

User manual- HAIWEI- General

Preface

In order to learn more about the product information, technical operation of HD encoder more efficiently, convenient and fast maintenance for engineers and professionals, Haiwei keeps editing its instruction manual if renewed.

The user manual can be applied to general encoders!

Our products mainly including:

ENCODER : HDMI/ SDI/ VGA/ YPBPR/ CVBS/ DVI over HTTP/ RTSP/ RTMP (pull/ push)/ UDP Unicast O Multicast/ RTP/ SRT/ P-P (Haiwei proprietary protocol), 4G ,WIFI, Ethernet encoder

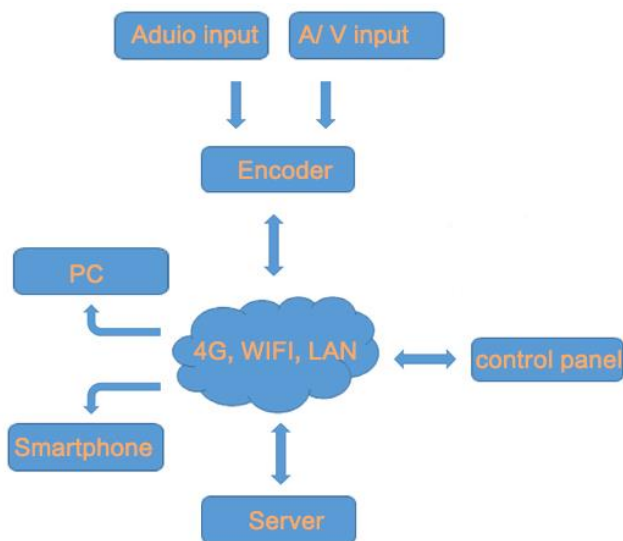
DECODER: 4K (4096*2160) IP decoder, transcoder

Transcoder: RTSP/ RTMP/ UDP/ HTTP/ HLS/ P-P/ SDK to HTTP/ HLS/ RTSP over UDP TCP/ RTMP/ UDP Unicast Multicast/ ONVIF/ RTP/ P-P

AI: AI camera, AI module, machine learning module

Official CN/ EN web: www.hwcodec.com

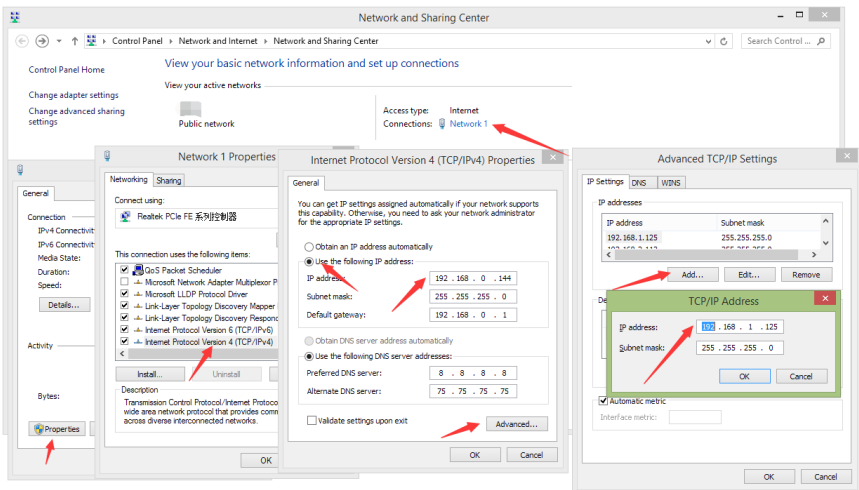
Part 1: Connection illustrated



Part 2: Configure network

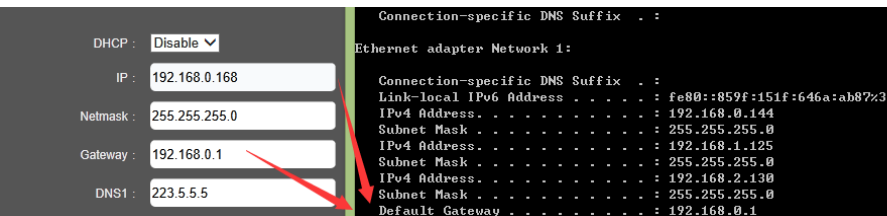
DHCP suggested for new customer or will use it in different networks, so network configuration can be ignored if parameter of the stream configured.

If not DHCP enabled by default, please follow the following steps to configure the network for streaming



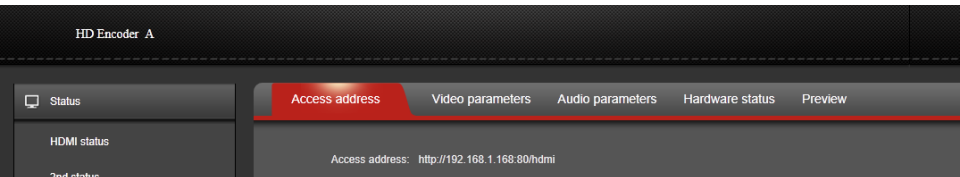
- 1- Enter network setting
- 2- Enter “Properties”
- 3- Choose IPv4
- 4- Enter current IP address and DNS (if don’t know the DNS, use 8.8.8.8)
- 5- Add another 192.168.1.x based IP address.
- 6- Then reboot the encoder on the UI of “System”option.

Once the network configured, to change the IP address of the encoder to your local IP gateway required, like following instance



Part III: Encoder Functions

1- States



Access address – Show the RTSP/ RTMP pull/ HTTP/ UDP/ RTP address

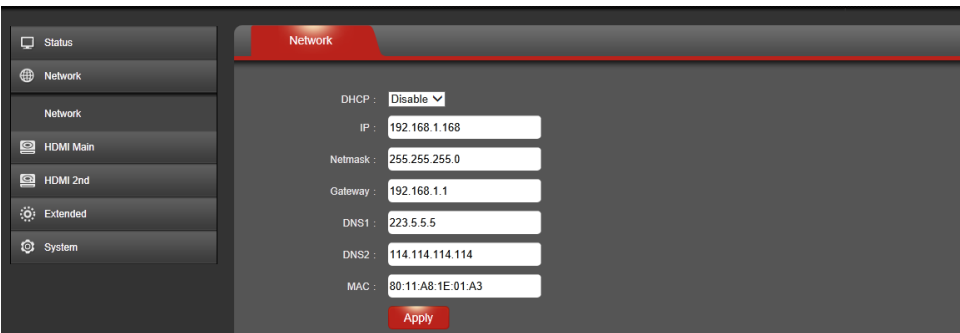
Video/ Audio parameters – Show the information of the inputting signal

Hardware status– If the encoder working normally, the data will keeps going

Preview– VLC based preview for P-P encoder, HTML5 based for general encoder

2- Network

1)- general encoder- Once the network configured, to change the IP address of the encoder to your local IP gateway required



2)- 4G/ WIFI encoder- Once the network configured, to change the IP address of the encoder to your local IP gateway required;

If need to use WiFi, different IP gateway to encoder IP required; for 4G, enable STA MODE.

If need to Use 4G network, just enable it

The screenshot shows the 'Network' configuration page for 4G+ AP mode. The DHCP is set to 'Disable'. The IP address is 192.168.1.168, Netmask is 255.255.255.0, Gateway is 192.168.1.1, DNS1 is 223.5.5.5, and DNS2 is 114.114.114.114. The MAC address is 88:11:9C:26:09:01. The WiFi Mode is set to 'AP MODE'. The WiFi IP is 192.168.3.2, WiFi ESSID is 'AP_CODE', and the WiFi password is 123456789 (9 bytes). The 4G switch is set to '4G Enable', and the 4G PIN is 0. The 4G username and password are empty. There is an 'Apply' button at the bottom.

4G+ AP mode

The screenshot shows the 'Network' configuration page for 4G+ STA mode. The DHCP is set to 'Disable'. The IP address is 192.168.1.168, Netmask is 255.255.255.0, Gateway is 192.168.1.1, DNS1 is 223.5.5.5, and DNS2 is 114.114.114.114. The MAC address is 88:11:9C:26:09:01. The WiFi Mode is set to 'STA MODE'. The WiFi DHCP is set to 'Enable'. The WiFi IP is 192.168.5.168, WiFi Netmask is 255.255.255.0, and the WiFi Gateway is 192.168.5.1. The WiFi Encryption is set to 'WPA/WPA2', and there is a 'Refresh' button. The Near the AP number is 0. The WiFi ESSID is 'super', and the WiFi Password is 00000000. The 4G switch is set to '4G Enable', and the 4G PIN is 0. The 4G username and password are empty. There is an 'Apply' button at the bottom.

4G+ STA mode

3)- Two Ethernet (U/Y520 series)

The screenshot shows the 'Network' configuration page for Two Ethernet (U/Y520 series). The DHCP is set to 'Disable'. The IP address is 192.168.0.168, Netmask is 255.255.255.0, Gateway is 192.168.0.1, DNS1 is 223.5.5.5, and DNS2 is 114.114.114.114. The MAC address is 52:81:C2:36:43:36. The Network 1 (Gigabit) is set to '192.168.1.168', Netmask is 255.255.255.0, Gateway is 192.168.1.1, and MAC is 88:11:9C:26:09:01. There is an 'Apply' button at the bottom.

Set Stream Venc :	H264 ▾	To choose H.264/ H.265 for streaming
Video Input :	HDMI ▾	To choose the input source
channel name :	chan	Set your channel name for to recognize the encoder
mirror control :	disable ▾	Rotate the video
flip control :	disable ▾	
aspect ration :	auto ▾	To choose the display resolution from 4:3 or 16:9
Bitrate control :	cbr ▾	To choose VBR/ CBR
Key Interval :	30 [5-200]	To change the GOP size
Encoded size :	auto ▾	To change the output resolution
Bitrate :	800 [16-12000]	To change the output video bitrate
Fluctuate Level :	auto ▾	higher level higher bit fluctuation
H.264 Profile :	main profile ▾	Alternatives: H.265 main, H.264 high/ main/ baseline profile
Encoding frame rate :	25 [5-60]	To choose your output frame frequency
Package :	ffmpeg ▾	To choose VLC/ FFMPEG package
Buffer Mode :	188x7 ▾	Modify it if signal detected wrongly
PMT ID :	260 [1-65535]	To rename PMT ID
Transport ID :	264 [256-3840]	To rename transport ID
Stream ID :	280 [256-3840]	To rename stream ID
Program ID :	1	To set up the channel name
SDT name :	Service01	To rename SDT name
HTTP :	/hdm1 [Disable ▾]	To rename the HTTP stream name; Enable HTTP streaming
HTTP Port :	80 [1-65535]	To change the HTTP port
RTSP :	/hdm1 [Enable ▾]	To rename the RTSP stream name; Enable RTSP streaming
RTSP Port :	554 [1-65535]	To change the RTSP port
RTSP Authentication :	Disable ▾	To enable RTSP authentication
RTSP mode :	video+audio ▾	Alternatives: Audio/ video/ AV
RTSP TCP :	UDP ▾	RTSP over UDP/ TCP
TTL :	16 [0-255]	Time To Live
unicast IP :	192.168.1.200 [Disable ▾]	To choose the Unicast address; Enable Unicast streaming
unicast port :	1234 [1-65535]	To change the Unicast port
Multicast IP :	238.0.0.1 [Disable ▾]	To choose the Multicast address; Enable Multicast streaming
Multicast port :	1234 [1-65535]	To change the Multicast port
RTP Server Ip :	192.168.1.123 [Disable ▾]	To choose the RTP address; Enable RTP streaming
RTP Port :	6666 [1-65535]	To change the RTP port
RTMP :	URL MODE ▾ [Disable ▾]	RTMP by URL/ IP mode; Enable RTMP streaming
RTMP mode :	video+audio ▾	Alternatives: Audio/ video/ AV
RTMP URL :		RTMP stream address
Apply		Save current setting

HDMI 2nd

Set Stream Venc : H264 ▼
aspect ration : auto ▼
Bitrate control : cbr ▼
Encoded size : 704x576 ▼
Bitrate : 512 [16-12000]
Fluctuate Level : auto ▼
H.264 Profile: main profile ▼
Encoding frame rate : 25 [5-60]
Buffer Mode : 188x7 ▼
PMT ID : 260 [1-65535]
Transport ID : 264 [256-3840]
Stream ID : 230 [256-3840]
Program ID: 2
SDT name : Service02
HTTP : /hdm_ext Enable ▼
HTTP Port : 80 [1-65535]
RTSP : /hdm_ext Disable ▼
RTSP Authentication : Disable ▼
rtsp mode : video+audio ▼
RTSP Port : 554 [1-65535]
unicast IP : 192.168.1.201 Disable ▼
unicast port : 1235 [1-65535]
Multicast IP : 238.0.0.2 Disable ▼
Multicast port : 1235 [1-65535]
RTP Server Ip : 192.168.1.123 Disable ▼
RTP Port : 8888 [1-65535]
RTMP : URL MODE ▼ Disable ▼
RTMP mode : video+audio ▼
RTMP URL : rtmp://
Apply

2nd stream

- The parameters are same to the 1st stream, to see more details please check the previous page
- The 2nd stream can use at most 1280*720 for HDMI/ SDI encoder, the resolution will be lower than main stream
- 1st and 2nd stream can be used at same time

HD Encoder A

Status

Network

HDMI Main

HDMI 2nd

Extended

Audio Setting

Main OSD Setting

2nd OSD Setting

Color Setting

Image Setting

RTMP-HLS Setting

Smart Encoder

onvif setting

System

Audio Encoder

Audio input : HDMI audio ▾

Audio bitrate: 128000 ▾

Audio channel: L+R ▾

Audio Codec: AAC ▾

AAC type: LC ▾

Resample: Disable ▾

RTSP audio encode: AAC ▾

Audio gain: close ▾

Apply

- To choose the input source, SDI/ HDMI, Line In
- To modify the audio bitrate
- To choose audio channel, alternative: Left/ right/ stereo
- AAC/ MP3
- LC/ HE
- Enable/ disable Resample
- RTSP over AAC/ G.711
- Audio gain
- Save current setting

Main OSD

update logo : Browse... (Main osd logo named logo.bmp , 2nd osd logo named logo_ext.bmp)

upload

logo : close ▾

logo X : 100 (0-1920)

logo Y : 170 (0-1080)

font X : 100 (0-1920)

font Y : 100 (0-1080)

Font size : 32 (8-72)

alpha : 100 (0-128)

font color : 0xFFFFFFFF (0-0FFFFFFF) example : R: 0xFFFFFFFF G: 0xFF00FF00 B: 0xFF0000FF

text : Up to 255 character

Apply

2nd OSD

logo : close ▾

logo X : 100 (0-1920)

logo Y : 170 (0-1080)

font X : 100 (0-1920)

font Y : 100 (0-1080)

Font size : 32 (8-72)

alpha : 100 (0-128)

font color : 0xFFFFFFFF (0-0FFFFFFF) example : R: 0xFFFFFFFF G: 0xFF00FF00 B: 0xFF0000FF

text : Up to 255 character

Apply

OSD function

- Tips: if need transparent logo, black/ grey background required,
- To make the OSD function work, 24 Bits in BMP format required

Status

Network

HDMI Main

HDMI 2nd

Extended

Audio Setting

Main OSD Setting

2nd OSD Setting

Color Setting

Image Setting

RTMP-HLS Setting

Smart Encoder

onvif setting

Color Setting

Brightness: 50 (0-100) Default value:50

Contrast: 50 (0-100) Default value:50

Hue: 50 (0-100) Default value:50

Saturation: 50 (0-100) Default value:50

Apply

quality Setting

Noise : close

Sharpening : close

Sharpening strength : 0 [-4-5]

Filtering : open

Filtering A : 0 (0-3)

Filtering B : 0 (0-255)

Filtering C : 0 (0-4)

Apply

RTMP-HLS

RTMP-HLS stream : open

RTMP-HLS Mode : video+audio

RTMP access address : rtmp://192.168.1.106:1935/hls/hd-live

HLS access address : http://192.168.1.106:8235/hls/hd-live.m3u6

Apply

smart Encoder

smart Encoder : open

Apply

onvif setting

onvif auth : close

onvif user : admin

onvif pwd : admin

onvif device name : Hd-Encoder

Apply

Image optimization

To adjust the video quality based on the video sources

RTMP-HLS

To enable RTMP pull and HLS protocol, for general encoder, HTML5 preview will be available once the HLS enabled.

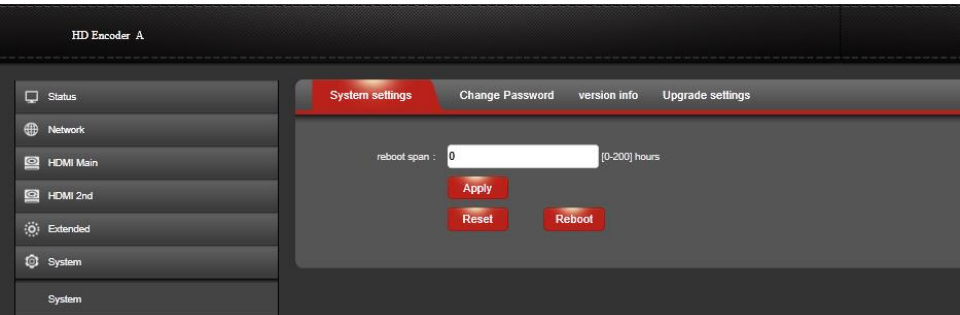
Smart Encoder

If using in low bitrate condition, the function would helps for better quality and info completeness

ONVIF

To enable ONVIF and modify its info

System



To reboot, reset, change admin password, check the firmware version and upgrade the firmware.

If using TCP based protocols, 168 hours reboot span required (in case latency cache)

The encoder web GUI will be some kind different for the different design, the user manual can be applied to almost all encoder except K3, IPC, U/Y 10, for more details please ask for more information

Part IV: Operation Guidance

1) HTTP-RTSP

Copy the address and open it with VLC- streaming- network- fill the URL
(Except RTMP push)

Such as HTTP : WEB management→ HDMI Main→ Enable HTTP/
RTSP→ Apply→ Status(find the URL) → VLC→ fill the URL→
Done

HTTP : Disable ▾ Start with "/"

HTTP Port : [1-65535]

RTSP : Disable ▾ Enable Start with "/"

RTSP Port : [1-65535]

RTSP Authentication : Disable ▾

RTSP mode : video+audio ▾

RTSP TCP : UDP ▾

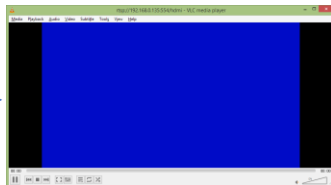
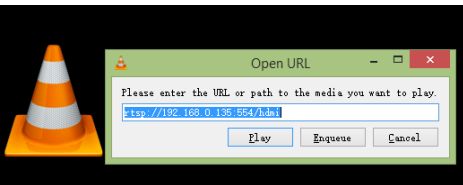
□ Status

HDMI status

2nd status

Access address Video parameters Audio parameters Hardware status Preview

Access address: rtsp://192.168.0.135:554/hdm1



2) Unicast- Multicast- RTP

For those three protocol, fill in the IP address required (multicast can be by default)

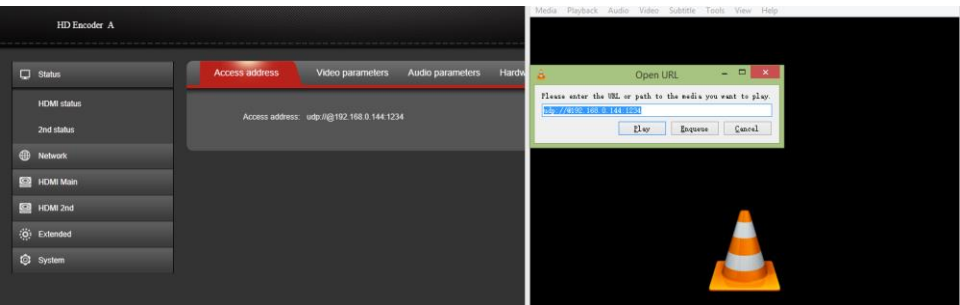
Then copy the address and open it with VLC- streaming- network- fill the URL

Such as HTTP : WEB management→ HDMI Main→ Enable HTTP/RTSPS→ Apply→ Status(find the URL) → VLC→ fill the URL→ Done

unicast IP : [Support domain or ip format]

unicast port : [1-65535]

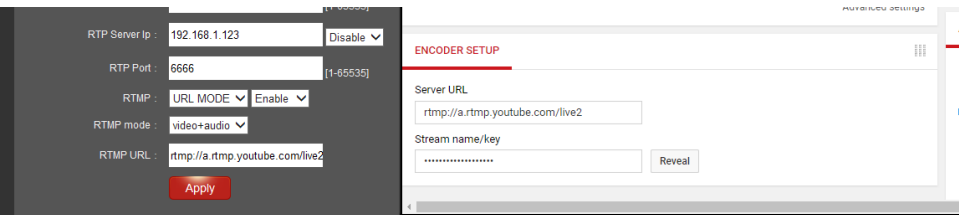
Multicast IP :



3) RTMP (Push/ pull)- HLS

URL mode

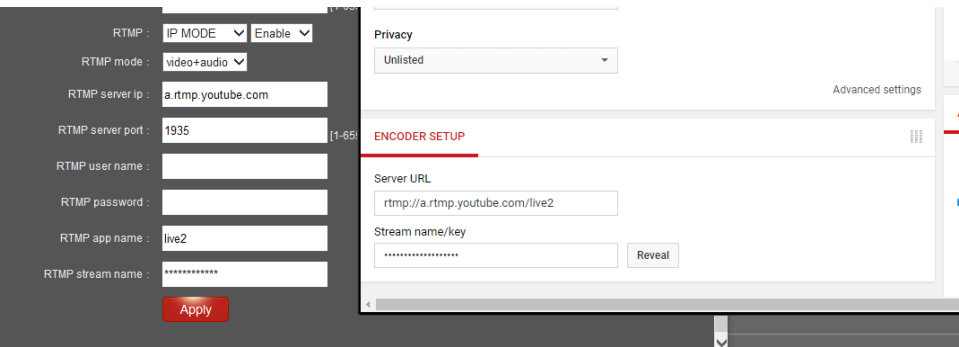
Copy the CORRECT RTMP address from the server or platform and directly paste it on the RTMP filed, then “Enable” the RTMP function.



The screenshot displays two side-by-side configuration panels. The left panel, titled 'RTMP SETTINGS', contains the following fields: 'RTP Server Ip' (192.168.1.123) with a 'Disable' dropdown, 'RTP Port' (6666) with a '[1-65535]' range indicator, 'RTMP' mode set to 'URL MODE' with an 'Enable' dropdown, 'RTMP mode' set to 'video+audio', and 'RTMP URL' (rtmp://a.rtmp.youtube.com/live2). An 'Apply' button is at the bottom. The right panel, titled 'ENCODER SETUP', shows 'Server URL' (rtmp://a.rtmp.youtube.com/live2) and 'Stream name/key' (masked with asterisks) with a 'Reveal' button.

IP mode

Copy the CORRECT RTMP address from the server or platform, separately input it like following image, then “Enable” the RTMP function.

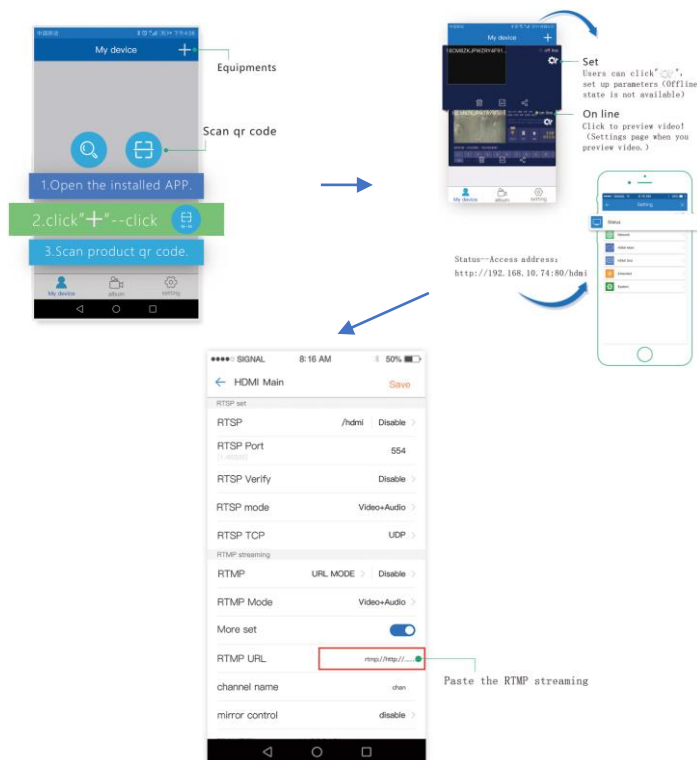


The screenshot displays two side-by-side configuration panels. The left panel, titled 'RTMP SETTINGS', contains the following fields: 'RTMP' mode set to 'IP MODE' with an 'Enable' dropdown, 'RTMP mode' set to 'video+audio', 'RTMP server ip' (a.rtmp.youtube.com), 'RTMP server port' (1935) with a '[1-65535]' range indicator, 'RTMP user name' (empty), 'RTMP password' (empty), 'RTMP app name' (live2), and 'RTMP stream name' (masked with asterisks). An 'Apply' button is at the bottom. The right panel, titled 'ENCODER SETUP', shows 'Privacy' set to 'Unlisted', 'Server URL' (rtmp://a.rtmp.youtube.com/live2), and 'Stream name/key' (masked with asterisks) with a 'Reveal' button.

Part V : LiveX

APP—LiveX, control the encoder and record the video at anywhere, any network, any device.

Android/ IOS: download it on its apple/ Google play store



No	Question	Solution
1	How to connect encoder?	Connect encoder with computer directly via net cable.
2	How to access to encoder?	Set up one constant IP including IP: 192.168.1.1**, then access to 192.168.1.168 on PC browser.
3	How to watch the TS stream from the encoder?	Copy the streaming URL to VLC - Media- Open network stream- paste, enjoy it.
4	How to use RTSP?	1 Enable RTSP on the user interface, and watch it on VLC with same step to last question. 2. Enter RTSP address to your server
5	How to use UDP Unicast and RTP?	Enter your Unicast IP and RTP IP address, then you can watch it on the server or on VLC.
6	How to set up display resolution?	To set up the “encoded size” on the user interface , then click “apply”
7	How to set up bitrate?	To set up the output” Bitrate” on the user interface, then click “apply”
8	How to set up” IP address” of the encoder?	To set up the IP address at “ Network” function on the user interface, new address works after “apply” and “reboot” the device
9	How to do RTMP streaming live?	You will get your streaming URL and key once created the live streaming function on the platform, then enter the full address on the RTMP option, if use ip mode, separate each part via”/”.
10	How to set up my logo on the video?	logo size: 1920*1080 ; 2M ; BMP: 24, name: logo.bmp, 2 nd logo name: logo_ext.bmp, upload the logo at”main/ 2 nd OSD setting” on the” extended”, adjust the coordination and “apply”
11	Not smooth on the platform?	1 The problem of the platform. 2 Network unable to afford the bit, lower required.
12	Failed to use RTMP?	1 Network ip address not matched. 2 upload speed unable to upload the stream
13	How to makes encoder works on RTMP transmission?	Set up the same segment to the computer, and another available IP address.

