Baudcom BD-3224V HEVC AVC H.265 Encoder User Manual

Contents

Baudcom BD-3224V HEVC AVC H.265 Encoder

Outline

Baudcom BD-3224V HEVC/H.265 HD Encoder is a professional HD audio & video encoding and multiplexing device. It has 4/8/12 HDMI video input interfaces, and supports HEVC/H.265 & MPEG 4 AVC/H.264 AVC video encoding and MPEG 1 Layer 2, LC-AAC, HE-AAC, HE-AAC V2 audio encoding. This device can simultaneously encode 4/8/12 channels HD audio & video; moreover, it supports IP out (1 MPTS and max 4 SPTS per module)

from Data port.

Main Features

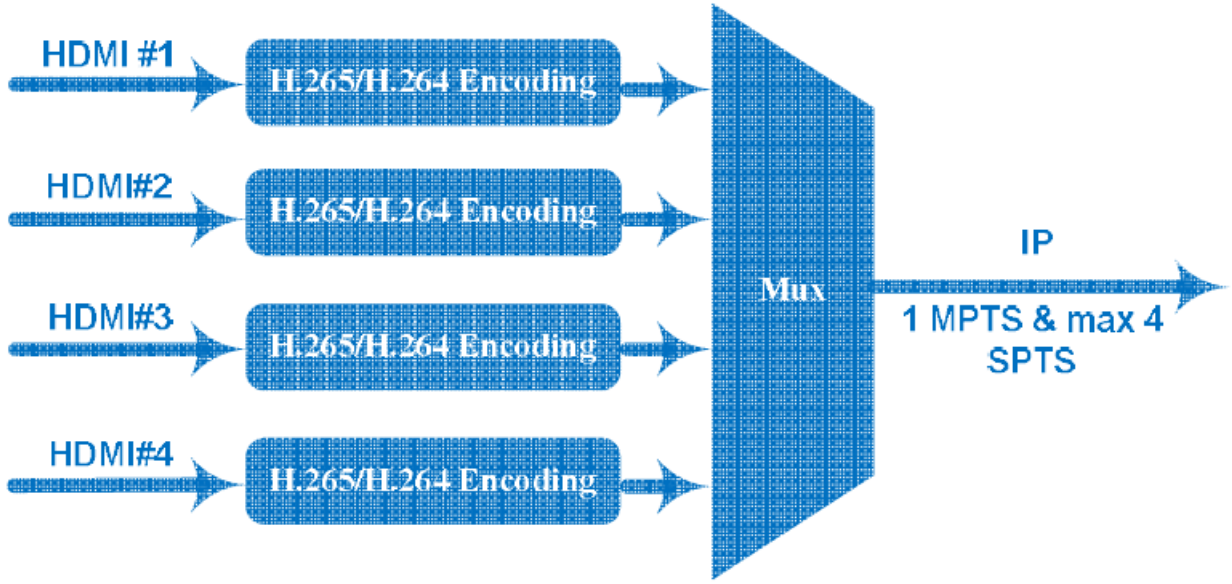
- Support 4/8/12 HDMI(1.4) (HDCP1.4) inputs, maximum support 3 modules
- Support HEVC/ H.265 & MPEG 4 AVC/H.264 AVC video encoding
- Support MPEG-1 Layer 2, LC-AAC, HE-AAC and HE-AAC V2 Audio encoding and AC3 Passthrough
- Support 1 MPTS and maximum 4 SPTS (per module) output over UDP/RTP/RTSP
- Up to 2160P 30Hz
- Ultra low bit rate: save 75% bandwidth
- Enhance picture quality: Advanced compressing algorithm
- Advanced Pretreatment: De-interlacing, Noise Reduction, Sharpening
- STB available with Ensurity CAS
- Decoding chipset: Montage CS8051/8021, NationalChip GX3201H
- Control and easy updates via web management

Specifications

Input	4/8/12×HDMI input (1.4), HDCP 1.4	
Video Encoding	Encoding Format	HEVC/ H.265 , MPEG 4 AVC/H.264
	Resolution	3840×2160_30P, 3840×2160_29.97P (Encoding 2 CHs per module for H.265, and encoding 1 CH for H.264) 1920×1080_60P,1920×1080_59.94P,1920×1080_50P,

		(Encoding 4 CHs per module for H.265, and encoding 2 CHs for H.264) 1280×720_60P, 1280×720_59.94P, 1280×720_50P (Encoding 4 CHs per module for H.264 and H.265)
	Chroma	4:2:0
	Bitrate	0.5Mbps~20Mbps (each channel)
	Rate Control	CBR/VBR
	GOP Structure	IBBP, IPPP
	Advanced Pretreatment	De-interlacing, Noise Reduction, Sharpening
Audio Encoding	Encoding Format	MPEG-1 Layer 2, LC-AAC, HE-AAC, HE-AAC V2, AC3 Passthrough
	Sampling rate	48KHz
	Bit-rate (each channel)	48Kbps~384Kbps (MPEG-1 Layer 2 & LC-AAC) 24 Kbps~128 Kbps (HE-AAC) 18 Kbps~56 Kbps (HE-AAC V2)
	Audio Gain	0~255
Stream output	1 MPTS and maximum 4 SPTS output over UDP/RTP/RTSP per module, 1000M/100M Base-T Ethernet interface (unicast/ multicast) IP null packet filter	
System	Web based management	
	Chinese-English control interface	
	Ethernet software upgrade	
Miscellaneous	Dimension (W× L× H)	482mm×328mm×44mm
	Approx weight	5kg
	Temperature	0~45°C(work), -20~80°C Storage
	Power	AC 100V-220V±10%, 50/60Hz

Principle Chart of Per Module (the number of encoding channels depend on encoding format and resolution)



Appearance and Illustration

Front Panel Illustration:

Front Panel Illustration:

1	NMS (Network Management Port) Data Port (for IP output)
2	Indicators: Run and Power
3	Grounding Pole/ Power Switch and socket
4	4 HDMI input ports

Installation Guide

Acquisition Check
When users open the package of the device, it is necessary to check items according to packing list. Normally it should include the following items:

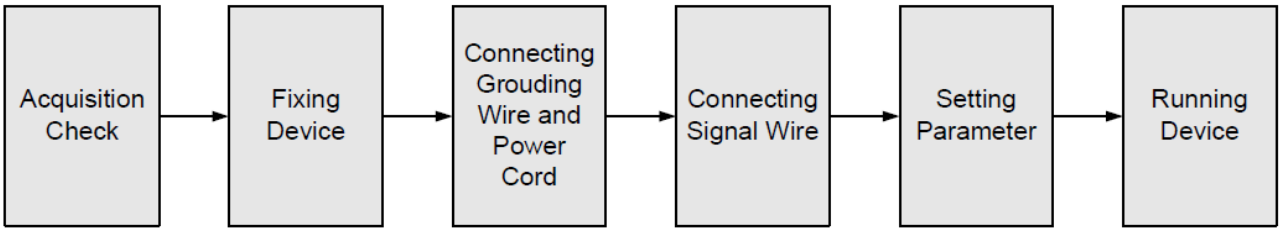
- BD-3224V HEVC/H.265 HD Encoder
- Power Cord
- HDMI cable
- Network cable
- If any item is missing or mismatching with the list above, please contact local dealer.

Installation Preparation
When users install device, please follow the below steps. The details of installation will be described at the rest part of this chapter. Users can also refer rear panel chart during the installation.

The main content of this chapter including:

- Checking the possible device missing or damage during the transportation
- Preparing relevant environment for installation
- Installing Encoder
- Connecting signal cables
- Connecting communication port (if it is necessary)

Device's Installation Flow Chart is Illustrated as following



Environment 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: $1X10^{7}$~$1X10^{10W}$ Grounding current limiting resistance: 1M (Floor bearing should be greater than 450Kg/)
Environment Temperature	5~40℃(sustainable) 0~45℃(short time) installing air-conditioning is recommended
Relative Temperature	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 power 220V 50Hz. Please carefully check before running.

Grounding Requirement

- All function modules' good grounding designs are 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.
- Coaxial cable's outer conductor and isolation layer should keep proper electric conducting with the metal housing of device.
- 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 25mm2.
- All the machine frames should be connected with protective copper strip. The grounding wire should be as short as possible and avoid circling. The area of the conduction between grounding wire and grounding strip should be no less than 25mm2.

Device Grounding
Connecting the device's grounding rod to frame's grounding pole with copper wire.

Wire's Connection
The grounding wire conductive screw is located at the right end of rear panel, and the power switch, fuse, power supply socket is just beside ,whose order goes like this, power switch is on the left ,power supply socket is on the right and the fuse is just between them.

- Connecting Power Cord

  User can insert one end into power supply socket, while insert the other end to AC power.
- Connecting Grounding Wire

  When the device solely connects to protective ground, it should adopt independent way, say, share the same ground with other devices. When the device adopts united way, the grounding resistance should be smaller than 1Ω.

Caution: Before connecting power cord to BD-3224V HEVC/H.265 HD Encoder, user should set the power switch to “OFF”.

WEB NMS Operation

BD-3224V does not support front buttons and LCD, 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 the BD-3224V’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 0 to 255 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 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.

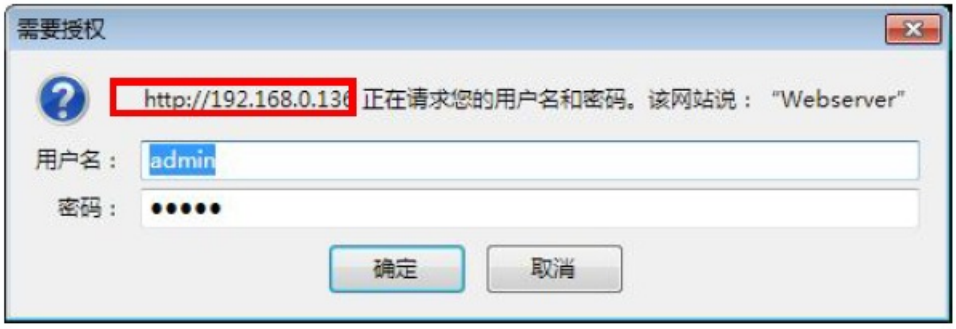


Figure-1

Operation

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

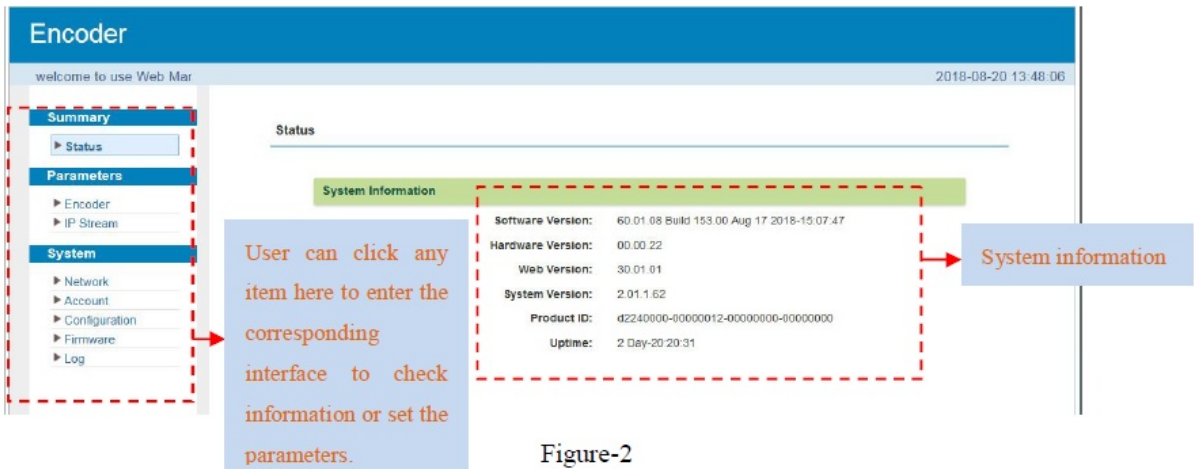


Figure-2

Parameters →Encoder:

From the menu on left side of the webpage, clicking “Encoder”, it displays the programs information of each

encoding channel and interface where users can set video and audio parameters as Figure-3.

Note:
Encoding with H.265 and 4K resolution, only “Enc CH3 and CH4” can be connected, if users want to encode 1 channel, “Enc CH4” must be connected. Encoding with H.264 and 4K resolution, only “Enc CH4” can be connected. Encoding with H.264 and 1080 resolution, only “Enc CH3 and CH4” can be connected, if users want to encode 1 channel, “Enc CH4” must be connected. The number of encoding channels depends on encoding format and resolution, please view datasheet.

HDMI:

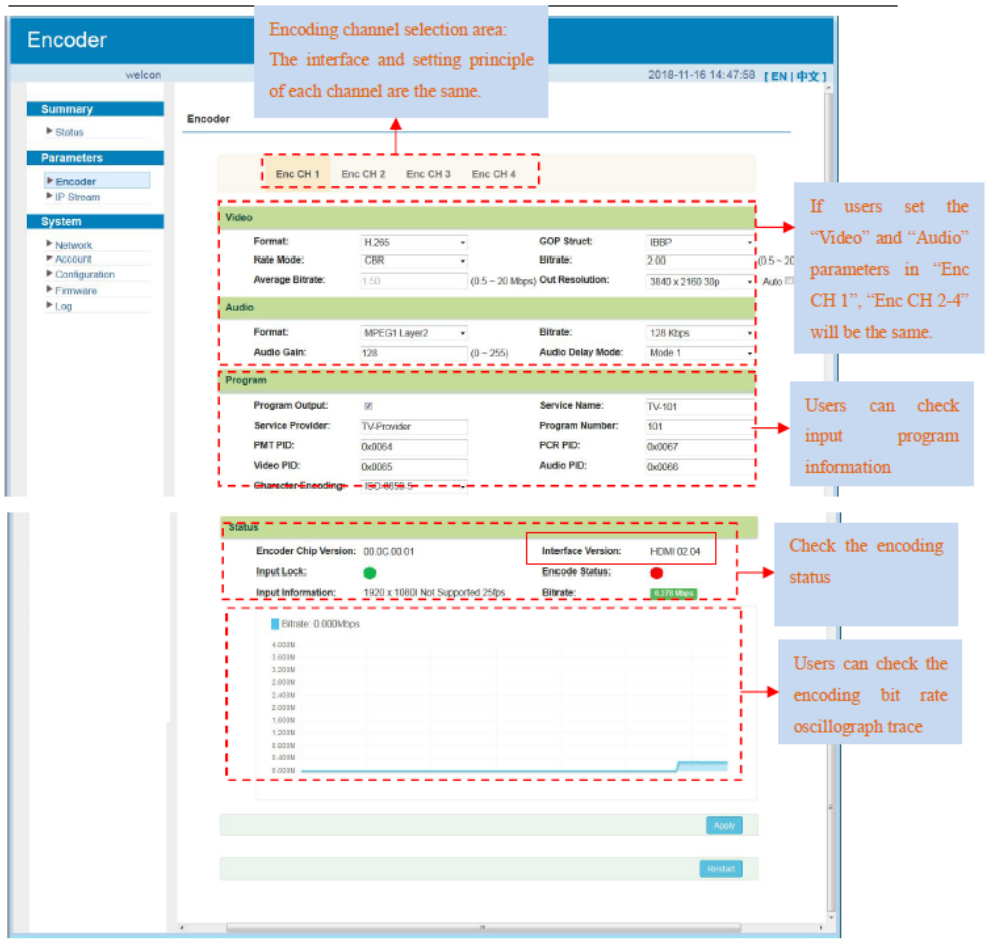


Figure-3

Click this button to apply the modified parameters. Different audio format, audio bit rate will be different:
MPEG-1 Layer 2 & LC-AAC: 48Kbps~384Kbps
HE-AAC: 24 Kbps~128 Kbps
HE-AAC V2: 18 Kbps~56 Kbps

Parameter → IP Stream:
BD-3224V supports TS to output in IP (maximum 4 SPTS and 1 MPTS per module) format through the DATA port on the front channel. SPTS 1-4” is corresponding to “Enc CH 1-4” separately, and the number of SPTS depends on encoding format and resolution. Clicking “IP Stream”, it displays the interface where to set IP out parameters (Figure-4).

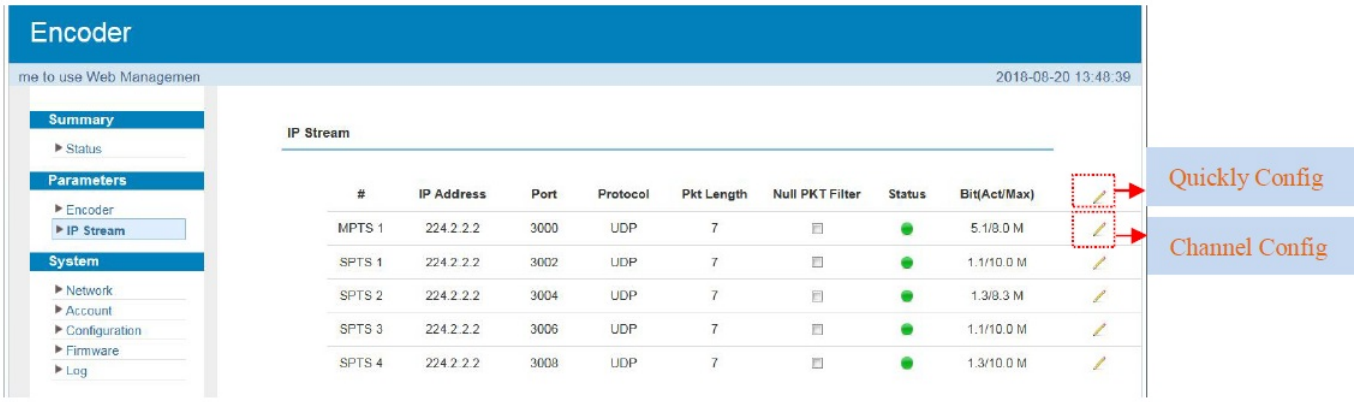


Figure-4

When users click “quickly config” button, it triggers a dialog box (Figure-5) where users can set all channels configuration.

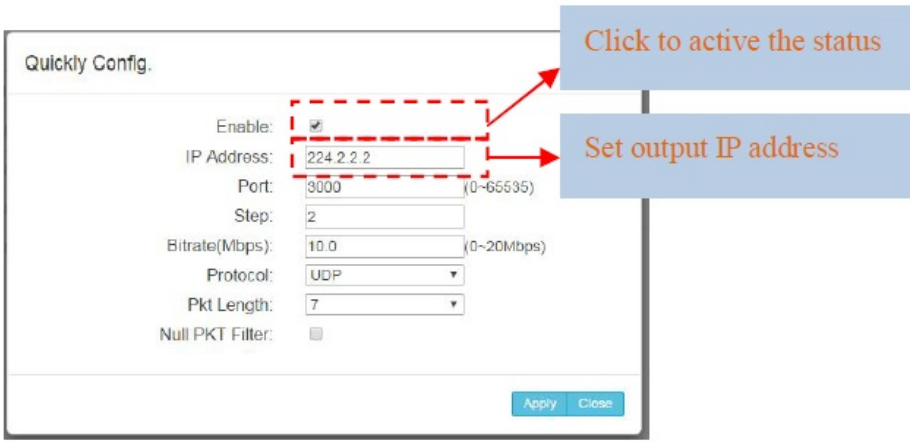


Figure-5

When users click “Channel config” button, it triggers a dialog box (Figure-6) where users can set the corresponding channel configuration

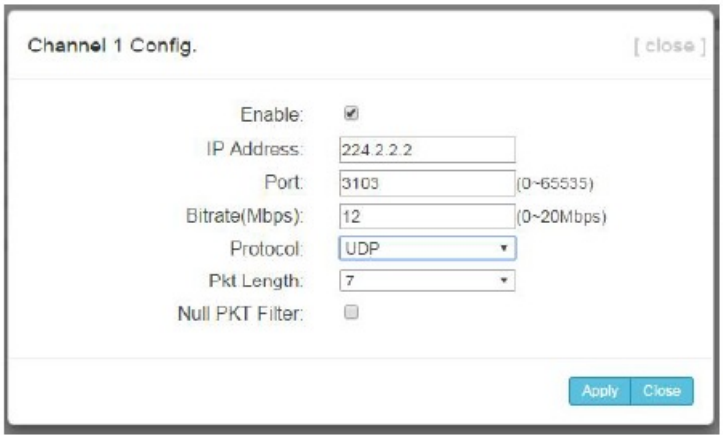


Figure-6

Parameter →Network:
Clicking “Network”, it displays the interface as Figure-7 where to set NMS parameters

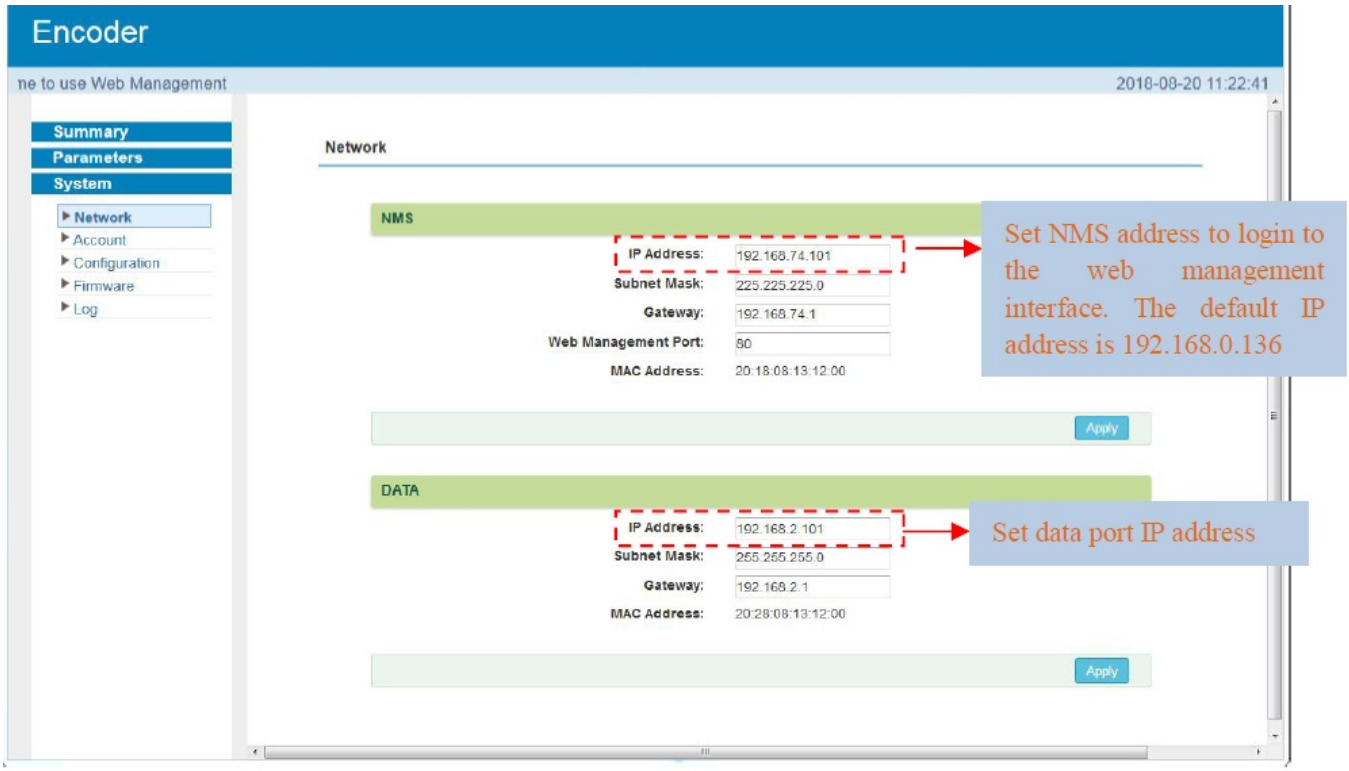


Figure-7

System → Account:

Clicking “Account”, it displays the screen as Figure-8 where to set new login account and password for the web NMS. Both the current username and password are “admin”.

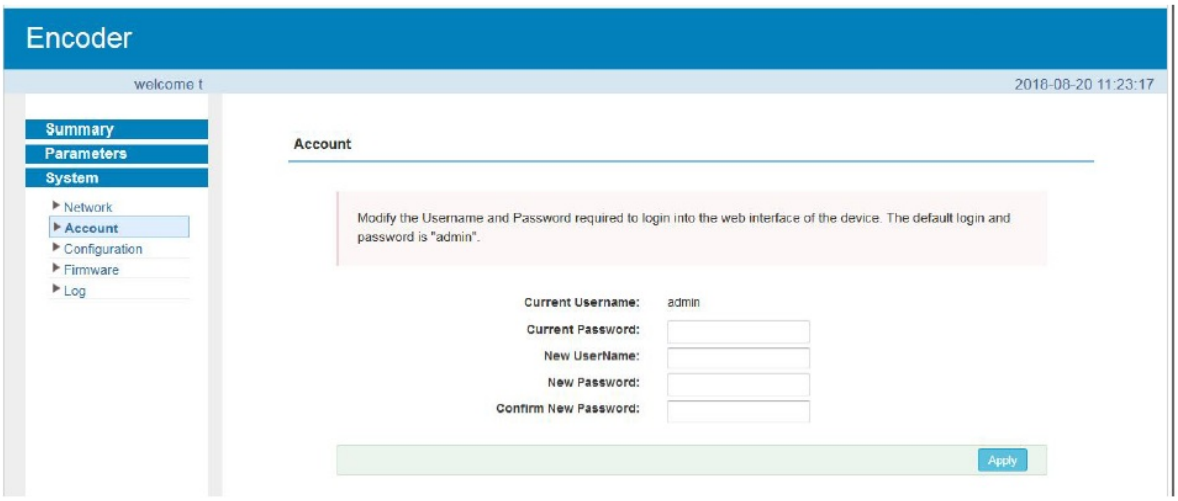


Figure-8

System → Configuration:

Clicking “Configuration”, it displays the screen as Figure-9 where to set save/ restore/ factory set/ backup/ load configurations

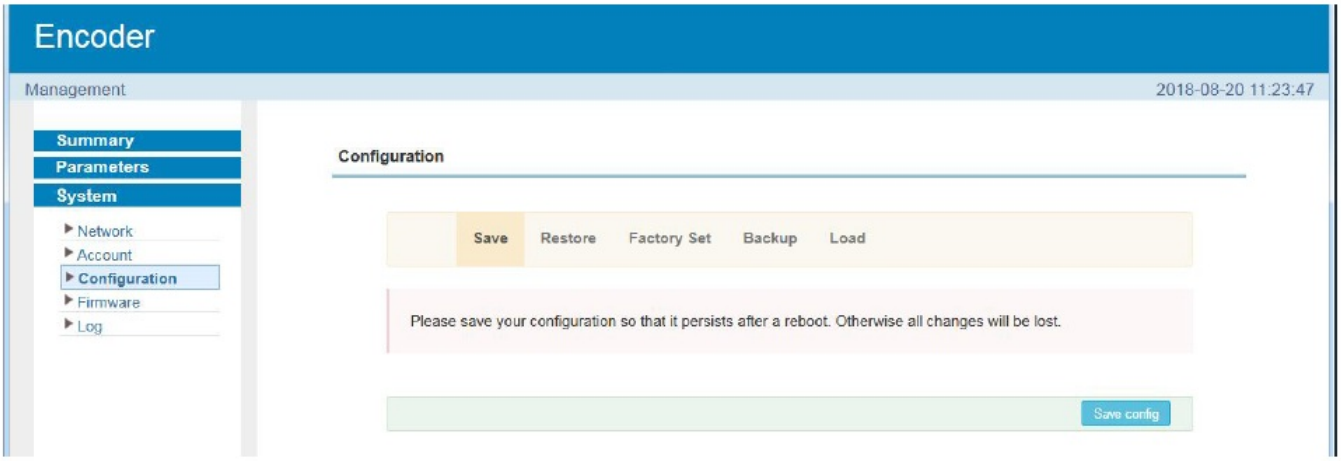


Figure-9

System → Firmware:
Clicking “Firmware”, it displays the screen as Figure-10 where to upgrade firmware for the encoder.

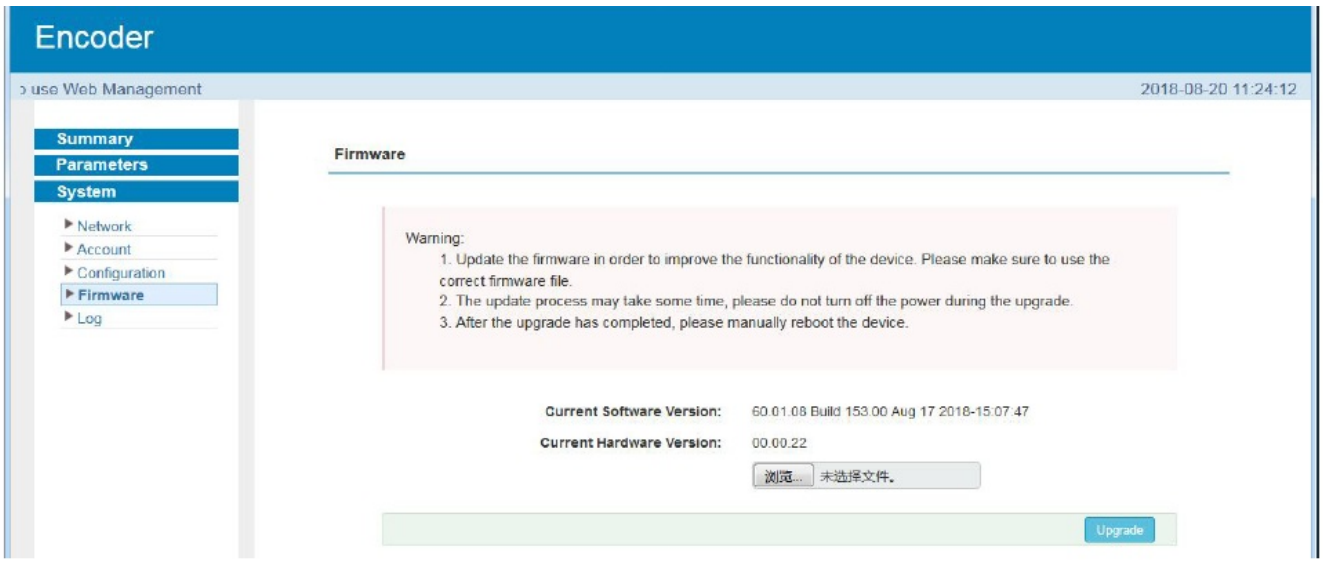


Figure-10

System → Logo:
Clicking “Log”, it displays the log interface as Figure-11 where to check or export the Kernel/System log.

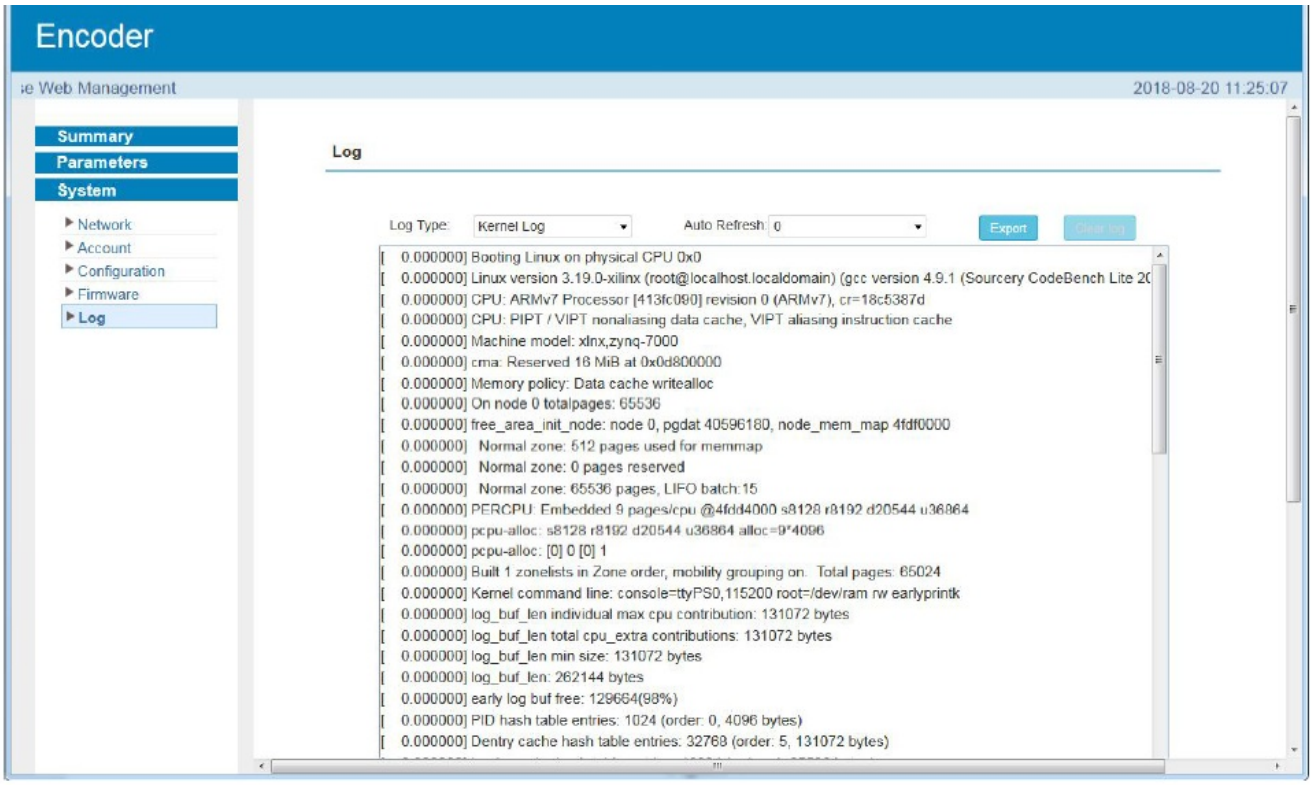


Figure-12

Troubleshooting

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

Packing list

- BD-3224V HEVC/H.265 HD Encoder
- Power cord
- HDMI cable
- Network cable

Documents / Resources

	Baudcom BD-3224V HEVC AVC H.265 Encoder [pdf] User Manual BD-3224V HEVC AVC H.265 Encoder, BD-3224V, HEVC AVC H.265 Encoder, H.265 Encoder, Encoder

References

- GPON ONU, Fiber Tools, FTTX total solution provider - Baudcom