

# THOR

BROADCAST



[24 Analog CVBS Video Audio H.264 SD Encoder  
Streamer & Mux ASI and IPTV output](#)

**H-24AV-IP**

## About This Manual

### Intended Audience

This user manual has been written to help people who have to use, to 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 Introduction

## 1.1 Product Overview

**H-24AV-IP** Multi-Channel Encoder is a professional audio & video encoding and multiplexing device. It supports to convert 8/12/24 CVBS video inputs to MPTS or SPTS IP output. To meet customers' various requirements, it is also equipped with 1 ASI output as copy of MPTS. In conclusion, its high integrated and cost effective design makes the device widely used in varieties of digital distribution systems such as cable TV digital head-end, satellite digital TV broadcasting etc.

## 1.2 Key Features

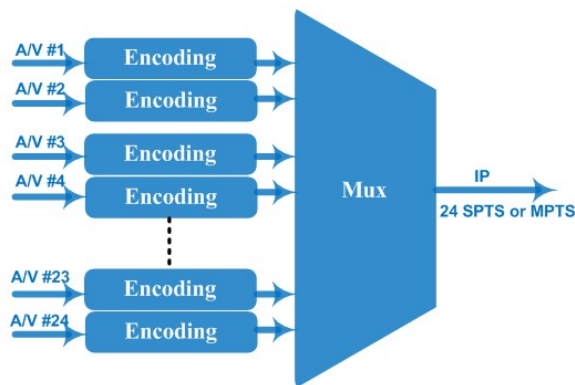
- **8/12 CVBS video inputs with 8/12 SPTS and 1 MPTS output through Data 1 or Data 2**
- **24×CVBS video inputs with 24 SPTS or 1 MPTS output through Data 1 or Data 2**
- **Supports PAL and NTSC SD video formats, MPEG-2 Video encoding**
- **Support MPEG1 Layer II, AC3 (2.0) Audio encoding and support audio gain adjustment**
- **Support 1 ASI output as copy of MPTS**
- **Support CC (closed caption)**
- **Support “Null PKT Filter” function**
- **Support PID Remapping/PCR accurate adjusting/PSI/SI editing and inserting**
- **Real-time effective encoding output bit-rate monitoring**
- **Control via web management, and easy updates via web**

## 1.3 Specifications

<b>Input</b>	8/12/24 CVBS inputs , RCA interface
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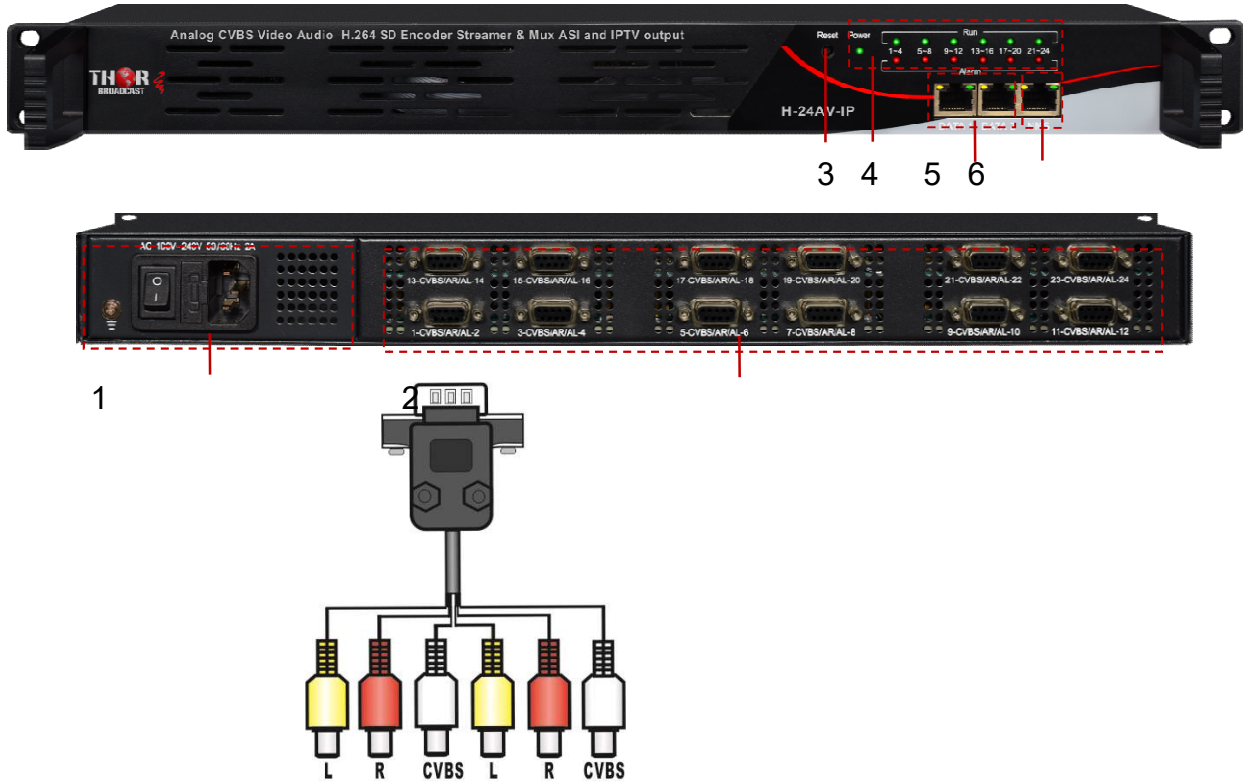
<b>Video</b>	Resolution	720×480_60i, 544×480_60i, 352×480_60i 352×240_60i, 320×240_60i, 176×240_60i, 176×120_60i
		720×576_50i, 704×576_50i, 640×576_50i, 352×288_50i, 320×288_50i, 176×288_50i, 176×144_50i
	Encoding	MPEG-2
	Bit-rate	0.5Mbps~8Mbps each channel
	Rate Control	CBR/VBR
	GOP Structure	GOP_0_B, GOP_1_B, GOP_2_B, GOP_3_B
Advanced Pretreatment	De-interlacing, noise reduction	
<b>Audio</b>	Encoding	MPEG-1 Layer 2, AC3(2.0)
	Sampling rate	48KHz
	Resolution	24-bit
	Bit-rate	64Kbps, 128Kbps, 192kbps, 256kbps, 320kbps, 384kbps each channel
<b>Multiplexing</b>	Function	PID remapping (automatically or manually)
		Accurate PCR adjusting
		Generate PSI/ SI table automatically
<b>Stream output</b>	1 ASI as copy of MPTS IP (MPTS/SPTS) output over UDP/RTP/RTSP 8/12 CVBS inputs with 8/12 SPTS and 1 MPTS output 24×CVBS inputs with 24 SPTS or 1 MPTS output	
<b>System function</b>	Network management(WEB)	
	Chinese and English language	
	Ethernet software upgrade	
<b>Miscellaneous</b>	Dimension(W×L×H)	482mm×410mm×44mm
	Environment	0~45°C(work); -20~80°C (Storage)
	Power requirements	AC 110V± 10%, 50/60Hz, AC 220 ± 10%, 50/60Hz

### 1.4 Principle Chart



## 1.5 Appearance and Description

Front and Rear Panel Illustration



1	Port Power supply and Grounding Pole
2	24 CVBS input
3	Reset Key
4	Indicators
5	DATA Port (IP stream output through DATA 1 or DATA 2)
6	NMS (Web management)

## Chapter 2 Installation Guide

This section is to explain the cautions the users must know in some case that possible injure may bring to users when it’s used or installed. For this reason, please read all details here and make in mind before installing or using the product.

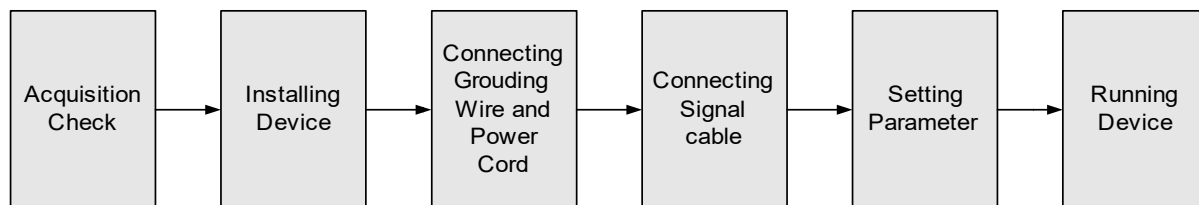
### 2.1 General Precautions

- ✓ Must be operated and maintained free of dust or dirty.
- ✓ The cover should be securely fastened, do not open the cover of the products when the power is on.
- ✓ After use, securely stow away all loose cables, external antenna, and others.

### 2.2 Power precautions

- ✓ When you connect the power source, make sure if it may cause overload.
- ✓ Avoid operating on a wet floor in the open. Make sure the extension cable is in good condition
- ✓ Make sure the power switch is off before you start to install the device

### 2.3 Device’s Installation Flow Chart Illustrated as following



### 2.4 Environment Requirement

Item	Requirement
Machine Hall Space	When user installs machine frame array in one machine hall, 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 Volume resistivity of ground 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 $450 \text{Kg/m}^2$ )
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
Wall	It can be covered with wallpaper, or brightness less paint.
Fire Protection	Fire alarm system and extinguisher
Power	Requiring device power, air-conditioning power and lighting power are independent to each other. Device power requires AC $110\text{V} \pm 10\%$ , 50/60Hz or AC $220\text{V} \pm 10\%$ , 50/60Hz. Please carefully check before running.

## 2.5 Grounding Requirement

- ✓ All function modules' good grounding is the basis of reliability and stability of devices. Also, they are the most important guarantee of lightning arresting and interference rejection. Therefore, the system must follow this rule.
- ✓ Grounding conductor must adopt copper conductor in order to reduce high frequency impedance, and the grounding wire must be as thick and short as possible.
- ✓ Users should make sure the 2 ends of grounding wire well electric conducted and be antirust.
- ✓ It is prohibited to use any other device as part of grounding electric circuit
- ✓ The area of the conduction between grounding wire and device's frame should be no less than  $25 \text{mm}^2$ .



## Chapter 3 WEB NMS Operation

User can control and set the configuration in computer by connecting the device to web NMS Port. User should ensure that the computer's IP address is different from this device's IP address; otherwise, it would cause IP conflict.

### 3.1 Encoder login

The default IP address of this device is **192.168.0.136**.

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

I.G. the PC IP address is 192.168.99.252, we then change the device IP to 192.168.99.xxx (xxx can be 1 to 254 except 252 to avoid IP conflict).

Use web browser to connect the device with PC by inputting the Encoder's IP address in the browser's address bar and press Enter.

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.

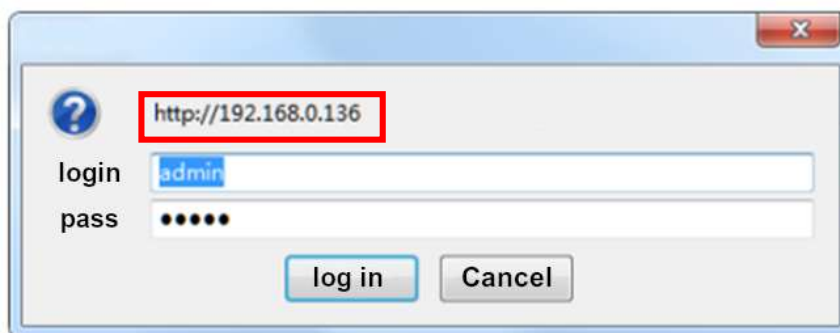
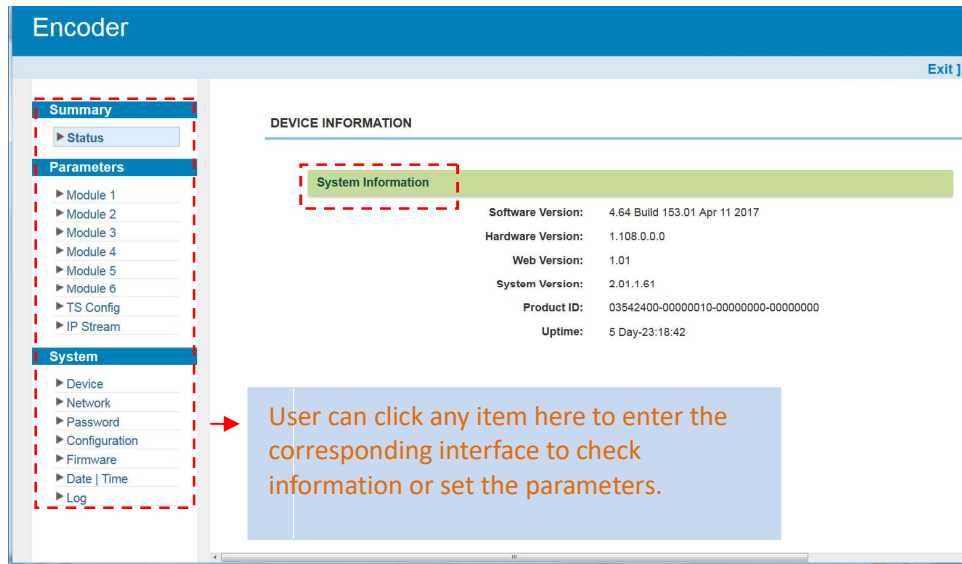


Figure-1

### 3.2 Encoder Operation

#### Status

When we login into encoder module, it will display the status interfaces Figure-2.



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Figure-2

#### Parameters → Module 1-6

H-24AV-IP supports up to 6 modules with 24 CVBS input. From the menu on left side of the webpage, clicking “Module 1-6”, it will display the information of each encoding channel as Figure-3.

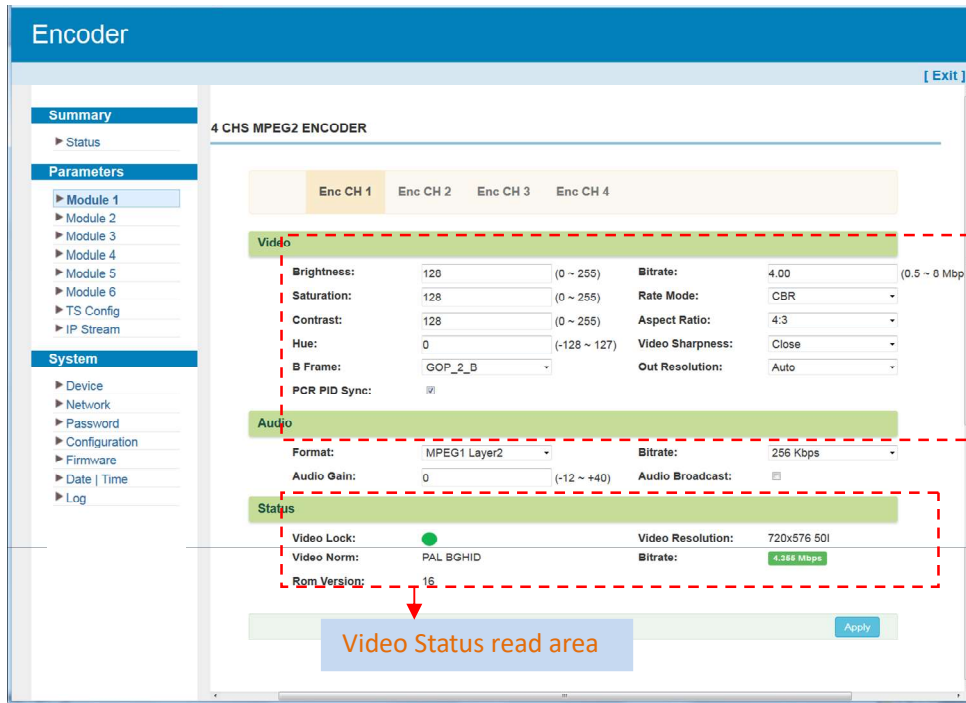


Figure-3

### Parameters → TS Config:

From the menu on left side of the webpage, clicking “TS Config”, it will display the interface where users can configure the TS output parameters.

#### ➤ TS Config → Stream select:

From the menu on top side of the webpage, clicking “Stream select”, it will display the interface where users can select program(s) to multiplex out and modify program info. (Figure-4)

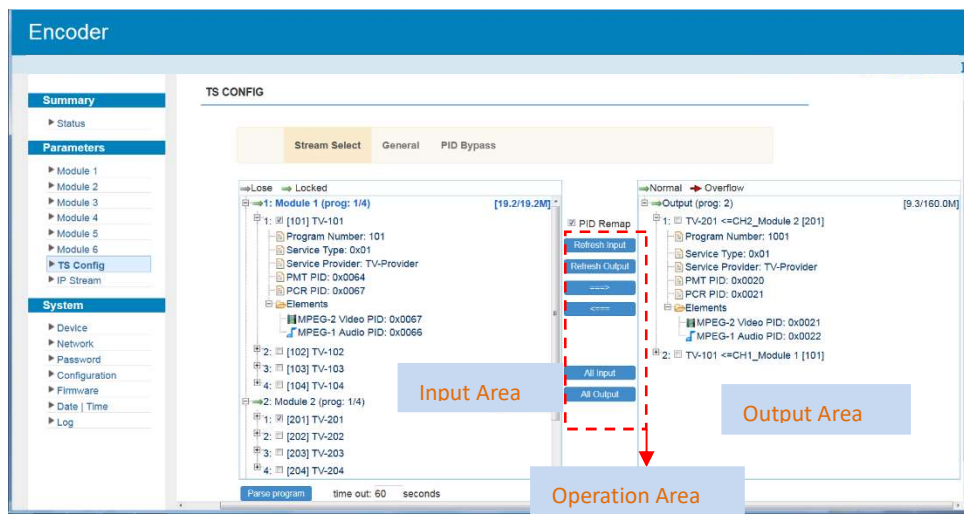


Figure-4

Configure ‘Input Area’ and ‘Output Area’ with buttons in ‘Operation Area’. Instructions are as

below:

→Lose → Locked : To check input IP lock or not, green means current IP locked

→Normal → Overflow : To check current TS overflow or not, red color means current TS overflow, need reduce program

PID Remap : To enable/disable the PID remapping

**Refresh Input** To refresh the input program information

**Refresh Output** To refresh the output program information

**====>** Select one input program first and click this button to transfer the selected program to the right box to output.

**<===** Similarly, user can cancel the multiplexed programs from the right box.

**All Input** To select all the input programs

**All Output** To select all the output programs

**Parse program** To parse programs seconds time limitation of parsing input programs

### ➤ Program Modification:

The multiplexed program information can be modified by clicking the program in the ‘output’ area. For example, when clicking <sup>1</sup>:  TV-201 <=CH2\_Module 2 [201] , it triggers a dialog box (Figure 5) where users can input new information.

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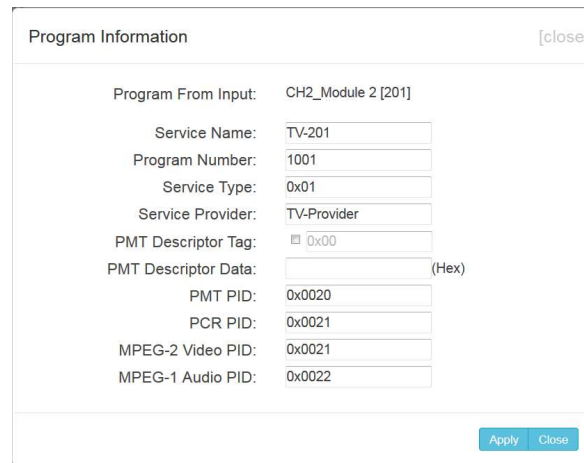


Figure-5

### ➤ TS Config→General:

From the TS Config menu on up side of the webpage, clicking “General”, it will display the interface where users can check and set parameters. (Figure-6)

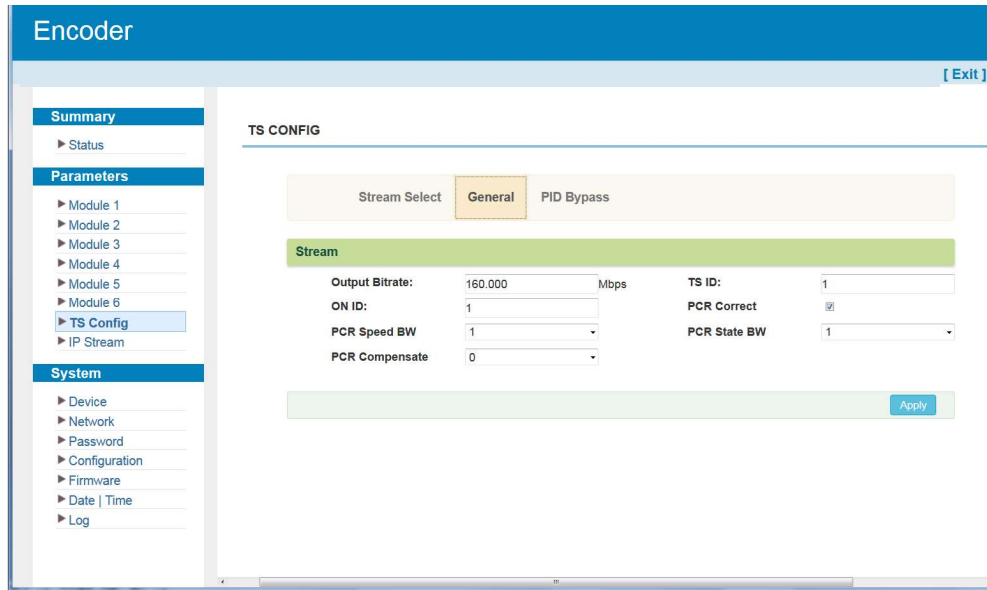


Figure-6

➤ **TS Config→PID Bypass:**

From the TS Config menu on up side of the webpage, clicking “PID Bypass”, it will display the interface as Figure-7 where user can add PIDs to be passed, click the “+” symbol, input current IP channel number, then input current IP source Pid and output Pid which is customer needed , then click “set”

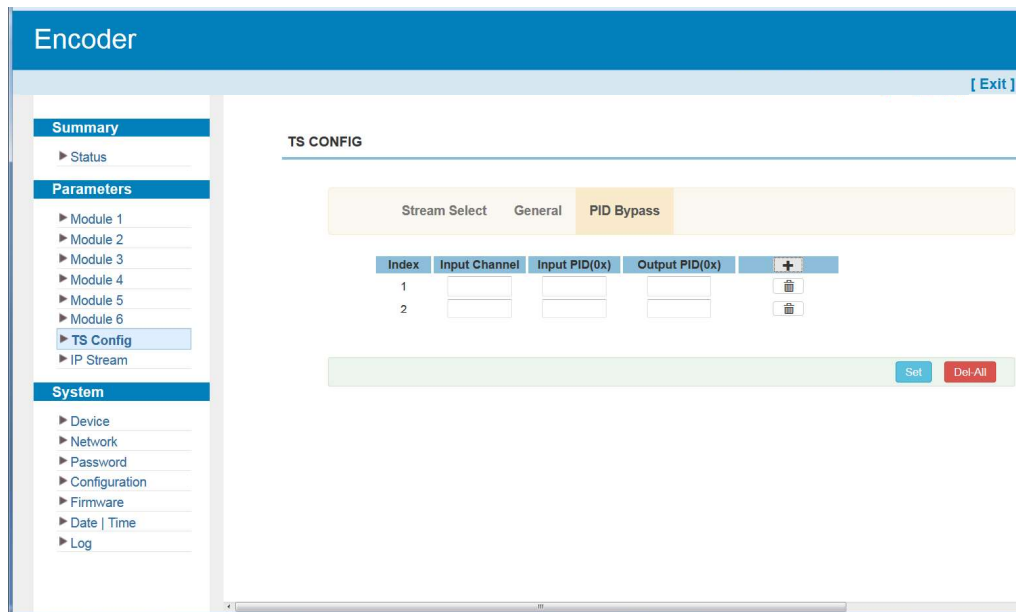


Figure-7

**Parameters → IP Stream:**

H-24AV-IP supports TS to output in IP (24\*SPTS or 1\*MPTS) format through the DATA1 or DATA 2 port.

Click 'IP Stream', it will display the interface where to set IP out parameters(Figure-8).

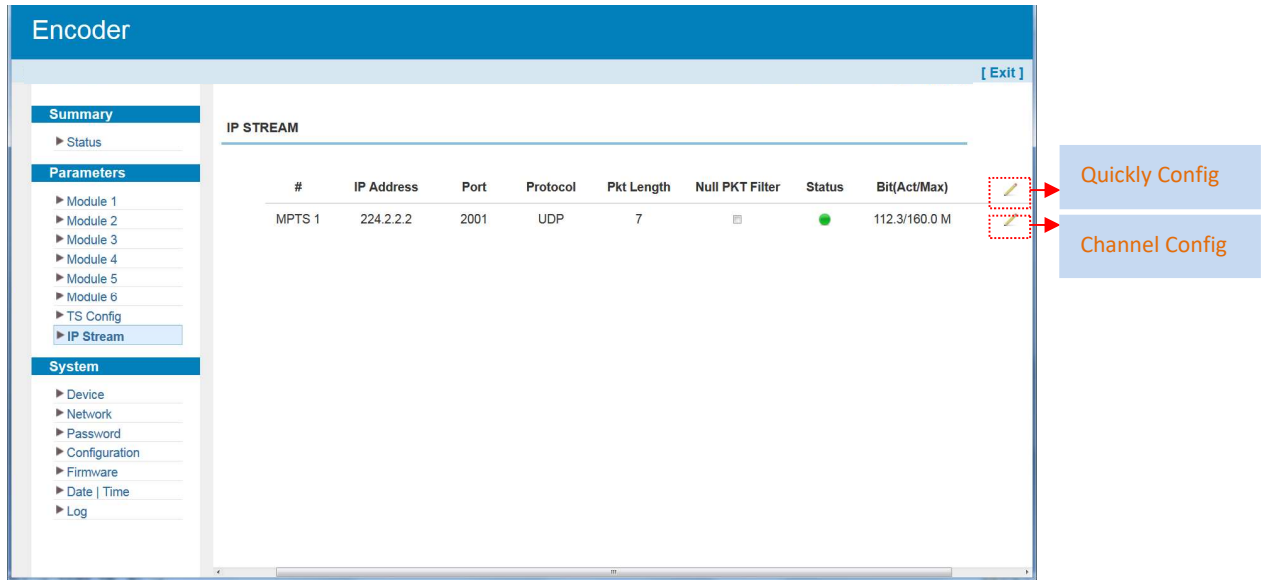


Figure-8

### System→Device:

Click “Device”, it will display the interface where to select IP outmode (Figure-9). Users can select one of IP mode (SPTS or MPTS), and new mode will work after reboot the device.

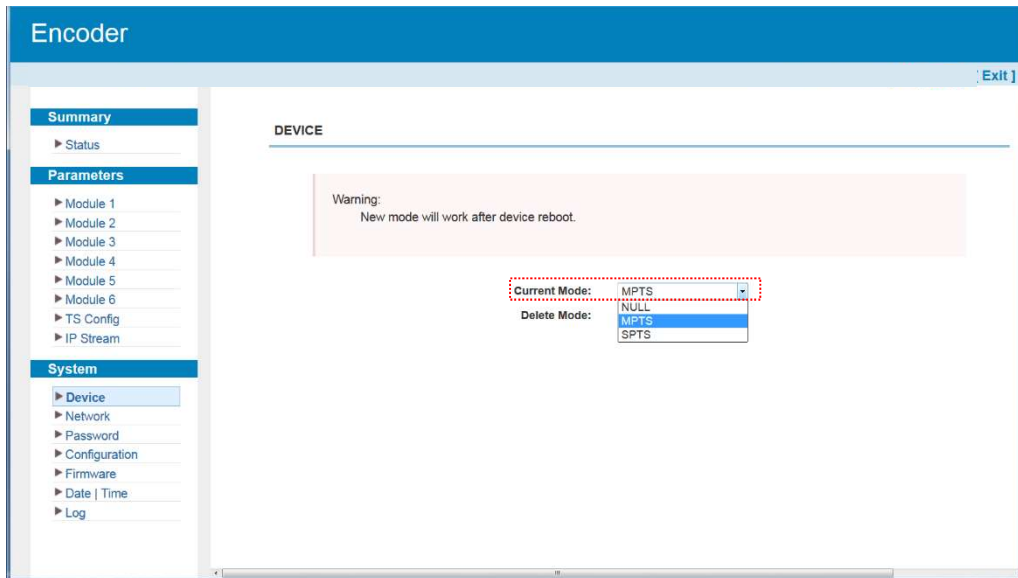


Figure-9

### System→Network:

Click “Network”, it will display the interfaces Figure-10 where to set network parameters.

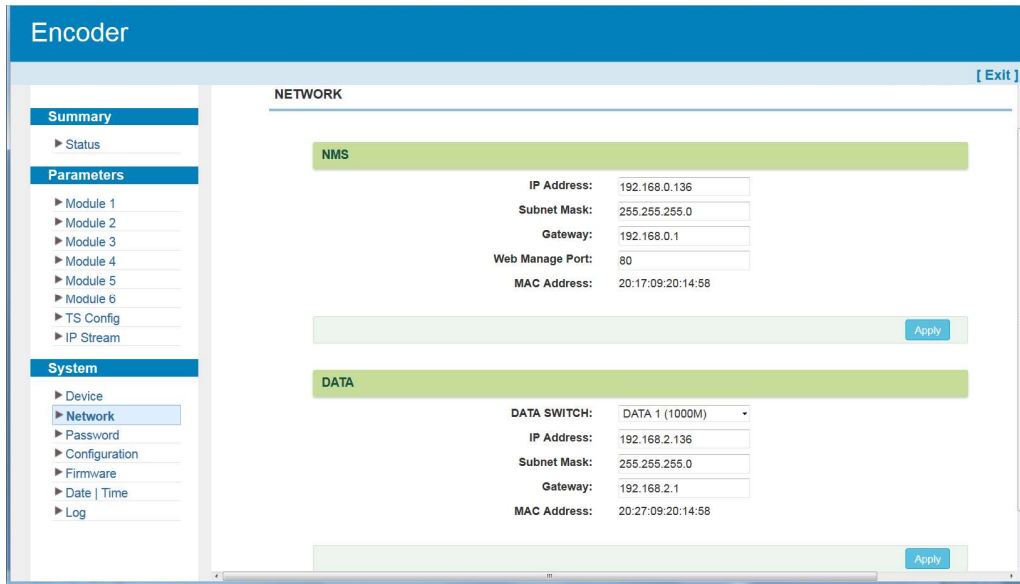


Figure-10

**System→password**

From the menu on left side of the webpage, clicking “Password”, it will display the screen as Figure-11 where to set the login account and password for the web NMS.

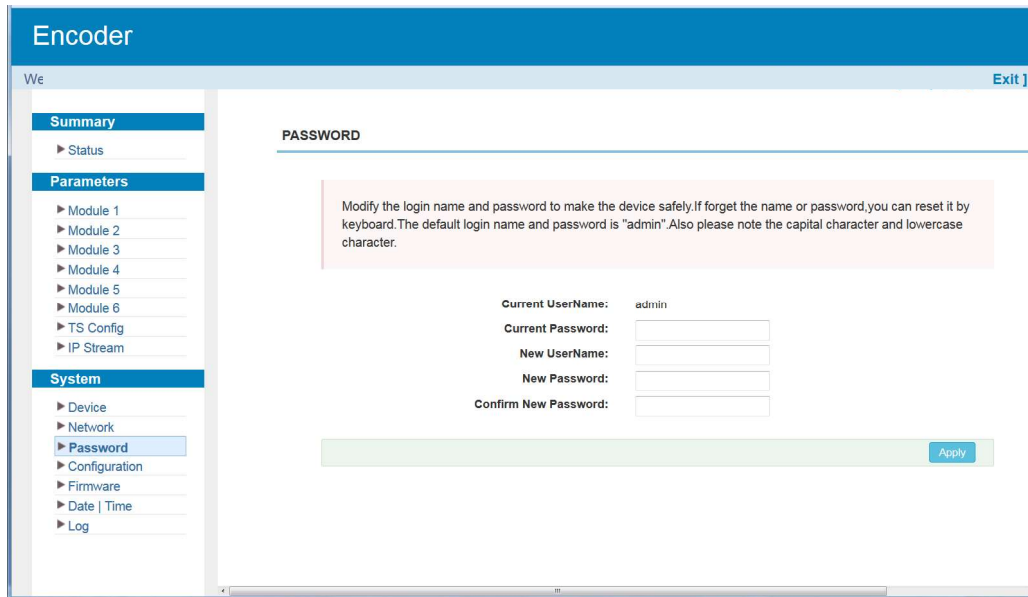


Figure-11

**System→Configuration:**

From the menu on left side of the webpage, clicking “Configuration”, it will display the screen as Figure-12 where to save/ restore/factory setting/ backup/ load your configurations.

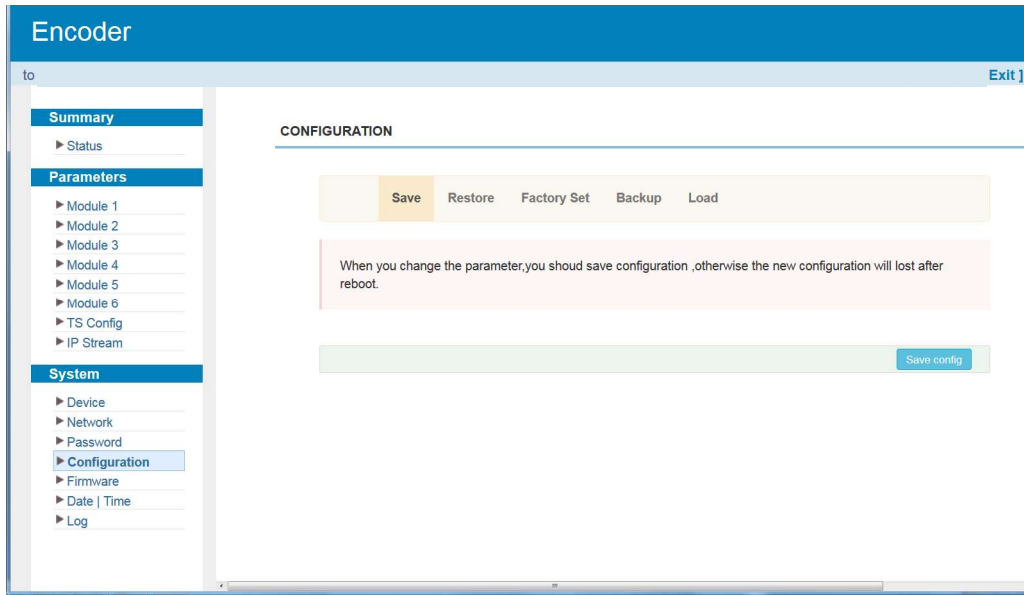


Figure-12

**System → Firmware:**

From the menu on left side of the webpage, clicking “Firmware”, it will display the screen as Figure-13 where to update firmware for the encoder.

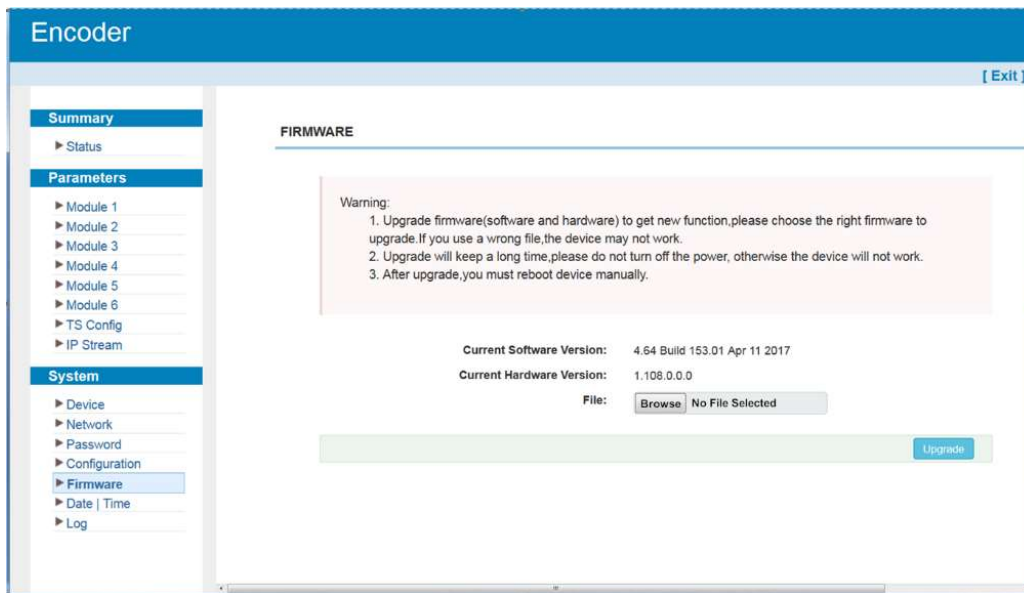


Figure-13

**System → Date/Time:**

From the menu on left side of the webpage, clicking “Date/Time”, it will display the screen as Figure-14 where to set date and time for the device.



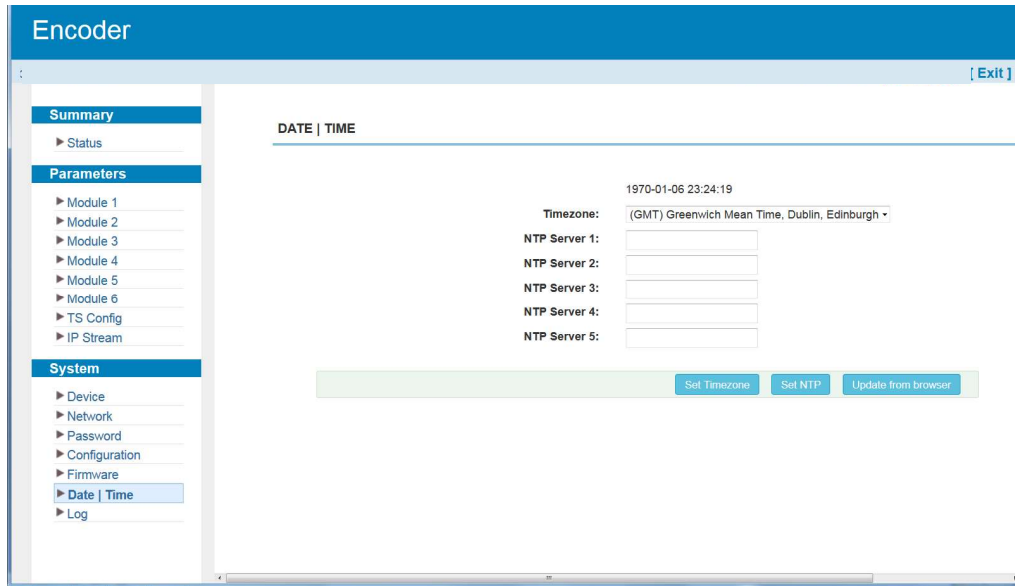


Figure-14

**System → Log:**

From the menu on left side of the webpage, clicking “Log”, it will display the log interface as Figure-15 where to check or export the Kernel/System log.

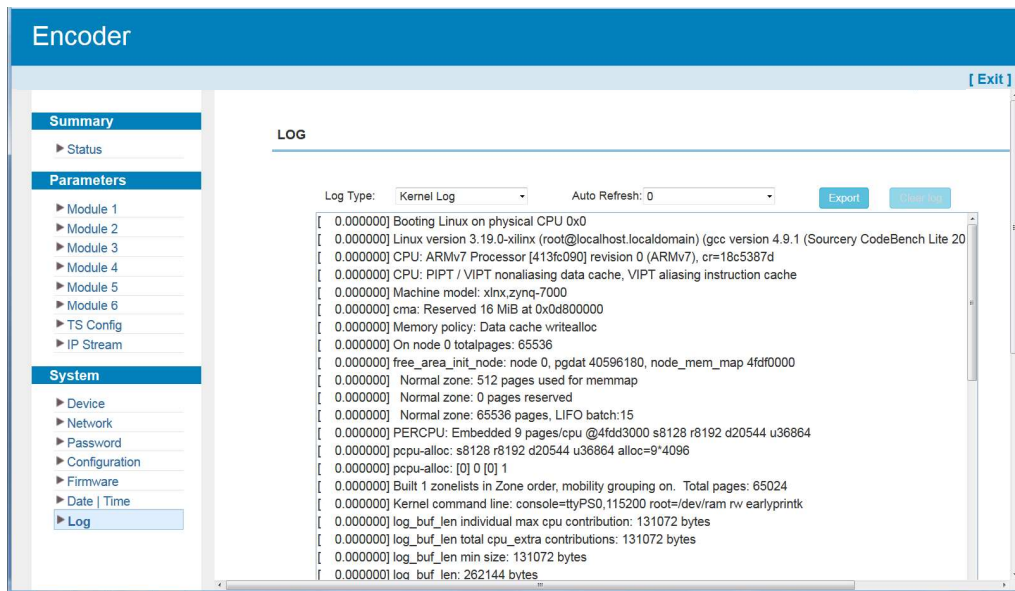


Figure-15

## Chapter 4 Troubleshooting

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

### Prevention Measure

- Installing the device at the place in which environment temperature between 0 to 45 °C
- Making sure good ventilation for the heat-sink on the rear panel and other heat-sink bores if necessary
- Checking the input AC within the power supply working range and the connection is correct before switching on device
- Checking the RF output level varies within tolerant range if it is necessary
- Checking all signal cables have been properly connected
- Frequently switching on/off device is prohibited; the interval between every switching on/off must greater than 10 seconds.

### Conditions need to unplug power cord

- Power cord or socket damaged.
- Any liquid flowed into device.
- Any stuff causes circuit short
- Device in damp environment
- Device was suffered from physical damage
- Longtime idle.
- After switching on and restoring to factory setting, device still cannot work properly.
- Maintenance needed

## Chapter 5 Packing List

H-24AV-IP Multi-Channel Encoder 1 pc

User Manual 1 pc

Power Cord 1 pc