PRODUCT MODEL NUMBER: TL-9242A 4-in-1 MPEG-2/H.264 HD Encoder

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CHAPTER 1

INTRODUCTION

1.1 PRODUCT OVERVIEW

TL-9242A is our new professional HD audio & video encoding device with powerful functionality. It has equipped with 4 HDMI channels input supporting MPEG-2 and MPEG-4 AVC/H.264 video encoding and MPEG-1 Audio layer 2, LC-AAC, HE-AAC and AC3 audio encoding. The 4 encoded HDMI programs will output through ASI and IP ports in MPTS or SPTS.

It adopts inner drawer-type structural design which greatly facilitates the change of encoding modules if needed.

We apply dual power supplies with one for backup to provide a better protection for your business.

1.2 KEY FEATURES

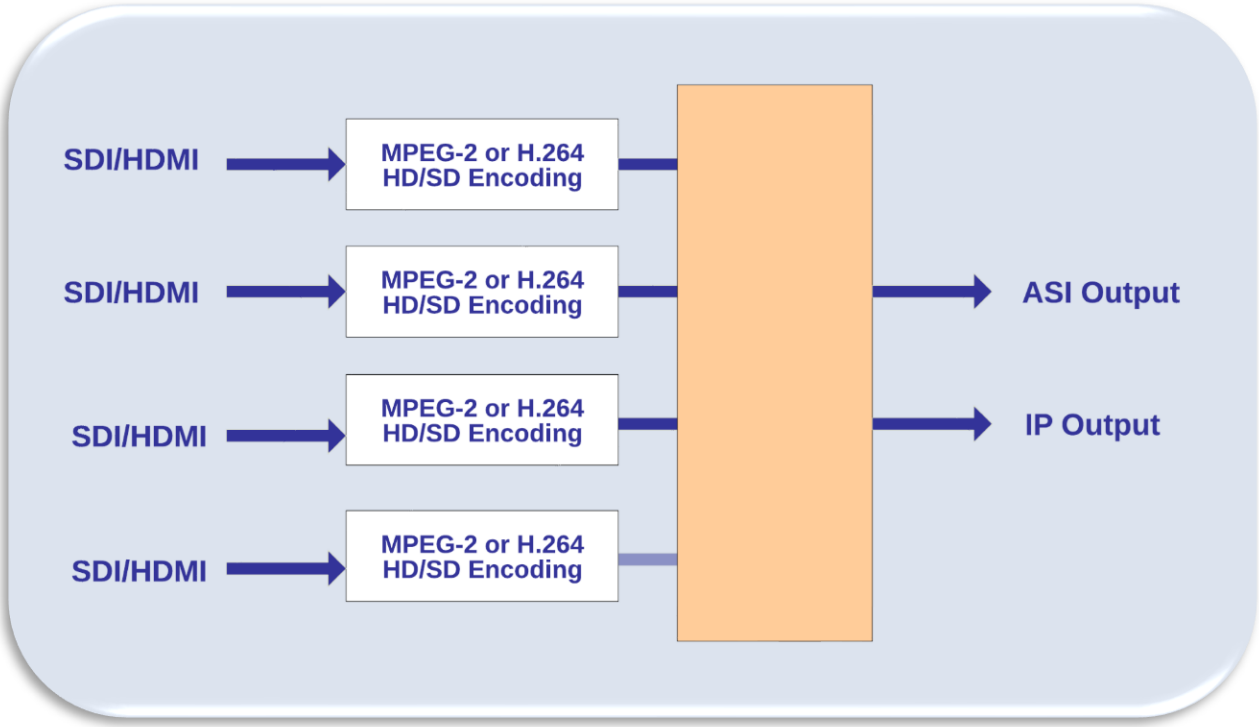
- Dual power supply
- MPEG2 HD/SD & MPEG4 AVC/H.264 HD/SD video encoding
- MPEG1 Audio Layer 2, LC-AAC, HE-AAC and AC3 audio encoding
- 4*HDMI input
- Support VBR/CBR rate control mode
- Support Low Latency function
- Support PSI/SI editing and inserting
- Supports IP null packet filter
- ASI output, IP (MPTS & 4 SPTS) output over UDP, RTP
- LCD display, Remote control and firmware
- Web-based NMS management; Updates via web

1.3 SPECIFICATIONS

Video	
Encoding	MPEG2 & MPEG4 AVC/H.264
Input	HD-SDI*4 or HDMI*4
Resolution	1920*1080_60P, 1920*1080_50P, (-for MPEG4 AVC/H.264 only) 1920*1080_60i, 1920*1080_50i, 1280*720_60p, 1280*720_50P 720*480_60i, 720*576_50i
Bit Rate	0.5~19.5Mbps
Rate Control Mode	CBR/VBR
Audio	
Encoding	MPEG1 Layer II, MPEG2-AAC, MPEG4-AAC, Dolby Digital AC3 (2.0)
Sample rate	48KHz
Bit rate	64kbps, 96kbps,128kbps, 192kbps, 256kbps, 320kbps
System	
Local interface	LCD + control buttons
Remote management	Web NMS
Low Latency Mode	Normal, mode 1, mode 2
Output	2*ASI out (BNC type); IP (1 MPTS & 4 SPTS) over UDP, RTP (RJ45, 100M)
NMS interface	RJ45, 100M
Language	English

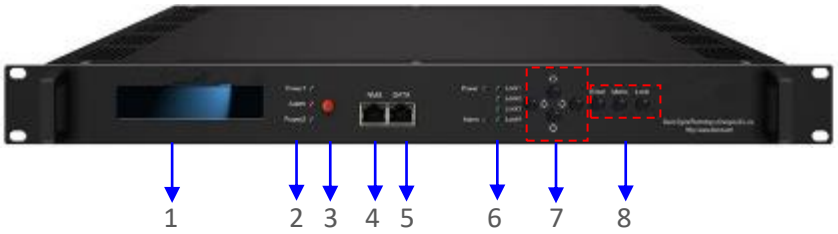
General	
Power	AC 100V~240V, 45W
Dimensions	482*400*44mm
Weight	4.5 kgs
Operation temperature	0~45℃

1.4 PRINCIPLE CHART



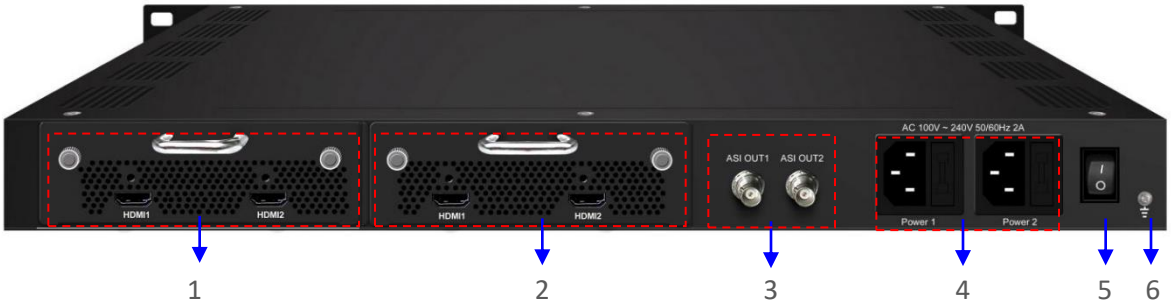
1.5 APPEARANCE AND DESCRIPTION

Front Panel Illustration



1	LCD window
2	Power supply indicators
3	Power Alarm Switch: When only one power supply is connected or one of the power supplies fails, the device will give alarm sound, and then press the alarm switch to turn off the alarm sound.
4	NMS port for the connection between the device and PC
5	DATA port for IP signal out
6	Indicators for whole unit power supply, working alarm and input signal lock status
7	Control Buttons
8	Handles

Rear Panel Illustration



1	HDMI Input Module 1: Program input port 1&2
2	HDMI Input Module 2: Program input port 3&4
3	ASI output ports
4	Power Supply Slot
5	Power Switch
6	Grounding

CHAPTER 2

INSTALLATION GUIDE

This section is to explain the cautions the users must know in some case that possibly 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.

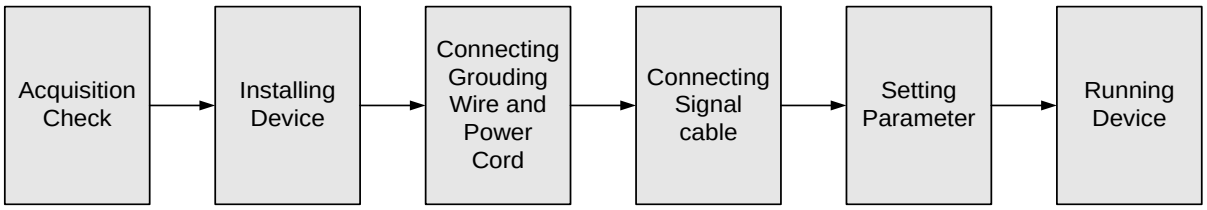
2.1 GENERAL PRECAUTIONS

- 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: 1X107~1X1010Ω, 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.

2.5 GROUNDING REQUIREMENT

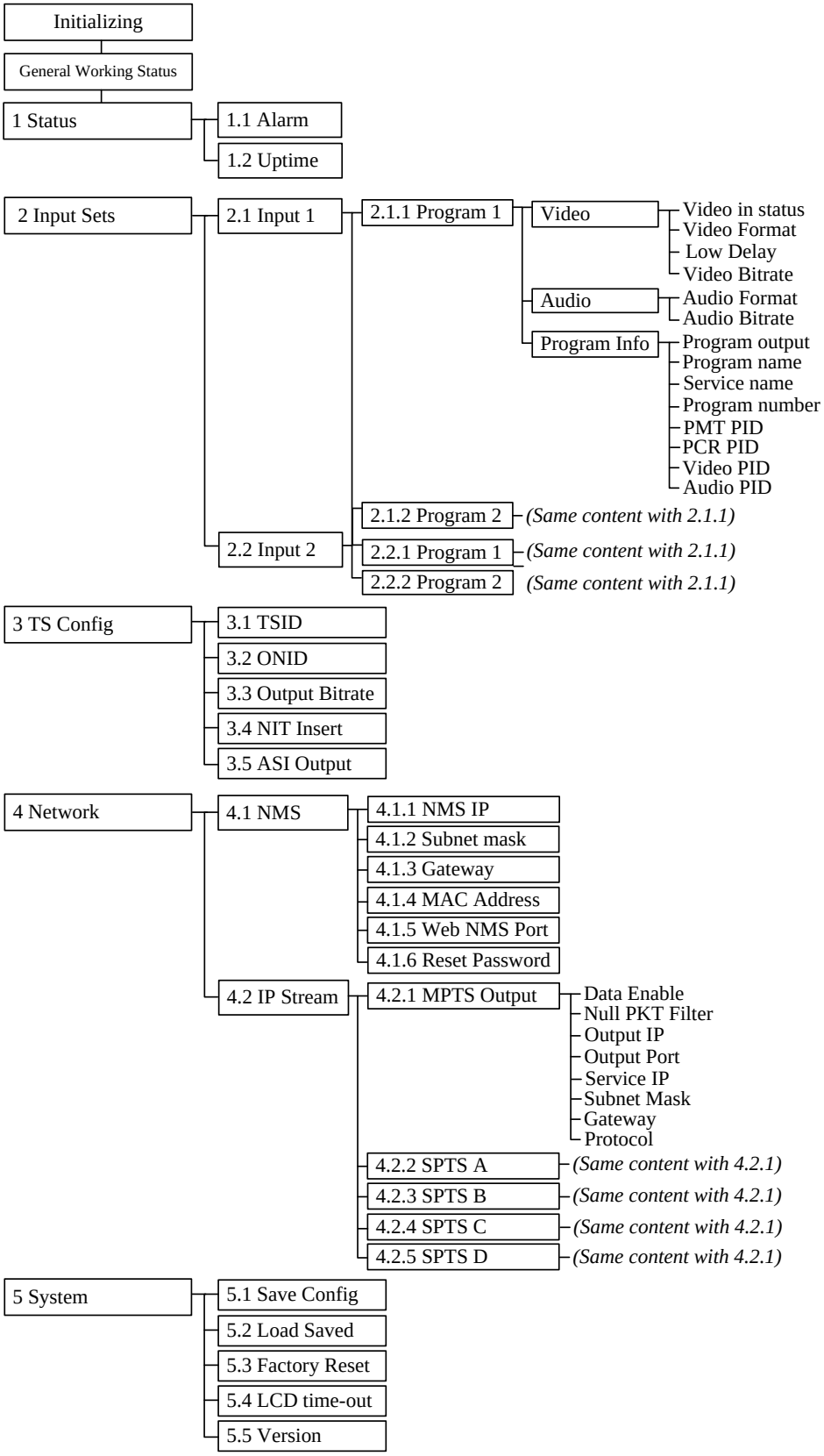
- All function modules' good grounding is the basis of reliability and stability of devices. Also, they are the most important guarantee of lightning arresting and interference rejection. Therefore, the system must follow this rule.
- Grounding conductor must adopt copper conductor in order to reduce 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 25mm^2.

CHAPTER 3

OPERATION

3.1 LCD MENU STRUCTURE

Please refer to the diagram below


Initializing
General Working Status
1 Status
1.1 Alarm
1.2 Uptime
2 Input Sets
2.1 Input 1
2.1.1 Program 1
Video
Video in status
Video Format
Low Delay
Video Bitrate
Audio
Audio Format
Audio Bitrate
Program Info
Program output
Program name
Service name
Program number
PMT PID
PCR PID
Video PID
Audio PID
2.1.2 Program 2
(Same content with 2.1.1)
2.2 Input 2
2.2.1 Program 1
(Same content with 2.1.1)
2.2.2 Program 2
(Same content with 2.1.1)
3 TS Config
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3.2 ONID
3.3 Output Bitrate
3.4 NIT Insert
3.5 ASI Output
4 Network
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4.1.2 Subnet mask
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4.1.4 MAC Address
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4.2 IP Stream
4.2.1 MPTS Output
Data Enable
Null PKT Filter
Output IP
Output Port
Service IP
Subnet Mask
Gateway
Protocol
4.2.2 SPTS A
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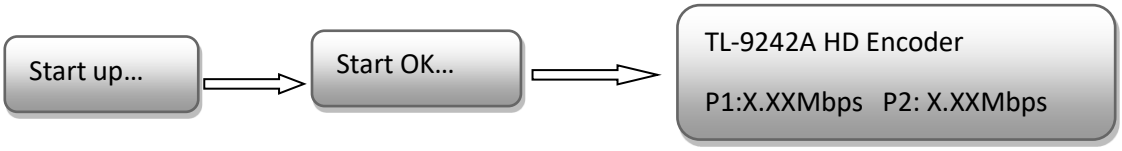
4.2.3 SPTS B
(Same content with 4.2.1)
4.2.4 SPTS C
(Same content with 4.2.1)
4.2.5 SPTS D
(Same content with 4.2.1)
5 System
5.1 Save Config
5.2 Load Saved
5.3 Factory Reset
5.4 LCD time-out
5.5 Version

Initial Status

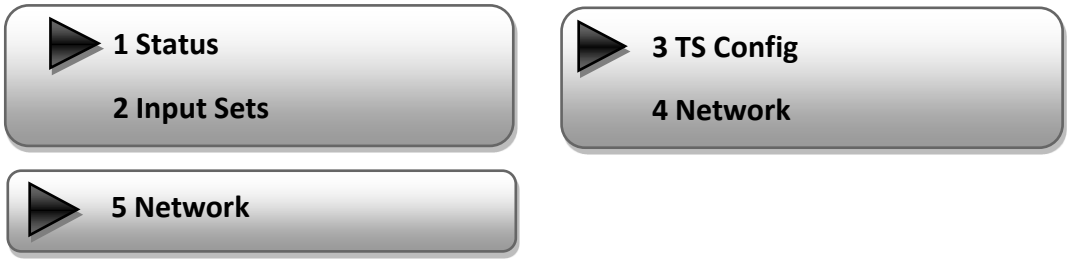
After powering on the device, it will take a few seconds to initialize the system It shows as below:



- **TL-9242A HD Encoder**: Module number and name
- **P1**: Program 1; **P2**: Program 2; **P3**: Program 3; **P4**: Program 4
- **X.XX Mbps**: indicate the current encoding bit rate of the corresponding channel.

3.2 GENERAL SETTINGS FOR MAIN MENU

By pressing "Lock" key on the front panel, user can enter the main menu. The LCD will display the following pages:



User can press UP/DOWN buttons to specify menu item, and then press ENTER to enter the submenus as below:

1) Status

Press Enter to enter "Status" and it displays the working time duration of the device. It times upon power

➢ Alarm

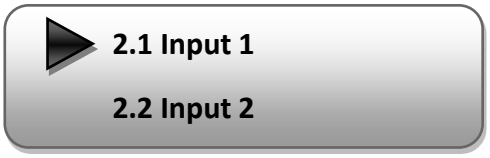
The alarm indicator will turn on if there is no A/V signals inputting or outputting bit rate overflows. User then can enter this menu to check the error type.

➢ Uptime

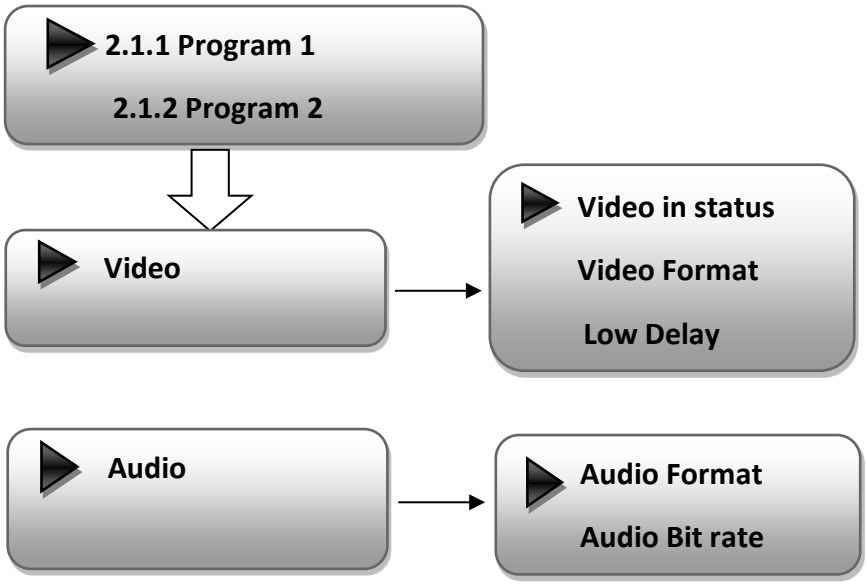
It displays the working time duration of the device. It times upon power on.

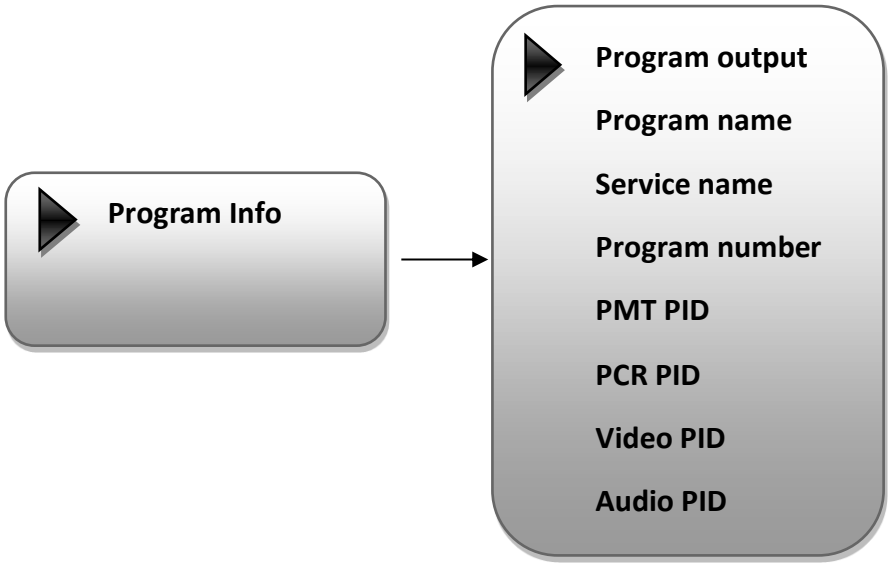
2) Input Sets

Under this submenu, the LCD will show “2.1 Input 1” and “2.2 Input 2” to represent the two HDMI input modules respectively.



Each HDMI input module support two program input connecters. Under submenus 2.1 (or 2.2), user could set the video/audio parameters for the 2 HDMI programs respectively.





- Video in Status

Users can enter this menu to check the video input status.

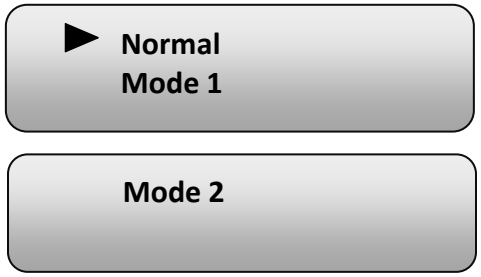
- Video Format

The HDMI encoding module supports both “MPEG2” and “H.264” video encoding formats. Users can enter this menu to select one format from the 2 options.

Press ENTER to shift ‘*’ to ‘►’, and then press UP/DOWN buttons to specify one item and then press ENTER to confirm. Press MENU to step back to upper-level menu. (The operation method is applicable for rest part.)

➢ Low Delay

This unit can achieve a low time delay from encoding to decoding terminal end-to-end.



NOTE

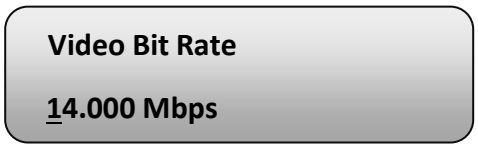
The different combination of Video Format, Video Bit-rate, Low Delay Mode, the Resolution of signal source and Decoding solution adopted on terminal side will have an impact on the latency.

➢ Video Bit Rate

Users can set the video encoding bit rate manually in this menu.

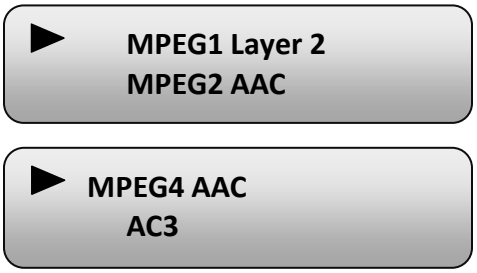
0.5~19.5Mbps for H.264 encoding

1~19.5Mbps for MPEG-2 encoding



➢ Audio Format

The HDMI encoding module supports 4 encoding formats. Users can enter this menu to select one format from the 4 options.



➢ Audio Bit Rate

The audio bit rate ranges from 64Kbps to 320Kbps. Users can select one bit-rate from the options provided.

Audio Bitrate
► 64Kbps

➢ Program Info

Users can enable or disable the program output in the first sub-menu and configure the other parameters in the rest sub-menus.

Program Output
► Enable

Program Name
TV-101

Service Name
TV-Provider

Program number
0x101

PMT PID
0x101

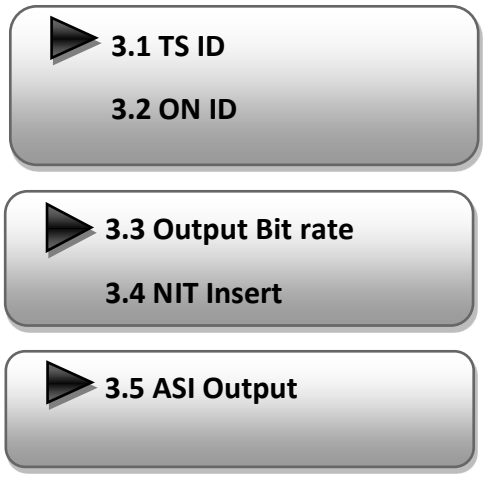
PCR PID
0x100

Video PID
0x100

Audio PID
0x100

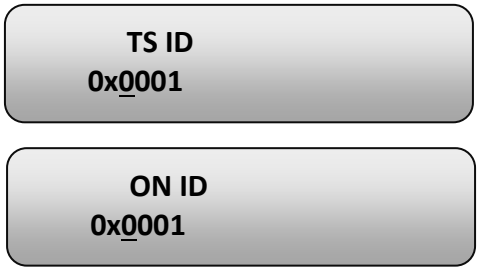
3) TS Config

This encoder support TS output via ASI ports. 'TS Config' is for the configuration of ASI output. Its submenus contain:



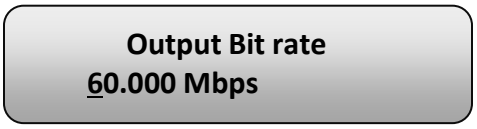
➢ TS ID/ON ID

Users can set the TS ID and Original Network ID in the 2 submenus. The IDs are in hexadecimal form.



➢ Output Bit rate

Users can set the max output bit rate for the ASI MPTS out. (Range 0-100 Mbps)

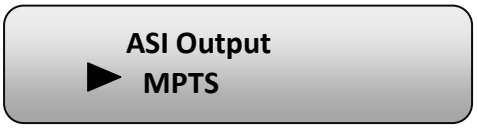


➢ NIT Insert

Users can insert your NIT with operations in the menu.

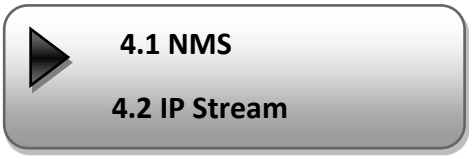
➢ ASI Output

Users can copy a stream from the IP out streams (1 MPTS & 8 SPTS) to output through ASI.



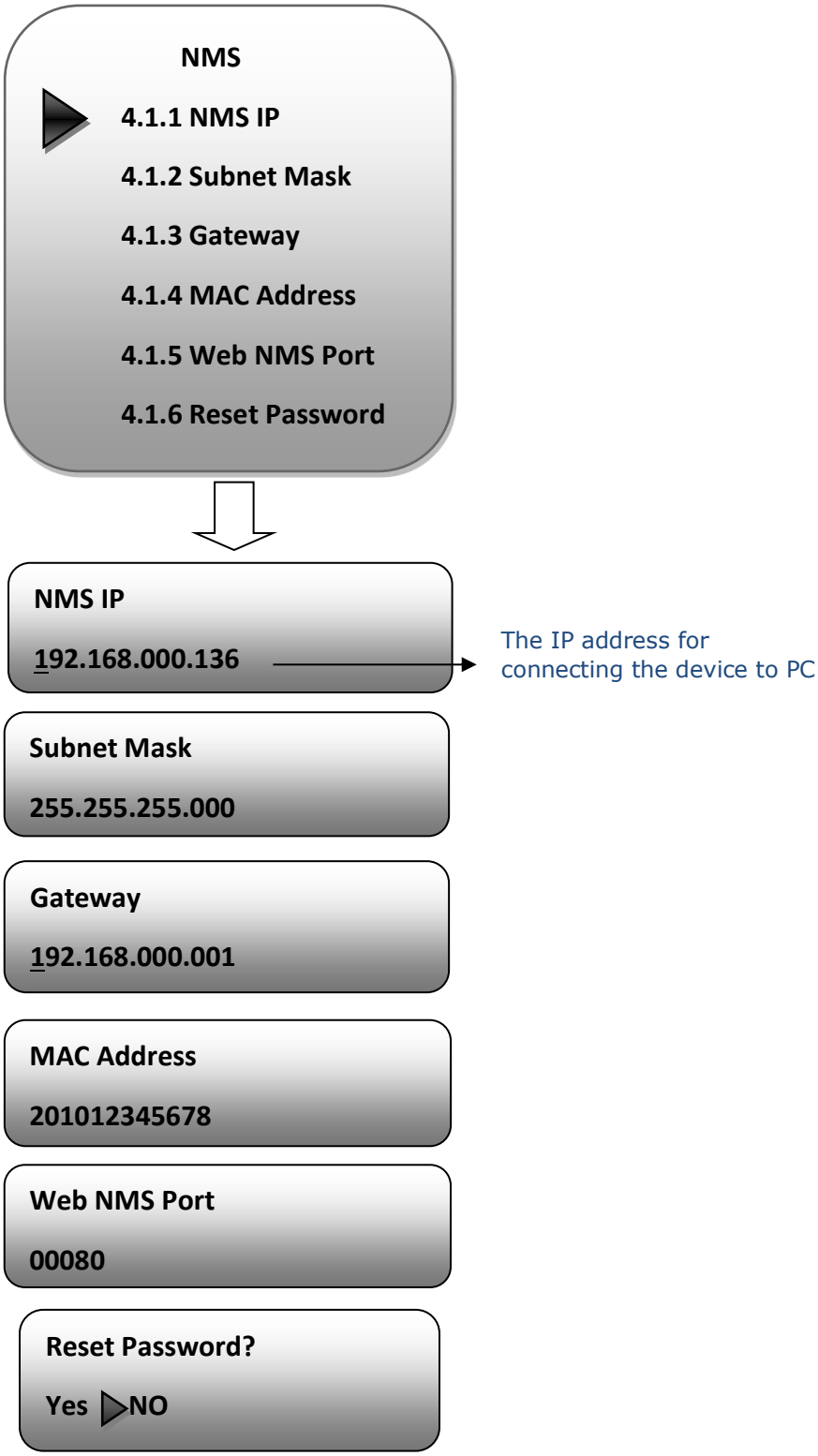
4) Network

'Network' is divided into 2 parts: NMS and IP Stream.



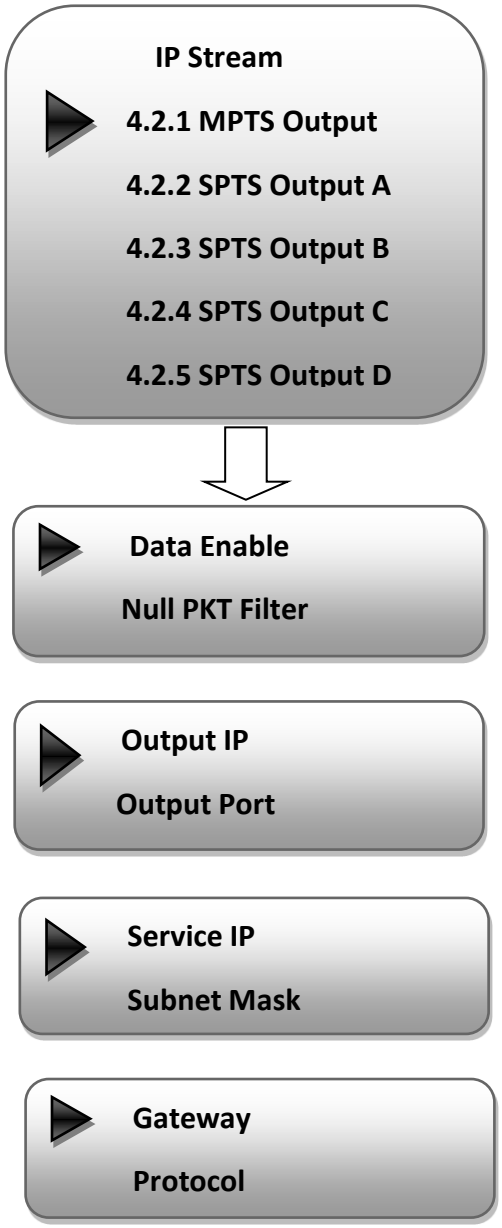
➢ NMS

Submenus under 'NMS' are for setting the parameters related to the device connection in the network.


NMS
4.1.1 NMS IP
4.1.2 Subnet Mask
4.1.3 Gateway
4.1.4 MAC Address
4.1.5 Web NMS Port
4.1.6 Reset Password
NMS IP
192.168.000.136
The IP address for connecting the device to PC
Subnet Mask
255.255.255.000
Gateway
192.168.000.001
MAC Address
201012345678
Web NMS Port
00080
Reset Password?
Yes NO

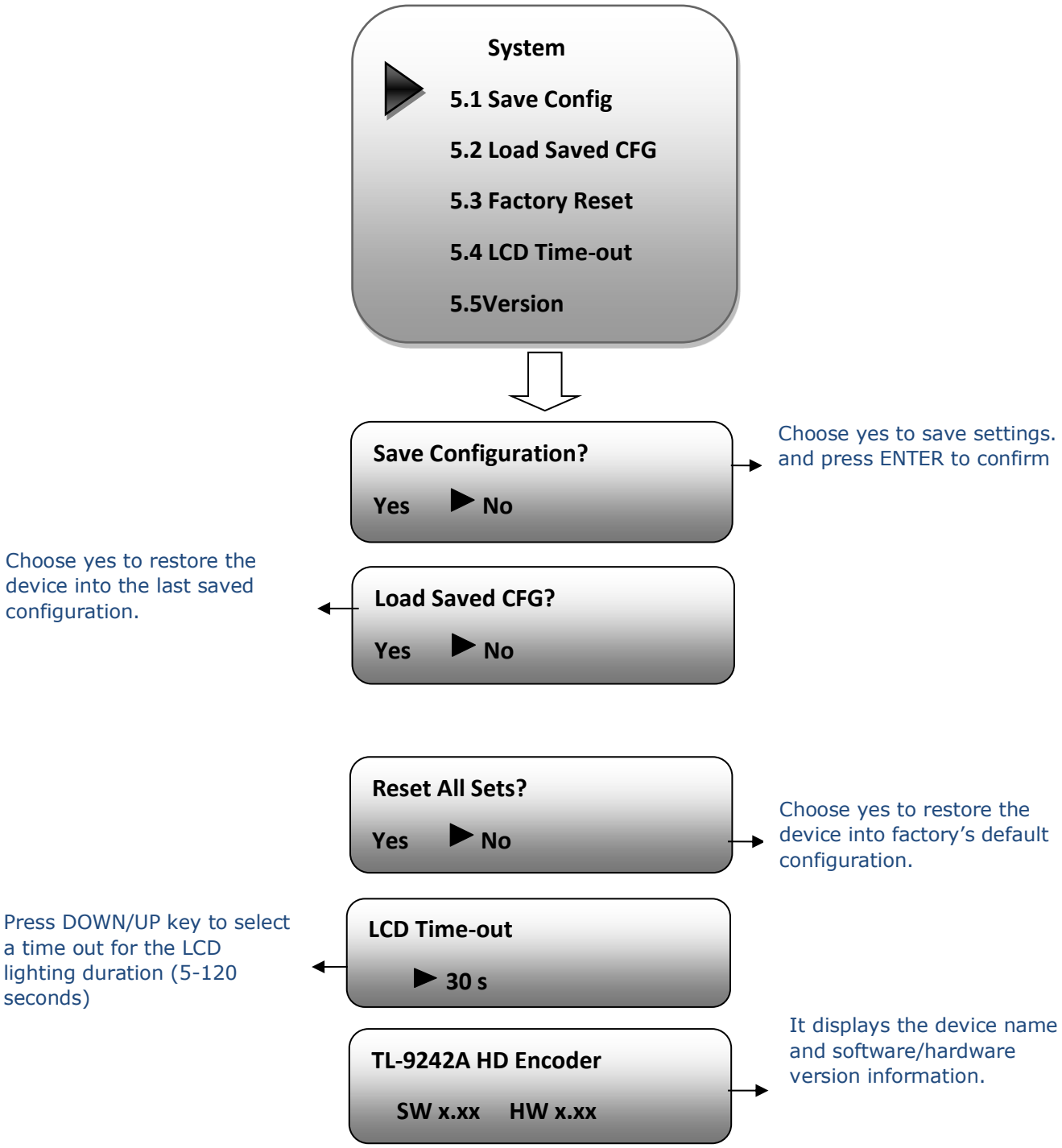
➢ IP Stream

Submenus under 'IP Stream' are for setting the output IP stream in MPTS or SPTS.



5) System

Users can set the system parameters in this menu. Enter 'System' submenus to separately set corresponding parameters.



CHAPTER 4

WEB NMS OPERATION

User not only can use front buttons for setting 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 TL-9542B's IP address; otherwise, it would cause IP conflict.

4.1 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).

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.

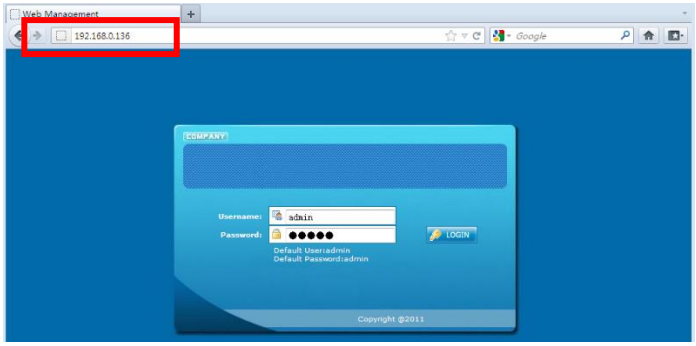


Figure-1

4.2 OPERATION

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

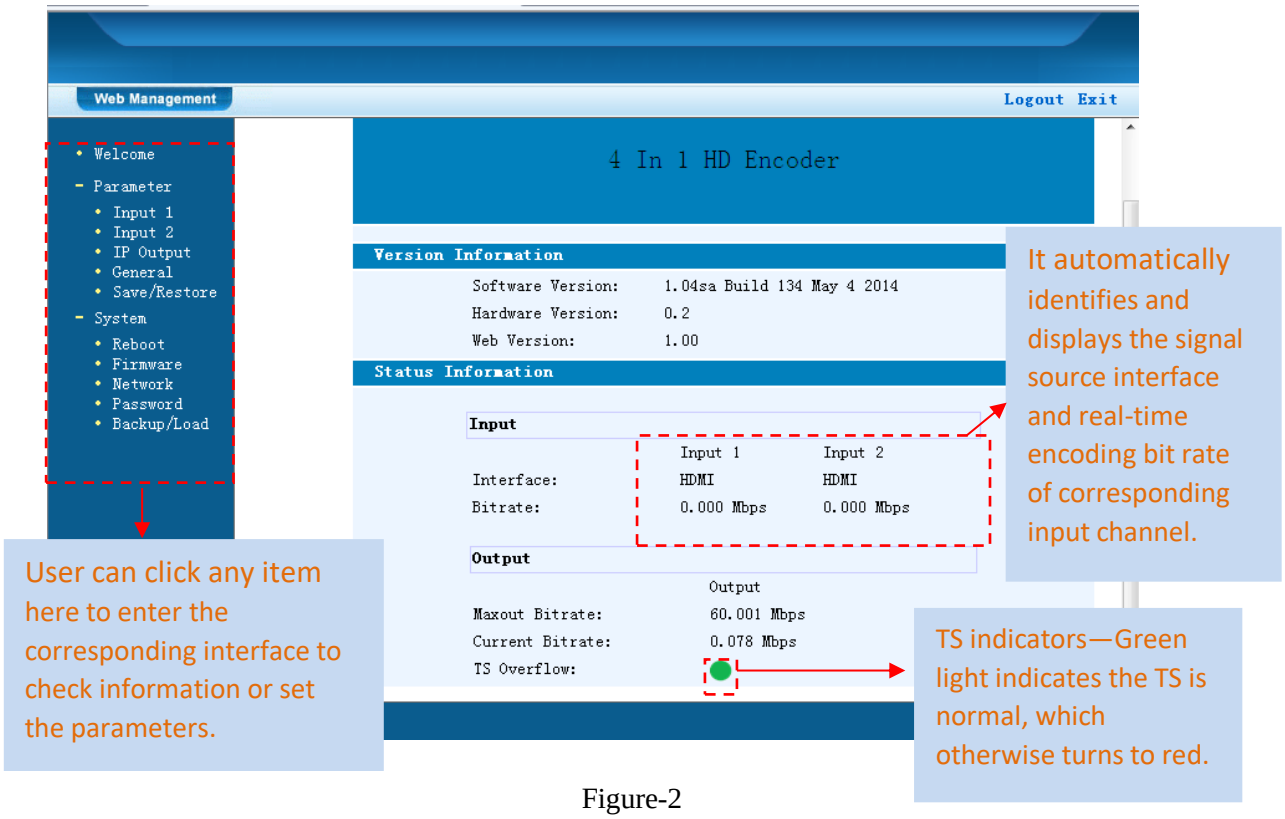


Figure-2

Input 1

From the menu on left side of the webpage, clicking “Input 1”, it displays the information of the programs (1st & 2ed ones) from the 1st HDMI encoding module as Figure-3.

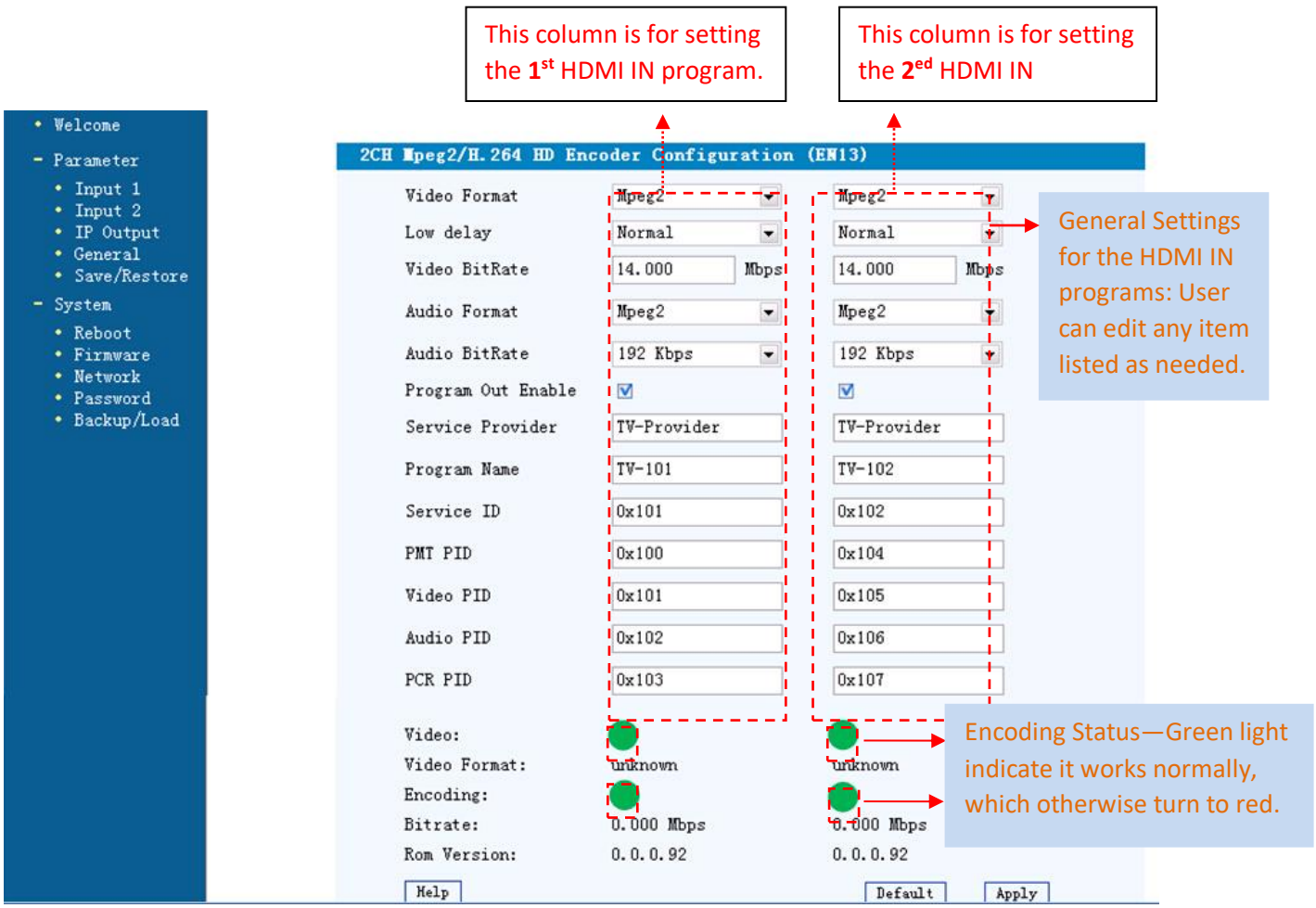


Figure-3

NOTE

The different combination of Video Format, Video Bit-rate, Low Delay Mode, the Resolution of signal source and Decoding solution adopted on terminal side will have an impact on the latency.

Help For user to turn to refer detailed explanation of terms on this interface

Default Click this button to apply the default setting of Input 1

Apply Click this button to apply the modified parameters.

Input 2

Similarly, from the menu on left side of the webpage, clicking “Input 2”, it displays the information of the programs (3rd & 4th ones) from the 2ed HDMI encoding module.

IP Output

Click “IP Output”, it will display the interface where to configure the output IP stream in MPTS or SPTS the as Figure-4.

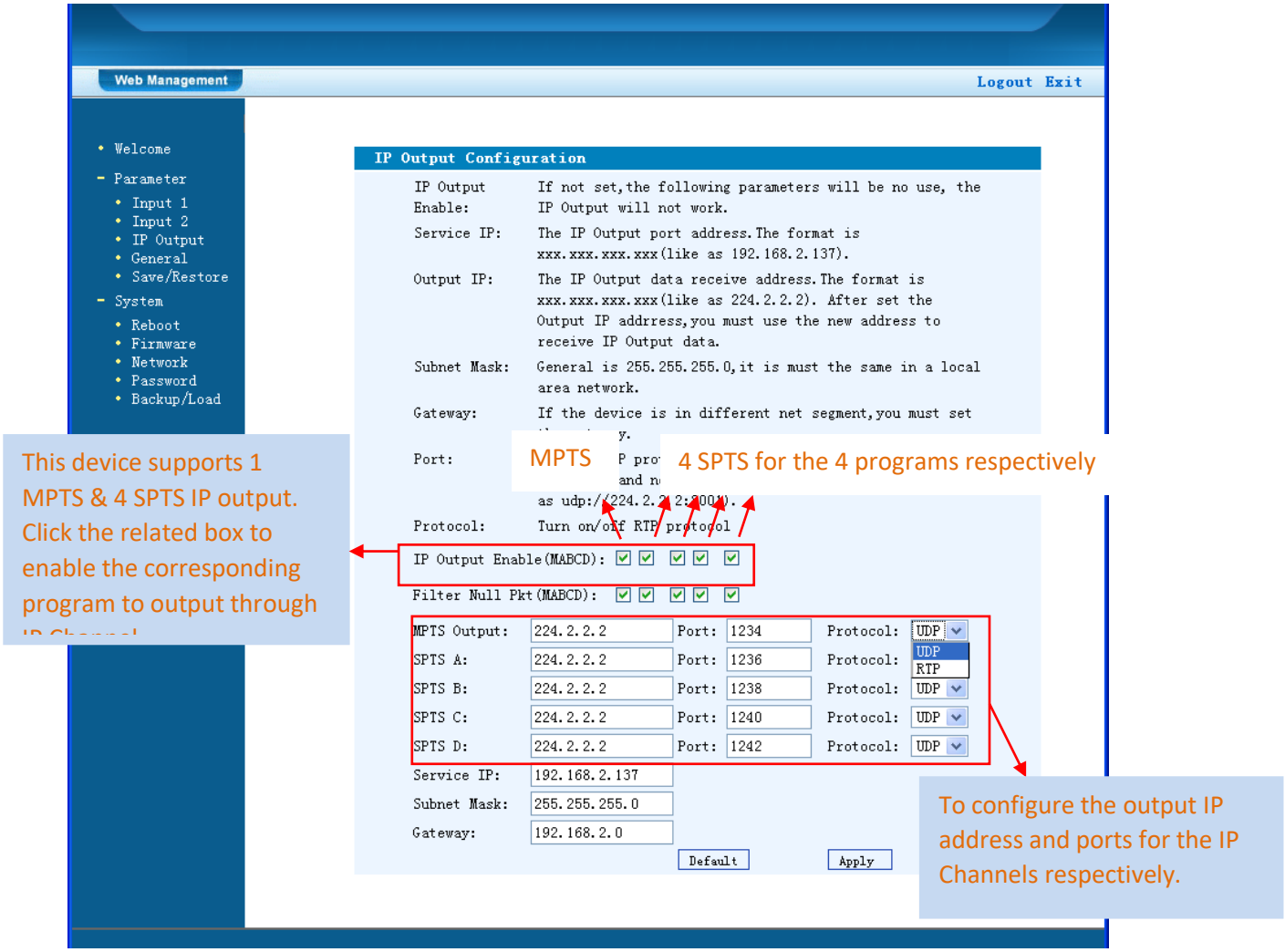


Figure-4

After setting the parameters, click “Apply” to save the setting.

General

Clicking “General” from the menu, it will display the interface as Figure-5 where to set the network info for the output TS.

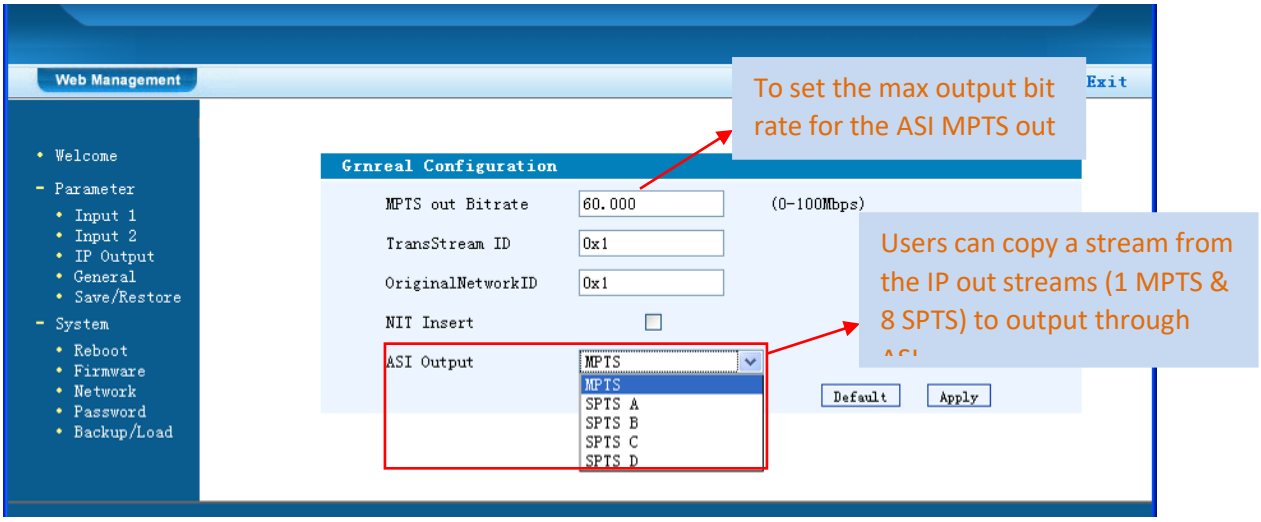


Figure-5

Save/Restore

From the menu on left side of the webpage, clicking “Save/Restore”, it will display the screen as Figure-6 where to save or restore your configurations.

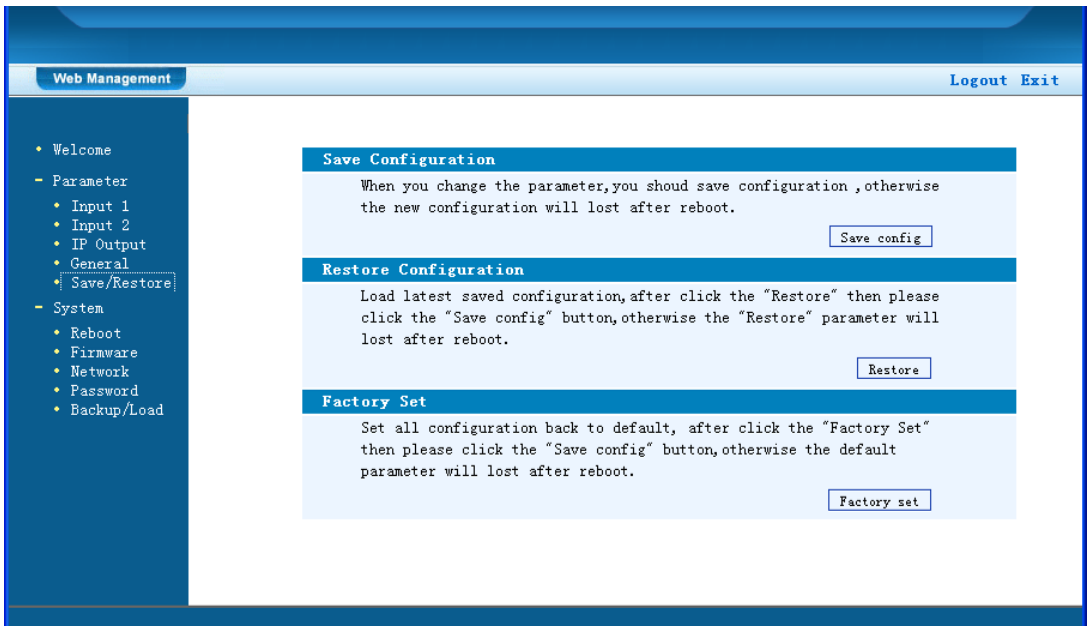


Figure-6

Restart the Device

Click “Reboot” from the menu, the screen will display as Figure-7. Here when clicking “Reboot” box, it will restart the device automatically.

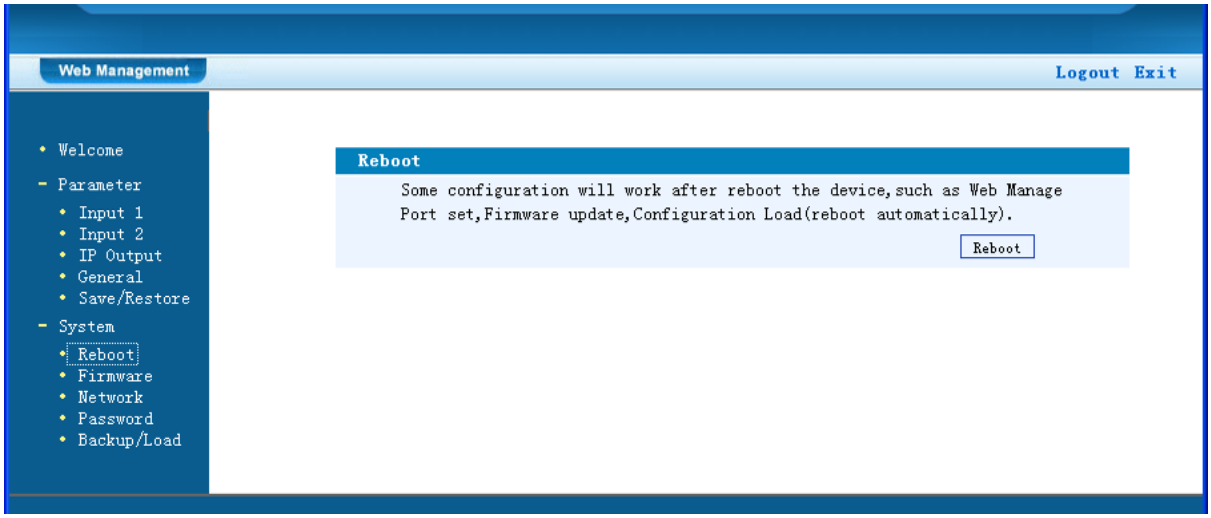


Figure-7

Update the Device

Click “Firmware” from the menu it will display the screen as Figure-8. Here user can update the device by using the update file.

Click “Browse” to find the path of the device update file for this device then click “Update” to update the device.

After updating the device, user needs to restart the device by using Reboot option.

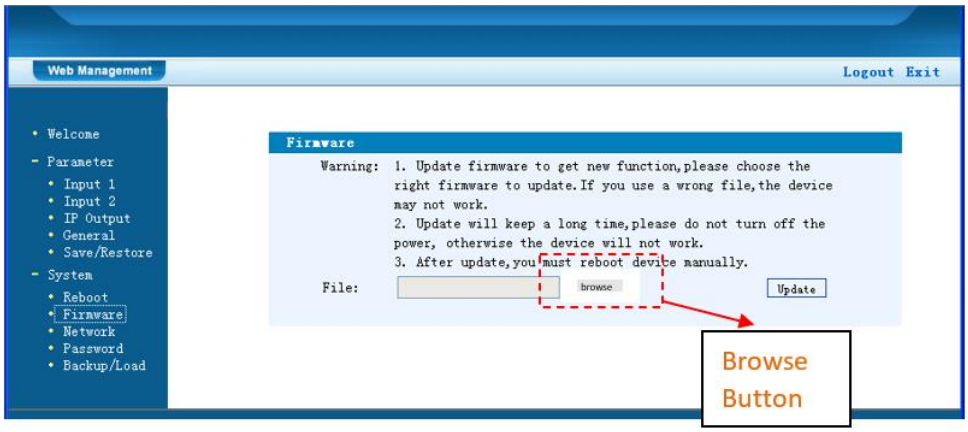


Figure-8

Network

When user clicks “Network”, it will display the screen as Figure-9. It displays the network information of the device. Here user can change the device network configuration as needed.

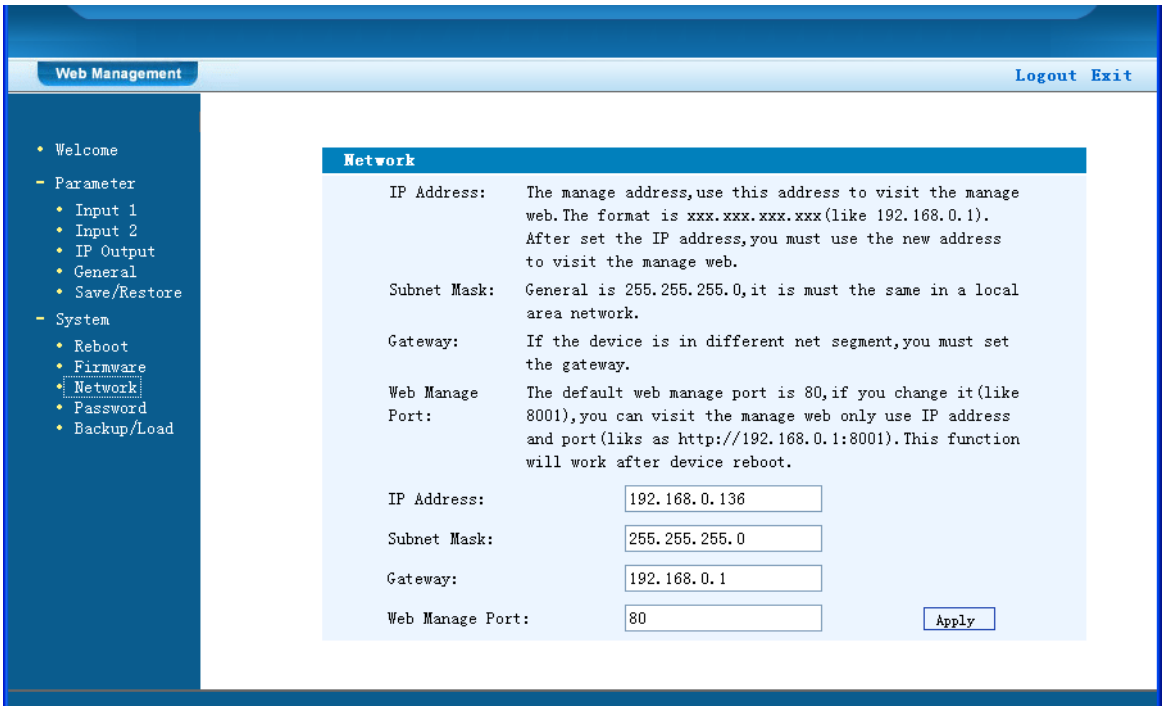


Figure-9

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.

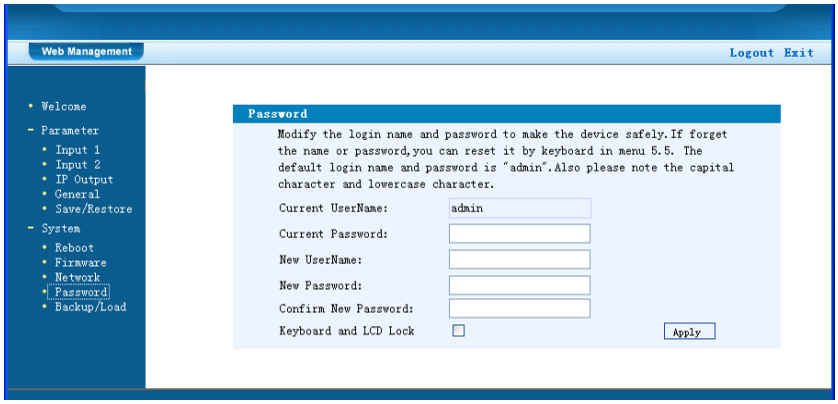


Figure-10

Keyboard and LCD Lock ☐ Keyboard and LCD Lock: If it is marked with "√", the LCD and keyboard will be locked to avoid unrelated users' modifying or view the device information and configurations. User can't operate the keyboard & LCD while only the device IP address can be noted in the LCD window.

Backup/Load

Click "Backup/Load" from the menu, it will display the screen as Figure-11.

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.

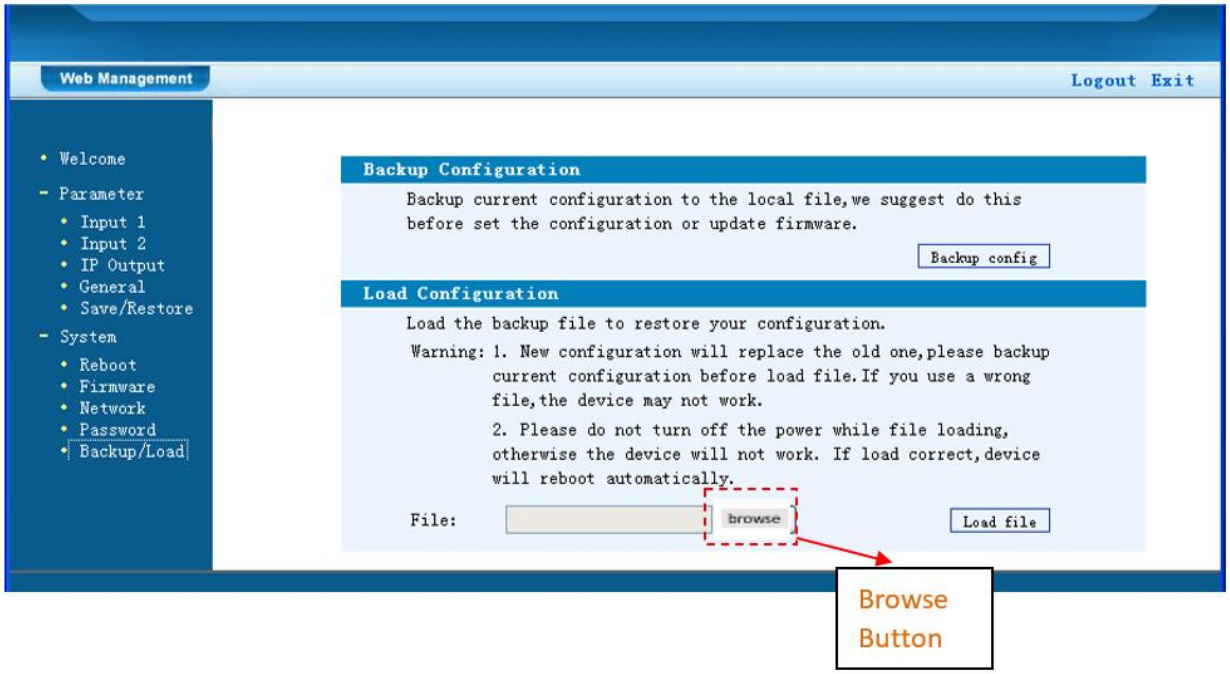


Figure-11

CHAPTER 5

TROUBLESHOOTING

All TRANSLITE products have been passed the testing and inspection before shipping out from factory. The testing and inspection scheme already covers all the Optical, Electronic and Mechanical criteria which have been published by TRANSLITE. 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 6

PACKING LIST

TL-9242A Encoder	1PC
User's Manual	1PC
HDMI Cables	4PCS
Power Cord	1PC

For Sales

North America:
sales@transliteglobal.com

Asia:
sales@translite.co.in

Rest Of The World:
sales@transliteglobal.com

For Support

North America:
support@transliteglobal.com

Asia:
support@translite.co.in

Rest Of The World:
support@transliteglobal.com