Fmuser FBE200 IPTV Streaming Encoder User Manual

Contents

Fmuser FBE200 IPTV Streaming Encoder

Some functions mentioned in this manual are applied to corresponding models, not to all models listed, thus this manual shall never be used as a promise for all functions available on all models.

Overview

FMUSER FBE200 series encoders are featured by highly integrated and cost-effective design which enabled them to be widely used in a variety of digital distribution systems, such as construction of professional broadcast level IPTV&OTT system, hospital and hotel IPTV systems, remote HD multi-window video conferences, remote HD education and remote HD medical treatments ,Streaming Live Broadcast etc.

The FMUSER FBE200 H.264 /H.265 IPTV Streaming Encoder supports 1 extra audio input through 3.5mm jack except from the HDMI input, the two channels can be input at the same time.

This device supports three IP stream output, each output can be different resolutions, among which the maximum resolution for the Main Stream is 1920*1080, for the Side Stream is 1280*720 and for the Third stream is 720*576. These three streams all support the IP protocols output of RTSP / HTTP/ Multicast / Unicast / RTMP.

FMUSER FBE200 IPTV Encoder can deliver H.264/ H.265/ video streams with multi channels of IP output which are independent from each other,to various servers for IPTV & OTT applications, such as Adobe Flash Server(FMS), Wowza Media Server, Windows Media Server , RED5,and some other servers based on UDP / RTSP / RTMP / HTTP / HLS / ONVIF protocols. It also supports VLC decode.

This device also have SDI versions, there are 4 in 1 version and 16 in 1 version inputs made in professional 19′ Rack chassis, please feel free to contact us if you need them.

If you want to promote your own brand, we can also do OEM for you.

We reserve the right to upgrade the appearance or functions of the product without extra notice.

Applications

- Digital TV Broadcasting System
- RJ45 Digital TV Programs Transmission
- Hotel TV System
- Head-end system of Digital TV branch network –CATV Broadcasting system

- Edge side of Digital TV backbone network
- IPTV and OTT head end system

Technical Specifications

Input

Video input	1 x HDMI (1.4a ,1.3a) (support HDCP protocol, or 1 x SDI for option)
HDMI input Resolution	1920×1080_60i/60p, 1920×1080_50i/50p, 1280×720_60p,1280×720_50p 576p,576i,480p,480i and below
Audio input	1 x 3.5mm Stereo L / R, Support 32K ,44.1K audio signal sources.

Video

Video Encode	H.264 MPEG4/AVC Basicline / Main Profile / High Profile, H.265
Output Resolution	1920×1080,1280×720,850×480,720×404,704×576,640×480,640×360, 480×270
Biterate Ctrl	CBR / VBR
Color adjust	Brightness, Contrast, Hue, Saturation
OSD	Chinese and English OSD ,BMP LOGO
Filter	Mirror, flip, Deinterlace, Noise reduction, Sharpen, Filtering

Audio

Audio input	Support resampling 32K, 44.1K
Audio encode	AAC-LC, AAC-HE, MP3, G.711
Audio gain	Adjustable for -4dB to +4dB
Sampling rate	Adaptive, selectable of re-sample
Bit Rate	48k,64k,96k,128k,160k,192k,256k

Streaming

Protocol	RTSP,UDP Multicast, UDP Unicast, HTTP ,RTMP, HLS, ONVIF

RTMP	Streaming media server, as: Wowza, FMS,Red5,Youtube, Upstream, Nginx, VLC, Vmix, NVR etc.
Three streams Output	Support main stream, sub stream and 3rd stream support web page preview video, Broadcast, VOD, IPTV and OTT, Mobile/ web, Set top box applications
Data Rate	0.05-12Mbps
Full-duplex mode	RJ45,1000M / 100M

System

Web server	Web Control Default IP http://192.168.1.168 user admin pwd admin
Web UI	English
Support	Microsoft standard flow driven architecture (WDM architecture), Microsoft WMENCODER, Windows VFW software architecture and WDM mode

General

Power supply	110VAC±10%, 50/60Hz; 220VAC±10%, 50/60Hz
DC Power input:	12V or 5V by Micro-USB
Consumption	less than 0.30W
Operating temperature:	0–45°C (operation), -20–80°C (storage)
Dimensions	146mm(W)x140mm(D)x27mm(H)
Package Weight	0.65KG

Appearance

Front Panel

1. RJ45 100M / 1000M Cable Network
2. 3.5mm Stereo Audio Line in
3. HDMI Video in

4. Status LED / Power LED:
    - The red light is the indicator for power supply.
    - The green light is for working status, it lights up when the device is running normally and well connected to internet; Otherwise it'll be OFF.
    - Press the reset key to restart the device when green light flashes, then the green light goes off.
5. Reset to Factory setting.
    - Restore factory settings, the device starts normally, press the button and hold 5 seconds, the green light flashes 6 times until the green light turns off the device to restart, and then release the button to complete the factory settings.

Rear Panel

FBE200-H.264-LAN

FBE200-H.264/H.265-WIFI

1. 2.4G WIFI Antenna Interface–SMA-K (FBE200-H.264-LAN doesn't have this interface.)
2. Micro USB Power Port (5V,optional)
3. DC Power Port (12V)

Quick Guide for Connecting part

When you are the first time to use FMUSR FBE200 encoder, please do a quick with the following procedures:

1. Use the HDMI cable to connect the DVD and FBE200 encoder, get the DVD playing.
2. Use the RJ45 cable to connect the computer and the FBE200 encoder. Add the 192.168.1.* to your computer setting of TCP/IP protocols.
3. Plug in 12V power for the FBE200 encoder.
4. Open VLC Media Player. Click "Media," then "Open Network Stream."
5. Type in the URL of "rtsp://192.168.1.168:554/main"

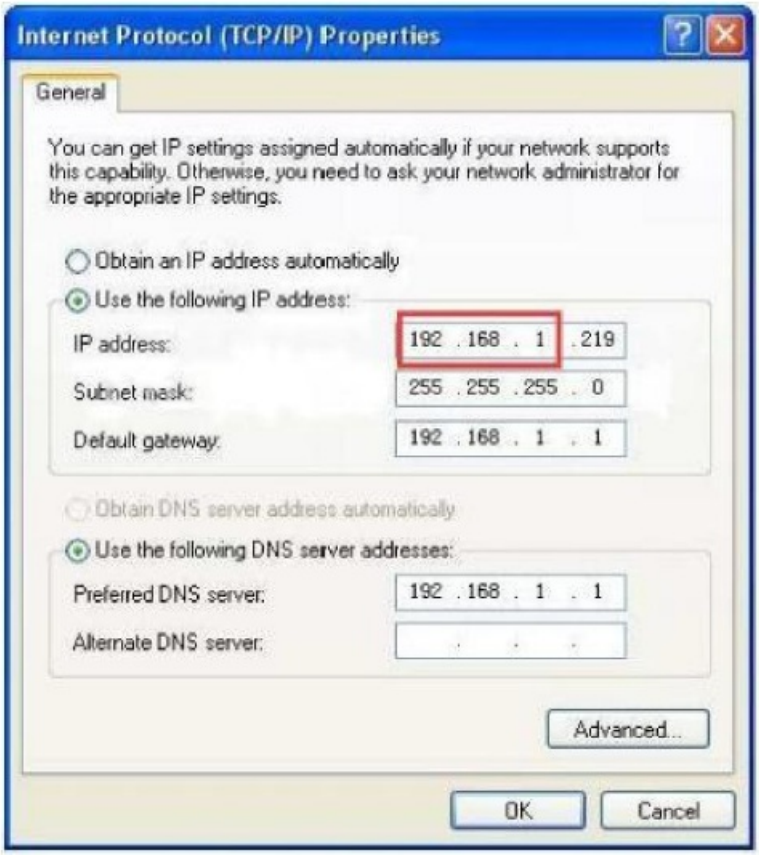
6. Click “Play.” The stream will begin to play.

Please go to **http://bbs.fmuser.com** and get a step by step tutorial.

Login web manager

Computer IP setting

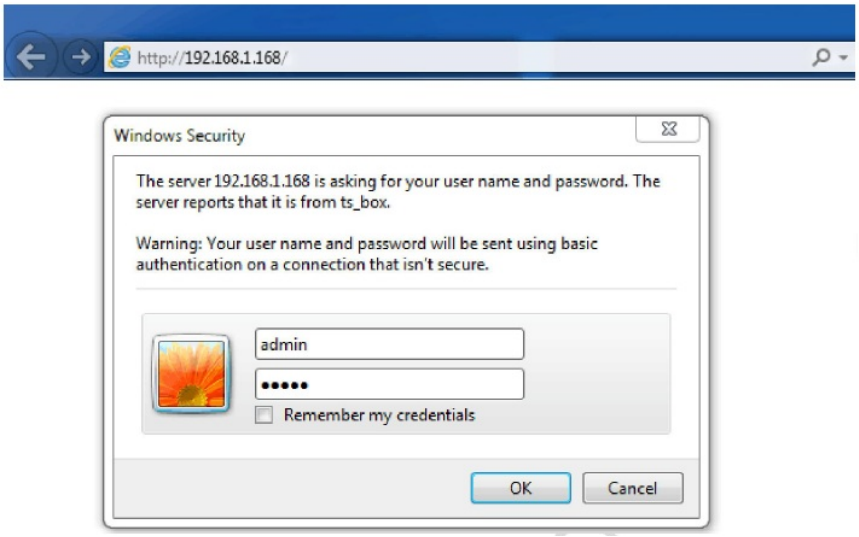
- The default IP address for FMUSER FBE200 HDMI Encoder is 192.168.1.168.
- Your computer’ IP address must be 192.168.1.XX for connecting with Encoder.(Note: “XX” can be any number ranging from 0 to 254 except 168.)



Connect to FMUSER FBE200 Encoder

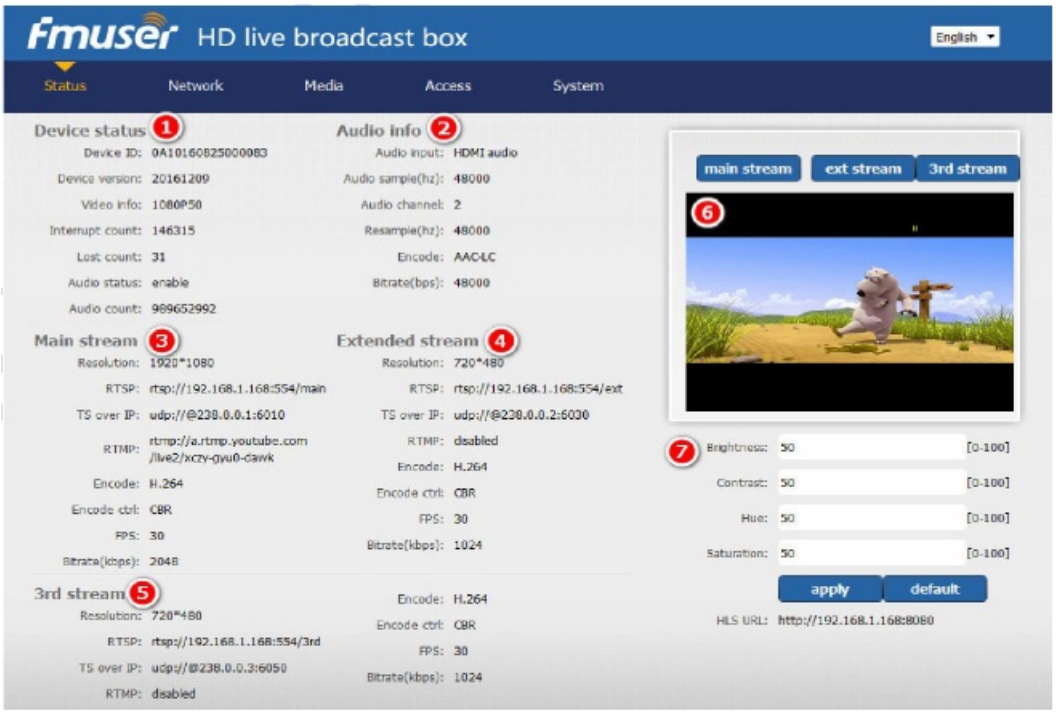
- Connect your computer to FMUSER FBE200 through network line cable.
- Open IE browser, input “192.168.1.168” to visit FMUSER FBE200 HDMI Encoder’s WEB administrator page.

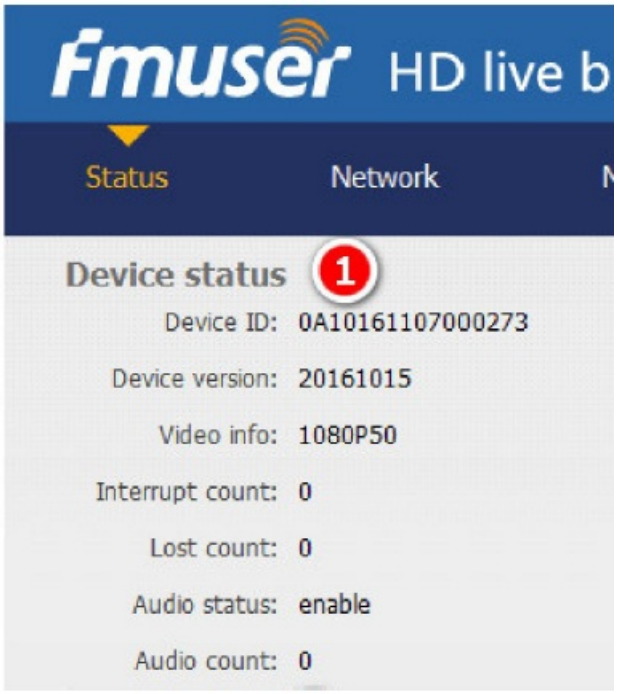
User Name: admin
Password: admin



Status

You will be able to see all status information of the FEB200 encoder, which includes stream URLs, encode parameters, HDMI signal information, audio capture information and audio encode parameters, as well as video preview and color adjustment interface, etc. And you can directly copy them to the VLC player software for decoding.





Device Status:

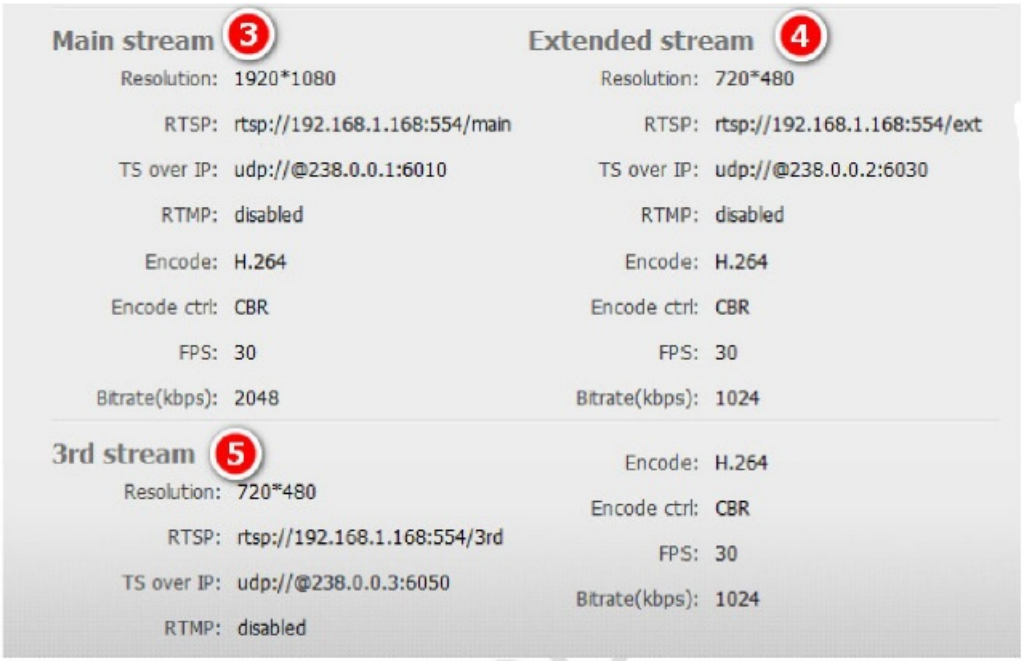
1. Device ID
2. Device Version: The Firmware version.
3. Video info: Video signal parameters that inputted in.
4. Interrupt Count: Increasing intervals indicates it has video input. If it displays as 0, it means there is no video input, then you need to check the input signal.
5. Lost Count: This figure is generally very small, a large number of lost frames, the video card, it is necessary to detect the input program source is normal
6. Audio Status:
7. Audio Count: Increasing audio count it has 3.5mm input. If it displays as 0, it means there is no video input, then you need to check the input signal.

If you are an experienced user,for more information about the counter
Please go to **http://bbs.fmuser.com**

Audio info

1. Audio input: Currently Audio input (HDMI or line in)
2. Audio sample(HZ):
3. Audio Channel :
4. Resample(HZ): disable / 32k /44.1k
5. Encode: AAC-LC / AAC-HE / MP3
6. Bit rate(bps):48000-256000bps

Main Stream / Extended stream / 3rd stream



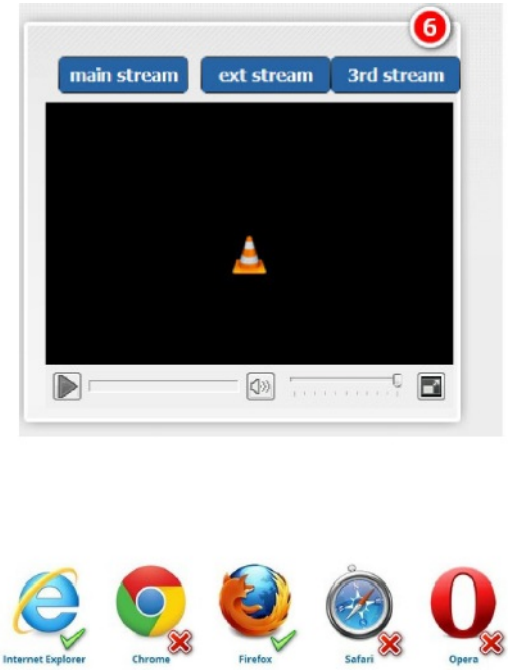
1. Resolution: 1920*1080 —-Output stream resolution.
2. RTSP: rtsp://192.168.1.168:554/main —- it can be directly copied to the VLC player software for decoding.
3. TS over IP: —-Http / Unicast / Multicast, only work one at same time.

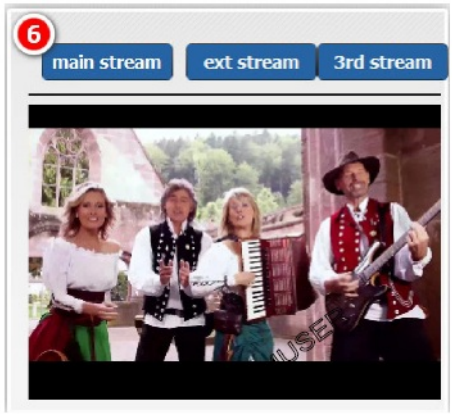
    1. http://192.168.1.168:80/main —-Http output
    2. udp://@238.0.0.2:6010 —- Unicast output
    3. udp://@192.168.1.160:6000 —- Multicast output
4. RTMP: rtmp://a.rtmp.youtube.com/live2/xczy-gyu0-dawk-****
   —- Your YouTube RTMP address
5. Encode: H.264 —-H.264 / H.265 (some model only H.264)
6. Encode ctrl: CBR —-CBR / VBR
7. FPS: 30
8. Bit rate(kbps): 2048

Extended Stream —2nd output stream
3rd Stream —3rd output stream

Live video show

Only use in Firefox browser and you need install the Vic plugin add-ons of vlc.
Download it at http://www.videolan.org/vlc/





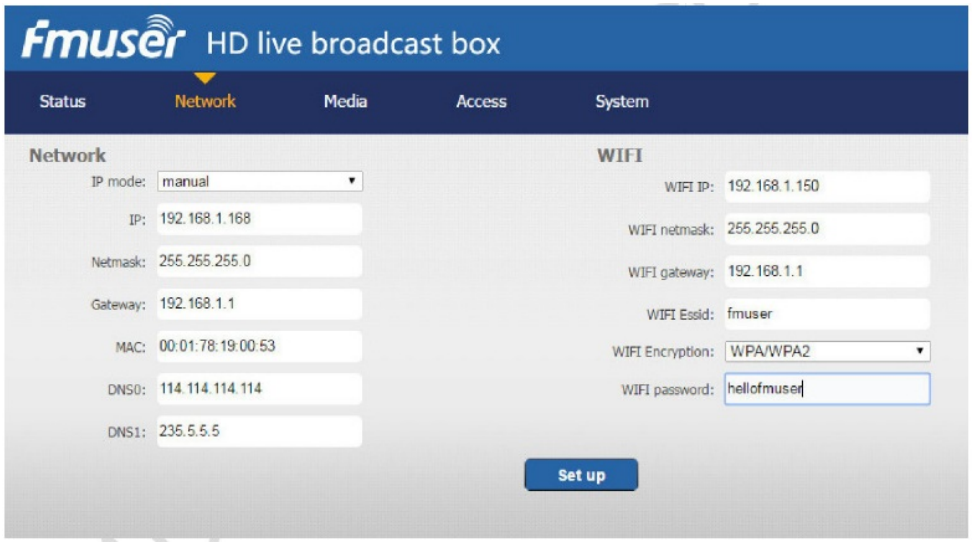
Video Color and Brightness setting

If you had open the HLS, you may try the hls address to set on your
HLS URL: **http://192.168.1.168:8080**

Network Setting

Network page display and network address and related parameters modification.

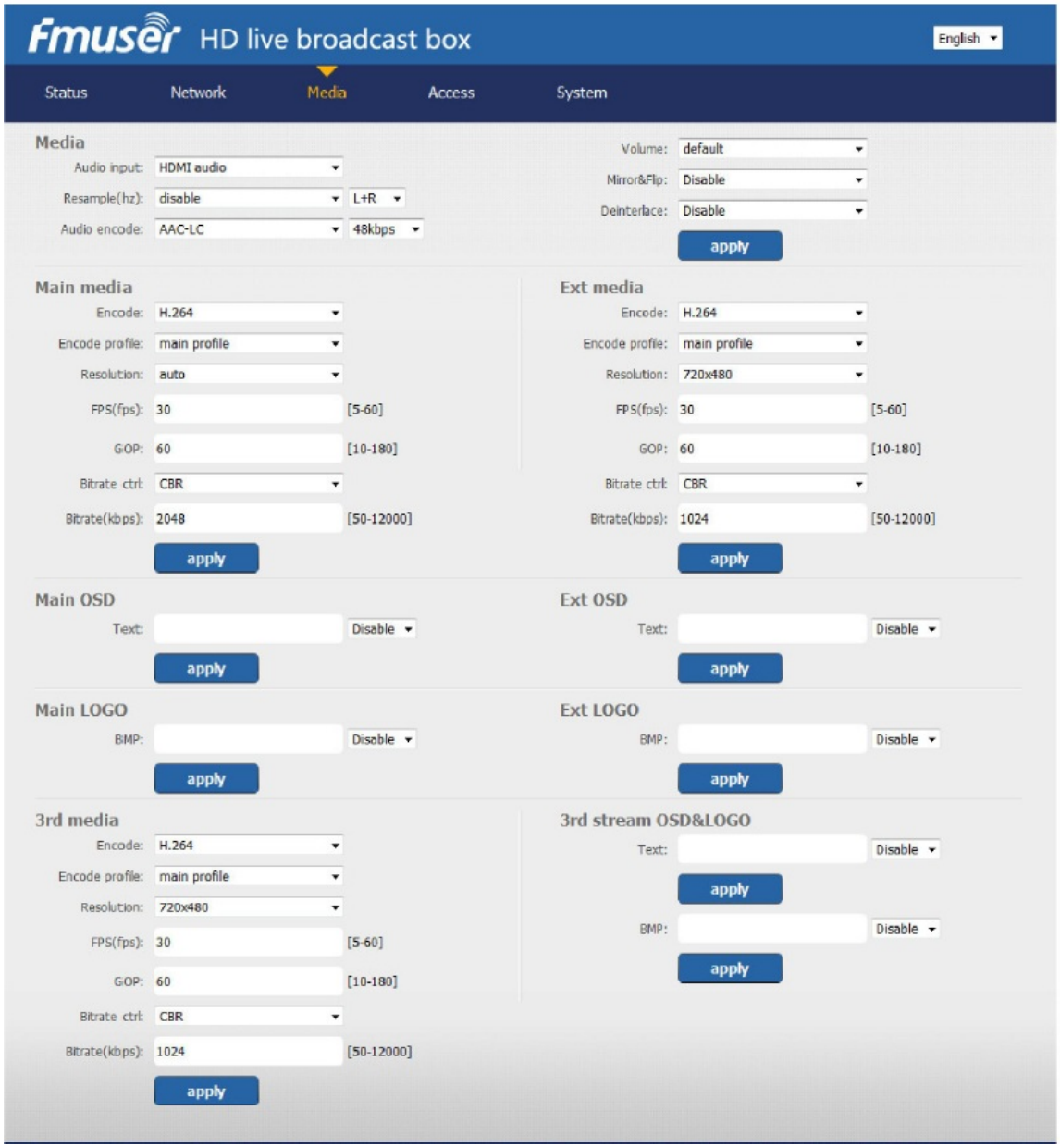
1. Set FMUSER FBE200 encoder's IP address according to your LAN IP. For example, if your LAN IP is 192.168.8.65, FBE200 IP should be set to 192.168.8.XX ("XX" can be any number ranging from 0 to 254 except from 168). FMUSER FBE200 should be in the same Network environment as your LAN IP.
2. If you don't have LAN ,you can try to use WIFI connection by setting the WIFI ID and the password (This setting is applicable only to the versions with WIFI).
   The wifi is only for 2.4G ,if you found the wifi can not connect ,try to reset find out the router open 2.4G ,sometimes they work for 5.8G.



3. Click "set up" button to save the new setting.
4. After network setting is done, you need to reboot the device to make it work.
   Reset and Initialization, if you forgot the IP address you've set, please reset to factory.
   - Press and hold the Reset button for 5 seconds to reset and initialize the FMUSER FBE200 HDMI Encoder.
   - After reset, FMUSER FBE200 will restore factory setting with IP address of 192.168.1.168.

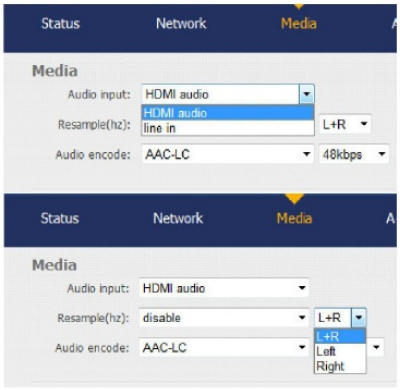
Media Setting

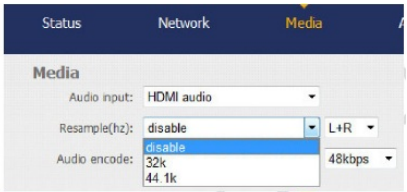
Media page includes video encoding parameters for the stream setting, such as Mirror, flip and deinterlace setting, output OSD subtitles and bmp LOGO, as well as audio input setting, Audio resampling, audio encode, volume control etc.



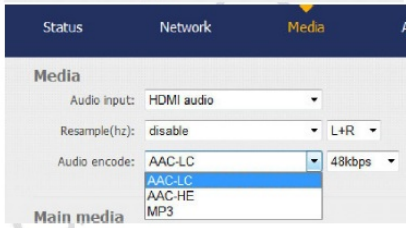
Media setting

You can modify “Audio input”, “Resample” etc if needed.

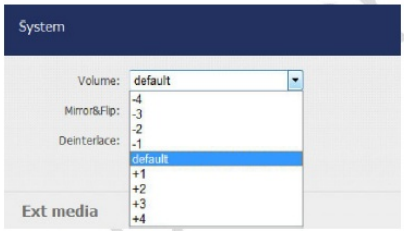




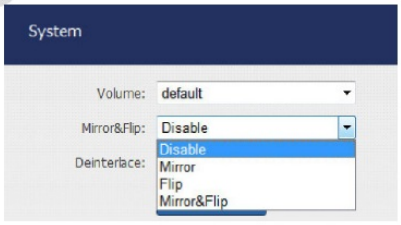
Audio LR: L+R/Left/Right



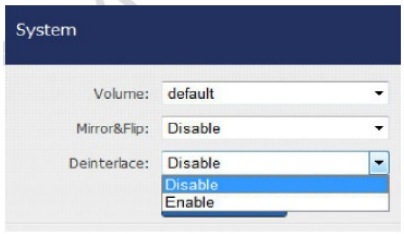
Audio encode: AAC-LC/AAC-HE/MP3



Volume: form -4--+4db



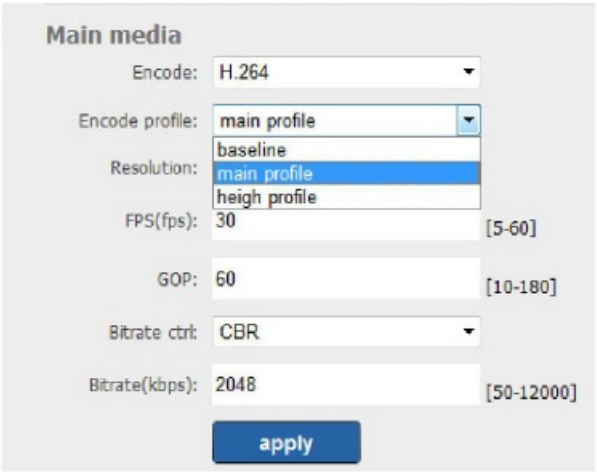
Video Mirror Flip: disable/mirror/flip/mirror Flip



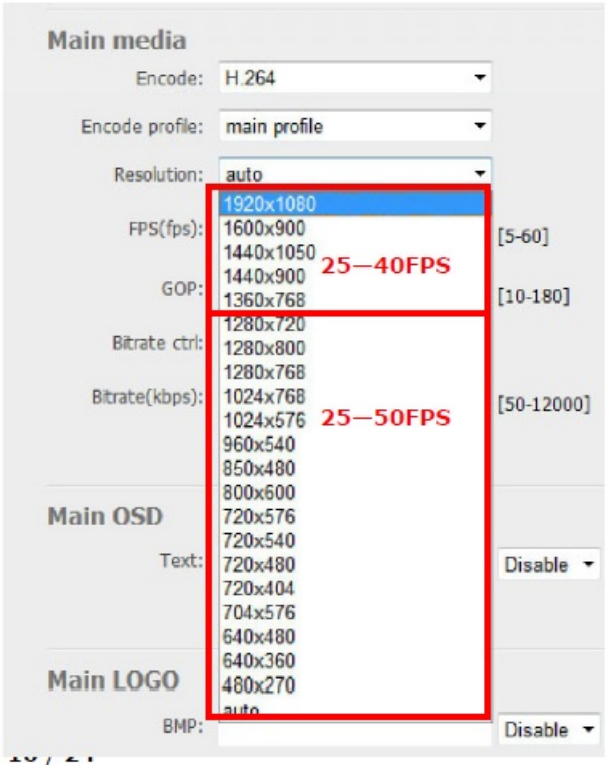
Main media setting (video)

Not all models support both H.264 and H.265 at the same time, you can choose the corresponding ones based on your need.

If you want to support RTMP you should choose the baseline profile ,H.265 only supports baseline profile, if to use HLS , please make sure to set it to Baseline.



Encode Profile: baseline/main profile/high profile



Bit rate: CBR / VBR

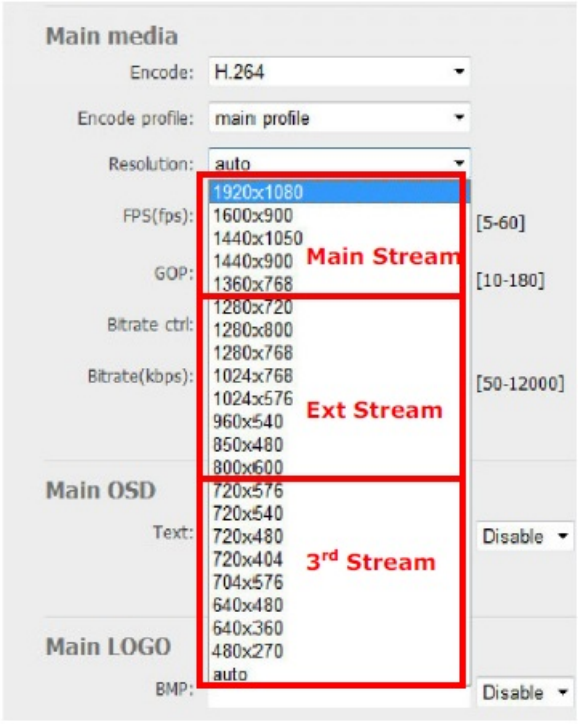
Resolution: main media has more choices.
If you set the resolution to 1280×720, The FPS should be lower than 50.

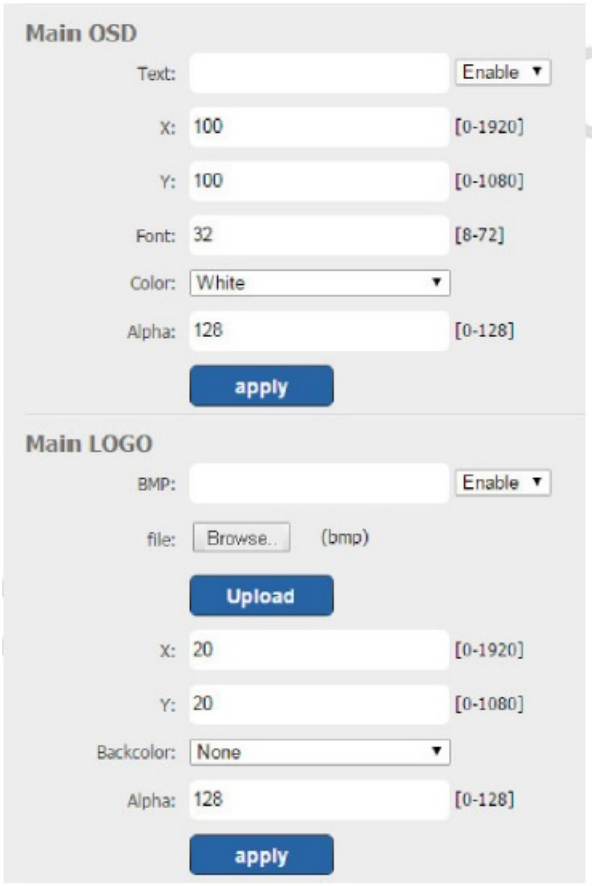
Bit rate: Live Stream RTMP 1500-3000kbps

IPTV 1920*1080p 4000-12000kbps

FPS depends on your output resolution, it can’t exceed the input frame rate. Otherwise the image will appear to have dropped frames. We advice you to set 25 fps normally.

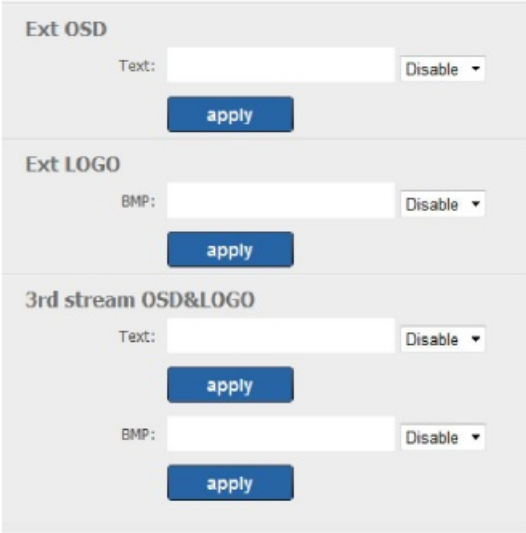
Main Stream is from 1360*768 to 1920*1080
Extended Stream is from 800*600 to 1280*720 3rd Stream is from 480*270 to 720*576





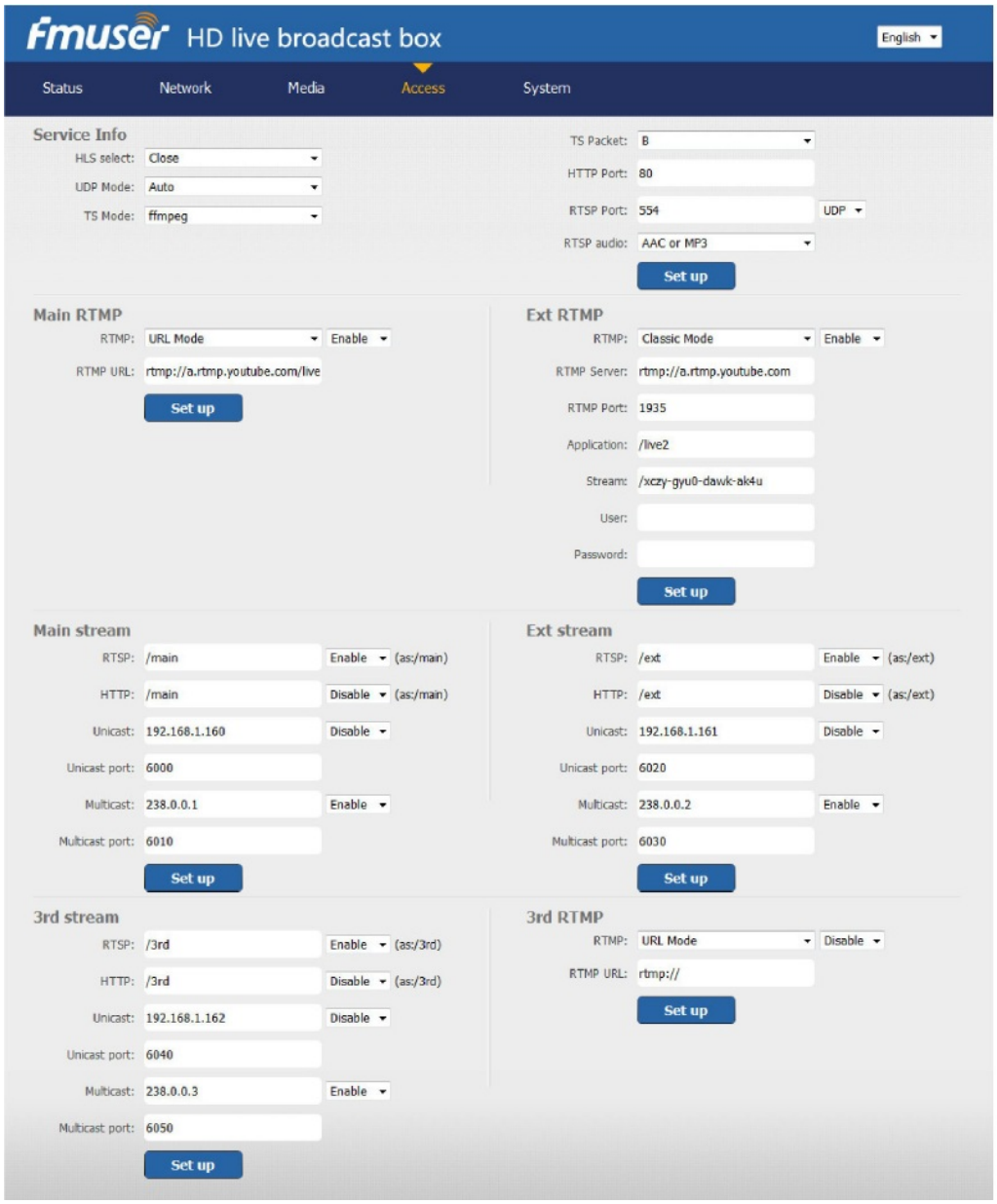
OSD setting

You can write a text as a OSD.
Or upload a *.bmp file as a LOGO.
Try to set the X-axis and Y-axis you want to show the OSD and LOGO.



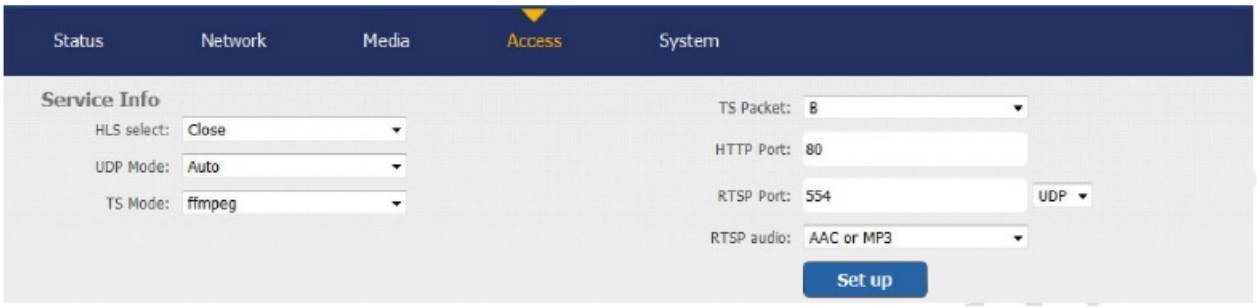
Acces

FBE200 supports protocol of HTTP, RTSP, Unicast IP, Multicast IP, RTMP and ONVIF. You can choose any of them on the access page according to your application.



Service Info

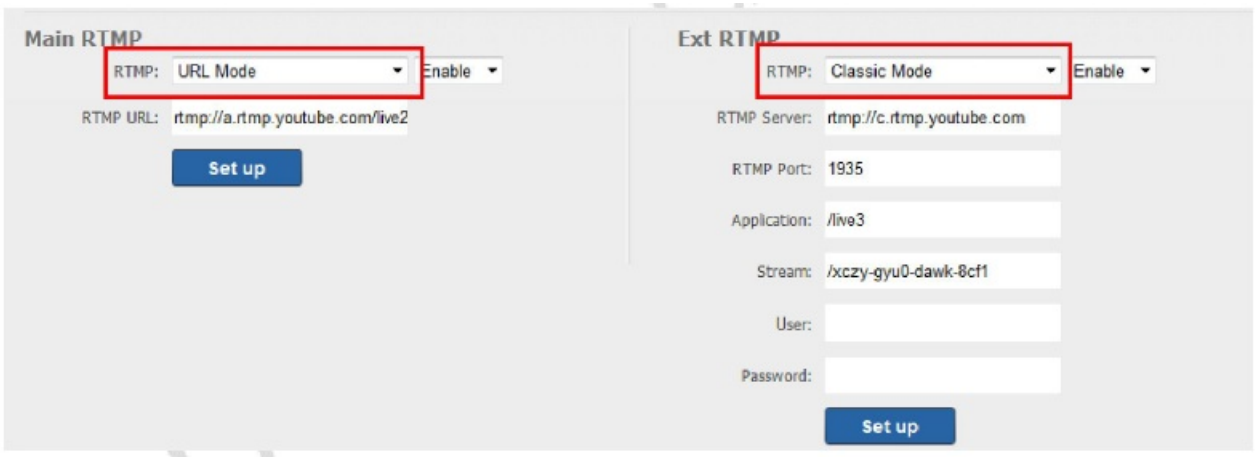
Setting the HLS, HTTP Port, TS mode, RSTP port and Audio.



HLS select: Some models supports HLS, you can select HLS for corresponding stream in the downlist.

UDP mode: Auto(for 1000M/100M),A(for 100M,B(for 10M) ,some IPTV STB has only 100M internet bandwidth, if you find it doesn't work well by multicast, please change it to B.

RTMP Setting



RTMP URL Mode: Use the RTMP address in one line, not separate lines.
For example: rtmp://a.rtmp.youtube.com/live2/xczy-gyu0-dawk-8cf1
RTMP Classic Mode: as shown in the picture. Please don't forget to input the "/" in the address.

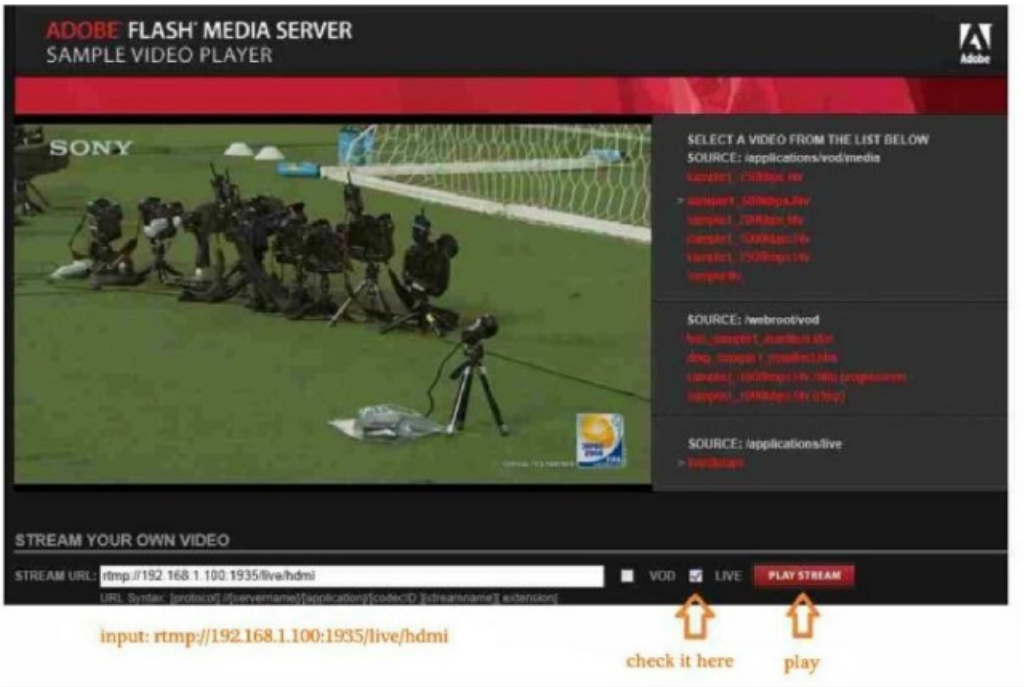
After all the parameters are filled in based on your needs, click "Set up" to save the settings, and reboot the device.

- H.264/H.265 level Baseline main / high / profile: If you want support RTMP, please choose baseline profile or main profile.

Sever Testing:

- Set the FBE200 encoder RTMP address to the FMS server address: rtmp://192.168.1.100:1935/live/hdmi
- Install the software: Flash Media Server 3.5. There is no need to input series number; Both user name and password are 1. — Start the background software

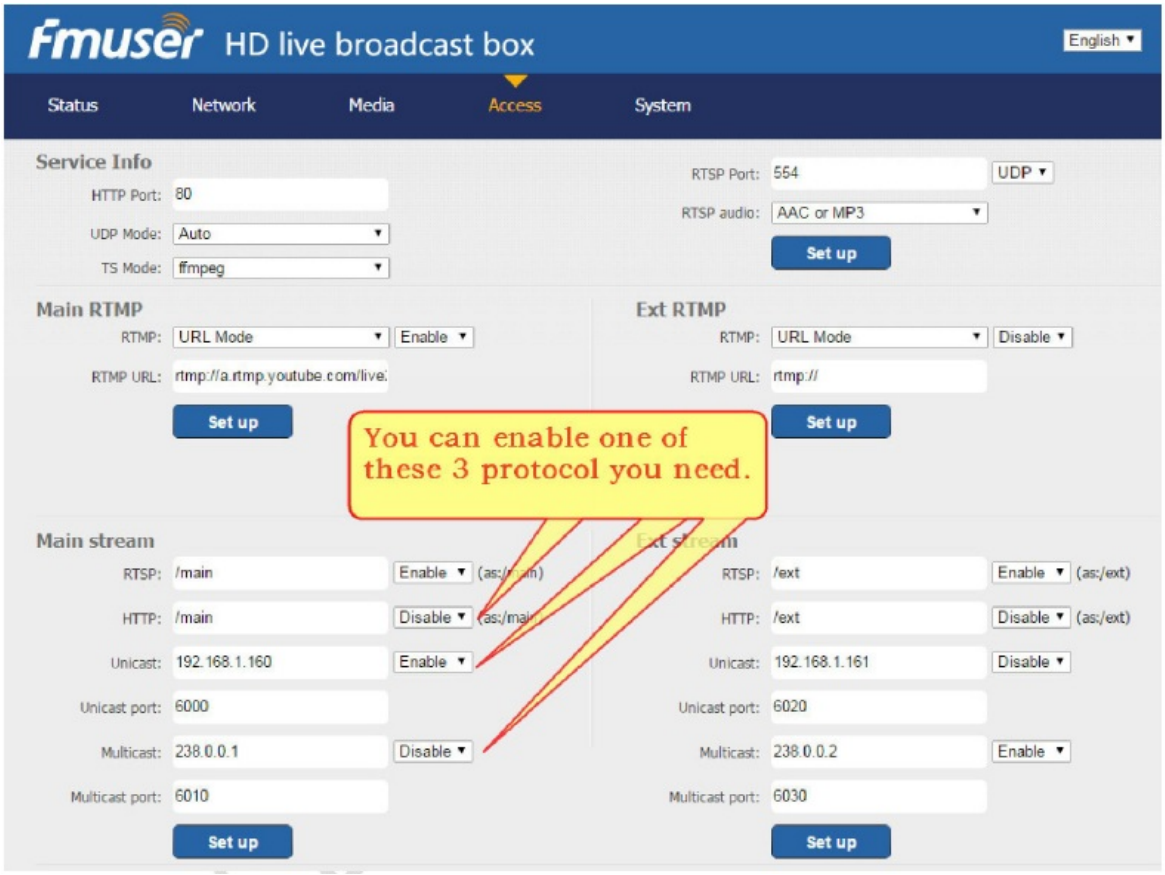
- Go to folder “Flash Player”, find “VideoPlayer.html” and open it
- Input: **rtmp://ip address/RTMP/HDMI**, then choose “live” to see the images, or input **rtmp://192.168.1.100:1935/live/hdmi** and choose “LIVE”, then click “Play stream”



You can enable “HTTP”, “RTSP” or “Multicast IP” as needed. After all the data are settled, click the button “Apply” .

Main Stream Setting

You can enable one of “HTTP”, “Unicast” or “Multicast” as needed, after all the data is settled, click “set up”.



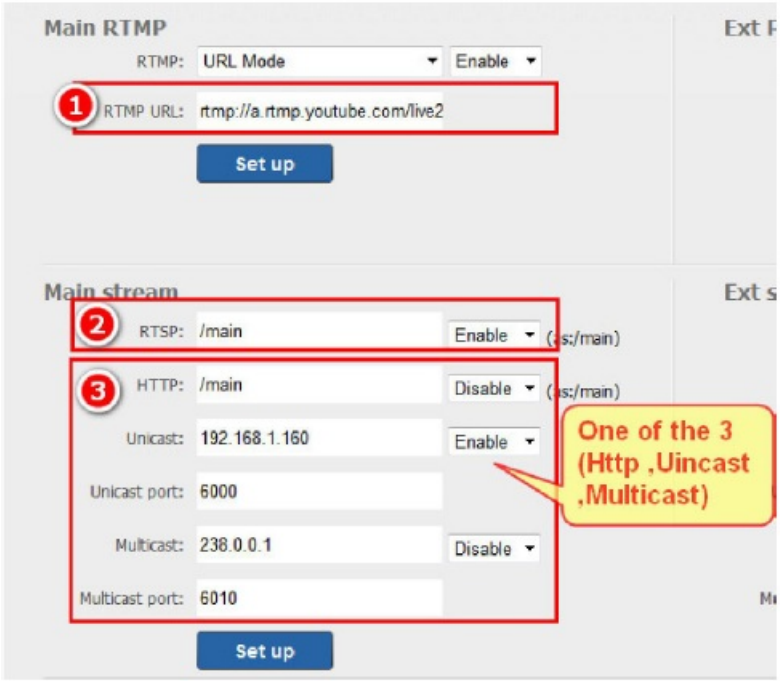
Notes: All the data above can be adjusted based on your practical application. You can enable one of these 3 protocols as you need.

Ext Stream and 3rd stream
Same setting like Main stream.

How many Streams can work on the FBE200 at one time?

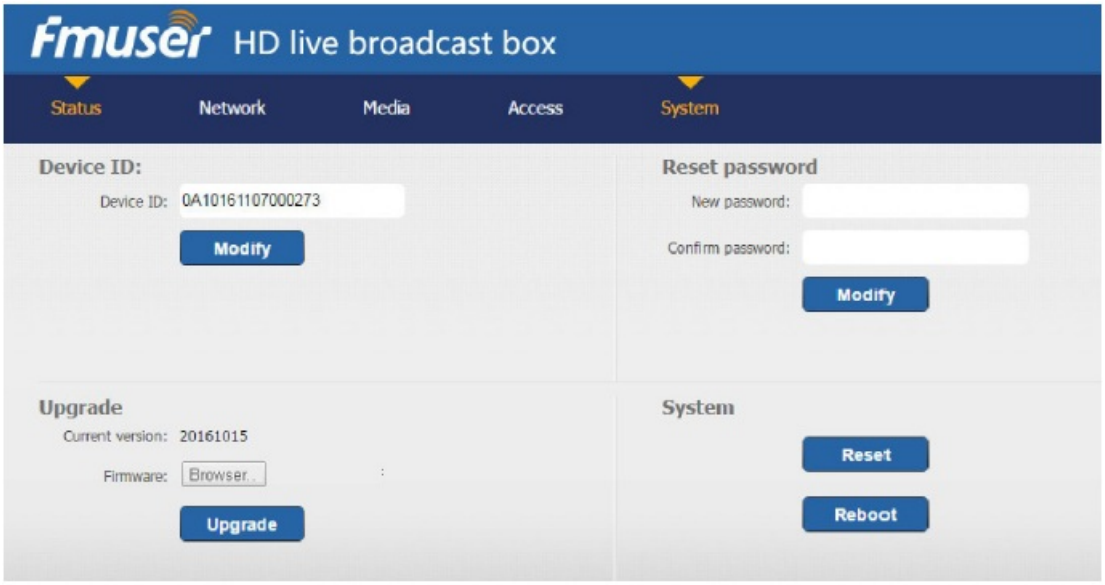
Every stream can work with RTMP, RTSP, and http/unicast/multicast) at the same time.

So if it full runs, it will be work 3*3=9 streaming at one time. (3 x RTMP, 3 x RTSP, 3 one of (http, Unicast, Multicast).

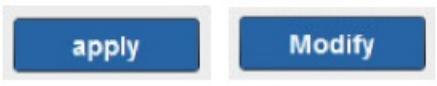


System Setting

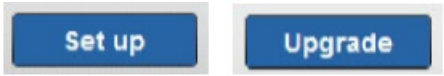
You can modify the device ID and administrator password on the system setting page, as well as upgrading the firmware, restoring the factory settings, restarting the encoder and other functions.
Upgrade: Upgrade the firmware; you can download the newest firmware on bbs.fmuser.com.
Reset password: change the login password, which must be Less than or equal to 12 characters.



About Reboot
If you use the button of apply, modify, it will run immediately, not need for reboot.



If you use the button of upgrade, set up, a reboot is needed, you can click the reboot button or re-plug the power sourece.



Order Guide

Troubleshooting

1. Black screen, nothing output from the streaming.
    - Check the Status (Refer to 3.1) ,if you find the interrupt count is 0 or there is no automatic increase, check the HDMI (SDI) cable and video source.
2. There are some horizontal red short lines on the Screen.
    - Replace a new and good HDMI cable.
3. The picture freeze like a still shot of the movie for a few seconds and then it resumes playing. -Check the Status of video input and refer to 5.2 (FPS) .
4. Freezing playing with VLC on the computer, but playing well on another computer.
    1. Check the CPU usage status of the computer, usually the problem is the computer CPU is running too full.
5. Others, like blurred screen….
   Go to the **http://bbs.fmuser.com**, there is a solution to help you correct the problem on live streaming.

Get Help (**http://bbs.fmuser.com**)

All FMUSER products are equipped with 10 years technical support. If you have any questions related to our products, please visit **http://bbs.fmuser.com** and submit a help post, our engineer will reply you quickly.

How to get help fast?
In order to save time and get better understanding of the problems, please provide the information as below, this will help us to get a solution faster.

- The full page Screenshots of status
- The full page Screenshots of media
- The full page Screenshots of access
- What is the problem

If you have any application for encoders, you are welcomed to share your application case with us.
That is all, enjoy your streaming.

Tomleequan
Update 2016-12-29 15:58:00

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