TEKNOLINE THE-8000 DVB-C Encoder Modulator User Manual

Contents

TEKNOLINE THE-8000 DVB-C Encoder Modulator

Chapter 1 Introduction

Product Overview

THE-8000 is a professional high integration device which includes encoding, multiplexing, and modulating in one box. It supports 8 HDMI inputs, 128 IP inputs and DVB-C RF out with 4 adjacent carries and 4 MPTS out as mirror out of the 4 modulation carriers via DATA (GE) port. This full function device makes it ideal for small CATV head end system, and it's a smart choice for hotel TV system, entertainment system in sports bar, hospital, apartment

Key Features

- Support LOGO, OSD and QR code insertion for every local channel (Language Supported:, for more languages please consult us…)
- 8 HDMI input, MPEG-4 AVC/H.264 Video encoding
- MPEG1 Layer II, LC-AAC HE-AAC audio encoding format and AC3 Pass Through and support audio gain adjustment
- 4 groups of multiplexing/modulating output channels
- 4 DVB-C RF out with each carrier channel processing maximum 32 IP from DATA input port
- Support 4 MPTS IP output over UDP and RTP/RTSP
- Support PID remapping/PSI/SI editing and inserting
- Control via web management, and easy updates via web

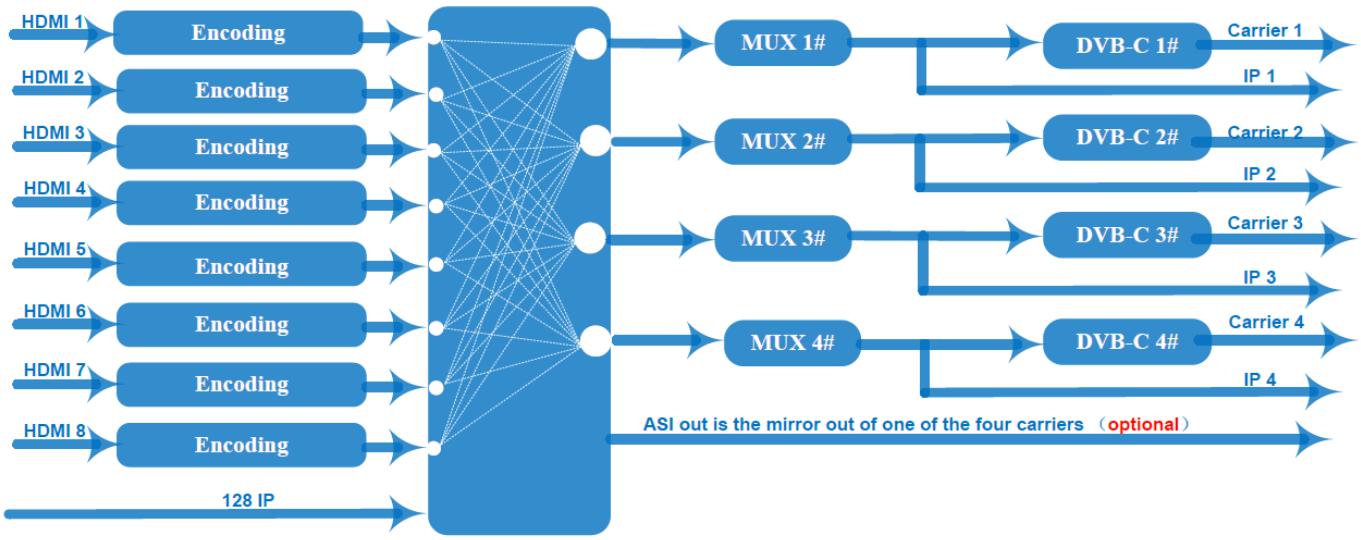
Specifications

Input	8 HDMI inputs; 128 IP inputs		
Video	Encoding	MPEG-4 AVC/H.264	
	Resolution	In-put	1920×1080_60P, 1920×1080_60i, 1920×1080_50P, 1920×1080_50i, 1280×720_60P, 1280×720_50P, 720×576_50i,720×480_60i,
		Out-put	1920×1080_30P, 1920×1080_25P, 1280×720_30P, 1280×720_25P, 720×576_25P,720×480_30P,
	Bit-rate	1Mbps~13Mbps each channel	
	Rate Control	CBR/VBR	
Audio	Encoding	MPEG-1 Layer 2, LC-AAC, HE-AAC and AC3 Pass Through	
	Sampling rate	48KHz	
	Resolution	24-bit	
	Audio Gain	0-255 Adjustable	
	MPEG-1 Layer 2 bit-rate	48/56/64/80/96/112/128/160/192/224/256/320/384 kbps	
	LC-AAC bit-rate	48/56/64/80/96/112/128/160/192/224/256/320/384 kbps	
	HE-AAC bit-rate	48/56/64/80/96/112/128 kbps	

Multiplexing	Maximum PID Remapping	180 input per channel		
	Function	PID remapping (automatically or manually)		
		Generate PSI/ SI table automatically		
Modulation	DVB-C	RF out	4*RF DVB-C out (4 carriers combined output)	
		Standard	EN300 429/ITU-T J.83A/B	
		MER	≥40db	
		RF frequency	50~960MHz, 1KHz step	
		RF output level	-25~-1dBm (82~105 dbμV), 0.1dBm	
		Symbol Rate	5.0Msps~7.0Msps, 1ksps stepping	
			J.83A	J.83B
		Constellation	16/32/64/128/256QAM	64/256 QAM
		Bandwidth	8M	6M
Stream output	RF output (F type interface)			

	4 IP MPTS output over UDP/RTP/RTSP, 1*1000M Base-T Ethernet interface	
System function	Network management(WEB)	
	Chinese and English language	
	Ethernet software upgrade	
Miscellaneous	Dimension (W×L×H)	482mm×328mm×44mm
	Environment	0~45℃(work)；-20~80℃（Storage）
	Power requirements	AC 110V± 10%, 50/60Hz, AC 220 ±10%,50/60Hz

Principle Chart



Appearance and Description

Front and Rear Panel Illustration

1. RF test and RF out port
2. Port Power supply and Grounding Pole
3. 8 HDMI inputs
4. Run Indicators
5. Power Indicators
6. DATA: IP input and output port(GE)
7. NMS (Network management port)

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.

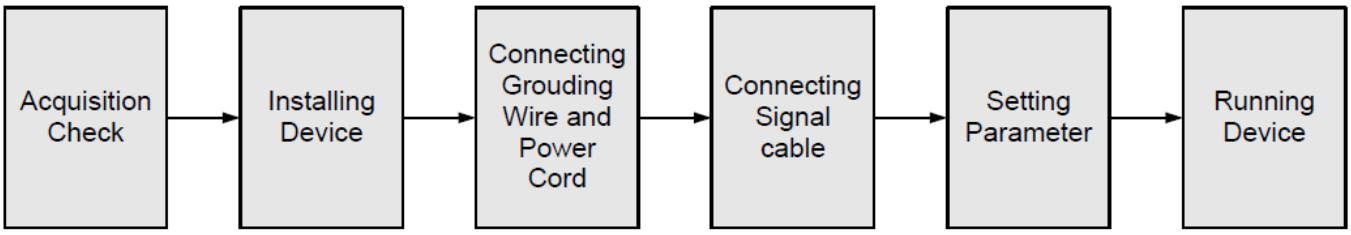
General Precautions

- 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.

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

Device's Installation Flow Chart Illustrated as following



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: $1X10^{7}$~$1X10^{10}\Omega$, Grounding current limiting resistance: 1MΩ (Floor bearing should be greater than 450Kg/㎡)
Environment Temperature	5~40℃(sustainable) , 0~45℃(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±10%, 50/60Hz or AC 220V±10%, 50/60Hz. Please carefully check before running.

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 mm2.

Chapter 3 WEB NMS Operation

Users can only 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.

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). se web browser to connect the device with PC by inputting the Encoder & Modulator's IP address in the browser's address bar and press Enter. It displays 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.

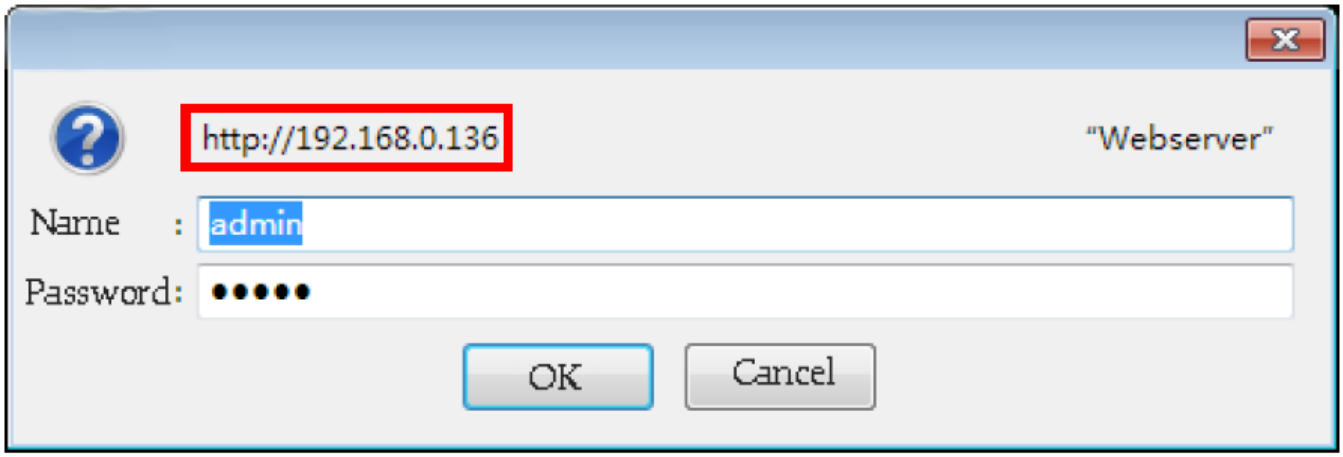


Figure-1

Operation

Summary → Status

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

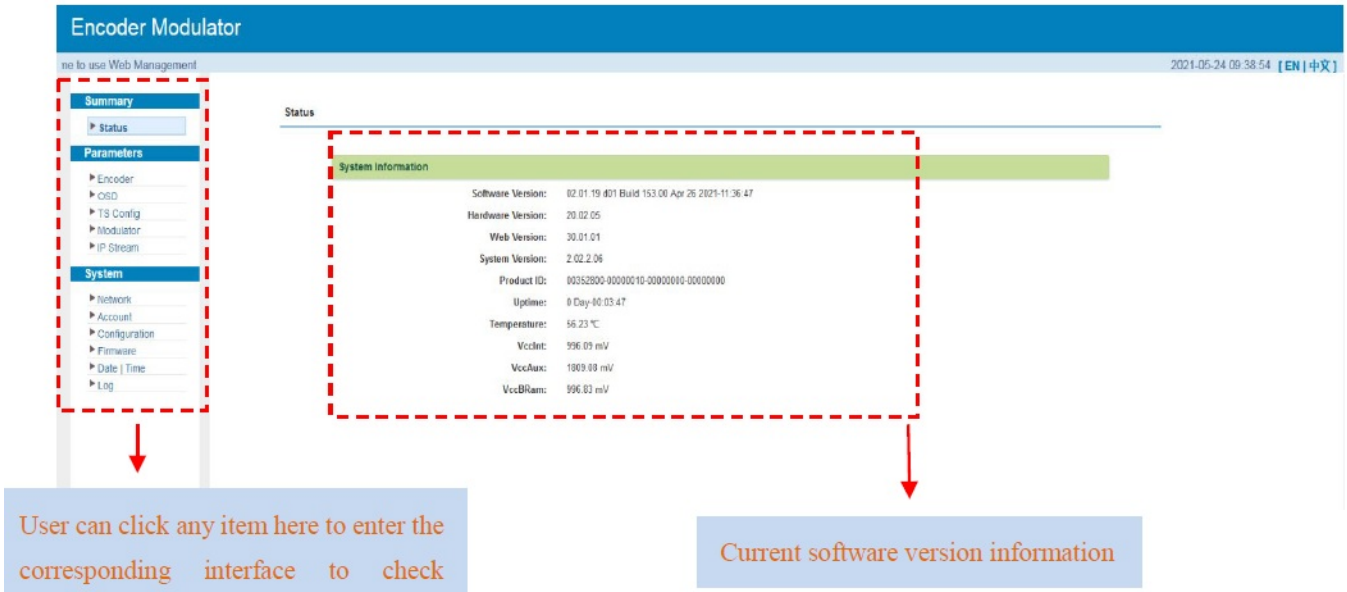
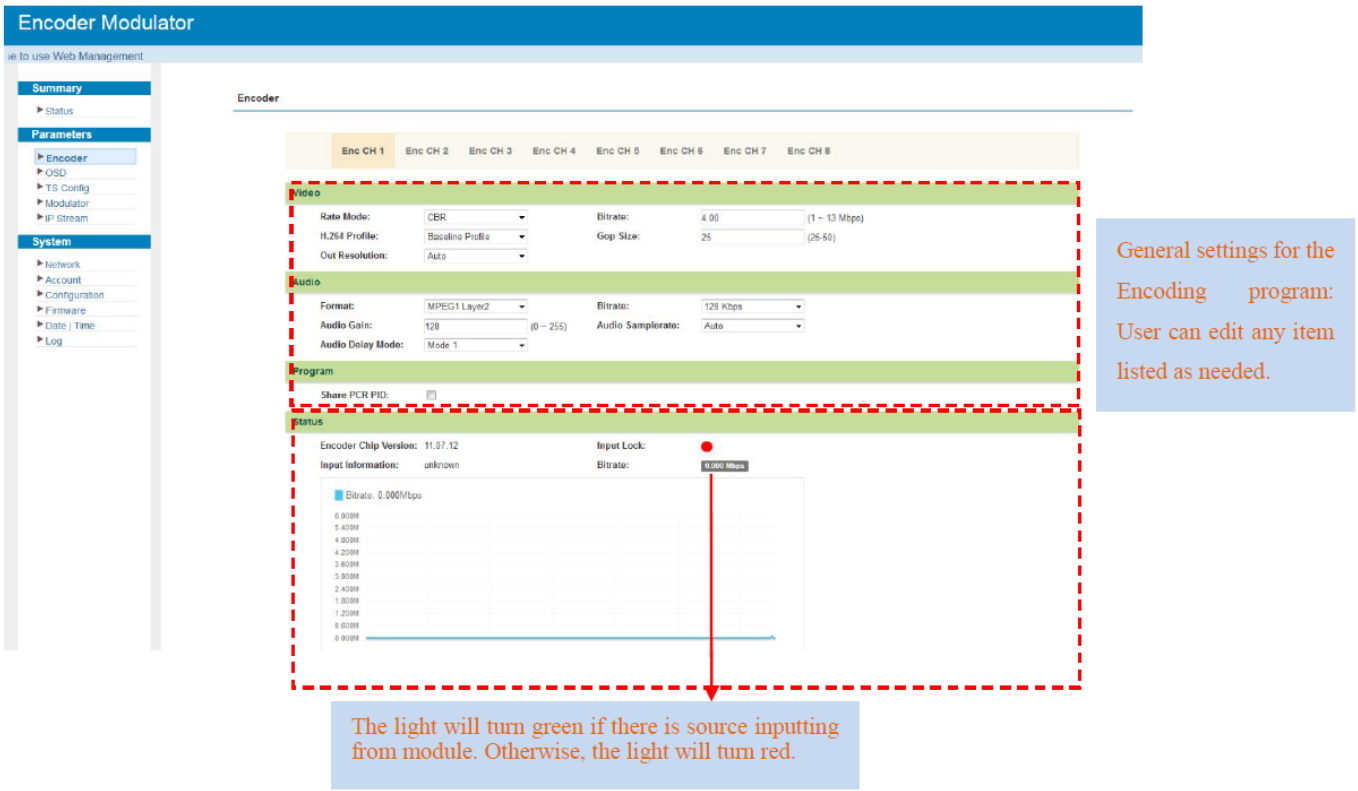


Figure-2

Parameters → Encoder

From the menu on left side of the webpage, clicking “Encoder”, it displays the information of each encoding channel from the encoder as Figure-3.



Parameters → OSD:

Clicking “OSD”, it displays the interface as Figure-4/5/6 where to set Logo/ Caption/ QRCode parameters.

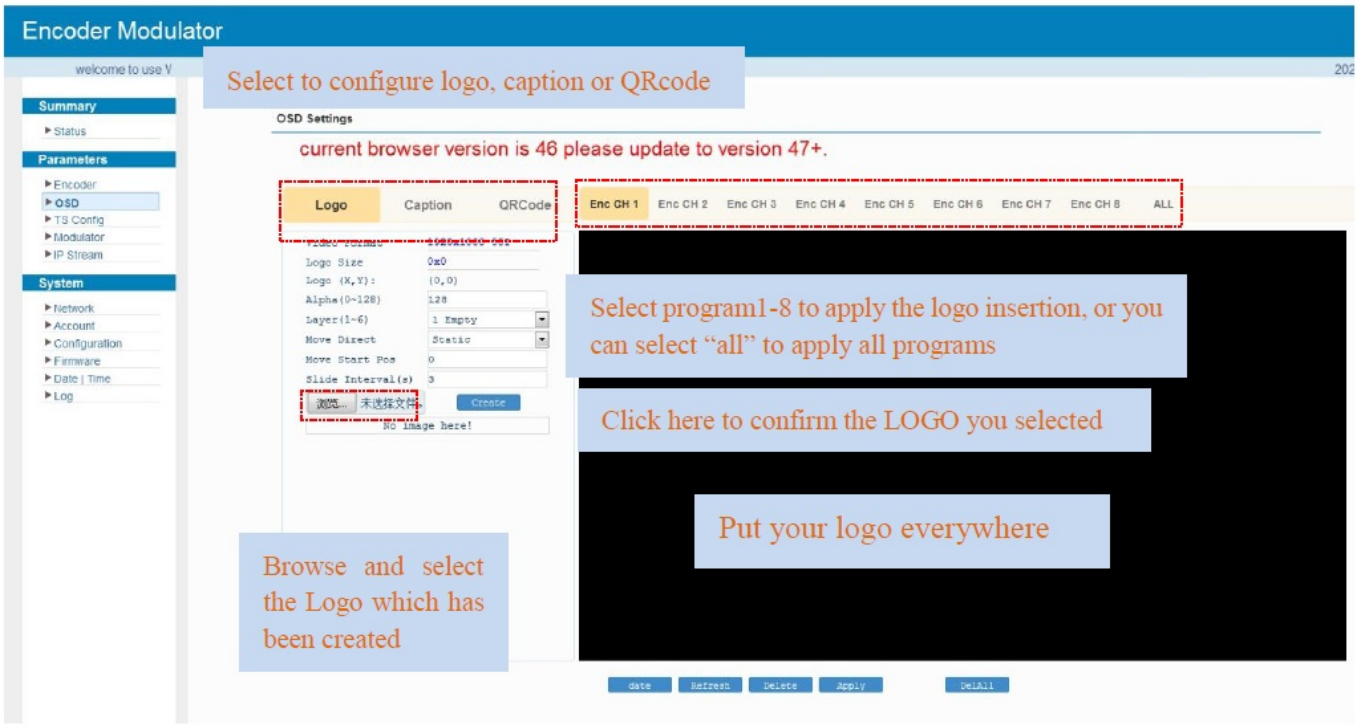


Figure-4

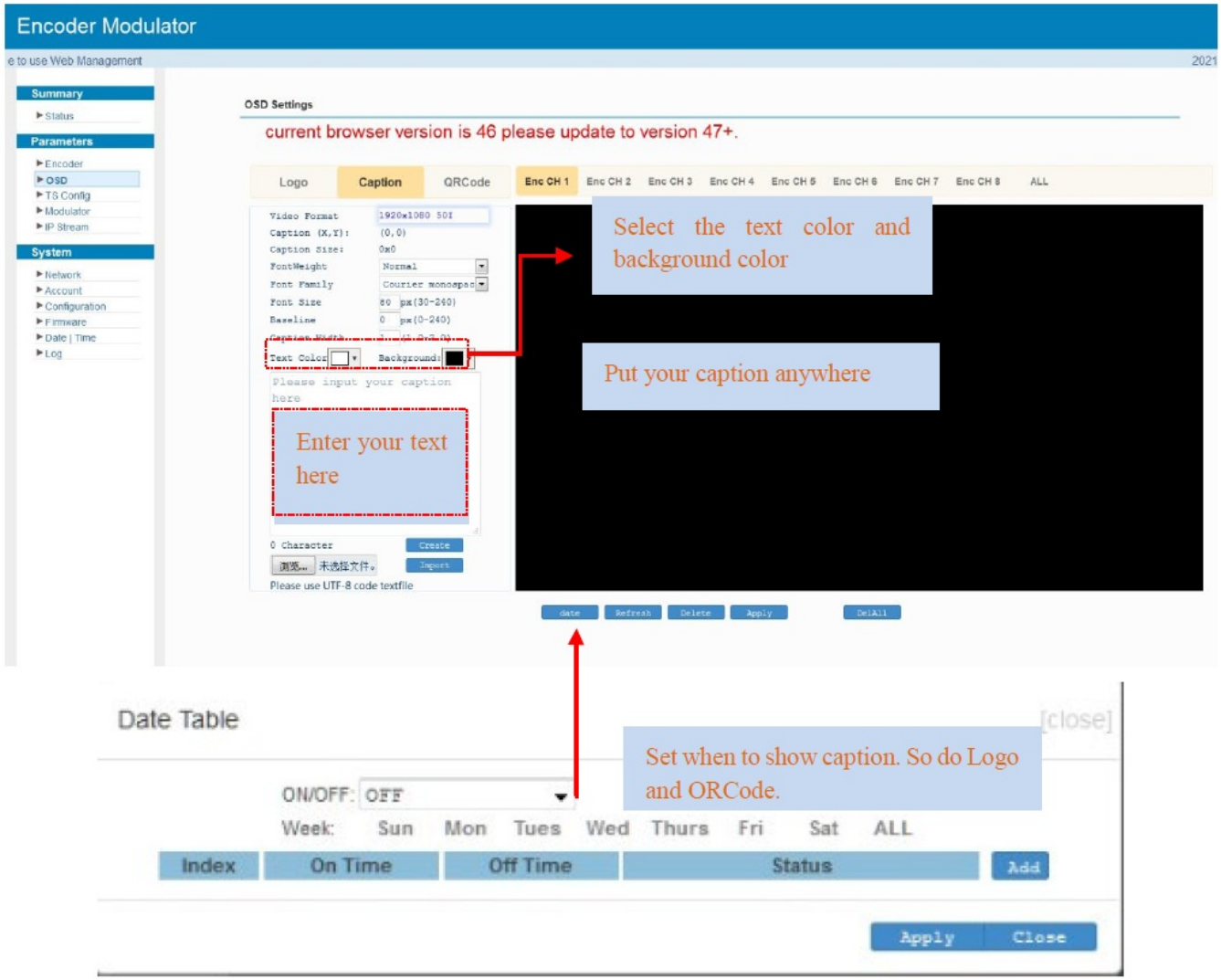


Figure-5

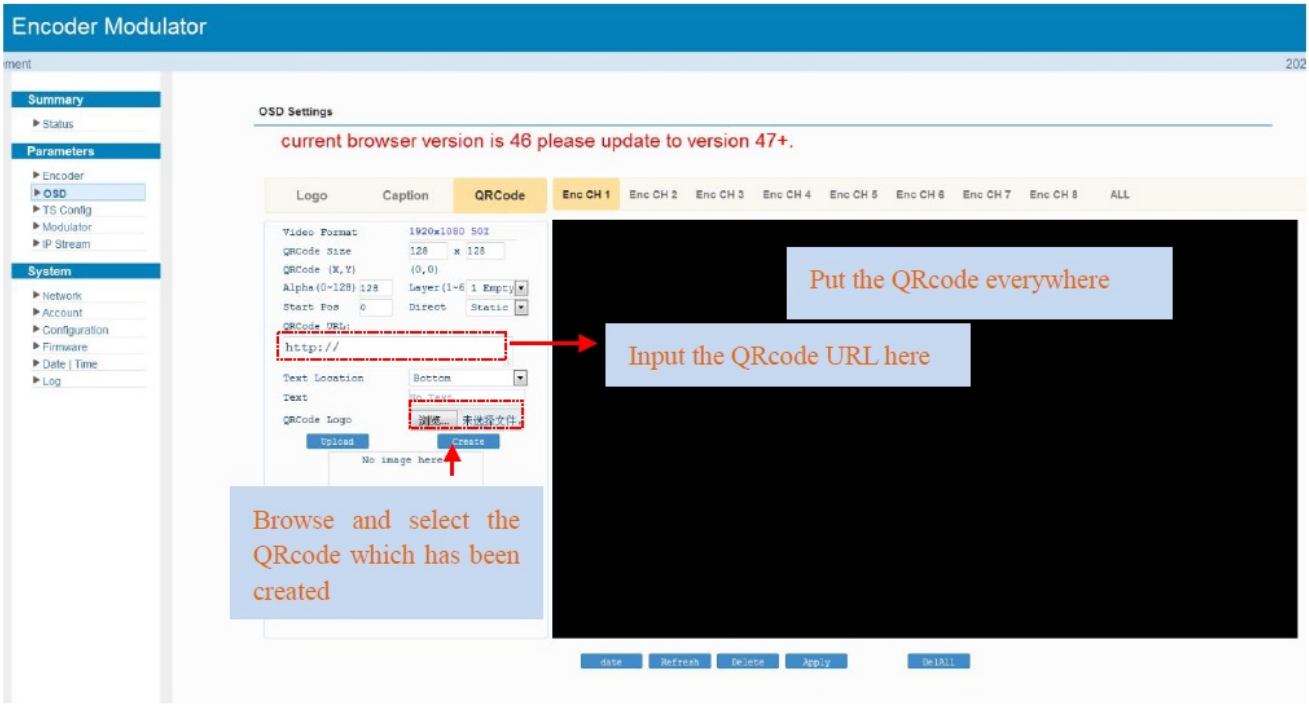


Figure-6

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→Output TS X

Clicking “Output TS X”, it displays the interface where users can select the TS output carrier (Figure-7)

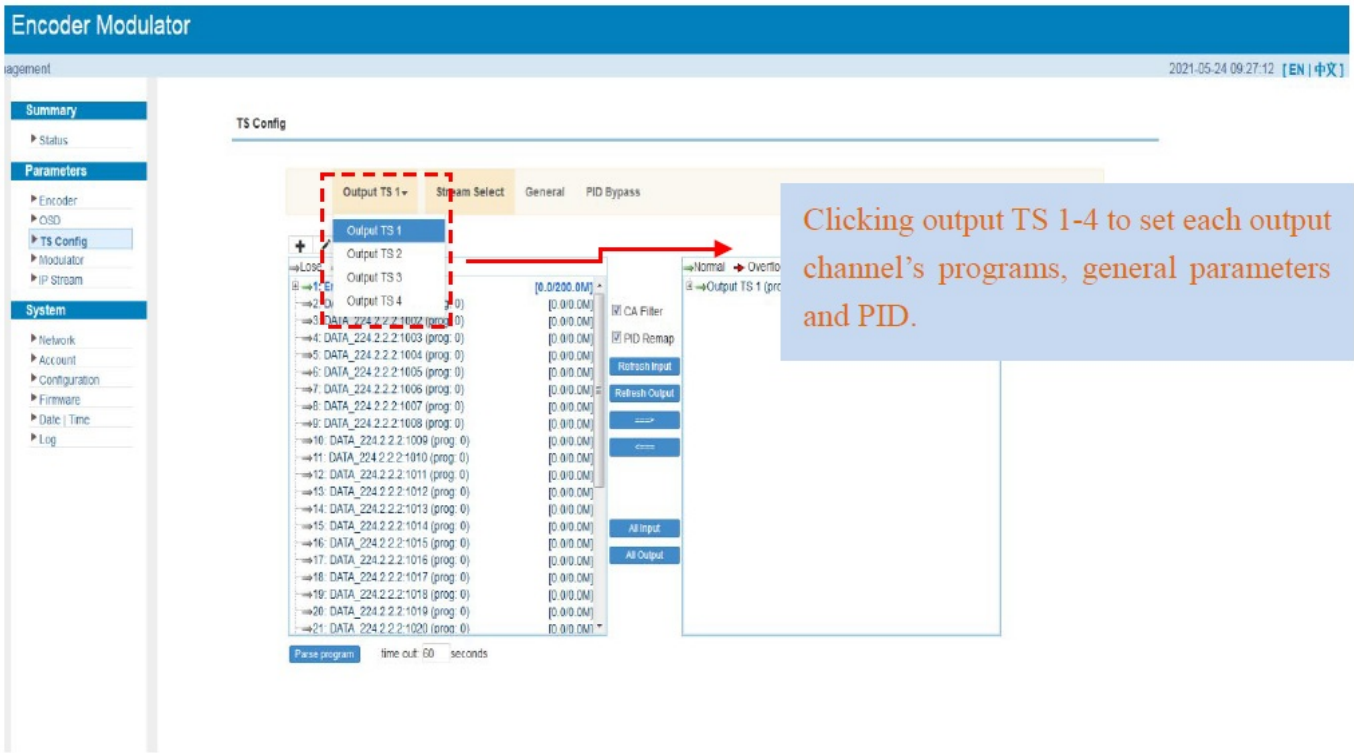
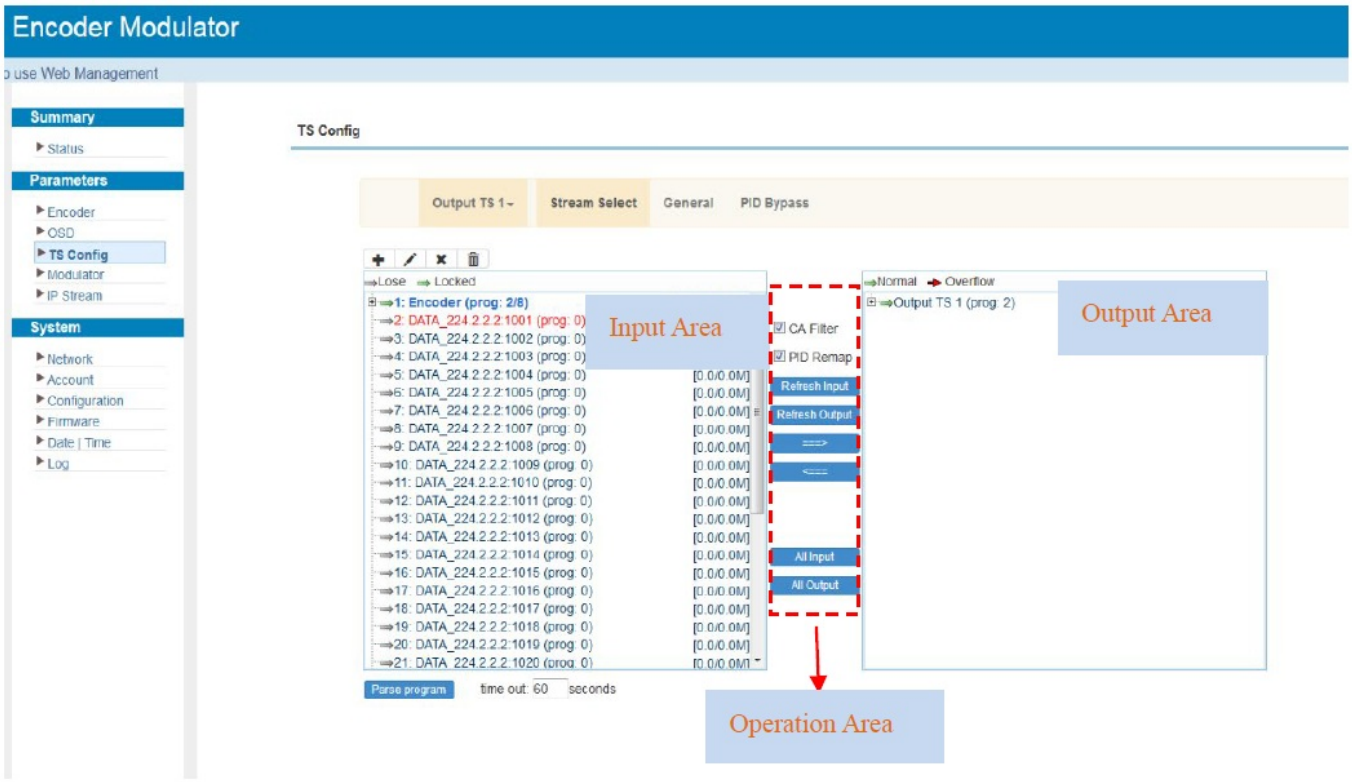
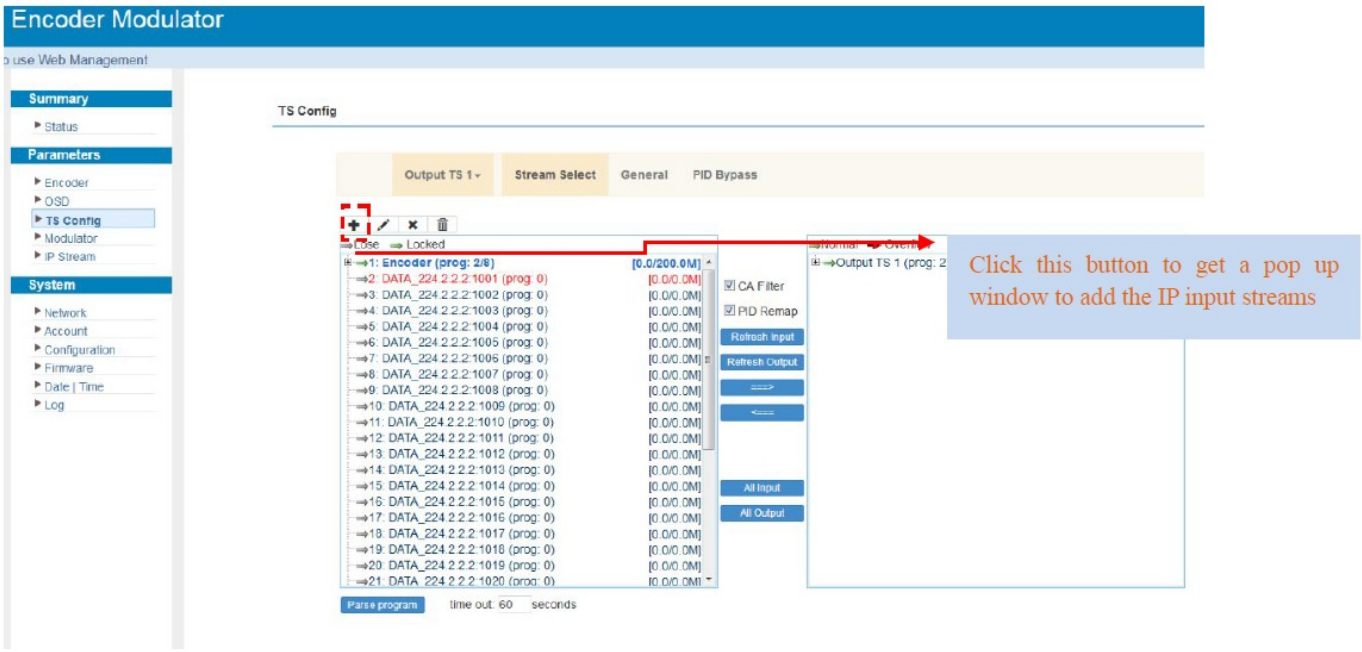


Figure-7

TS Config→Stream select

Clicking “Stream select”, it displays the interface where users can select program(s) to multiplex out and modify program info. (Figure-8)





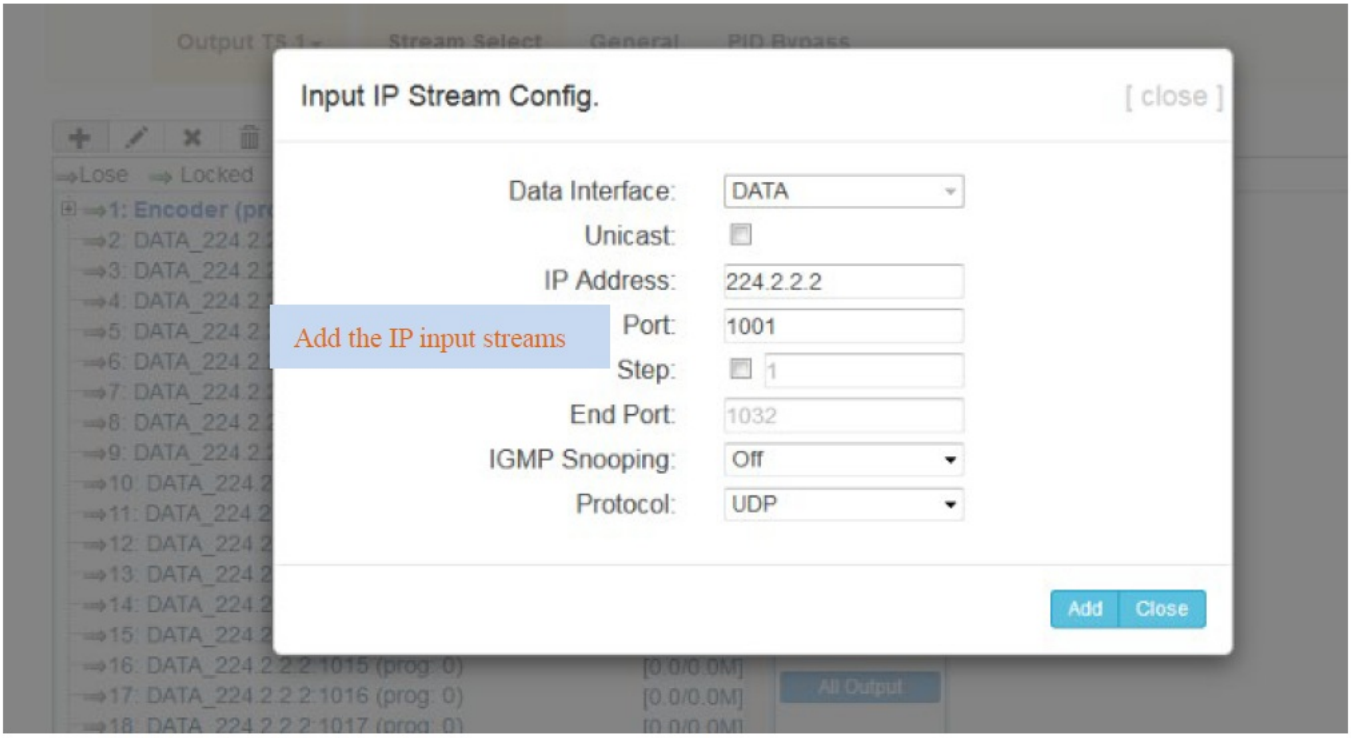


Figure-8

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

- Lose Locked To check encoder stream locked or not, green means current encoder stream locked
- Normal Overflow To check current TS overflowing or not, red color means current TS overflowing, need reduce program
- CA Filter To filter/not filter the source CA information
- PidRemap 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

Program Modification

The multiplexed program information can be modified by clicking the program in the ‘output’ area. For example, when clicking, 1: TV-101 <=CH1_Module 1 [101] , it triggers a dialog box

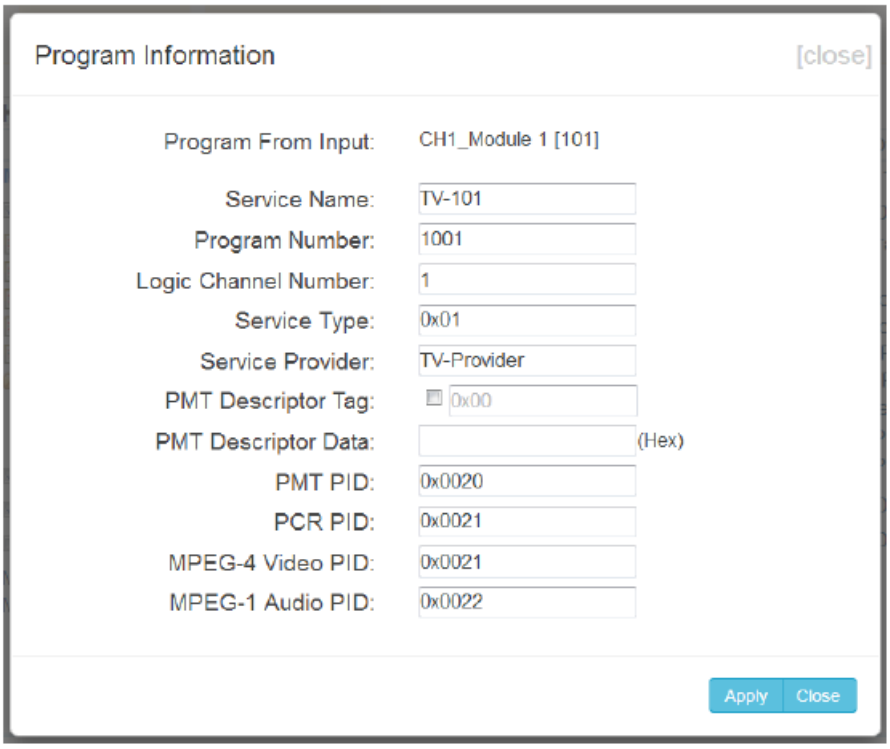


Figure-9

TS Config→General:

From the TS Config menu on up side of the webpage, clicking “General”, it displays the interface where users can enable PSI/SI table out, NIT insert and Character Encoding. (Figure-10)

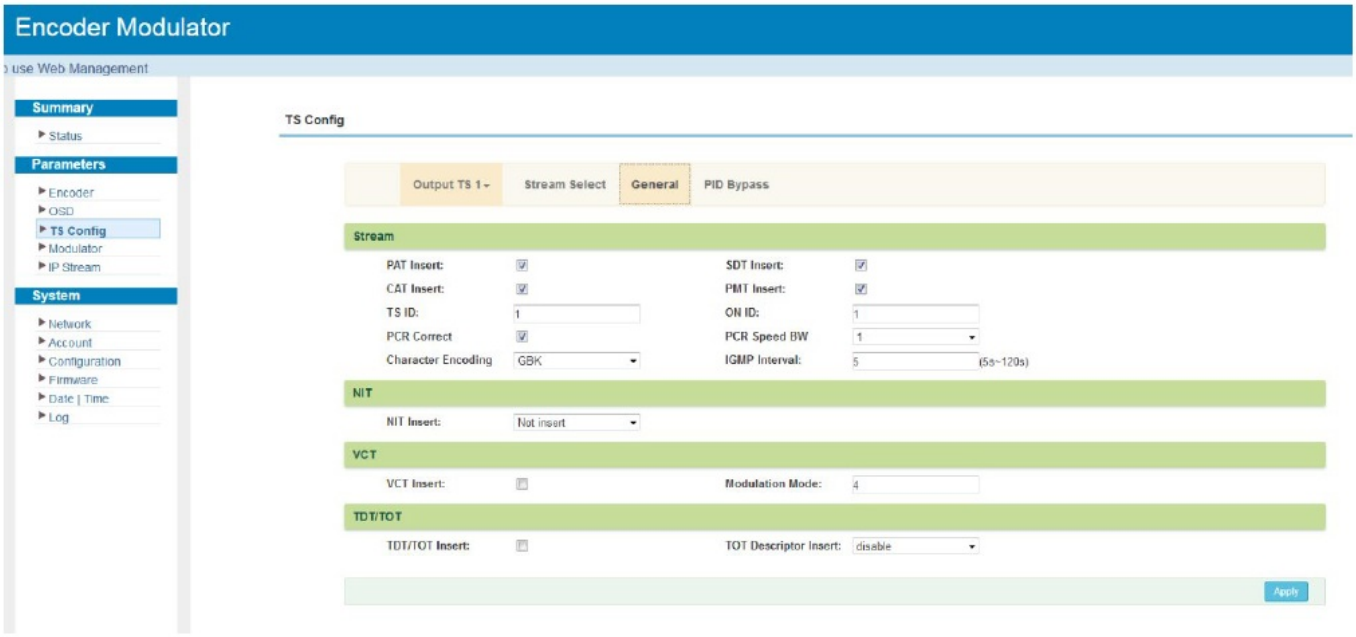


Figure-10

TS Config → PID Bypass

Users can bypass the wanted PIDs here as Figure-11.

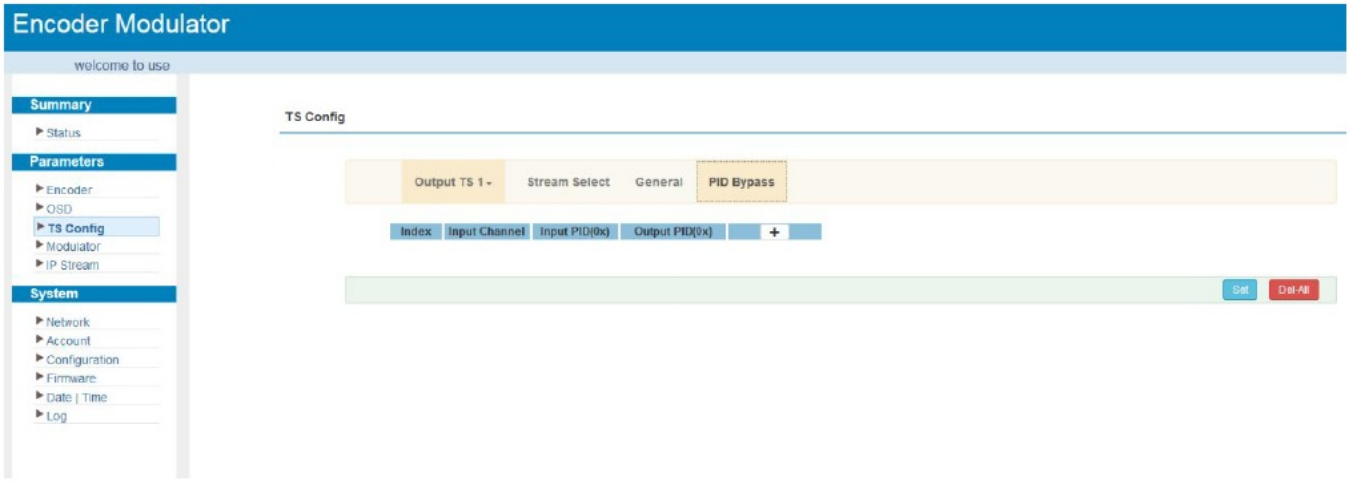
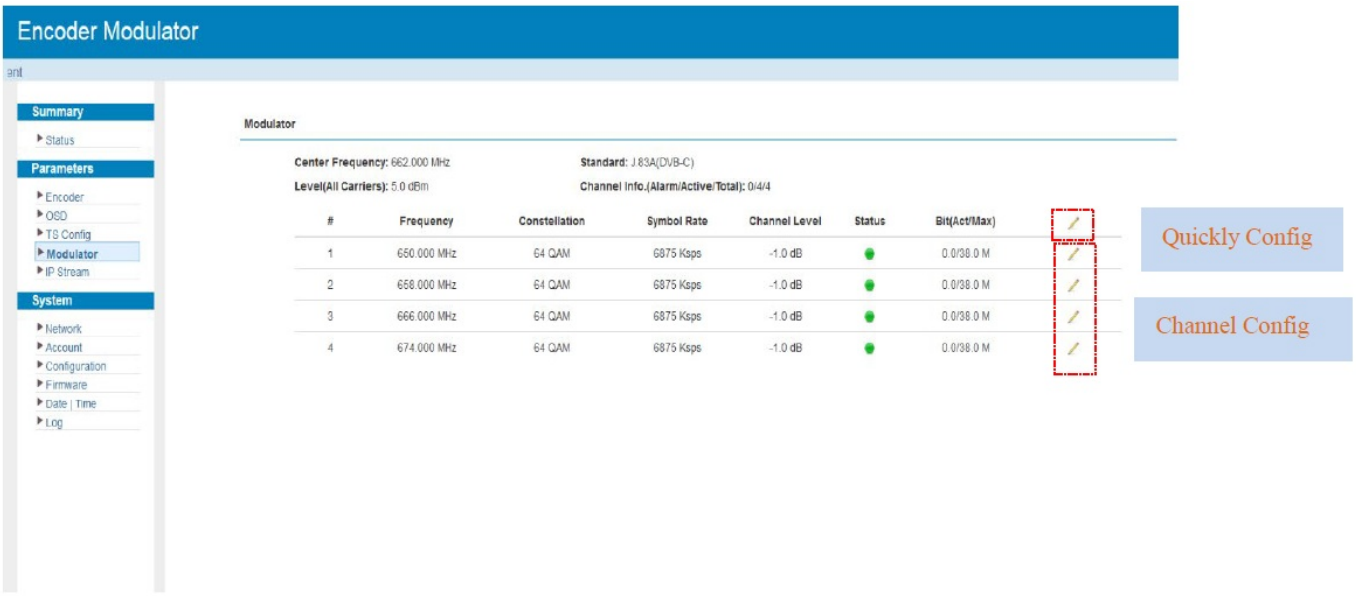


Figure-11

Parameters → Modulator

Clicking “Modulator”, it displays the Modulator Configuration screen as Figure-12. THE-8000 supports 4 DVB-C RF out. Here user can set modulation parameters, such as level, frequency and bandwidth etc.



Parameters → IP Stream

THE-8000 supports 4 TS to output in IP format through the DATA port. Clicking “IP Stream”, it displays the interface where to set IP out parameters (Figure-13).

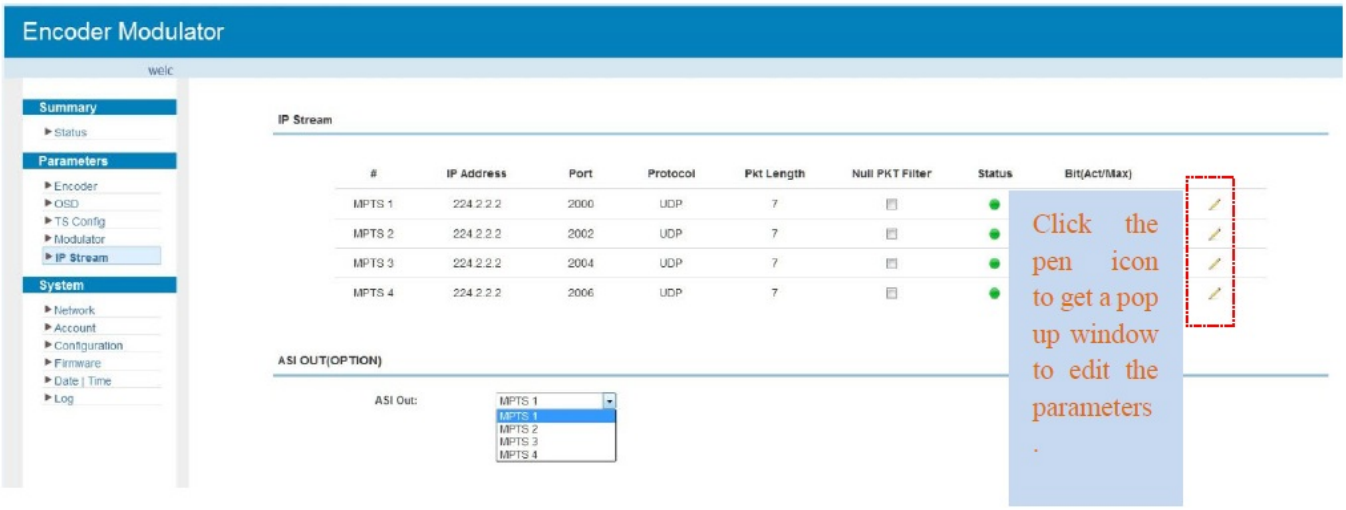


Figure-13

When users click “pen” button, it triggers a dialog box (Figure-14) where users can set the corresponding channel configuration.

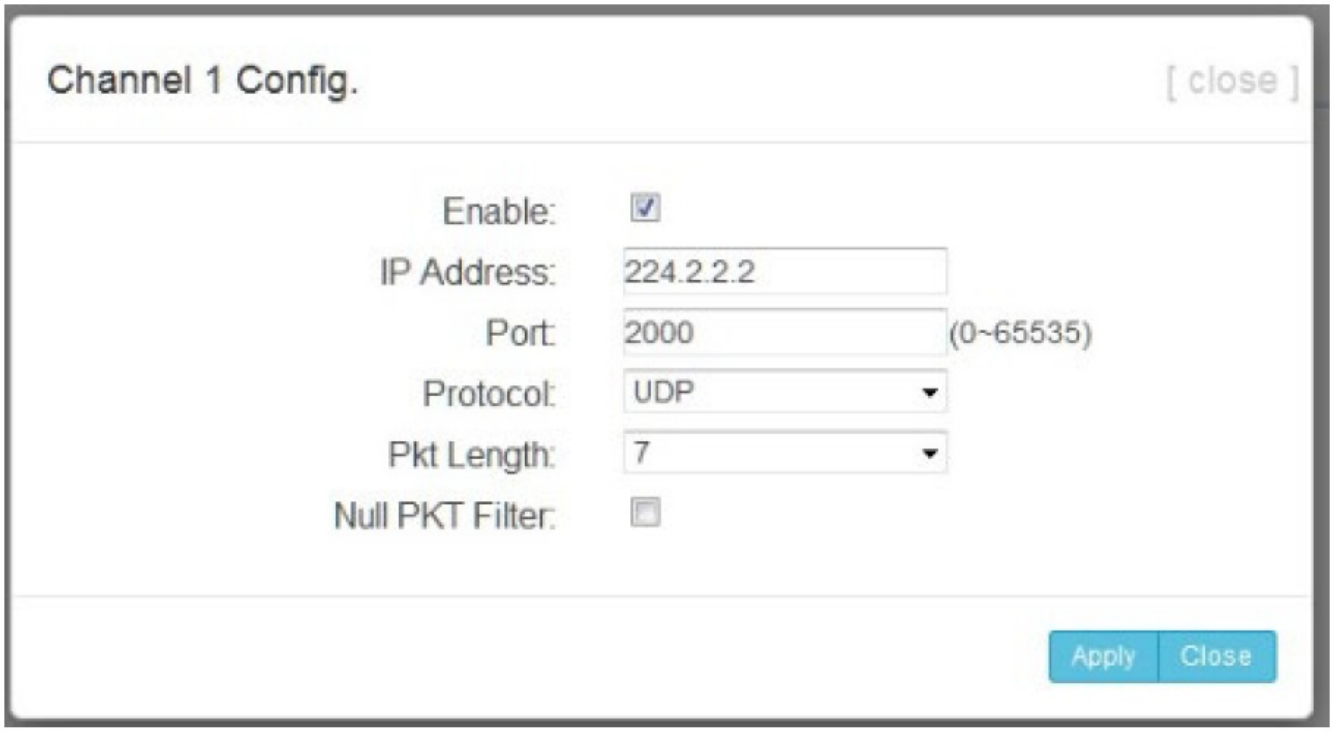


Figure-14

When users click “ASI Out” list, users can set MPTS 1, 2 3 or 4 as the TS out via ASI out ASI out is optional as per your order .

System → Network:
Clicking “Network”, it displays the interface as Figure-15 where to set network parameters.

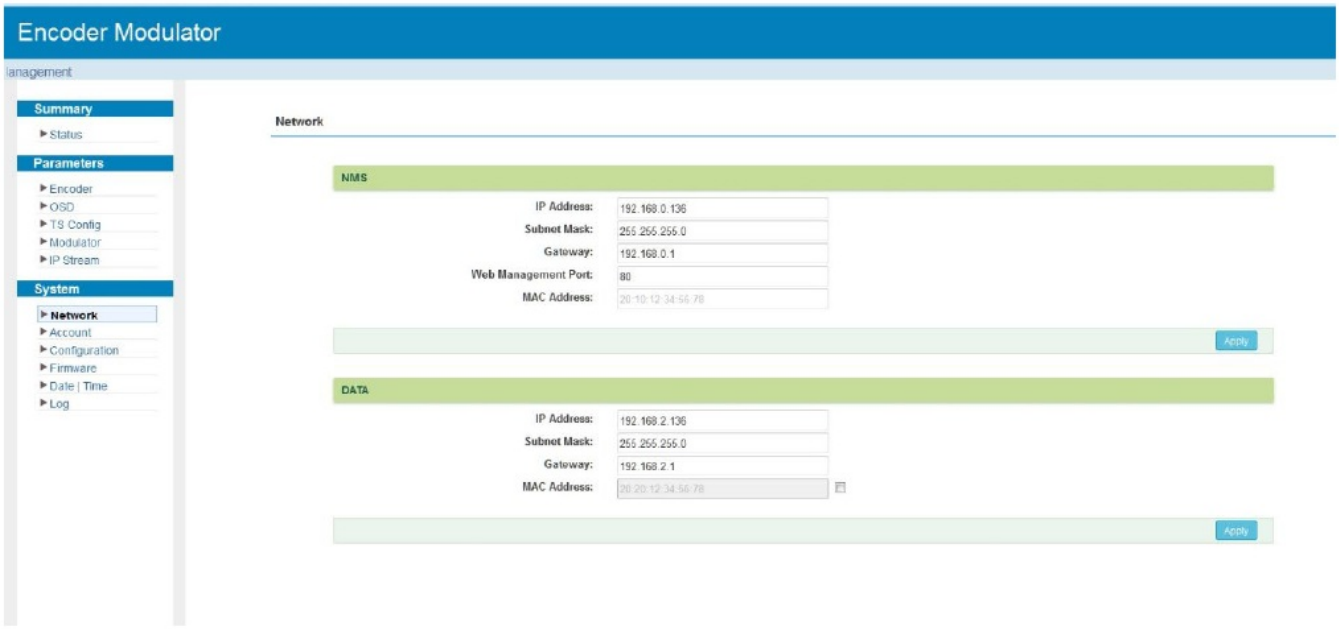


Figure-15

System → Account:
Clicking “Account”, it displays the screen as Figure-16 where to set the login account and password for the web NMS. Both the current username and password are “admin”.

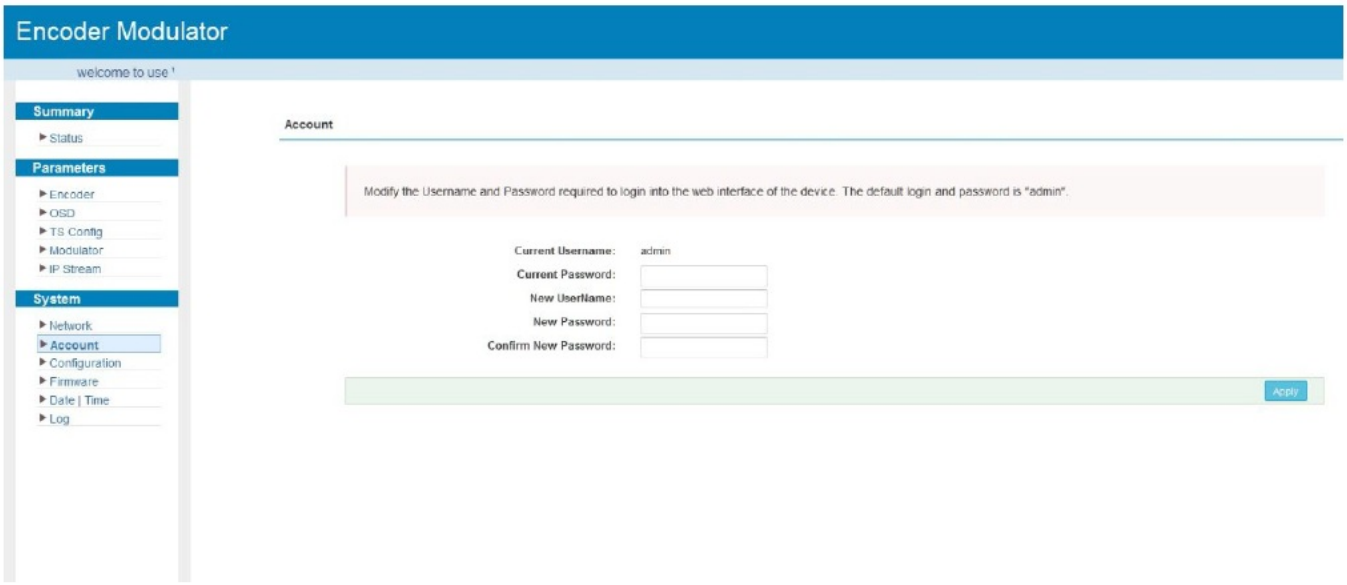


Figure-16

System → Configuration:
Clicking “Configuration”, it displays the screen as Figure-17 where to save/ restore/factory setting/ backup/ load your configurations.

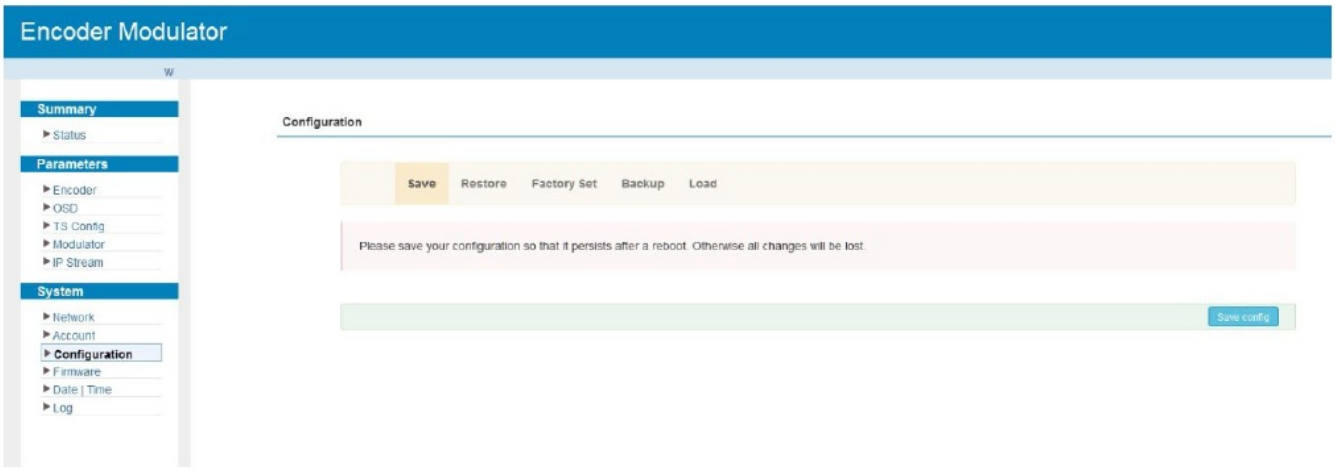


Figure-17

System → Firmware:
Clicking “Firmware”, it displays the screen as Figure-18 where to update firmware for the modulator.

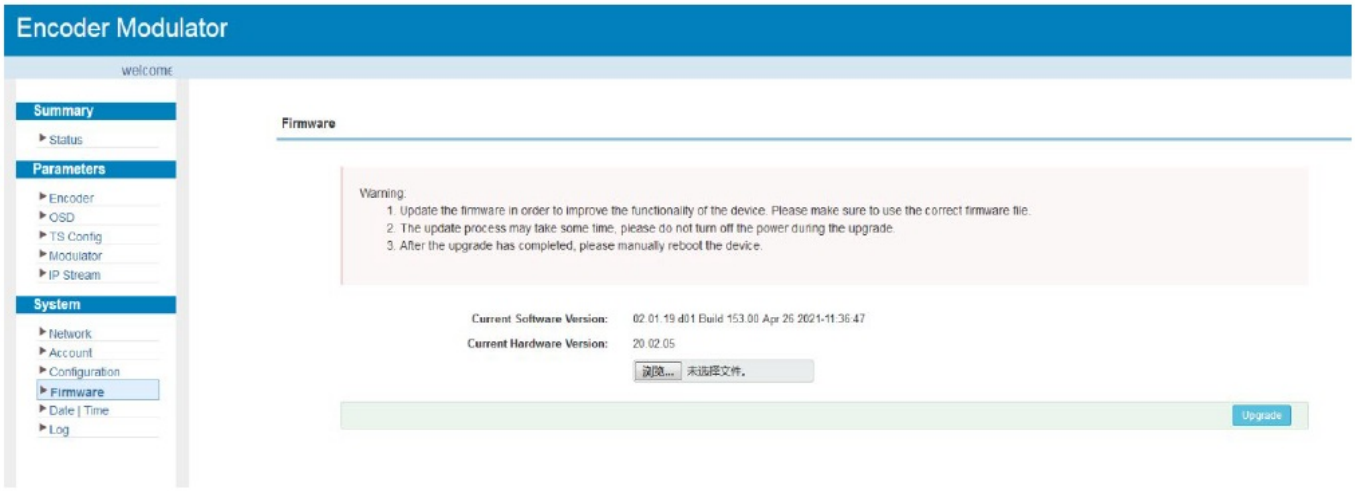


Figure-18

System→ Date/Time:
From the menu on left side of the webpage, clicking “Date/Time”, it will display the screen as Figure-19 where to set date and time for the device.

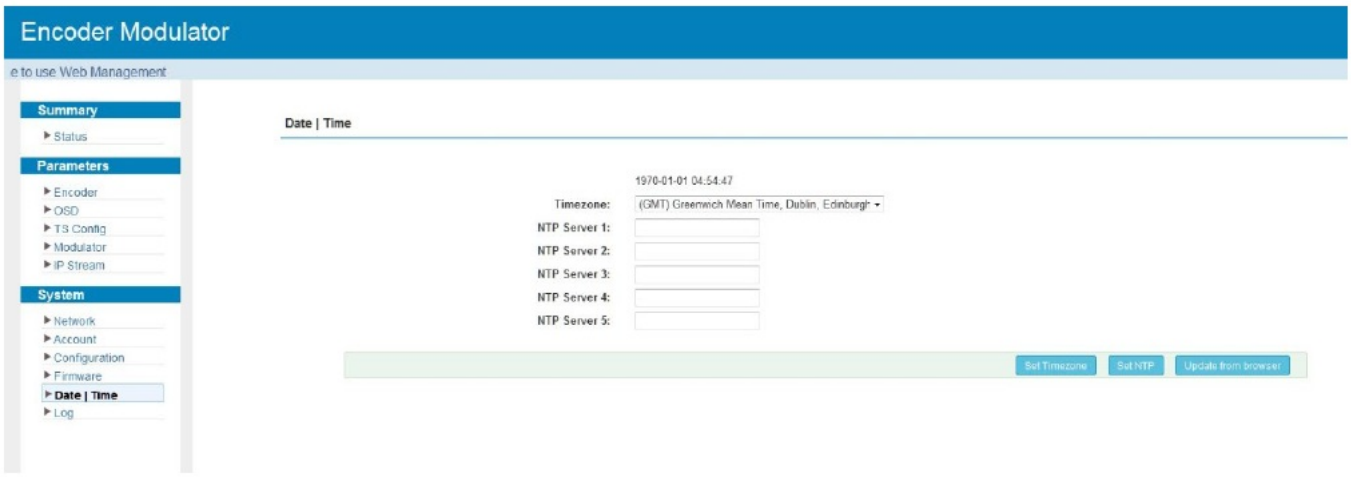


Figure-19

System→ Log:

Clicking “Log”, it displays the log interface as Figure-20 where to check or export the Kernel/System log.

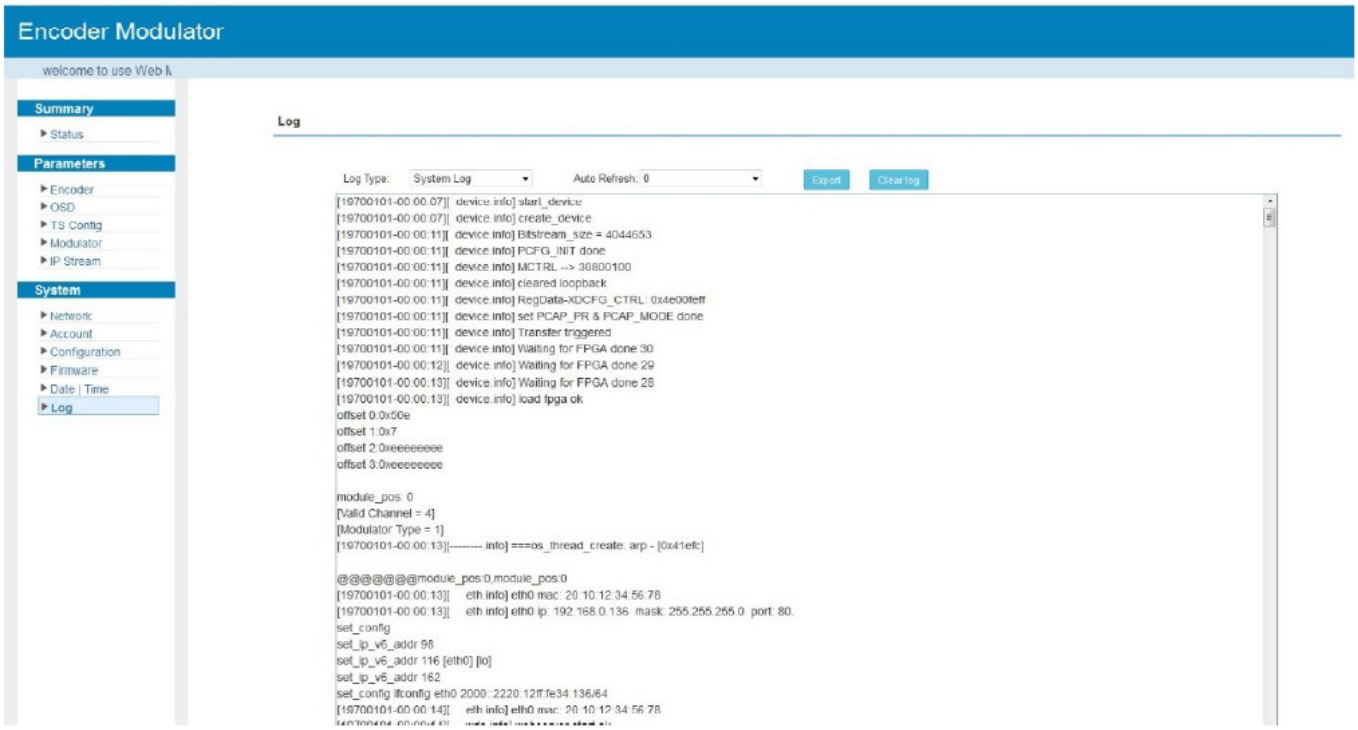


Figure-20

Documents / Resources

	TEKNOLINE THE-8000 DVB-C Encoder Modulator [pdf] User Manual THE-8000, DVB-C Encoder Modulator, THE-8000 DVB-C Encoder Modulator, THE-8000 DVB-C, Encoder Modulator, Modulator