
胜天工科技
VBCTECHNOLOGY

VIDEO& AUDIO IP ENCODER

2019@ CELTECH

HDMI/ CVBS/ SDI/ VGA/ YPBPR /WIFI
instruction manual

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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, Celtech keep editing its instruction manual if renewed.

It contains the instructions, functions and features of the Celtech 4G video encoder.

Please contact us if any problem encountered.

Company status:

Or www.celtech.com.cn

NOTE:

Copyright@ Beijing Celtech Technology,Co,Ltd.

Summary

Celtech HD-Video Encoder is R&D, produced @Beijing Celtech Technology Co,Ltd. The highest resolution is up to 1920*1080P, in order to meet different requirements, many different resolutions added, such as 1080I. 1280*720(720P), 720*576 (720i). We produced three different designs: 1. HDMI. 2. CVBS. 3. SDI. 4. VGA. 5. YPBPR. All the designs support access to web backstage management multi devices simultaneously, multi network protocol.

In order to adapt for different uses, Celtech produced: HDMI, SDI, VGA, BNC, CVBS, YPBPR Encoder. Supports: HTTP, UDP, RTSP, RTMP, ONVIF, HLS etc network protocol (HDMI+ RCA simultaneously video encoder doesn't support HLS).

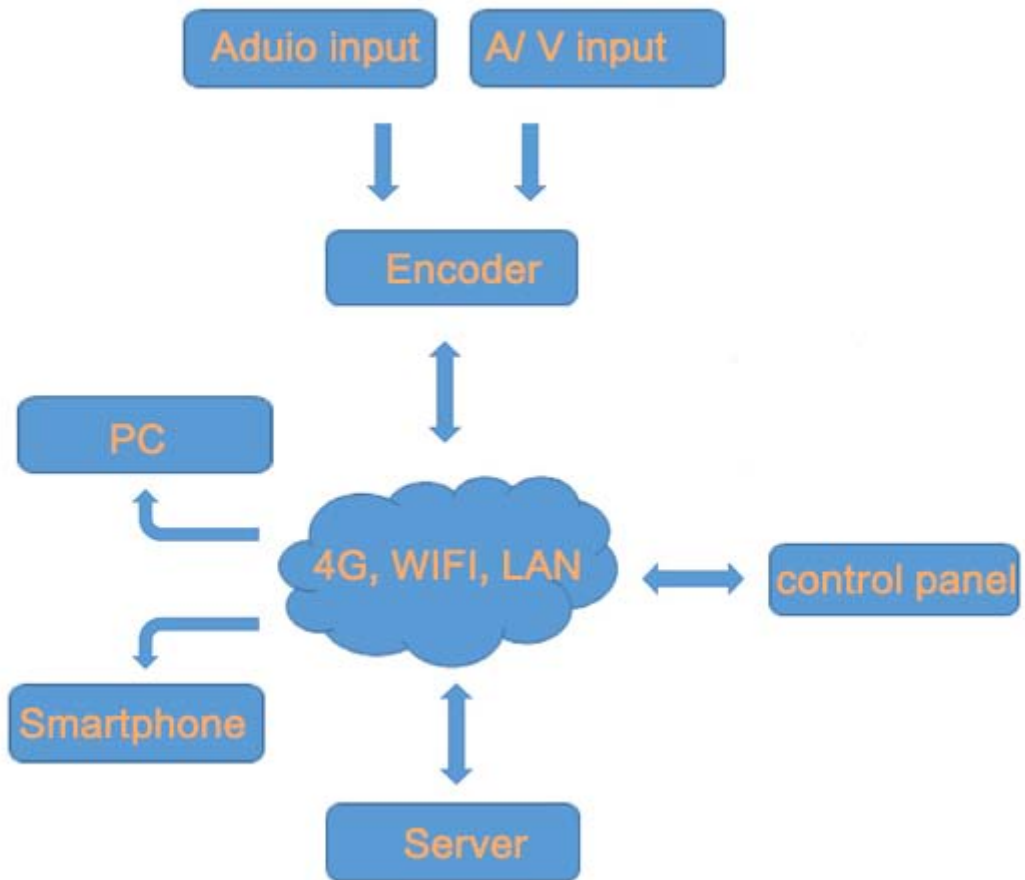
Notice: Test UDP/ RTSP/ ONVIF in LAN

1. Check the accessories are connected before switch on Encoder
2. Place the encoder in ventilation and dry environment
3. In order to works properly, use standard communication network when crowded network is needed
4. Use “ 1000M” network port when you wanna watch online video
5. AC: 5V 2.4 A, notice: The circuit is complex, do not dismount the machine
6. Default IP: 192.168.1.168. log in again after restored settings is needed

Part I: Installation

1. Connection Illustration

1



2. Network

Access to video encoder through LAN- Set up network protocol: HTTP, RTSP, UDP, RTMP, ONIVF, (HLS)- Server- local server/ PC/ Smartphone.

1. Steps

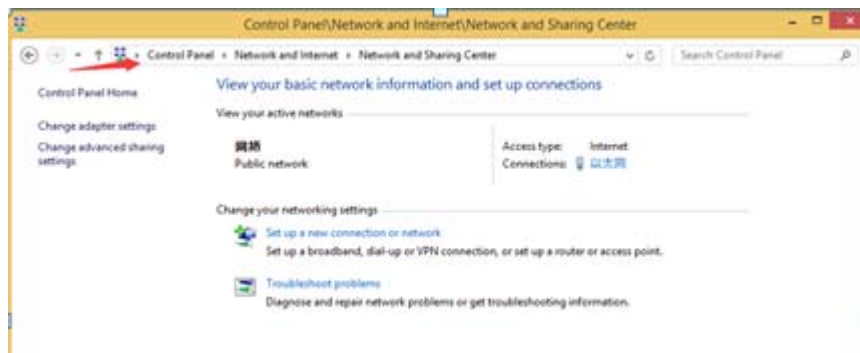
Enter “network center” – “Local” - “Properties”- “TCP/ IPv4”

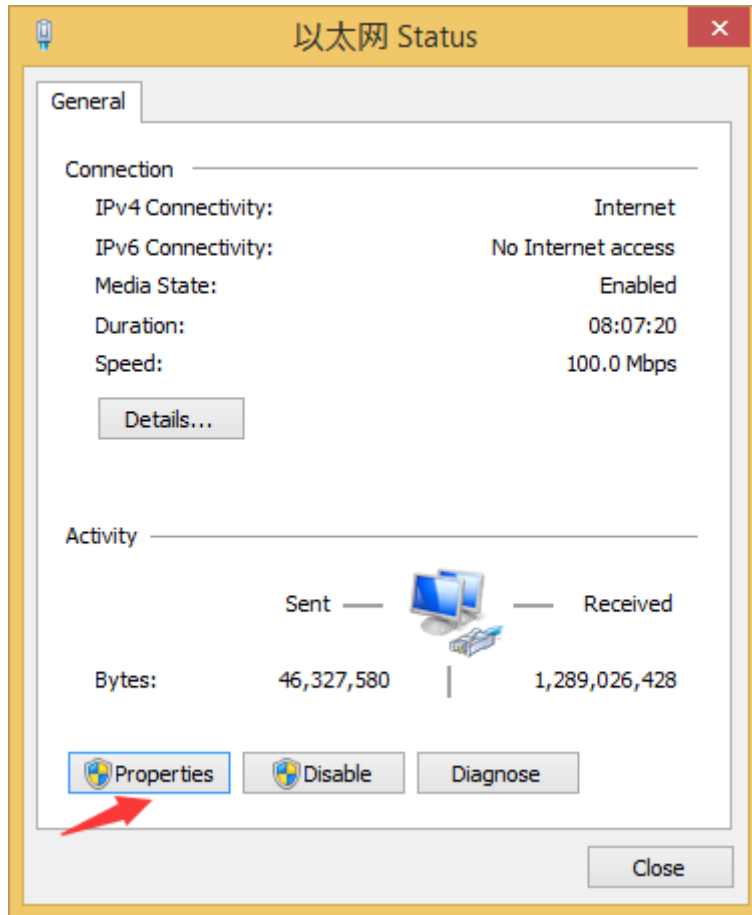
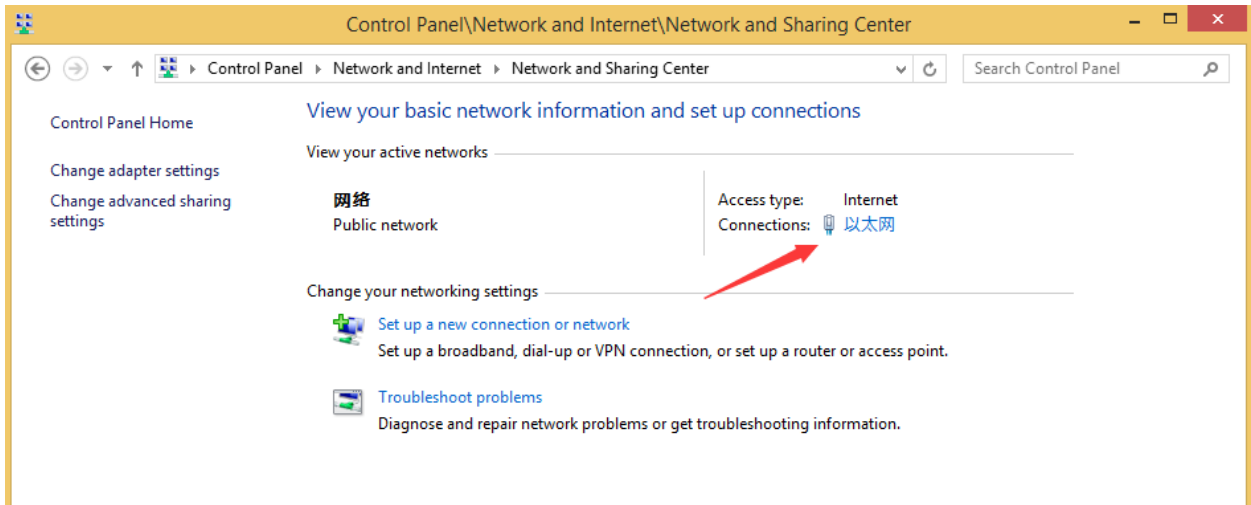
For example: Default computer IP gateway: 192.168.0.1

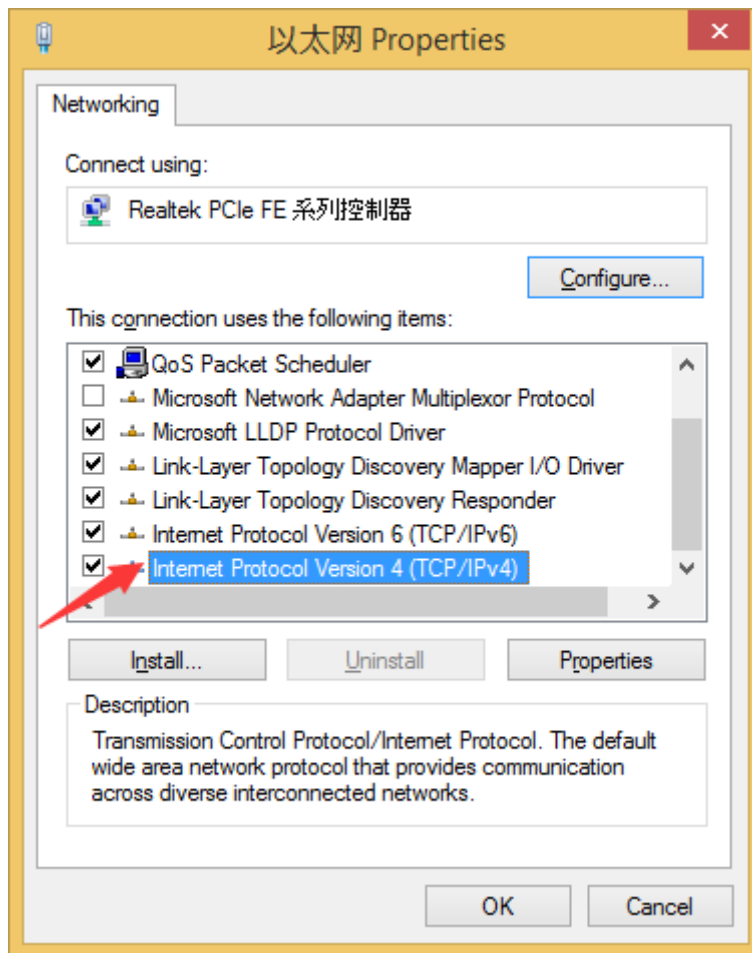
Input Ip address: 192.168.1.100 subnet mask: 255 255 255 0 (Don't set ip address to: 192.168.1.168)

2. Local ip address settings

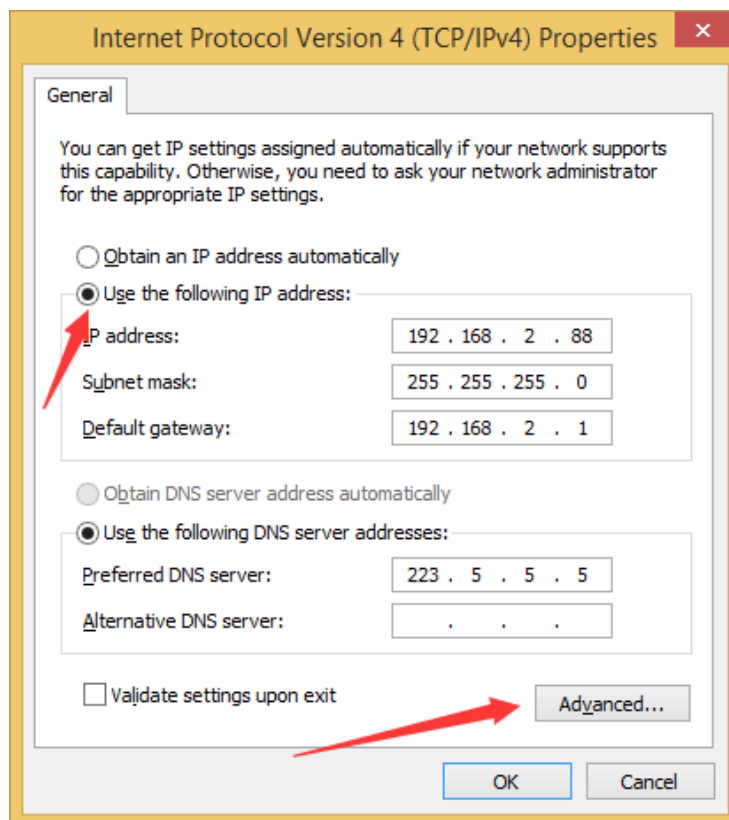
Illustration

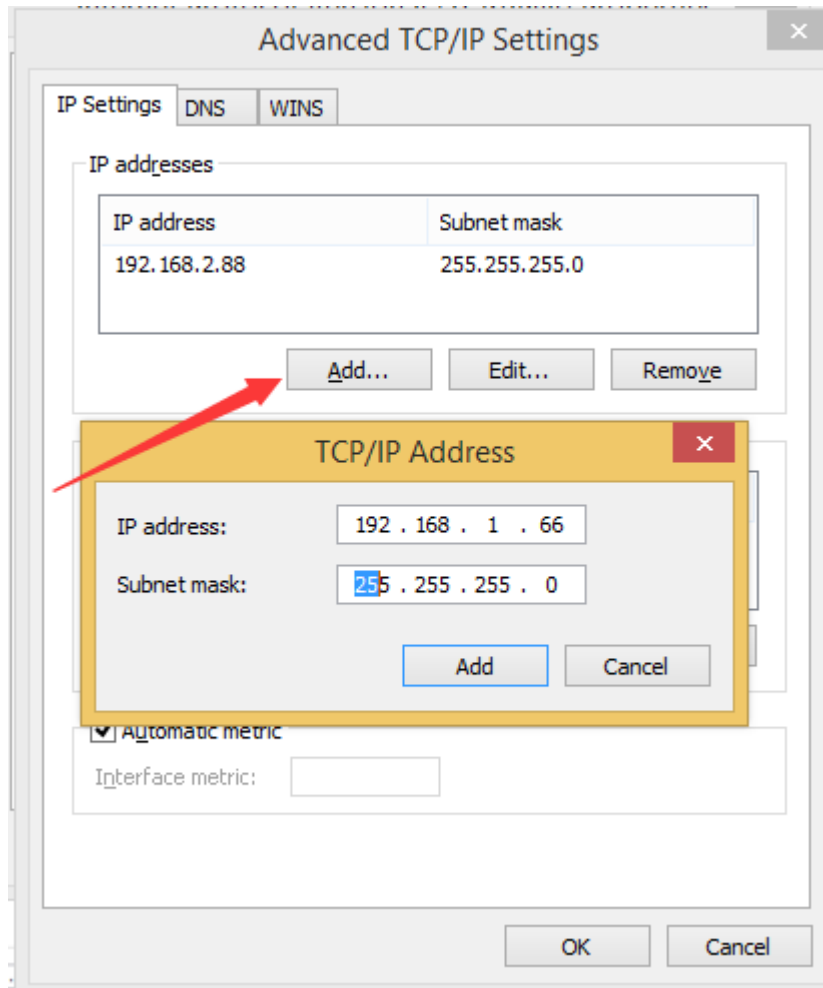






5



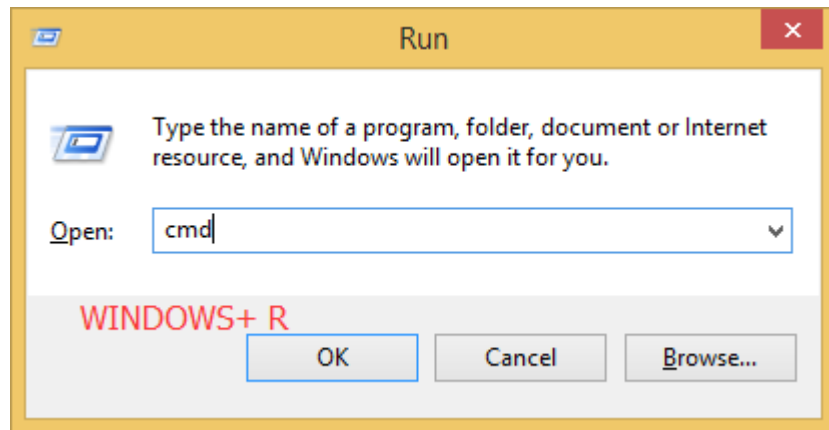


Ensure the IP address and the network is working and ain't the existed one. Ping the encoder IP address when network resumed, it's working as following picture shows, you can access to encoder on WEB now.

3. Ping



2



WINDOWS+ R

Enter "CMD"- DOS: ping 192.168.1.168 -t。

3

C:\WINDOWS\system32\cmd.exe

```
Microsoft Windows [版本 10.0.10586]  
© 2015 Microsoft Corporation。保留所有权利。  
C:\Users\Mr~Wu>ping 192.168.1.168 -t
```

```
C:\WINDOWS\system32\cmd.exe - ping 192.168.1.168 -t
Microsoft Windows [版本 10.0.10586]
(c) 2015 Microsoft Corporation. 保留所有权利。

C:\Users\Mr~Wu>
C:\Users\Mr~Wu>ping 192.168.1.168 -t

正在 Ping 192.168.1.168 具有 32 字节的数据:
来自 192.168.1.168 的回复: 字节=32 时间<1ms TTL=64
来自 192.168.1.168 的回复: 字节=32 时间<1ms TTL=64
来自 192.168.1.168 的回复: 字节=32 时间=1ms TTL=64
来自 192.168.1.168 的回复: 字节=32 时间<1ms TTL=64
来自 192.168.1.168 的回复: 字节=32 时间<1ms TTL=64
来自 192.168.1.168 的回复: 字节=32 时间<1ms TTL=64
```

Ping the IP of Encoder (means you can access to WEB)

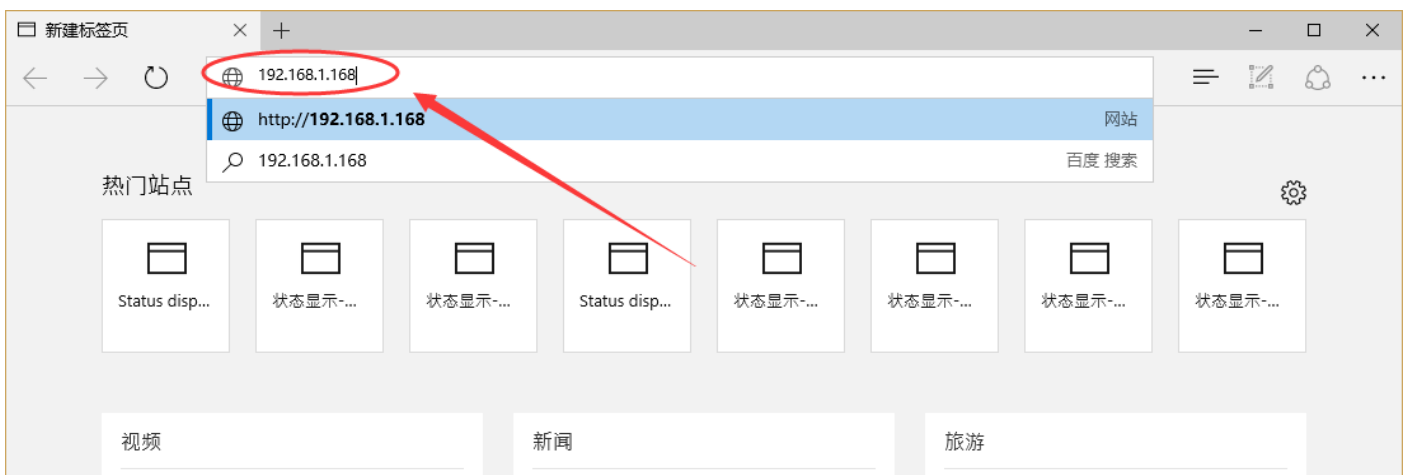
Part II: Set up (WEB)

1. Open browser

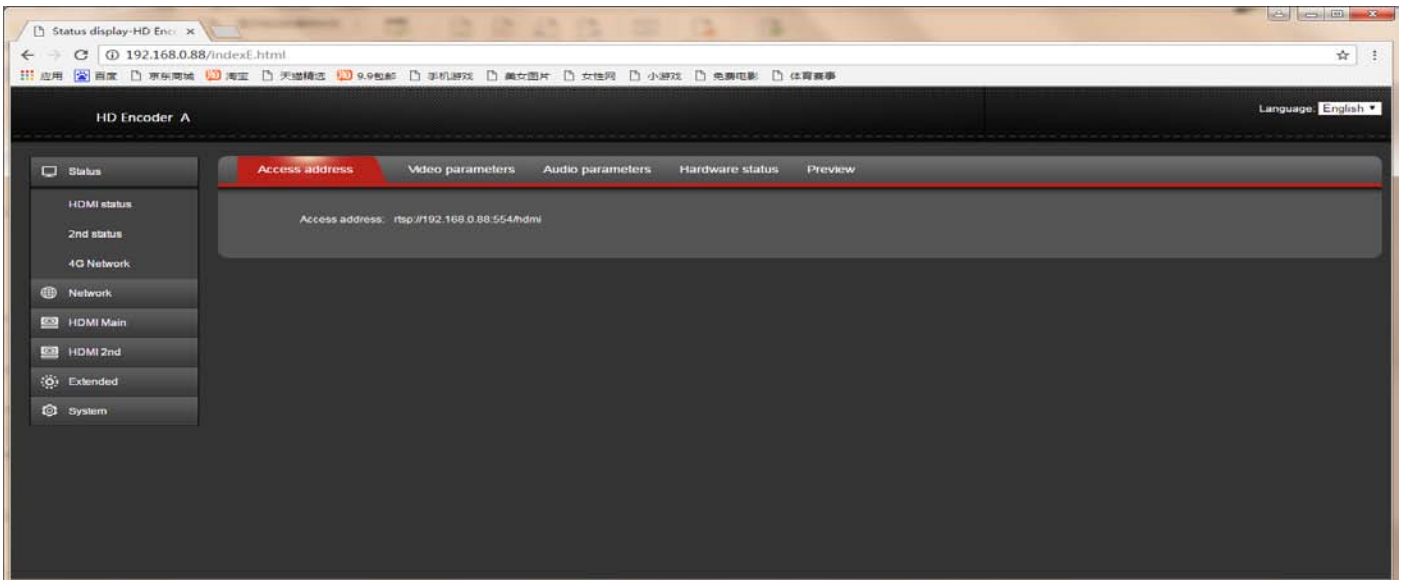


2. Fill URL

Default ip address: **192.168.1.168**.



3. Access to the WEB



4 . Network

DHCP: (would be enabled when the IP and gateway are unknown)

IP: (constant IP address)

Netmask: (To enter a fixed multiplex network server address here to enable IP to work properly)

Gateway: (The gateway of the router/ computer)

DNS1: (Main domain server)

DNS2: (The domain server in reserve)

MAC: (16-bit MAC)

5. HDMI/SDI main stream

- Channel name: (Enter your channel name)
- Bit rate control: (TO select CBR/ VBR)
- Key interval: [5-200] (gap to show "I frame" and "P frame" 100s X 25=4s shows one I frame)
- Encoded Size: (To choose your resolution)
- Bitrate (K): [16-12000] (To select your bitrate)
- Fluctuate level: (To change the video quality, higher level higher fluctuation)
- H.264 profile: (Encoding Level)
- Frame: [5-60] (Encoded frame rate, 5-60 available, it doesn't available for interlaced scanning "I ")
- Packaging: (VLC or FFMPEG, choose the proper one based on your server)
- Buffer Mode: (To change the size of the TS stream)
- PMT ID: [1-65535] (To change the PMT ID)
- Transport ID: [256-3840] (To change the TRANSPORT ID)
- Stream ID: [256-3840] (To change STREAM ID)
- HTTP: Format:/hdm i(separate the text in"/")
(To change the display URL, instance: <http://192.168.1.168:80/hdm i>)
- HTTP port: [1-65535] (To change the server Port based on your local server.
display: <http://192.168.1.168:81>)
- RTSP: (same to HTTP)

RTSP port: [1-65535]

RTSP mode: (alternative: video and video, video only, audio only)

Unicast IP: (Enter the target IP address)

Unicast port: (Ehter the Unicast port)

Multicast IP: (same to Unicast)

Multicast port: (enter the multicast port)

RTMP server IP: (support IP MODE AND URL MODE)

RTMP port: (enter your server Port)

RTMP mode: (alternative: video and video, video only, audio only))

RTMP user name: (Enter the info if the server required)

RTMP password: (Enter the info if the server required)

RTMP APP name: (To fill the app name based on your server)

RTMP URL: (stream key)

Here is an example: rtmp://a.rtmp.youtube.com/live2/*****

Server IP: a.rtmp.youtube.com; app name: live2; URL:*****

6 Audio

Audio input: (Line in audio/ HDMI audio)

Audio bit: (based on your server)

Audio channel: (alternative: left, right, stereo)

Audio codec: (AAC, MP3)

AAC type: (LC AAC or LE AAC)

Resample: (Based on your needs)

RTSP audio codec: (AAC or G.711)

Audio gain:

7 OSD

Update logo: [logo size: 1920*1080; 2M; BMP: 24, name: logo.bmp, 2nd logo name: logo_ext.bmp)

logo: (Close or open the OSD)

logo X: (Longitudinal coordination up to 1080)

logo Y: (Longitudinal coordination up to 1080)

Font X: (Transverse coordinates up to 1920)

Font Y: (Transverse coordinates up to 1920)

Font size: (8-72)

Alpha: (0-128)

Font color: (font color: default: 0-0xFFFFFFFF)

Font: (limitation: Chinese < 127, English < 255)

8 Image color control

To adjust the video quality based on your requirements.

Brightness: [0-100]

contrast ratio: [0-100]

hue: [0-100]

saturation: [0-100]

9.RTMP-HLS settings

RTMP-HLS: (open or close HLS)

RTMP address: rtmp://192.168.1.168:1935/hls/hd-live

HLS address: http://192.168.1.168:8235/hls/hd-live.m3u8

10. System

Reboot interval: (Up to 200hours)

Change password: (to change the password of the encoder)

Hardware version: v1.1.0_20161215_80_1_release

onvif: version 2.8.32

Upgrade: [upgrade.bin)

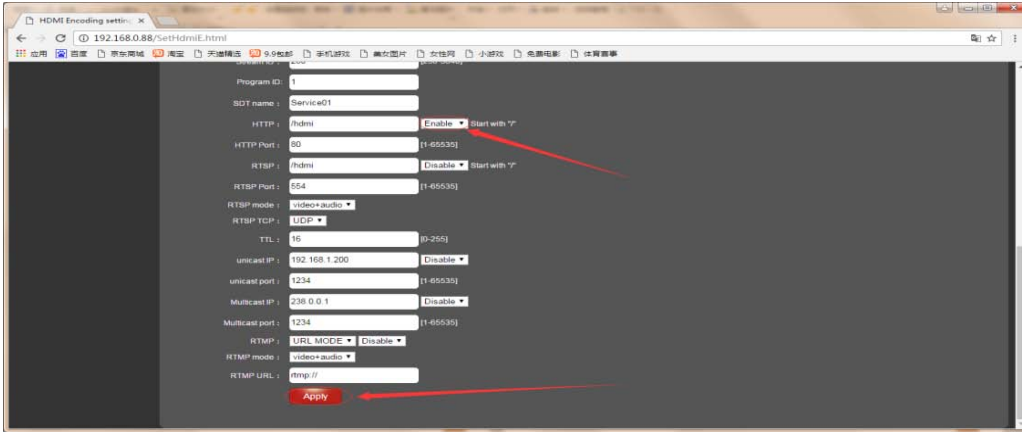
11 Setting guide

HTTP-RTSP

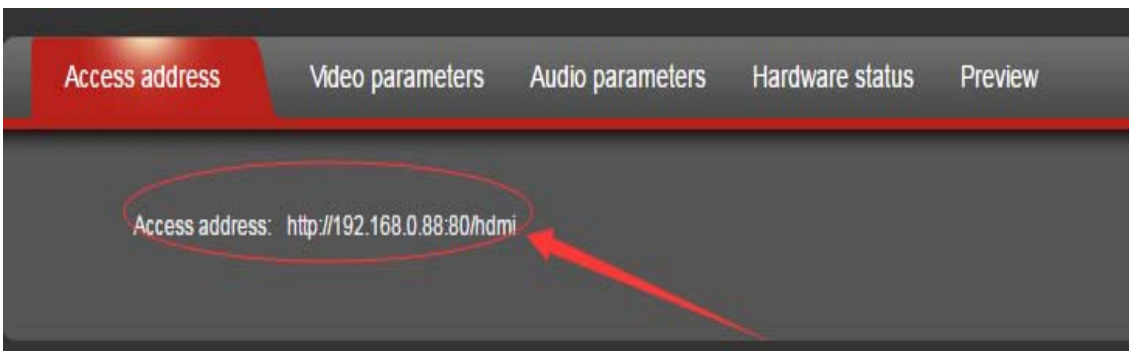
Copy the address and open it with VLC- streaming- network- fill the URL (Except RTMP):

Such as HTTP: WEB management → Mainstream → Enable HTTP → Apply → Status(find the URL) → VLC → fill the URL → Done

1



2



12 UDP- unicast, multicast

Unicast

Fill the IP of target device

RTSP :	/hdmi	Disable	Start with
RTSP Port :	554	[1-65535]	
RTSP Authentication :	Disable		
RTSP mode :	audio only		
RTSP TCP :	TCP		
TTL :	16	[0-255]	
unicast IP :	192.168.2.111	Enable	
unicast port :	1234	[1-65535]	

Internet Protocol Version 4 (TCP/IPv4) Properties

General

You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.

Obtain an IP address automatically

Use the following IP address:

IP address:	192 . 168 . 2 . 111
Subnet mask:	255 . 255 . 255 . 0
Default gateway:	192 . 168 . 2 . 1

Obtain DNS server address automatically

Playing

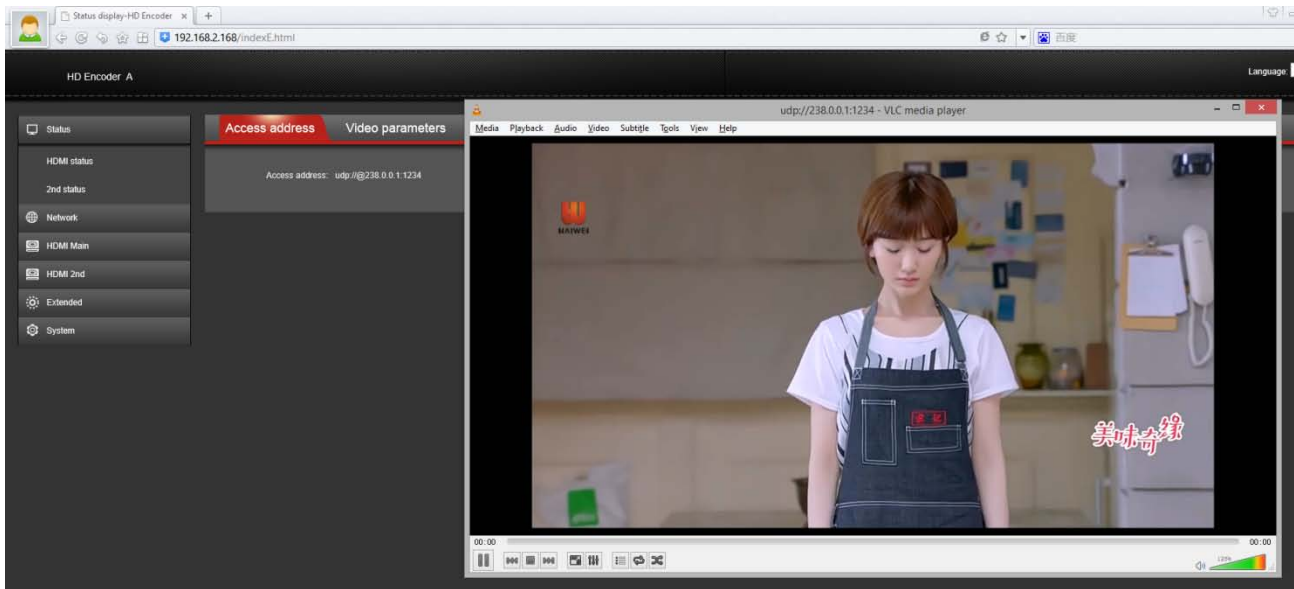


Multicast

Fill Multicast IP

TTL :	<input type="text" value="16"/>	[0-255]
unicast IP :	<input type="text" value="192.168.2.111"/>	Disable ▾
unicast port :	<input type="text" value="1234"/>	[1-65535]
Multicast IP :	<input type="text" value="238.0.0.1"/>	Enable ▾
Multicast port :	<input type="text" value="1234"/>	[1-65535]

Playing



13. RTMP-Youtube Live- Facebook Live

URL MODE

Multicast port : 1234 [1-65535]
RTP Server Ip : 192.168.1.123 Disable ▾
RTP Port : 6666 [1-65535]
RTMP : URL MODE ▾ Disable ▾
RTMP mode : video+audio ▾
RTMP URL :

Fill the Streaming ID (instance: Mudu.tv, due to strict Internet control)

1

The screenshot shows the mudu.tv live control interface. At the top, there is a navigation bar with the mudu.tv logo and links for 首页 (Home), 应用 (Applications), 媒体库 (Media Library), 账户 (Account), and 百科 (Encyclopedia). Below the navigation bar, there is a dropdown menu for '海威视讯直播测试' and a '观看地址' (View Address) button. A '直播控制' (Live Control) button is also visible. The main content area is divided into several sections. On the left, there is a '直播监控' (Live Monitoring) section with a video player showing a '直播' (Live) logo. Below the video player, there is a '直播方式' (Live Method) section with tabs for '专业设备直播' (Professional Equipment Live), '拉流直播' (Streaming Live), '列表直播' (List Live), '桌面直播' (Desktop Live), '手机直播' (Mobile Live), and '导播台直播' (Director's Desk Live). The '直播推流地址' (Live Streaming Address) section is highlighted, showing the URL 'rtmp://pub.mudu.tv/watch/3jcpvu' in a text input field, with a '复制' (Copy) button next to it. A red arrow points to the text input field.

2

RTP Server Ip : Disable ▾

RTP Port : [1-65535]

RTMP : URL MODE ▾ Enable ▾

RTMP mode : video+audio ▾

RTMP URL :

Playing

mudu.tv
直播控制台

首页 | 应用 | 媒体库 | 账户 | 百科

海威视讯直播测试

直播监控

直播视频

互动详情

观看页显示

直播方式

直播推流地址

提示 建议直播网络上带宽是码率的2倍以上

IP Mode (instance: WOWZA)

RTMP : IP MODE ▾ Enable ▾

RTMP mode : video+audio ▾

RTMP server ip : 192.168.2.168

RTMP server port : 1935 [1-65535]

RTMP user name :

RTMP password :

RTMP app name : live

RTMP stream name : 123

Apply

WOWZA
media systems


PRODUCTS DOCS & APIS SOLUTIONS PRICING

Server: 192.168.2.168:1935 Application: live

Stream: 123 VOD Live

MPEG DASH Apple HLS **Adobe RTMP** Adobe HDS MS Smooth Mobile

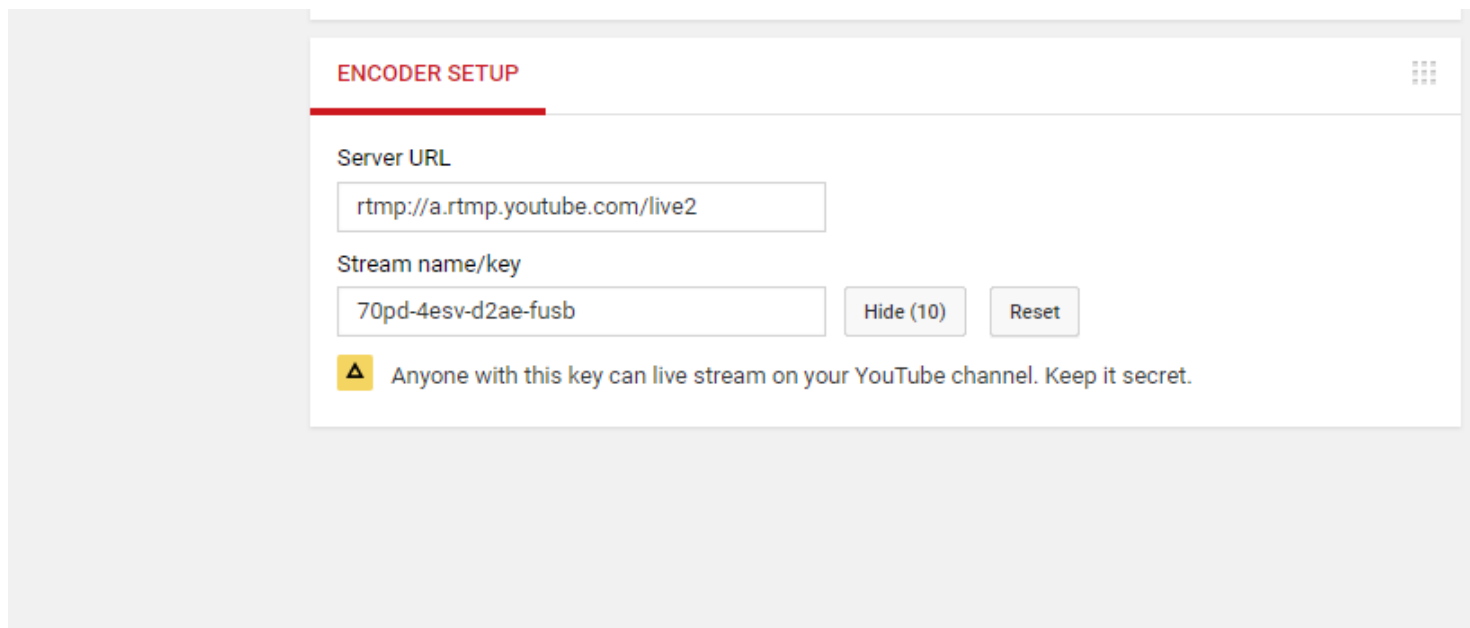
Server: rtmp://192.168.2.168:1935/live Stream: 123 Stop



Status: Started playing stream. WIN 25,0,0,127 (Flash-AS3)

Youtube (instance due to unable to access YouTube without VPN)

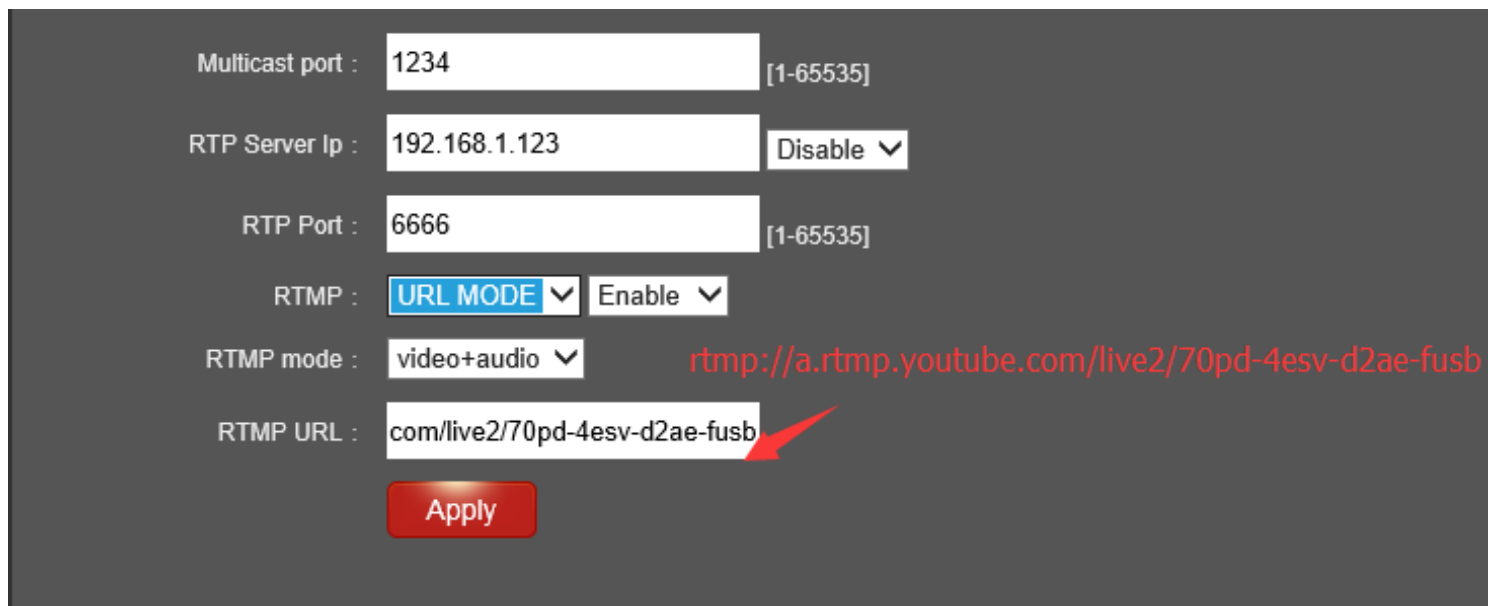
1. URL mode



The image shows a web interface titled "ENCODER SETUP". It contains the following fields and controls:

- Server URL:** A text input field containing "rtmp://a.rtmp.youtube.com/live2".
- Stream name/key:** A text input field containing "70pd-4esv-d2ae-fusb". To its right are two buttons: "Hide (10)" and "Reset".
- Warning:** A yellow triangle icon followed by the text: "Anyone with this key can live stream on your YouTube channel. Keep it secret."

Encoder



The image shows a configuration interface for an encoder with the following settings:

- Multicast port:** 1234 [1-65535]
- RTP Server Ip:** 192.168.1.123 [Disable ▾]
- RTP Port:** 6666 [1-65535]
- RTMP:** URL MODE ▾ [Enable ▾]
- RTMP mode:** video+audio ▾
- RTMP URL:** com/live2/70pd-4esv-d2ae-fusb

A red arrow points to the RTMP URL field. A red text label "rtmp://a.rtmp.youtube.com/live2/70pd-4esv-d2ae-fusb" is positioned above the RTMP URL field. A red "Apply" button is located at the bottom of the configuration area.

Use"/" to separate the RTMP Server IP, RTMP APP name and RTMP Stream name

2. Ip MODE


ENCODER SETUP

Server URL

Stream name/key

Hide (10)

Reset

 Anyone with this key can live stream on your YouTube channel. Keep it secret.

RTMP : IP MODE Enable

RTMP mode : video+audio

RTMP server ip : rtmp://a.rtmp.youtube.com

RTMP server port : 1935 [1-65535]

RTMP user name :

RTMP password :

RTMP app name : live2

RTMP stream name : 70pd-4esv-d2ae-fusb

Apply

14 WIFI

- 1, Select wifi and enter wifi password

Network

Network

HDMI Main

HDMI 2nd

Extended

System

DHCP: **Disable** ▼

IP: 192.168.1.168

Netmask: 255.255.255.0

Gateway: 192.168.1.1

DNS1: 223.5.5.5

DNS2: 114.114.114.114

MAC: 80:09:51:41:00:01

WIFI_DHCP: **Enable** ▼

Wifi IP: 192.168.2.128

Wifi Netmask: 255.255.255.0

Wifi Gateway: 192.168.2.1

Wifi Encryption: **WPA/WPA2** ▼ **Refresh** Refresh near wifi access number and ID and signal strength

Near the AP number: 22

Wifi Essid: **hwsx2** ▼

Wifi Password: **www.hwsxtec.com**

Apply

2 reboot encoder

Network

Network

HDMI Main

HDMI 2nd

Extended

System

DHCP: **Disable** ▼

IP: 192.168.1.168

Netmask: 255.255.255.0

Gateway: 192.168.1.1

DNS1: 223.5.5.5

DNS2: 114.114.114.114

MAC: 80:09:51:41:00:01

WIFI_DHCP: **Enable** ▼

Wifi IP: 192.168.2.128

Wifi Netmask: 255.255.255.0

Wifi Gateway: 192.168.2.1

Wifi Encryption: **WPA/WPA2** ▼ **Refresh** Refresh near wifi access number and ID and signal strength

Near the AP number: 24

Wifi Essid: **hwsx2** ▼

Wifi Password: **www.hwsxtec.com**

Apply

来自网页的消息

⚠ Set successfully, please reboot your device !

确定

3 Play use wifi ip

Network

Network

HDMI Main

HDMI 2nd

Extended

System

DHCP:

IP:

Netmask:

Gateway:

DNS1:

DNS2:

MAC:

WIFI_DHCP:

Wifi IP:

Wifi Netmask:

Wifi Gateway:

Wifi Encryption: Refresh near wifi access number and ID and signal strength

Near the AP number:

Wifi Essid:

Wifi Password:

4 Play

Open Media

File Disc Network Capture Device

Network Protocol

Please enter a network URL:

Show more options

3 Technical parameter

- **Default IP: 192.168.1.168**
- **Codec level: baseline profile main profile high profile**
- **Bitrate control: CBR/ VBR.**
- **Video Bitrate: 16 kbit~12000 kbit.**
- **Audio: built-in/ external Sampling rate: 64Kb/s~384Kb/s**
- **Fluctuate level:1-5**
- **Encoded Audio: AAC MP3 Sampling rate: 32000 44100 48000 etc**
- **Encoded audio bitrate: 48 K, 64 K, 96 K, 128 K, 160 K, 192 K, 256 K.**
- **Package:FFMPEG, VLC**
- **Transportation: TCP UDP. 100M/ 1000M RJ45.**
- **Protocols: RTMP RTSP HTTP UDP ONVIF Unicast Multicast HLS (RTMP Support add user name and password).**
- **Chinese / English management backstage, change access password**
- **Image optimization: Contrast, brightness, hue, saturation, Noise detection, Sharpness, wave filtering...**
- **ODS, text, OSD rolling, logo**
- **Reset configuration button, firmware upgrade, remote maintenance**
- **Input: DVD player, STB, Camera etc (HDMI)**
- **RTMP, HLS function.**

Part IV. FAQ

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.

Part V . Celtech softwares

Celtech software

1. Video management platform for multi devices:

