

# UHD/4K HEVC ENCODER

## LAVISION-8811UE

### User Manual



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## **Preface**

Thank you for purchasing TELELYNX INC products!

We fully own the intelligent property rights of this product. Our company reserves the rights to pursue legal actions against unauthorized duplication and usage of the product and its software by any organizations or individuals.

For ensuring long-term stability of product operation, please strictly follow the methods, procedures and constraints introduced by this manual while operating the device, while the manual is for reference only, the functionality and UI shall be subject to the real products.

After purchasing of our devices, please leave your contact details to our customer service staff. We will track the usage of the device randomly, and inform you while there is a new version of software available for your device upgrading.

When encountering malfunction of the device, please contact our customer service staff in time for maintenance and repairing.

## Safety Instructions

- Read this manual carefully before start operating the device.
- Removal of device cover without permission may cause harm to human body and the maintenance bond to be invalidated.
- Handle the device with care to avoid crashing and falling, or otherwise it may cause hazards to the internal hardware parts.
- Keep all inflammable, metal and liquid materials from dropping into the device casing, or otherwise it may cause damages to the device.
- Avoid dusty places and places with heating resources nearby, direct projection of sunlight or instant mechanical vibrations for installation of the device.
- Connect the grounding connector on the rear panel to protective earth contact properly while in operation.
- Choose proper type of cable connectors for connecting network interfaces of the device.
- Avoid rapid and frequent power on/off, or it may cause damages to the semiconductor chipsets.
- Keep proper direction of the power cord when plug into or out from a power socket.
- Connect the grounding pole and signal cable before connecting the power cord.
- Do not touch the power socket with wet hands to avoid electric shocks.
- Take off all jewelry or ornaments, such as ring, necklaces, watches, bracelets, etc., before operating the device, or otherwise the metal contact may possibly cause short circuit and result in components damage.
- Make sure the AC power is unplugged in case of operator services within the device casing or close to power supply are needed.
- Only we trained and approved staff is permitted to perform live line operation and maintenance within the device casing.
- Ensure good ventilation when the device is in operation, or otherwise it may cause damages to the device due to overheating.
- It is recommended to unplug the power cord from the socket if the device will not be used for a long period of time.



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# Chapter 1 Introduction

## 1.1 Product Overview

With the significant increase in UHD TV hitting the market, we now is releasing a new professional UHD/4K video encoder for a solution to address the needs of early adopters of the premium TV standard. LAVISION-8811UE delivers UHD/4K for an immersive experience with high-resolution and high-framerate.

The encoder supports 4:2:2 and low-latency encoding; combined with its significant HEVC bitrate savings, content in real-time via HEVC (H.265), today' s most advanced compression standard. It is equipped with a 2 channels HDMI interface (1 channel input with 1 port for backup), which can encode 1 channel UHD/4K video signal.

The device supports ASI, Gigabit IP input and output, With its wide range of encoding tools, and excellent video quality, HEVC offers incredible compression efficiency, making live UHD/4K delivery available for satellite, cable, terrestrial, fiber networks and digital television broadcasting systems.

## 1.2 Key Features

- 2 channels HDMI 2.0 interface (for 1 channel input with 1 port for backup)
- Embedded hardware coding
- H.265 / HEVC and H.264 / MPEG-4 AVC Video encoding
- 2\*ASI&128\*IP input over UDP / RTP protocol
- 4\*MPTS (UDP / RTP protocol) output
- Superior real-time HEVC compression, with ultra high video compression ratio
- MPEG-1 Layer2, LC-AAC, AC3 passthrough Audio encoding
- HDCP2.2, HDCP 1.4 supported
- 1 channel HDMI video loop out
- maximum 3840X2160@60P video coding
- VBR / CBR supported
- RGB / YCbCr 4:4:4 input
- Low latency Mode
- PSI/SI editing/insert supported
- PID remapping
- Accurate PCR adjusting

- IP null packet filtering
- Real time output bitrate monitoring
- Management via External SNMP and WEB
- Easy-to-Use System Management
- Reliable: Hardware based for 24/7 operation

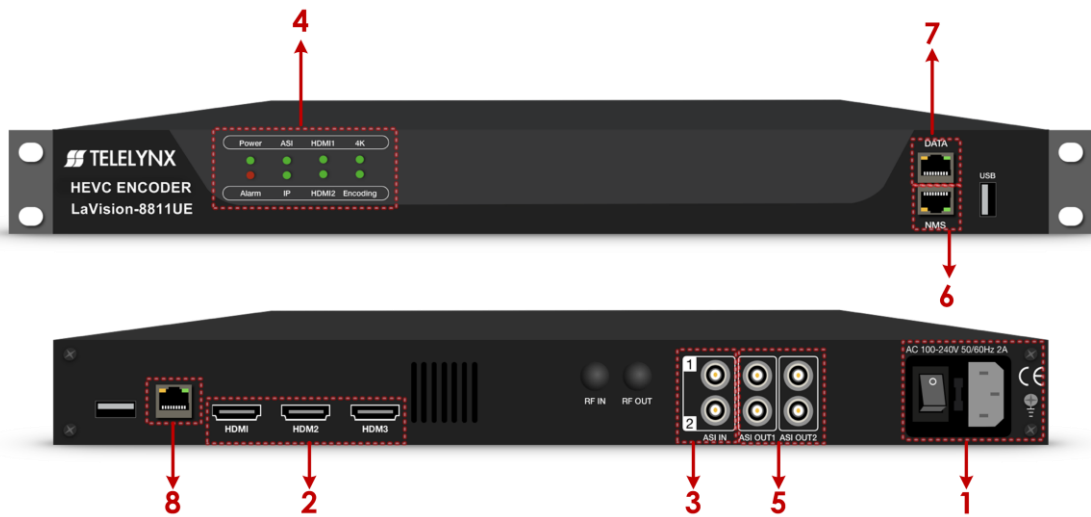
### 1.3 Specifications

<b>Input</b>	1×HDMI input (2.0) with 2 HDMI port, HDCP 2.2/1.4	
	2 ASI input, BNC interface	
	32 IP input over UDP and RTP protocol	
<b>Video Input</b>	Resolution	Chroma
	3840×2160_60P,3840×2160_59.94P, 3840×2160_50P,3840×2160_30P, 3840×2160_29.96P,3840×2160_25P, 3840×2160_24P,1920×1080_60P, 1920×1080_59.94P,1920×1080_50P, 1920×1080_30P ,1920×1080_25P 1920×1080_24P,	RGB, YCbCr 4:4:4, YCbCr 4:2:2, YCbCr 4:2:0 (2160P_50/60Hz only)
<b>Video Encoding</b>	Encoding	H.265/HEVC, H.264/AVC
	Chroma	4:2:2, 4:2:0
	Bit-rate	1Mbps~23Mbps
	Rate Control	CBR
<b>Audio Encoding</b>	Encoding	MPEG-1 Layer 2, LC-AAC
	Sampling rate	48KHz
	Bit-rate	64Kbps~256Kbps each channel
<b>Multiplexing</b>	2 ASI input multiplexed with local 1 channel of TS	
	PID remapping (automatically or manually)	
	Accurate PCR adjusting	
	Generate PSI/SI table automatically	
<b>Stream output</b>	1*ASI output through 4 BNC interfaces	
	1 MPTS over UDP/RTP, 1000M/100M Base-T Ethernet interface (unicast/multicast)	
<b>System function</b>	LCD/keyboard operating, web NMS supporting	
	Ethernet software & hardware upgrade	
<b>Miscellaneous</b>	Dimension (W× L× H)	482mm×455mm×44mm

	Approx weight	4kg
	Temperature	0~45℃(work), -20~80℃ (Storage)
	Power	AC 100V-220V±10%, 50/60Hz
	Consumption	25W

## 1.4 Appearance and Description

### Front and Rear Panel Illustration



1	Port Power supply and Grounding Pole
2	HDMI input
3	ASI input
4	Data Port Indicator
5	ASI output port
6	DATA Port
7	NMS/CAS
8	Second DATA Port, for OSD interface

## 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.

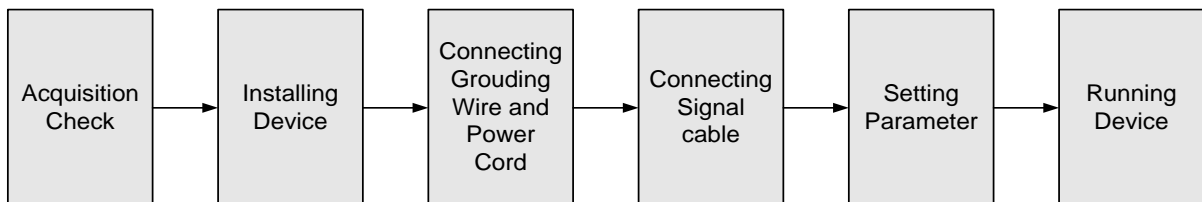
### 2.1 General Precautions

- ✓ 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 $450 Kg/m^2$ )
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 $110V \pm 10\%$ , 50/60Hz or AC $220V \pm 10\%$ , 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 not only can use front buttons to set configuration, but also 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 the LAVISION-8811UE's IP address; otherwise, it would cause IP conflict.

### 4.1 Encoder login

The default IP address of this device is 192.168.0.136. (We can modify the IP through the front panel.)

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). Second DATA Port, for OSD interface IP address is 192.168.0.137.

II. Use web browser to connect the device with PC by inputting the Encoder 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.

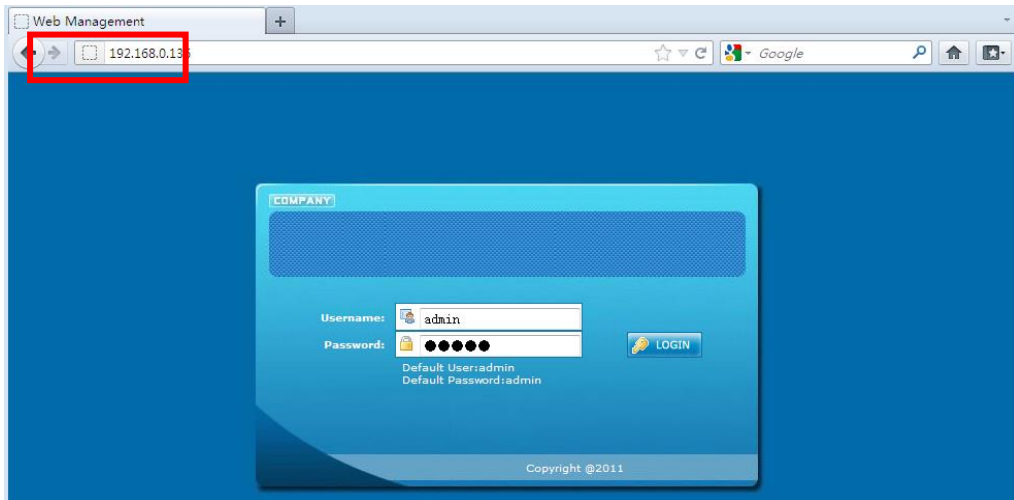
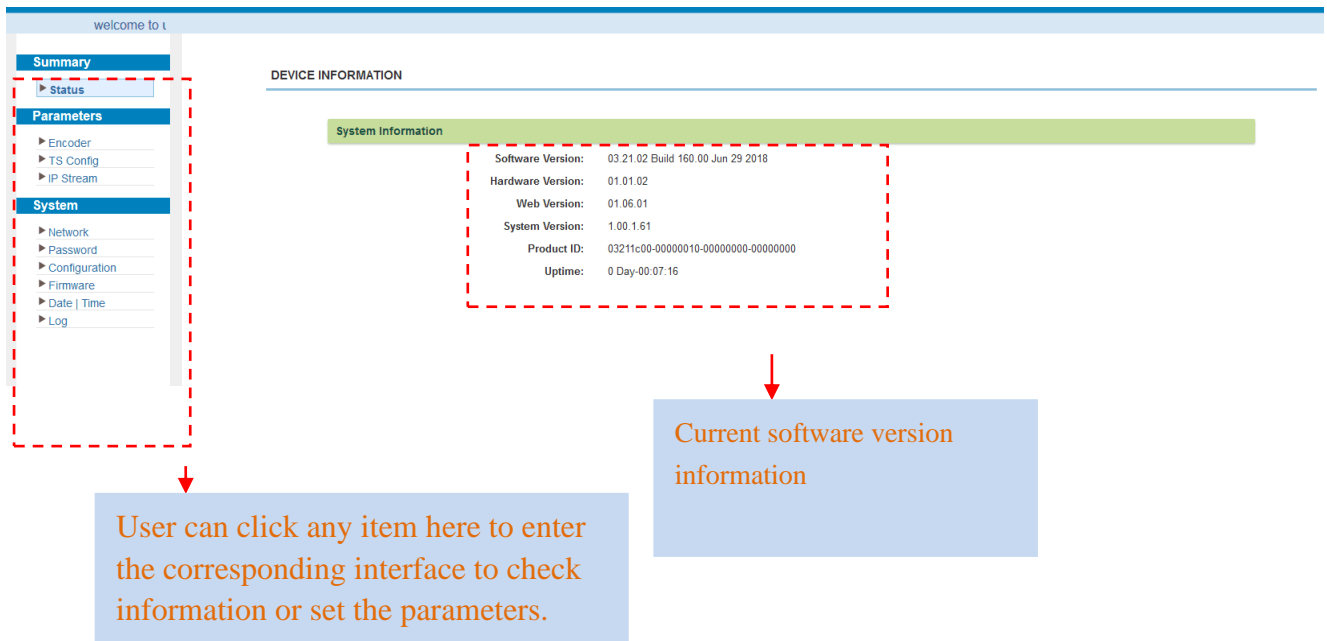


Figure-1

## 4.2 Encoder Operation

### Status

When we login into encoder module, it displays the status interface as Figure-2.



### Parameters → ENCODER

LAVISION-8811UE support 1 channel HDMI input, 1 for backup. From the menu on left side of the webpage, clicking “encoder”, it displays the information of each encoding channel as Figure-3.

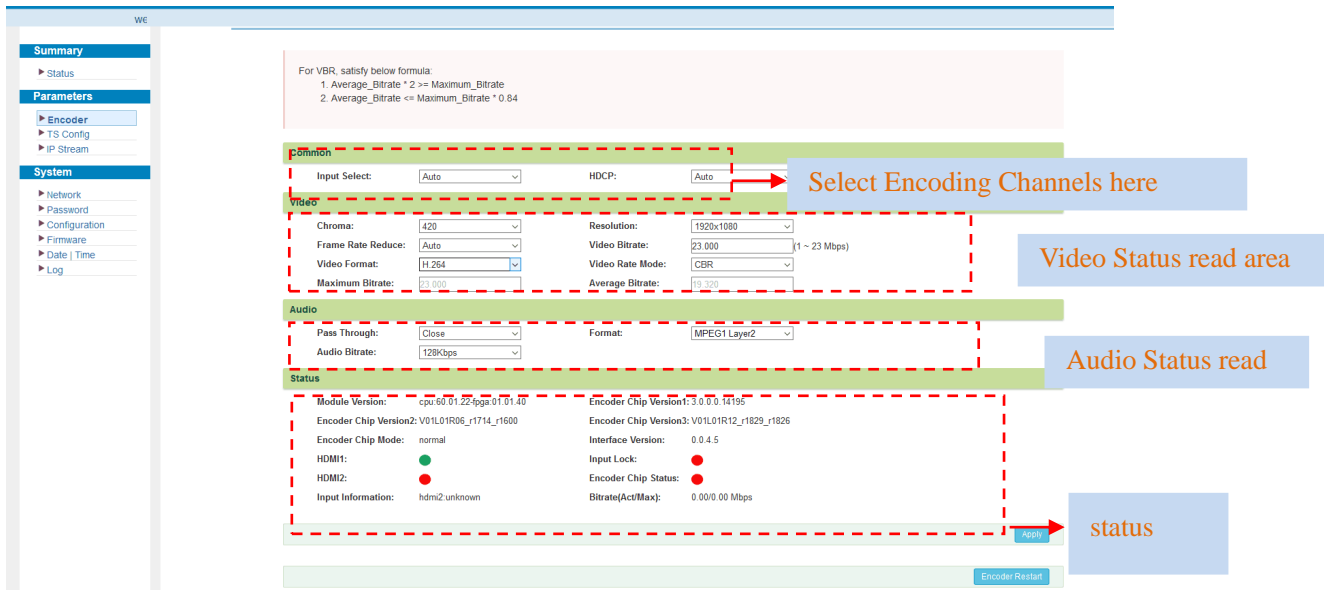


Figure-3

**Parameters → TS Config:**

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

➤ **TS Config→Stream select:**

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

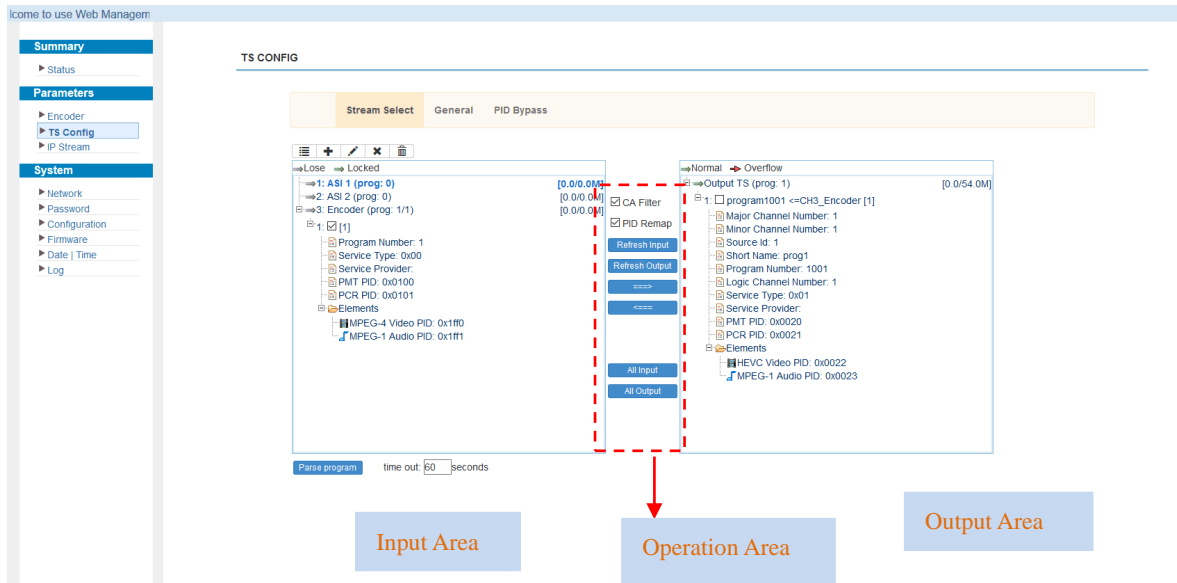











Figure-4

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

-  : To add input channel which can from 3 modules
-  : To edit the input channel
-  : To delete the input channel
-  : To delete all inputs channel
-   **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
- CA Filter** : To filter/not filter the source CA information
- PidRemap** : To enable/disable the PID remapping
- To refresh the input program information
- 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.
- To select all the input programs
- To select all the output programs
- 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 **1: CCTV-101=>239.93.0.1:5101** , it triggers a dialog box (Figure 5) where users can input new information.

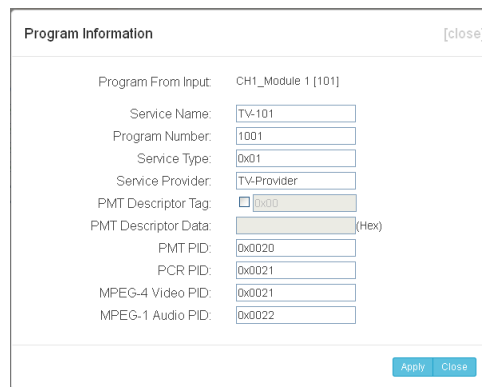


Figure-5

## Parameters → OSD:

Click 'OSD', it will display the interface where to configuration the OSD parameters



2018-07-04 16:00:04 [Exit]

Summary  
▶ Status

Parameters  
▶ Encoder  
▶ **OSD**

System  
▶ Network  
▶ Password  
▶ Configuration  
▶ Firmware  
▶ Log

Click here to confirm the LOGO you selected

Logo: ● QRCode: ●

Video Resolution:1920x1080 50F

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Browse and select the Logo which has been created

to add the image to the right side of the simulation window, right click on the corresponding thumbnail to set more parameters.  
\* Support png,bmp,gif,jpg,jpeg.

Put your logo everywhere



2018-07-04 16:00:15 [Exit]

Summary  
▶ Status

Parameters  
▶ Encoder  
▶ **OSD**

System  
▶ Network  
▶ Password  
▶ Configuration  
▶ Firmware  
▶ Log

QRCode Size 400 x 400  
(40x40 ~ 400x400)

QRCode URL:  
http://www.dibsys.cn

Text Location Top

Text dibsys

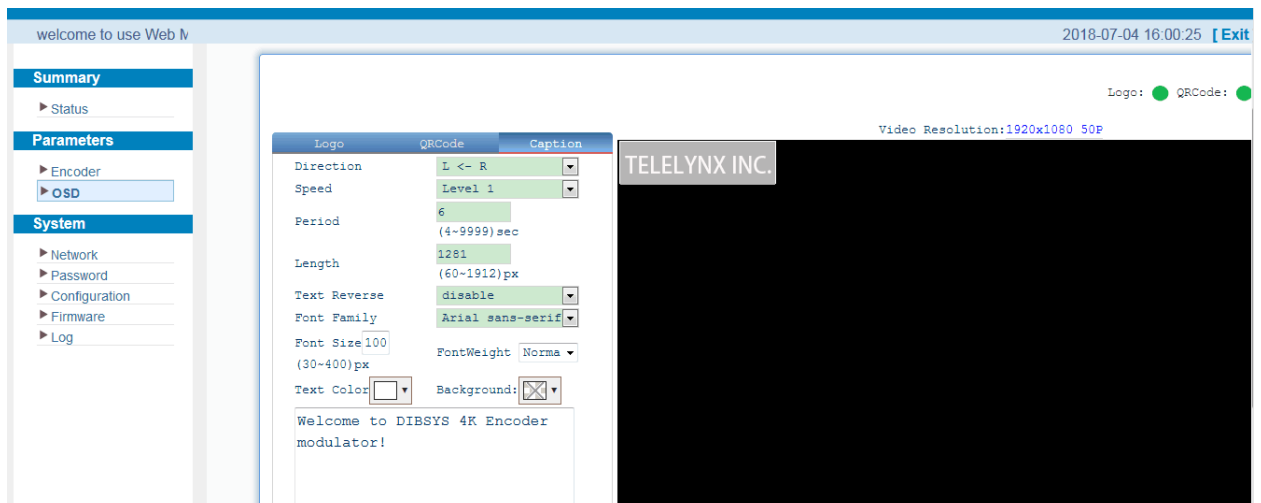
QRCode Logo 浏览... 未选择文件。

Upload Add>>

Logo: ● QRCode: ●

Video Resolution:1920x1080 50F

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welcome to use Web v 2018-07-04 16:00:25 [Exit]

Summary  
▶ Status

Parameters  
▶ Encoder  
▶ **OSD**

System  
▶ Network  
▶ Password  
▶ Configuration  
▶ Firmware  
▶ Log

Direction L <- R

Speed Level 1

Period 6  
(4-9999)sec

Length 1281  
(60-1912)px

Text Reverse disable

Font Family Arial sans-serif

Font Size 100  
(30-400)px

FontWeight Norma

Text Color Background: X

Welcome to DIBSYS 4K Encoder modulator!

Logo: ● QRCode: ●

Video Resolution:1920x1080 50F

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➤ **TS Config→General:**

From the TS Config menu on up side of the webpage, clicking “General”, it displays the interface where users can set output mode, enable PSI/SI table out, NIT insert/VCT insert, PCR correction. (Figure-6)

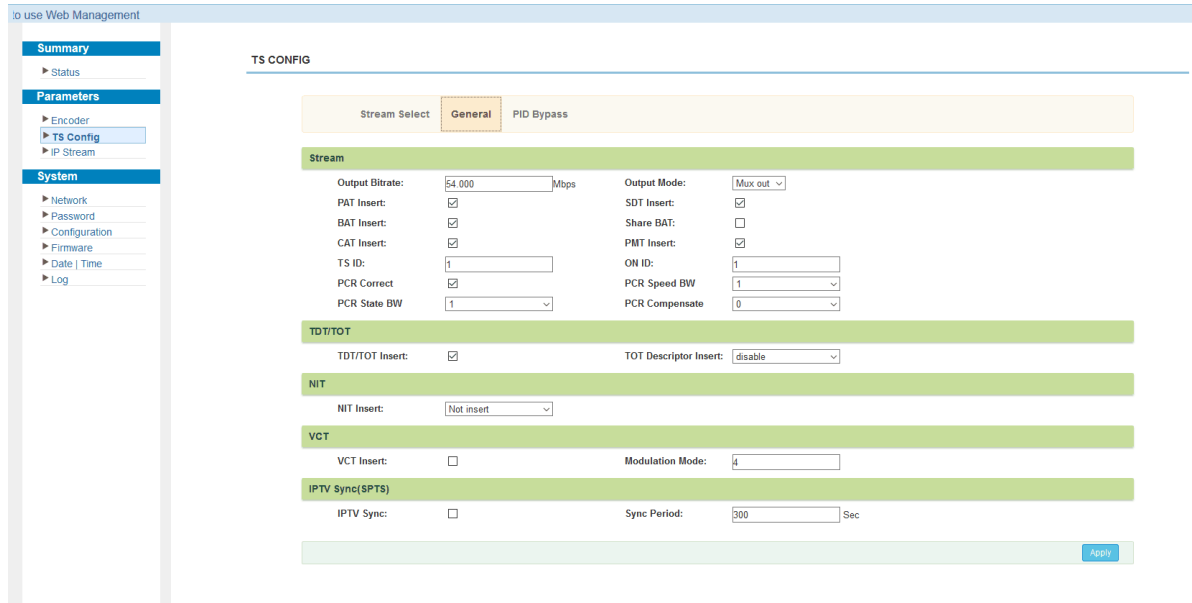


Figure-6

➤ **TS Config→PID Bypass:**

From the TS Config menu on up side of the webpage, clicking “PID Bypass”, it displays 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”

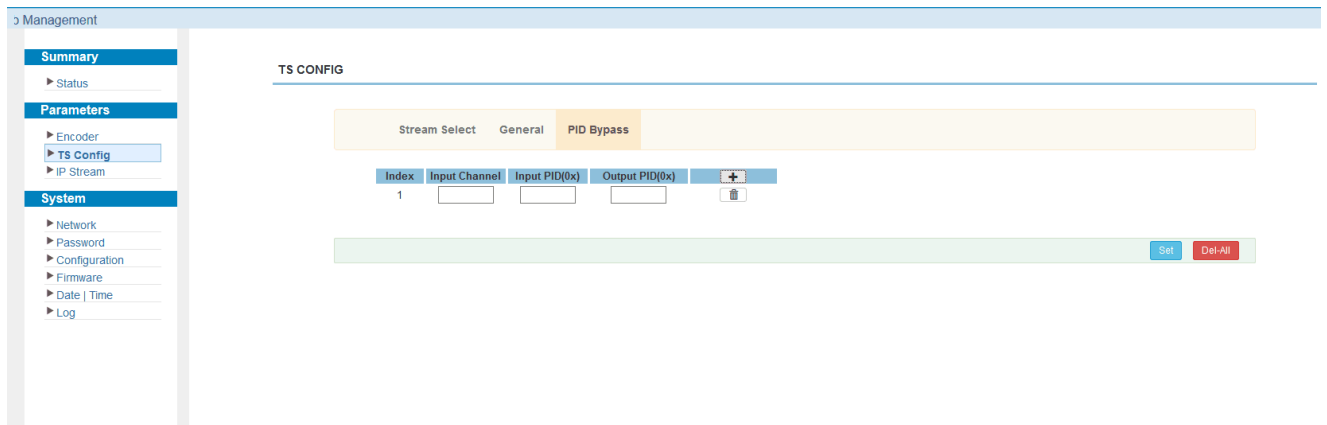


Figure-7

**Parameters → IP Stream:**

LAVISION-8811UE supports TS to output in IP (MPTS) format through the DATA1 and DATA2 port.

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

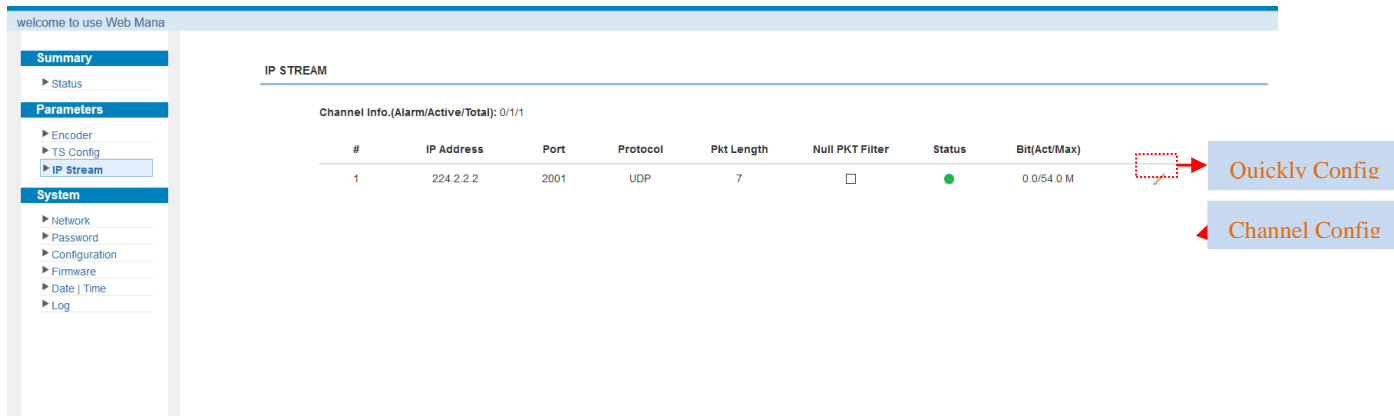


Figure-8

**System → Network:**

Click 'Network', it will display the interface as Figure-9 where to set network parameters.

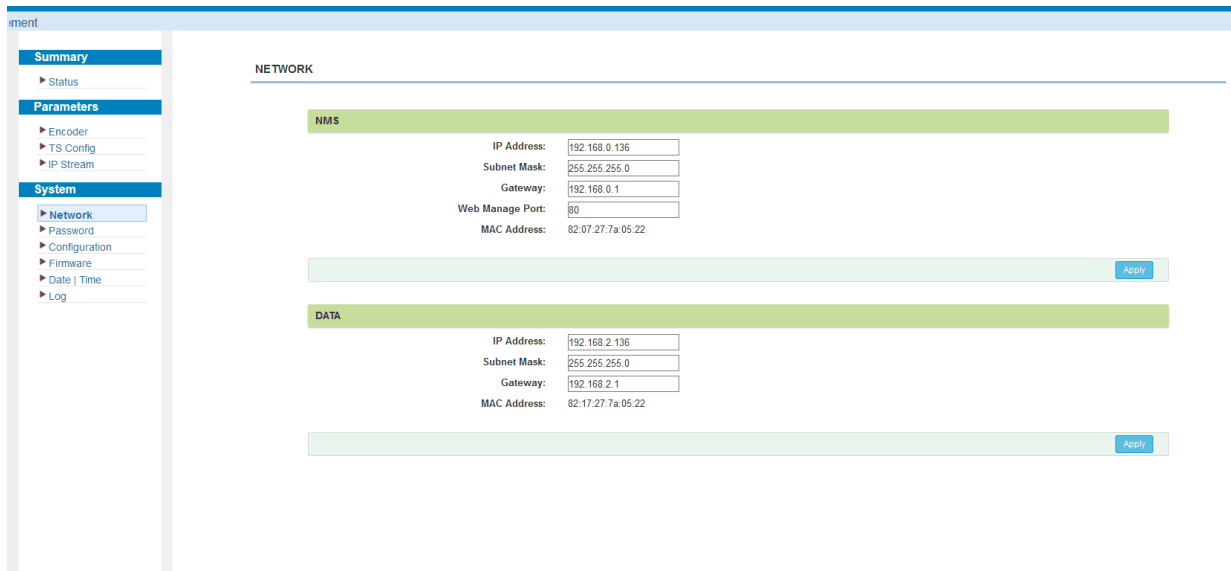
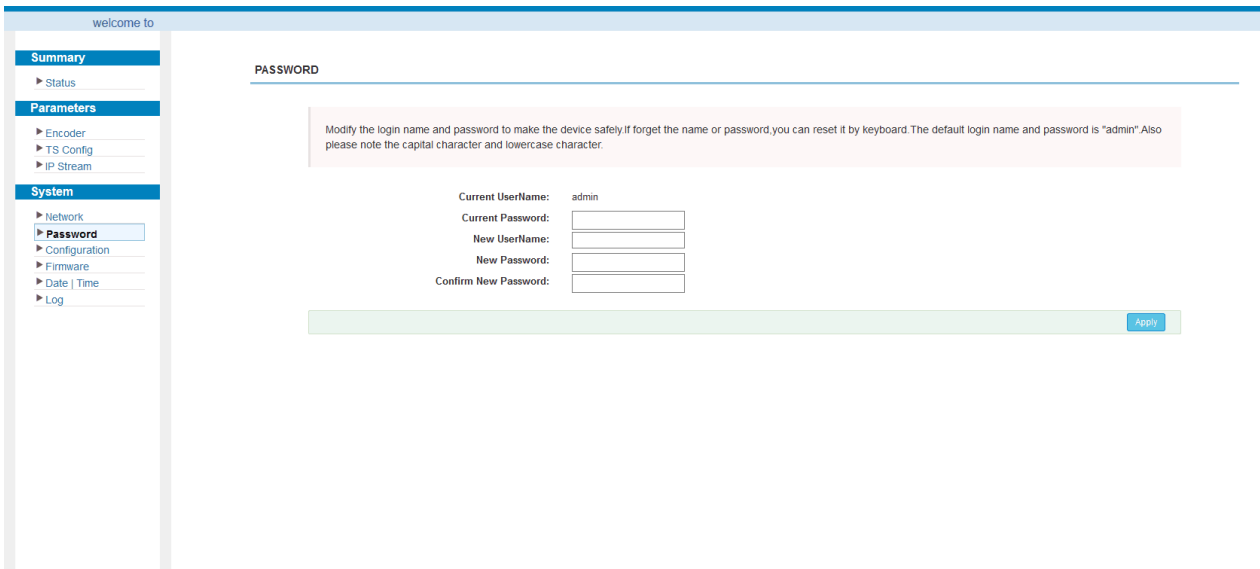


Figure-9



## System → password

From the menu on left side of the webpage, clicking “Password”, it will display the screen as Figure-10 where to set the login account and password for the web NMS.

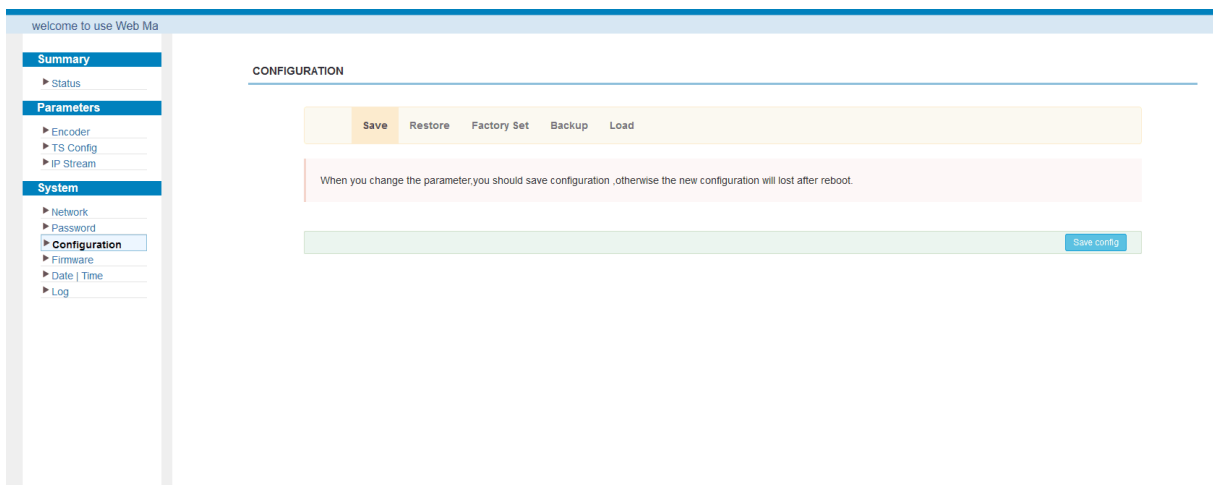


The screenshot shows the 'PASSWORD' configuration page. On the left is a navigation menu with sections: Summary (Status), Parameters (Encoder, TS Config, IP Stream), and System (Network, Password, Configuration, Firmware, Date | Time, Log). The 'PASSWORD' section is selected. The main content area has a title 'PASSWORD' and a warning box: 'Modify the login name and password to make the device safely. If forget the name or password, you can reset it by keyboard. The default login name and password is "admin". Also please note the capital character and lowercase character.' Below this are four input fields: 'Current UserName:' (pre-filled with 'admin'), 'Current Password:', 'New UserName:', and 'New Password:'. A 'Confirm New Password:' field is also present. An 'Apply' button is at the bottom right.

Figure-10

## System → Configuration:

From the menu on left side of the webpage, clicking “Configuration”, it will display the screen as Figure-11 where to save/ restore/factory setting/ backup/ load your configurations.



The screenshot shows the 'CONFIGURATION' page. The left navigation menu is similar to Figure 10, but 'Configuration' is selected. The main content area has a title 'CONFIGURATION' and a toolbar with buttons: 'Save', 'Restore', 'Factory Set', 'Backup', and 'Load'. Below the toolbar is a warning box: 'When you change the parameter, you should save configuration, otherwise the new configuration will lost after reboot.' A 'Save config' button is at the bottom right.

Figure-11

**System → Firmware:**

From the menu on left side of the webpage, clicking “Firmware”, it will display the screen as Figure-12 where to update firmware for the modulator.

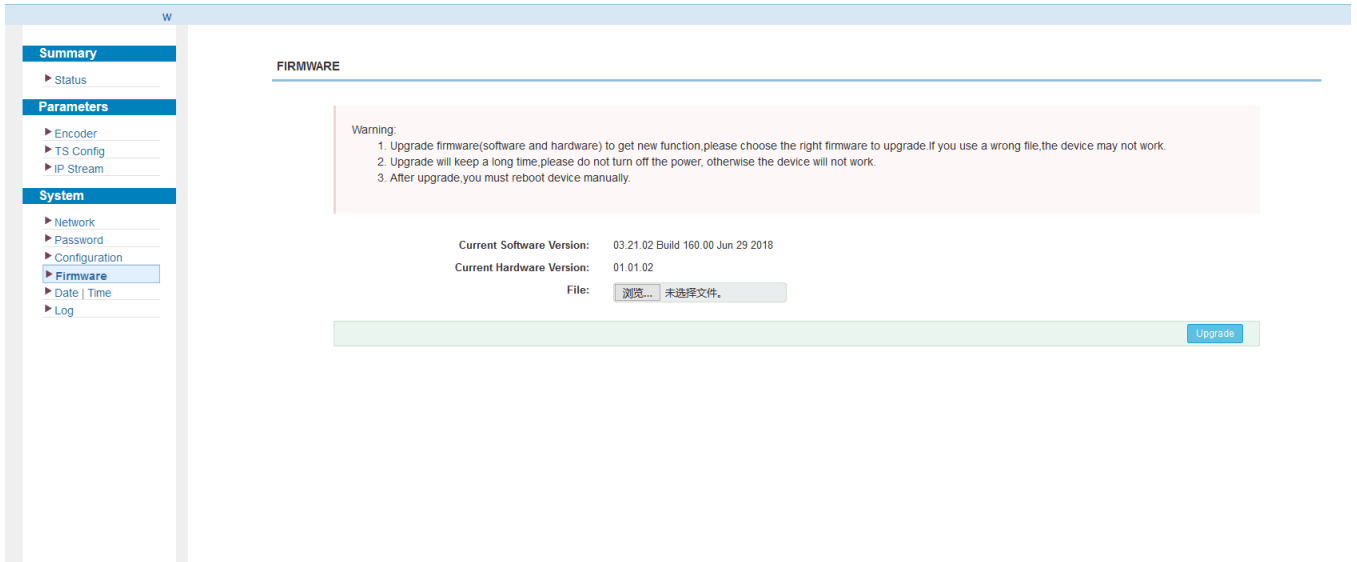


Figure-12

**System → Date/Time:**

From the menu on left side of the webpage, clicking “Date/Time”, it will display the screen as Figure-13 where to set date and time for the device.

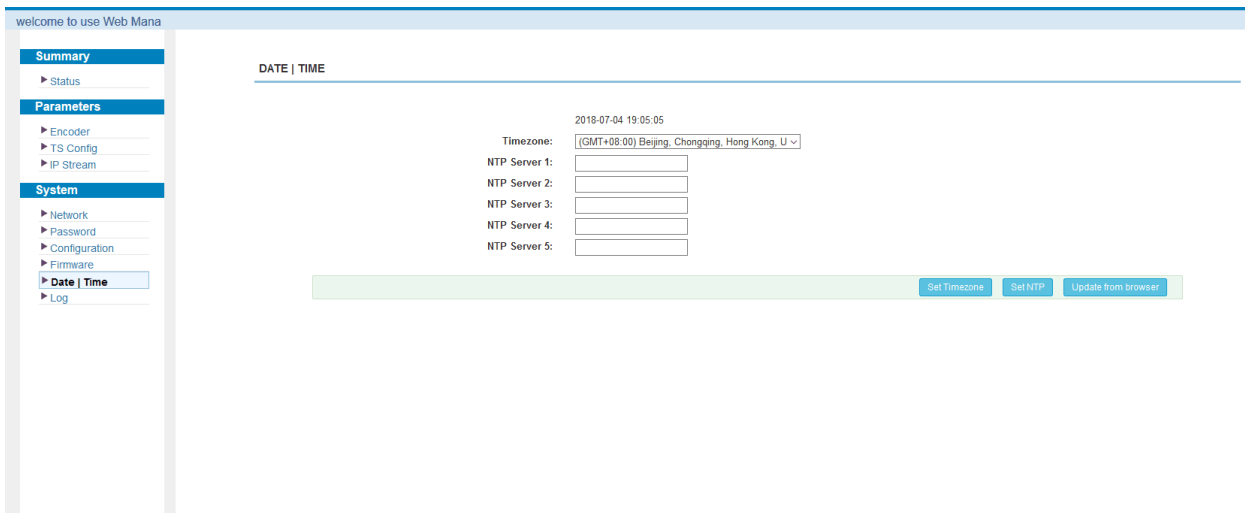


Figure-13

**System → Log:**

From the menu on left side of the webpage, clicking “Log”, it will display the log interface as Figure-14 where to check or export the Kernel/System log.

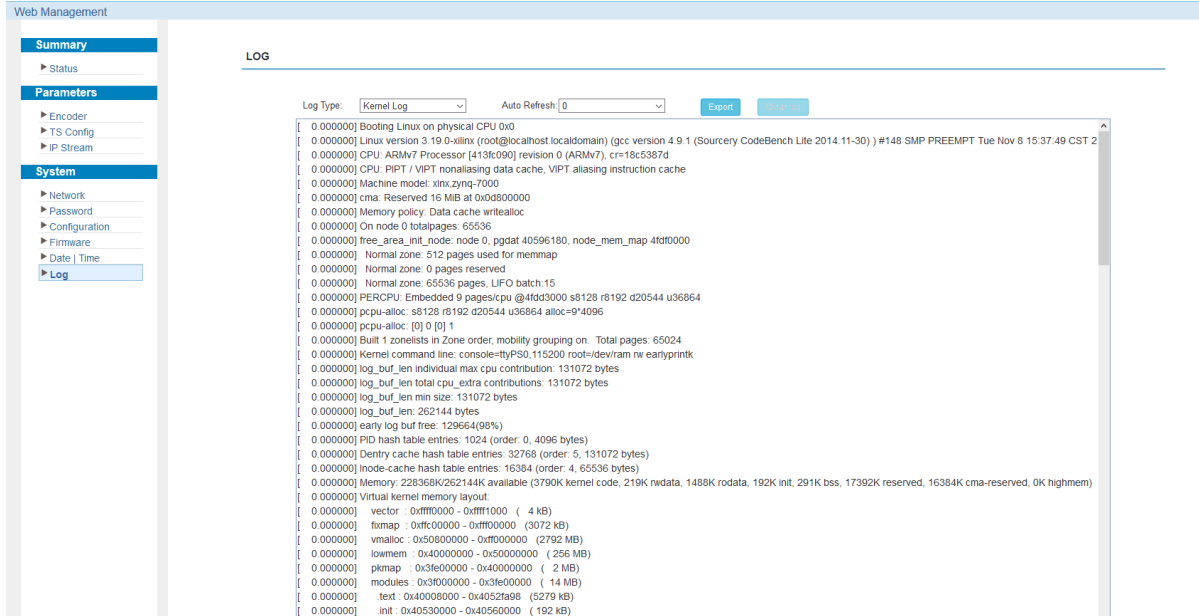


Figure-14

## Chapter 4 Troubleshooting

ISO9001 quality assurance system has been approved by CQC organization. For guarantee the products' quality, reliability and stability. All products have been passed the testing and inspection before ship out factory. The testing and inspection scheme already cover all the Optical, Electronic and Mechanical criteria which have been published. 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

LAVISION-8811UE UHD/4K HEVC Encoder	1 pcs
User Manual	1 pcs
Power Cord	1pcs