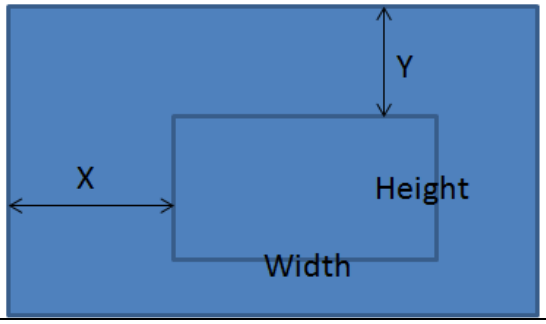
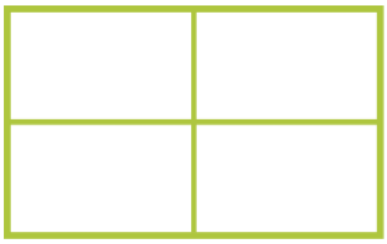


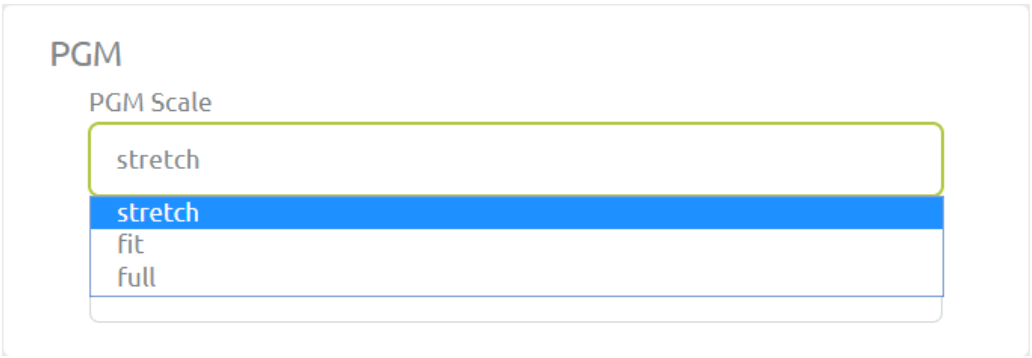


Picture by picture mode will display all 4 channels in one screen, but there will be a main channel in the right. There also a main channel selection in the bottom.
This mode also provide PGM Advance mode for user to adjust their video layout.



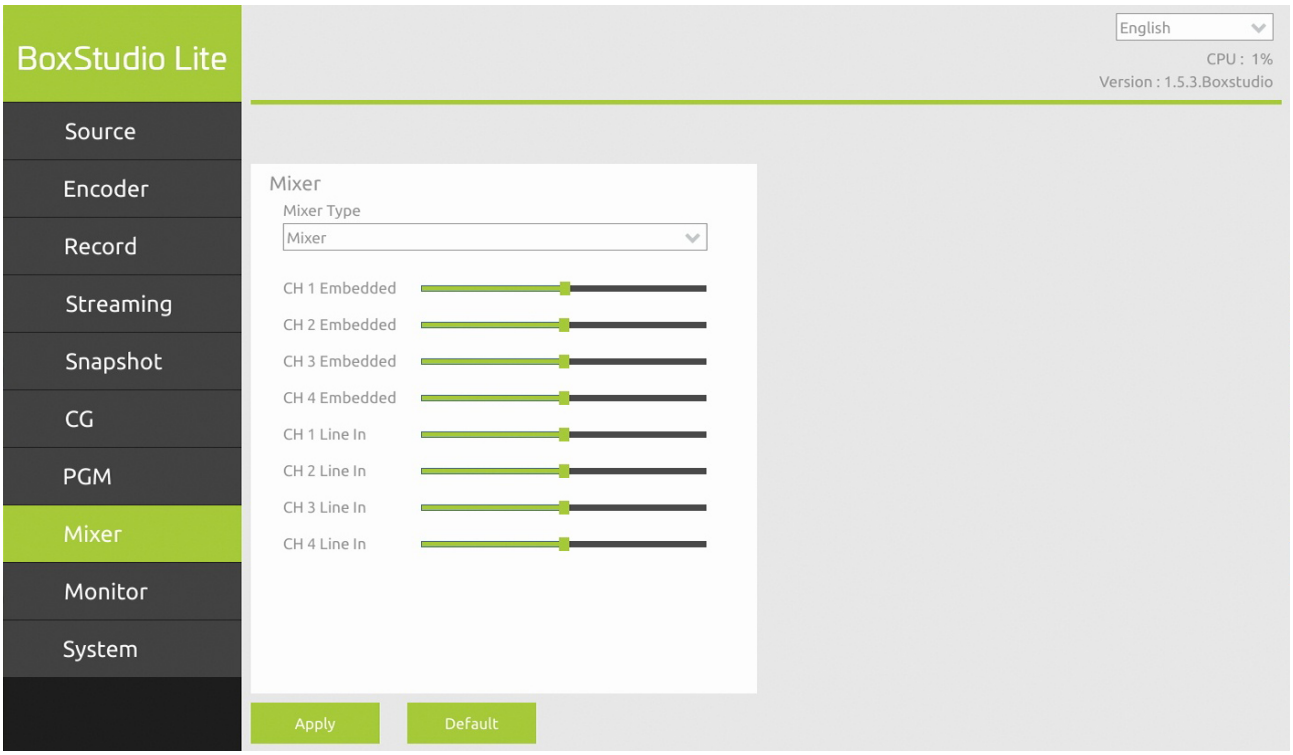
The PGM Advance layout is listed as below.

	
Quadview Mode	 This mode will display all 4 channels in one screen.
PGM Loop Mode	 PGM Loop mode will automatically loop all channels.

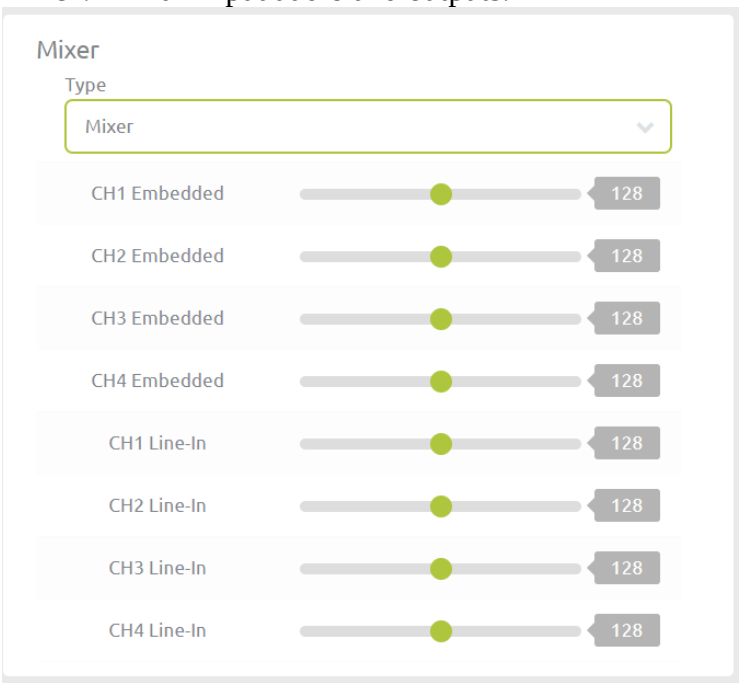


PGM: PGM video scale setting.
PGM Background Color: Change when no video input, displayed PGM background color.

4.9. Mixer

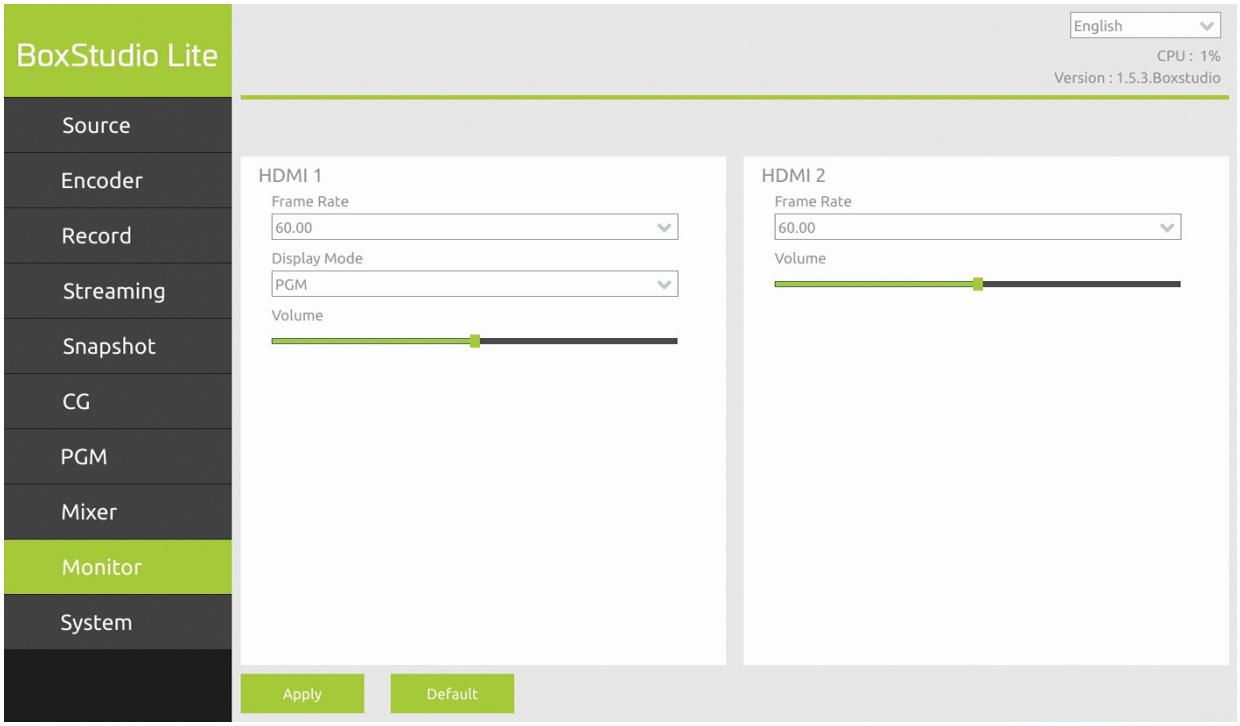


Select PGM audio to Mixer or follow PGM
Mixer: Mix all input audio and outputs.



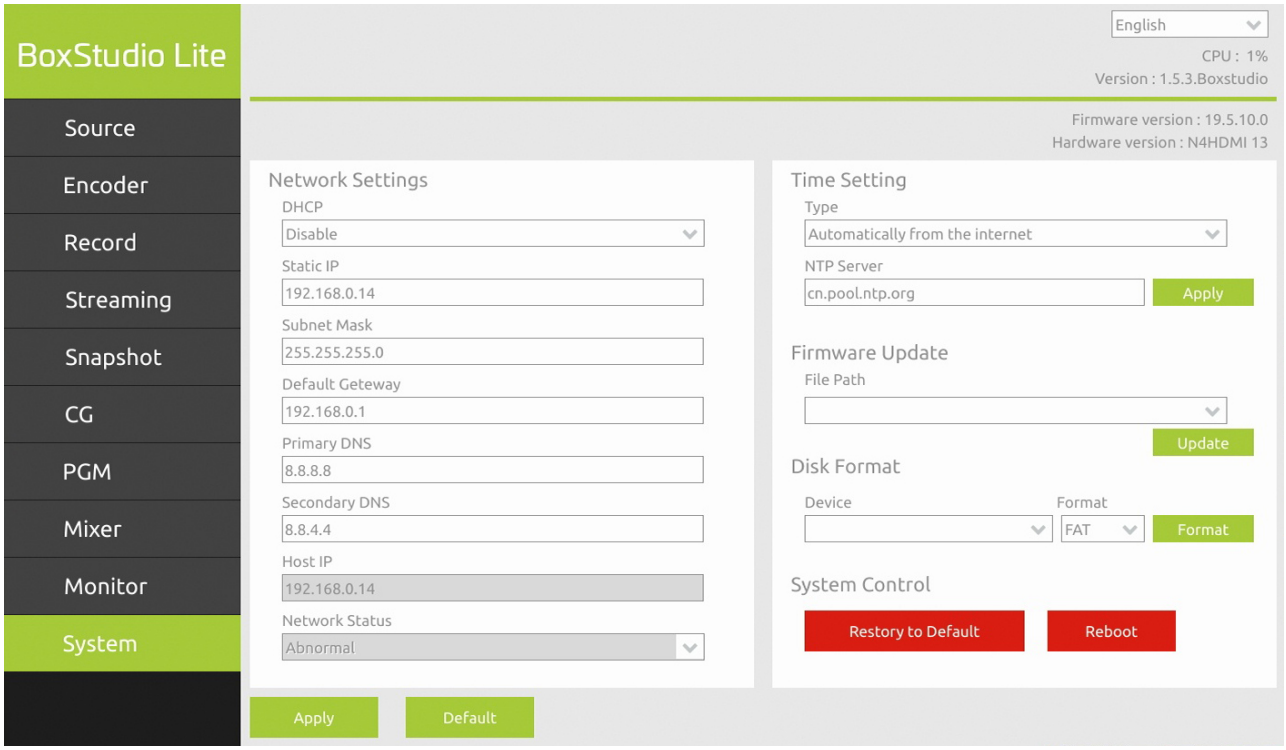
Follow PGM: Mix audio input source that channels displayed by PGM mode.
Channel 1/2/3/4 Sound: Set output audio as channel 1/2/3/4.

4.10. Monitor



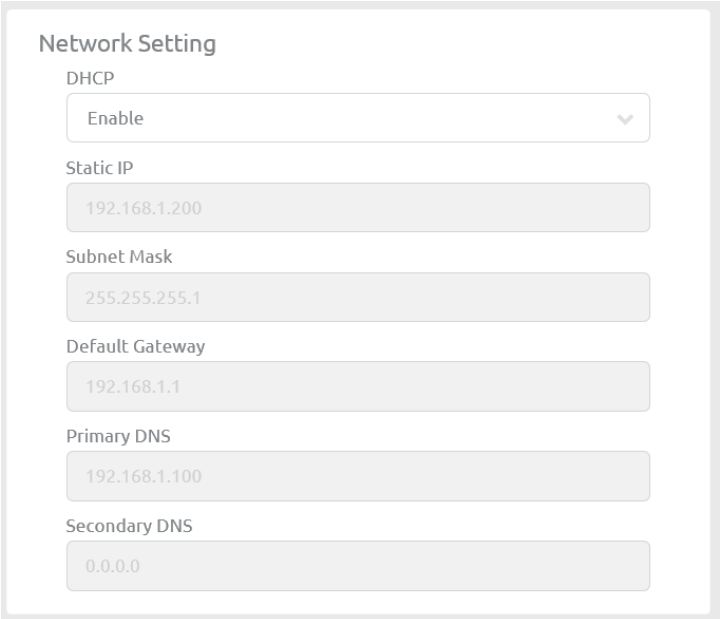
HDMI: PGM Channel, user can select PGM mode or Multiview mode for it.

4.11. System



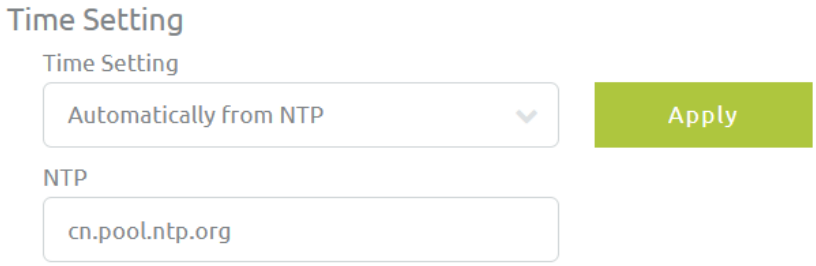
In system page, user can set account /password, system reboot, format attached USB disk, check network status/setting and **Firmware Update** here.

4.11.1. Network Setting



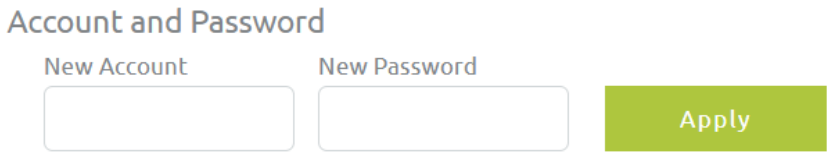
DHCP: Enable/disable DHCP feature.When disable DHCP, please provide necessary internet parameters for YS-SW41H.
Static IP: Setting YS-SW41H static IP
Subnet Mask: Setting YS-SW41H subnet mask
Default Gateway: Setting YS-SW41H default gateway
Primary DNS: Setting YS-SW41H primary DNS
Secondary DNS: Setting YS-SW41H secondary DNS

4.11.2. Time Setting



User can change time setting and specify NTP server here.

4.11.3. Account and Passowrd



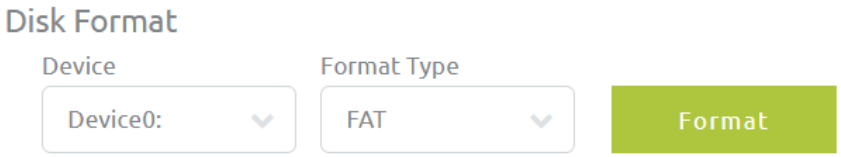
User can assign new account and password here.

4.11.4. Firmware Update



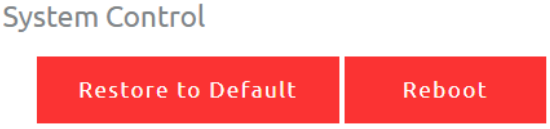
Please press **Browse** button to select firmware and **Update** button to update it, **during update firmware, please don't turn off power and wait until upgrade progress complete.**

4.11.5. Disk Format



User can format attached USB disk drive here.

4.11.6. System Control



Restore to default will erase all settings and back to original, and Reboot button will restart the YS-SW41H.

5. VERSION

5.1. Version 1.0

- Initial version.

5.2. Version 1.1

- Add network setting.
- Fix typo.
- Update PGM available modes.
- Fix OSD block diagram.

5.3. Version 1.2

- Update network setting.

5.4. Version 1.3

- Update Web UI.
  - FW:1.70 - 1.1.20
  - MCU:17.8.11.0
- Add login part.

5.5. Version 1.4

- Update Web UI.
  - SW:1011.2.7 Beta
  - FW:17.12.19.0

5.6. Version 1.5

- Update spec to V3.31

5.7. Version 1.6

- Update spec to V1.3.1

5.8. Version 1.7

- Update spec to V1.3.6