NetUP Streamer HD

User manual

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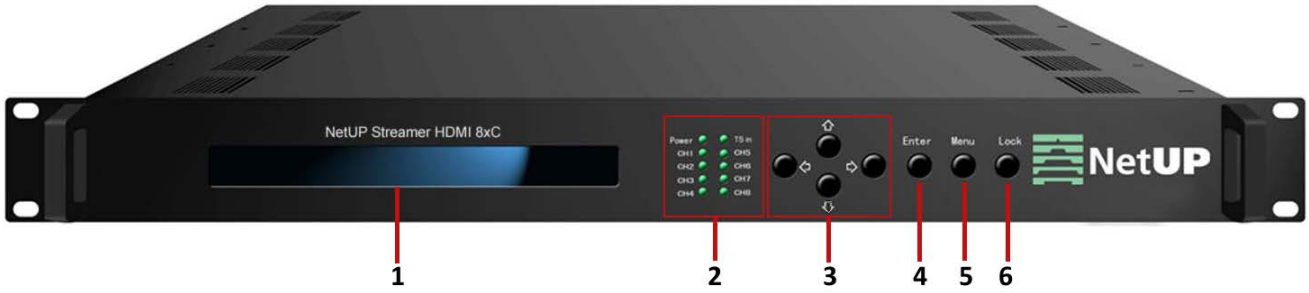
Contents

Chapter 1 Introduction

NetUP Streamer HD is our newest professional HD audio & video encoding and multiplexing device with powerful functionality. It is equipped with 8 HDMI (or SDI) channels input supporting MPEG-4 AVC/H.264 High Profile coding format & main Profile coding format, and also 1 ASI input for re-mux. It can multiplex the ASI input TS and the 8 encoded SPTS to generate a MPTS output with the inserted PSI/SI information. In conclusion, its high integration and cost-effective design make this device widely used in variety of digital distribution systems such as CATV digital head-end, satellite and terrestrial digital TV, etc.

Appearance and illustration



Front panel:

1	LCD screen	
2	Indicators	Indicators
		TS in – the input lock indicator
		CH1-CH8 coding channels
		All indicators light up when the device is turned on
3	UP/DOWN, LEFT/RIGHT keys	
4	ENTER key	
5	MENU key	
6	LOCK key	

Rear panel:

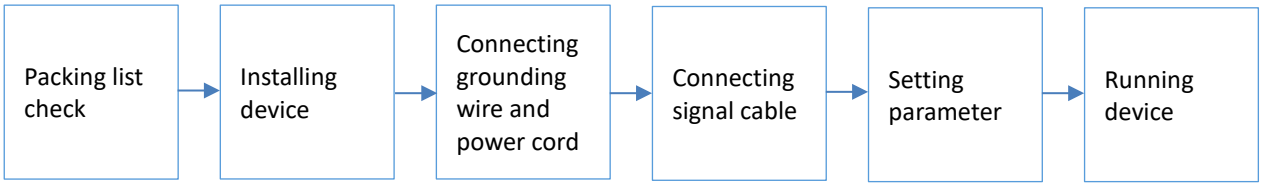
1	8×HDMI/SDI input ports
2	ASI input port
3	2×ASI output ports
4	DATA port (for IP signal output)
5	NMS (Network management port)
6	Power switch, fuse and power socket
7	Grounding pole

Specifications

Input	8×HDMI (8×SDI) and 1×ASI	
Video	Encoding	MPEG-4 AVC/H.264
	Resolution	1920×1080_60P, 1920×1080_50P 1920×1080_60i, 1920×1080_50i 1280×720_60P, 1280×720 _50P 720×576_50i, 720×480_60i
	Resolution Downscale	1080i/720p to 576p/480p
	Bit-rate	0.8Mbps~19Mbps (each channel)
	Rate Control	CBR/VBR
	GOP Structure	IBBP
	Advanced Pretreatment	De-interlacing, Noise Reduction, Sharpening
Audio	Encoding	MPEG-1 Layer 2 (HE-AAC V2, LC- AAC Option); AC3 passthrough (for HDMI)
	Sampling rate	48KHz
	Resolution	24-bit
	Bit-rate	64Kbps,96Kbps,112Kbps,128Kbps,160Kbps,192Kbps,224Kbps,256Kbps,320 Kbps,384Kbps each channel
	Audio Gain	0-400
Multiplexing	1 ASI input multiplexed with local 8 channels of TS	
Output	2×ASI output, BNC interface; MPTS and 8 SPTS over UDP and RTP/RTSP., 1000 Base-T Ethernet interface (unicast / multicast)	
System	Control	LCD/keyboard operating, net manager (Web)
	Update	Ethernet software & hardware upgrade
Other parameters	Dimension (W× L× H)	440mm×410mm×44.5mm
	Temperature	0~45℃(work), -20~80℃ （Storage）
	Power	AC 100V-220V±10%, 50/60Hz

Chapter 2 Installation guide

Device's installation flow chart



Before installing and connecting the device, carefully read the environment and grounding requirements, as well as safety instructions for the sake of your safety and for the safety of the device

Packing list check

Check items according to packing list. Normally it should include the following items:

- NetUP Streamer HD
- Power Cord
- HDMI or SDI cable
- ASI cable

Safety instructions

- Before installing and connecting the device make sure that the device was not damaged during delivery.
- Install the device in an appropriate place. The device is designed to work in a clean and dry room. It must be operated and maintained free of dust.
- Before switching on the device make sure that it is adjusted to the mains voltage you intend to use. Make sure that you keep within the specifications – AC 100V-220V±10%, 50/60Hz.
- Check that all the cables are connected properly. Connect cables only to a device that is turned off.

Environment requirement

Item	Requirement
Room space	When installing a rack in the room, make sure the distance between two rows of racks is 1.2~1.5m and the distance to the wall must be at least 0.8m.
Room floor	Electric isolation. Dust free. The volume resistivity of ground anti-static material: 1×107~1×1010 Ω. Grounding current limiting resistance: 1M (Floor bearing should be greater than 450Kg/m^2).
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	Install rubber strip for sealing door-gaps and dual level glasses for windows
Walls	Can be covered with wallpaper or dark paint.
Fire protection	Fire alarm system and extinguisher.
Power	The device requires AC 100V-220V±10%, 50/60Hz. Please carefully check before running.

Grounding requirement

- Connect the ground wire to the grounding hardware on the device. Ground resistance should be no more than 1 Ω

Grounding is essential for device's functionality, surge and electronic interference protection

- Keep proper contact with the metal housing of the device
- Grounding wire must be made out of copper and as thick and short as possible
- Make sure the two ends of grounding wire conduct electricity and are not rusty
- It is prohibited to use any other devices as a part of grounding electric circuit
- All racks should be connected with a protective copper strip. Ground loops should be avoided
- Grounding wire's contact area with the rack should be no less than 25mm^2

Chapter 3 LCD screen feature description

NetUP Streamer HD has the LCD screen and keys on its front panel. You can use them to control and configure the device. Here is the description of keys' functions:

MENU	Cancel unsaved changes, resets to previous settings and returns to the previous menu
ENTER	Select a menu item and activates a parameter for modifying, or confirms the changes after modification
LEFT / RIGHT UP / DOWN	Navigate through the menu and choose between the available options
LOCK	Lock or unlock the screen. After pressing the lock key, the system will ask if you want to save the current changes. If you select "No", the LCD will display the current configuration state

Initializing and general settings

After powering on the device, it will take a few seconds to initialize the system, and then the LCD will show the device's name and output real-time bitrate *in the first row*, while channels' respective input video resolution, frame rate and real-time encoding bitrate *in the second row* in turn. It shows as below:

```
8 in 1 Encoder          65.958 Mbps
1 480I 60  08.235M      2 480I 60  08.241M
```

Press **LOCK** to enter the main menu and set the input and output parameters. The LCD will display the following pages:

```
1 Encoder Param
2 Output Setting
3 Mux Setting
4 Network Setting
5 Config Setting
6 Version
```

*Use **UP / Down** to move through the list. The arrow icon (►) indicates which item has been selected. Press **ENTER** to get to the submenu*

1 Encoder Param

The **Encoder Param** menu contains eight submenus, one for each of the eight encoding channels:

```
1.1 Encoder 1
-----------------
1.8 Encoder 8
```

Select a channel and press **ENTER** to get to the submenu:

```
1.1.1 Video Param
1.1.2 Audio Param
1.13 Prg info
```

Select an item and press **ENTER** again.

1.1.1 Video Param

The **Video Param** menu gives you access to the following settings:

Item	Valid values
Bitrate (Mbps) 08.000	range from 0.8 to 19 Mbps

1.1.2 Audio Param

The **Audio Param** menu gives you access to the following settings:

Item	Valid values
1.1.2.1 Audio Bitrate [1] 64 Kbps	range from 64 to 384 Kbps
1.1.2.2 Audio Format [1] MPEG1-Layer II	MPEG1 Layer II, LC-AAC and HE-AAC

3 Prg info

The **Prg info** menu gives you access to the following settings:

1.1.3.1 Program Number
0001
1.1.3.2 PMT PID
0x0110
1.1.3.3 PCR PID
0x0111
1.1.3.4 Video PID
0x0111
1.1.3.2 Audio PID
0x0112

Parameter's current value is displayed under its name

1) *Press **ENTER** to start editing.*
2) *Use **UP / DOWN** to select one of the possible values for the parameter. If you need to enter a numeric value, first use **LEFT / RIGHT** to move the cursor to the desired position, and then set the value using the **UP / DOWN** buttons.*
3) *Press **ENTER** to apply changes or press **MENU** to return to the parameter list.*

2 Output Settings

The **Output Settings** menu contains nine submenus, eight items for each of the SPTS outputs and one item for the MPTS output:

2.1 MPTS
2.2 SPTS1
2.3 SPTS2

2.9 SPTS9

Select one of the outputs and press **ENTER** to get access to the following settings:

Item	Valid values
2.1.1 Output Protocol [1] OFF	OFF, UDP, RTP/RTSP
2.1.2 Output IP 224.002.002.002	IP address
2.1.3 Output Port 01000	port
2.1.4 Filter Null Pkt [1] YES	YES or NO
2.1.5 TSID and ONID	TSID (Trans Stream ID); ONID (Original Network ID)

3 MUX Setting

The **MUX Setting** menu contains three submenus:

3.1 Encoder Mux
3.2 ASI

Select an item and press **ENTER.**

3.1 Encoder Mux

The **Encoder Mux** menu gives you access to the following settings:

Output Prog List:
1. DTV1
2. DTV2
---
8. DTV8

1) *Press **ENTER** to open a list for editing.*
2) *Use **UP / DOWN** to select program that should be routed to the selected RF.*
3) *Use **LEFT / RIGHT** to select "Add" (add to list) or "Del" (remove from list).*
4) *Press **ENTER** to apply changes or press **MENU** to return to the program list.*

3.2 ASI

The **ASI** menu gives you access to the following settings:

Item	Valid values
3.2.1 Program List	If there is no program, the LCD will display the «No Program» message.
3.2.2 Parse Prog	YES or NO

1) *Press **ENTER** to open a list for editing.*
2) *Use **UP / DOWN** to select program that should be routed to the selected RF.*
3) *Use **LEFT / RIGHT** to select "Add" (add to list) or "Del" (remove from list).*
4) *Press **ENTER** to apply changes or press **MENU** to return to the program list.*

4 Network Setting

The **Network Setting** menu contains two submenus:

4.1 NMS Interface
4.2 Data Interface

Select one of these items and press **ENTER.**

NMS Interface

The **NMS Interface** menu gives you access to the following settings:

4.1.1 IP Address
192.168.002.136
4.1.2 Subnet Mask
255.255.255.000
4.1.3 Default Gateway
192.168.002.001
4.1.4 MAC Address
00-72-74-76-78-7A

Use the web interface to modify MAC address

DATA Interface

The **DATA Interface** menu gives you access to the following settings:

4.2.1 IP Address
192.168.002.137
4.2.2 Subnet Mask
255.255.255.000
4.2.3 Default Gateway
192.168.004.001
4.2.4 MAC Address
20-72-74-76-78-7A

5 Configuration Setting

The **Configuration Setting** menu gives you access to the following settings:

5.1 Save Configuration
►Yes (No)
5.2 Restore Configuration
►Yes (No)
5.3 Factory Set
►Yes (No)

Select the Factory Set item and press ENTER to reset to factory settings

6 Version

Use the **Version** menu to check the current firmware versions:

7.1 SW Version
X.XX
7.2 HW Version
X.XX

Chapter 4 WEB NMS Operation

In addition to the buttons on the front panel, you can use the web interface to control NetUP Streamer HD.

Login

Connect a personal computer and the device with net cable, and use ping command to confirm they are on the same network segment.

Make sure that the computer's IP address is different from the device's IP address; otherwise, it would cause an IP conflict

The default IP address of NetUP Streamer HD is **192.168.0.136**. Thus, set the computer's IP address to 192.168.0.X, where X can be from 0 to 255, except 136. Open a web browser, enter the device's IP address in the browser address bar and press **Enter**. If the network is configured correctly, you will see the login interface (Figure 1).
Enter username and password and click **LOGIN** to enter the web interface. Default username is "admin", default password is "admin".

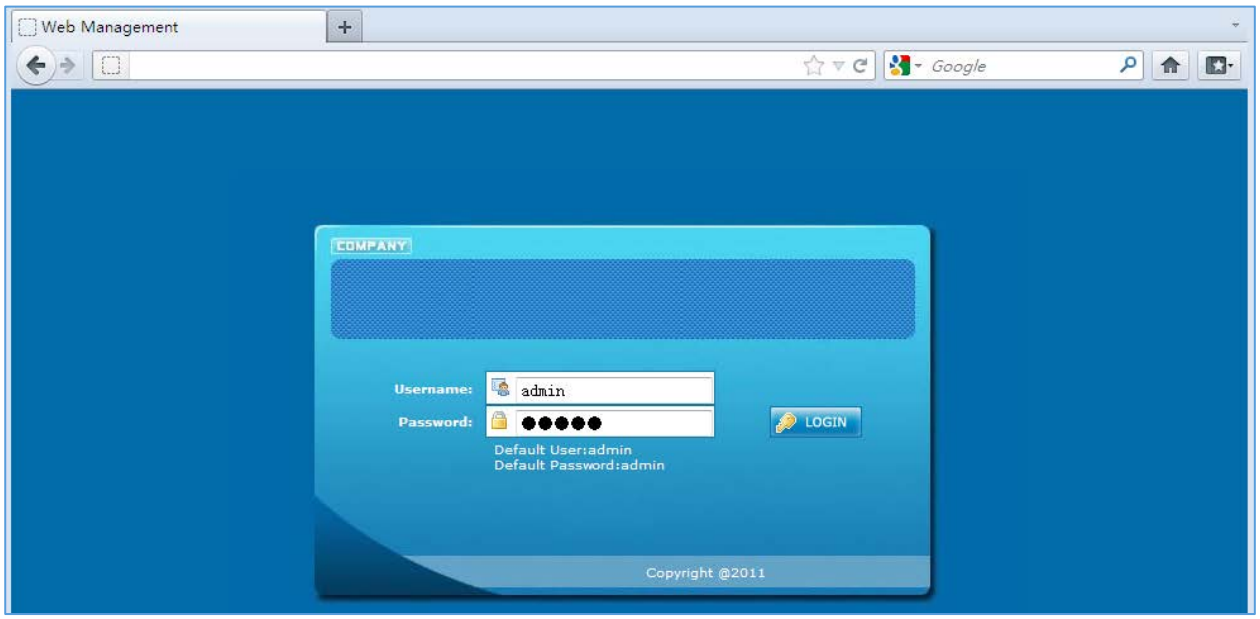


Figure-1

Status

After login, you will get the **Status** page which displays the current system status (Figure-2).

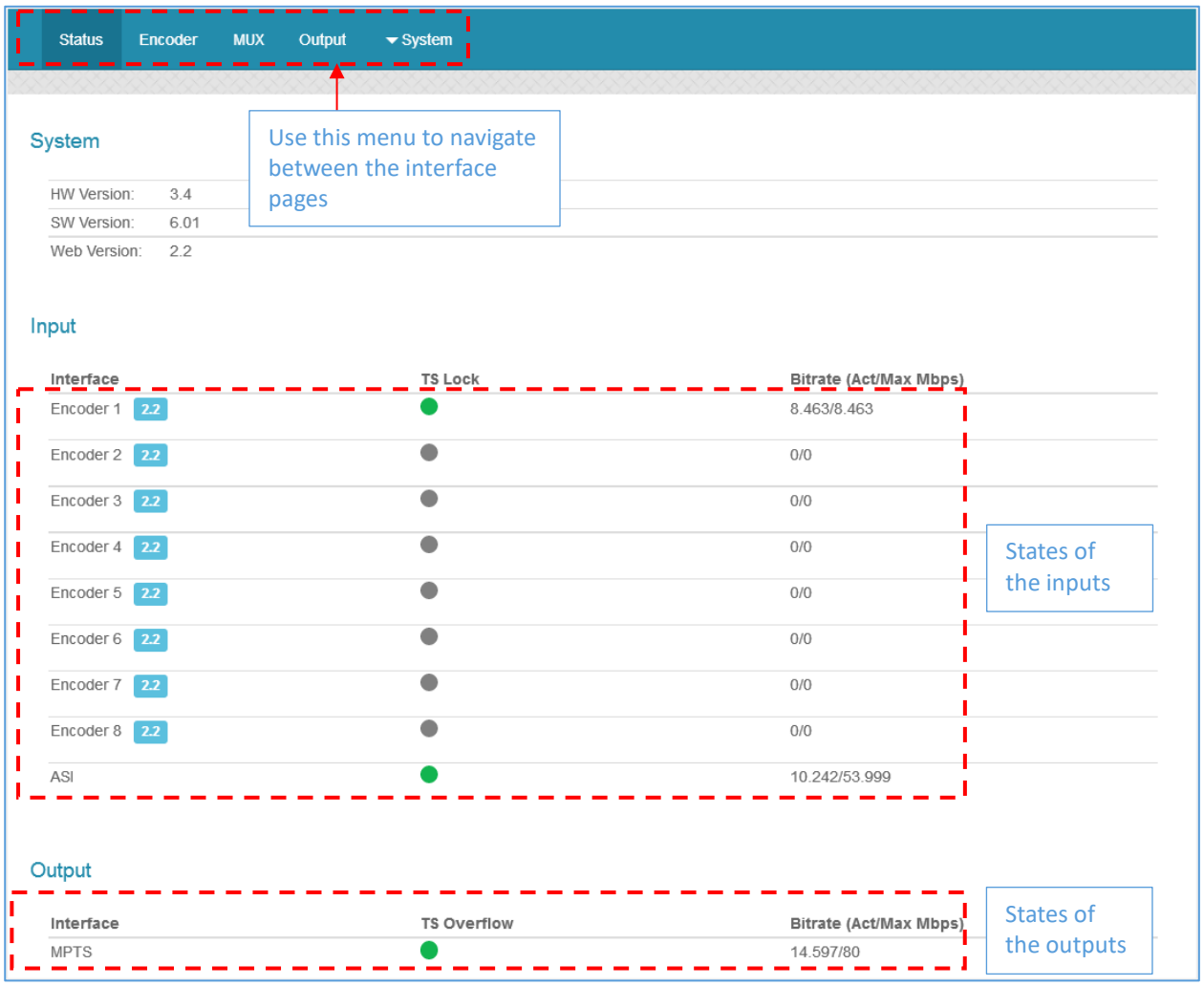


Figure-2

Encoder

Use the **Encoder** page to set coding parameters for each channel (Figure-3).

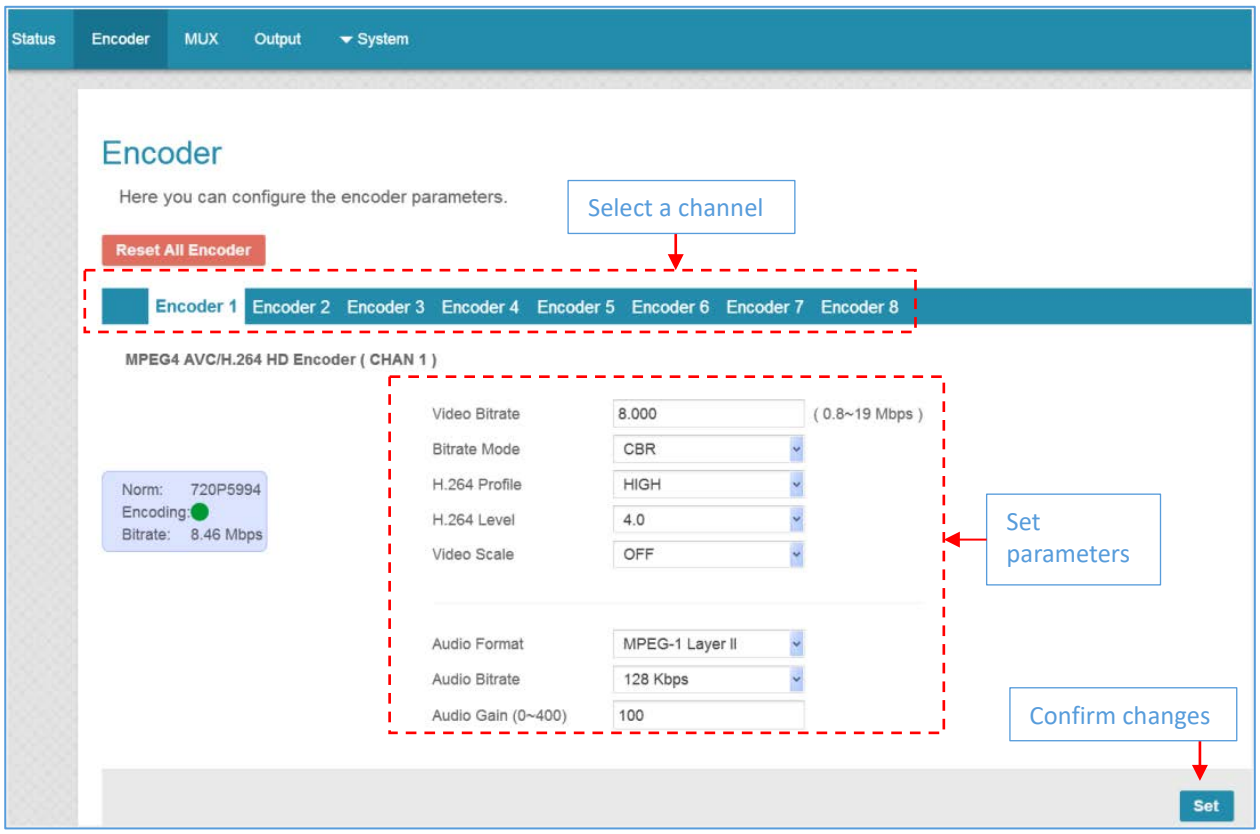


Figure-3

MUX

Use the **MUX** page to set program multiplexing parameters (Figure-4).

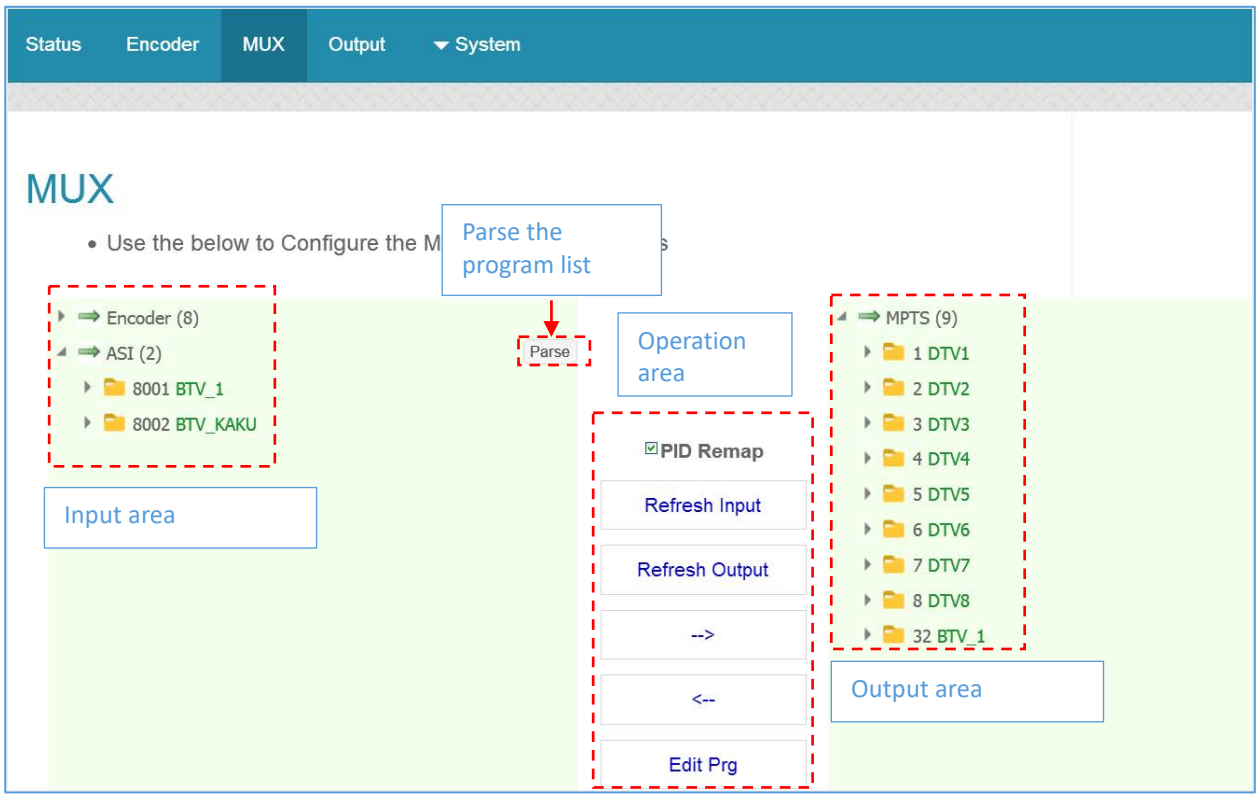


Figure-4

Operation area

PID Remap	enable or disable PID remapping
Refresh Input Refresh Output	refresh an input or an output
--> <--	move programs between the input and the output areas
Edit Prg	modify program information

Program modification window

Select a program and click on **Edit** to modify program information (Figure-5).

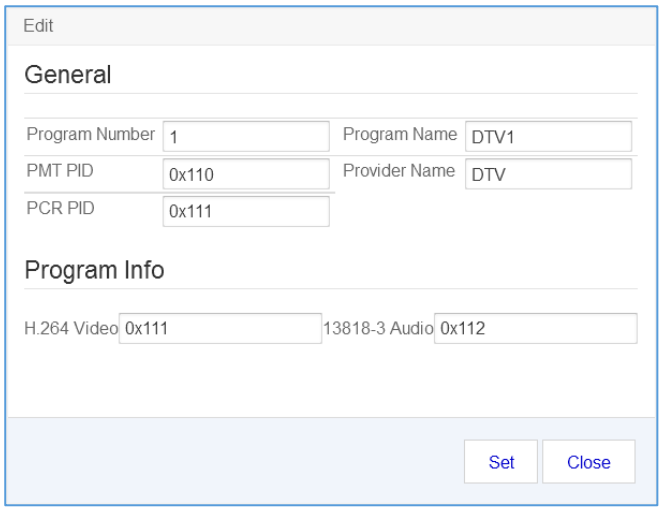


Figure-5

Output

Use the **Output** page to set up outputs. There is a separate tab for each type of signal: **DATA IP Settings, MPTS IP Settings, SPTS IP Settings** or **ASI Output.**

DATA IP Settings

Select the **DATA IP Settings** tab to set network parameters (Figure-8).

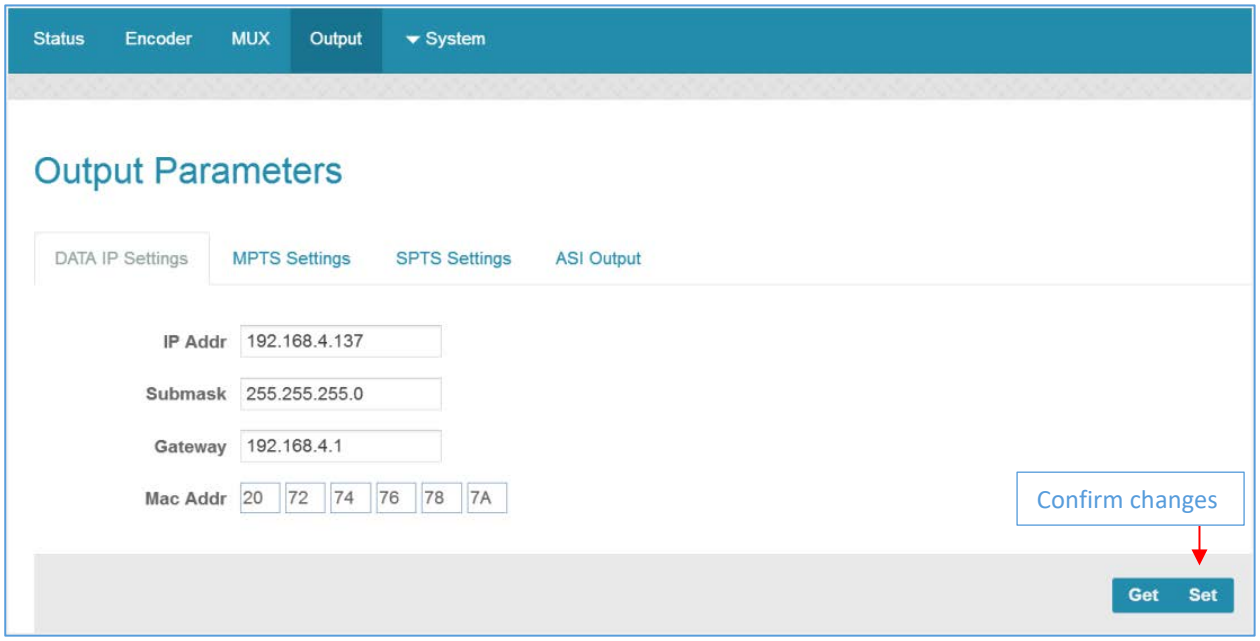


Figure-6

MPTS IP Settings

Select the **MPTS IP Settings** tab to check and change parameters of MPTS (Figure-7).

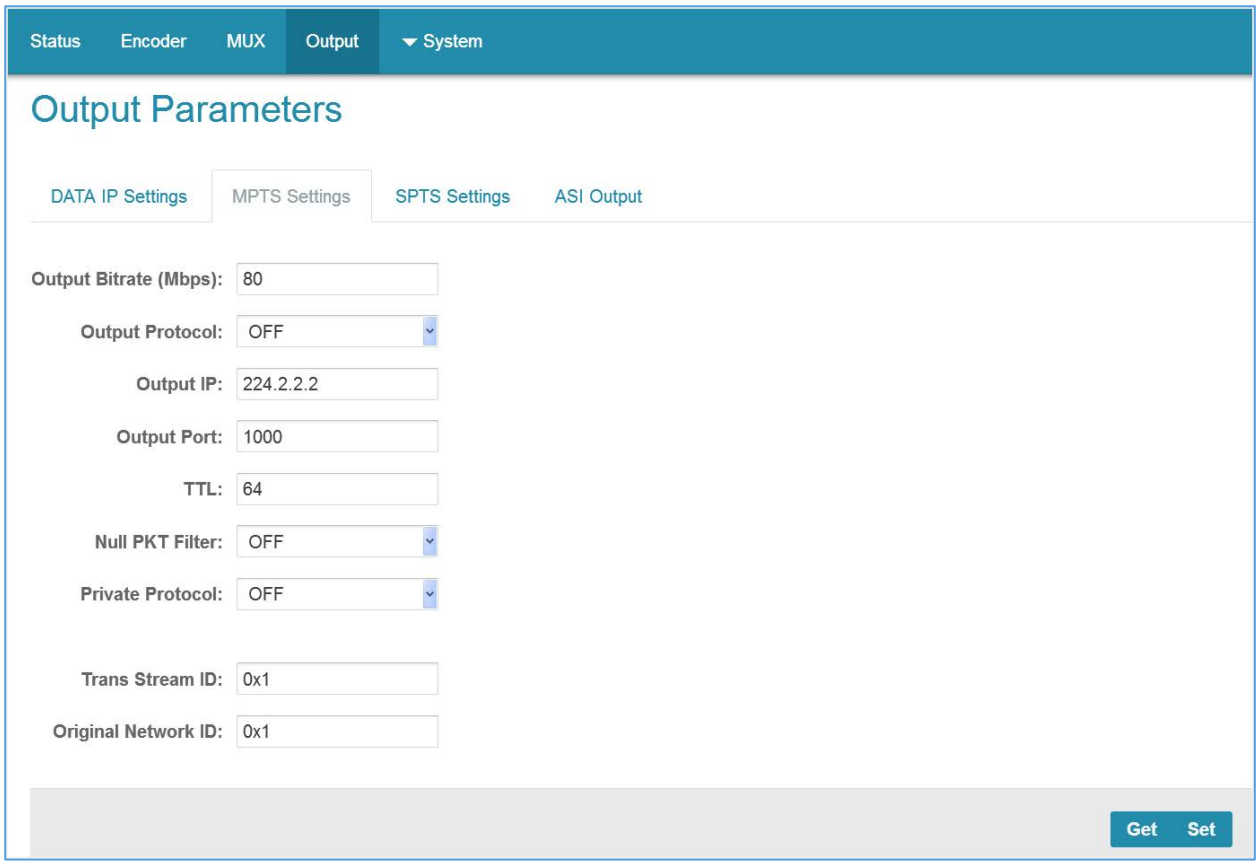


Figure-7

SPTS IP Settings

Select the **SPTS IP Settings** tab to check and change parameters of SPTS (Figure-8).

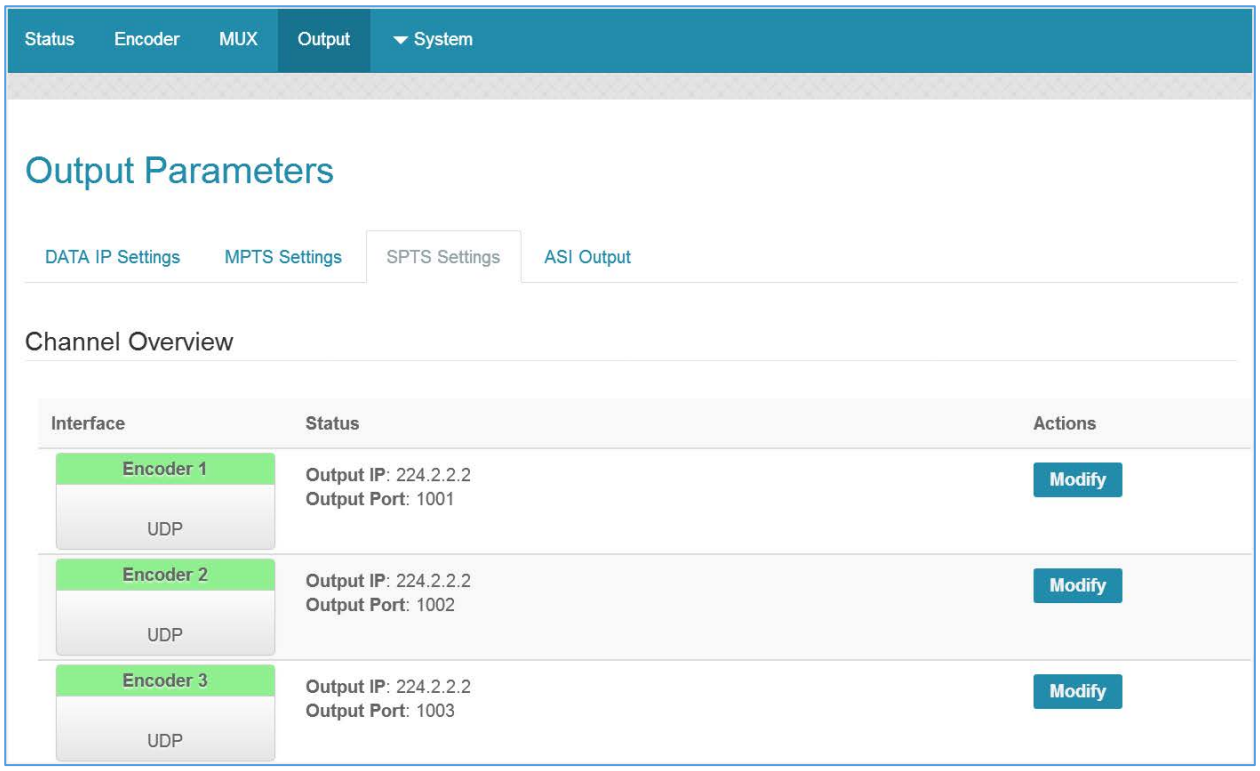


Figure-8

Click **Modify** next to a channel to set parameters of SPTS:

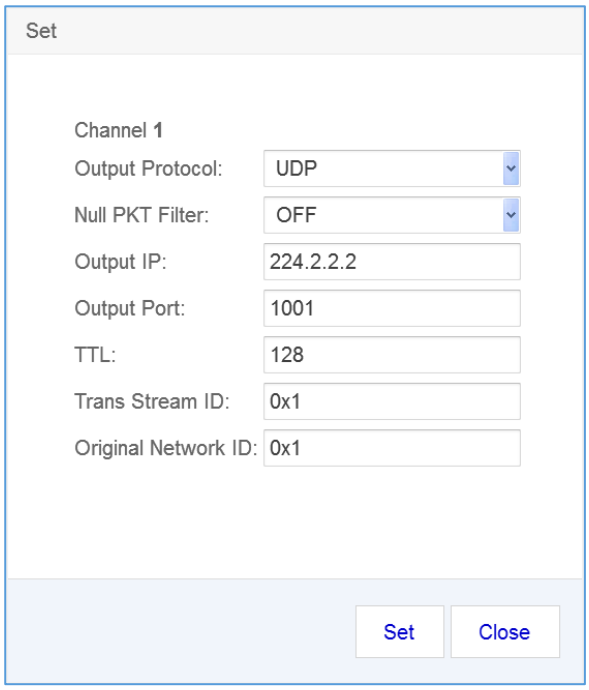


Figure-9

ASI Output

Select the **ASI Output** tab to select ASI output stream as mirrior MPTS or SPTS (Figure-10).

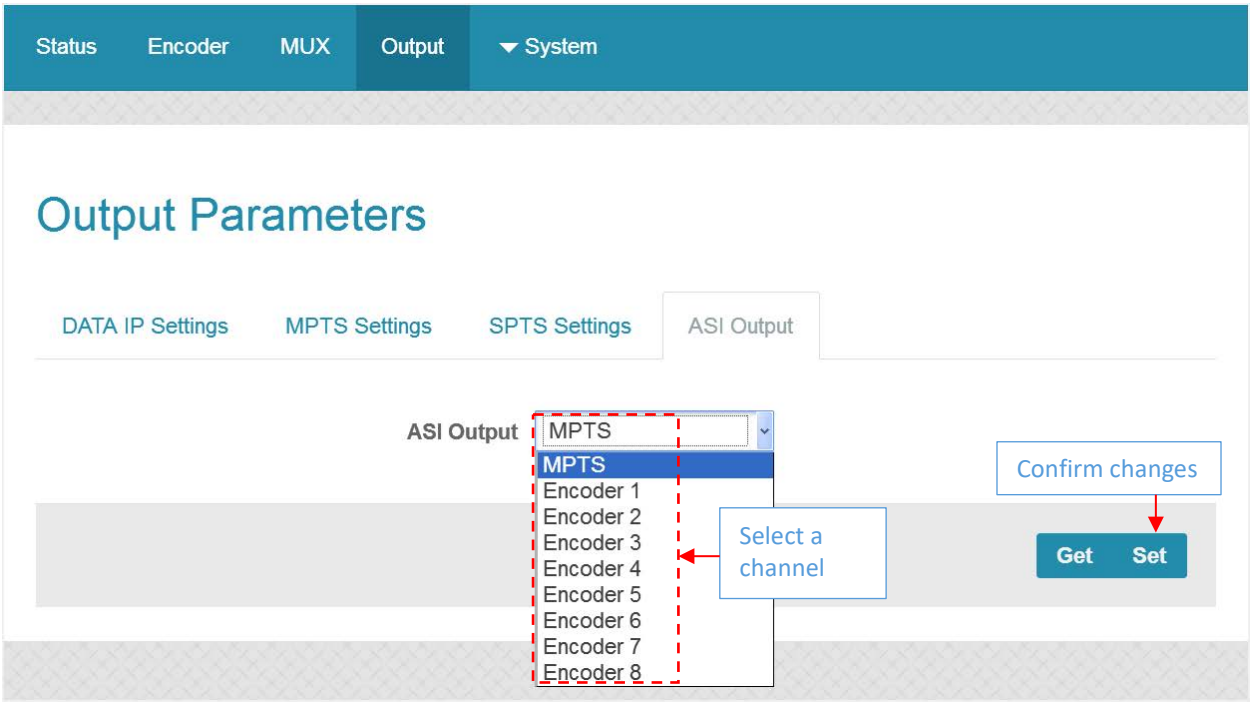


Figure-10

System → Network

Use the **Network** page to edit networking parameters (Figure-11).

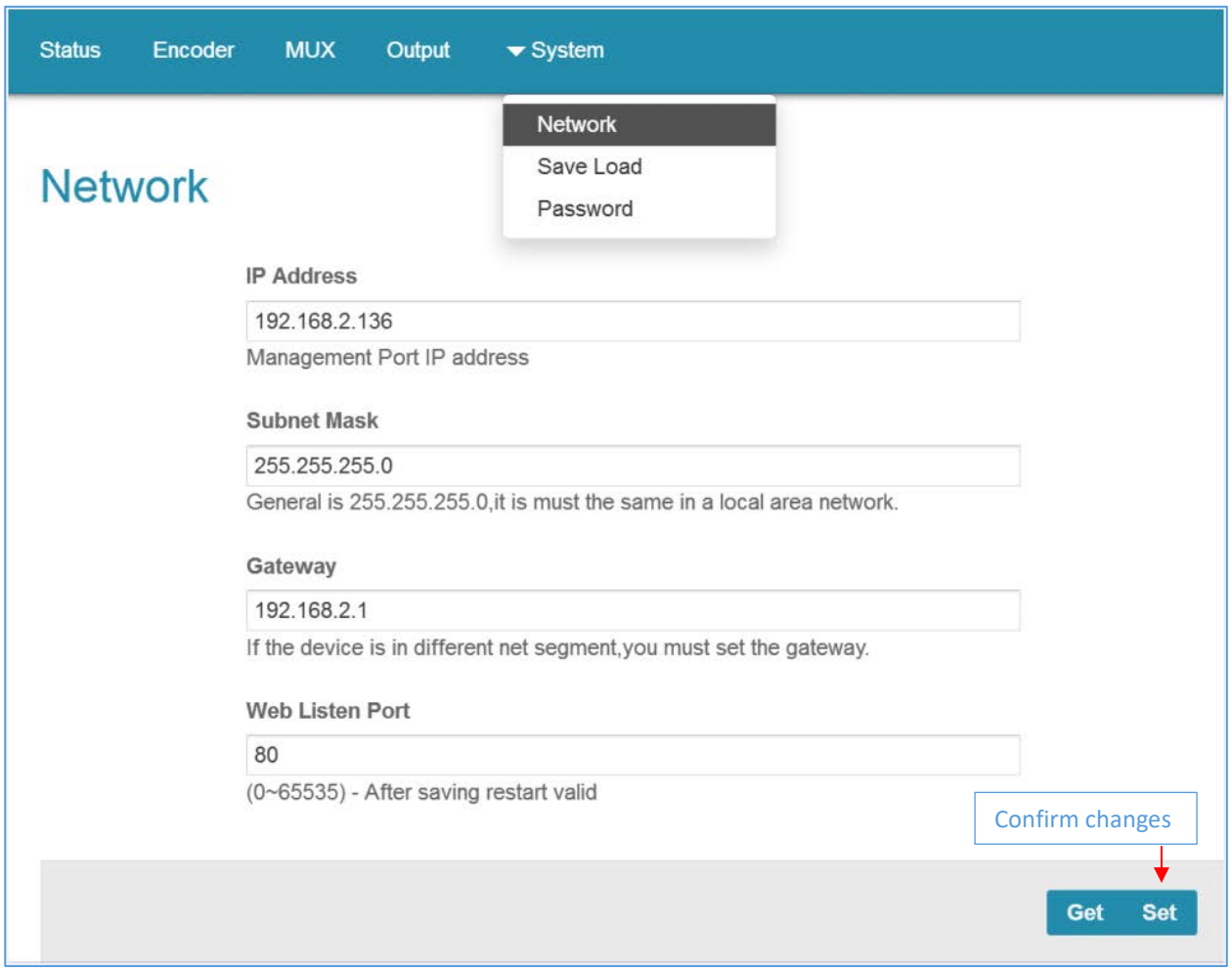


Figure-11

System → Save Load

Use the **Save Load** page to save or restore the system configuration, to return to the factory settings, to save and to load the configuration file (Figure-12).

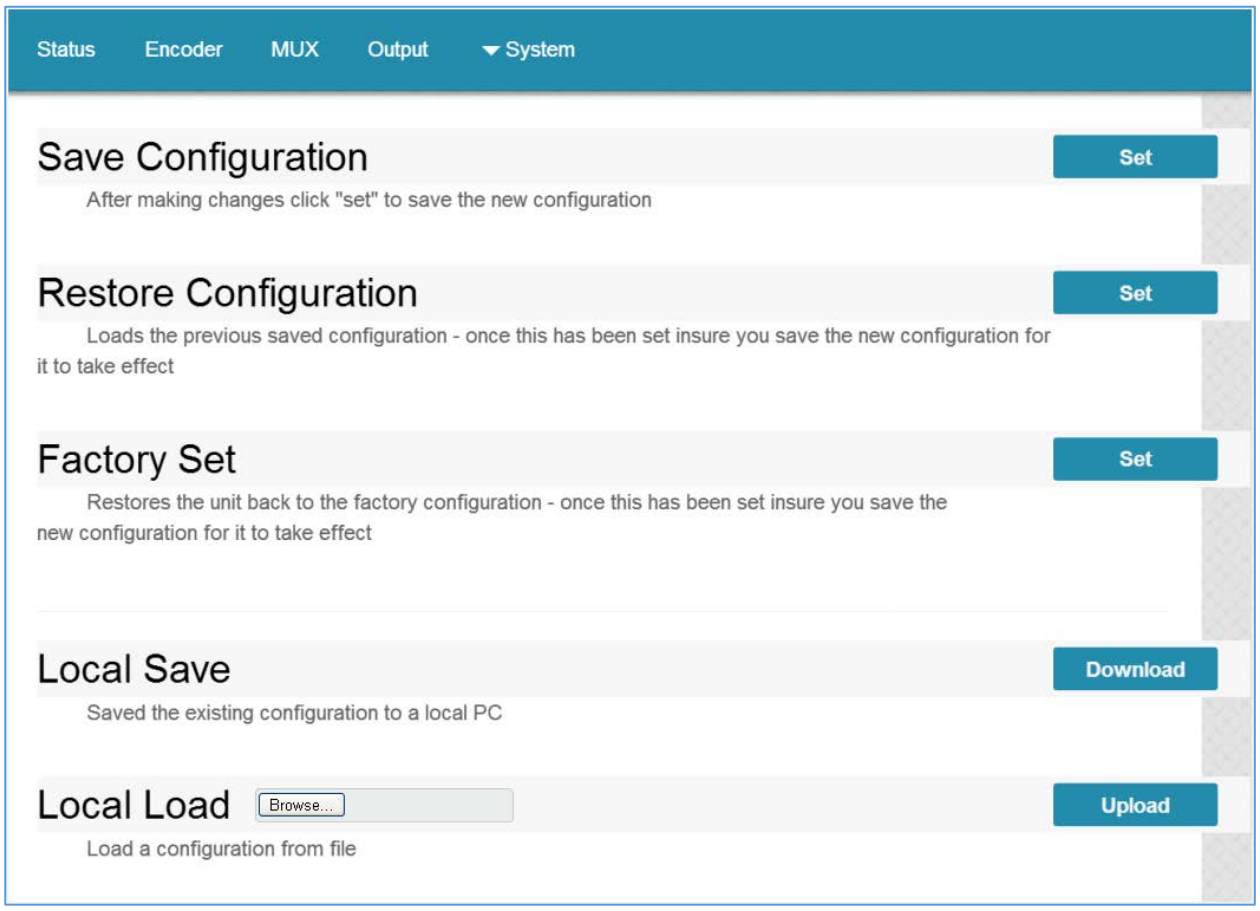


Figure-12

System → Password

Use the **Password** page to change current password and username (Figure-13).

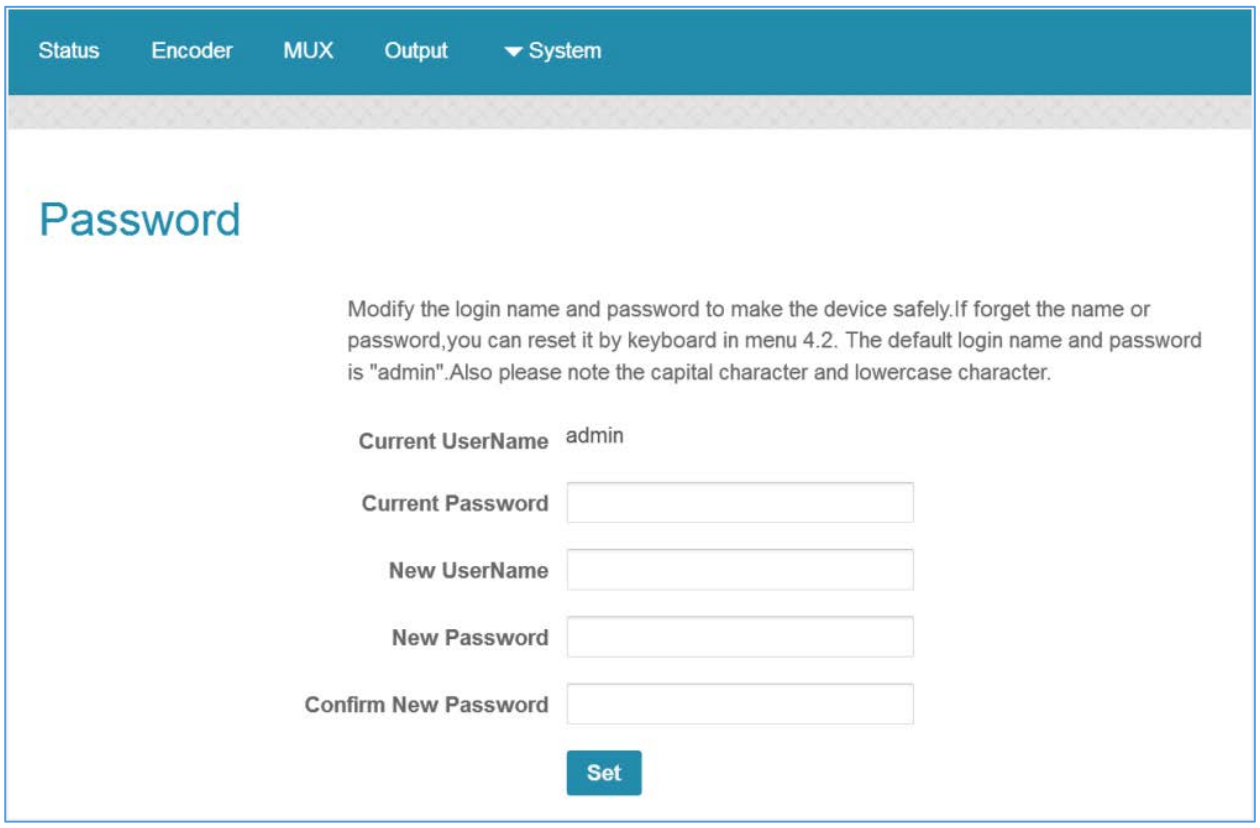


Figure-13

Chapter 5 FAQ

How to add RTSP stream

1. Set IP address of NetUP Streamer HD using the front panel buttons and LCD or web app, for example, 192.168.3.111.

Make sure that NetUP Streamer HD and the device broadcasting the RTSP stream are in the same subnet

2. Check the MAC address of the NetUP Streamer HD. If its value is FFFFFFFFFFFF, change it
3. Set the output stream IP address on the Output Parameters page of the web app, for example, 224.2.2.2:3000

You can check the broadcast using VLC:

- *RTP – rtp@224.2.2.2:3000*
- *RTSP – 192.168.3.111:5000/X, where X is the encoder number, for MPTS X=0, for SPTS1-8 – X=1…8*

Troubleshooting

Check the following before troubleshooting:

- Whether the server room is well ventilated and hot air from the back panel of the device is effectively removed?
- Does the supply voltage meet the power requirements of the device?
- Are all cables connected correctly?

Turn off the device and unplug the power cord in the following cases:

- The power cord or socket is damaged.
- A liquid is splashed on the device.
- A short circuit has occurred.
- The device is in damp environment.
- The device suffered from physical damage.
- Longtime idle.
- After switching on and restoring to factory setting, device still cannot work properly.
- Maintenance needed.

Frequent on and off switching is prohibited; the interval between switching the device on and off must be more than 10 seconds