



User Manual



HDMI-IPCast

H-4HDMI-IPCST (4 channel)
H-8HDMI-IPCST (8 channel)

Revision 8/2024

A Note from Thor Broadcast about this Manual

Intended Audience

This user manual has been written to help people who have to use, integrate and to install the product. Some chapters require some prerequisite knowledge in electronics and especially in broadcast technologies and standards.

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Chapter 1 HDMI-IPCast Intro

1.1 Outline

The Thor Broadcast HDMI IPCast network encoder is a unique solution for IP broadcasting. This can come equipped with 4/8/12/24 HDMI inputs with MPEG-4 AVC/H.264 video encoding and LC-AAC or HE-AAC audio encoding. The signals source could be sourced from any STB, PC, Game Console, DVD/BluRay, or any HDMI source. It can transfer the live programs through the internet/LAN and outputs IP out over UDP (Unicast/Multicast), RTSP, RTMP, HTTP and HLS, and the output signals can received by PC, phone and other mobile terminals. The IPCast encoders let you access your IP STB, PC or TV anywhere to watch your programs.

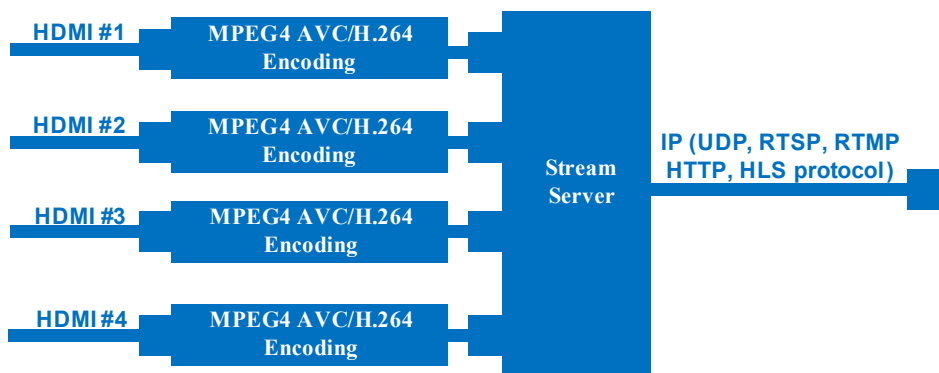
1.2 Main Features

- 4/8/12/24 HDMI inputs
- MPEG-4 AVC/H.264 video encoding and LC-AAC or HE-AAC Audio encoding
- IP Output over UDP (Unicast/Multicast), RTSP, RTMP, HTTP and HLS
- Includes support for Logo, Caption, QR Code inserting
- Management Control and easy updates via web management

1.3 Specifications

Input	4/8/12/24 HDMI inputs			
Encoder Section	Video	Resolution	Input	Output
			1920x1080_60p, 1920x1080_60i	1920x1080_30p
			1920x1080_50p, 1920x1080_50i	1920x1080_25p
			1280x720_60p	1280x720_30p
			1280x720_50p	1280x720_25p
			720x480_60i	720x480_30p
	720x576_50i	720x576_25p		
	Encoding	MPEG-4 AVC/H.264 (Baseline profile, Main profile, High profile)		
	Bit rate	1Mbps~13Mbps		
	Rate Mode	CBR, VBR		
	GOP Size	25~50		
	Audio	Encoding	LC-AAC or HE-AAC	
		Sampling rate	44.1KHz	
Bitrate		LC-AAC : 48, 64, 96, 128, 256 kbps HE-AAC : 48, 64 kbps		
Stream out	IP out over UDP (Unicast/Multicast) , RTSP, RTMP, HTTP, HLS (RJ45, 100M) ASI output port and Data port are not applicable currently			
System	Remote control	Network management (WEB)		
	Language	Chinese and English		
	Upgrade	Ethernet software upgrade		
General	Operation temperature	0~45°C(work), -20~80°C (Storage)		
	Power supply	AC 100-240V 50/60Hz 2A		
	Dimensions	482mm×328mm×44mm		

1.4 Principle Chart (Per Module)



1.5 Appearance and Illustration



1	NMS (Network Management Port) Data Port (IP output)
2	Indicators: Run and Power
3	Grounding / Power Switch and socket
4	4 HDMI input ports (up to 24 based on unit ordered)

Chapter 2 Installation Guide

2.1 What's in the Box

Thor Broadcast will deliver the unit with the following items:

- Thor HDMI-IPCast (4-24ch) Network Encoder
- Power Cord
- HDMI cables (4-24 included)
- Network cable

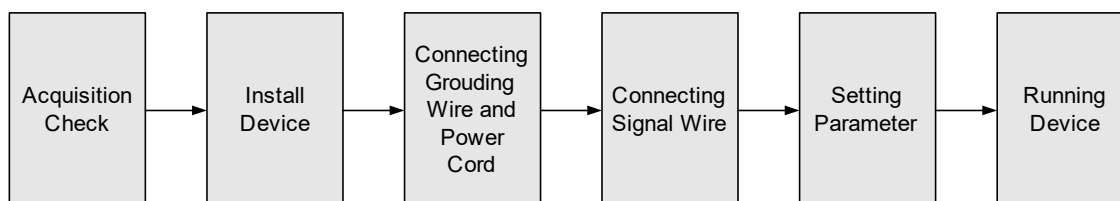
If any item is missing or mismatching with the list above, please contact local dealer.

2.2 Installation Prep

When you install the encoder, please follow the steps below. Checking the possible device missing or damage during the transportation

- Preparing relevant environment for installation (rack room or Headend)
- Installing Encoder
- Connecting signal cables
- Connecting communication port (if it is necessary)

2.2.1 Installation Flow Chart is as follows :



2.2.2 Rack Accommodation

Item	Requirement
Machine Rack Space	When installing unit on rack, the distance between 2 rows of machine frames should be 1.2~1.5m and the distance against wall should be no less than 0.8m.
Machine Hall Floor	Electric Isolation, Dust Free, HVAC anti-static material: $1 \times 10^7 \sim 1 \times 10^{10} \Omega$, Grounding current limiting resistance: $1 M\Omega$ (Floor bearing should be greater than $450 Kg/m^2$)
Environment Temperature	5~40°C(sustainable) , 0~45°C(short time) , installing air-conditioning is recommended
Relative Humidity	20%~80% sustainable 10%~90% short time
Pressure	86~105KPa
Door & Window	Installing rubber strip for sealing door-gaps and dual level glasses for window
Fire Protection	Fire alarm system and extinguisher
Power	Device power, HVAC and lighting should be independent to each other. Device power requires AC $110V \pm 10\%$, 50/60Hz or AC $220V \pm 10\%$, 50/60Hz. Please carefully check before running.

2.2.3 Grounding Requirement

- Must be operated and maintained in an area free of dust and debris.
- The cover should be securely fastened, do not open the cover of the chassis when the power is on. This will also void Thor's manufacturer's warranty.
- After installation, securely stow away all loose cables, external antenna, and others.
- Be careful when connecting a power source to the device.
- Do not operate in wet or damp areas. Make sure the extension cable is in good condition
- Make sure the power switch is off before you start to install the device
- It is important to keep this device grounded to ensure all of the modules function correctly. Correctly grounding the device will also help prevent any electrical interference, lightening. Etc. Also it helps reject minor interference that may disrupt the devices ability to function smoothly. General rule of them, make sure the device is grounded when installing anywhere.
- Always use copper wire. When applied correctly the ground must be wrapped well to ensure maximum conduction so it can reduce any high frequencies. The copper ground wire should also be as short and thick as possible
- Installer must make sure that the two ends of the ground are well conducted and have appropriate anti-rust properties.
- It is prohibited to use any other device as part of the grounding electric circuit.
- The area of the conduction between the ground wire and device's frame should be no less than 25 m².



Caution:

Before connecting power cord to HDMI-IPCast Encoder, set the power switch to "OFF"

2.4 Signal Cable Connection

The signal connections include the connection of input signal cable and the connection of output signal cable. The details are as follows:

2.4.1 HDMI input cable illustration:



2.4.2 Network Cable illustration (CAT5):



Chapter 3 WEB NMS Operation

The Thor Broadcast HDMI-IPCast Encoder series does not support front D-pad buttons or an LCD screen, you can only control and set the configuration by connecting the Encoder to a PC to web NMS Port. Make sure that the computer's IP address is different from the Encoder's IP address otherwise it would cause IP conflict and you will not be able to login.

3.1 login

The default IP address of this device is **192.168.1.137**

Connect the PC (Personal Computer) and the device with included net cable, and use ping command to confirm they are on the same network segment (subnet).

E.G. the PC IP address is 192.168.99.252, we then change the device IP to 192.168.99.xxx (xxx can be 0 to 255 except 252 to avoid IP conflict).

Use any web browser to connect the device with the PC by inputting the Encoder's IP address in the browser's address bar and press Enter. (our units usually work better on Mozilla and IE, not Chrome)

It will display the Login interface as Figure-1. Input the Username and Password (Both the default Username and Password are "admin".) and then click "LOGIN" to start the device setting.

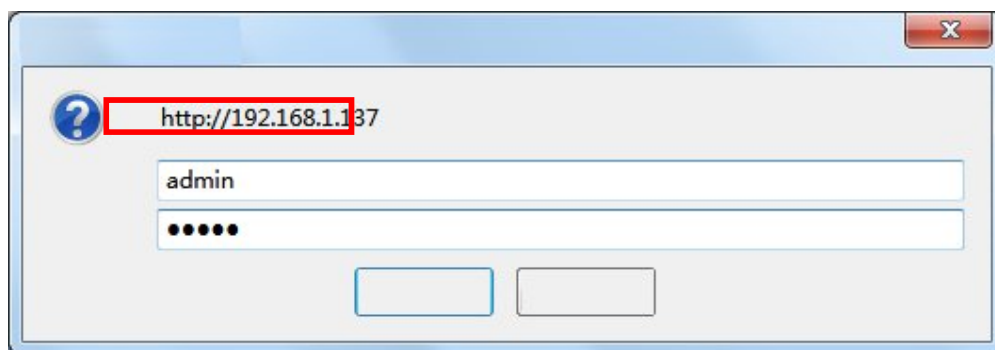


Figure-1

3.2 Operation

When we confirm the login, it displays the WELCOME interface as Figure-2.

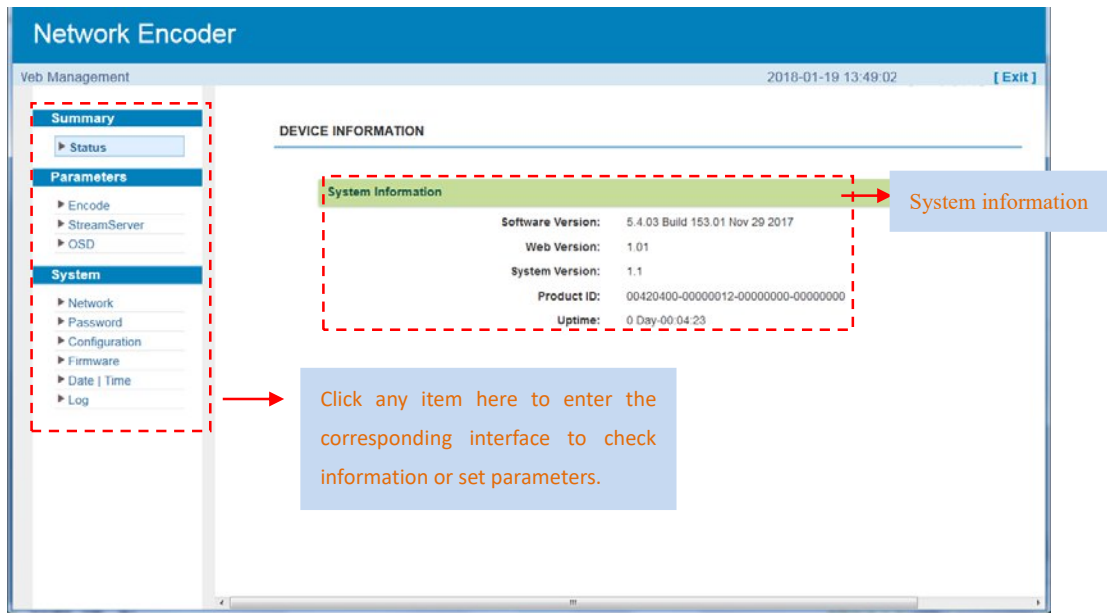


Figure-2

Parameters → Encoder:

From the menu on left side of the webpage, click “Encoder”, it displays the program information of each encoding channel and interface where you can set video and audio parameters as in Figure-3.

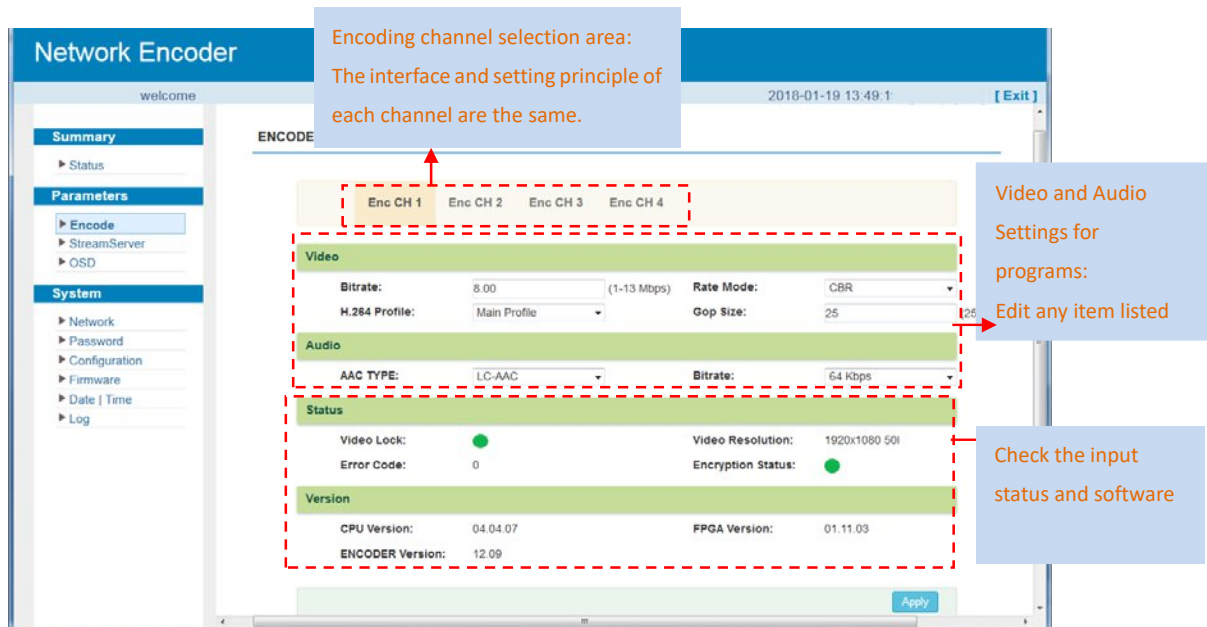


Figure-3

Apply Click this button to apply the modified parameters.

Parameter →Stream Server:

The Thor IPCast supports IP Output over UDP (Unicast/Multicast), RTSP, RTMP, HTTP and HLS. Click “Stream Server”, it will display the interface as shown in Figure-4 where you can set RTSP/HTTP/HLS parameters.

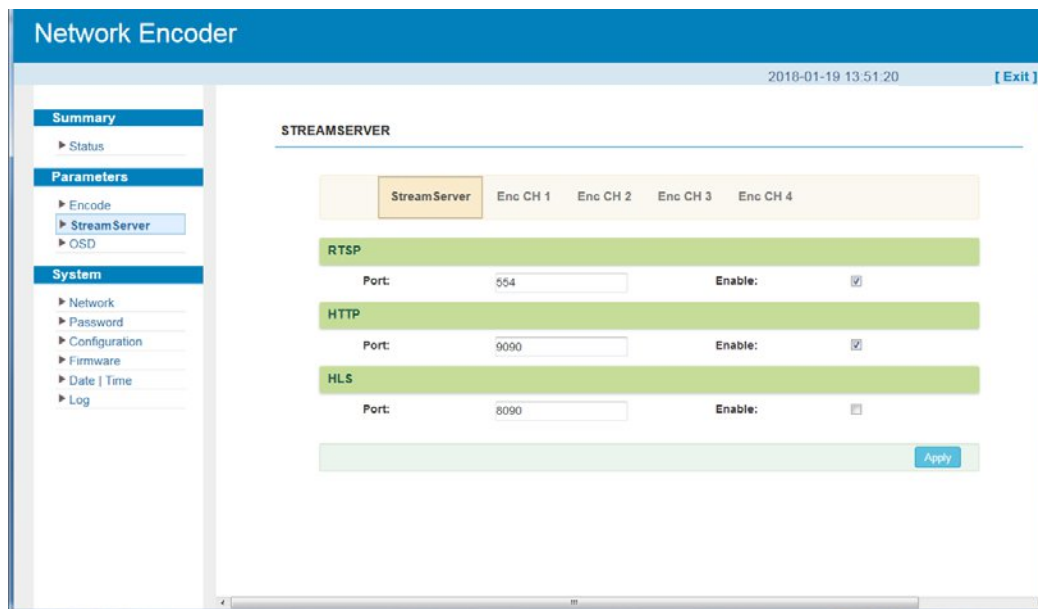


Figure-4

Click “EncCH1-4”, it displays the interface as inFigure-5 where you can set stream names, RTMP and UDP parameters of each encoding channel.

These are the VLC player syntaxes that can be used to test the streams:

```
udp://@224.2.2:2005  
udp://@(multicast IP address):(port number)
```

RTSP, HTTP, and HLS streams are unicasts. The receiving device, such as a PC, needs to be on the same subnet as the NMS IP address (for example, set your receiving stream PC to 192.168.1.100).

RTSP protocol output:
rtsp://192.168.1.137:554/stream1

HTTP protocol output:
http://192.168.1.137:9090/stream1

HLS protocol output:
http://192.168.1.137:9090/stream1.m3u8

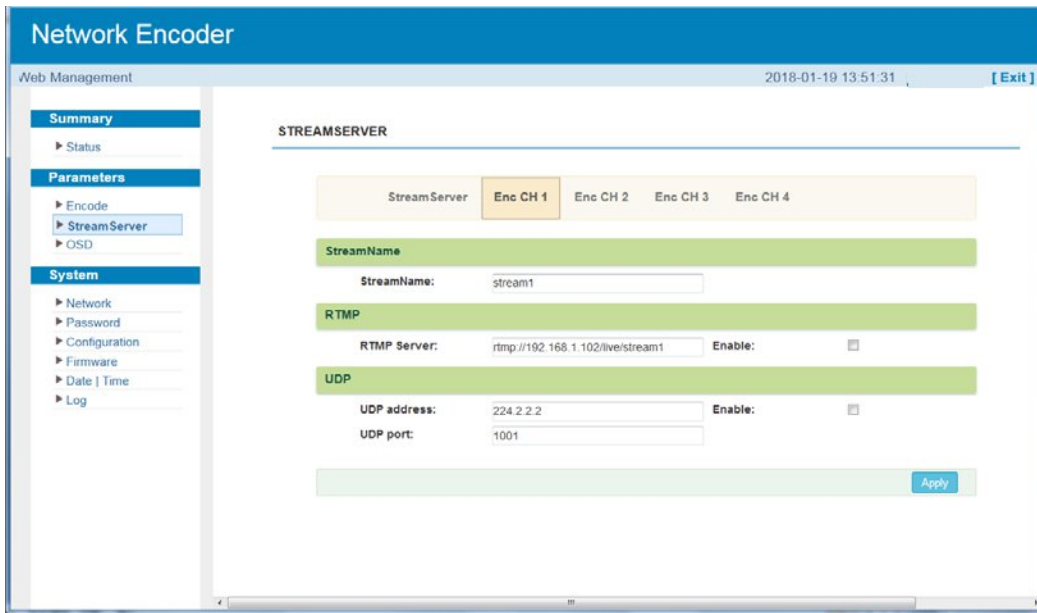


Figure-5

Parameter →OSD:

Clicking “OSD”, it displays the interface as Figure-6/7/8 where to set different Logo/ Caption/ QRCode of each encoding channel or set same Logo/ Caption/ QRCode of all channels.

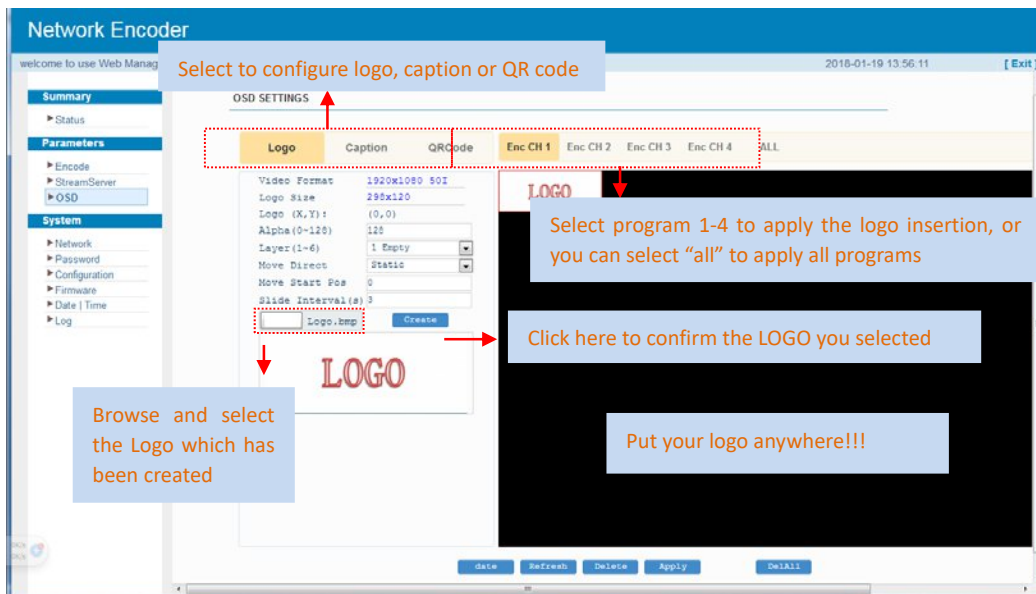


Figure-6

Clicking **date**, will trigger a dialog box where you can set the date to decide when the LOGO, Caption and QR Code appear. Select the week and then click **Add** to set specific time.

Date Table [close]

ON/OFF: OFF

Week: Sun Mon Tues Wed Thurs Fri Sat ALL

Index	On Time	Off Time	Status	Add	Del
1	00:00:00	23:59:59	Sun		

Apply Close

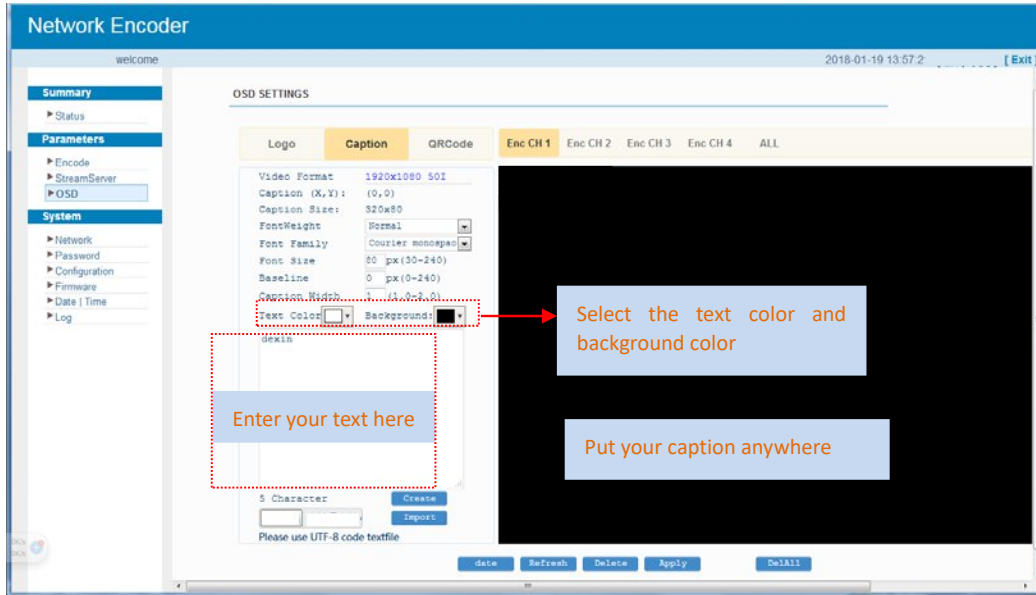


Figure-7



Figure-8

Parameter → Network:

Click “Network”, this displays the interface as shown in Figure-9 where to set NMS parameters.

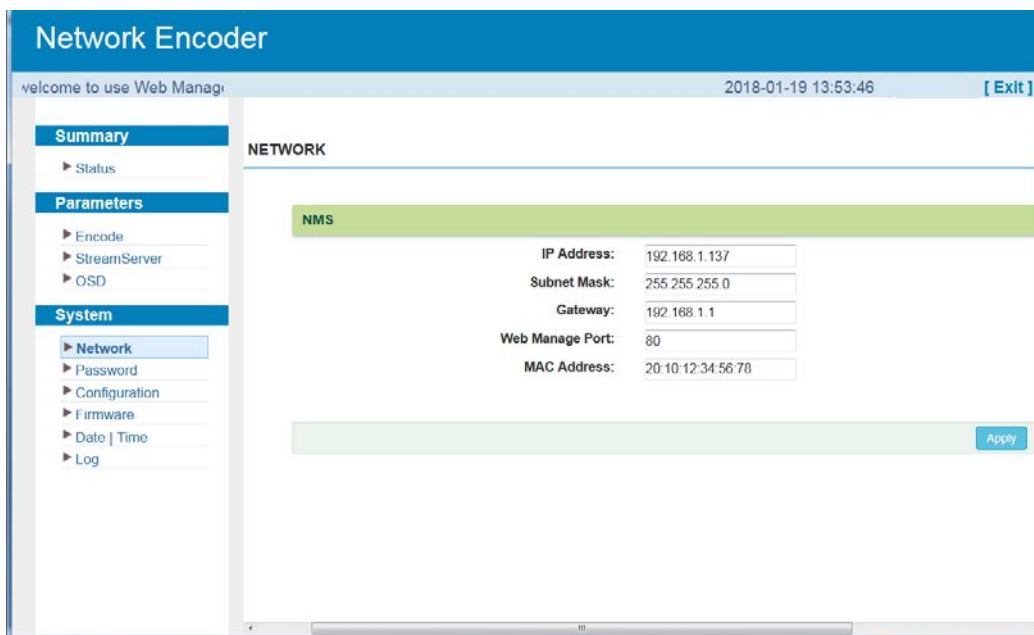


Figure-9

System → Password:

Clicking “Password”, it displays the screen as Figure-10 where to set new login account and password for the web NMS. Both the current username and password are “admin”.

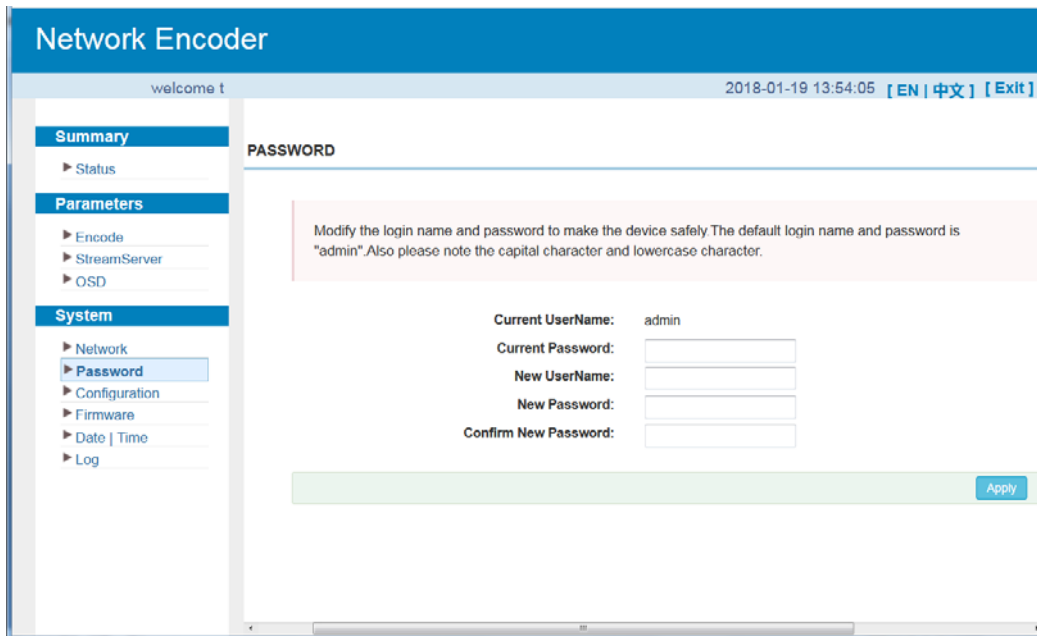


Figure-10

System → Configuration:

Click “Configuration”, it displays the screen as shown in Figure-11 where to set save/ restore/ factory set/ backup/ load configurations.

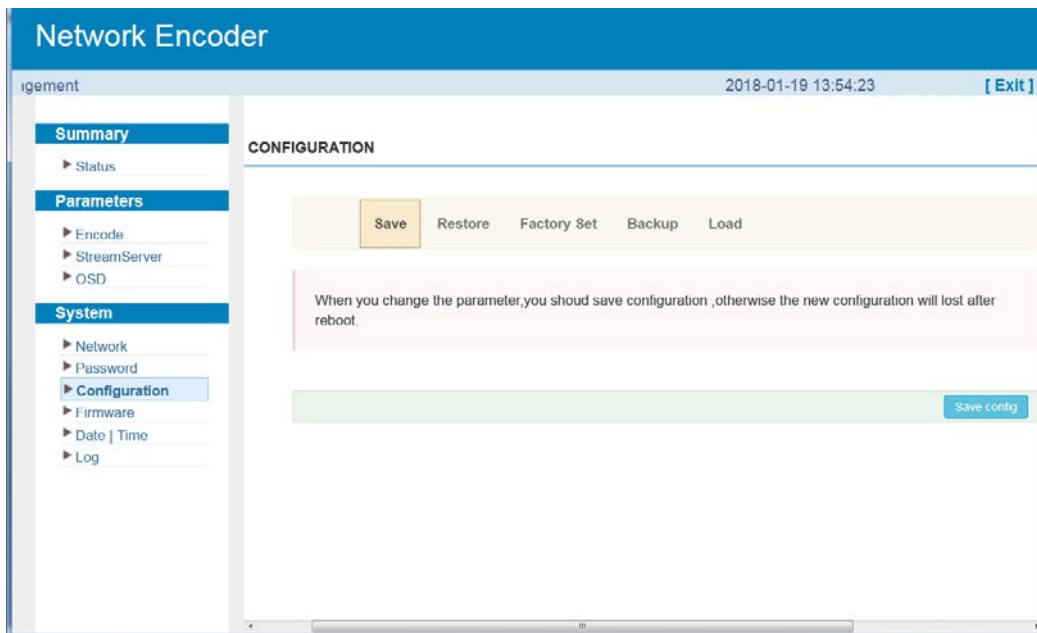


Figure-11

System → Firmware:

Click “Firmware”, it displays the screen as shown in Figure-12 where to upgrade firmware.

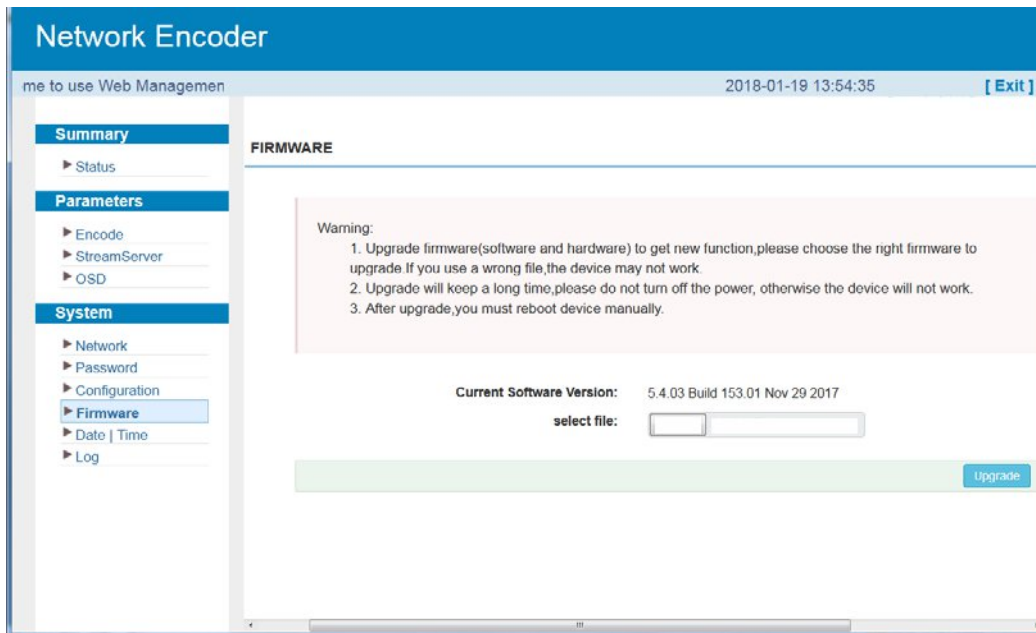


Figure-12

System → Date/Time

Click “Date/Time”, it displays the screen as in Figure-13 where to set date and time for the device.

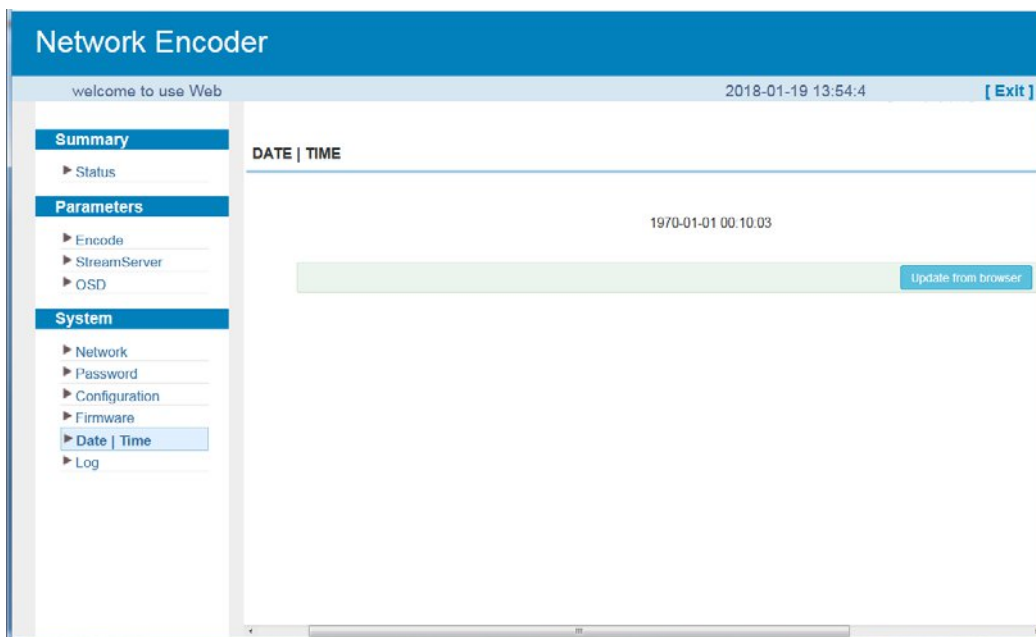


Figure-13

System → Logo:

Clicking “Log”, it displays the log interface as in Figure-14 where to check or export the Kernel/System log.

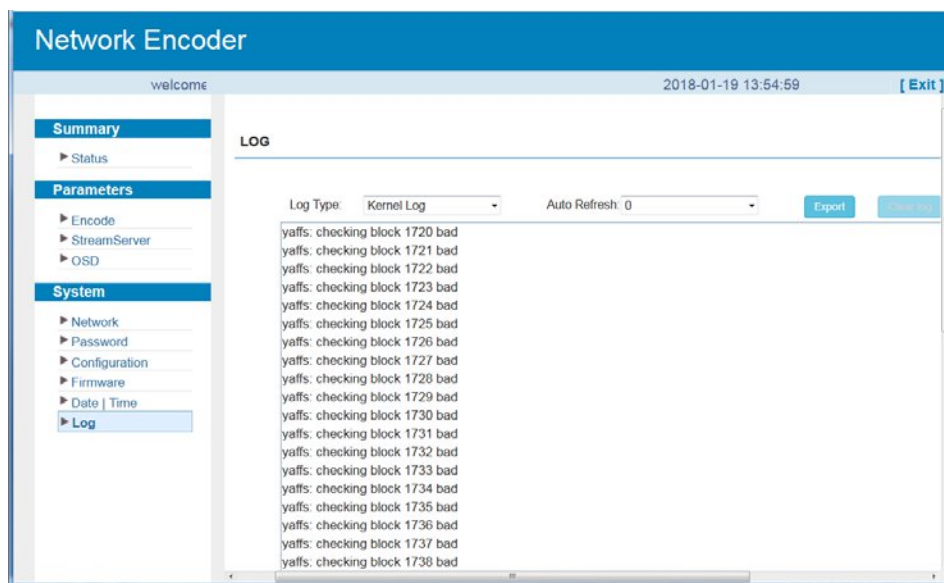


Figure-14

Chapter 4 Troubleshooting

THOR's ISO9001 quality assurance system has been approved by the CQC organization. We guarantee the products' quality, reliability and stability. All THOR products have passed all testing and manual inspections before they are shipped out. The testing and inspection scheme already covers all the Optical, Electronic and Mechanical criteria which have been published by THOR. To prevent a potential hazard, please strictly follow the operation conditions.

Prevention Measures

- Installing the device in a place where the environmental temperature is between 0 to 45 °C
- Making sure the unit has plenty of ventilation for the heat-sink on the rear panel; and other heat-sink bores if necessary
- Checking the AC input within the power supply and ensure it is working, the connection is correctly installed before switching on device
- Checking the RF output levels to stay within a tolerable range, if it is necessary
- Checking all signal cables have been properly connected

IPcast

- Frequently switching on/off device is prohibited; the interval between every switching on/off must be greater than 10 seconds.

Conditions needed to unplug power cord

- Power cord or socket damage.
- Any liquid that got into the device.
- Any stuff that could cause a circuit short
- Device in damp environment
- Device has suffered from physical damage; i.e. it fell off a rack.
- Longtime idle.
- After switching on and restoring to factory setting, device still won't work properly.

Maintenance needed on device

Chapter 5 Packing list

Thor Broadcast IPCast Encoder	1 PC
User's Manual CD	1 PC
HDMI Cables	4 PCS
Power Cord	1 PC

For Further Tech Support

1-800-521-Thor(8467)

support@thorfiber.com