VINGTOR STENTOFON
by ZENITEL GROUP

HDMI Encoder 8x

USER MANUAL

Vingtor-Stentofon IPTV System

Table of content

1. Basic Information

1.1 Revision history

Document no.	A100K11593
Last revised by:	Boris Cezner
Revision:	02
Date:	09.11.2016

1.2 Related documentation

For further information, refer to the following documentation

Doc.no.	Documentation
A100K11581	IPTV Administrator Guide
A100K11594	MPEG-2 Encoder 8X User Manual

The WEEE Directive does not legislate that Zenitel, as a 'producer', shall collect 'end of life' . The owner who should use proper treatment and recycling measures should recycle this 'end of life' WEEE appropriately. It should not be disposed to landfill.

Many electrical items that we throw away can be repaired or recycled. Recycling items helps to save our natural finite resources and also reduces the environmental and health risks associated with sending electrical goods to landfill.

Under the WEEE Regulations, all new electrical goods should now be marked with the crossed-out wheeled bin symbol shown below:

Goods are marked with this symbol to show that they were produced after 13th August 2005, and should be disposed of separately from normal household waste so that they can be recycled.

2. Product Introduction

2.1 Outline

The HDMI Encoder 8X is our professional HD audio & video encoding and multiplexing device with powerful functionality. It is equipped with 8 HDMI inputs supporting MPEG-4 AVC/H.264 High Profile code format & main Profile code format and 1 ASI input. It can multiplex the ASI input TS and the 8 encoded SPTS to generate an MPTS output with the inserted PSI/SI information. In conclusion, its high integrity 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.

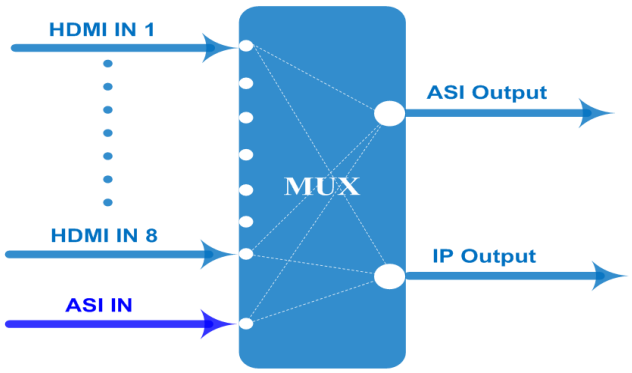
2.2 Main Features

- 8 HDMI & 1 ASI inputs
- H.264/AVC high profile level 4.0 video encoding
- MPEG1 Layer 2 (HE-AAC (V2) or LC-AAC optional) audio encoding
- PSI/SI editing and inserting
- VBR or CBR video bitrate mode
- 720P, 1080I, 1080P HD video format
- ASI output MPTS or 8 SPTS
- IP Output MPTS and 8 SPTS
- IP null packet filter
- PID filter and transparent transport
- Real-time output bit-rate monitoring
- Update device through NMS port
- LCD / keyboard operating, and network management (SNMP)

2.3 Specifications

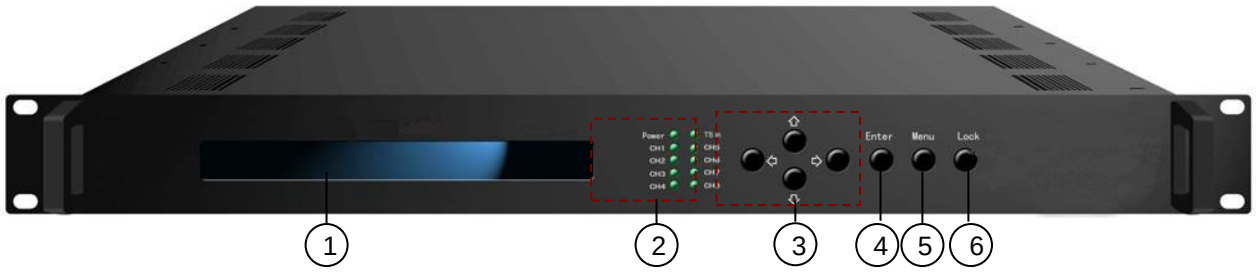
Input	8 HDMI inputs	
	1 ASI input, BNC interface	
Video	Resolution	1920×1080_60P, 1920×1080_50P
		1920×1080_60i, 1920×1080_50i
		1280×720_60P, 1280×720 _50P
		720x576_50i, 720x480_59.95i
	Encoding	MPEG-4 AVC/H.264 high profile level 4.0
	Bit-rate	0.8Mbps~19Mbps (each channel)
	Rate Control	CBR/VBR
	GOP Structure	IBBP
	Advanced Pretreatment	De-interlacing, Noise Reduction, Sharpening
Audio	Encoding	MPEG-1 Layer II, HE-AAC (V2), LC-AAC
	Sampling rate	48KHz
	Resolution	24 bit
	Bit-rate	64Kbps~384Kbps each channel
Multiplexing		1 ASI input multiplexed with local 8 channels of TS
Stream output		2*ASI output, BNC interface
		MPTS and 8 SPTS over UDP, 1000 Base-T Ethernet interface (UDP unicast / multicast)
System function		LCD/keyboard operating, NMS supporting
		Chinese-English control interface
		Ethernet software & hardware upgrade
Miscellaneous	Dimension (W× L× H)	440mm×410mm×44.5mm
	Approx weight	4kg
	Temperature	0~45℃(work), -20~80℃（Storage）
	Power	AC 100V-220V±10%, 50/60Hz
	Consumption	25W

2.4 Principle Chart



2.5 Appearance and Illustration

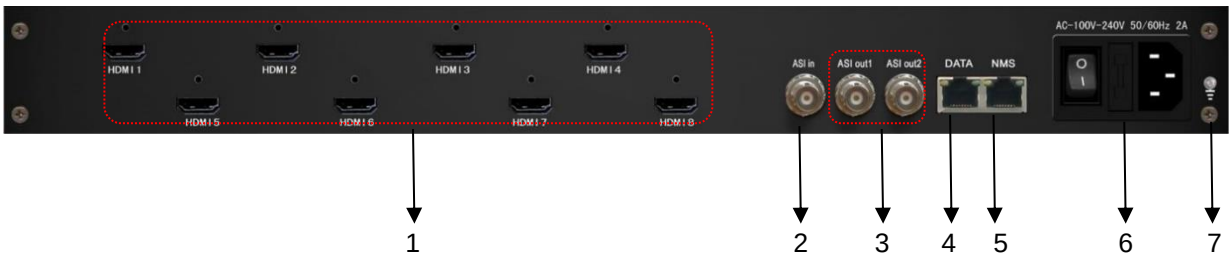
Front Panel Illustration:



Indicate area: All indicators will light on when the device is on the current working state.

	LCD screen	
	Indicators	Power indicator
		TS in: input lock indicator
		CH1-CH8: When program has been multiplexed, the indicator will be on.
3	UP/ DOWN, LEFT/RIGHT keys	
4	Enter key	
5	Menu key	
6	Lock key	

Rear Panel Illustration:



1	8 * HDMI input ports
2	ASI Input Port
3	2* ASI Output Port
4	Data port (for IP signal output)
5	NMS (Network management port)
6	Power Switch and socket
7	Grounding Pole

3. Installation Guide

3.1 Acquisition Check

When opening the package, it is necessary to check the items according to the packing list. Normally it should contain the following items:

- HDMI Encoder 8x
- User's Manual
- HDMI Cable
- ASI Cable
- Power Cord

If any item is missing or mismatching with the list above, please contact your local dealer.

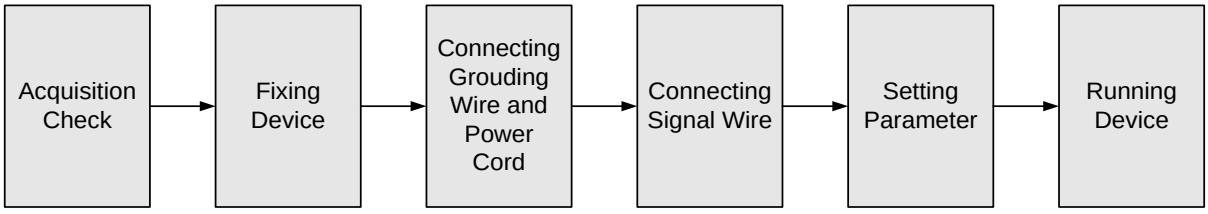
3.2 Installation Preparation

When installing the device, please follow the steps below. The details of the installation process will be described later in this chapter. One can also use the rear panel chart during the installation.

This chapter describes:

- Checking the possible device loss or damage during the transportation
- Preparing relevant environment for installation
- Installing the HDMI Encoder 8x
- Connecting signal cables
- Connecting communication port (if it is necessary)

3.2.1 Device's Installation Flow Chart：



3.2.2 Environment Requirements

Machine Hall Space

- When installing a 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: $1X10^{7}$~$1X10^{10}$ Ω, 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 Humidity

- 20%~80% sustainable, 10%~90% short time

Pressure

- 86~105KPa

Doors & Windows
- Install rubber strip for sealing door-gaps and dual level glasses for window

Walls
- May be covered with wallpaper, or dark 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.

3.2.3 Grounding Requirement

All function modules' good grounding designs are the basis of reliability and stability of electronic devices. It is the most important guarantee of surge protection and interference rejection. Therefore, the system must be grounded. 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. Make sure the 2 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. The area of the conduction between grounding wire and device's frame should be no less than 25mm^2.

3.2.4 Frame Grounding

All the machine frames should be connected with protective copper strip. The grounding wire should be as short as possible and should avoid circling. The area of the conduction between grounding wire and grounding strip should be no less than 25mm^2.

3.2.5 Device Grounding

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

3.3 Wire's Connection

The grounding wire conductive screw is located at the right of the rear panel, and the power switch, fuse, power supply socket are 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 the Power Cord:

Connect one end to the power supply socket, and the other end to the 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.

Before connecting power cord to the HDMI Encoder 8x, set the power switch to "OFF" position.

3.4 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:

- HDMI input cable illustration:

- ASI output cable illustration:

- LAN Patch Cable illustration:

3.4.1 HDMI input interface connection

Find the HDMI interface on the device according to the connector mark described on the rear panel illustration, and then connect the HDMI cable (in the accessories). One end is connected to the head-end equipment while the other end to the encoder's HDMI input port. The encoder's HDMI input port (HDMI1…HDMI8) and an HDMI cable connected to it, illustrated as follows:

3.4.2 ASI output interface connection

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). Connect one end to the encoder's ASI out connector (ASI1, ASI2) and the other end to the TS stream multiplexer or modulator's ASI input port. The encoder's ASI output interface and a cable, connected to it, illustrated as follows:

3.4.3 IP Output Interface connection

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

3.4.4 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 (patch) cable. Connect one end of the network cable to the encoder's NMS connecter, and the other end to your PC. The encoder's NMS connection is illustrated as follows:

4. Operation

HDMI Encoder 8x's front panel has the user interface. Before operating, user can decide whether directly use the default setting or customize the input and output parameters setting. Here is a detailed description of these operations:

Keyboard Functions Description:

- **ENTER:** Activates the parameters that need to be modified, or confirms the changes after modification.
- **MENU:** Cancels unsaved changes to currently selected value, resets to previous settings and returns to previous menu.
- **LEFT/RIGHT:** Moves the "►" to choose or set the parameters.
- **UP/DOWN:** Modify activated parameter or page up/down when a parameter is not activated.
- **LOCK:** Locks the screen / cancels the locked state. After pressing lock key, the system will ask if you want to save the current changes. If not, the LCD will display the current configuration state.

At the "Factory Configuration" page, press "**ENTER**" key to restore the factory default configuration.

4.1 Initializing

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 bit-rate in the first row, while the 8 channels' respective input video resolution, frame rate and real-time encoding bit-rate in the second row in turn. It shows as below:

4.2 General Setting

By pressing LOCK key, one can enter the main menu and set the input and output parameters in the following editing interfaces, the LCD will display the following pages:

The option with "►" is the current selection, press the ENTER key to enter the specified submenu to modify the device parameters.

4.2.1 Input Setting

Under this menu, users can enter the corresponding encoding channel to set the relevant audio and video input parameters, and select programs to multiplex. The LCD will display 8 submenus from Encoding Channel 1 to Encoding Channel 8. The setting principle is the same for Encoding Channel 1-8, so here this manual takes one channel as an example. After pressing the enter key, the LCD will display the following pages:

Once you enter a submenu, the screen will show the following pages, and then one can enter the corresponding interface to modify its parameters.

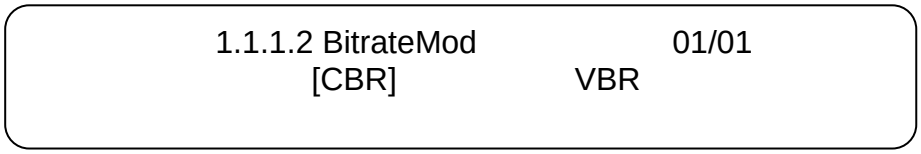
4.2.1.1 Video Setting

- **Bitrate**

Press Enter to modify relevant parameter of encoding rate (adjustable range: 0.8M~19M), the specific steps are displayed as follows:

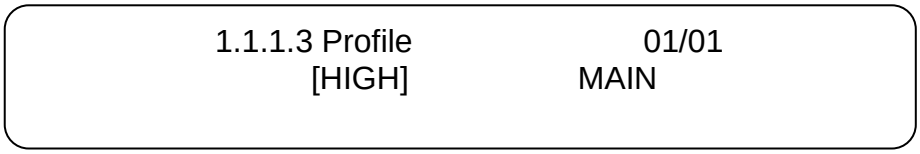
- **Bitrate Mode**

Choose CBR & VBR in 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 change along with the video scene changing.



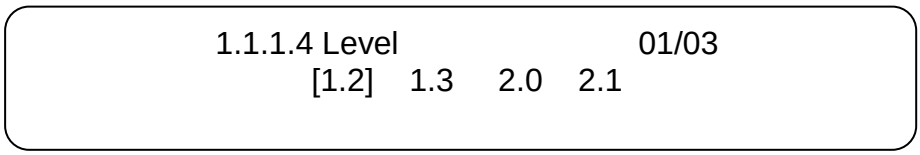
- **Profile**

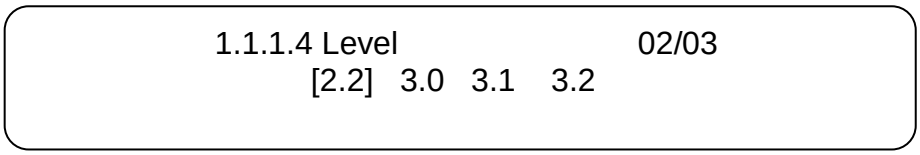
Select the configuration of the H.264 profile at this menu. There are H.264 High Profile code format and main Profile code format.

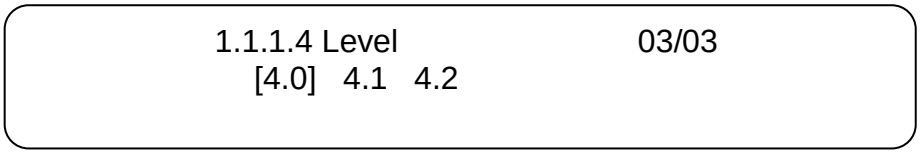


- **Level**

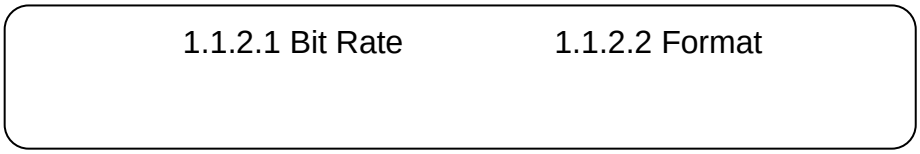
Select the H.264 level at this menu. The option in brackets is the current choice.





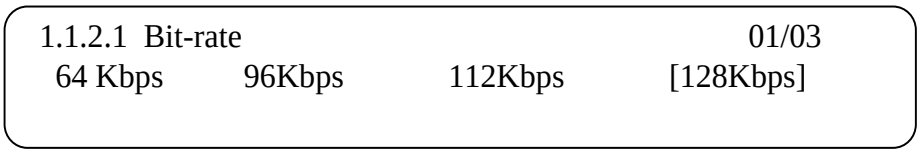


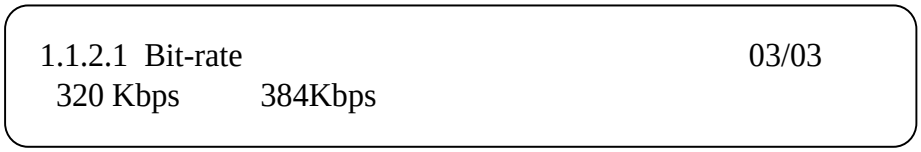
4.2.1.2 Audio Setting



- **Audio Bit Rate Setting**

Set the input audio bit-rate by pressing Enter to enter the main editing screen. And there are: 64Kbps, 96Kbps, 112Kbps, 128Kbps, 160Kbps, 192Kbps, 224Kbps, 256 Kbps, 320Kbps, and 384Kbps options. After modification, press Enter again to apply changes. The LCD will display the following pages:

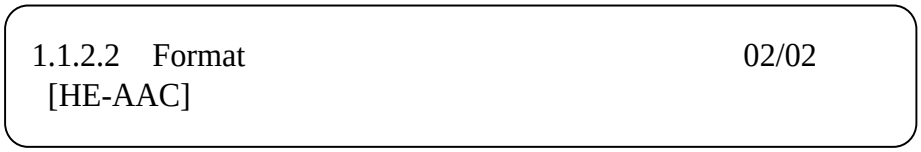




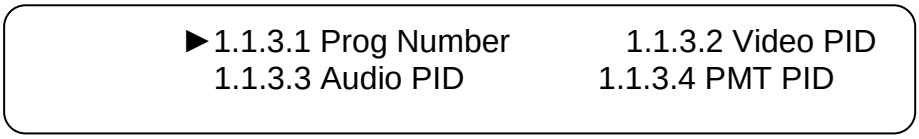
- **Audio Format Setting**

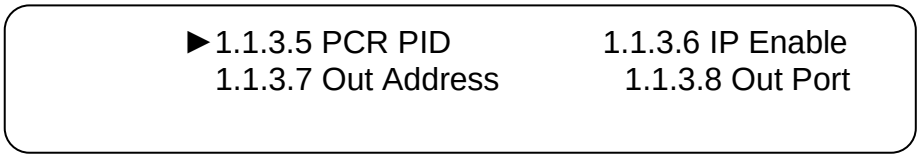
AAC: Advanced Audio Coding

Set the input audio format on this screen, and the 3 options are MPEG1 Layer Ⅱ, LC-AAC, and HE-AAC. When you enter the main editing menu, the LCD will display the following page:



4.2.1.3 System Settings

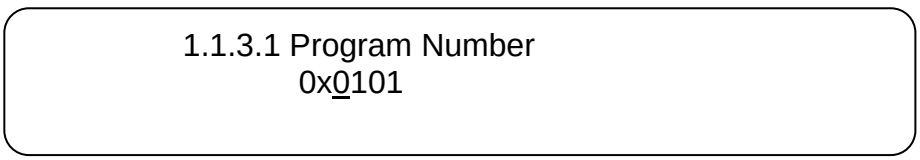




On this screen, one can set the corresponding system parameters, after setting those parameters, press Enter to apply the changes.

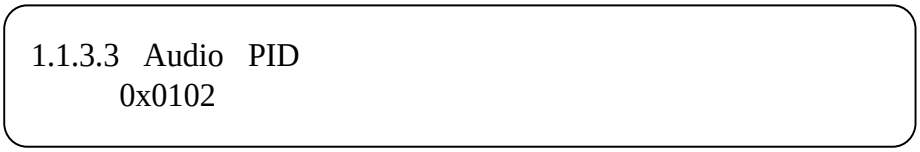
- **Program Number Setting**

  Set the program number by pressing Enter to enter this submenu. The LCD will display the following:



- **Video/Audio/PMT/PCR PID Settings**

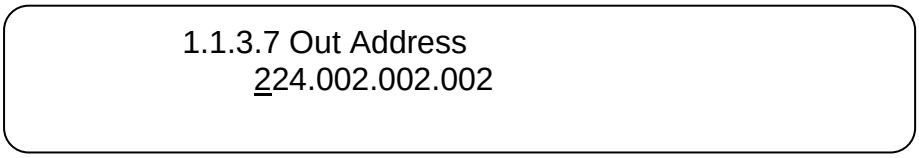
  Set these parameters by pressing Enter to enter these submenus. The LCD will display the following pages, and the maximum PID number cannot exceed 0x1fff.

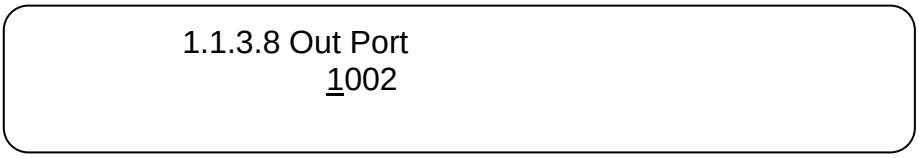


- **IP Enable**

- **Out Address/Out Port Setting**

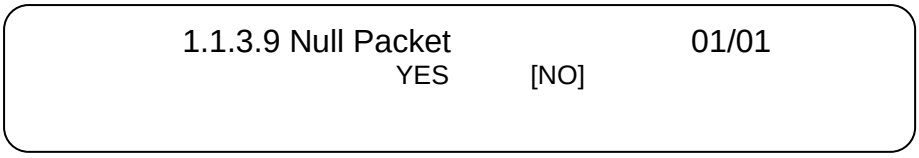
Modify the out address and out port:





- **Null Packet**

Choose YES (filter the null packet) or NO (don't filter the null packet).

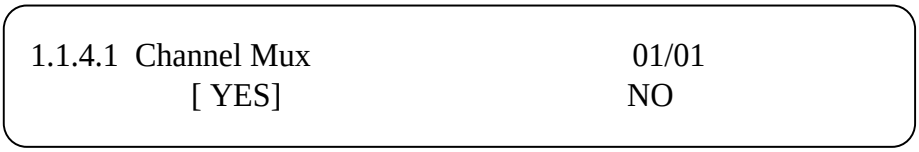


4.2.1.4 Program Mux Setting

Decide whether to open the multiplexing function of the device.

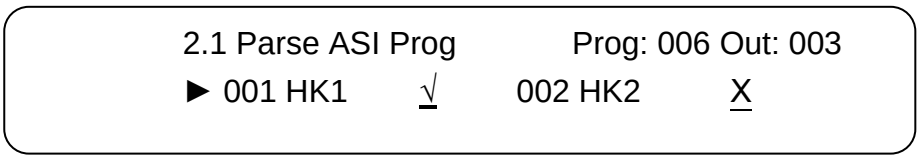
- **Channel Mux**

Under this interface, you can decide whether to multiplex the channel encoding stream. **YES** means that the device multiplexes the encoding stream into the MPTS, while **NO** means that the output program is SPTS. The LCD will display the following pages after pressing Enter.



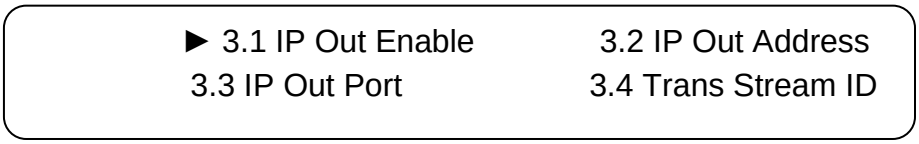
4.2.2 ASI Setting

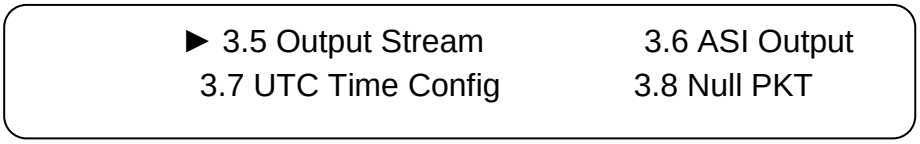
Check the number of ASI input programs on this screen, the LCD will display the following page. Prog: 006 means that the number of input programs is 6 and Out:003 means that 3 of those 6 programs are multiplexed.

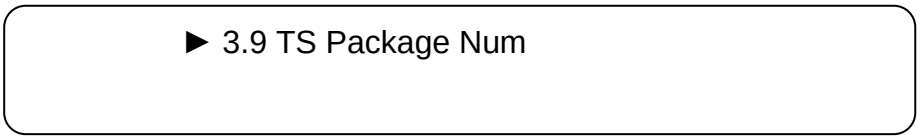


4.2.3 Output Setting

Press Enter in the main editing screen, to set the device output parameters. The LCD will display the following page:

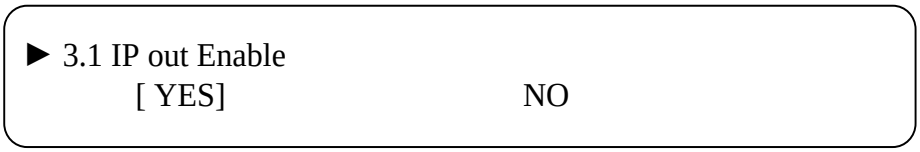






4.2.3.1 IP Out Enable

This is a new function of this encoder, user can decide whether to open the IP output function by pressing Enter in this menu, and the LCD will show the following page:



4.2.3.2 IP Out Address

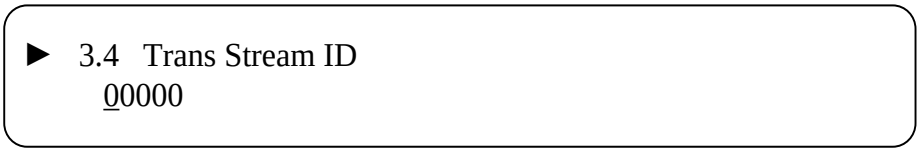
If you enable the IP output function, then you can setup the device's IP address in the following screen. After you press the Enter, the LCD will display the following page:

4.2.3.3 IP Out Port

In this menu set the encoder IP output port number by pressing the Enter to enter the main editing screen:

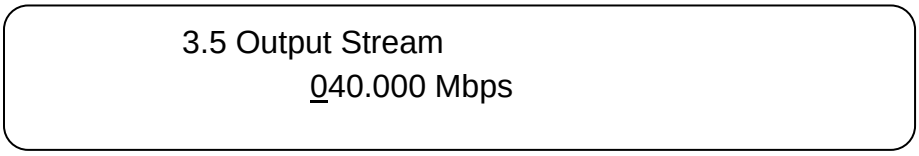
4.2.3.4 Trans Stream ID

Set the device TS ID in this screen after pressing the Enter to enter the main editing page.



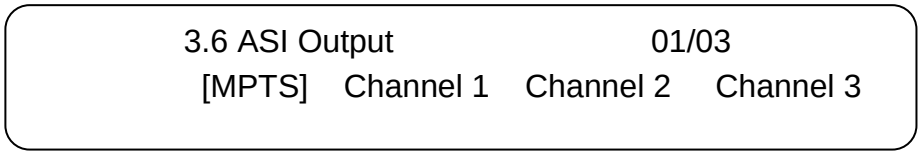
4.2.3.5 Output Stream

You can modify the bit rate of the output stream in this screen after pressing Enter to enter the main editing page:

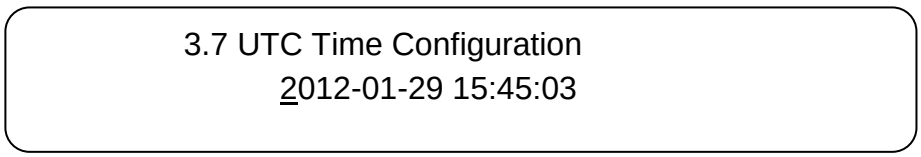


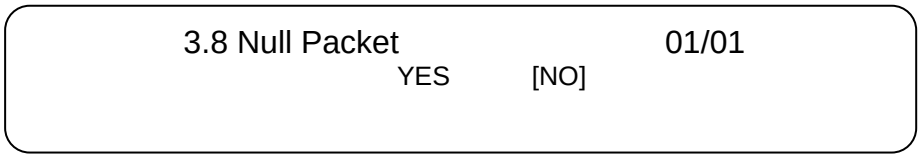
4.2.3.6 ASI Output

One can set the ASI output in this screen under this menu, and there are 9 options: MPTS, Channel 1-8.



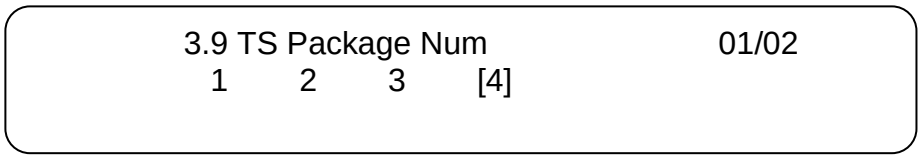
UTC refers to Universal Time Coordinated. Enter this menu to set the time as needed and it will then generate the TDT table and show it in the user's STB.

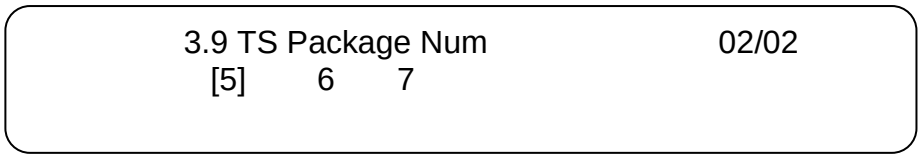




4.2.3.7 TS Package Num

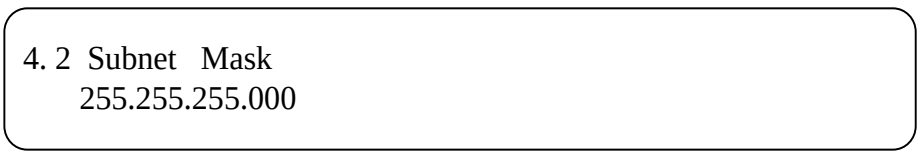
One can set the amount of TS packages by entering the screen below:

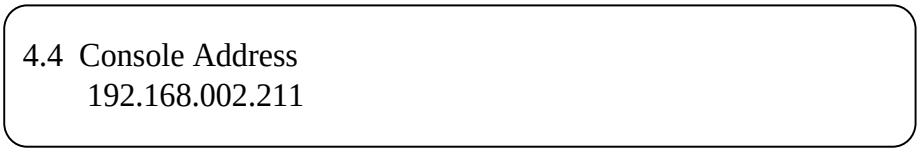




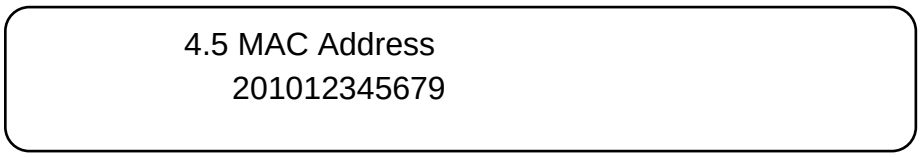
4.2.4 Network Setting

Set the network parameters by pressing Enter, the LCD will display the following screens:





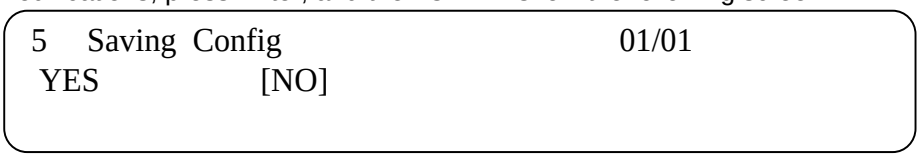
The MAC address is read-only in the keyboard operation interface, so one can only check the physical address under this interface, and the modification must be done with the network updating tools.



NOTE: The MAC address is unique, and cannot be modified. When the MAC address is ffffffffffff, users must modify the address through special software, otherwise, the IP output data will be filtered out when the IP stream passes through a router.

4.2.5 Saving Configuration

To save the modifications, press Enter, and the LCD will show the following screen:

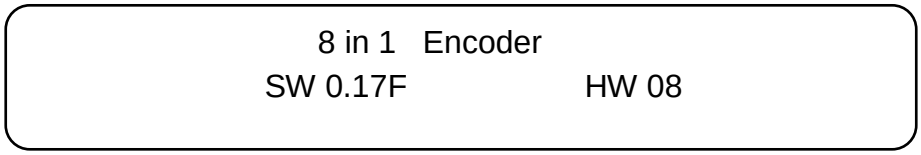


4.2.6 Loading Configuration

In this screen, one can select the modified configuration and the factory default configuration. One can enter the corresponding menu to select the configuration. The LCD will show the following screen:

4.2.7 Version

Check the device software version and hardware version, and the LCD will show the following screen when you press Enter:



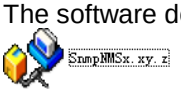
4.2.8 Language

Select the language in this submenu:

5. NMS (Network Management System) Operation

Network management system is applied to digital TV equipment operation, control, management, parameters setting, etc. It allows centralized control of the digital TV equipment over the network.

User not only can use front buttons to set configuration, but also can control and set the configuration in computer by connecting the device to NMS Port. User should ensure that the computer's IP address is different from the encoder's IP address; otherwise, it would cause IP conflict.

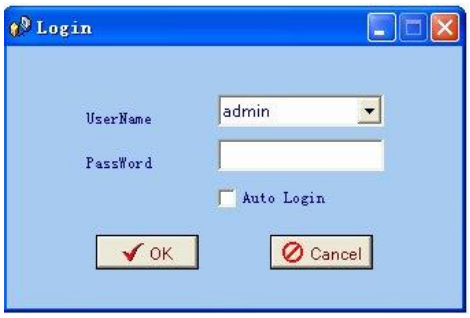
The software doesn't need special installation. User can just open the folder SnmpNMS x.xy.z, find the icon 

and double click it to pop up the login interface.

5.1 Software Operation

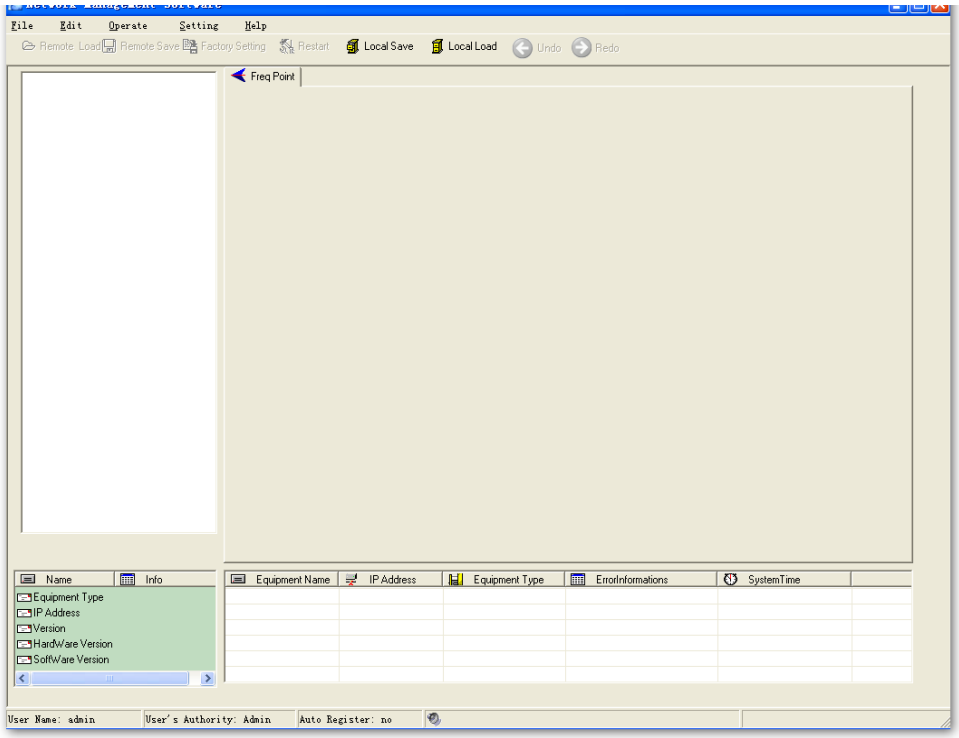
5.1.1 Login Interface

A login interface will pop up firstly when the software is running and give user prompts to input user name and password (The default user name is **admin** and no password). User can add users and passwords as needed. The menu shows as follows:



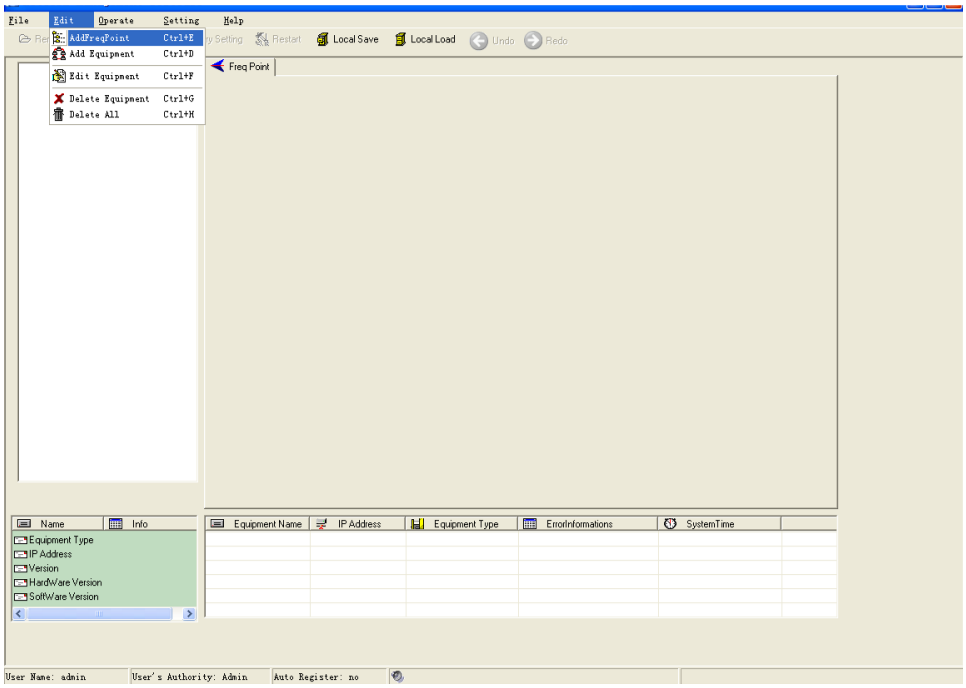
User can login the NMS by pressing **OK** key after inputting user name. Upon the inputs, the software will verify them with database record automatically and the main interface will appear.

5.1.2 Main Interface



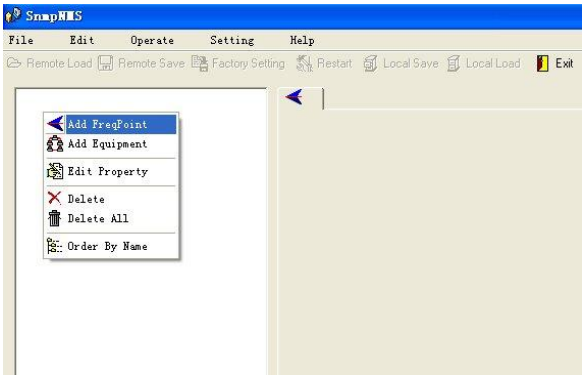
User can create a device node tree in the left column by adding, modifying and deleting the device node. This software provides a powerful node operation function, and the user can edit various parameters in the device tree for management and classification.

5.1.3 Adding Frequency Point



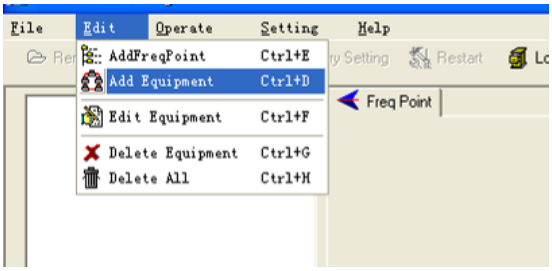
The AddFreqPoint dialog box popes up when the user clicks the AddFreqPoint item in the Edit pull down menu on the menu row. The device will confirm the given frequency while user clicks **OK**.

User can also click right mouse key to pop up the short-cut menu in device tree or in the left blank column, then the corresponding dialog box will pop up by choosing **Add MainFreqPoint.** The device will confirm the given frequency while user clicks **OK.**

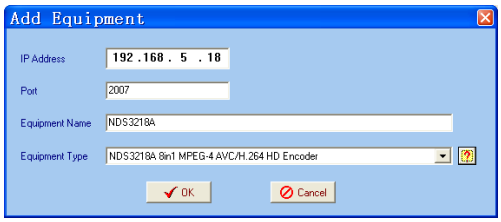


5.1.4 Adding Equipment under Given Frequency Point

User should choose the frequency point in advance, and then the dialog box of Add Equipment will pop up when user clicks “Add Equipment” item in the Edit pull down menu on the menu row.



5.1.5 Edit Equipment Interface



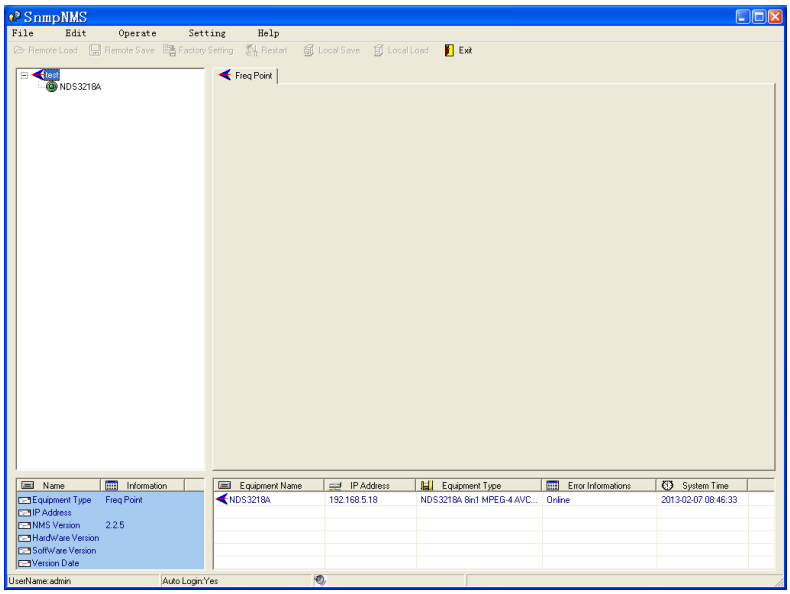
User should follow the steps as below:

- Inputting the device **IP Address**
- Inputting the **Port**
- Inputting the **Equipment Name**
- Choosing the connected equipment type in drop down list of "**Equipment Type**" by clicking the "▼" Or Click "?" to auto search the type of device.

The default IP of HDMI Encoder is 10.1.20.7, also you can check its IP address in the front panel of device in case the IP changed unexpected.

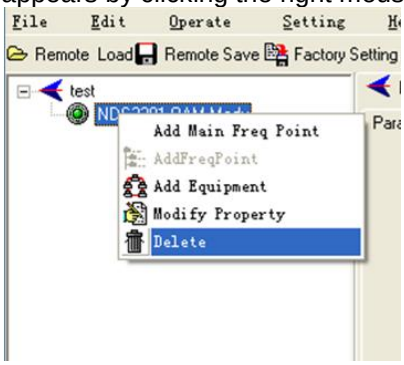
The PC IP address and device IP address should be in the same network. For example the Device IP is 10.1.20.7 with sub mask 255.255.255.0. So the PC IP address should be 10.1.20.X (1<X<255), sub mask is 255.255.255.0. User can use ping command to confirm these two are in same network or not.

Click OK, it will appear as below:



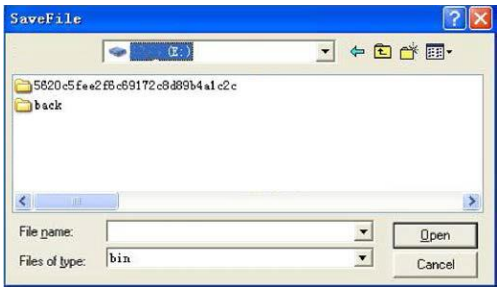
5.1.6 Delete Equipment

User can choose the equipment to be deleted in the left column, and then click the “delete” item in the pull down menu which appears by clicking the right mouse key.

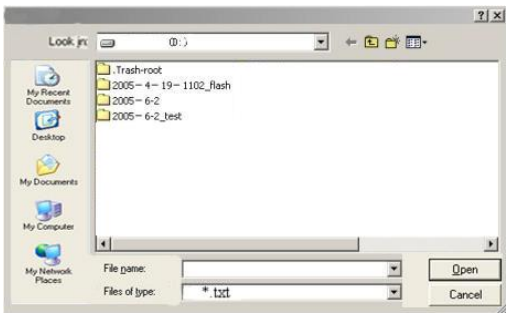


5.1.7 Save Configuration

After finishing all the parameters setting, user can click **„Remote Save“** button on the toolbar to save the modifications to the device’s flash, while user can also reload the saved parameters from device’s flash and refresh the device’s parameters setting according to the loaded values by clicking **„Remote Load“**
Alternatively, user can also click the **„Local Save”** button on the toolbar to popup the “save file” dialog box, which gives prompts to save all the device’s parameters as binary files in the computer’s hard disk.



Similarly, user can choose to click the **„Local Load“** button on the toolbar to popup the read file dialog box, to read the stored binary file and set the device’s parameters according to the loaded binary files.

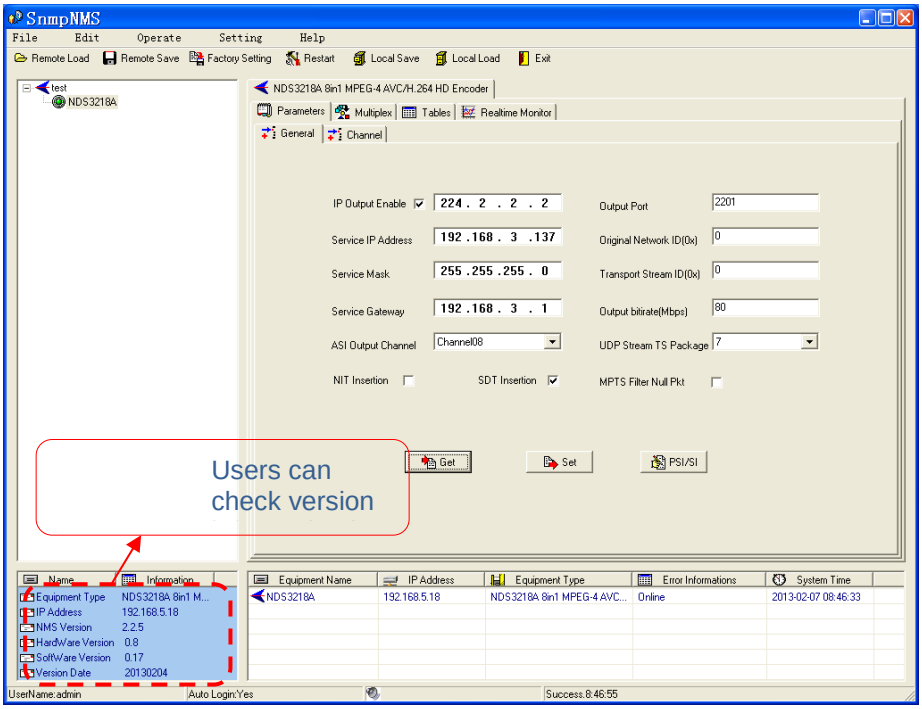


5.2 HDMI Encoder 8x Operation

User can choose the encoder in the device tree; the procedure will display the encoder interface in operating area. The interface is mainly composed of encoding video parameters, audio parameters and the encoding system parameters, output parameters and etc.

5.2.1 Parameters Setting

Users can click Equipment Name on the node tree and enter in the Parameter interface by clicking **„Parameters“** and **„General“** or **„Channel“** to configure the parameters.



5.2.2 General Parameters

Set: to make the current parameters shown in the SNMP software activate.
Get: to read the current device’s activating parameters and show them on SNMP software.

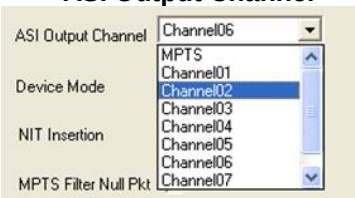
- **IP Out Enable**

Check the checkbox with “√”, then the IP output is enabled, otherwise it is not. Users can decide whether to open the IP output function or not.Users can modify the IP address here as well.

- **IP Out Address/Service IP Address/Service Mask/Service Gateway**

Users can set the address by modifying the value in these four fields.

- **ASI Output Channel**



This device supports 1 MPTS (Multiple Programs Transport Stream) and 8 SPTS (Single Programs Transport Stream) output. User can click ▼ to triger a pull-down list to select the output type.

- **Output Port**

To set the output port by modifying the value in this field.

- **Original Network ID**

This 16-bit field gives the label identifying the network ID of the originating delivery system. The value ranges from 0 to 0xFFFF.

- **Transport Stream ID**

This is a 16-bit field which serves as a label for identification of this TS from any other multiplex within the delivery system. The value ranges from 0 to 0xFFFF.

- **Output Bit Rate (Mbps)**

This includes the effective bit-rate of encoding channel 1-8, the effective bit-rate from ASI input and the bit-rate of stuffed null packets.

- **UDP Stream TS Package**

Users can set the amount of TS packages in this field.

- **NIT Insertion**

In this field, users can decide whether to effect the NIT (Network Information Table) insertion function.

- **SDT Insertion**

In this field, users can decide whether to effect the SDT insertion function.

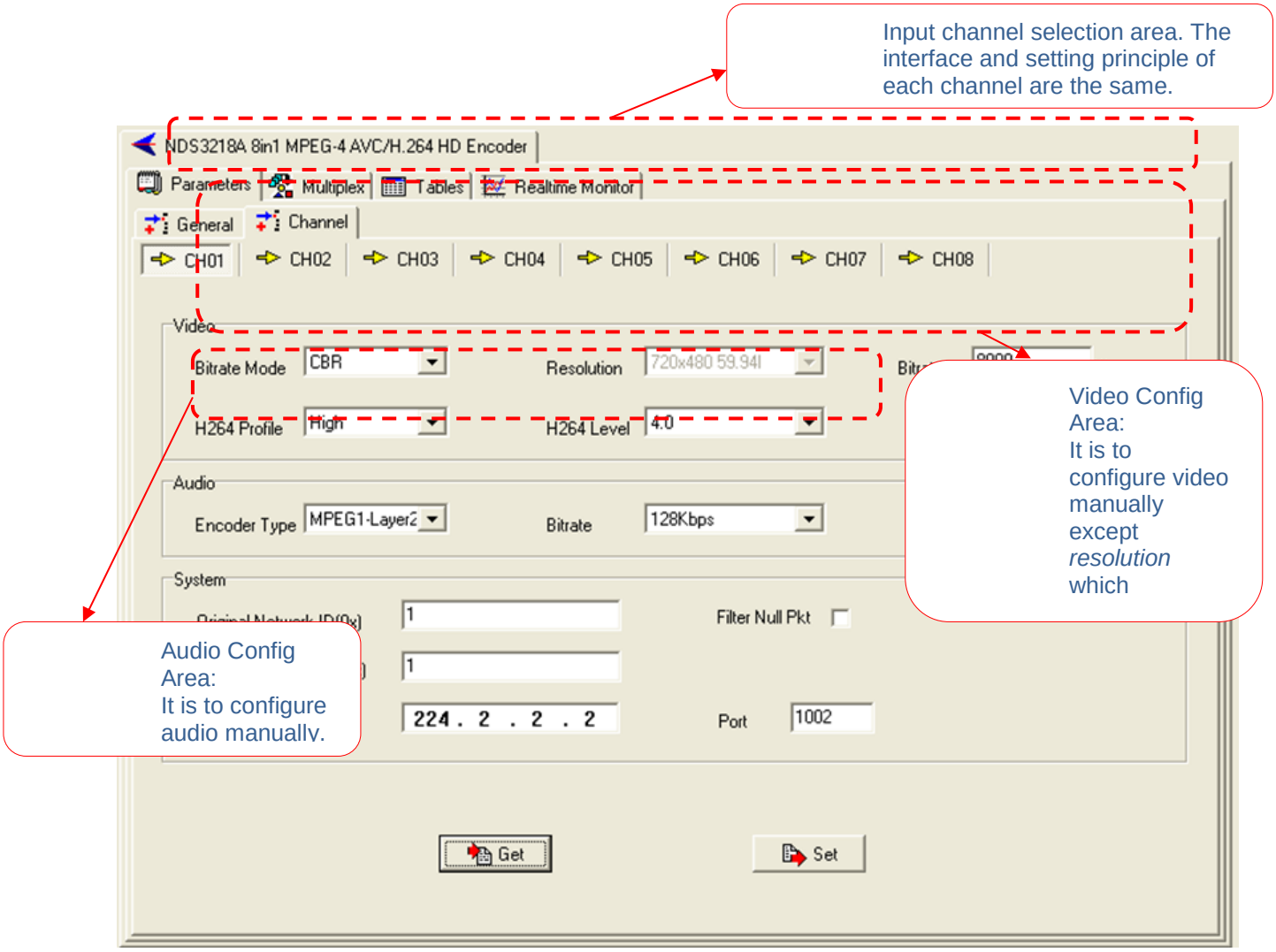
- **MPTS Filter Null Packet**

If this function is effected, then the null packets in IP output stream will be filtered.

- **PSI/SI Editor**

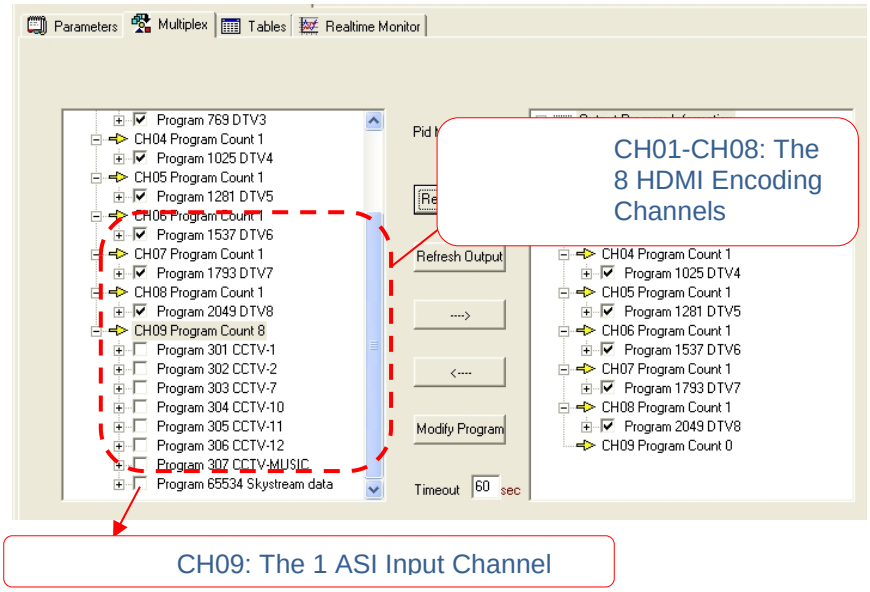
This button will trigger the PSI/SI Editor for some users' advanced usage. For more detail, please refer to the manual of PSI/SI.

5.2.2.1 Video Parameters (Parameters->Channel->CH0X)



If any parameter is modified, it is supposed to click "**Set"** to make the modified parameters activate and click "**Get"** to read and effect the current device's activating parameters.

5.2.2.2 Multiplexing



The programs in the left column represent all input programs and which port they come from, while the programs in the right column represent the output programs and from which port they are from. User can parse the programs of each channel and multiplex those programs to the output. Moreover, user can modify the output programs' Program Name, PMT, PCR, video, audio PID.

Pid Mapping : Check this box the set the PID Mapping

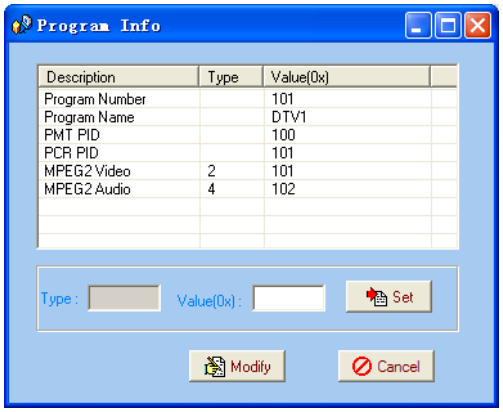
Refresh Input : To refresh the inputting terminal and get the inputting information

Refresh Out : To refresh the outputting terminal and get the outputting information

----> : Multiplex the input programs to the output channels after selecting the target program with ☑. The system will automatically allot the program to the relevant output channel.

<---- : Cancel the multiplexed programs.

Modify Program : To modify the output programs' Program Name, PMT, PCR, video, or audio PID as needed. To modify program information, user can select the target program in output part first and click this button to pop up a dialog box as below:

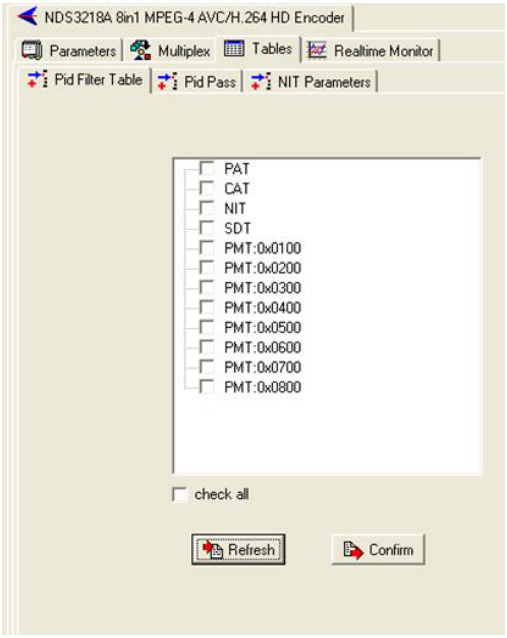


Select the target item and input the new value in the box below, then click **„Set“** and **“Modify”** to effect the modification.

Timeout 60 sec : The parsing overtime value

5.2.3 Tables

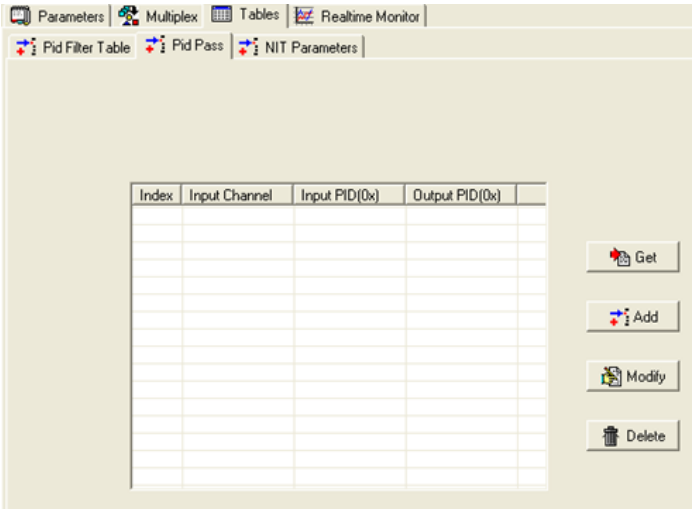
5.2.3.1 PID Filter Table



Users can operate PID filter in this table by checking the check boxes of corresponding items and click **“Confirm”**
Refresh: getting PID filter table from the device
Setting: submitting the PID filter table to the device
Check All: selecting all the selections of the list

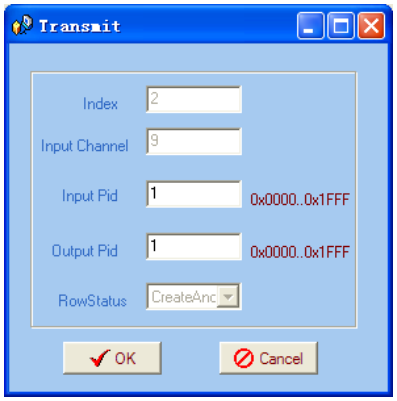
After user selects one PID in the table, then the corresponding output PSI/SI table will not be sent to the output stream.

5.2.3.2 PID Pass



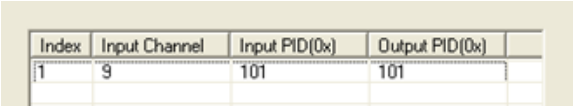
User can decide to bypass the inputting PID as needed in this interface. In some occasions, there are some PIDs which won't belong to any program, such as EPG, NIT tables, and so on, but user just wants to pass them through the multiplexing module without changing anything. This is the main purpose of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

The display will show as below when user clicks **"Add"** button.



Input PID and Output PID

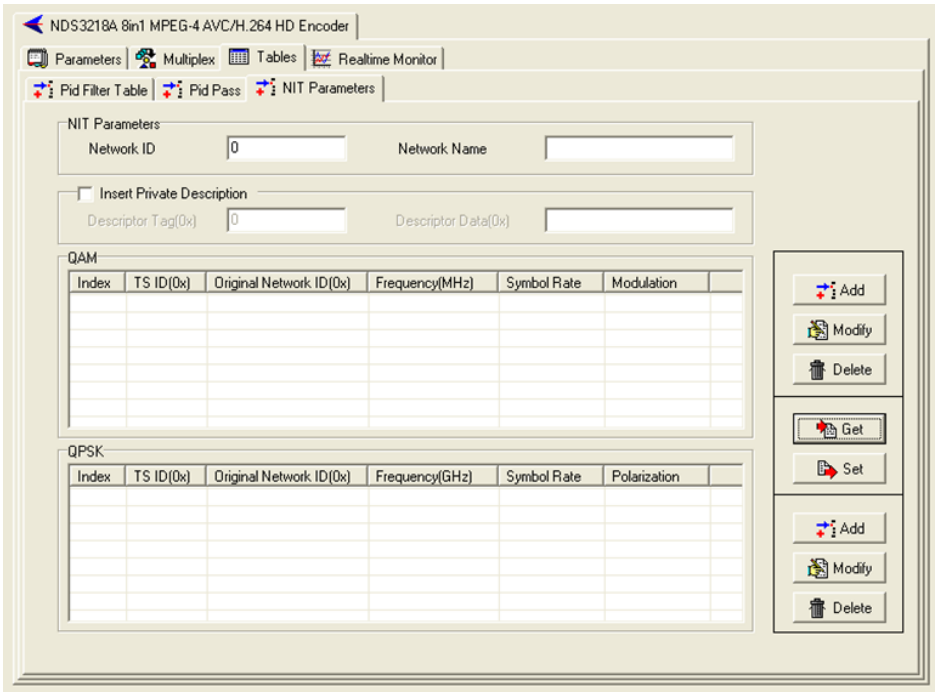
The Old (Input) PID is the PID number in the TS from given Port. The correspondent New (output) PID number could be same as input PID number while it could be different if a PID remapping is needed. Modify the data as needed and click OK to confirm. The PID then will be bypassed and listed in the table as below.



User can also modify or delete the added PID through the corresponding buttons at right.

5.2.3.3 NIT Parameters

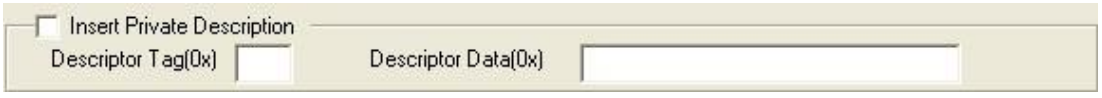
NIT (Network Information Table) is a very important table for describing the network and TS. Users can set the parameters of the output NIT table.



Network ID : The parameter describes the output TS's network ID

Network Name : The parameter describes the output TS's network name.

5.2.3.4 Insertion of private description

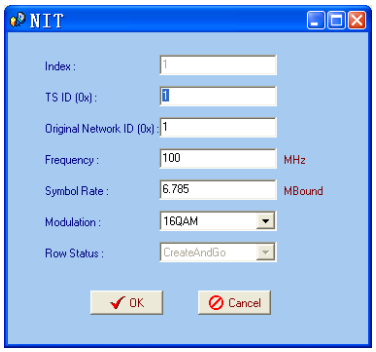


Insert Private Description : This checkbox will allow user to insert the private descriptor into the output TS. The private descriptor includes two parts. One is descriptor tag, and the other is descriptor information.

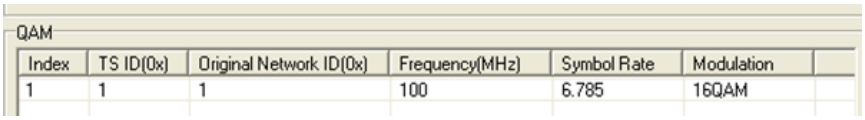
Descriptor Tag(0x) : The Descriptor Tag is an 8-bit field which identifies each descriptor.

Descriptor Data(0x) : The Descriptor Data is the detailed information of the private description.

: Users can add the cable transmission descriptor in this Add button, and it will pop up the following dialogue box, say, the added descriptor is applied for the DVB-C network.



The interface will show as below after the NIT parameters being added：



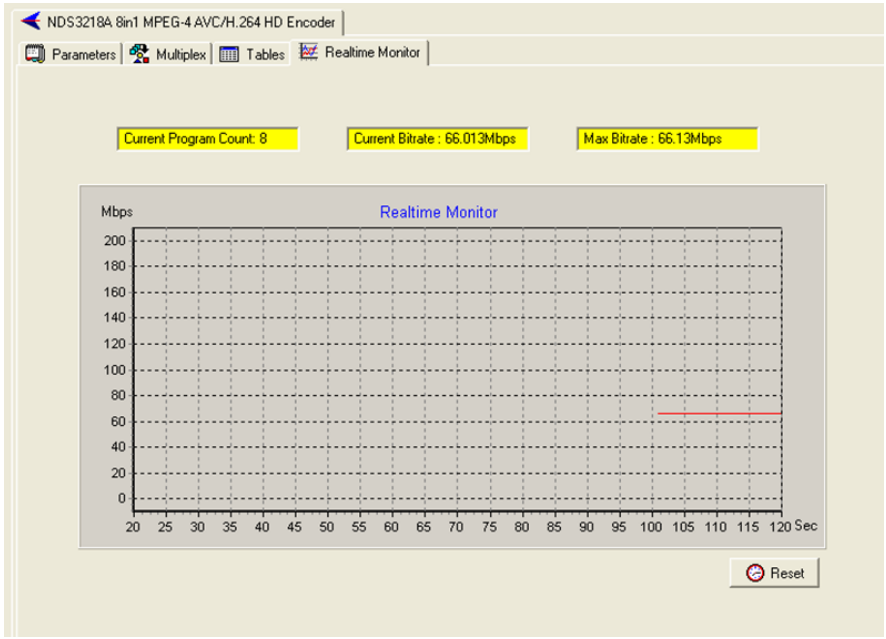
The “Modify” button will trigger modify window and allow user to modify the selected items in the NIT.

The “Delete” button will remove the selected items in the NIT.

The set “Button” will send the NIT to the chosen output Port.

5.2.4 Real-time Monitor

There will be a real-time bit rate chart generating in the monitor for users to check the bit rate information.

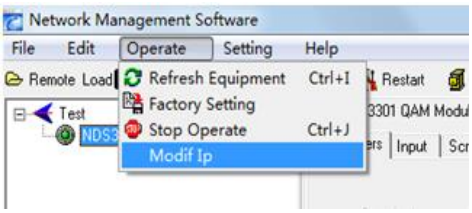


5.3 Other Settings

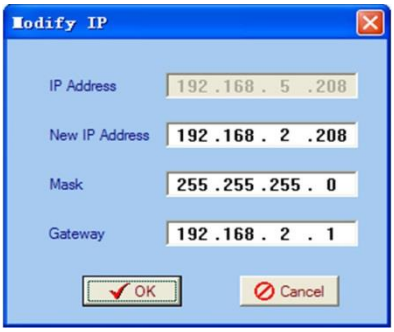
5.3.1 Difference between Set and Remote Save

In many cases during the configuration of parameters in NMS, users save the modified configuration by clicking **"Set"**, in which way the configuration can only be saved temporarily and will restore the last saved configuration if the device reboots. To save the configuration permanently, it is required to operate through "Remote Save" on the toolbar. That is the difference between **"Set"** and **"Remote Save"**.

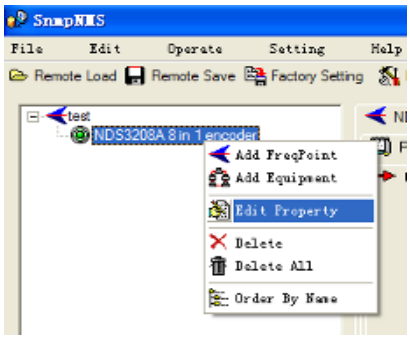
5.3.2 IP Modification



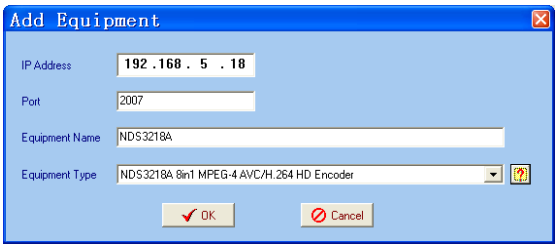
Users can click **Operate** and select **Modify IP** in the drop-down list, and a dialog box presents itself as shown below.
Users input the new NMS IP Address for the device and click OK button to confirm.



Users can then note the indicator light turns red, which signifies the equipment has disconnected. Users then can refer to below prompts to edit the property by inputting the new IP to re-connect the equipment.



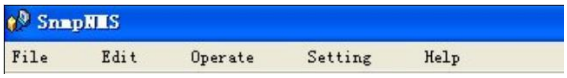
Input the new IP Address in the box and click OK button, then the device will be connected again.



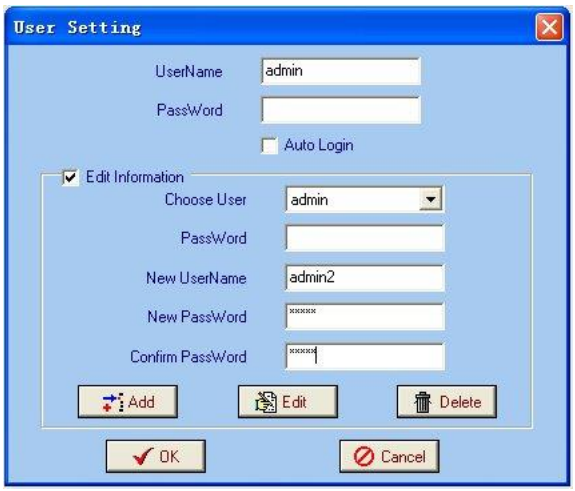
After finishing all the parameters setting, user should click **„Remote Save“** button on the toolbar to save the modifications to the device's flash.

5.3.3 Creating User

When logging in, user will note that the default user name is **admin** and no password. User can add users and passwords as needed.



User clicking "Setting" in the menu bar and selecting "User Setting" in the pull-down list, the below dialog box will pop out as shown below. Select the "Edit Information" by marking the check box with "√", user can input the new username and new password as prompts below. It is required to click **"Add"** to add the new user and then click **"OK"** to save the new setting.



6. WEB NMS (Network Management System) Operation

On newer models we can also use web browser for configuration

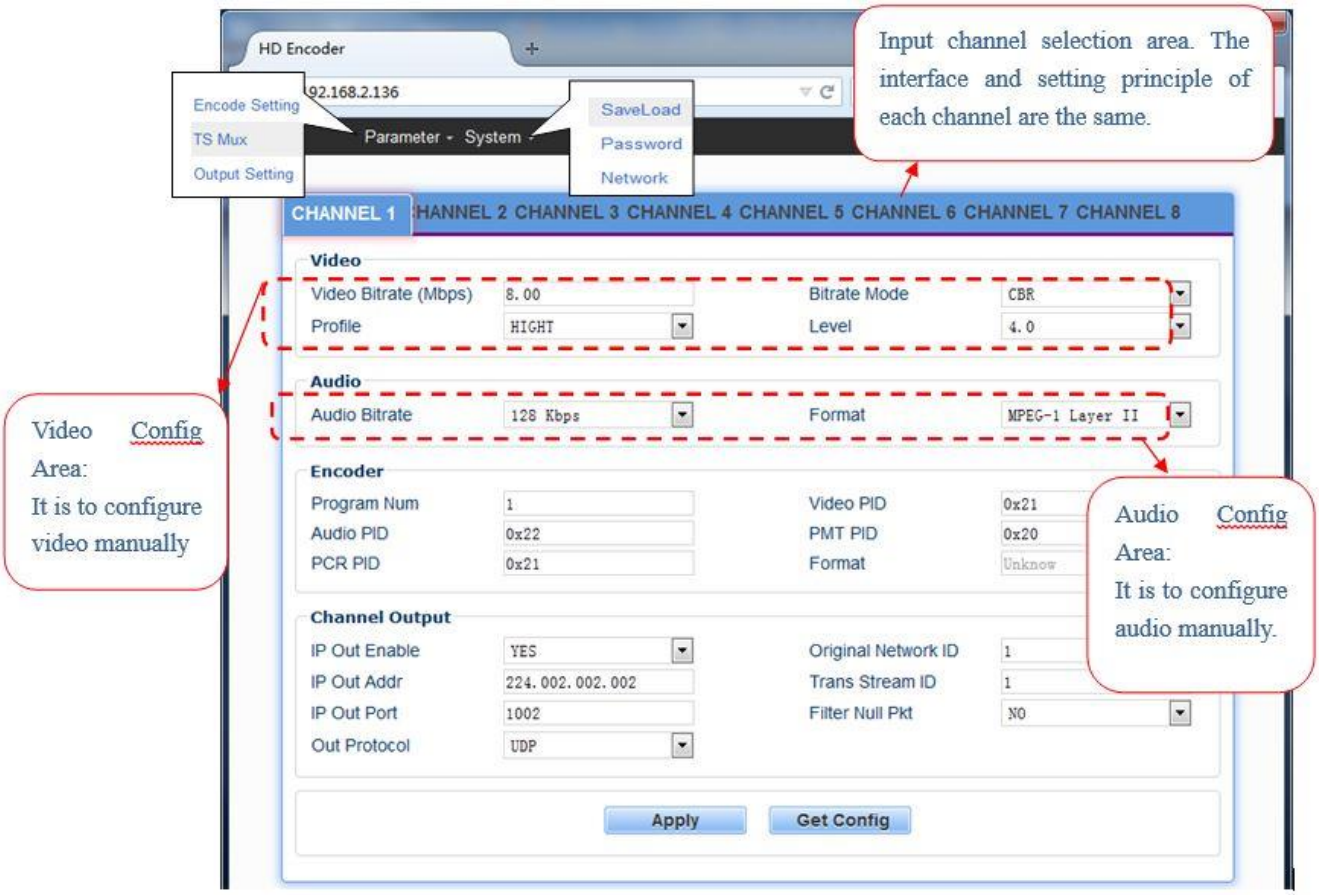
6.1 Login

The default IP address of this device is 10.1.20.7. (This can be modified through the front panel.) Connect the PC (Personal Computer) and the device with lan cable and configure network card on PC to be in the same network segment. Use web browser to connect to the encoder using encoders IP address in the browser's address bar and press Enter. It will display the Login interface. Input the Username and Password (default User name is "Admin" and Password is "Zenitel!".) and then click "LOGIN" to start the device setting.

6.2 Operation

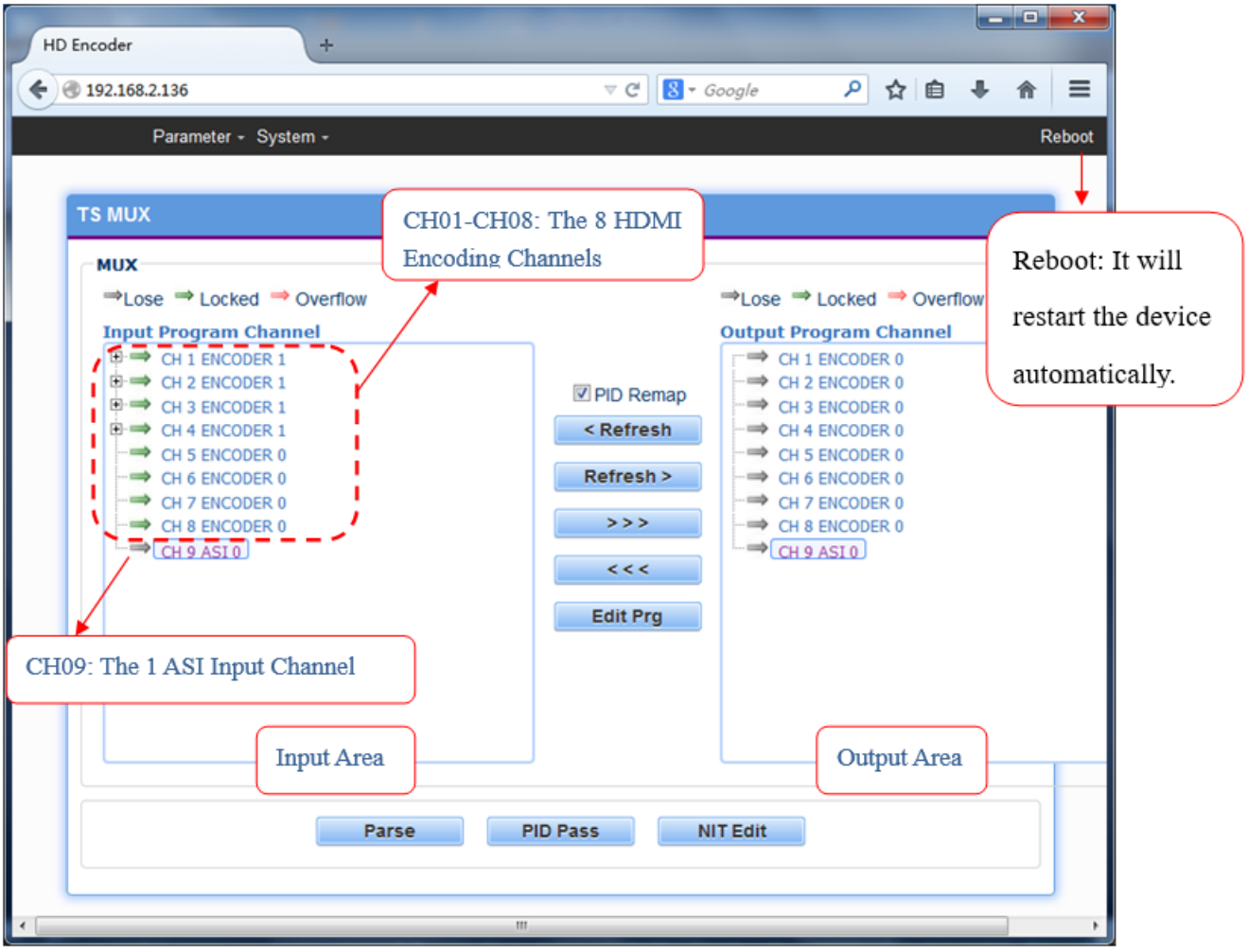
6.2.1 Encode Setting

From the menu on top of the webpage, clicking “Encode Setting”, it displays the information of the program from the 1st HDMI encoding channel.



6.3 TS Mux

From the menu on top of the webpage, clicking “TS MUX” will display screen as below:



PID Remap : Check this box to set the PID Mapping

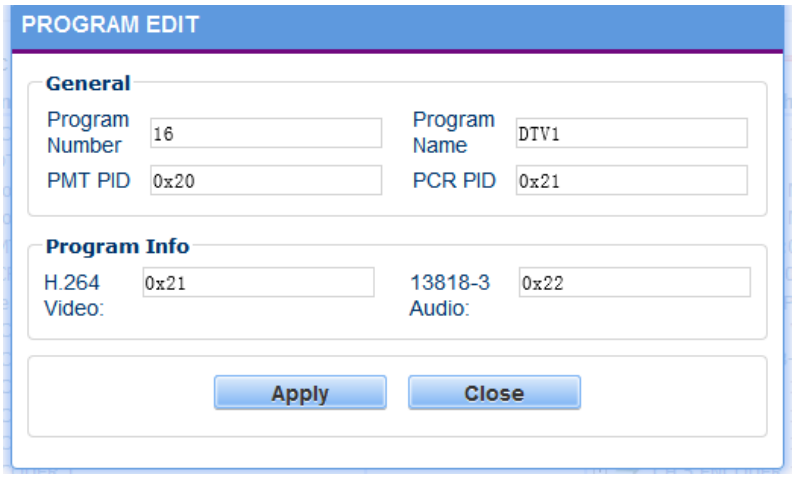
< Refresh : To refresh the inputting terminal and get the inputting information

Refresh > : To refresh the outputting terminal and get the outputting information

> > > : Multiplex the input programs to the output channels after selecting the target program. The system will automatically set the program to the relevant output channel.

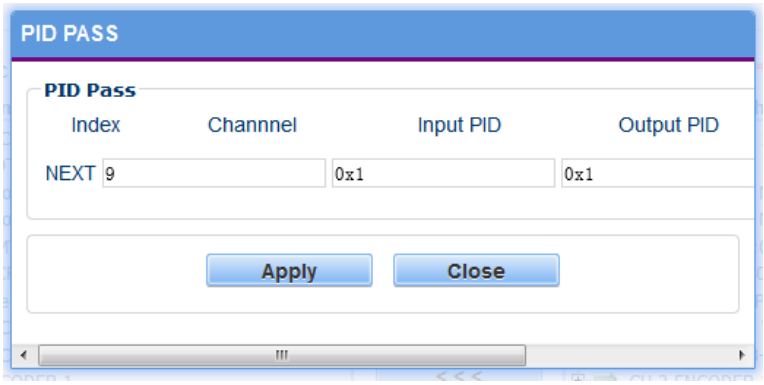
< < < : Cancel the multiplexed programs.

Edit Prg : To modify the output programs’ Program Name, PMT, PCR, video, or audio PID as needed. To modify program information, user can select the target program in output part first and click this button to pop up a dialog box as below:



In some occasions, there are some PIDs which won't belong to any program, such as EPG, NIT tables, and so on, but user just wants to pass them through the multiplexing module without changing anything. To do that we need to use PID Pass function.

PID Pass : User can decide to bypass the inputting PID as needed. Click this button to pop up a dialog box



NIT Edit NIT: Network Information Table.
NIT table is a very important table for describing the network and TS. Users can set the parameters of the output NIT table under below interface.

Network ID : The parameter describes the output TS's network ID

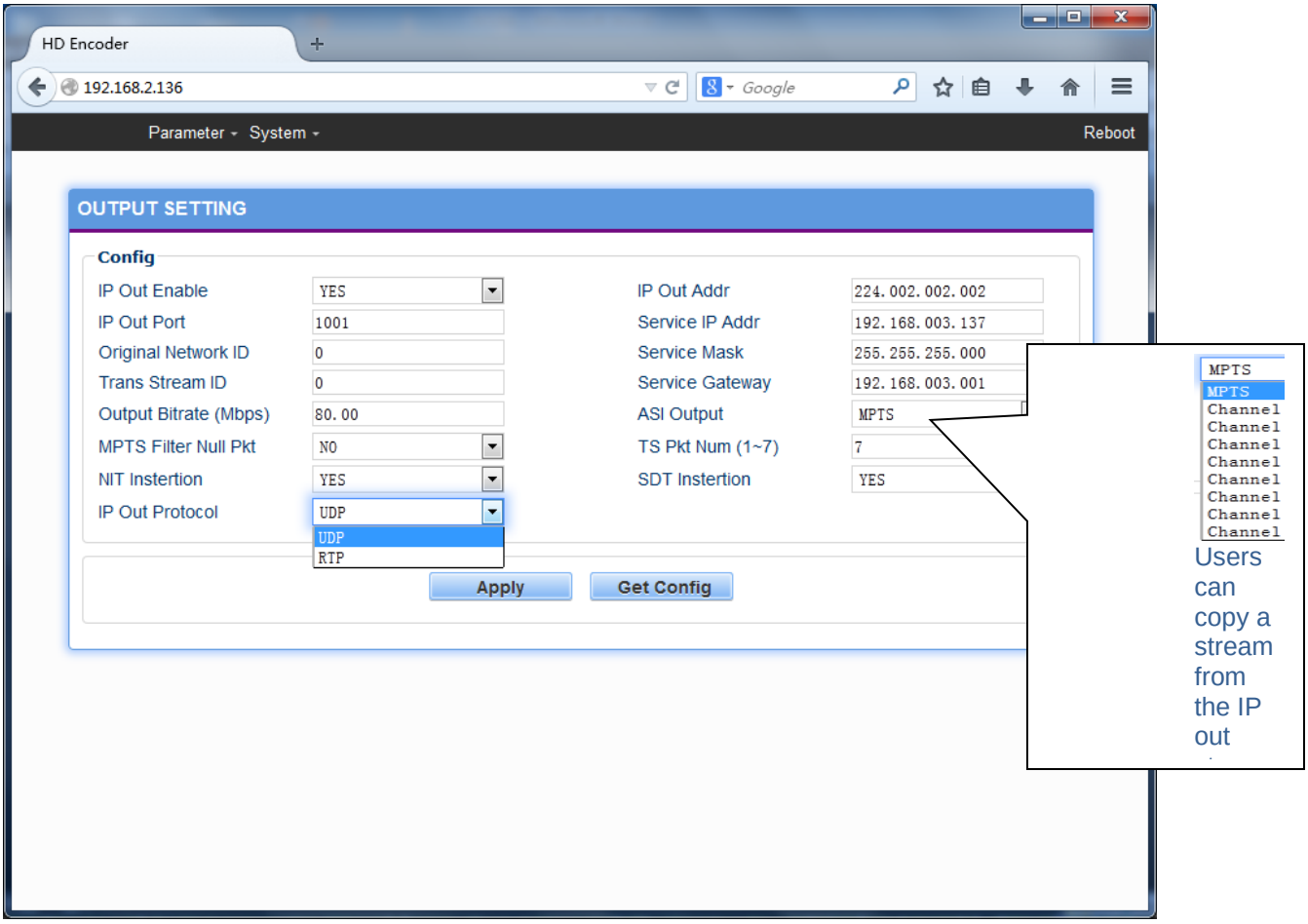
Network Name : The parameter describes the output TS's network name.

6.3.1 Insertion private description

Instert Private : This checkbox will allow user to insert the private descriptor into the output TS. The private descriptor includes two parts. One is descriptor tag, and the other is descriptor information. The Descriptor Tag is an 8-bit field which identifies each descriptor. The Descriptor Data is the detailed information of the private description.

6.3.2 Output Setting

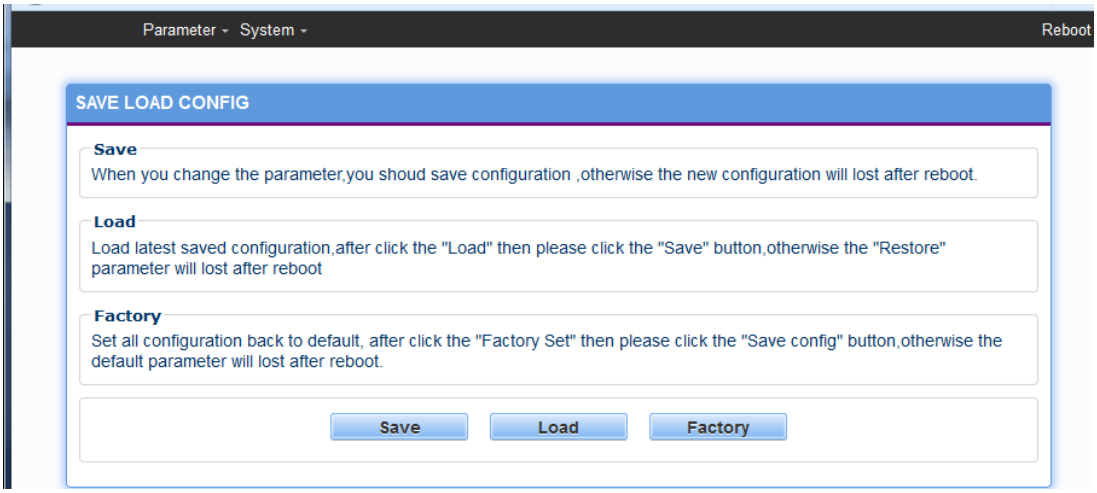
Click “Output Setting”, it will display the interface where to configure the output parameter.



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

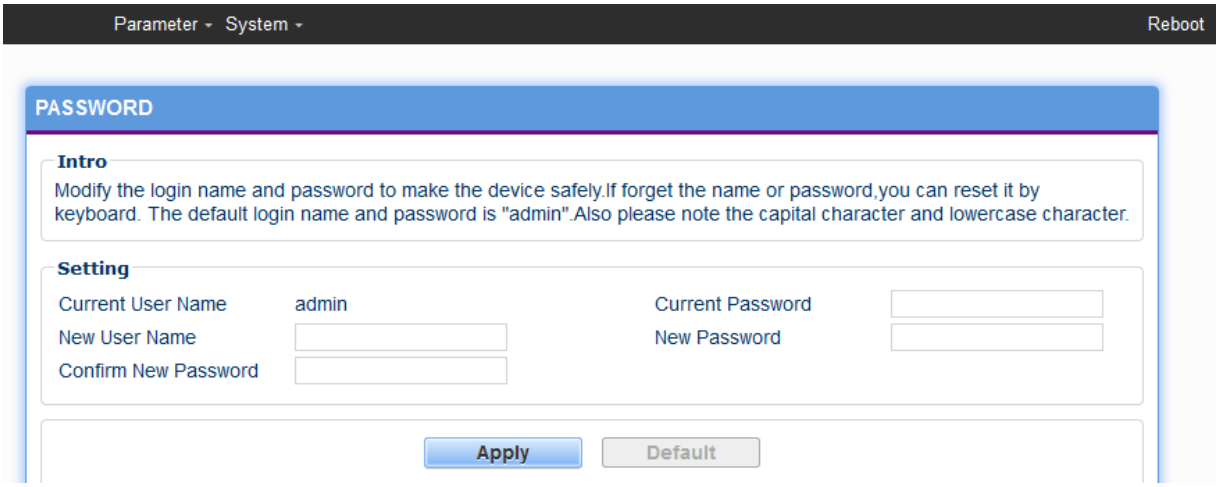
6.3.3 Save Load

From the menu on left side of the webpage, clicking “Save Load”, it will display the screen where to save or restore your configurations.



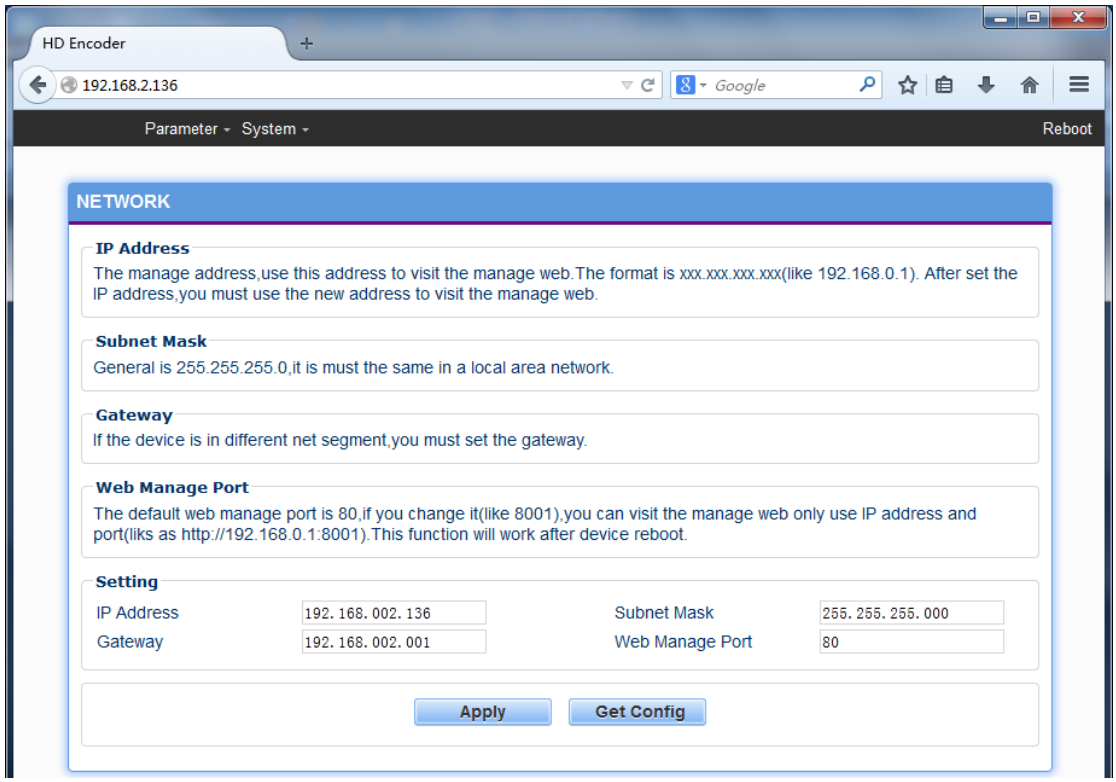
6.3.4 Password

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



6.3.5 Network

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


HD Encoder
192.168.2.136
Google
Parameter
System
Reboot
NETWORK
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.
Subnet Mask
General is 255.255.255.0,it is must the same in a local area network.
Gateway
If the device is in different net segment,you must set the gateway.
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(liks as http://192.168.0.1:8001).This function will work after device reboot.
Setting
IP Address
192. 168. 002. 136
Subnet Mask
255. 255. 255. 000
Gateway
192. 168. 002. 001
Web Manage Port
80
Apply
Get Config

7. Troubleshooting

Precautions:

- Install the device at a place with average temperature between 0 to 45 °C
- Provide good ventilation for the heat-sink on the rear panel and other heat-sink bores if necessary
- Check that the input AC is in the power supply's working range and that the commutation is correct before switching the device on
- Check if the RF output level varies within tolerant range if it is necessary
- Check that all the signal cables are connected properly
- Frequent switch on/off of the device is prohibited; the interval between switching the device on/off must be greater than 10 seconds.

Unplug the power cord to shut down the device when:

- The power cord or socket is damaged
- Any liquid flowed into the device
- Any stuff causes short circuit
- Device is in damp environment
- Device suffered from physical damage
- Longtime idle
- After switching on and restoring to factory setting, device still cannot work properly
- Maintenance needed

8. Packing list

- HDMI Encoder 8x 1 pcs
- HDMI Cable 8 pcs
- ASI cable 1 pcs
- Power cord 1 pcs

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