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VINGTOR  STENTOFON  
by ZENITEL GROUP



# MPEG-2 ENCODER

## USER MANUAL

Vingtor-Stentofon IPTV System



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# 1. Basic Information

## 1.1 Revision history

Document no.        A100K11594  
 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
A100K11593	HDMI Encoder 8x

 **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

## 2. Product Introduction

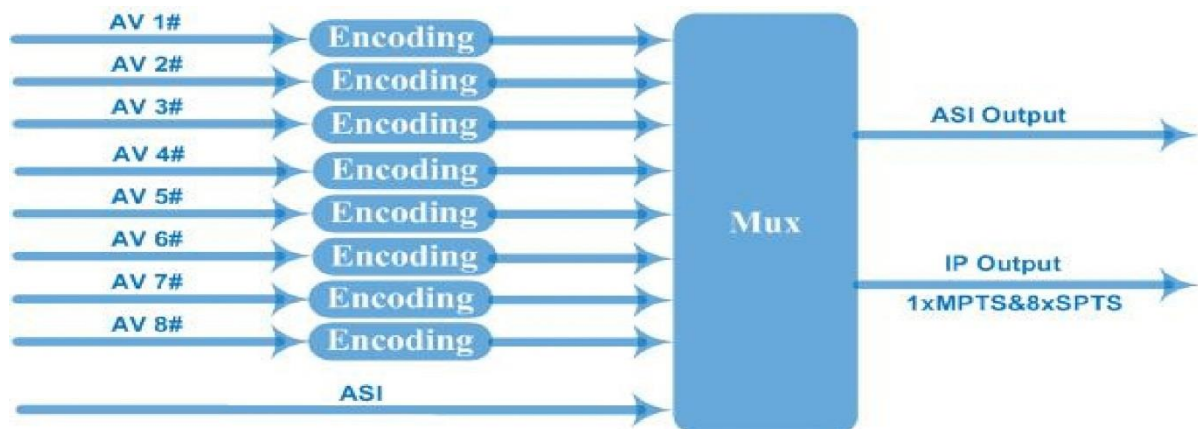
### 2.1 Outline

MPEG-2 Encoder 8x supports 8 AV (8 CVBS and 8 unbalanced analog stereo audio) and 1 ASI input, after multiplexing process, it gives ASI and IP output at the same time. Users can manage the device through the NMS. Besides, it supports MPEG-2 video encoding, and the audio encoding supports MPEG1-LAYER 2, AAC and AC3. In conclusion, its high compatibility and integrated design make this device widely used in a variety of digital TV broadcasting systems.

### 2.2 Main Features

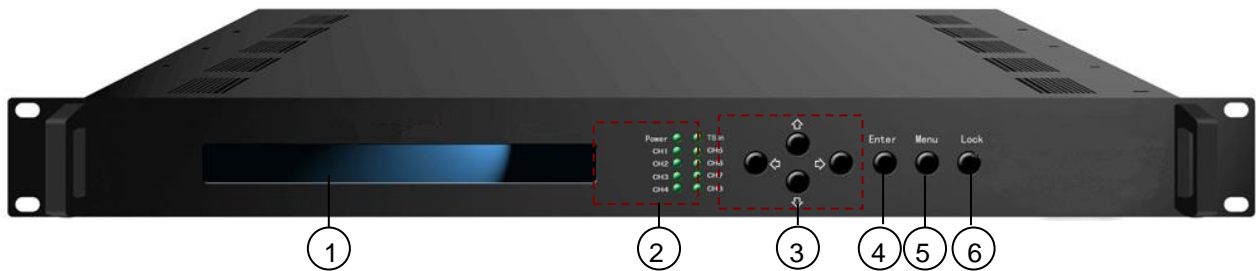
- Support 8AV,1 ASI Input
- Support MPEG2 format encoding
- Support PAL NTSC format
- Support Maximal 108Mbps ASI input
- 0.8Mbps~20Mbps each channel
- Support D1, HD1, 2/3D1, 3/4D1 resolution
- Support multiplexer function
- Support ASI and IP output
- Support Keyboard and LCD operation
- Update device through NMS port

### 2.3 Principle Chart



## 2.4 Appearance and Illustration

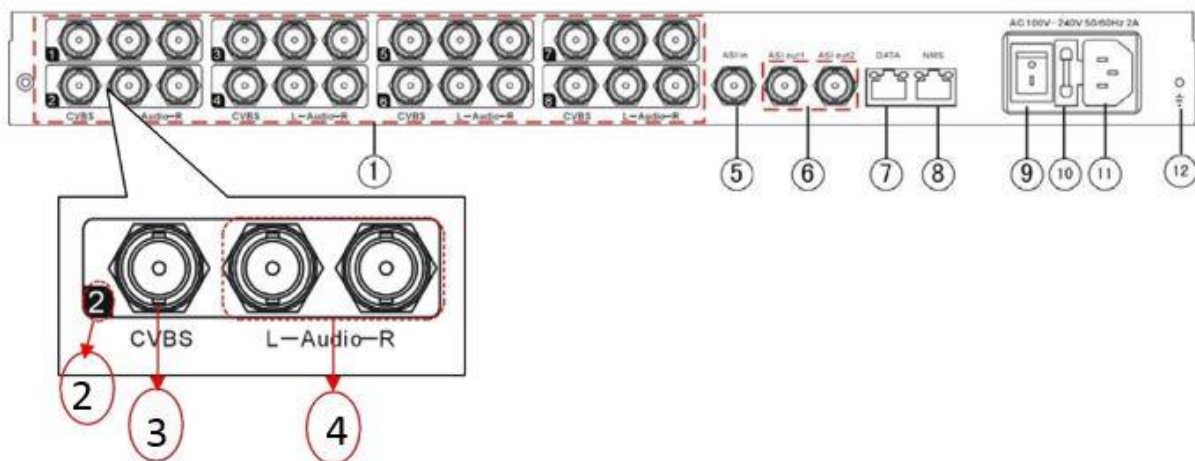
Front Panel Illustration:



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

1	LCD screen	
2	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 * CVBS input ports
2	CVBS input serial number from 1 to 8
3	Video input port
4	Audio input port (Left & Right channels)
5	ASI input port
6	2 * ASI output ports
7	Data port (for IP signal output)
8	NMS (Network management port)
9	Power Switch
10	Fuse
11	Power socket
12	Grounding Pole

## 3. Installation Guide

### 3.1 Acquisition Check

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

- MPEG-2 Encoder 8x
- 8x Analog Audio/Video Composite Input Cable
- Power Cord

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

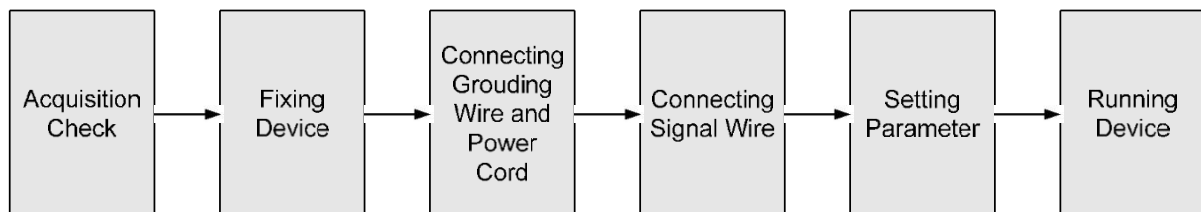
### 3.2 Installation Preparation

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

The main content of this chapter including:

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

#### 3.2.1 Device's Installation Flow Chart is illustrated as following :





### 3.2.2 Environment Requirement

Item	Requirement
Machine Hall Space	When user installs machine frame array in one machine hall, the distance between 2 rows of machine frames should be 1.2~1.5m and the distance against wall should be no less than 0.8m.
	Electric Isolation, Dust Free Volume resistivity of ground anti-static material: $1 \times 10^7 \sim 1 \times 10^{10} \Omega$ , Grounding current limiting resistance: 1M (Floor bearing should be greater than 450Kg/m <sup>2</sup> )
Environment Temperature	5~40°C (sustainable ), 0~45°C (short time), installing air conditioning is recommended
Relative Temperature	20%~80% sustainable      10%~90% short time
Pressure	86~105KPa
Door & Window	Installing rubber strip for sealing door-gaps and dual level glasses for window
Wall	It can be covered with wallpaper, or brightness less paint.
Fire Protection	Fire alarm system and extinguisher
Power	Requiring device power, air-conditioning power and lighting power are independent to each other. Device power requires AC power 220V 50Hz. Please carefully check before running.

### 3.2.3 Grounding Requirement

- All function modules' good grounding designs are the basis of reliability and stability of devices. Also, they are the most important guarantee of lightning arresting and interference rejection. Therefore, the system must follow this rule.
- Coaxial cable's outer conductor and isolation layer should keep proper electric conducting with the metal housing of device.
- Grounding conductor must adopt copper conductor in order to reduce high frequency impedance, and the grounding wire must be as thick and short as possible.
- Users should make sure the 2 ends of grounding wire well electric conducted and be antirust.
- It is prohibited to use any other device as part of grounding electric circuit
- The area of the conduction between grounding wire and device's frame should be no less than 25mm<sup>2</sup>.

### 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 avoid circling. The area of the conduction between grounding wire and

grounding strip should be no less than 25mm<sup>2</sup>.

### 3.2.5 Device Grounding

Connecting 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 end of rear panel, and the power switch, fuse, power supply socket is just beside ,whose order goes like this, power switch is on the left ,power supply socket is on the right and the fuse is just between them.

- Connecting Power Cord  
User can insert one end into power supply socket, while insert the other end to AC power.
- Connecting Grounding Wire  
When the device solely connects to protective ground, it should adopt independent way, say, share the same ground with other devices. When the device adopts united way, the grounding resistance should be smaller than 1Ω.

**Before connecting power cord to MPEG-2 Encoder 8x, user should set the power switch to "OFF".**

### 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:

#### 3.4.1 Unbalanced audio and CVBS video input cable illustration:



### 3.4.2 ASI output cable illustration:



### 3.4.3 Network Cable illustration (CAT.5E):



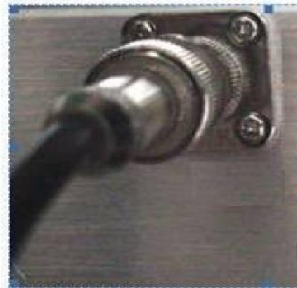
### 3.4.4 Unbalanced audio and CVBS video input connection

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



### 3.4.5 ASI output interface connection

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



### 3.4.6 IP Output Interface connection

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



### 3.4.7 NMS Connection

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



## 4. Operation

MPEG-2 Encoder's front panel is user operating interface. Before operating, user can decide whether directly use the default setting or customize the input and output parameters setting. The detail operations go as follows:

### Keyboard Function Description:

**ENTER:** Activating the parameters which need modifications, or confirming the change after modification.

**MENU:** To cancel presently entered value, resume previous setting and return to previous menu.

**LEFT/RIGHT:** To move the "▶" to choose or set the parameters.

**UP/DOWN:** To modify activated parameter or page up/down when parameter is inactivated.

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

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

### 4.1 Initializing

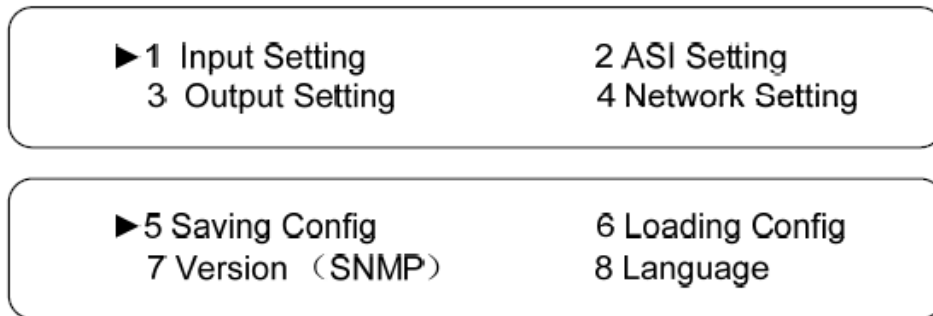
After powering on the device it will take a few seconds to initialize the system, and then the LCD will show the device name and output real-time bit-rate in the first row, while the 8 channels' respective hue encoding system (**P**: PAL; **N**: NTSC) and input real-time encoding bit-rate in the second row in turn. It shows as below:

8 in 1 Encoder			23.485 Mbps
1P 02.94M	2N 02.73M	3P 02.92M	4N 02.90M

## 4.2 General Setting

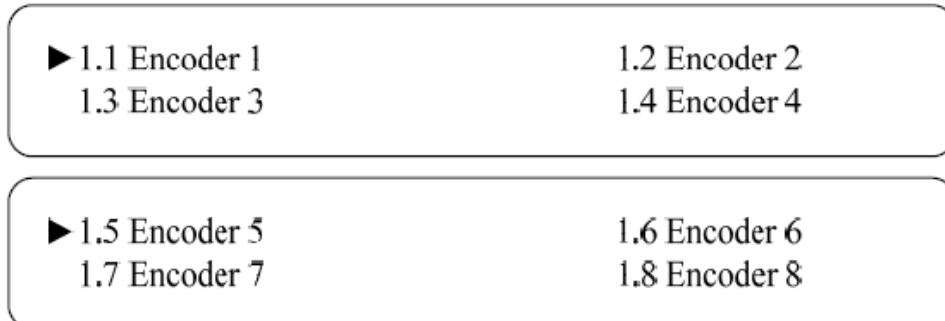
By pressing LOCK key, users can enter in the main menu and set the input and output parameters in the following editing interfaces, the LCD will display the following pages:

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



### 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 which from Encoding Channel 1 to Encoding Channel 8. The setting principle is the same for Encoding Channel 1-8, so here this manual just takes one channel as the example to explain. After pressing the enter key, the LCD will display the following pages:



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



#### 4.2.1.1 Video Setting

▶ 1.1.1.1 Input 1.1.1.3 Contrast	1.1.1.2 Brightness 1.1.1.4 Saturation
▶ 1.1.1.5 Hue 1.1.1.7 Coding Type	1.1.1.6 Aspect Rati 1.1.1.8 Resolution
▶ 1.1.1.9 Rate Mode 1.1.1.B Max Bit Rate	1.1.1.A Bit Rate 1.1.1.C Gop Struct
▶ 1.1.1.D Video Sharp	1.1.1.E MP4 Profile

#### Input

This is for user to check the input port type and it is read-only. It will identify the input port type automatically.

1.1.1.1 Input	CVBS
---------------	------

At this interface, by pressing ENTER again, users can select the input format, which includes 8 options. Pressing 1.1.1.1, the operation interface will turn up as following page:

1.1.1.1 Input Format [PAL-B/G/H/I/D]	01/04 PAL-60
---	-----------------

When user enter 1.1.1.1, the LCD displays only one option which is the device's current option which is marked with square bracket when user presses ENTER **again** to enter the operation interface.

"01/04" in the up-right corner indicates there are all together 4 pages and the LCD is displaying the 1<sup>st</sup> page currently.

#### Brightness/Contrast/Saturation and Hue Setting

User can adjust the relevant parameters of input video in submenus of Brightness, Contrast, Saturation and Hue. The adjustable range is 0~255, while the adjustable range of Hue is -128~127. The figure outside the parentheses is decimal while the inside is hexadecimal.

NOTE: Below explanations are applied in this entire manual.

- 1) To press ENTER to start editing.
- 2) To move the underline through LEFT/RIGHT keys.
- 3) To modify the value of underlined character through UP/DOWN keys.

▶ 1.1.1.2 Brightness  
128 (0\*80)

▶ 1.1.1.3 Contrast  
128 (0\*80)

▶ 1.1.1.4 Saturation  
128 (0\*80)

▶ 1.1.1.5 Hue  
± 000 (0\*00)

#### Aspect Ratio Setting

In this interface, users can set the video aspect ratio, which includes 4 options. Pressing 1.1.1.6, the operation interface will turn up as following page:

1.1.1.6 Aspect Ratio 01/02  
 [4:3 MPEG 2] 1:1 MPEG 2

#### Coding Type

This device supports only MPEG2 encoding and it's read-only in this interface.

1.1.1.7 Coding Type 01/01  
 MPEG 2

#### Resolution

Under this interface, users can set the video resolution (Refer to 1.3 Specifications in Chapter 1 for details). Pressing 1.1.1.8, the operation interface will turn up as following page:

1.1.1.8 Resolution 01/06  
 [720\*576\_50I] 704\*576\_50I



### Rate Mode

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



### Bit Rate/Max Bit Rate

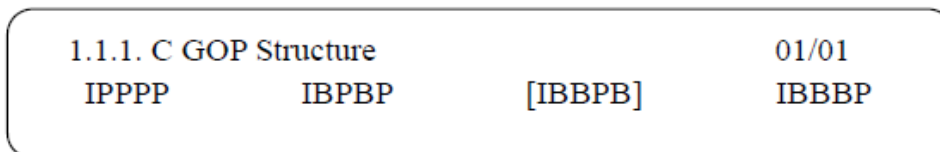
User can modify the video encoding bit rate, maximal and minimum bit rate under menu 1.1.1.A-1.1.1.B.



### GOP Structure

**GOP:** Group of Pictures

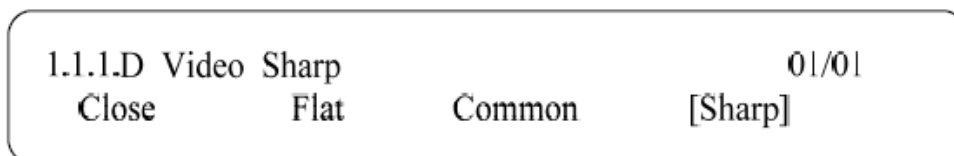
Users can set the GOP frames in this interface. There are 4 options provided as follows:



### Video Sharp Setting

Users can set the Video sharp in this interface, and the LCD will display the following page.

There are four options (Sharp, Common, Flat and close). If users choose the Close option, the Video Sharp function is closed. Users can refer the following interface for details.



### 4.2.1.2 Audio Setting

1.1.2.1 Bit Rate

1.1.2.2 Sample

1.1.2.3 Format

1.1.2.4 Gain

#### Audio Bit Rate Setting

User can set the input audio bit-rate by pressing the enter key to enter the main editing interface. And there are : 32Kbps, 48Kbps, 56Kbps,64 Kbps,80Kbps,96 Kbps,112 Kbps,128 Kbps,160 Kbps,192 Kbps,224 Kbps,256 Kbps,320 Kbps,384 Kbps. After the modification, users can press enter key again to take the modification into effect. The LCD will display the following pages:

1.1.2.1 Bit-rate

01/04

32 Kbps

48Kbps

56Kbps

[64Kbps]

#### Audio Sample Rate

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

1.1.2.2 Sample

01/01

[48 KHz]

44.1 KHz

32 KHz

#### Audio Format Setting

**AAC: Advanced Audio Coding**

**AC3: Audio Coding**

Users can set the input audio format in this interface, and the 5 options are MPEG1 Layer II , PD-CE (AC3-CE), DD-PE (AC3-PE), LC-AAC, and HE-AAC. When users enter the main editing menu, the LCD will display the following page:

1.1.2.3 Format

01/03

[MPEG1-Layer II]

PD-CE (AC3-CE)

#### Gain

1.1.2.4 Gain

16

### 4.2.1.3 System Settings

Under this interface, users can set the corresponding system parameters, after the modification, users can press enter key to take the modification into effect.

▶ 1.1.3.1 Prog Number	1.1.3.2 Video PID
1.1.3.3 Audio PID	1.1.3.4 PMT PID
▶ 1.1.3.5 PCR PID	1.1.3.6 IP Enable
1.1.3.7 Out Address	1.1.3.8 Out Port
▶ 1.1.3.9 Null PKT	

#### Program Number Setting

Users can set the program number by pressing ENTER to enter this submenu. The LCD will display as below:

1.1.3.1 Program Number
0*0101

#### Video/Audio/PMT/PCR PID Settings

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

1.1.3.2 Video PID
0*0102
1.1.3.3 Audio PID
0*0103
1.1.3.4 PMT PID
0*0103
1.1.3.5 PCR PID
0*0101

#### IP Enable

1.1.3.6 IP Enable
YES [NO]

### Out Address/Out Port Setting

User can modify the out address and out port in below interfaces.

1.1.3.6 Out Address <u>224.002.002.002</u>
---

1.1.3.8 Out Port <u>1002</u>
---------------------------------

### Null Packet

1.1.3.9 Null Packet YES                      [NO]
--

Users can choose YES (filter the null packet) or NO (don't filter null packet) to decide whether to filter the null packet or not.

### 4.2.1.4 Program Mux Setting

Users can decide whether to open the multiplexing function of the device.

#### Channel Mux

Under this interface, users 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 key.

1.1.4.1 Channel Mux [ YES]                      01/01 NO
--

### 4.2.2 ASI Setting

Users can check the ASI input program amount in this interface, and the LCD will display the following page. Prog: 006 represents the input program is 6 and Out:003 represents 3 of the 6 programs have been multiplexed.

2.1 Parse ASI Prog ▶ 001 HK1 <u>√</u> Prog: 006 Out: 003 002 HK2 <u>X</u>
---

### 4.2.3 Output Setting

By press the enter key in the main editing interface, use can set the device output parameter. The device will display the following page after users pressing the enter key.

▶ 3.1 IP Out Enable	3.2 IP Out Address
3.3 IP Out Port	3.4 Trans Stream ID
▶ 3.5 Output Stream	3.6 Output Mode
3.7 ASI Output	3.8 UTC Time Config
▶ 3.9 Null PKT	

#### 4.2.3.1 IP Out Enable

This is the new function of this super encoder, user can decide whether to open the IP output function by press the ENTER key in this menu, and the operating interface will show the following page:

▶ 3.1 IP out Enable	
[ YES]	NO

#### 4.2.3.2 IP Out Address

If users enable the IP output function, then users can set the device IP output address in this interface. After users press the ENTER key, the operating interface will display the following page:

▶ 3.2 IP Out Address
224.002.002.002

#### 4.2.3.3 IP Out Port

In this menu, users can set the encoder IP output port number by press the ENTER key to enter the main editing interface.

▶ 3.3 IP Out Port
<u>0</u> 1001

#### 4.2.3.4 Trans Stream ID

Users can set the device TS ID in this interface after pressing the ENTER key to enter the main editing page.

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

#### 4.2.3.5 Output Stream

Users can modify the bit rate of output stream in this interface after pressing the ENTER key to enter the main editing page.

3.5 Output Stream <u>040.000</u> Mbps
--

#### 4.2.3.6 Output Mode

Users can set the output mode in this interface after pressing the ENTER key to enter the main editing page.

3.6 Output Mode	01/01
[1IP]                      8IP                      9IP	

#### 4.2.3.7 ASI Output

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

3.7 ASI Output	01/03
[MPTS]    Channel 1    Channel 2    Channel 3	

#### 4.2.3.8 UTC Time

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

3.8 UTC Time Configuration <u>2012-01-29 15:45:03</u>
--

### 4.2.3.9 Null Packet

3.9 Null Packet	YES	[NO]
-----------------	-----	------

### 4.2.4 Network Setting

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

4.1 IP Address	192.168.002.136
----------------	-----------------

4.2 Subnet Mask	255.255.255.000
-----------------	-----------------

4.3 Gateway	192.168.002.001
-------------	-----------------

4.4 Console Address	192.168.002.211
---------------------	-----------------

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

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

4.5 MAC Address	201012345679
-----------------	--------------

### 4.2.5 Saving Configuration

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

5 Saving Config	01/01
YES	[NO]

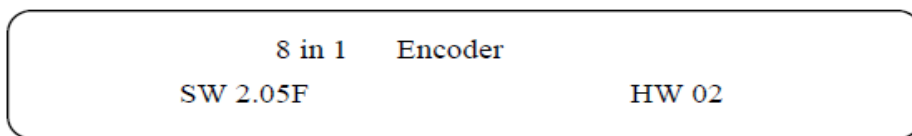
### 4.2.6 Loading Configuration

In this interface, users can select the modified configuration and the factory defaulted configuration. Users can enter the corresponding menu to select the configuration. The LCD will display the following interfaces:



### 4.2.7 Version

Users can check the device software version and hardware version, and the LCD will display the following interface when users press the ENTER key.





## 5. NMS Operation

### Network Management System Profile

Network management system is applied to digital TV equipment operation, control and management and parameters setting, etc. It centralizes digital TV equipment through network.

#### 5.1 Installation

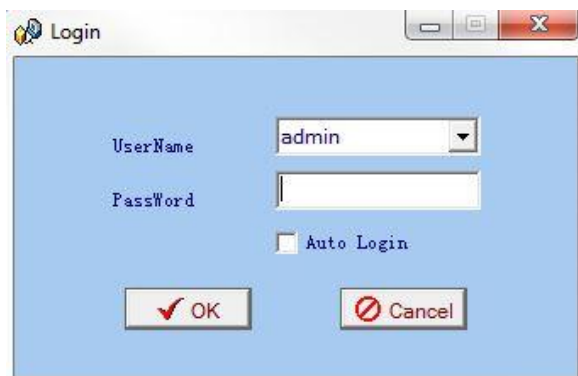
The software doesn't need special installation. User can just copy "Network Management Software X.XXY.exe" to the specified directory (X.XX is version number, Y represents language. For example: the version number of network management software 4.12E.exe is 4.12 English version) or place different versions of network management software to the same directory. When the network management software is running, it will generate two documents as follows:

- Network management software X.XXY.log (It preserves the log file.)
- Info. Bin (It's the user configuration data.)

#### 5.2 Software Operation

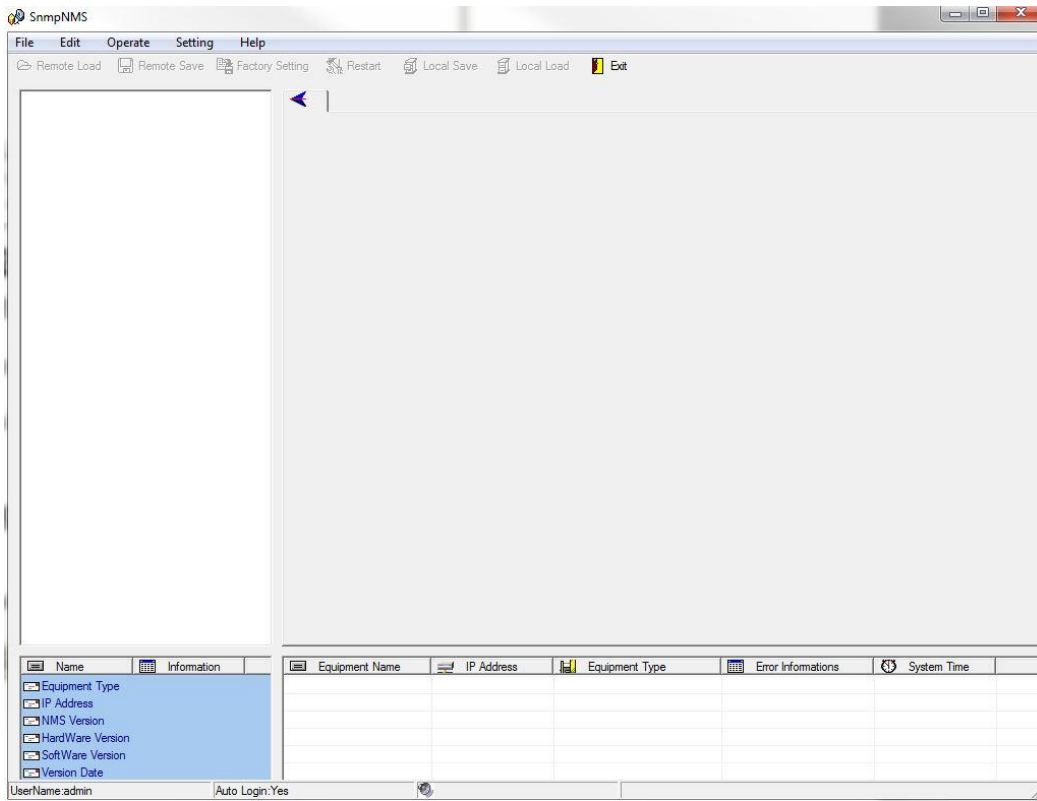
##### 5.2.1 Login Interface

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. Details please refer to 4.4.3 in 4.4 other settings.). The menu shows as follows:



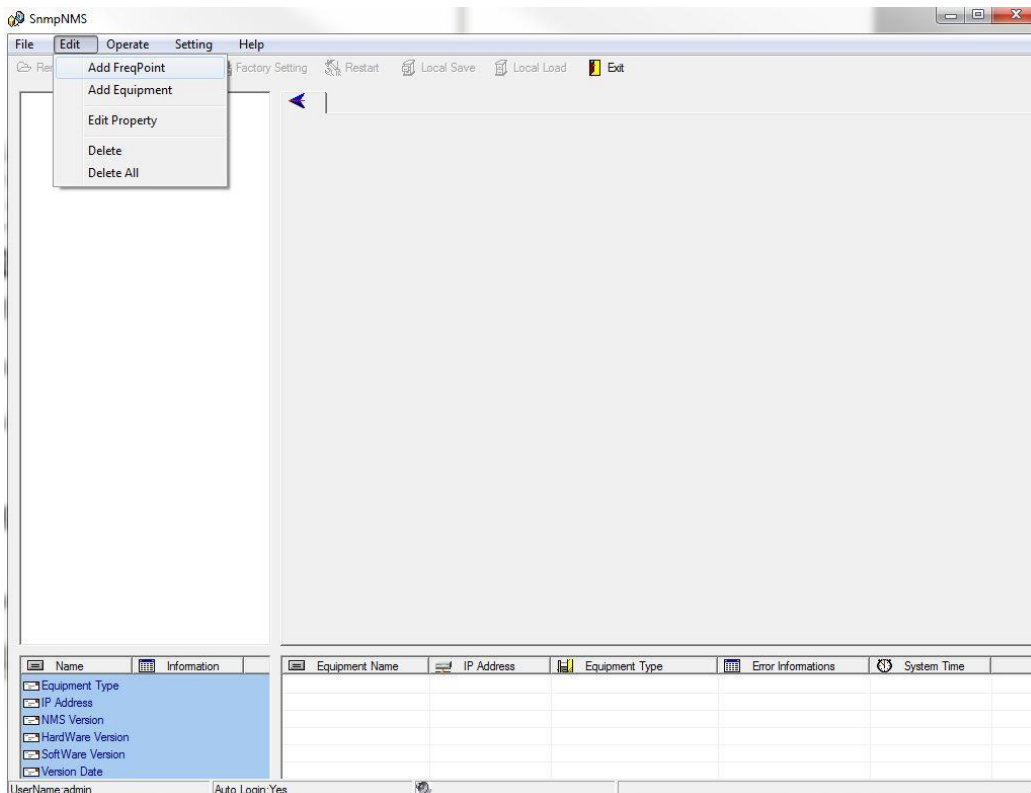
User can login the NMS by pressing **OK** key after inputting user name. Upon the inputs, the software will verify them with database record automatically and the main interface will appear.

## 5.2.2 Main Interface

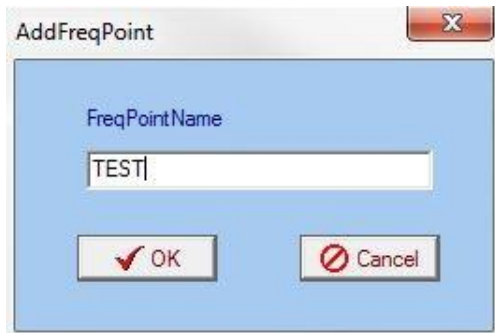


User can create a device node tree in the left column by adding, modifying and deleting the device node. This software provides a powerful node operation function, and the user can edit various parameters in the device tree for management and classification.

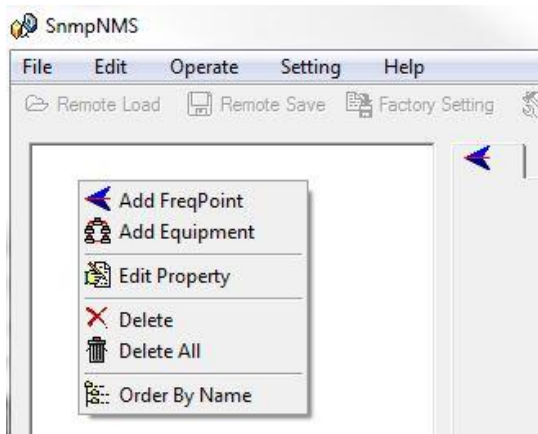
## 5.2.3 Adding Frequency Point



The Add Freq Point dialog box pops up when the user clicks the **Add FreqPoint** item in the Edit pull down menu on the menu row. The device will confirm the given frequency while user clicks **OK**.

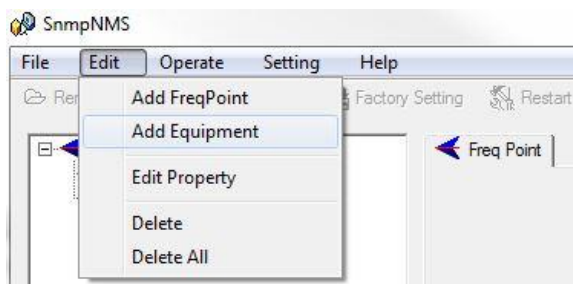


User can also click right mouse key to pop up the short-cut menu in device tree or in the left blank column, then the corresponding dialog box will pop up by choosing **Add Main FreqPoint**. The device will confirm the given frequency while user clicks **OK**.

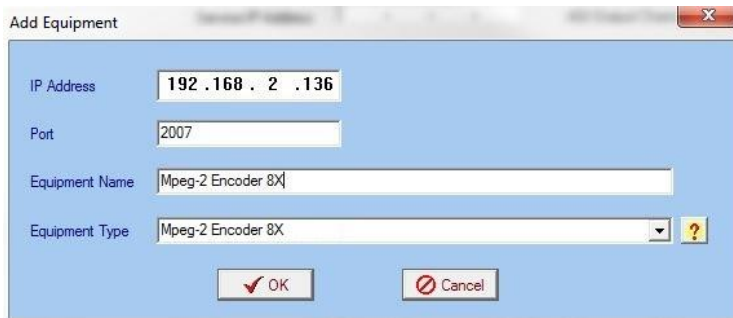


### 5.2.4 Adding Equipment under Given Frequency Point

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.



## 5.2.5 Edit Equipment Interface



User should follow the steps as below:

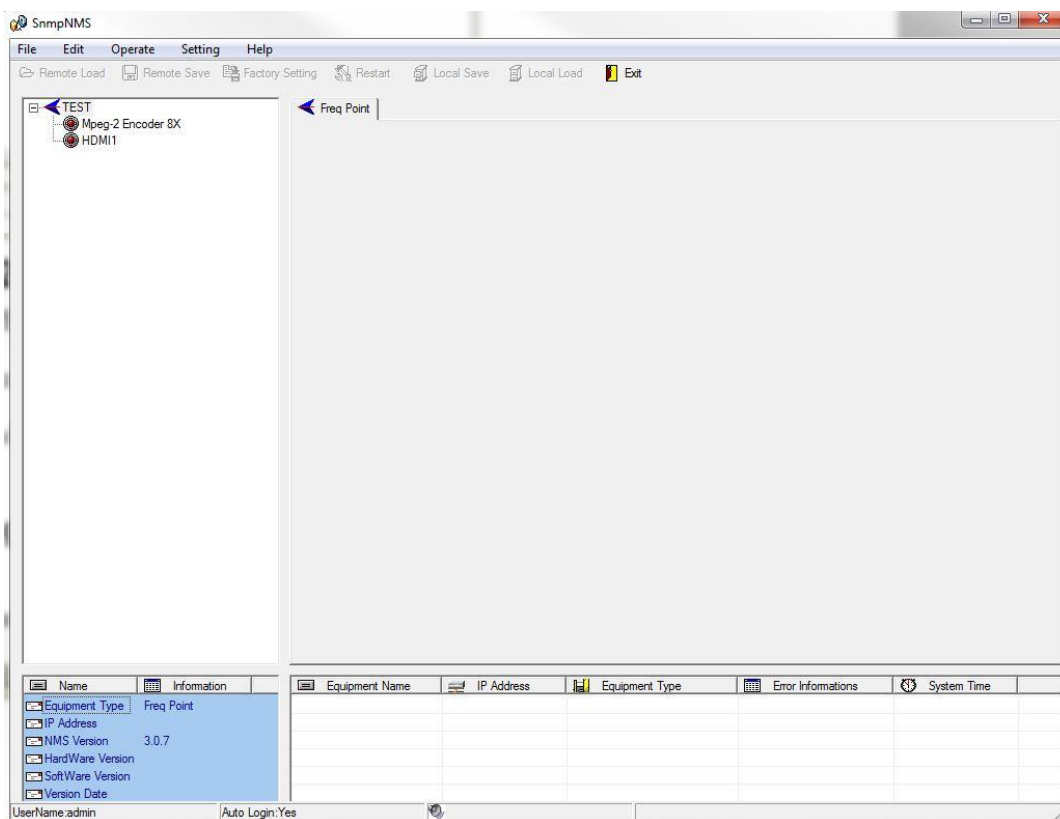
- Inputting the device IP Address
- Inputting the port
- Inputting the Equipment Name
- Choosing the connected equipment type in drop down list of "Equipment Type" by clicking the "▼" Or Click "?" to auto search the type of device.

### NOTE:

The default IP of MPEG-2 Encoder 8x is 10.1.20.8, also you can check its IP address in the front panel of device in case the IP changed unexpectedly.

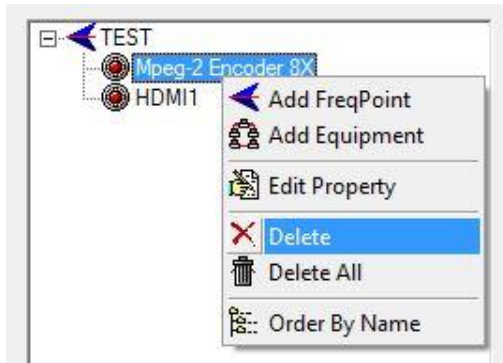
The PC IP address and device IP address should be in the same network. For example the Device IP is 10.1.20.8, sub mask is 255.255.255.0. So the PC IP address should be 10.1.20.X (1<X<255), sub mask is 255.255.255.0. User can use ping command to confirm these two are in same network or not.

Click OK, it will appear as below:






## 5.2.6 Delete Equipment

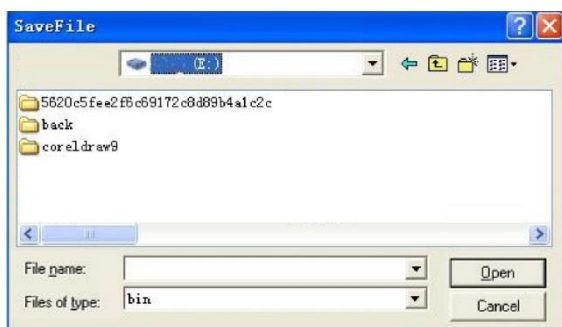
User can choose the equipment to be deleted in the left column, and then click the “delete” item in the pull down menu which appears by clicking the right mouse key.




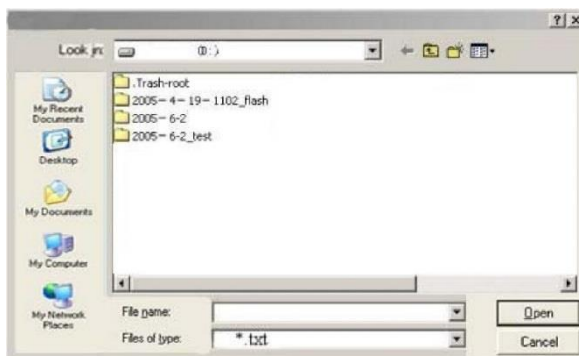
## 5.2.7 Save Configuration

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 .

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.



### 5.3 MPEG-2 Encoder 8x Operation

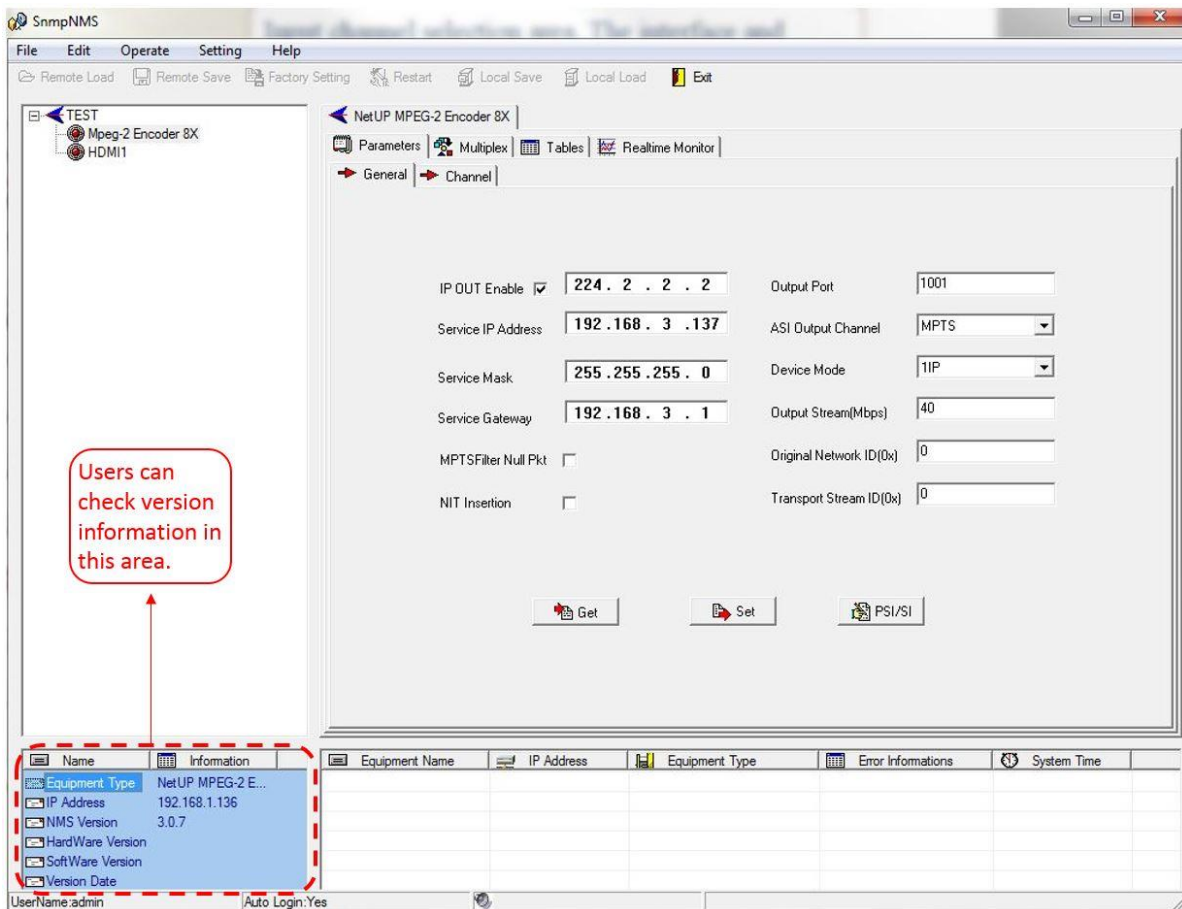
User can choose the MPEG-2 Encoder 8x in the device tree; the procedure will display the encoder interface in operating area. The interface is mainly composed of encoding video parameters, audio parameters and the encoding system parameters, output parameters and etc.

#### 5.3.1 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.

##### 5.3.1.1 General Parameters



**Set:** to make the current parameters, which shows in the NMS software, activate.

**Get:** to read the current device's activating parameters and show them on NMS 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/Service IP Address

Users can set the service IP and the TS output address by modifying the value in these two fields.

#### Pay attention to the 2 situations below:

**MPTS:** Keep the Service IP Address **different** from the IP Out Address.

**SPTS:** Keep the Service IP Address the **same** with the IP Out Address.

### 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.

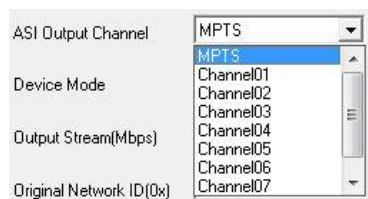
### Output Stream (Mbps)


This refers to output bit-rate, which 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.

### Output Port

Users can set the output port by modifying the value in this field.


### ASI Output Channel



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

### Device Mode



User can click  to trigger a pull-down list to select the device mode.

### NIT Insertion

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

### MPTS Filter Null Packet

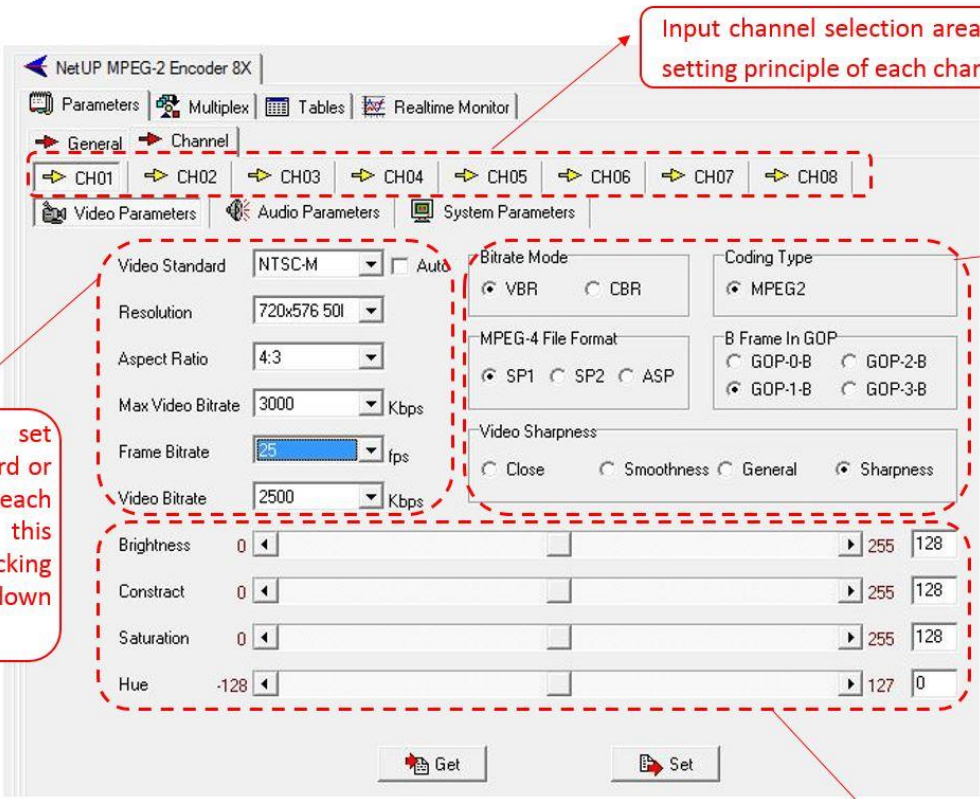
If this function is effected, then the null packets in IP output stream will be filtered.

### 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.



### 5.3.1.1 Video Parameters



Input channel selection area. The interface and setting principle of each channel are the same.

User can set the standard or format of each item in this area by clicking the pull-down trigger.

User can set the mode or type of each item by clicking the Radio Box under the corresponding item.

User can set the parameters of the video brightness, contrast, saturation, and Hue by moving respective slider. Figures at the beginning and end indicate the adjustment range.

**NOTE:**

**1. Bit Rate Mode & Max Video Bit-rate**

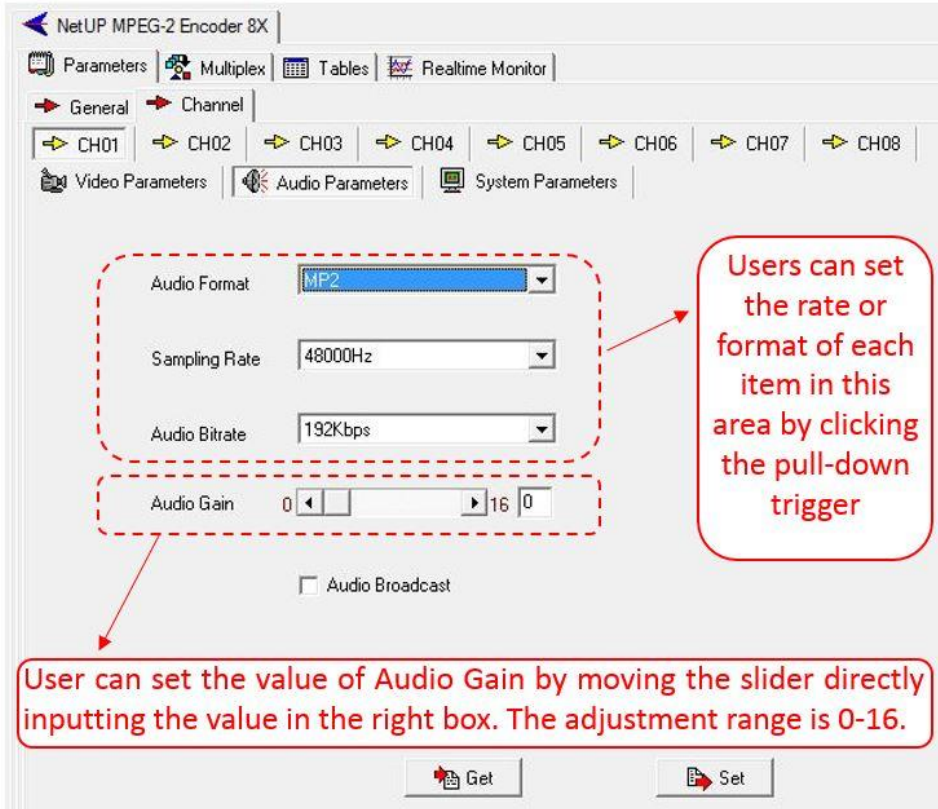
Users can only modify the Max Video Bit Rate when the Bit-rate mode is VBR, while CBR mode is selected, Max Video Bit Rate box turns gray and users can just check it.



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



### 5.3.1.2 Audio Parameters



NetUP MPEG-2 Encoder 8X

Parameters Multiplex Tables Realtime Monitor

General Channel

CH01 CH2 CH3 CH4 CH5 CH6 CH7 CH8

Video Parameters Audio Parameters System Parameters

Audio Format: MP2

Sampling Rate: 48000Hz

Audio Bitrate: 192Kbps

Audio Gain: 0 16 0

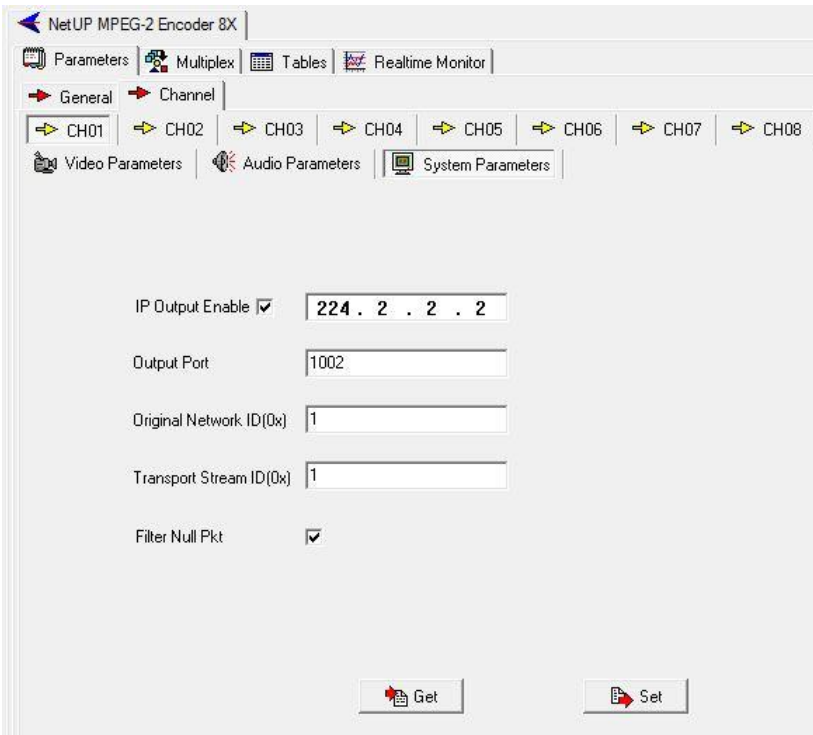
Audio Broadcast

Get Set

Users can set the rate or format of each item in this area by clicking the pull-down trigger

User can set the value of Audio Gain by moving the slider directly inputting the value in the right box. The adjustment range is 0-16.

### 5.3.1.3 System Parameters



NetUP MPEG-2 Encoder 8X

Parameters Multiplex Tables Realtime Monitor

General Channel

CH01 CH2 CH3 CH4 CH5 CH6 CH7 CH8

Video Parameters Audio Parameters System Parameters

IP Output Enable  224 . 2 . 2 . 2

Output Port: 1002

Original Network ID(0x): 1

Transport Stream ID(0x): 1

Filter Null Pkt

Get Set

### IP Output 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/Output Port

Users can set the service IP and the TS output address by modifying the value in these two fields.

### 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.

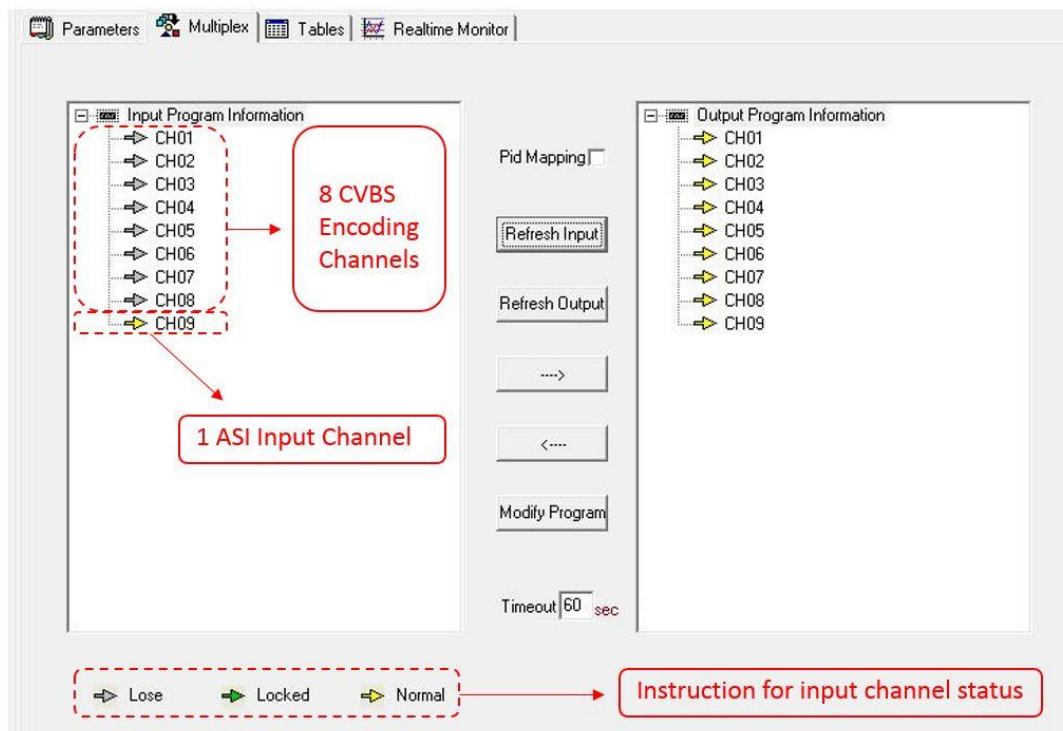
### Transport Stream ID

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.

### MPTS Filter Null Packet



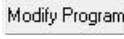
If this function is effected, then the null packets in IP output stream will be filtered.

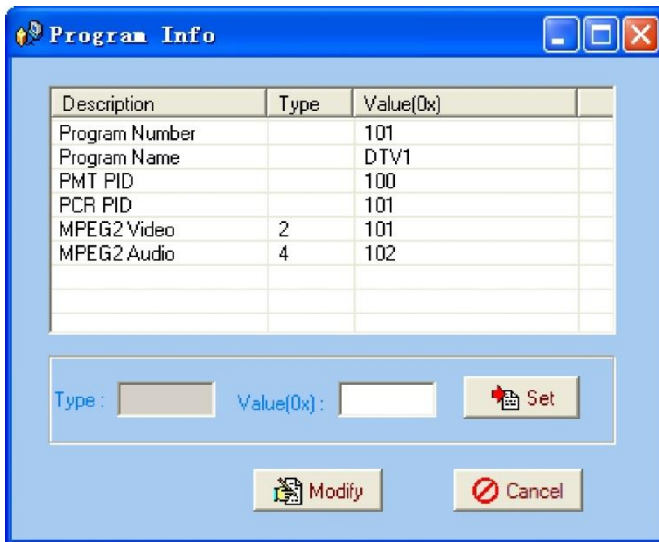
## 5.3.2 Multiplexing

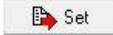
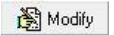


The programs in the left column represent all input programs and which port they come from, while the programs in the right column represent the output programs and from which port they are from. User can parse the programs of each channel and multiplex those programs to the output. Moreover, user can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

- Pid Mapping    Check this box the set the PID Mapping
- To refresh the inputting terminal and get the inputting information
- 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.
-  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:

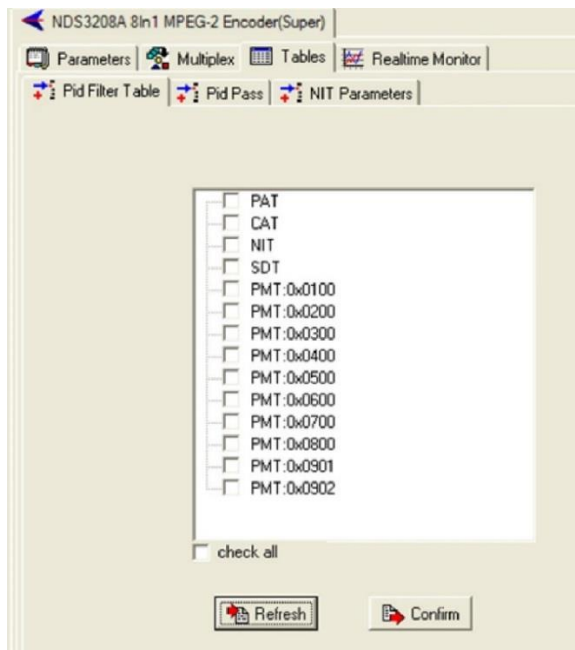


Select the target item and input the new value in the box below, then click  and  to effect the modification.

Timeout  sec The parsing overtime value

## 5.3.3 Tables

### 5.3.3.1 PID Filter Table



Users can operate PID filter in this table by checking the check boxes of corresponding items and click Confirm to take effect.

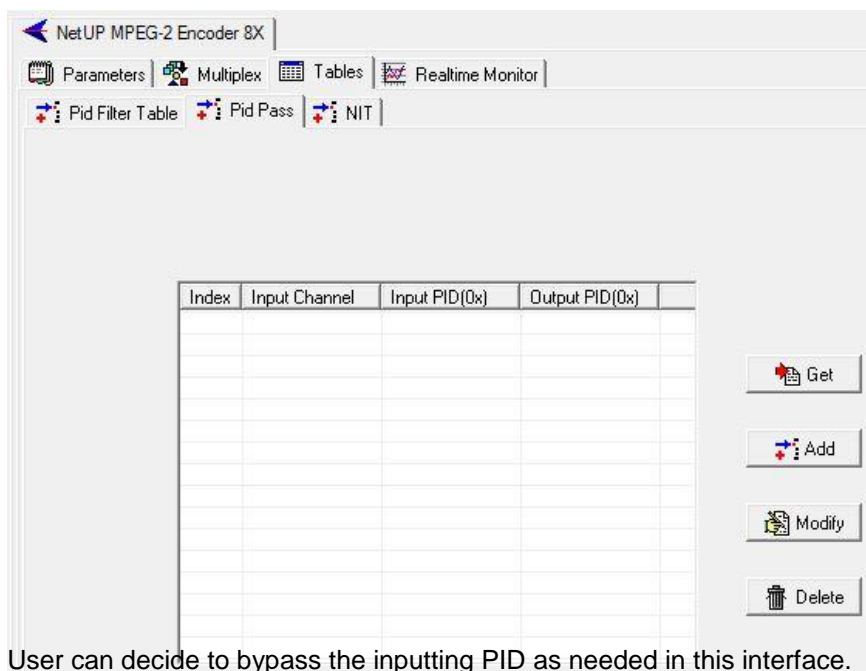
**Refresh:** getting PID filter table from the device

**Setting:** submitting the PID filter table to the device

**Check All:** selecting all the selections of the list

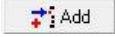
After user selects one PID in the table, then the corresponding output PSI/SI table will not be sent to the output stream.

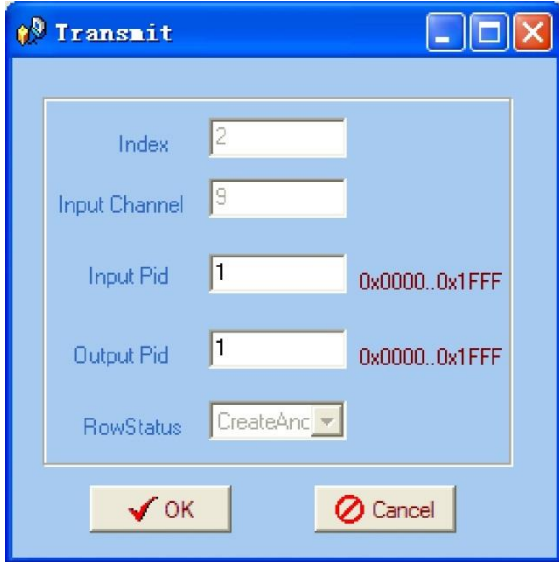
### 5.3.3.2 PID Pass



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  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.

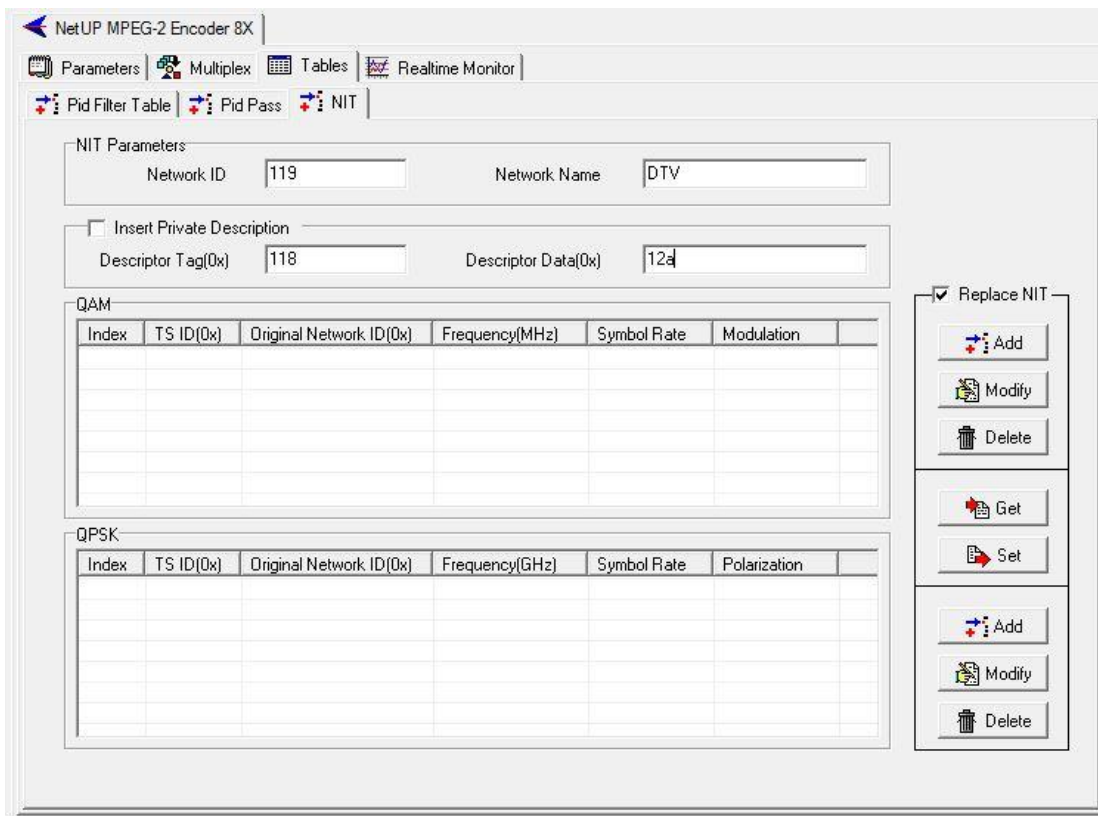
Index	Input Channel	Input PID(0x)	Output PID(0x)
1	9	101	101

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

### 5.3.3.3 NIT Parameters

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.



NetUP MPEG-2 Encoder 8X

Parameters Multiplex Tables Realtime Monitor

Pid Filter Table Pid Pass NIT

NIT Parameters

Network ID: 119 Network Name: DTV

Insert Private Description

Descriptor Tag(0x): 118 Descriptor Data(0x): 12a

QAM

Index	TS ID(0x)	Original Network ID(0x)	Frequency(MHz)	Symbol Rate	Modulation

QPSK


Index	TS ID(0x)	Original Network ID(0x)	Frequency(GHz)	Symbol Rate	Polarization

Replace NIT

Add Modify Delete

Get Set

Add Modify Delete



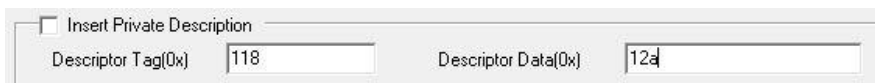
NIT Parameters

Network ID: 119 Network Name: DTV

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

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

### 5.3.3.4 Insertion private description



Insert Private Description

Descriptor Tag(0x): 118 Descriptor Data(0x): 12a

**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.

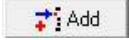
**Descriptor Tag(0x)** The Descriptor Tag is an 8-bit field which identifies each descriptor.

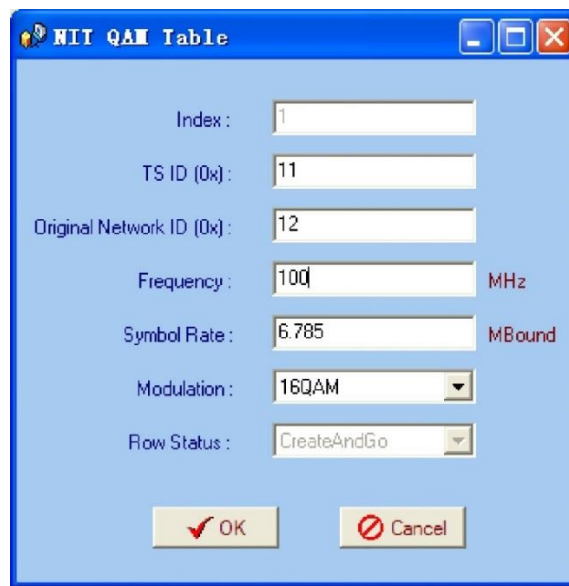
**Descriptor Data(0x)** The Descriptor Data is the detailed information of the private description.

### 5.3.3.5 Replace NIT Table

After checking the checkbox, the NIT editing menu is active. And also the device will insert the EIT table into the output TS.

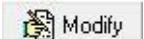
Replace NIT It means to replace the NIT table when users select it, and then users can edit the NIT table and output it.


 Add 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 apply for the DVB-C network.




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

QAM					
Index	TS ID(0x)	Original Network ID(0x)	Frequency(MHz)	Symbol Rate	Modulation
1	11	12	100	6.785	16QAM

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

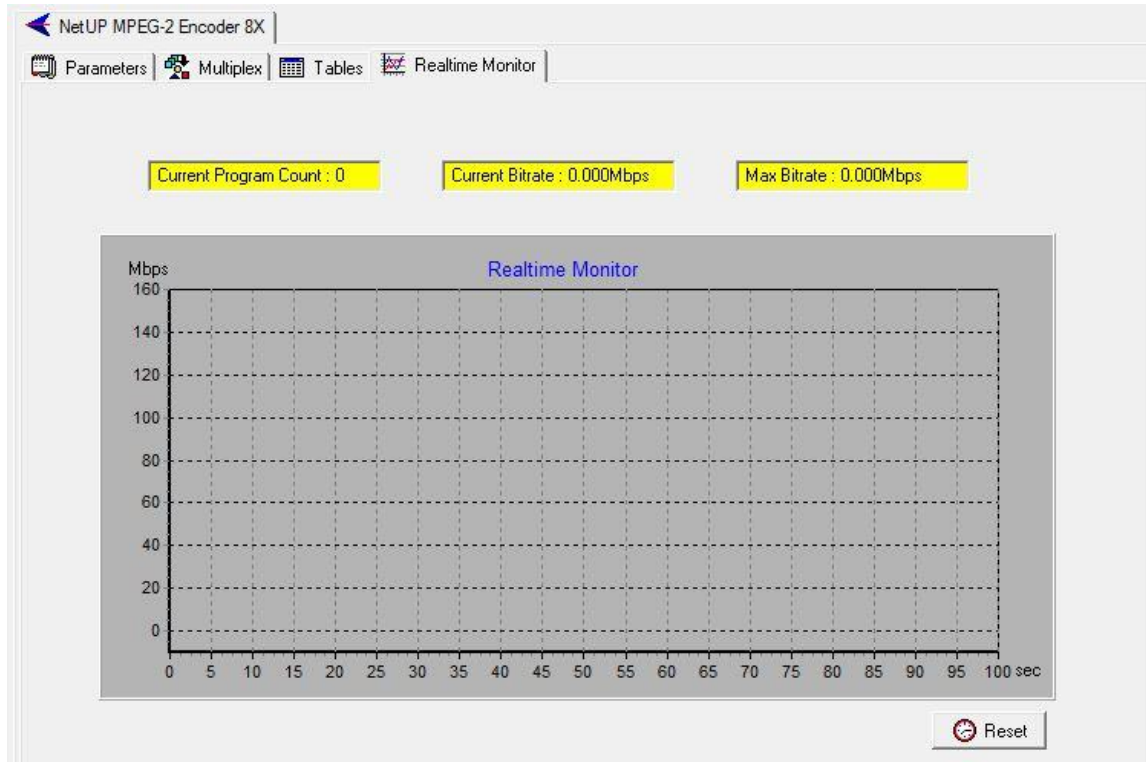
 Delete The “Delete” button will remove the selected items in the NIT.

 Set The “Set” button will send the NIT to the chosen output Port.



### 5.3.4 Real-time Monitor

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



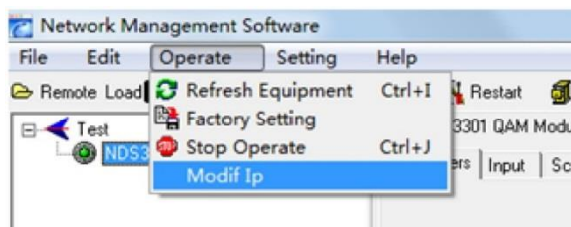
## 5.4 Other Settings

### 5.4.1 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 explained in 4.2.7.

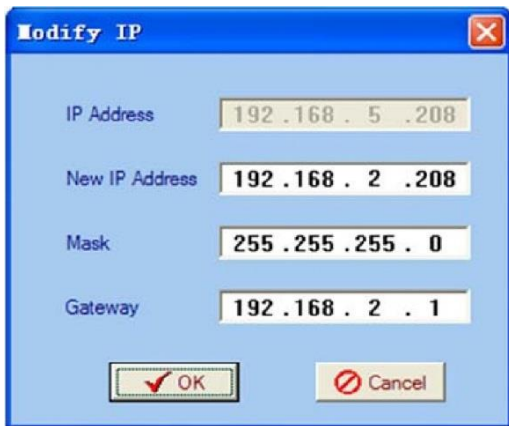
This is the difference between “**Set**” and “**Remote Save**”.

### 5.4.2 IP Modification

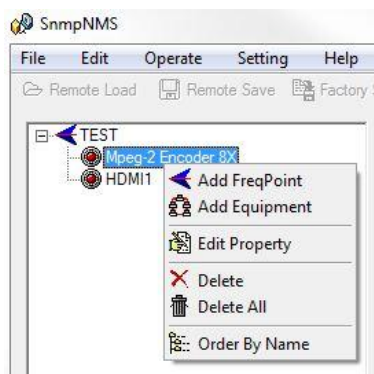


Users can click **Operate** and select **Modify IP** in the drop-down list, and a dialog box presents itself as shown below. Users input the new NMS IP Address for the device and click OK button to confirm.

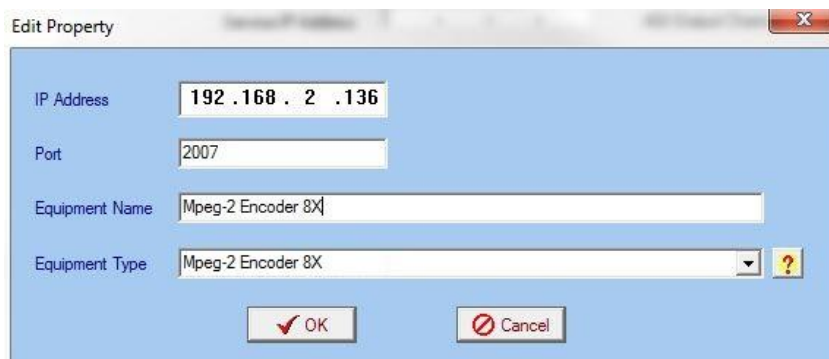





Users can then note the indicator light turns red, which signifies the equipment has disconnected. Users then can refer to below prompts to edit the property by inputting the new IP to re-connect the equipment.



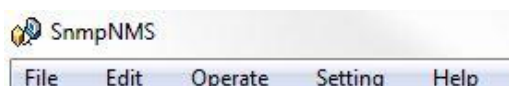
Input the new IP Address in the box and click OK button, then the device will be connected again.





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

### 5.4.3 User Add

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  to add the new user and then click  to save the new setting.



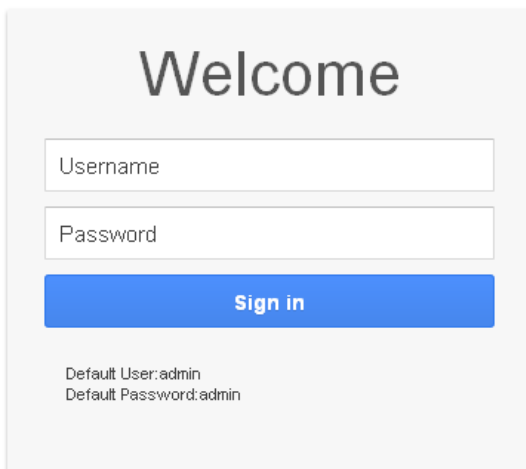
The image shows a "User Setting" dialog box with a blue background. At the top, there are fields for "UserName" (containing "admin") and "PassWord" (empty). Below these is a checked checkbox for "Auto Login". A section titled "Edit Information" is expanded, showing a "Choose User" dropdown menu (set to "admin"), a "PassWord" field (empty), a "New UserName" field (containing "admin"), a "New PassWord" field (empty), and a "Confirm PassWord" field (empty). At the bottom of the dialog, there are three buttons: "Add" (with a plus icon), "Edit" (with a pencil icon), and "Delete" (with a trash icon). Below these are "OK" and "Cancel" buttons.

## 6. WEB NMS (Network Management System) Operation

On newer models we can also use web browser for configuration

### 6.1 Login

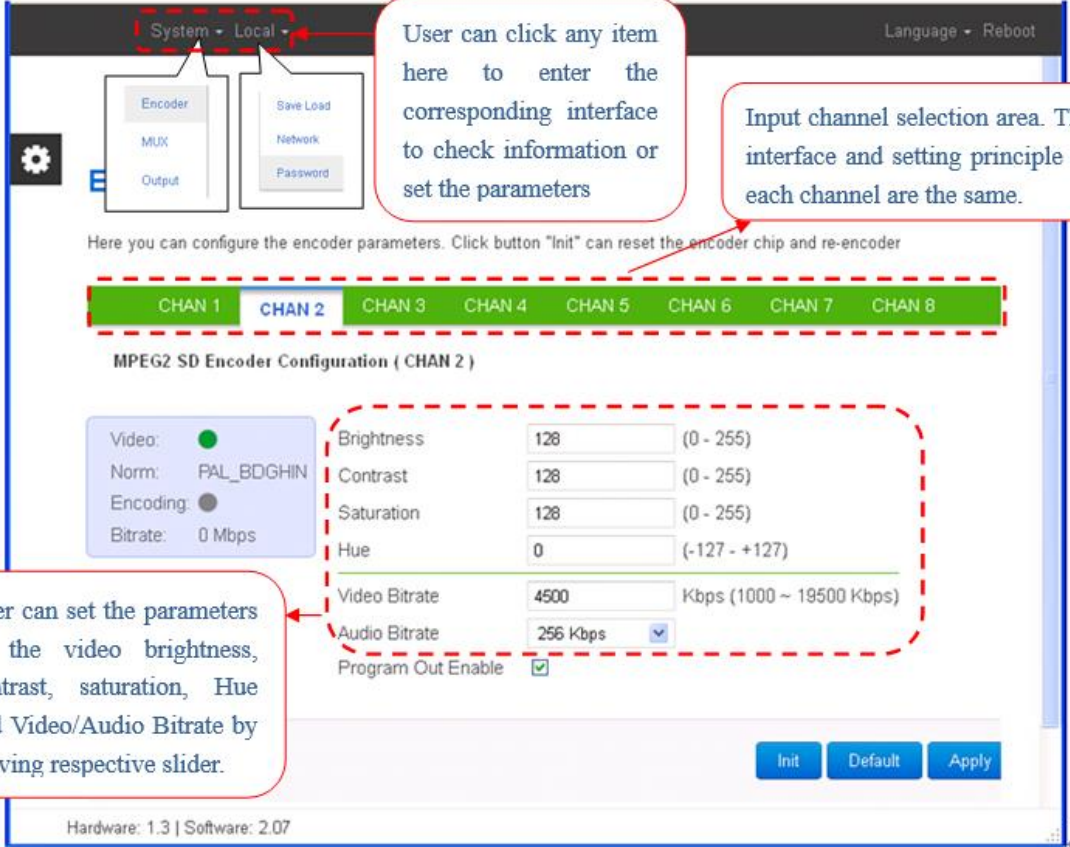
The default IP address of this device is 10.1.20.8. (This can be modified through the front panel.) Connect the PC (Personal Computer) and the device with lan cable and configure network card on PC to be in the same network segment. Use web browser to connect to the encoder using encoders IP address in the browser's address bar and press Enter. It will display the Login interface. Input the Username and Password (default Username is "Admin" and Password is "Zenitel!".) and then click "Sign in" to start the device setting.



User can login to Web 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.

## 6.2 Encode Setting

From the menu on top of the webpage, clicking “Encoder” will display the information of the program from the X encoding channel.



User can click any item here to enter the corresponding interface to check information or set the parameters

Input channel selection area. The interface and setting principle of each channel are the same.

Here you can configure the encoder parameters. Click button "Init" can reset the encoder chip and re-encoder

MPEG2 SD Encoder Configuration (CHAN 2)

Video:  Norm: PAL\_BDGHIN Encoding:  Bitrate: 0 Mbps


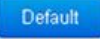


Brightness: 128 (0 - 255)  
 Contrast: 128 (0 - 255)  
 Saturation: 128 (0 - 255)  
 Hue: 0 (-127 - +127)

Video Bitrate: 4500 Kbps (1000 ~ 19500 Kbps)  
 Audio Bitrate: 256 Kbps  
 Program Out Enable:

User can set the parameters of the video brightness, contrast, saturation, Hue and Video/Audio Bitrate by moving respective slider.

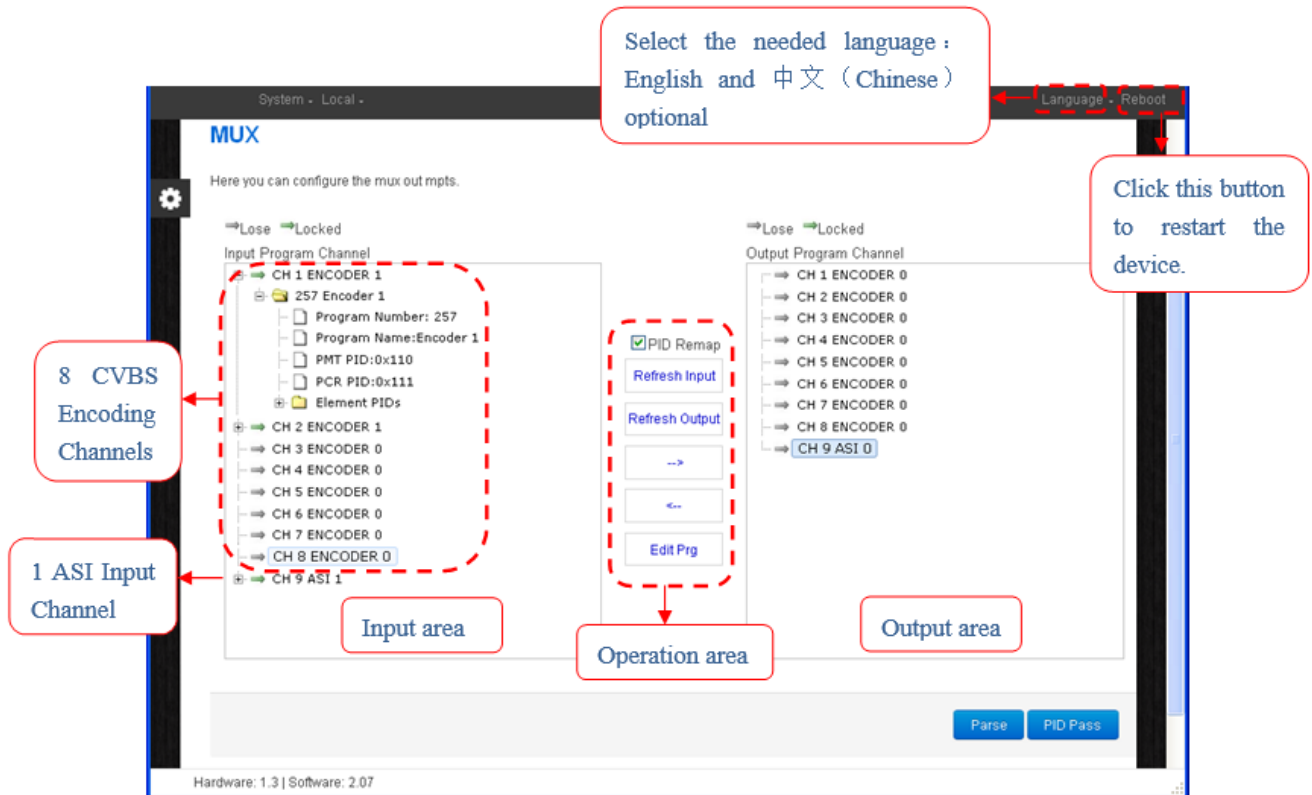
Init Default Apply

Hardware: 1.3 | Software: 2.07

-  Click this button to reset the encoder chip and re-encoder.
-  Click this button to apply the default setting of Input X
-  Click this button to apply the modified parameters.
-  Click this button to choose color schemes and patterns

### 6.2.1 System→MUX

Click “MUX”, it displays the interface where users can configure the Mux out MPTS.

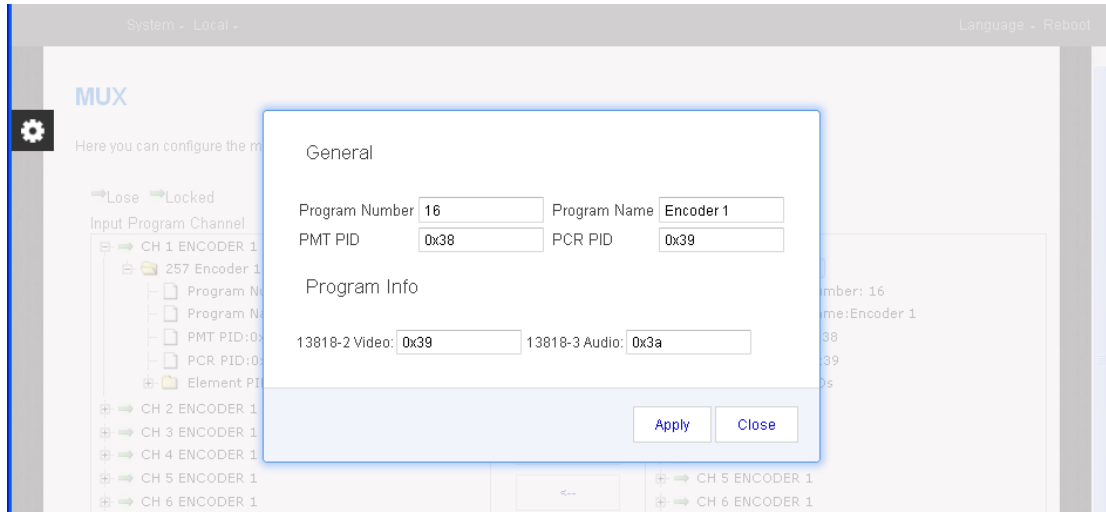


Configure 'Input Area' and 'Output Area' with buttons in 'Operation Area'. Instructions are as below:

- PID Remap To enable/disable the PID remapping
- To refresh the input program information
- To refresh the output program information
- Select one input program first and click this button to transfer the selected program to the right box to output.
- Similarly, user can cancel the multiplexed programs from the right box.

### 6.2.1.1 Program Modification

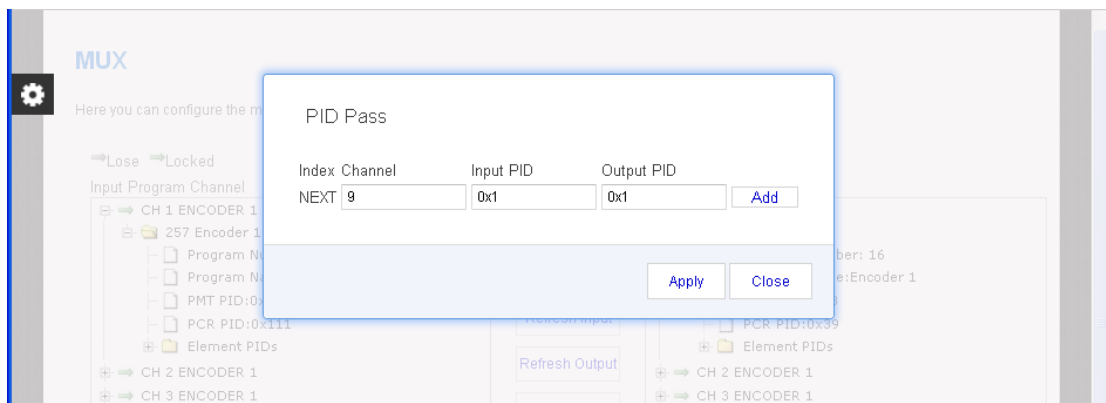
The multiplexed program information can be modified by clicking the program in the 'output' area. For example, first select the program in the 'output' area, then clicking "**Edit Prg**", it triggers a dialog box where users can input new information.



Input new data and click **“Apply”** button to confirm the modification.

### 6.2.1.2 PID Pass

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.



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

## 6.2.2 System→Output

Click **“Output”**, it displays the interface where users can configure the IP output, it include SPTS, MPTS and ASI output.

### 6.2.2.1 SPTS Settings

Under this menu, user can configure the 8 output SPTS parameters separately.

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## Output Parameters

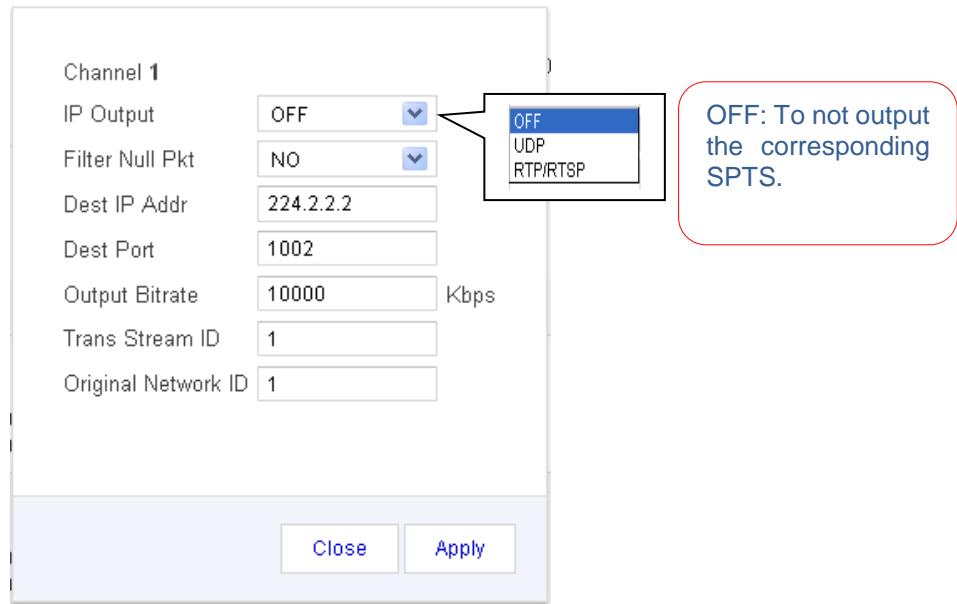
Here you can configure the ip output ,it includes spts and mpts ,but output bit rate should not over 100Mbps.

SPTS Settings MPTS Settings DATA IP Settings ASI Output

### Channel Overview

Interface	Status	Actions
<b>CHAN1</b> UDP	MAC Addr : 01:00:5E:02:02:02 Output IP: 224.2.2.2 Output Port: 1002 Output Bitrate: 4.801 Mbps	Modify
<b>CHAN2</b> RTP/RTSP	MAC Addr : 01:00:5E:02:02:02 Output IP: 224.2.2.2 Output Port: 1003 Output Bitrate: 4.795 Mbps	Modify
<b>CHAN3</b> OFF	MAC Addr : 00:00:00:00:00:00 Output IP: 224.2.2.2 Output Port: 1004 Output Bitrate: 4.797 Mbps	Modify
<b>CHAN4</b> OFF	MAC Addr : 00:00:00:00:00:00 Output IP: 224.2.2.2 Output Port: 1005 Output Bitrate: 4.818 Mbps	Modify
<b>CHAN5</b> OFF	MAC Addr : 00:00:00:00:00:00 Output IP: 224.2.2.2 Output Port: 1006 Output Bitrate: 4.786 Mbps	Modify
<b>CHAN6</b> OFF	MAC Addr : 00:00:00:00:00:00 Output IP: 224.2.2.2 Output Port: 1007 Output Bitrate: 4.81 Mbps	Modify
<b>CHAN7</b> OFF	MAC Addr : 00:00:00:00:00:00 Output IP: 224.2.2.2 Output Port: 1008 Output Bitrate: 4.8 Mbps	Modify
<b>CHAN8</b> OFF	MAC Addr : 00:00:00:00:00:00 Output IP: 224.2.2.2 Output Port: 1009 Output Bitrate: 4.786 Mbps	Modify

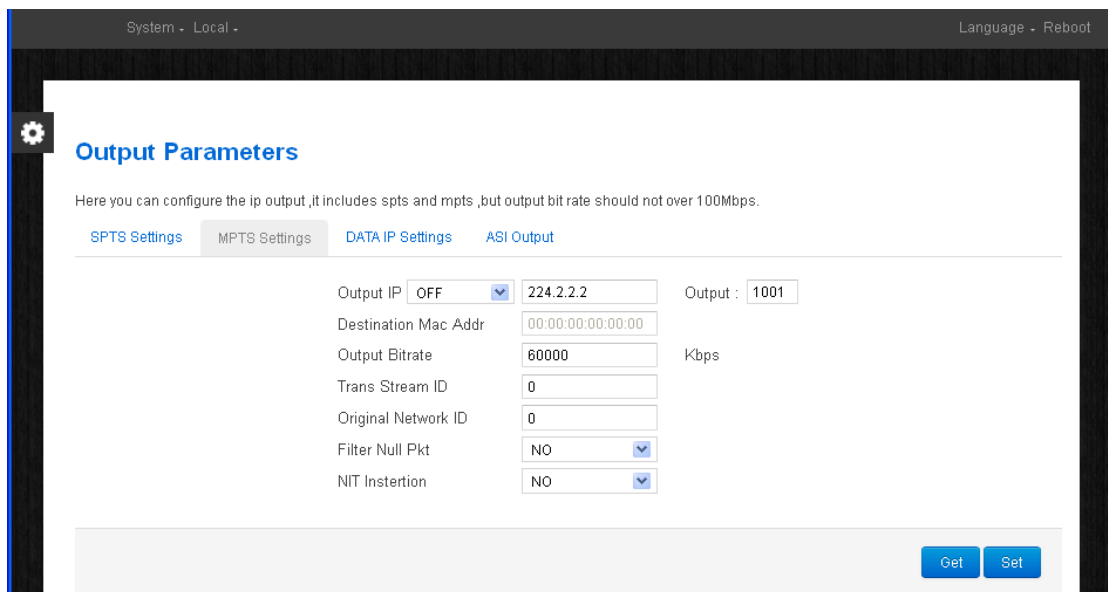
 : To modify the output SPTS parameters as needed. By clicking this button to pop up a dialog box as below:



Input new data and click 'Apply' button at last to confirm the modification.

### 6.2.2.2 MPTS Settings

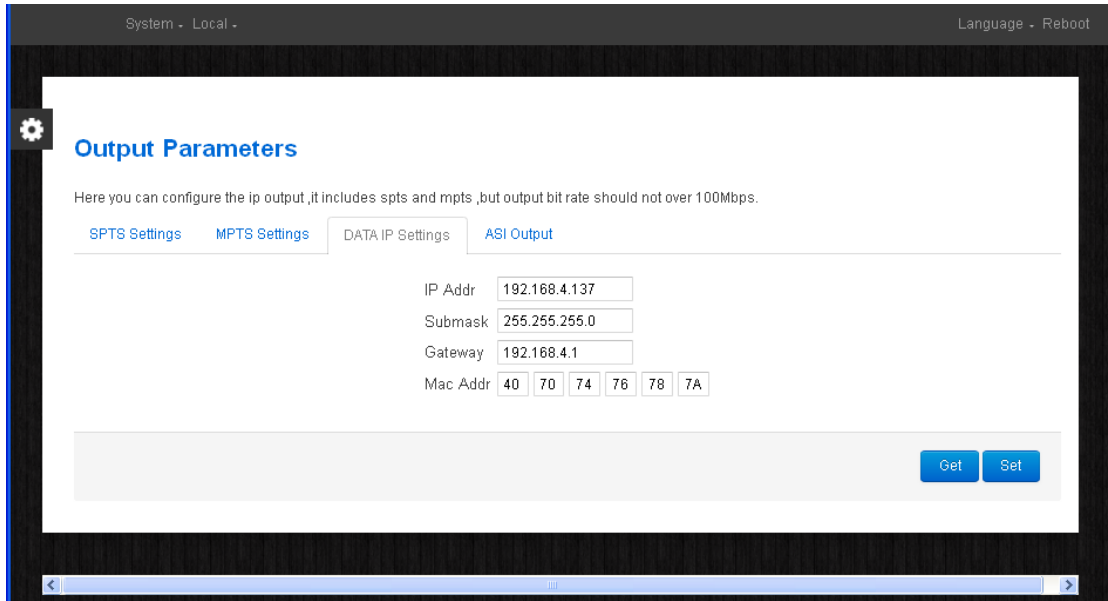
Under this menu, user can configure the output MPTS Parameters.



### 6.2.2.3 DATA IP Settings

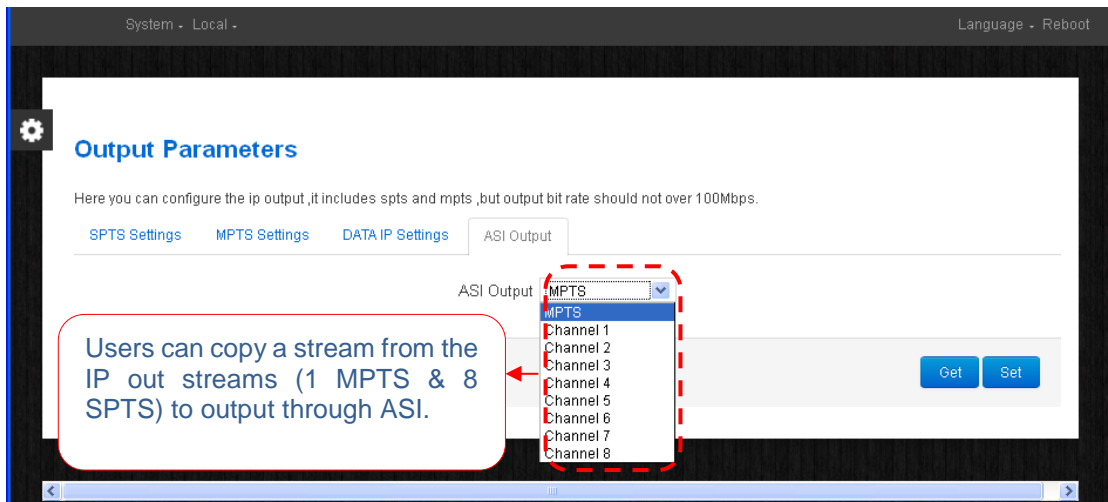
Data IP Setting is for setting the Data parameters for the device.





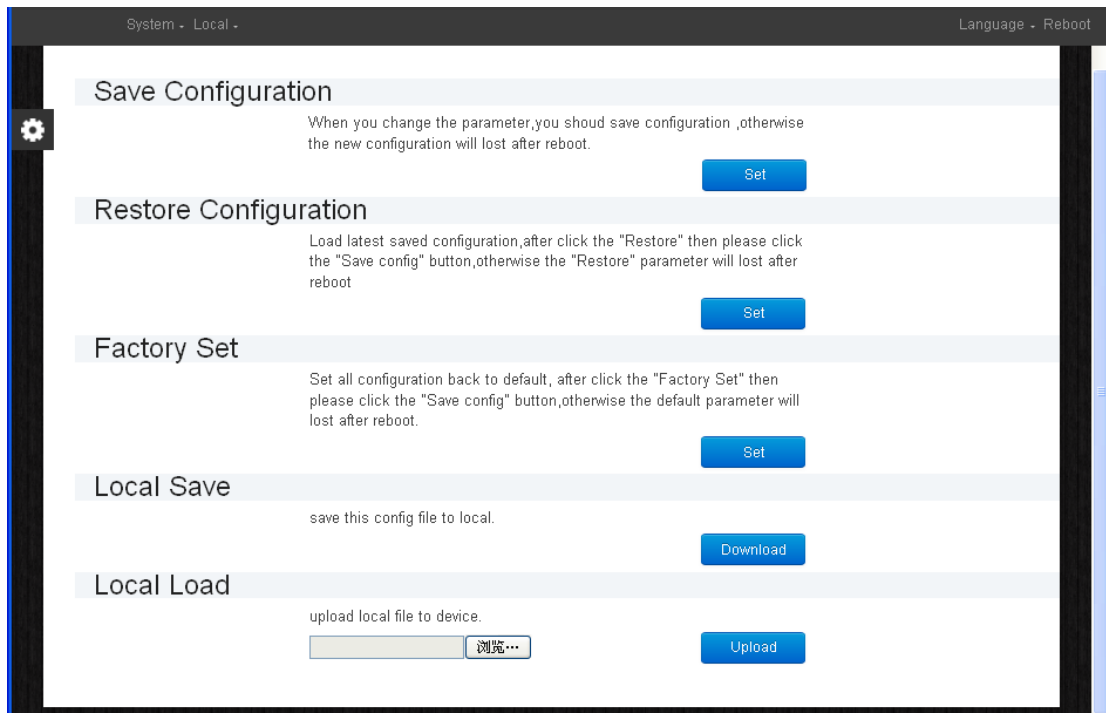
### 6.2.2.4 ASI Output

Clicking “ASI Output” from the menu, it will display the interface where to choose TS to output from ASI.



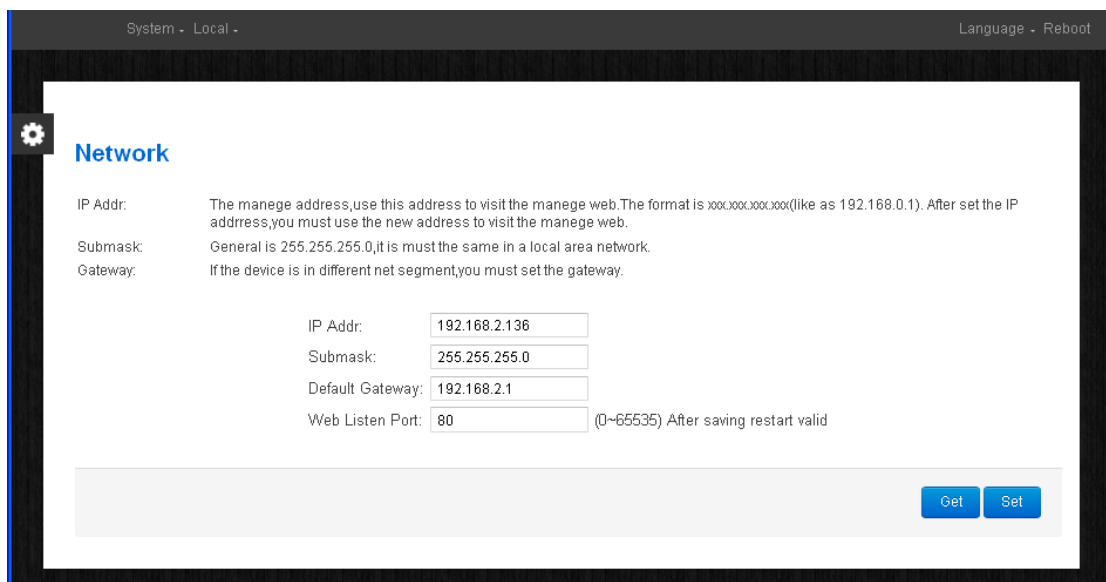
### 6.2.3 System→Save load

Clicking “Save Load” from the menu, it will display the screen as below.



### 6.2.4 System→Network

When user clicks "Network", it displays the network information of the device. Here user can change the device network configuration as needed.



### 6.2.5 System→Password

When user clicks "Password", it will display the password screen where user can change the Username and Password for login to the device. After putting the current and new Username and Password, click "Apply" to save the configuration.

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### Password

Modify the login name and password to make the device safely.If forget the name or password,you can reset it by keyboard in menu 4.2. The default login name and password is "admin".Also please note the capital character and lowercase character.

Current UserName:	admin
Current Password:	<input type="text"/>
New UserName:	<input type="text"/>
New Password:	<input type="text"/>
Confirm New Password:	<input type="text"/>

## 7. Troubleshooting

ISO9001 quality assurance system has been approved by CQC organization. For guarantee the products' quality, reliability and stability. All products have been passed the testing and inspection before ship out factory. The testing and inspection scheme already covers all the Optical, Electronic and Mechanical criteria. To prevent potential hazard, please strictly follow the operation conditions.

### 7.1 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 the device on/off is prohibited; the interval between every switching on/off must greater than 10 seconds.

### 7.2 Conditions when you need to unplug the power cord

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

## 8. Packing list

- MPEG-2 Encoder 8x 1 pcs
- Analog Audio/Video Composite Input Cable 8 pcs
- ASI cable 1 pcs
- Power cord 1 pcs



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**A100K11594**

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