

CLEAR VIEW

KR425H-16

Encoder Modulator User Manual



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

KR425H SD encoder modulator is a professional high integration device which includes encoding, multiplexing, scrambling and modulation. It supports 8/12/16/24 CVBS inputs, one DVB-C tuner input and 128 IP input with Data1 (GE) and Data2 (FE) port. It also supports DVB-C/T RF out with 4 adjacent carries, and support Data1 (GE) output port to support 4 MPTS out. 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...

1.2 Key Features

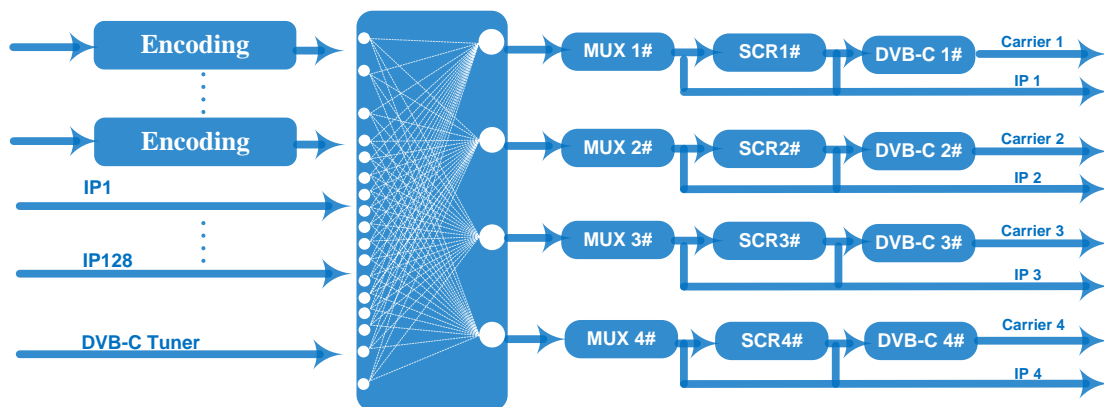
- **24 A/V inputs with MPEG2 Encoding**
- **1DVB-C tuner input for re-mux (only for DVB-C RF out)**
- **128 IP input over UDP and RTP protocol**
- **MPEG1 Layer II, AC3(2.0) Audio encoding and support audio gain adjustment**
- **4 groups of multiplexing/scrambling/modulation output channels**
- **Support 4 MPTS IP (DATA1 port only) output over UDP and RTP**
- **Support 1 ASI output (Optional as ordered)**
- **Support CC (closed caption)**
- **Support PID remapping/ accurate PCR adjusting/PSI/SI editing and inserting**
- **Control via web management, and easy updates via web**
- **Lowest cost per channel, breakthrough price**

1.3 Specifications

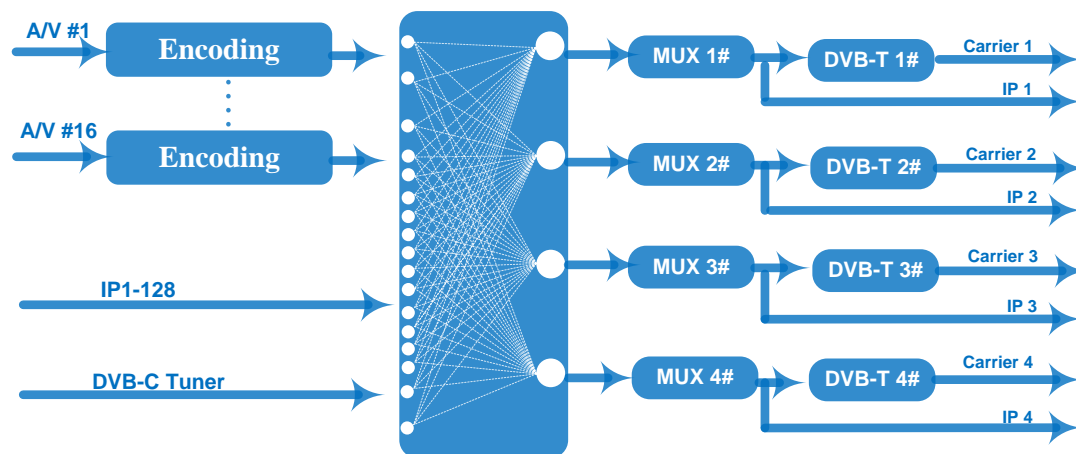
Input	16 CVBS inputs , RCA interface , 1 DVB-C Tuner for remux, F type interface (only for DVB-C RF out) 128 IP input over UDP and RTP, DATA1 and DATA2,RJ45			
Video	Resolution	720×480_60i, 544×480_60i, 352×480_60i 352×240_60i,320×240_60i,176×240_60i, 176×120_60i		
		720×576_50i,704×576_50i,640×576_50i, 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	IBBP		
	Advanced Pretreatment	De-interlacing, noise reduction		
Audio	Encoding	MPEG-1 Layer 2, AC3 (2.0)		
	Sampling rate	48KHz		
	Resolution	24-bit		
	Bit-rate	64Kbps,128Kbps,192kbps,256kbps,320kbps,384kbps each channel		
Multiplexing	Maximum PID Remapping	180 input per channel		
	Function	PID remapping (automatically or manually)		
		Accurate PCR adjusting		
		Generate PSI/ SI table automatically		
Scrambling	Maximum simulcrypt CA	4		
	Standard	EN300 429/ITU-T J.83A/B		
	Connection	Local/remote connection		
Modulation	DVB-C	QAM Channel: 4 Standard: EN300 429/ITU-T J.83A/B MER: ≥40db RF frequency: 50~960MHz, 1KHz step RF output level: -20~0dbm (87~107 dbμV), 0.1db step Symbol Rate: 5.0Msps~7.0Msps, 1ksps stepping Constellation: 16/32/64/128/256QAM		
			J.83A	J.83B
		Constellation	16/32/64/128/256 QAM	64/256 QAM
		Bandwidth	8M	6M
		DVB-T	Standard	EN300744

		FFT mode	2K,
		Bandwidth	6M, 7M, 8M
		Constellation	QPSK, 16QAM, 64QAM
		Guard Interval	1/4, 1/8, 1/16, 1/32
		FEC	1/2, 2/3, 3/4, 5/6, 7/8
		MER	≥42 dB
		RF frequency	50~960MHz, 1KHz step
		RF out	4*RF DVB-T out (4 carriers combined output)
		RF output level	-28~ -3 dBm (77~97 dbμV), 0.1db step
		Standard	EN300744
Stream output	RF output (F type interface)		
	4 IP MPTS output over UDP/RTP, 1*1000M and 1*100M Base-T Ethernet interface		
	1 ASI output (Optional as ordered)		
System function	Network management (WEB)		
	Chinese and English language		
	Ethernet software upgrade		
Miscellaneous	Dimension (W×L×H)	482mm×410mm×44mm	
	Approx weight	8kg	
	Environment	0~45℃(work); -20~80℃ (Storage)	
	Power requirements	AC 110V± 10%, 50/60Hz, AC 220 ± 10%, 50/60Hz	
	Power consumption	20W	

1.4 Principle Chart



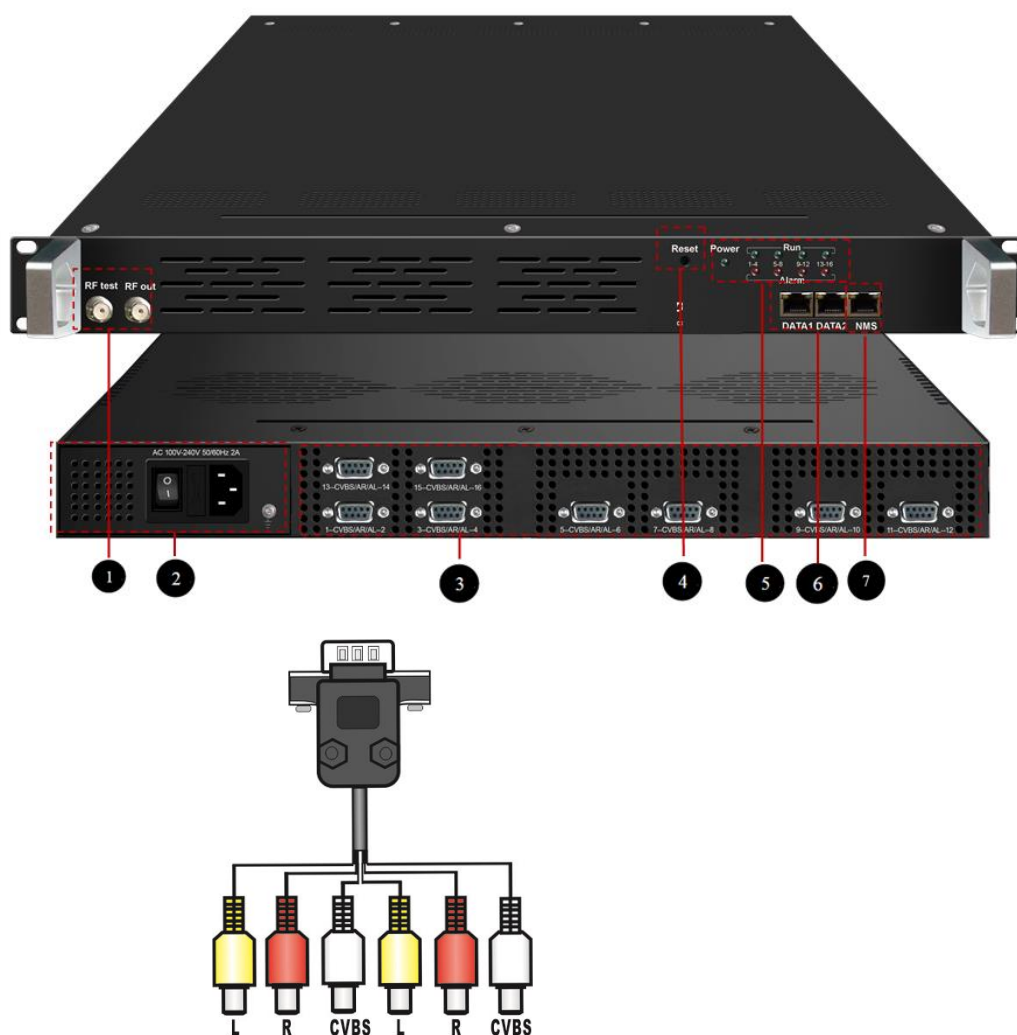
DVB-C RF output



DVB-T RF output

1.5 Appearance and Description

Front and Rear Panel Illustration



1	RF test and RF out port
2	Port Power supply and Grounding Pole
3	16 CVBS input(DB9 to RCA)
4	Reset Key
5	Indicators
6	DATA Port (for IP stream input/output)
7	NMS/CAS

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.

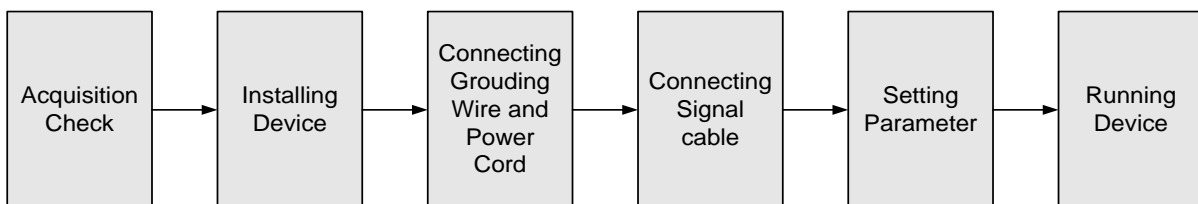
2.1 General Precautions

- ✓ 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	$5 \sim 40^\circ \text{C}$ (sustainable), $0 \sim 45^\circ \text{C}$ (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 mm^2 .

Chapter 3 WEB NMS Operation

User 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.

3.1 Encoder Modulator 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 & Modulator'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.

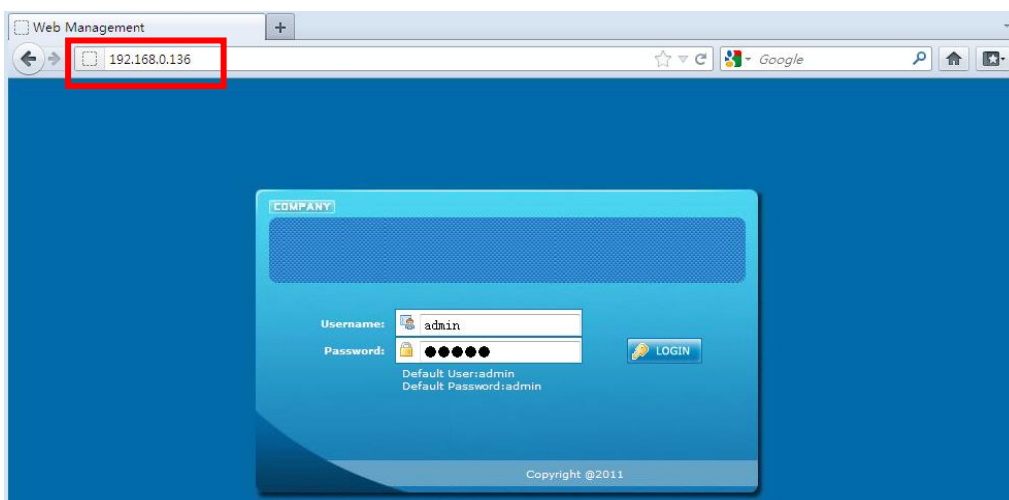


Figure-1

3.2 Encoder Modulator Operation

Status

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

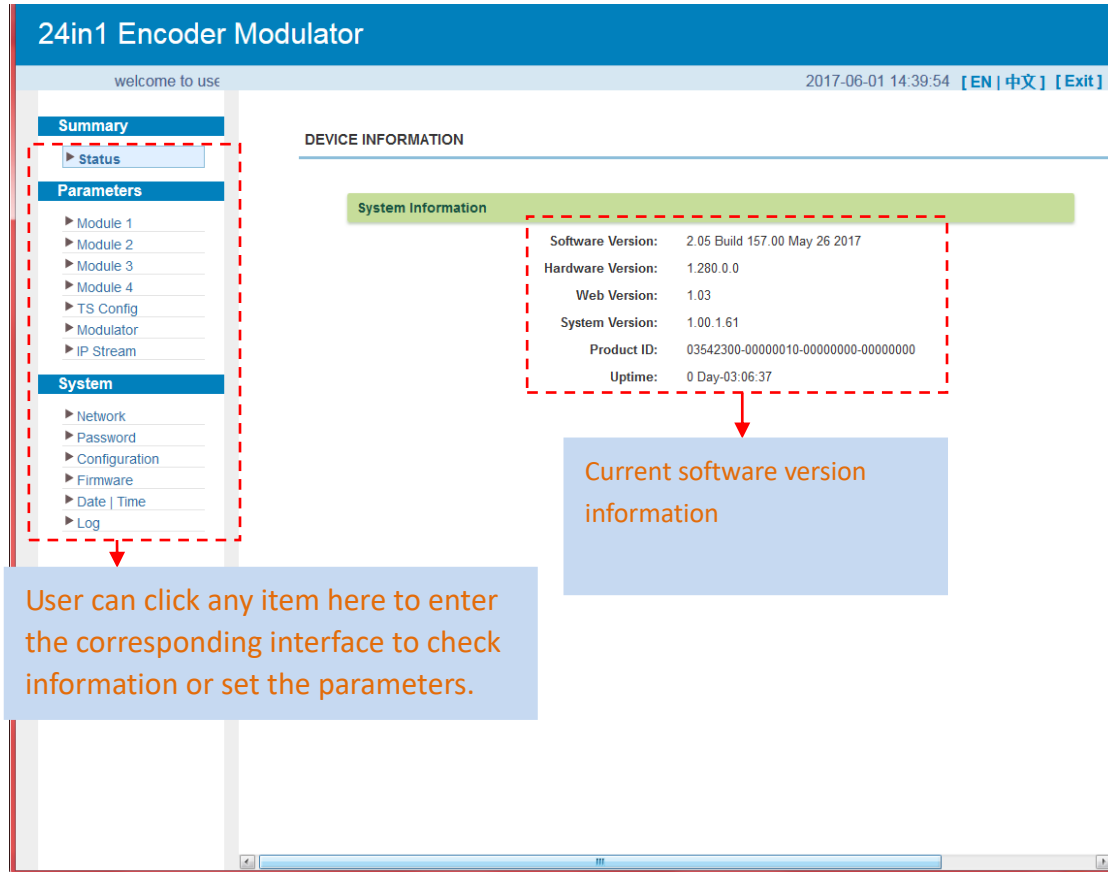


Figure-2

Parameters → Module 1-4

KR425H-16 supports up to 4 modules with 16CVBS input. From the menu on left side of the webpage, clicking “Module1-4”, it displays the information of each encoding channel as Figure-3.

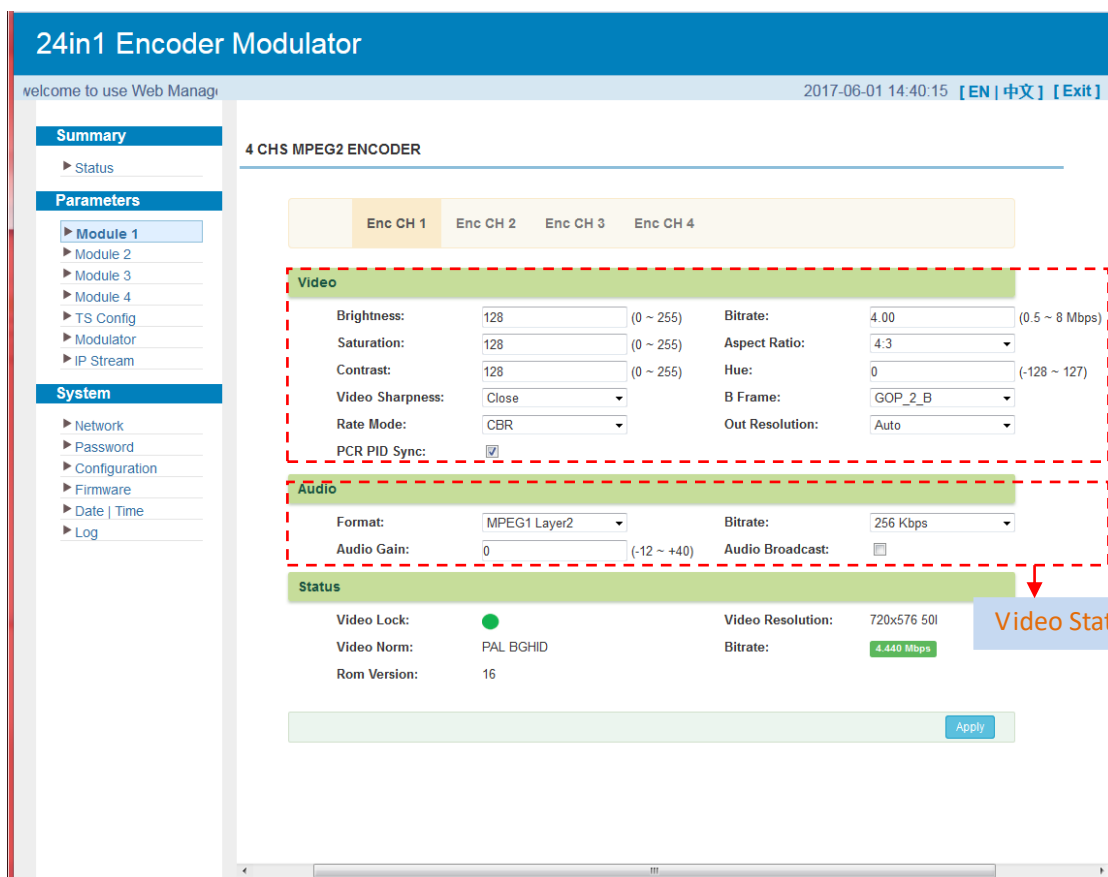


Figure-3

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→Output TS X:

From the menu on up side of the webpage, clicking “**Output TS X**”, it displays the interface where users can select the TS output carrier (Figure-4)

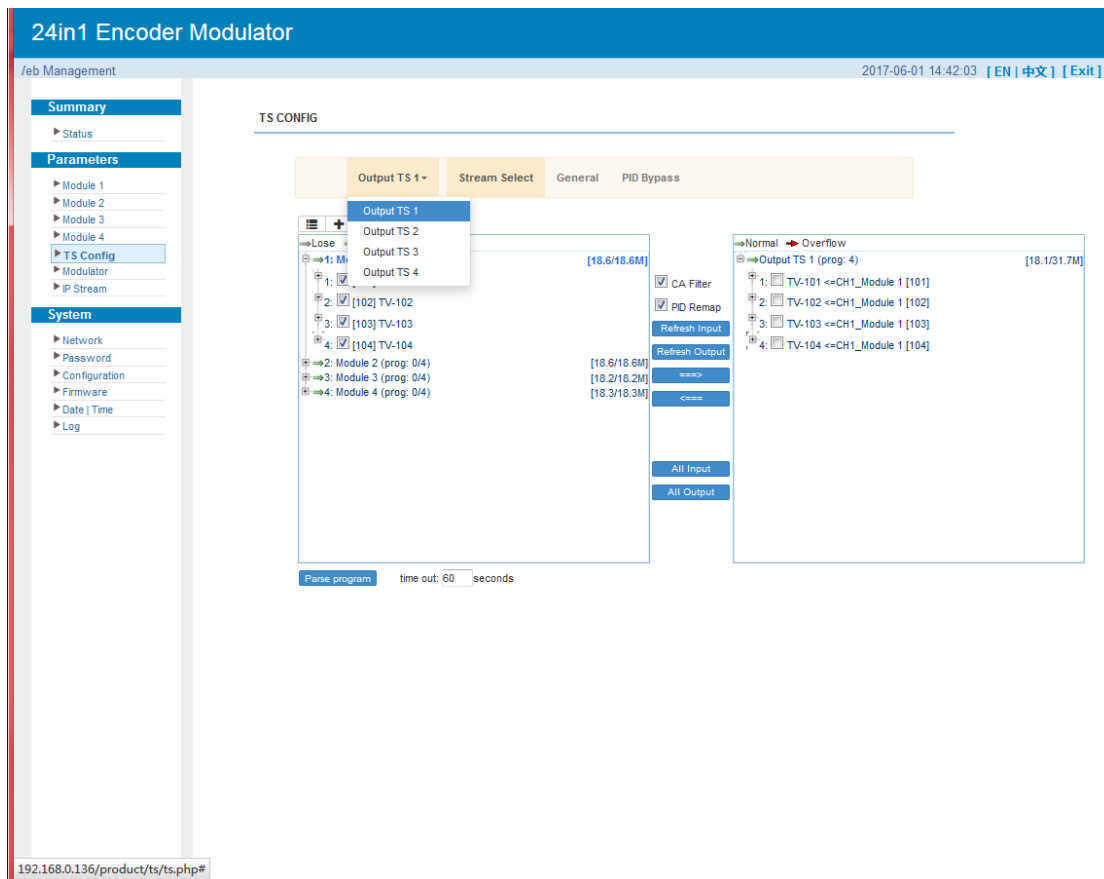


Figure-4

➤ **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-5)

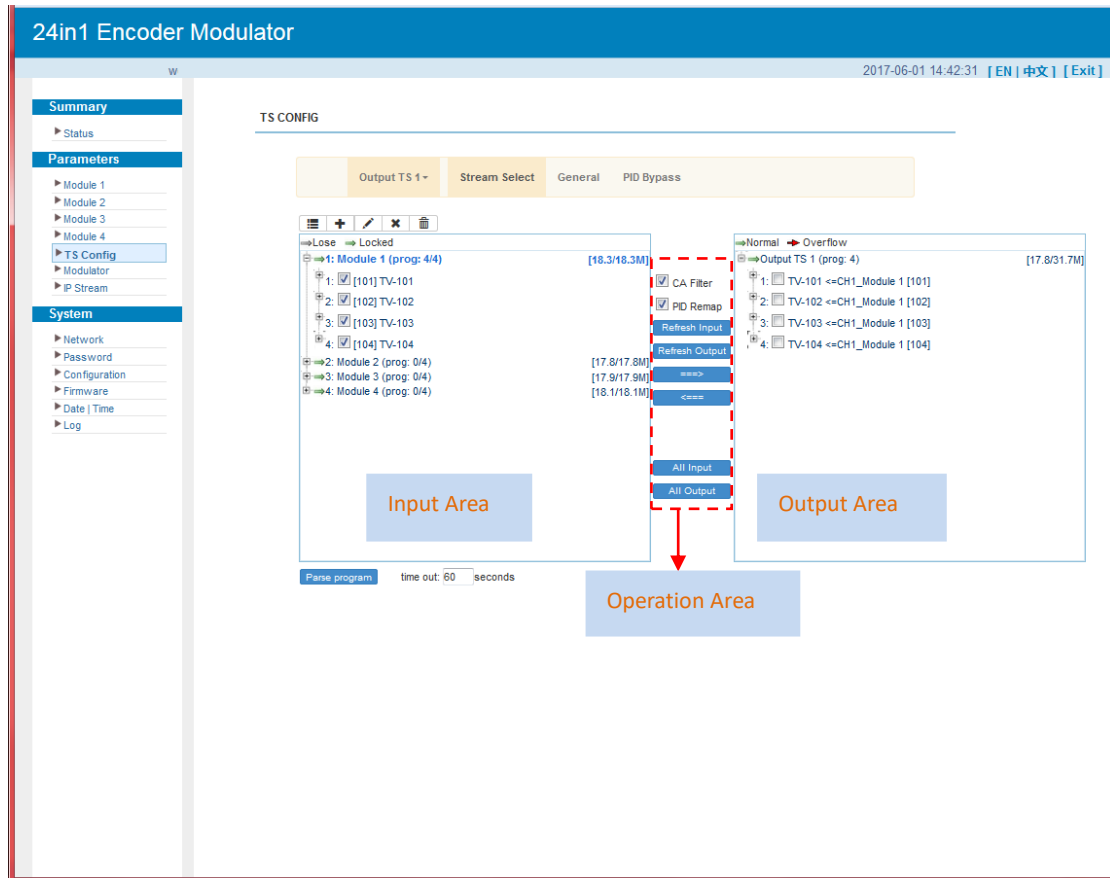








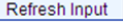
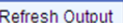
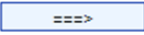
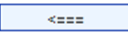


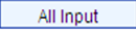
Figure-5

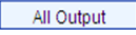
Configure 'Input Area' and 'Output Area' with buttons in 'Operation Area'. Instructions are as below:

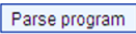

-  : To add input channel which can from GE1/GE2/Connector
-  : To edit the input channel
-  : To delete the input channel
-  : To delete all inputs channel
-   : To check input IP lock or not, green means current IP locked
-   : To check current TS overflow or not, red color means current TS overflow, 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  time out: 60 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:  TV-101 <=CH1_Module 1 [101], it triggers a dialog box (Figure 6) where users can input new information.

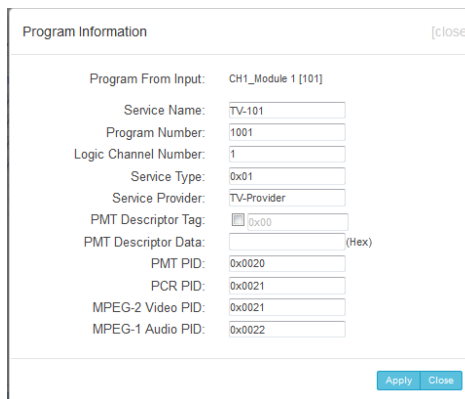


Figure-6

➤ 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-7)

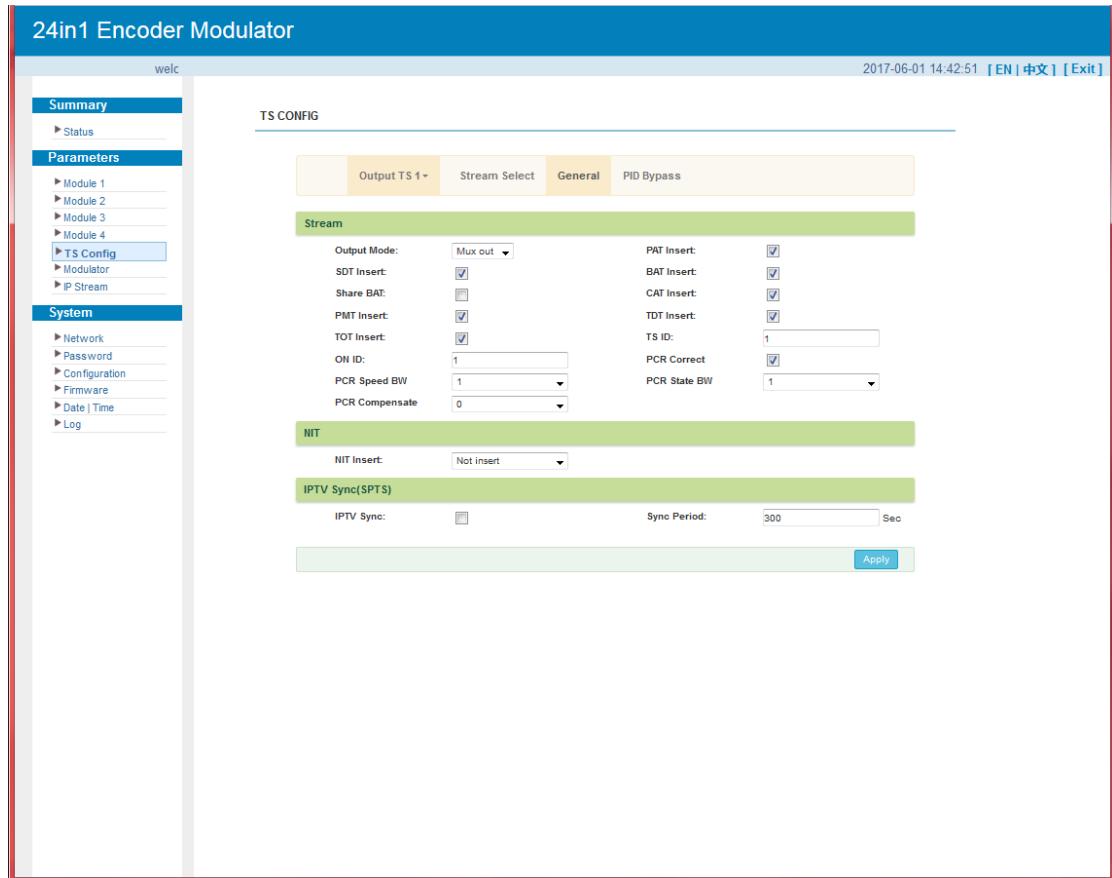


Figure-7

➤ **TS Config→PID Bypass:**

From the TS Config menu on up side of the webpage, clicking “PID Bypass”, it displays the interface as Figure-8 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”

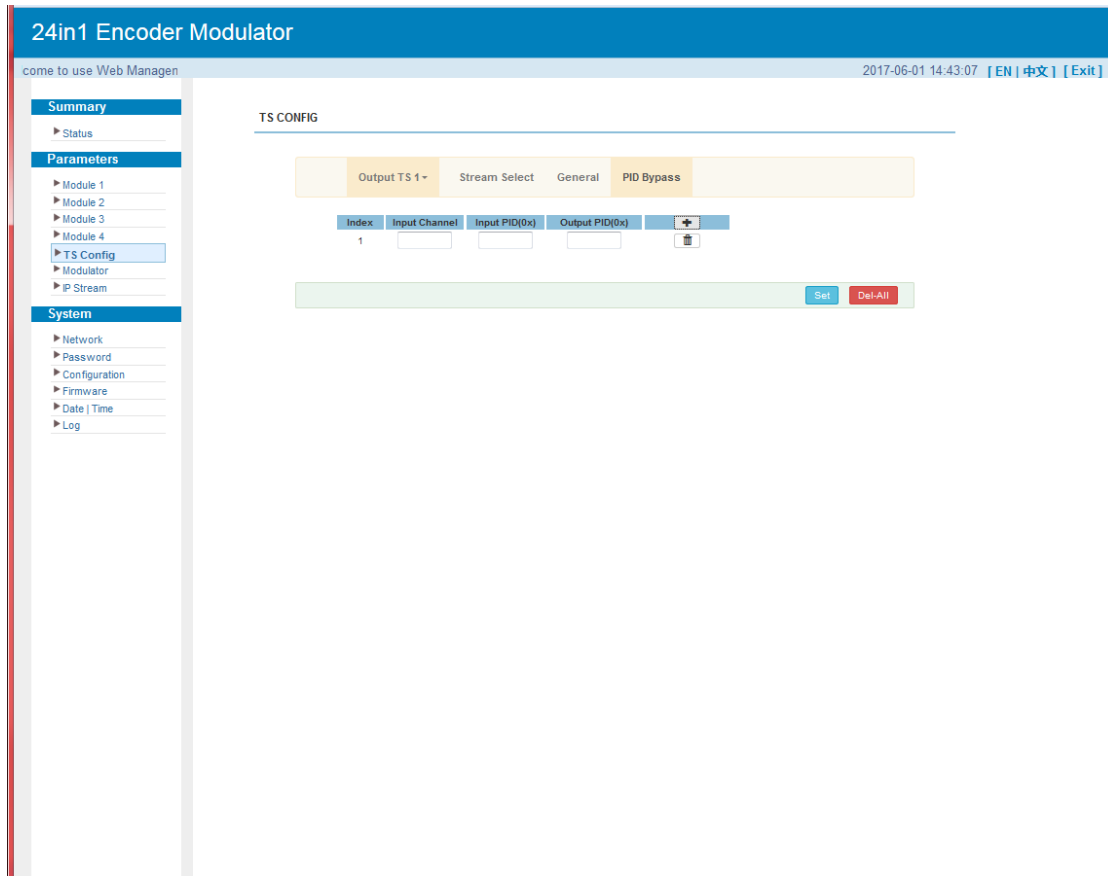


Figure-8

Parameters → Modulator:

From the menu on left side of the webpage, clicking “Modulator”, it will display the Modulator Configuration screen as Figure-9. Here user can set modulation parameters.

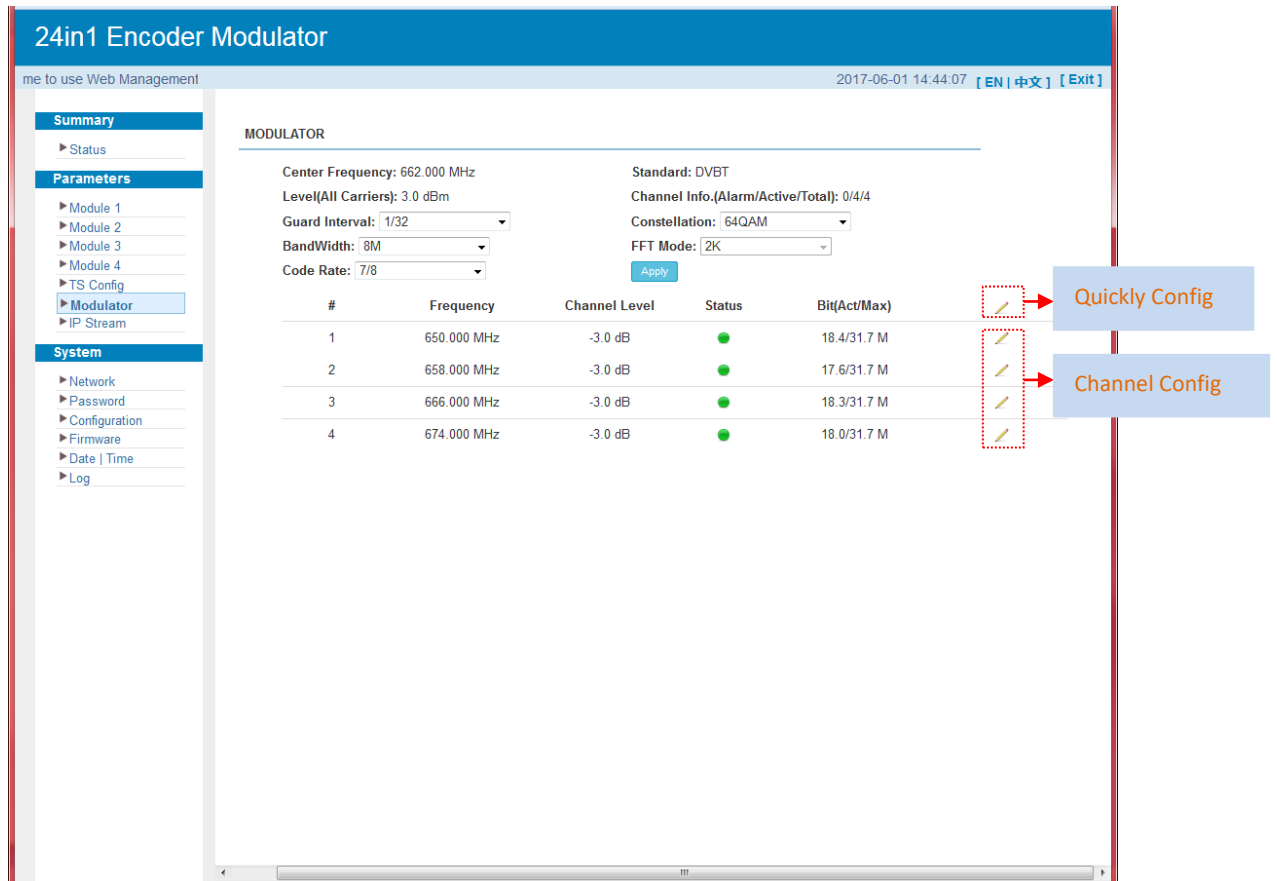


Figure-9

When users click “quickly config” button, it triggers a dialog box (Figure -10) where users can set all channels configuration.

The 'Quickly Config.' dialog box has a title bar with a close button. It contains the following fields: Channel Level: -3.0 (-28 ~ -3 dBm), Channel Enable: ☒, Start Frequency: 650.000 (50 ~ 960 MHz), and Bandwidth: 8.000 MHz. At the bottom right are 'Apply' and 'Close' buttons.

Figure-10

When users click “Channel config” button, it triggers a dialog box (Figure -11) where users can set the corresponding channel configuration.

The 'Channel 1 Config.' dialog box has a title bar with a close button. It contains the following fields: Channel Level: -3.0 (-28 ~ -3 dBm), Channel Enable: ☒, and Frequency: 650.000 (50 ~ 960 MHz). At the bottom right are 'Apply' and 'Close' buttons.

Figure-11

Parameters → IP Stream:

KR425H-16 supports TS to output in IP (Max 128 IP) format through the DATA1 and DATA2 port.

Click 'IP Stream', it will display the interface where to set IP out parameters (Figure-12).

24in1 Encoder Modulator

Web Management 2017-06-01 14:44:55 [EN | 中文] [Exit]

Summary

- ▶ Status

Parameters

- ▶ Module 1
- ▶ Module 2
- ▶ Module 3
- ▶ Module 4
- ▶ TS Config
- ▶ Modulator
- ▶ IP Stream**

System

- ▶ Network
- ▶ Password
- ▶ Configuration
- ▶ Firmware
- ▶ Date | Time
- ▶ Log

IP STREAM

Channel Info.(Alarm/Active/Total): 0/4/4

#	IP Address	Port	Protocol	Pkt Length	Null PKT Filter	Status	Bit(Act/Max)
1	224.2.2.2	2001	UDP	7	<input type="checkbox"/>	●	18.6/31.7 M
2	224.2.2.2	2002	UDP	7	<input type="checkbox"/>	●	18.1/31.7 M
3	224.2.2.2	2003	UDP	7	<input type="checkbox"/>	●	18.6/31.7 M
4	224.2.2.2	2004	UDP	7	<input type="checkbox"/>	●	18.3/31.7 M

Quickly Config

Channel Config

Figure-12

When users click “quickly config” button, it triggers a dialog box (Figure-13) where users can set all channels configuration.

Quickly Config. [close]

Enable: ☒

IP Address: 224.2.2.2

Port: 2001

Step: 1

Protocol: UDP

Pkt Length: 7

Null PKT Filter: ☐

Apply Close

Figure-13

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

Figure-14

System → Network:

Click ‘Network’, it will display the interface as Figure-15 where to set network parameters.

Figure-15

System → password

From the menu on left side of the webpage, clicking “Password”, it will display the

screen as Figure-16 where to set the login account and password for the web NMS.

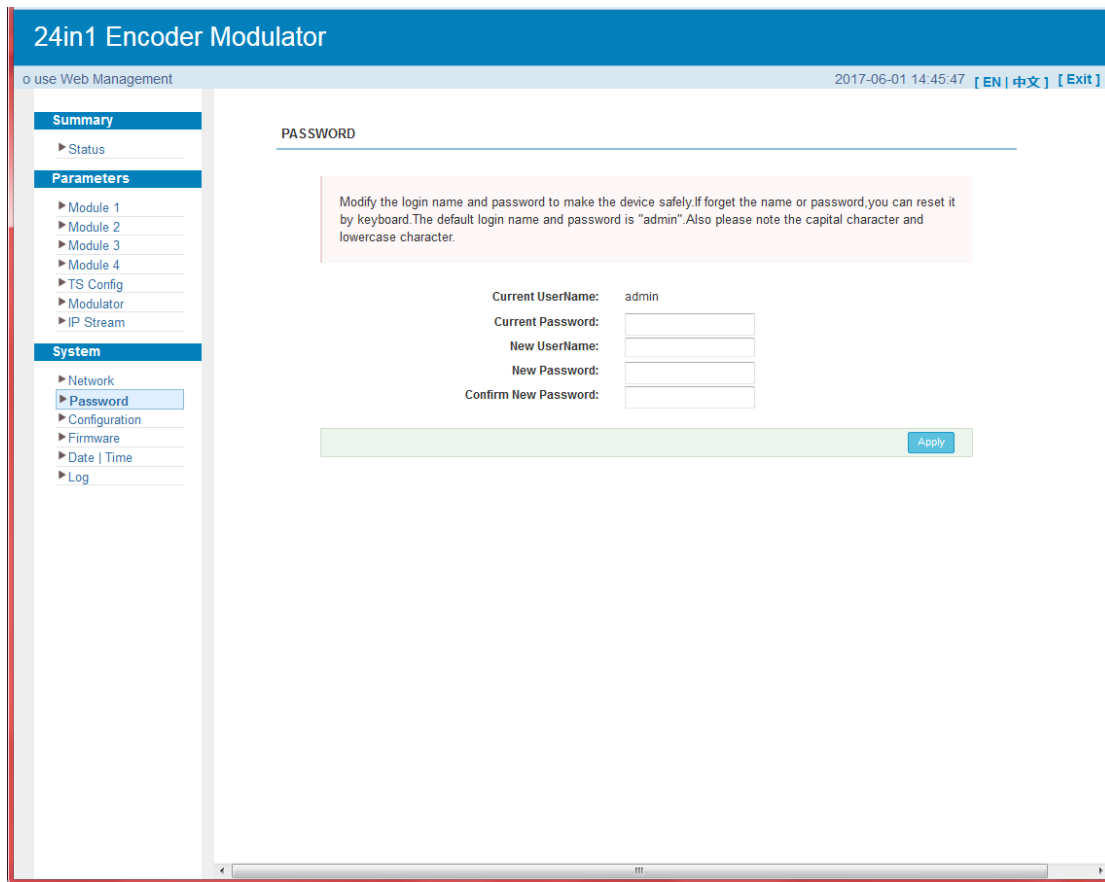


Figure-16

System → Configuration:

From the menu on left side of the webpage, clicking “Configuration”, it will display the screen as Figure-17 where to save/ restore/factory setting/ backup/ load your configurations.

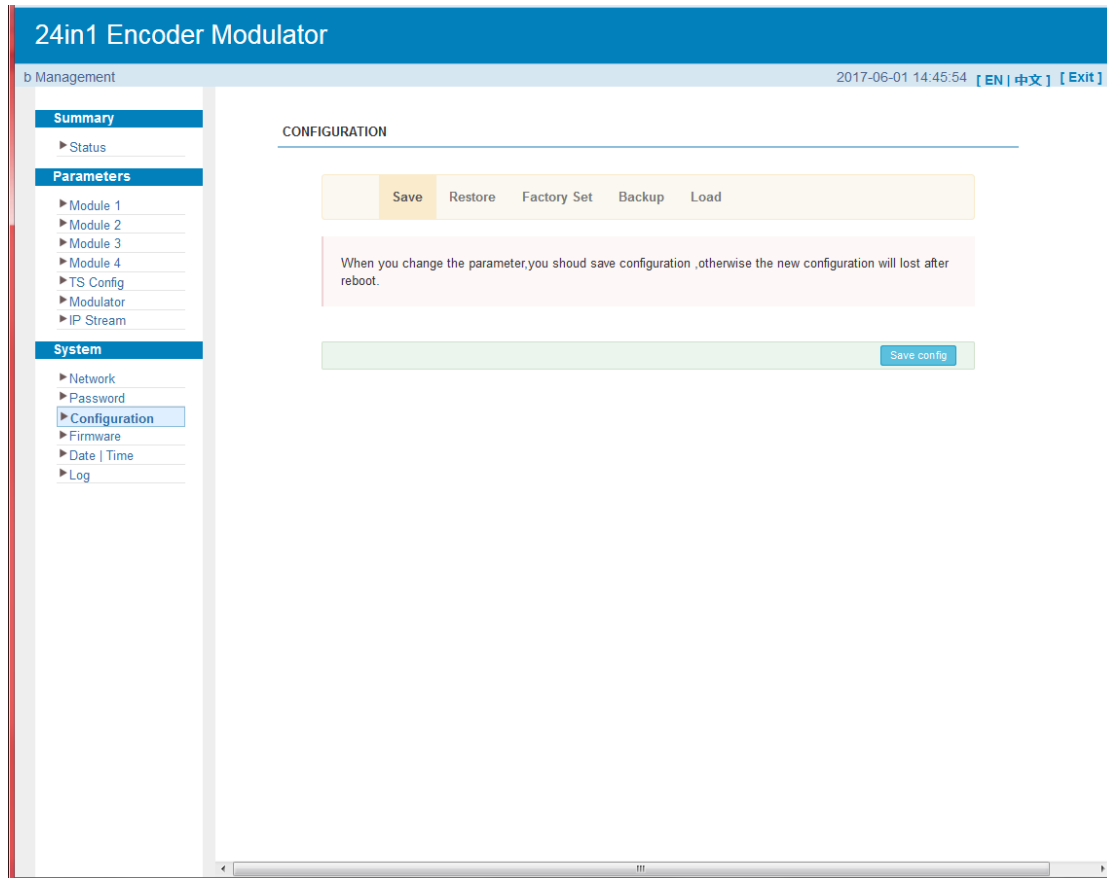


Figure-17

System → Firmware:

From the menu on left side of the webpage, clicking “Firmware”, it will display the screen as Figure-18 where to update firmware for the modulator.

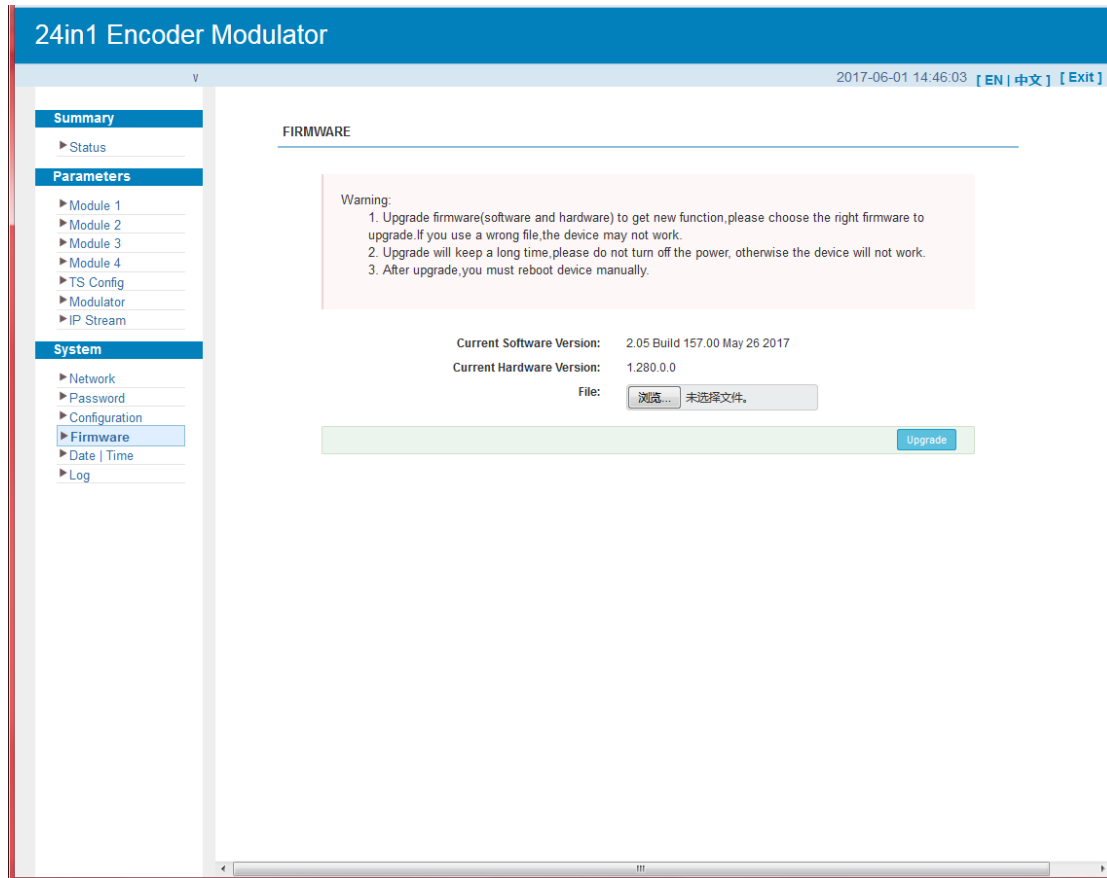


Figure-18

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.

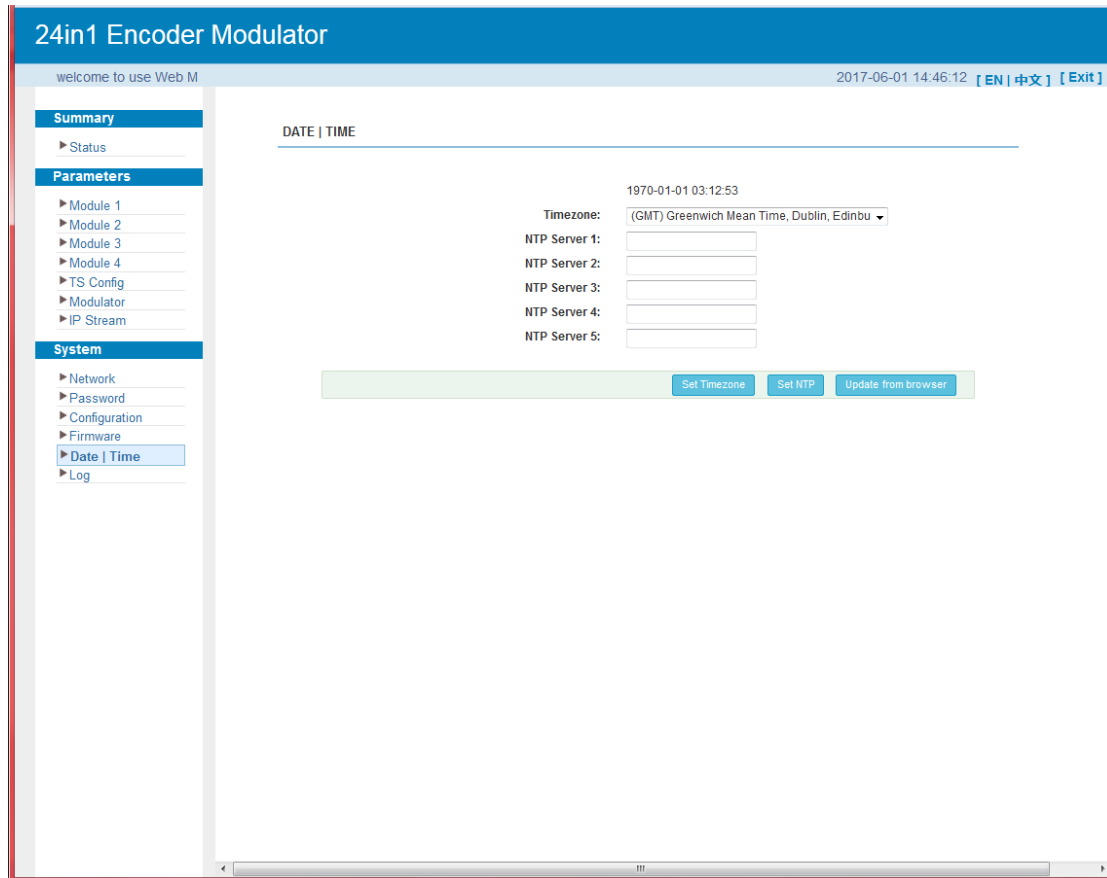


Figure-19

System→ Log:

From the menu on left side of the webpage, clicking “Log”, it will display the log interface as Figure-20 where to check or export the Kernel/System log.

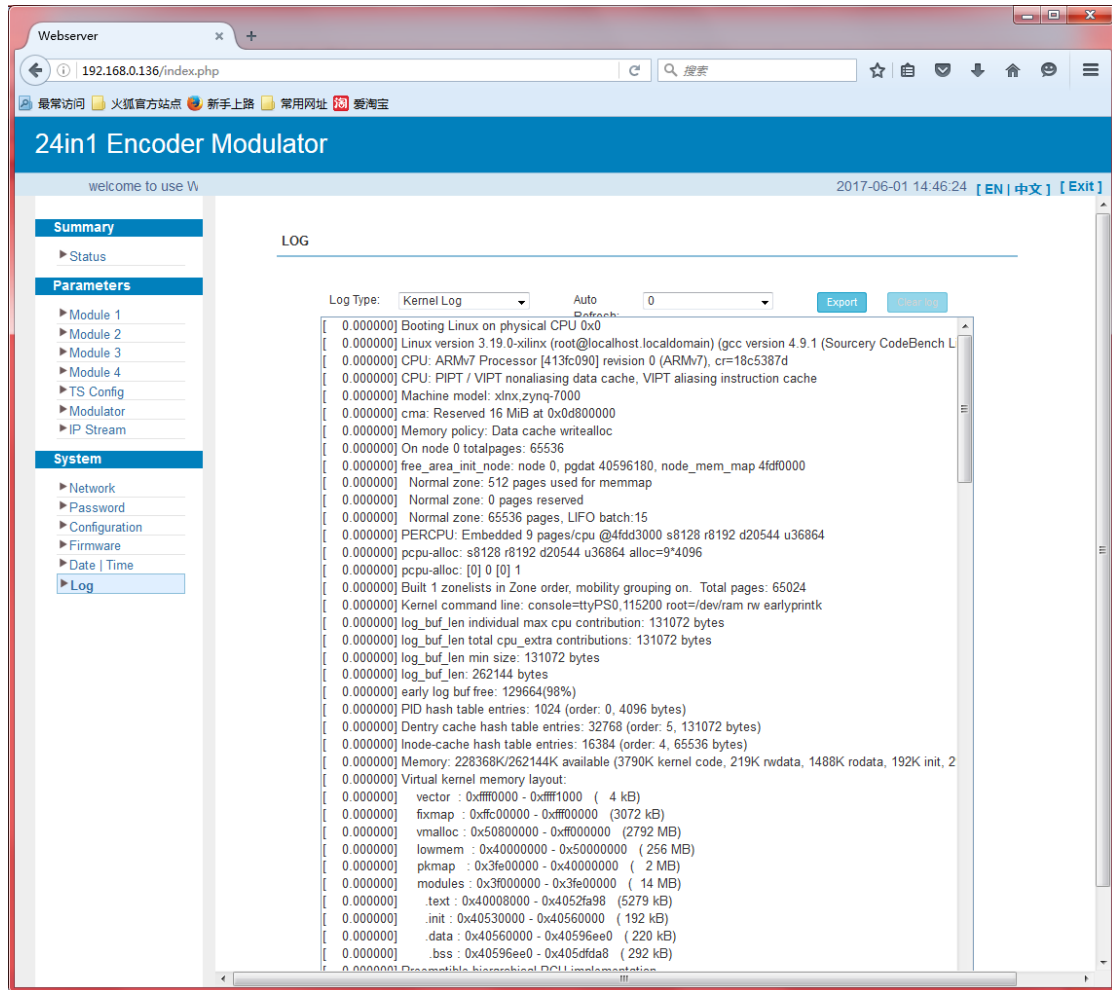


Figure-20

Chapter 4 Troubleshooting

ClearView's ISO9001 quality assurance system has been approved by CQC organization. For guarantee the products' quality, reliability and stability. All ClearView 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 ClearView. 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

KR425H-16 Encoder Modulator	1 pcs
DB9 to CVBS Adaptor Cables	8 pcs
Power Cord	1pcs