

THOR BROADCAST

User Manual

4Ch CVBS Video/Audio Encoder

User's Manual



DIRECTORY

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Chapter 1 Product Outline

1.1 Outline

The 4Ch CVBS Video/Audio Encoder is our professional SD audio & video encoding and multiplexing device. It has 4 independent channels of unbalanced audio & video input interfaces, supporting MPEG-2 and H.264. Furthermore, it can support the MPEG-1 Audio layer 2, LC-ACC, HE-AAC V2, and each channel can support ultra low bit-rate (0.25~15Mbps for H.264 encoding, and 0.5~15Mbps for MPEG-2 encoding). This device can simultaneously encode 4 channels of SD audio & video; moreover, it has an ASI input and can multiplex the input TS with the 4 encoded SPTS to generate a MPTS output, and users can select the MPTS and 4SPTS through the front panel operation. Also, the PSI/SI information can be inserted into MPTS output. In conclusion, its high integrated and cost effective design makes the device widely used in varieties of digital distribution systems such as CATV digital head-end, satellite and terrestrial digital TV, etc.

1.2 Features

- 4 independent channels of video/audio input ports and 1 ASI input multiplexing
- Supports multiple resolutions:
 PAL:720*576/352*288/320*240/320*180/176*144/160*120/160*90@50Hz
 NTSC: 720*480/352*288/320*240/320*180/176*144/160*120/160*90@59.94Hz
- H.264 and MPEG-2 video encoding, advanced video pretreatment algorithm
- MPEG1 Audio Layer 2 , LC-AAC, HE-AAC V2
- Supports VBR/CBR video encoding
- Supports ultra low bit rate encodings: 0.25~15Mbps(H.264)/ 0.5~15Mbps(MPEG-2)
- Applicable for one Seg/ISDB-T utilization
- System encoding output bit rate range: 2~40Mbps
- Supports multiplexed MPTS ASI output
- Supports MPTS and 4SPTS selection through the LCD operation
- Supports multiplexed MPTS or 4 SPTS over UDP unicast/multicast output

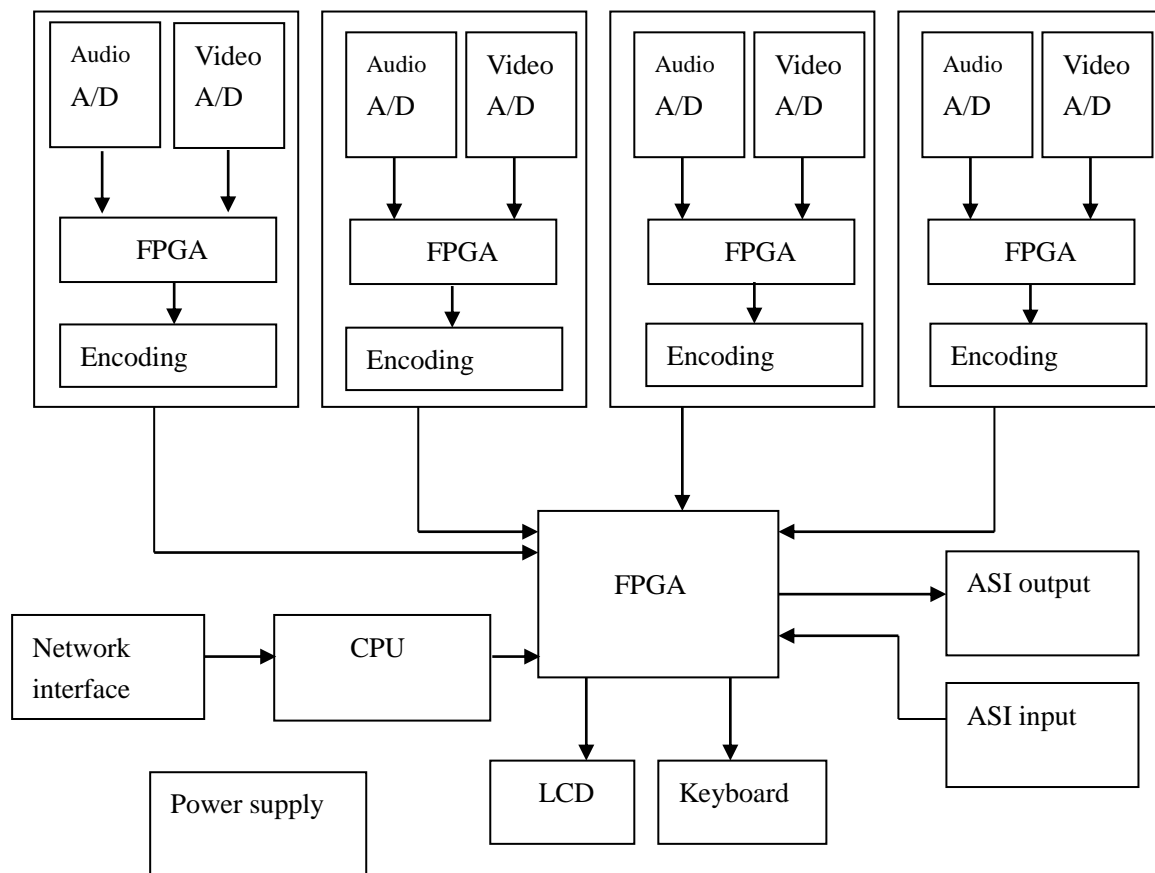
- Two isolated ports separately for data transfer and Ethernet
- Real-time effective output bit-rate monitoring
- LCD / keyboard and NMS operation

1.3 Specifications

Input	4×CVBS inputs , BNC interface	
	4 pairs unbalanced stereo audio inputs, BNC interface	
	1×ASI input, BNC interface	
Video	Resolution	PAL:720*576/352*288/320*240/320*180/176*144/ 160*120/160*90@50Hz NTSC:720*480/352*288/320*240/320*180/176*144/ 160*120/160*90@59.94Hz
	Encoding	MPEG-2 /H.264
	Bit rate	0.25~15Mbps for H.264 encoding, and 0.5~15Mbps for MPEG-2 encoding
	Rate Control	CBR/VBR
	GOP Structure	IBBP
	Advanced Pretreatment	De-interlacing, noise reduction, sharpening
	Audio	Encoding
Sampling rate		48KHz,
Resolution		24 bit
Bit-rate		64Kb/s~384Kb/s (each channel)
Multiplexing	1 ASI input multiplexed with local 4 channels TS	
Stream output	2 × ASI outputs, BNC interface	
	MPTS over UDP,10/100Base-T Ethernet interface (UDP unicast / multicast), 4 SPTS(optional)	
System function	LCD/keyboard operating, NMS support, Chinese-English control interface	
	Ethernet software upgrade	
General	Dimensions (WxDxH)	482mm×455mm×44.5mm
	Approx weight	4Kg
	Temperature	0~45°C (Operation), -20~80°C (Storage)

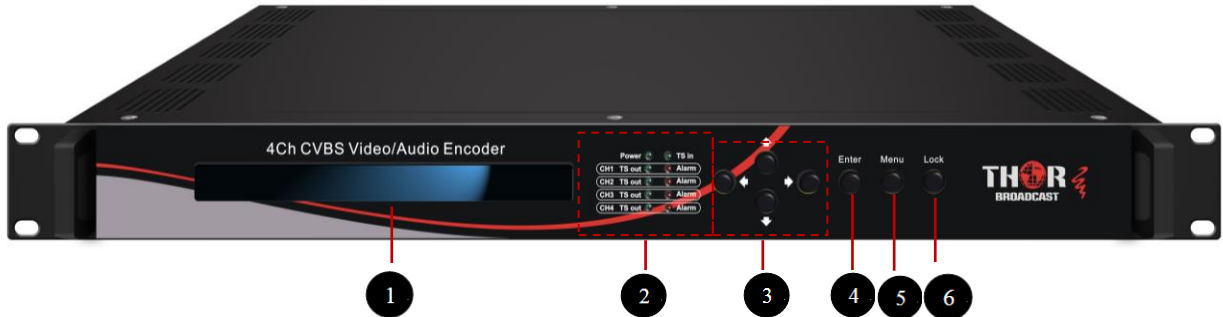
	range	
	Power requirements	AC 110V±10%,50/60Hz or AC 220V±10%,50/60Hz
	Power consumption	17.6W

1.4 Principle Chart



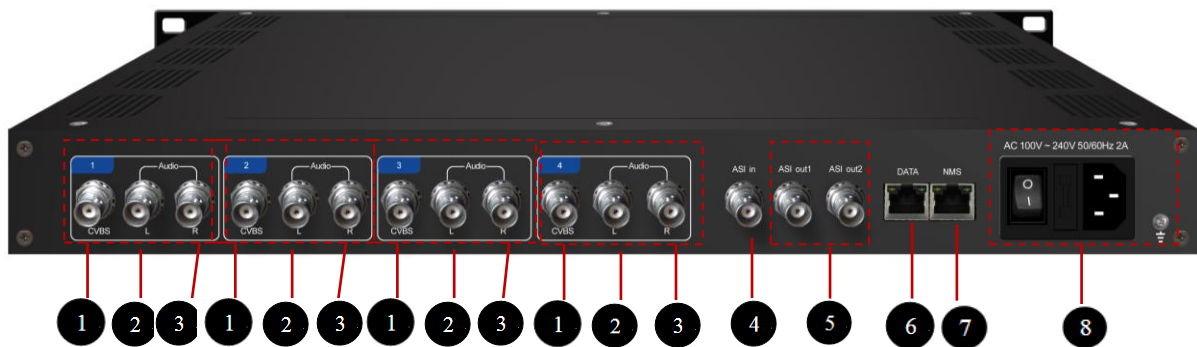
1.5 Appearance and Description

Front Panel Illustration:



1	LCD Display Interface
2	Power Indicator
	TS Output Indicator
	TS Input Indicator
	Alarm Indicator
3	Left /Right, Up /Down Arrow
4	Enter key
5	Menu Key
6	Lock key

Rear Panel Illustration



1	4* CVBS input interface
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2	4×audio inputs (Left)
3	4×audio inputs (Right)
4	1 ASI input interface
5	2 ASI output interface
6	IP output port
7	NMS (Network management port)
8	Power Switch/ Power socket/ Grounding Pole

Chapter 2 Installation Guide

2.1 Acquisition Check

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

- 4Ch CVBS Video/Audio Encoder
- User's Manual
- Analog Audio/Video Composite Input Cable
- ASI Cable
- Power Cord

If any item is missing or mismatching with the list above, please contact Thor.

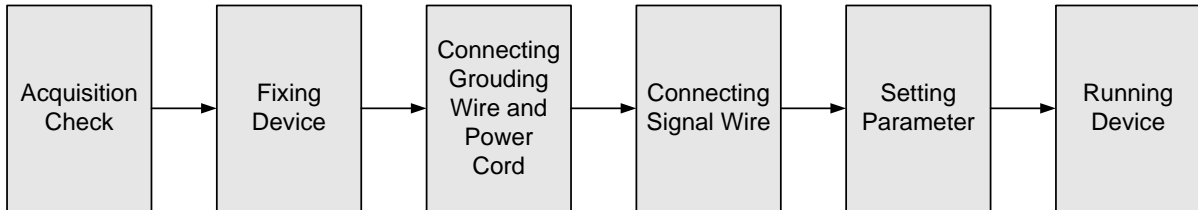
2.2 Installation Preparation

When you install the 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)

2.2.1 Device's Installation Flow Chart Illustrated as following:



2.2.2 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: 1M (Floor bearing should be greater than 450Kg/m ²)
Environment Temperature	5~40°C(sustainable) , 0~45°C(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.

2.2.3 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.

2.2.4 Frame Grounding

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.

2.2.5 Device Grounding

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

2.3 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 4Ch CVBS Video/Audio Encoder, user should set the power switch to "OFF".

2.4 Signal Cable Connection

The signal connections include the connection of input signal cable and the connection of output signal cable. The details are as follows:

2.4.1 Unbalanced audio and CVBS video input cable illustration:



2.4.2 ASI input and output cable illustration:



2.4.3 Network Cable illustration (CAT5):



2.4.4 Unbalanced audio and CVBS video input connection

User can firstly find the CVBS input connector on the device according to the connector mark described on the rear panel illustration, and then connect the analog CVBS video and unbalanced audio cables (in the accessories). One end is connected to the signal source equipment while the other end to the encoder's CVBS input port. The encoder's Analog Composite Video input port

and its connection are illustrated as follows:



2.4.5 ASI output interface connection

You can find the ASI output interface on the device according to the connector mark described on the rear panel illustration, and then connect the ASI cable (in the accessories). One end is connected to the encoder's ASI out connector (ASI1, ASI2) while the other end to the TS stream multiplexer or modulator's ASI input port. The encoder's ASI output interface and its connection are illustrated as follow:



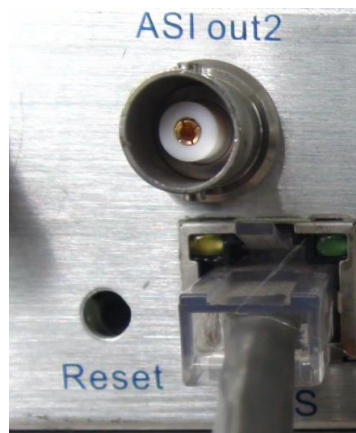
2.4.6 IP Output Interface connection

Users can find the DATA interface on the device according to the connector mark described on the rear panel illustration, and then connect the network (CAT5). One end of the network cable is connected to the encoder's DATA connector, while the other end to the TS stream multiplexer IP input port or other device which can input IP signal. The encoder's DATA connection is illustrated as follows:



2.4.7 NMS Connection

Find the NMS interface on the device according to the connector mark described on the rear panel illustration, and then connect the network (CAT5). One end of the network cable is connected to the encoder's DATA connector, while the other end to the computer or the PC. The encoder's NMS connection is illustrated as follows:



Chapter 3 Operation

Keyboard Function Description:

MENU: Canceling presently entered value, resuming previous setting; Return to previous menu.

ENTER: Activating the parameters which needs modify, or confirming the change after modification.

LEFT/RIGHT: To choose and set the parameters.

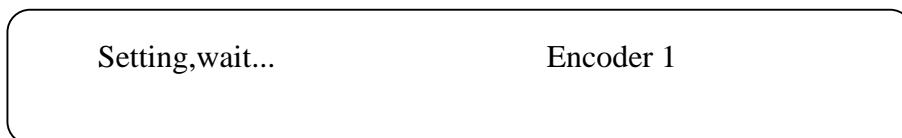
UP/DOWN: Modifying activated parameter or paging up/down when parameter is inactivated.

LOCK: Lock the screen / cancel the lock state. After pressing lock key, the system will question the users to save present setting or not. If not, the LCD will display the current configuration state.

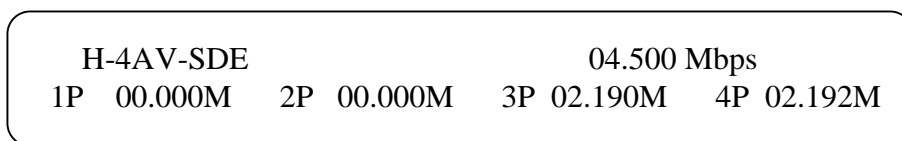
At the “Resume Factory Setting” page, user can firstly press “ENTER” key, consequently system resumes factory parameter setting.

3.1 Initializing

After powering on the system, device will firstly test whether the input signal source is available. If the 4 channel’s signal sources are connected, the device will start encoding in sequence. The LCD will sequentially display the following page:

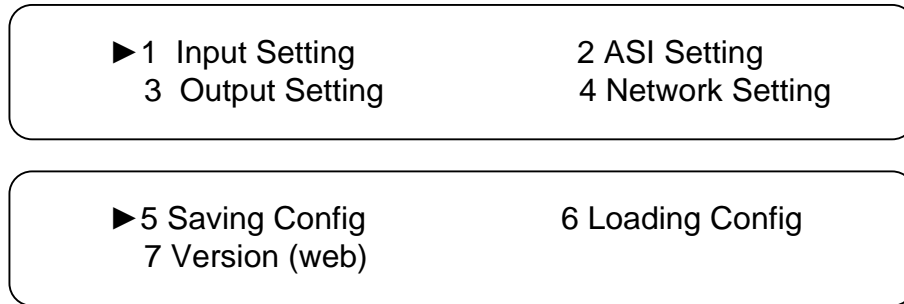


After switching on the encoder, the LCD will display the, device name and the real-time bit-rate in the first row while the 4 channels’ real-time bit-rate streams in the second row as below: the first alphabet “P” means input CVBS format is PAL while “N” means “NTSC”



3.2 General Setting

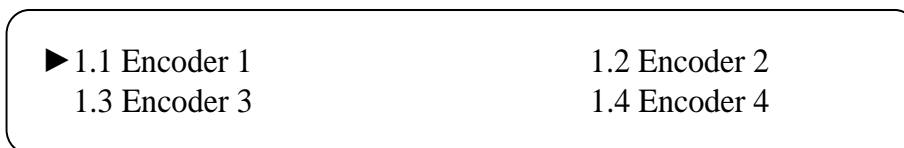
By pressing UP/DOWN key to enter the main menu, the LCD will display the following pages:
Users can set the input and output parameters in the following editing interfaces, the LCD will display the following pages after users pressing the enter key.



The option with “▶” is the current selection, users can press the ENTER key to enter the specified submenu to modify the device parameter.

3.2.1 Input Setting

Users can enter the corresponding encoding channel to set the relevant audio and video input parameters, and the interface will display four submenus which from Encoding channel One to Encoding channel 4, the modification is the same from encoding channel one to encoding channel four, so here just take one channel as the example. After pressing the enter key, the LCD will display the following pages:



3.2.1.1 Video Setting

After users enter the submenu, the interface will turn into the following pages, and then users can enter the corresponding interface to modify the parameters.



3.2.1.1.1 Video input Setting

Users can set the equipment video format in this interface, and the LCD will display the following interfaces after users pressing the enter key. The option 01/04 means that the current page is 1, and the total page is 4.

Input Format [PAL-B/G/H/I/D]	01/04 PAL-CN
Input Format [PAL-M]	01/04 PAL-60
Input Format [NTSC-J]	01/04 NTSC-M
Input Format [NTSC-4.43]	01/04 SECAM

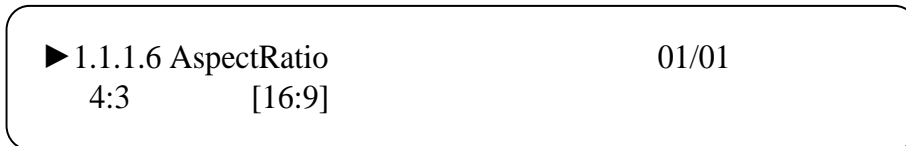
3.2.1.1.2 Video Brightness/Contrast/Saturation/Hue Setting

User can adjust the relevant parameters of input video with the submenus of Brightness, Contrast, Saturation and Hue, and the adjustable range is 0~249, but the adjustable range of hue information is -128~127. The figure outside the parentheses is decimal while the inside is hexadecimal.

▶ 1.1.1.2 Brightness 128 (0*80)
▶ 1.1.1.3 Contrast 128 (0*80)
▶ 1.1.1.4 Saturation 128 (0*80)
▶ 1.1.1.5 Hue 000 (0*00)

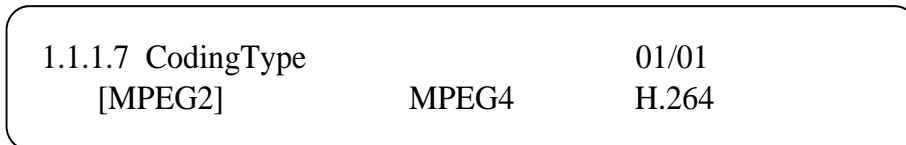
3.2.1.1.3 Aspect Ratio Setting

In this interface, users can set the corresponding ratio according to their own needs, and there are two options which are 16:9 and 4:3. After users press the enter key in the sub-mean, the LCD will show the following interface.



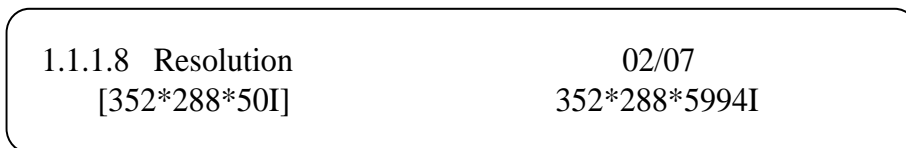
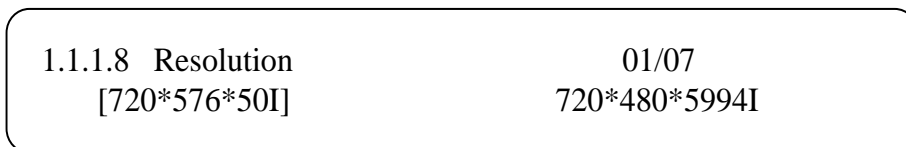
3.2.1.1.4 CodingType Setting

This low-bit rate can support various kinds of encoding type, and the LCD will display the following pages:



3.2.1.1.5 Resolution Setting

Users can set the equipment resolution according to their needs. And the LCD will display the following interfaces after pressing the enter key.



1.1.1.8 Resolution [176*144*50I]	05/07 176*144*5994I
-------------------------------------	------------------------

1.1.1.8 Resolution [160*120*50I]	06/07 160*120*5994I
-------------------------------------	------------------------

1.1.1.8 Resolution [160*90*50I]	07/07 160*90*5994I
------------------------------------	-----------------------

3.2.1.1.6 Video Rate-mode Setting

User can choose CBR & VBR at this menu. CBR (Constant Bit-rate) means that the bit-rate will be a constant value. VBR (Variable Bit-rate) means that the bit-rate will always change along with the video scene changing.

1.1.1.9 RateMode [CBR]	01/01 VBR
-----------------------------	--------------

3.2.1.1.7 Bit-rate Setting

Users can set the corresponding encoding channel effective video bit-rate in this interface, and the adjustable range is from 0~19Mbps. The LCD will display the following interface after pressing the enter key.

1.1.1.A Bit-rate <u>0</u> 19.000Mbps

3.2.1.1.8 Maximum and Minimum Bit-rate Setting

These two items are just used under the VBR rate mode. Under the VBR mode, the video bit-rate will always change, so users can set the bit-rate change range by setting the MAX and MIN bit-rate.

1.1.1.B MaxBitrate
019.000Mbps

1.1.1.C MinBitrate
000.500Mbps

3.2.1.1.D GOP Structure

GOP Structure support IPPPP, IBPBP, IBBPB, IBBBP.

1.1.1.D	GOP Structure	01/01
IPPPP	IBPBP	IBBPB
		IBBBP

3.2.1.2 Audio Setting

In this sub-menu, users can set the relevant audio parameter, and the LCD will display the following interface after pressing the enter key.

1.1.2.1 Bitrate	1.1.2.2 Sample
1.1.2.3 Format	1.1.2.4 Gain

1.1.2.5 Delay

3.2.1.2.1 Audio Bit-rate Setting

In this interface, users can set the encoding audio bit-rate, and the LCD will display the following interface. And the option 01/03 means that the current page is 1, and the total page is 3.

After the modification, users can press enter key again to take the modification into effect.

1.1.2.1 Bit-rate	01/03
64 Kbps	96 Kbps
	112 Kbps
	[128 Kbps]

1.1.2.1 Bit-rate	02/03
160 Kbps 192 Kbps 224 Kbps [256 Kbps]	

1.1.2.1 Bit-rate	03/03
320 Kbps [384 Kbps]	

3.2.1.2.2 Sample Frequency Setting

Under this interface, users can set the input audio sample frequency; users can set relevant audio sample frequency by moving UP/DOWN key, after the setting, users can press enter key again to take the modification into effect. And the LCD will display the following page:

1.1.2.2 Bit-rate	01/01
[48 KHz] 44.1KHz 32KHz	

3.2.1.2.3 Format

This low bit-rate encoder can support a various kinds of audio encoding formats, and the LCD will display the following interface after users pressing the enter key. After the modification, users can also press the enter key the take the modification into effect.

1.1.2.3 Format	01/02
[MPEG1-Layer II]	LC-AAC

1.1.2.3 Format	02/02
[HE-AAC]	

3.2.1.2.4 Gain

Users can set gain parameters here.

1.1.2.4 Gain
±10dB

3.2.1.2.5 Delay Setting

This item is to make sure that the audio and video can work sync. And the parameter is 0000ms if they work synchronously.

1.1.2.4 Delay
0000ms

3.2.1.3 System Setting

In this interface, users can set the system parameter by entering the corresponding menu. And the LCD will display the following interface.

▶ 1.1.3.1 Prog Number 1.1.3.2 Video PID
1.1.3.3 Audio PID 1.1.3.4 PMT PID

▶ 1.1.3.5 PCR PID 1.1.3.6 IP Enable
1.1.3.7 Out address 1.1.3.8 Out Port

▶ 1.1.3.9 NulPkt 1.1.3.A Broadcast
1.1.3.B PCR Intery

3.2.1.3.1 Program Number Setting

In this interface, users can set the program number, and the LCD will display the following interface.

▶ 1.1.3.1 Prog Number
0*0101

3.2.1.3.2 Video/Audio/PMT/PCR PID Setting

Users can set these parameters by pressing enter to enter these submenus. The LCD will display the following pages, and the maximum PID number cannot exceed 0x1fff.

1.1.3.2 Video PID
0*0102

1.1.3.3 Audio PID
0*0103

1.1.3.4 PMT PID
0*0103

1.1.3.5 PCR PID
0*0101

3.2.1.3.3 IP Enable

In this interface, users can set the corresponding encoding channel IP address in this interface, and this IP Enable item is only useful when the IP output mode is 4IP, which mean the IP output stream is 4SPTS. YES means that the IP output mode is 4SPTS, and then users can set the output address and port number in 3.2.1.3.4 and 3.2.1.3.5. NO means that the output stream is 1MPTS, then the 3.2.1.3.4 and 3.2.1.3.5 setting will not work.

1.1.3.6 IP Enable 01/01
YES [NO]

3.2.1.3.4 Out address Setting

In this sub-menu, users can set the output address, and the LCD will display the following interface after pressing the enter key.

1.1.3.7 Out Address
224.002.002.002

3.2.1.3.5 Output Port Number Setting

Users can set the output port number in this interface, and the LCD will display the following interface after pressing the enter key.

1.1.3.8 Out Port
01002

3.2.1.3.6 NulPkt/ Broadcast/ PCR Interval

1.1.3.9 NulPkt
 [YES] NO

1.1.3.A Broadcast
 [YES] NO

1.1.3.D PCR Interval
30

3.2.1.4 Program Mux Setting

In this menu, users can decide whether to multiplex the program, and the LCD will display the following page after pressing the enter key.

1.1.4.1 Channel Mux
 YES [NO]

3.2.1.5 Advance

Users can set “Deblocking/MCTF/CABAC/Profile” parameters here.

1.1.5.1 Deblocking
2

1.1.5.2 MCTF
2

1.1.5.3 CABAC
 YES [NO]

1.1.5.4 PROFILE
H264-HIGH [MPEG-MAIN]

1.1.5.4 PROFILE
MPEG2-HIGH

1.1.5.5 The level support: H.264-1.0, H.264-1.1, H.264-1.2, H.264-1.3, H.264-2.0, H.264-2.1, H.264-2.2, H.264-3.0, H.264-3.1, H.264-3.2, H.264-4.0, H.264-4.1, H.264-4.2, H.264-5.0, H.264-5.1, MPEG-HIGH, MPEG-HIGH1440, MPEG2-MAIN

3.2.2 ASI Setting

Users can check the ASI input program number in this interface, and the LCD will display the following page. The number after the character means that the ASI input program is zero.

▶ 2.1 Parse ASI Prog

After entering it, the LCD will display the following page.

2.1 Parse ASI Prog Prog:000 Out: 000

3.2.3 Output Setting

Users can set the encoder output parameter in this field, and the LCD will display the following pictures.

▶ 3.1 Ip Out Enable 3.2 Ip Out Address
3.3 IP Out Port 3.4 TransStream ID

▶ 3.5 Output Stream 3.6. Output Mode
3.7 Null Pkt 3.8 TS Packge Num

3.2.3.1 IP output Enable Setting

Users can decide whether to open the device IP output function or not, this item is totally different from the former IP Output Enable item, the former one is just for four encoding channels, and this is for the encoder itself. And there are also two options, YES means that users open the IP output function, while NO means users do not need to IP out.

3.1 Ip Out Enable	01/01
[YES]	NO

3.2.3.2 IP Out Address Setting

When users select the IP output mode is 1IP, then users can set the IP output address in this interface. If the output mode is 4IP, then the configuration in this field does not work.

3.2 Ip Out Address
<u>224.002.002.002</u>

3.2.3.3 IP output Port Number Setting

When users select the IP output mode is 1IP,(please check 3.2.3.6) then users can set the IP output port number in this interface. If the output mode is 4IP, then the configuration in this field does not work.

3.3 Ip Out Port
<u>01001</u>

3.2.3.4 Trans Stream ID Setting

Users can set the trans stream ID in this interface, and the LCD will display the following interface after pressing the enter key.

3.4 Trans Stream ID
<u>00000</u>

3.2.3.5 Output Stream

Users can set the output stream bit-rate in this field, and the LCD will display the following

interface.

3.5 Output Stream
040.000Mbps

3.2.3.6 Output Mode Setting

In this interface, users can select the MPTS and 4SPTS, and it shows as follows:

3.6 Output Mode 01/01
[1IP] 4 IP

3.2.3.7 Null Package

Users can select enable “Null package” or disable “Null package”.

3.7 Null Pkt 01/01
[YES] NO

3.2.3.8 TS Package Num

Users can checked the TS number here.

3.8 TS Package Num
3

3.2.4 Network Setting

Users can set the network parameters by pressing the enter key, and the LCD will display the following interfaces.

4.1 IP Address
192.168.002.136

4.2 Subnet Mask
255.255.255.000

4.3 Gateway
192.168.002.001

4.4 Console Address
192.168.002.211

3.2.4.1 MAC Address Setting

The MAC address is read-only in the keyboard operation interface, so users can just check the physical address under this interface, and the modification must be done in the network updating tools.

4.5 Console Address
ffffffffffff

Note: when the MAC address is ffffffffff, users must modify the address, otherwise, the IP output database will be filter out when the IP stream passes through the router.

3.2.5 Saving Config

Users can save the modification by pressing the enter key, and it will display the following interface when user press the enter key.

5 Saving Config 01/01
YES [NO]

3.2.6 Loading Configuration

In this interface, users can select the modified configuration and the factory defaulted configuration. Users can enter the corresponding menu to select the configuration.

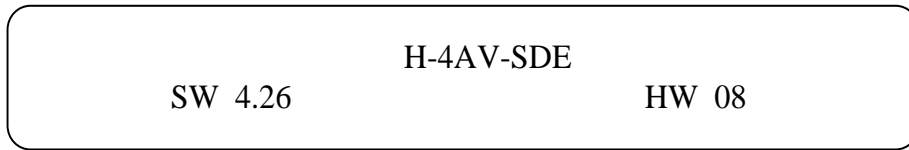
And the LCD will display the following interfaces:

▶ 6.1 Load Saved 6.2 Load Default

3.2.7 Version

Users can check the device software version and hardware version, and the LCD will display the

following interface when users press the enter key.



Chapter 4 WEB NMS operation

4.1 Login

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

Connect the pc 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 & 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.

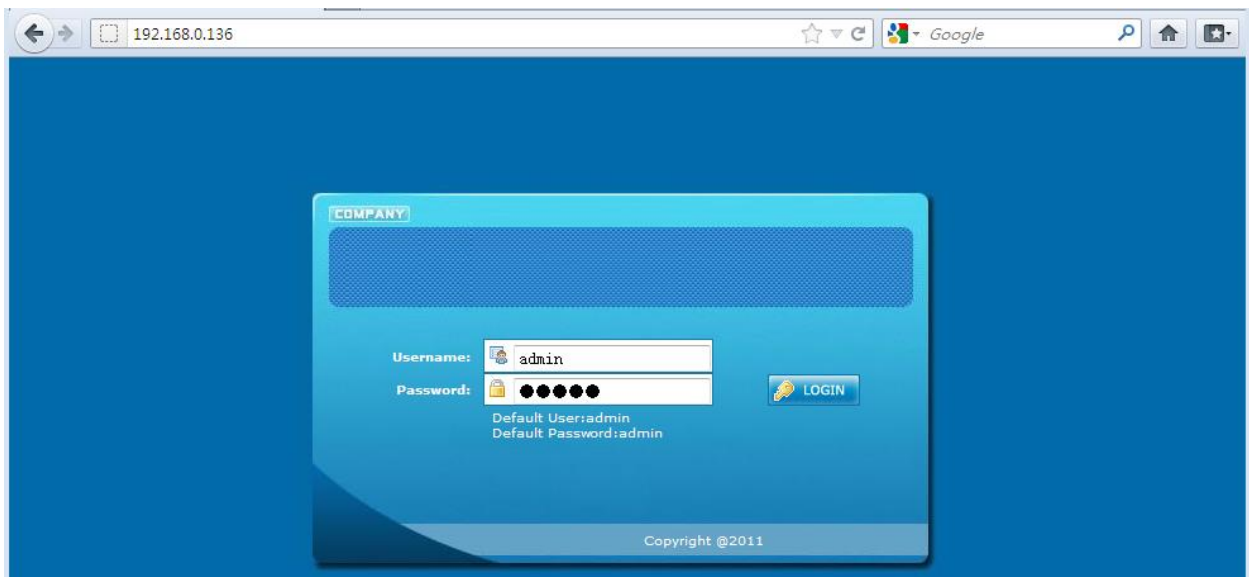


Figure-1

4.2 Operation

Welcome

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

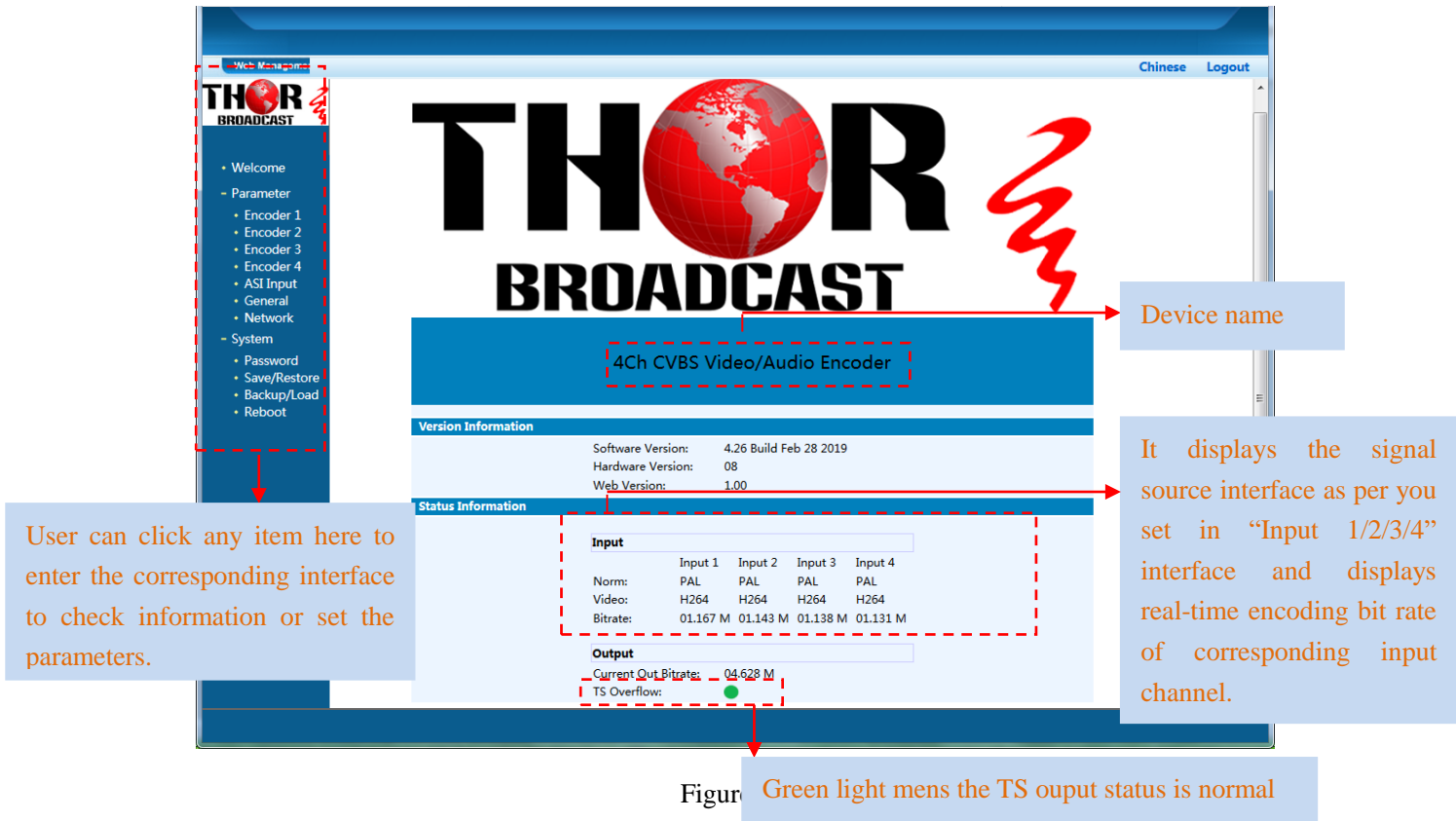


Figure 3 Green light mens the TS ouput status is normal

Parameter → Encoder 1

Clicking “Encoder 1”, it displays the information of the programs from the 1st encoding channel as Figure-3.

➤ Video

Clicking “Video”, users can set video encoding parameters as “Figure-4”.

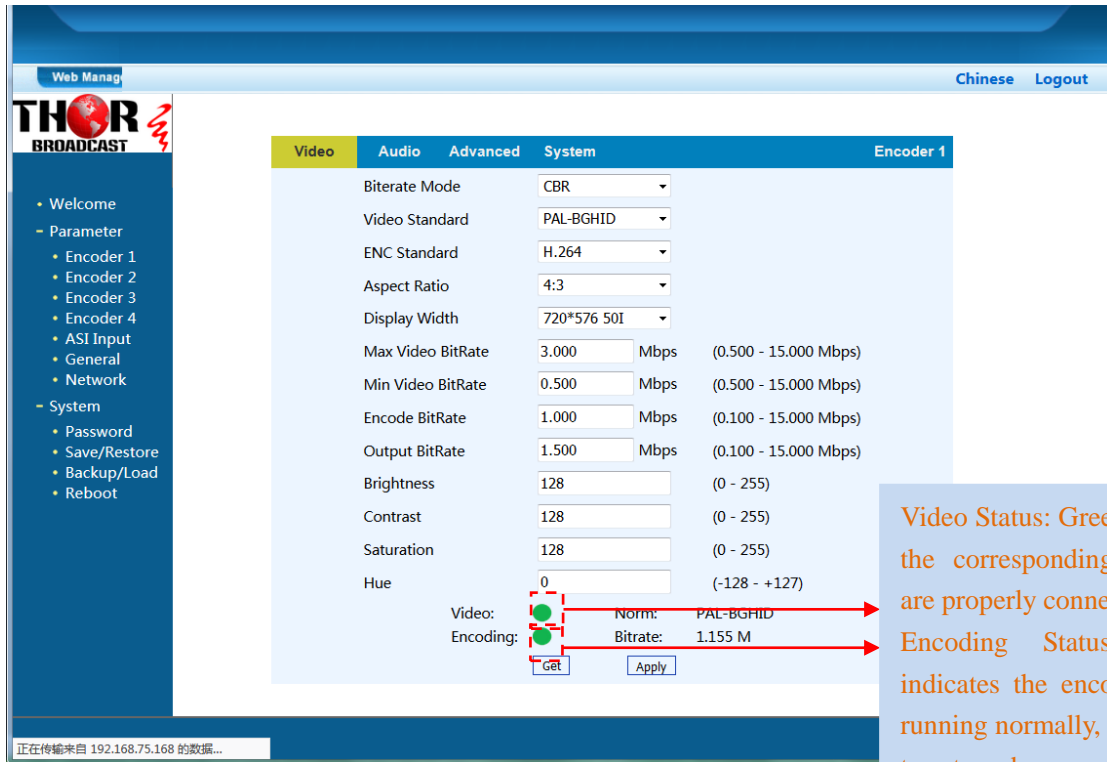


Figure-3

Video Standard : PAL-BGHID, PAL-CN, PAL-M, PAL-60, NTSC, NTSC-M, NTSC-4-43

ENC Standard (Encoding Format): MPEG2/H.264

Display (Resolution): 720*576_50i, 720*480_59.94i, 352*288_50i, 352*288_59.94i, 320*240_50i, 320*240_59.94i, 320*180_50i, 320*180_59.94i, 176*144_50i , 176*144_59.94i, 160*120_50i, 160*120_59.94i, 160*90_50i, 160*90_59.94i

➤ **Audio**

Clicking “Audio”, users can set audio encoding parameters as “Figure-4”.

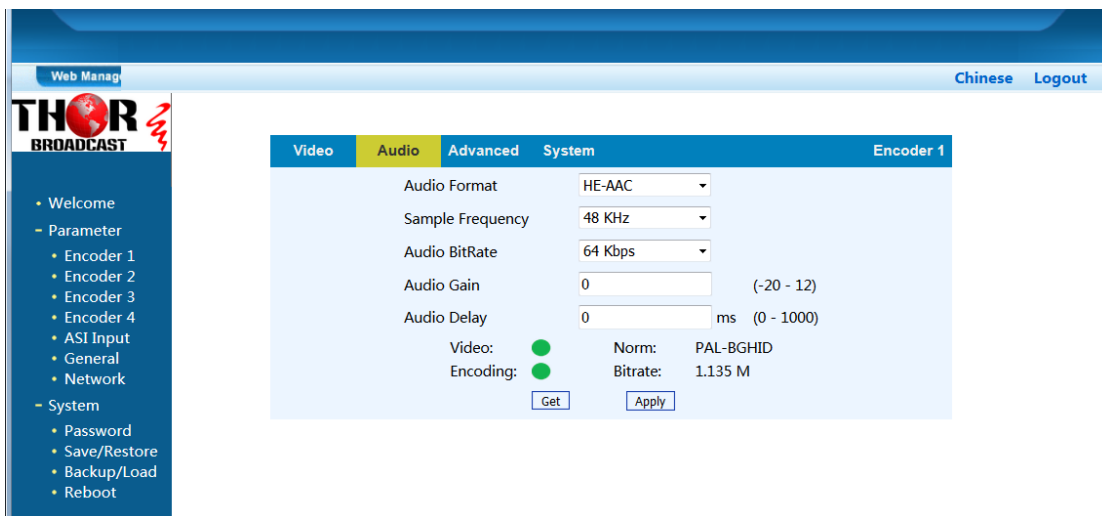


Figure-4

Audio Format: MPEG1 Audio Layer 2, LC-AAC and HE-AAC

Audio Bitrate: 32/48/64/96/112/128/160/192/224/256/320/384 kbps

➤ **Advanced**

Clicking “Advanced”, users can set GOP/Profile etc. parameters as “Figure-5”.

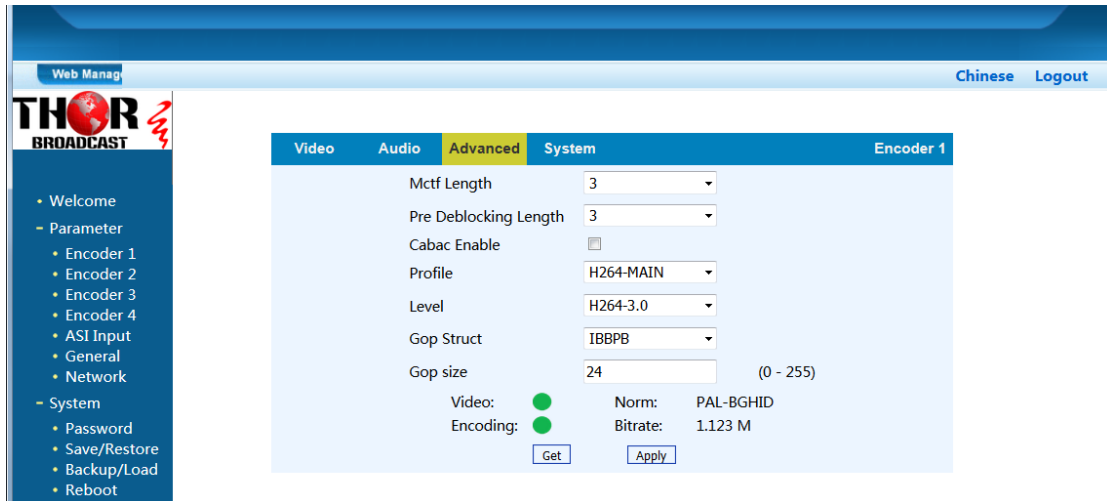


Figure-5

➤ **System**

Clicking “System”, users can set program information and set IP output parameters as Figure-6

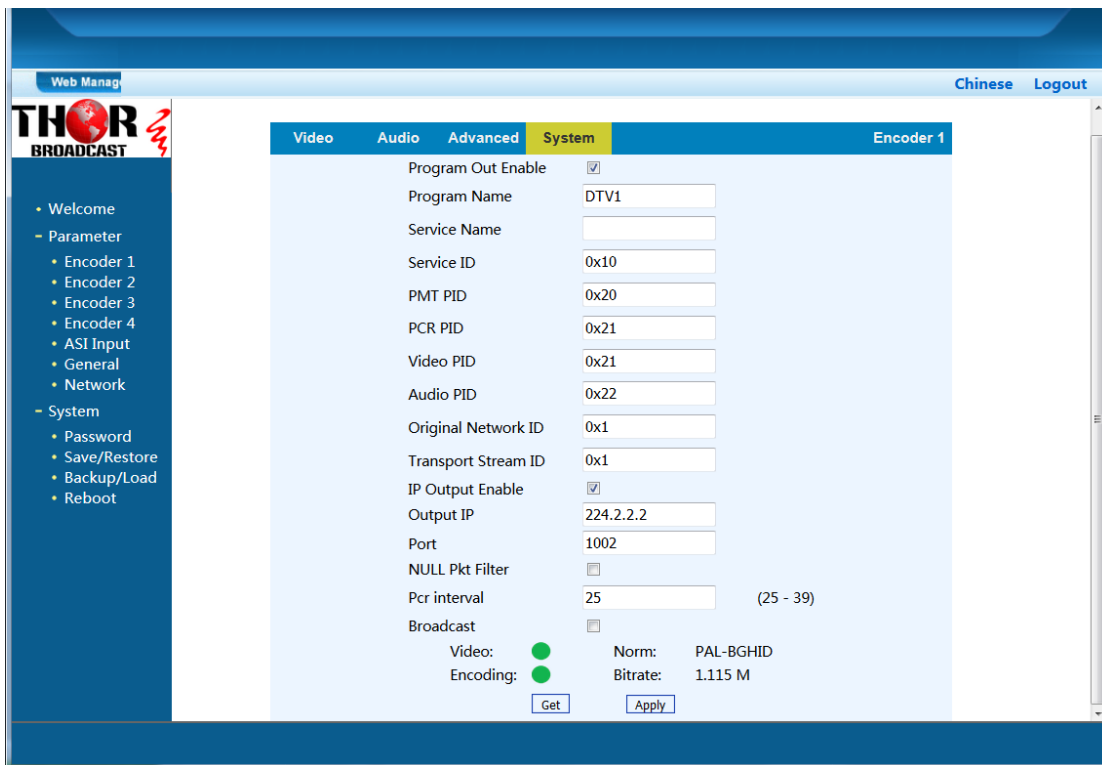


Figure-6

➤ **ASI Input**

Clicking “ASI Input”, users can parse ASI programs to mux out and edit program information as Figure-7. The multiplexed programs will be output through MPTS.

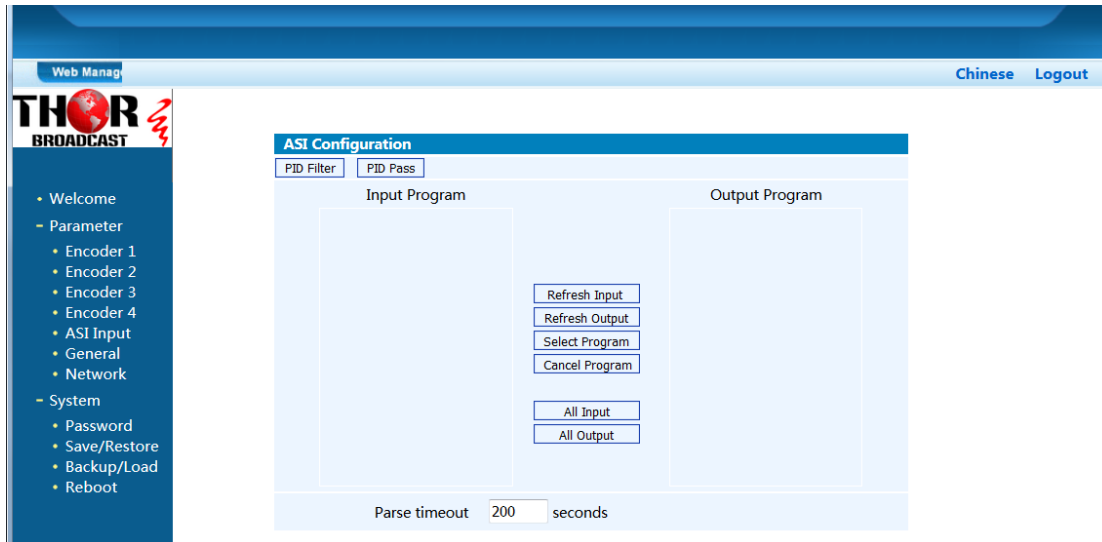


Figure-7

Clicking “Refresh Input”, it will refresh the programs from ASI as below. Selecting one program in “Input Program” part and clicking “Select Program” to multiplexing the selected program output.



Refresh Input

Click “Refresh Input” to refresh the input program list.

Refresh Output

Click “Refresh Output” to refresh the output program list.

Select Program

When user checks one input program with “√”, one can transfer the checked program to the right box to output.

Here user can select the programs which we want to output or we can output all the programs.

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

&

to select all the input/output programs with one-time clicking.

200

Time limitation to parse the input programs

Users can edit program information by clicking the program, it will display as below:

Program Information	
Program Output	
Program Name	<input type="text" value="CCIV 1"/>
Service ID	<input type="text" value="0x50"/>
PMT PID	<input type="text" value="0x60"/>
MPEG-2 Video PID	<input type="text" value="0x6a"/>
MPEG-2 Audio PID	<input type="text" value="0x6b"/>
PCR PID	<input type="text" value="0x69"/>
Service Type	<input type="text" value="0x01"/>
Service Provider	<input type="text"/>
<input type="button" value="Save"/> <input type="button" value="Close"/>	

Clicking “PID Filter” to trigger a dialog box as below, users can filter the PID as need.

PID Filter		
Number	PID	Filt
1	0	<input type="checkbox"/>
2	0x1	<input type="checkbox"/>
3	0x10	<input type="checkbox"/>
4	0x11	<input type="checkbox"/>
5	0x20	<input type="checkbox"/>
6	0x30	<input type="checkbox"/>
7	0x40	<input type="checkbox"/>
8	0x50	<input type="checkbox"/>
9	0x60	<input type="checkbox"/>
<input type="button" value="Apply"/> <input type="button" value="Cancel"/> <input type="button" value="Unselect All"/>		

Clicking “PID Pass” to trigger a dialog box as below, where to add the PIDs which need pass through.

In some occasions, there are some PIDs which won't belong to any program, such as EPG, NIT tables and so on which user just wants to pass them through the multiplexing module without changing anything. This is the main purpose of this function.

Click “Add” to add more boxes for filling the Input & Output PIDs, then click “Apply” to confirm.

PID Pass			
Number	Input PID	Output PID	Add
1	<input type="text"/>	<input type="text"/>	Del
2	<input type="text"/>	<input type="text"/>	Del
3	<input type="text"/>	<input type="text"/>	Del

Parameter → Encoder 2/3/4

Similarly, clicking “Encoder 2/3/4”, it displays the information of the programs from the encoding channels 2/3/4.

Parameter → General

Clicking “General”, users can set the output configuration as Figure-8. Select ASI output the programs which are from MPTS (all encoding programs and multiplexed programs) or output programs which are from Channel 1/2/3/4 (Channel 1/2/3/4 is corresponding to Encoding 1/2/3/4 separately) by pass. When enable IP output (MPTS), users need to set IP output parameters.

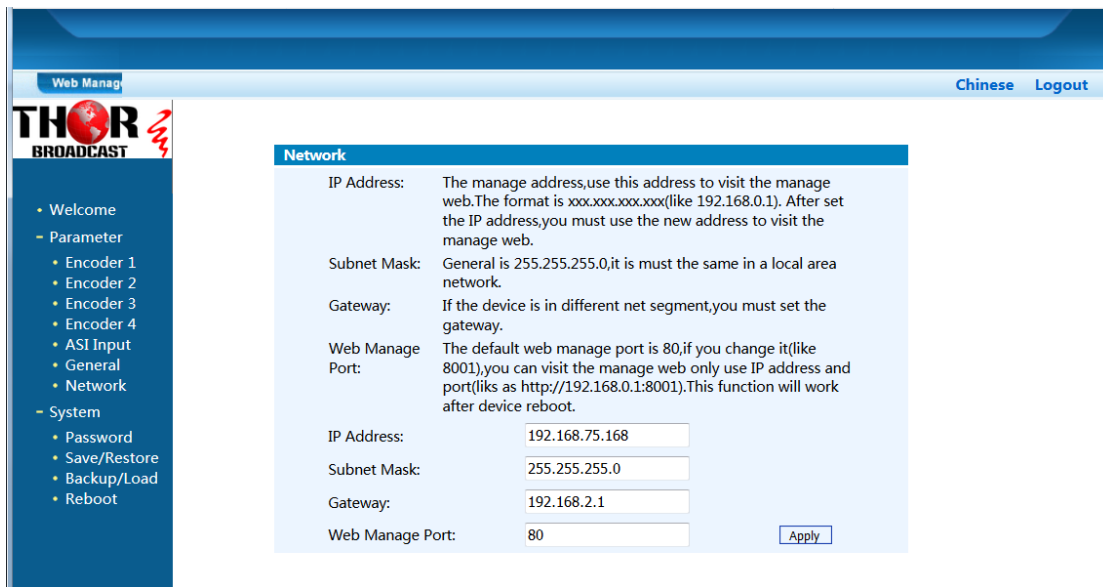
The screenshot shows the 'General Configuration' page in the THOR Broadcast web management interface. The 'ASI Out Channel' dropdown menu is open, showing options for MPTS, Channel 1, Channel 2, Channel 3, and Channel 4. A red arrow points from the 'MPTS' option in the dropdown to the 'MPTS' text in the 'ASI Out Channel' field.

Parameter	Value
Output Bitrate	40.000 Mbps
Original Network ID	0x0000
Transport Stream ID	0x0000
NIT Insert	<input type="checkbox"/>
SDT Insert	<input checked="" type="checkbox"/>
ASI Out Channel	MPTS
NULL Pkt Filter	<input type="checkbox"/>
IP Output Enable	<input checked="" type="checkbox"/>
Service IP	192.168.3.137
Output IP	224.2.2.2
Subnet Mask	255.255.255.0
Gateway	192.168.3.1
Port	1001
UDP Stream TS Package	7

Figure-8

Parameter → Network

Clicking “Network”, users can set NMS parameters as Figure-9. Modify the IP address and other information, then click “Apply”, and input the right IP address to enter the web management interface. The default IP address is 192.168.0.136.



The screenshot shows the 'Network' configuration page. On the left is a navigation menu with 'Network' selected. The main content area has a title 'Network' and a descriptive paragraph. Below are four fields for configuration: IP Address, Subnet Mask, Gateway, and Web Manage Port. Each field has a text input box. An 'Apply' button is located at the bottom right of the form.

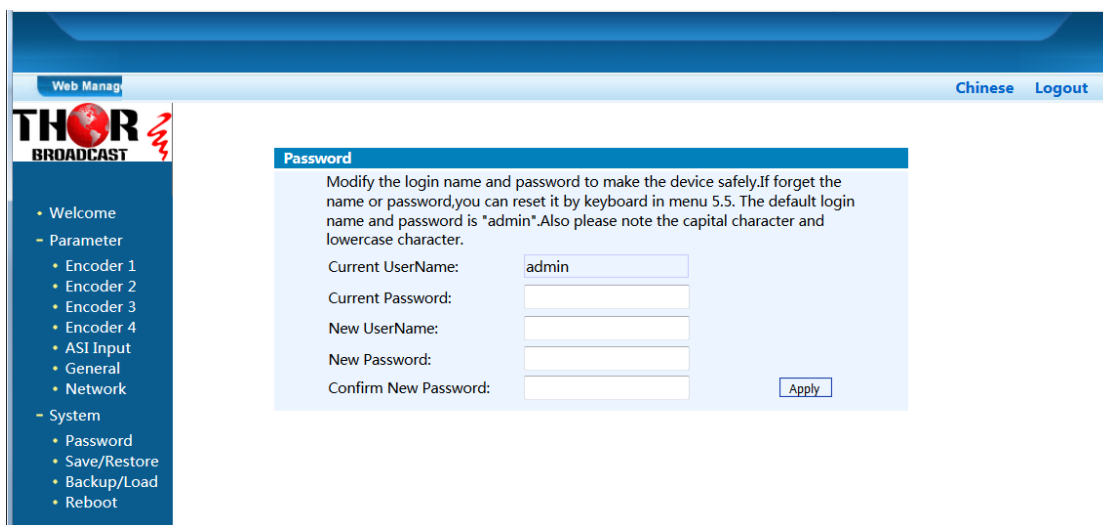
Field	Description	Value
IP Address:	The manage address,use this address to visit the manage web.The format is xxx.xxx.xxx.xxx(like 192.168.0.1). After set the IP address,you must use the new address to visit the manage web.	192.168.75.168
Subnet Mask:	General is 255.255.255.0,it is must the same in a local area network.	255.255.255.0
Gateway:	If the device is in different net segment,you must set the gateway.	192.168.2.1
Web Manage Port:	The default web manage port is 80,if you change it(like 8001),you can visit the manage web only use IP address and port(like as http://192.168.0.1:8001).This function will work after device reboot.	80

Figure-9

System → Password (Change Password)

When user clicks “Password”, it will display the password screen as Figure-10. Here user can change the Username and Password for login to the device.

After putting the current and new Username and Password, click “Apply” to save the configuration.



The screenshot shows the 'Password' configuration page. On the left is a navigation menu with 'Password' selected. The main content area has a title 'Password' and a descriptive paragraph. Below are four fields for configuration: Current UserName, Current Password, New UserName, and New Password. Each field has a text input box. A 'Confirm New Password' field is also present. An 'Apply' button is located at the bottom right of the form.

Field	Description	Value
Current UserName:		admin
Current Password:		
New UserName:		
New Password:		
Confirm New Password:		

Figure-10

System → Save/Restore

Clicking “Save/Restore” from the menu, it will display the screen as Figure-11 where can save the configuration permanently to the device. Click “Save Configuration”, for store the data permanently to the device.

By using “Restore Configuration” user can restore the latest saved configuration to the device.

By using “Factory Set” user can import the default factory configuration.

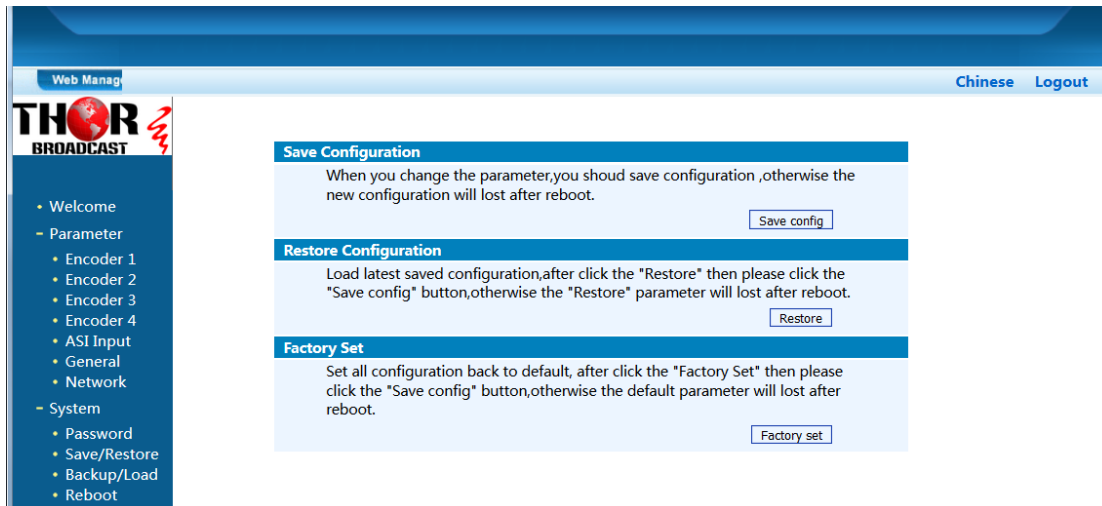


Figure-11

System → Backup/Load

Click “Backup/Load” from the menu, it will display the screen as Figure-12.

Backup Configuration – To back up the device configuration file to a folder

Load Configuration – If user needs to load the old configuration to the device, click “Browse” and find the backup configuration file path. After selecting the file, click “Load File” to load the backup file to the device.

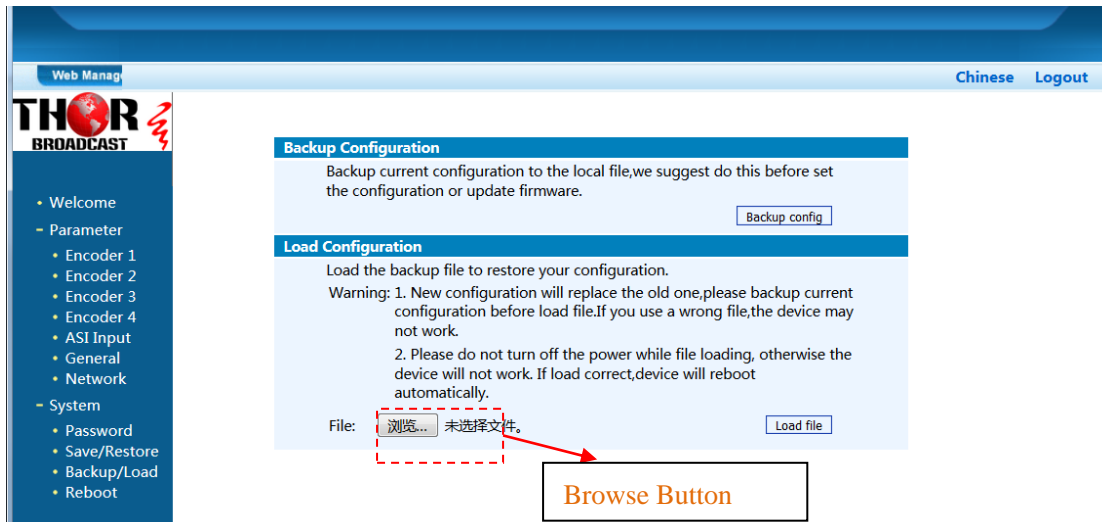


Figure-12

System → Reboot (Restart the Device)

Click “Reboot” from the menu, the screen will display as Figure-13. Here when clicking “Reboot” box, it will restart the device automatically.

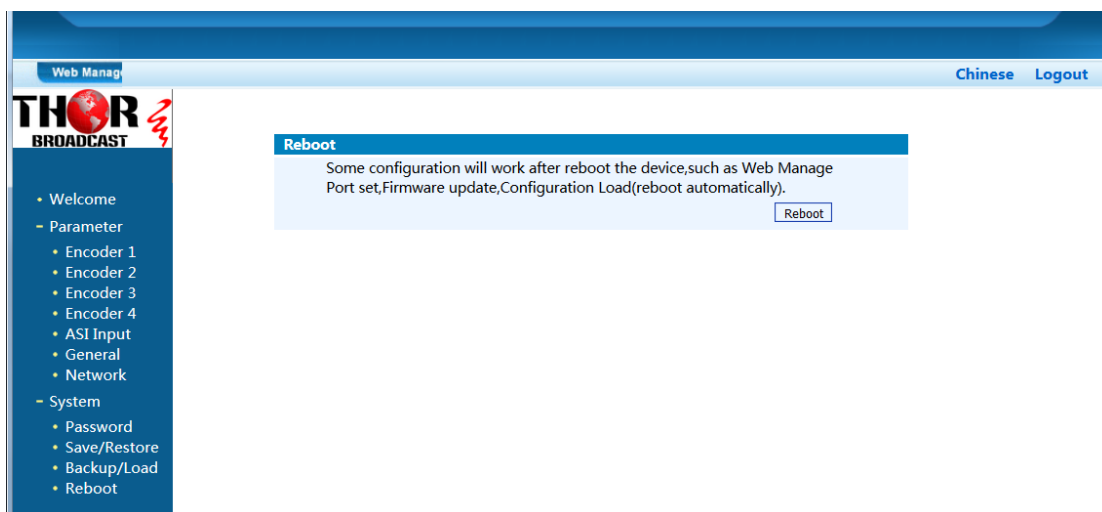


Figure-13

Chapter 5 Troubleshooting

Our ISO9001 quality assurance system has been approved by CQC organization. For guarantee the products' quality, reliability and stability. All of our 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 us. 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