LCT DCH 2400EC

4 in 1 MPEG-2 IP Encoder

User's Manual

Chapter 1 Product Outline

1.1 Outline

The DCH2400EC 4 in 1 MPEG-2 Encoder (with IP output) is a professional SD audio & video encoding and multiplexing device with powerful functionality. It has 4 channel CVBS video input interfaces, 4 pairs of unbalanced audio input interfaces and an ASI input interface, supporting MPEG-2 encoding format. This device can simultaneously encode 4 channel SD audio & video; moreover, it can multiplex the input TS with the 4 encoded SPTS to generate a MPTS output. Also, the PSI/SI information can be inserted into the MPST output. In conclusion, its high integrated and cost effective design makes the device widely used in varieties of digital distribution systems such as cable TV digital head-end, satellite digital TV broadcasting and terrestrial digital TV, etc.

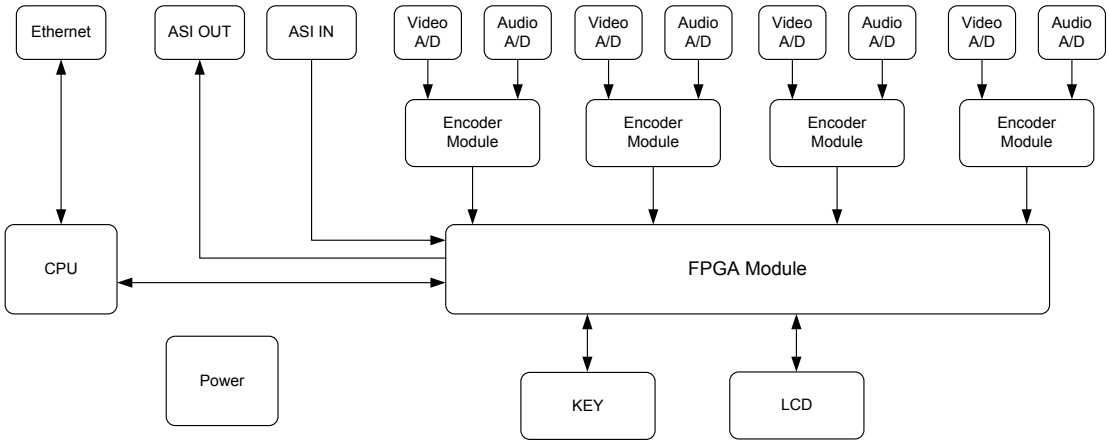
1.2 Main Features

- 4×CVBS video inputs, 4 pairs of unbalanced audio inputs.
- 1× ASI input interface
- Audio MPEG-1Layer1, Layer2(optional)
- Supports MPEG-2 encoding format
- Supports CBR and VBR
- Outputs multiplexed MPST ASI
- Multiplexes 4 channel encoded SPTS
- Supports PAL and NTSC SD video formats
- Supports MPTS over UDP protocol
- Real-time effective encoding output bit-rate monitoring
- Supports NMS monitoring
- LCD display

1.3 Specification

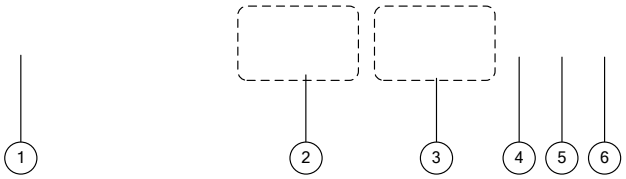
Input	4 CVBS inputs , BNC interface	
	4 pairs of unbalanced stereo audio input, BNC interface	
	1 ASI stream input, BNC interface	
Video	Resolution	720×480_60i, 720×576_50i(D1)
		544×480_60i, 544×576_50i(3/4D1)
		352×480_60i, 352×576_50i(HD1)
		480×480_60i, 480×576_50i(2/3D1)
	Encoding	MPEG-2 MP@ML
	Chroma Format	4:2:0
	Bitrate	0.8Mbps~20Mbps each channel
	Rate Control	CBR/VBR
	Advanced Pretreatment	De-interlacing, noise reduction, sharpening
Audio	Encoding	MPEG-1 Audio Layer 2
	Sampling rate	48KHz,44.1KHz,32KHz
	Resolution	24-bit
	Bit-rate	128Kbps,256Kbps and 384Kbps
Multiplexing		1 ASI input multiplexed with local 4 channels TS
Stream output		2-way ASI output, BNC interface
		MPTS over UDP,10/100Base-T Ethernet interface (UDP unicast / multicast)
System function		LCD/keyboard, network management, Chinese and English language
		Ethernet software upgrade
Miscellaneous	Environment	0~45℃(work)；-20~80℃（Store）
	Power	AC 220V±10%　50Hz,25W

1.4 Principle Chart



1.5 Appearance and Description

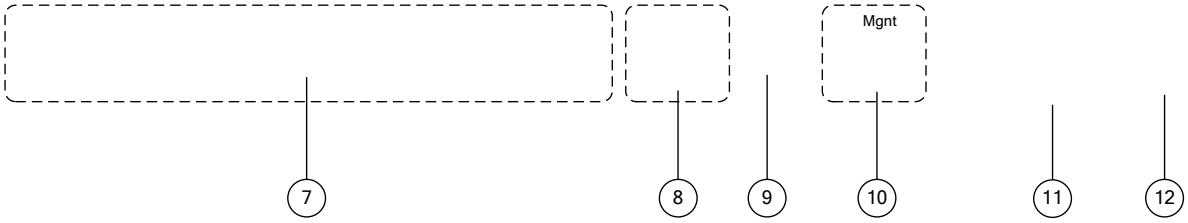
Front Panel Illustration：



Indicator area: All the indicators will light on when the DCH2400EC works at current mode.

1.	LCD interface	
2.	Indicator	Power：Power indicator
		TS in：TS input locked indicator
		CH1 TS out–CH4 TS out: device starts to encode and output TS
		CH1 Alarm—CH4 Alarm: device stops encoding or encoding error
3.	Up/down, left/right arrow	
4.	Enter key	
5.	Menu key	
6.	Lock key	

Rear Panel Illustration:



7.	4×CVBS inputs, 4 pairs of unbalanced audio inputs (Left/Right)
8.	2×ASI output multiplex interfaces
9.	ASI input multiplex interface
10.	Ethernet and NMS port, 10M/100M connection indicator
11.	Power socket
12.	Grounding pole

Chapter 2 Installation Guide

2.1 Acquisition Check

When users open the package of the device, it is necessary to check following items according to the packing list

- DCH2400EC 4 in 1 MPEG-2 Encoder
- User's Manual
- Analog Audio/Video Composite Input Cable
- ASI Cable
- Power Cord

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

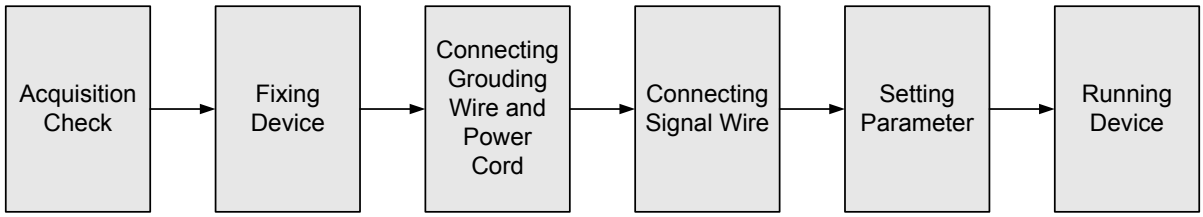
2.2 Installation Preparation

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

The main contents of this chapter includes the following steps::

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

2.2.1 Device's Installation Flow Chart is Illustrated as following:



2.2.2 Environment Requirement

Item	Requirement
Machine Hall Space	When user installs machine frame array in one machine hall, the distance between 2 rows of machine frames should be 1.2~1.5m and the distance against wall should be no less than 0.8m.
Machine Hall Floor	Electric Isolation, Dust Free Volume resistivity of ground anti-static material: $1X10^{7}$~$1X10^{10\Omega}$， 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
Door & Window	Installing rubber strip for sealing door-gaps and dual level glasses for window
Wall	It can be covered with wallpaper, or brightness less paint.
Fire Protection	Fire alarm system and extinguisher
Power	Requiring device power, air-conditioning power and lighting power are independent to each other. Device power requires AC power 220V 50Hz. Please carefully check before running.

2.2.3 Grounding Requirement

- All function modules' good grounding designs are the basis of reliability and stability of devices. Also, they are the most important guarantee of lightning arresting and interference rejection. Therefore, the system must follow this rule.
- Coaxial cable's outer conductor and isolation layer should keep proper electric conducting with the metal housing of device.
- Grounding conductor must adopt copper conductor in order to reduce high frequency impedance, and the grounding wire must be as thick and short as

possible.

- Users should make sure the 2 ends of grounding wire well electric conducted and be antirust.
- It is prohibited to use any other device as part of grounding electric circuit
- The area of the conduction between grounding wire and device's frame should be no less than 25mm^2.

2.2.4 Frame Grounding

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

2.2.5 Device Grounding

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

2.3 Wire's Connection

The grounding wire conductive screw is located at the right end of rear panel, and the power switch, fuse, power supply socket is just beside ,whose order goes like this, power switch is on the left ,power supply socket is on the right and the fuse is just between them.

- Connecting Power Cord

User can insert one end into power supply socket, while insert the other end to AC power.

- Connecting Grounding Wire

When the device solely connects to protective ground, it should adopt independent way, say, share the same ground with other devices. When the device adopts united way, the grounding resistance should be smaller than 1Ω.

☞**Caution:**

Before connecting power cord to DCH2400EC 4 in 1 MPEG-2 Encoder, user should set the power switch to "OFF".

2.4 Signal Cable Connection

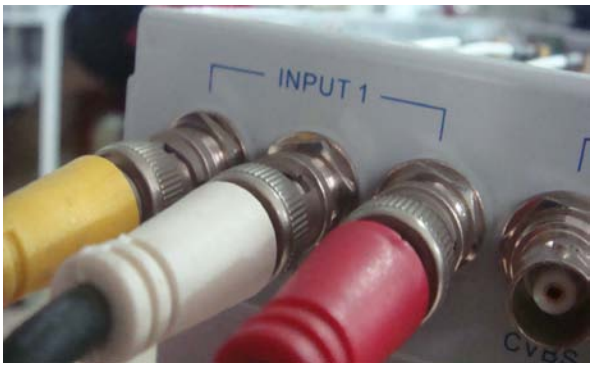
The signal connections include the connection of input signal cable and the connection of output signal cable. The details are as follows:

2.4.1 Unbalanced audio and CVBS video input cable illustration:

2.4.2 ASI input and output cable illustration:

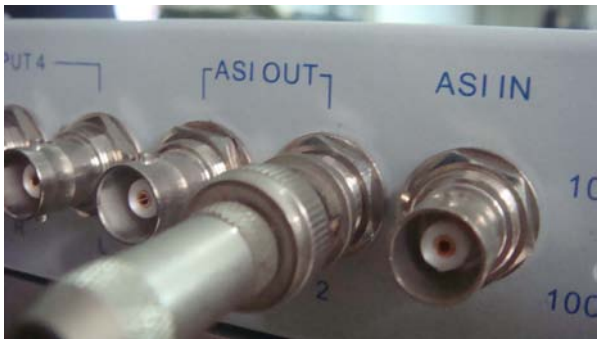
2.4.3 Unbalanced audio and CVBS video input connection

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 follow:



2.4.4 ASI output interface connection

User can firstly find the ASI out interface is just besides the CVBS and unbalanced audio input ports, 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 follows: (The ASI IN connection is the same as ASI OUT, but the ASI IN has only one port which is just at the right of ASI Out).



Chapter 3 Operation

DCH2400EC 4 in 1 MPEG-2 Encoder's front panel is user operating interface. Before operating, users can decide whether to directly use the default setting or customize the input and output parameters setting. The detail operations go as follows:

Keyboard Function Description:

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

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

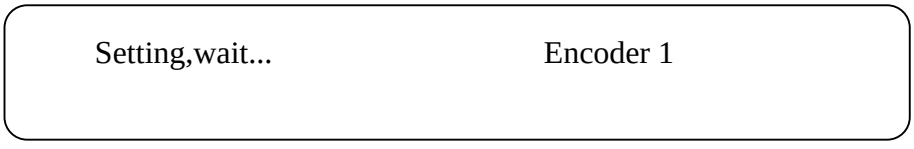
LEFT/RIGHT: Choosing and setting the parameters.

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

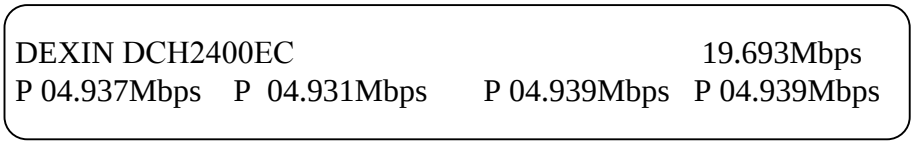
LOCK: Locking the screen / cancelling the lock state, and entering the main menu after the initialization of the device. After pressing lock key, the system will question the users to save present setting or not. If not, the LCD will display the current configuration state.

3.1 Initializing

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



After the above interface, the LCD will display the company name, device type and real-time bit rate value in the first row after all passages start encoding. The 4 programs' real-time bit rate will be displayed in the second row, and the menu goes as follows:



3.2 General Setting

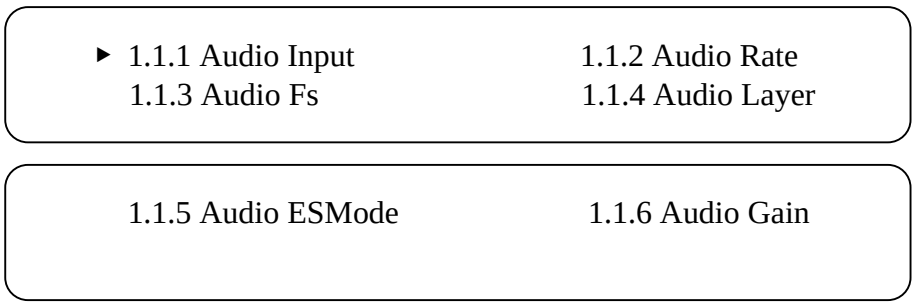
After the initialization, users can enter the main editing menu by press “LOCK” key, and the LCD will display following pages.

By pressing “UP” or “DOWN” key to the specified channels, and then users can press “Enter” to enter the following page：

At this menu, user can enter the corresponding submenu to set its parameters.

3.2.1 Audio setting

User can press “Up/Down” or “Left/Right” to choose this item. “Enter” and “Left/Right” to set the parameters. The item with “►”is the current option. The system displays following pages.



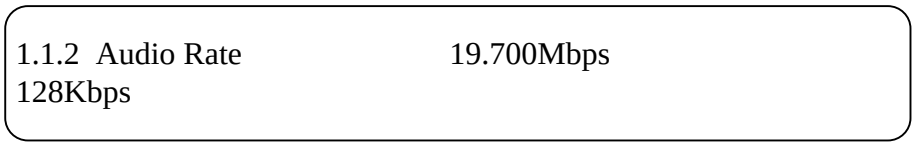
3.2.1.1 Audio input

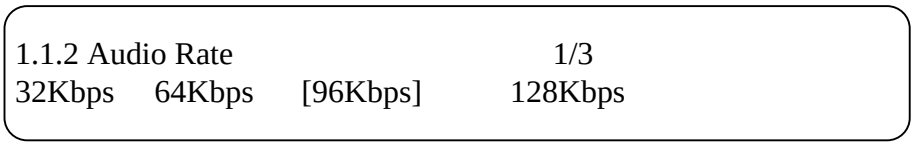
After entering the submenu by pressing “Enter” key, user can see the audio input format is RCA.

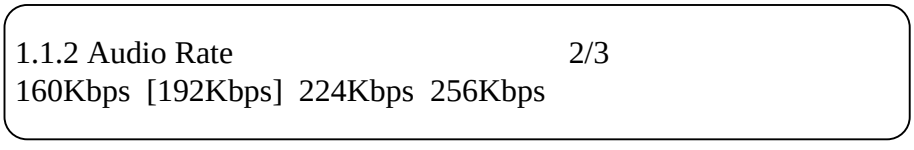
3.2.1.2 Audio Rate setting

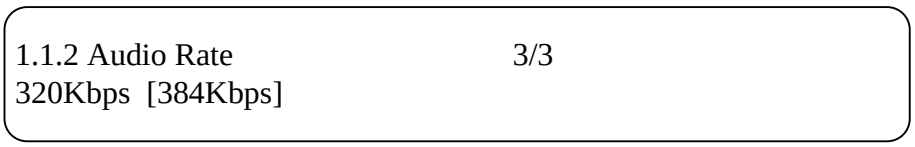
After entering the submenu by pressing “Enter” key, user can choose one out of the following bit-rates， which include 32Kbps、 64Kbps、 128Kbps、 160Kbps、 192Kbps、224Kbps、256Kbps、320Kbps、348Kbps.The option with the bracket is the current choice.

“1/3” means the current page. And the number at the upper and right corner is the total effective output audio bit-rate.



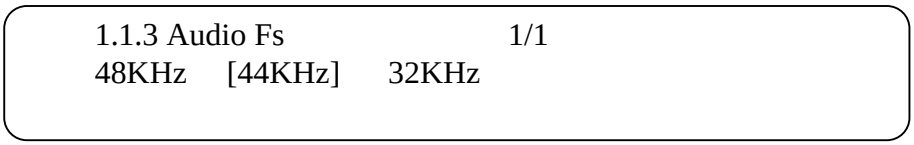






3.2.1.3 Audio Fs setting

After entering the submenu by pressing “Enter” key, user can select one of the following three frequency sampling. (48 KHz、44.1 KHz or 32 KHz)



3.2.1.4 Audio Layer

There are two kinds of audio format for users to choose, one is MPEG-1 Layer1, and the other one is MPEG-1 Layer2. The option with bracket is the current state.

3.2.1.5 Audio ES Mode

User can set the audio ES mode by pressing “Enter” key，there are four kinds of audio modes(stereo, joint stereo, dual channel and single channel).

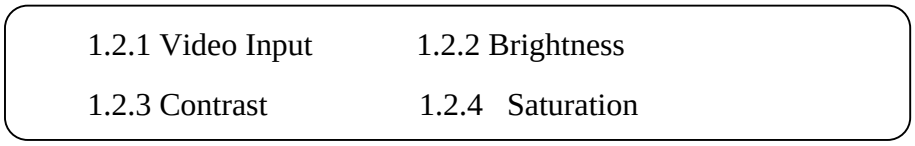
“1/2” indicates the current page.

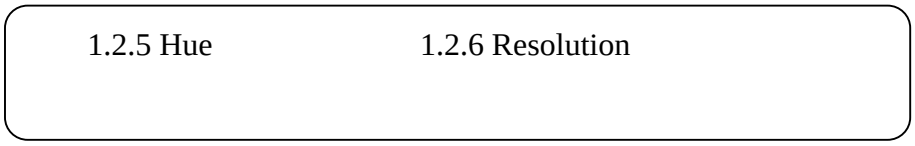
3.2.1.6 Audio Gain

Device will firstly identify whether this equipment supports the audio gain or not. If this device supports this function, the default value is -11db, If not, the default value is 0db, and the submenu goes as follows:

3.2.2 Video Setting

Device displays the following submenu after user enters into the video setting by pressing “Enter” key.





3.2.2.1 Video Input

Every passage has only CVBS input. Device displays the video formats menu by pressing “Enter” key.

After users pressing the “Enter” key again, the LCD will display the following interface”, and users can set one of the following video standard.

3.2.2.2 Brightness, Contrast, Saturation, and Hue

User can adjust the relevant parameters of input video with the submenus of Brightness, Contrast, Saturation and Hue, and the adjustable range is 0~255.

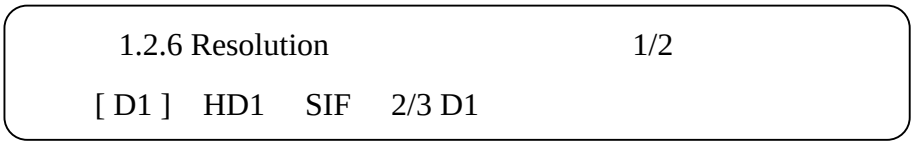
The number outside the parentheses is decimal system, and the number inside the parentheses is hexadecimal.

3.2.2.3 Resolution

The LCD will display the following interface after users enter “resolution” by pressing “Enter” key. User can select one of the following five resolutions, and the five resolutions are D1、HD1、SIF、2/3D1 and 3/4 D1.

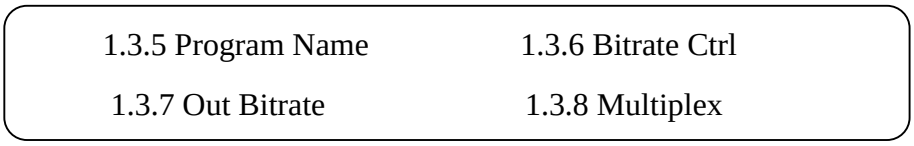
PAL：(D1-720*576、HD1-352*576、SIF-352*288、2/3D1-480*576、3/4D1-544*576)

NTSC:(D1-720*480, HD1-352*480, SIF-352*240, 2/3D-480*480、3/4D1-480*576）



3.2.3 Output Setting

The LCD will display the following submenus after user firstly entering the output setting menu by pressing “Enter” key.



3.2.3.1 Video/Audio PID Setting

User can modify the parameters by pressing UP/DOWN key after entering the edit state by pressing the “Enter” key. After finishing relevant modification, user can press “Enter” to take effect. And the maximal value of PID should be no greater than 0×1fff.

3.2.3.2 Provider and Program Name

These two items are read-only; user can modify them in the network management software. One is Program Provider and the other is Program name.

3.2.3.3 Code Rate Control Mode

User can set the code rate control mode by pressing “Enter” key, and the LCD will display the following page.

Note: 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.

3.2.3.4 Out bit-rate

By press “Enter” key, user can modify relevant parameter of encoding rate (adjustable range: 0.8M~20M), the specific steps are displayed as follows:

Note: **The parameter at the upper and right corner indicates the total effective output bit-rate from ASI output port.**

3.2.3.5 Multiplex

In this menu, user can choose whether to multiplex or not. **YES** means the system multiplexes this program's SPTS into output MPTS. The option with * is the current choice, and the option with

3.2.3.6 Enable or disable video avail

In this interface, users can decide whether to open the video avail function. This setting is mainly used for digital audio broadcasting.

User can complete the system setting with the above menus.

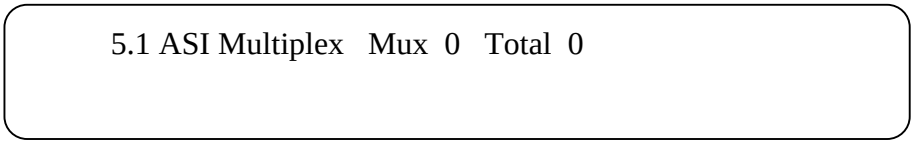
3.2.4 ASI Input Multiplexing

After entering the submenu by pressing “Enter” key, the device will display the programs’ list from the ASI input port. User can press UP/DOWN to choose the program needs to be multiplexed, and then press “Enter” key to confirm the setting.

“√” means the program has been multiplexed.

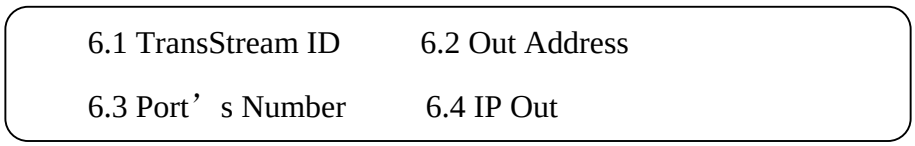
“Mux 0” means ‘0’ program has been multiplexed.

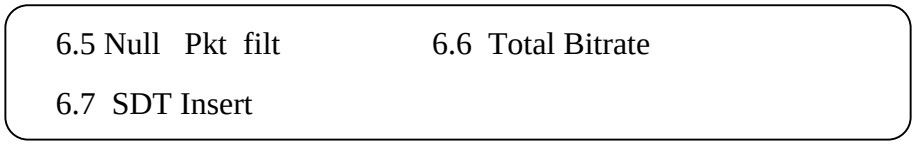
“Total 4” means there are 0 programs.



3.2.5 Output Setting

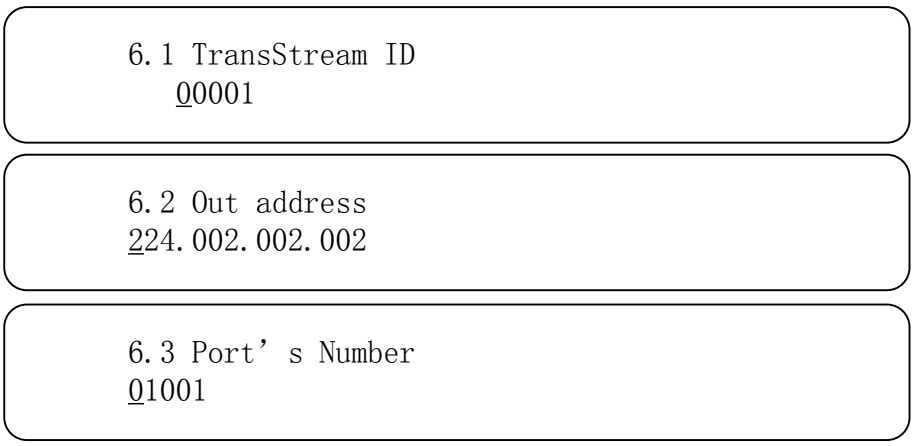
User can set the parameters of the following options at these menus.





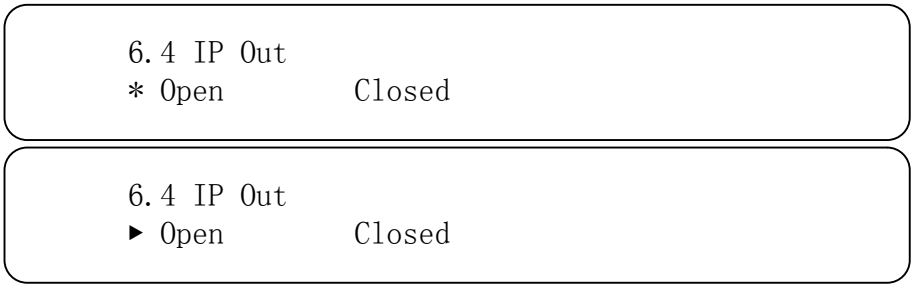
3.2.5.1Transport Stream ID, Output IP Address, Output IP Port

User can modify the parameters in the following submenus. The details are displayed as follows:



3.2.5.2 Enable/Disable Output IP Stream

User can enable or disable the IP output function by setting the value to “open” or “closed”.

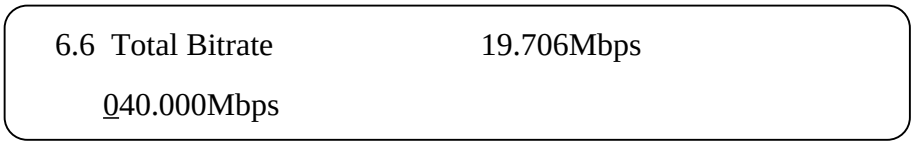


3.2.5.3 Null Packet Filtering

User can decide whether device filters the null pockets in the IP output. For IPTV implementation, filtering null pockets can save network bandwidth, but it will deteriorate PCR accuracy. Therefore, it is not recommended for DVB implementation.

3.2.5.4 System Output Code Stream Setting

The Output Bit-rate includes the output's effective bit-rate plus stuffed null pockets bit-rate to make the transmission bit-rate stable. Normally the suggested value of this parameter is the average of Output Bit-rate plus 3Mbps and the default setting is 40 Mbps



☞**Caution:**

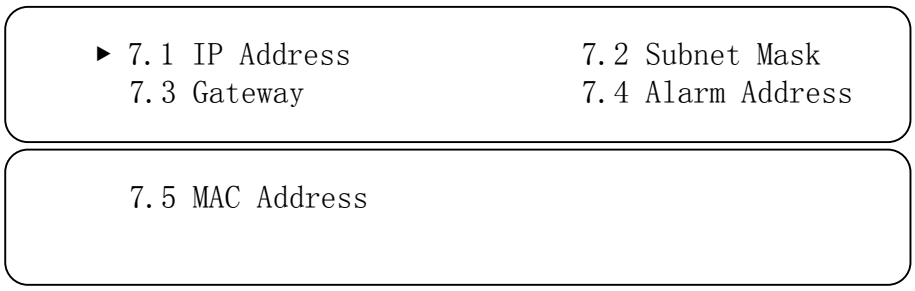
It is important to set the correct value for this parameter to assure the device work normally. If the value is smaller than the encoder output's effective bit-rate, this encoder's output will lose many encoding data, while if the value is far greater than the encoder output's effective bit-rate, the encoder's next stage device will overflow.

3.2.5.5 SDT Insert Setting

User can decide whether to insert SDT, the detail operation will display in following page:

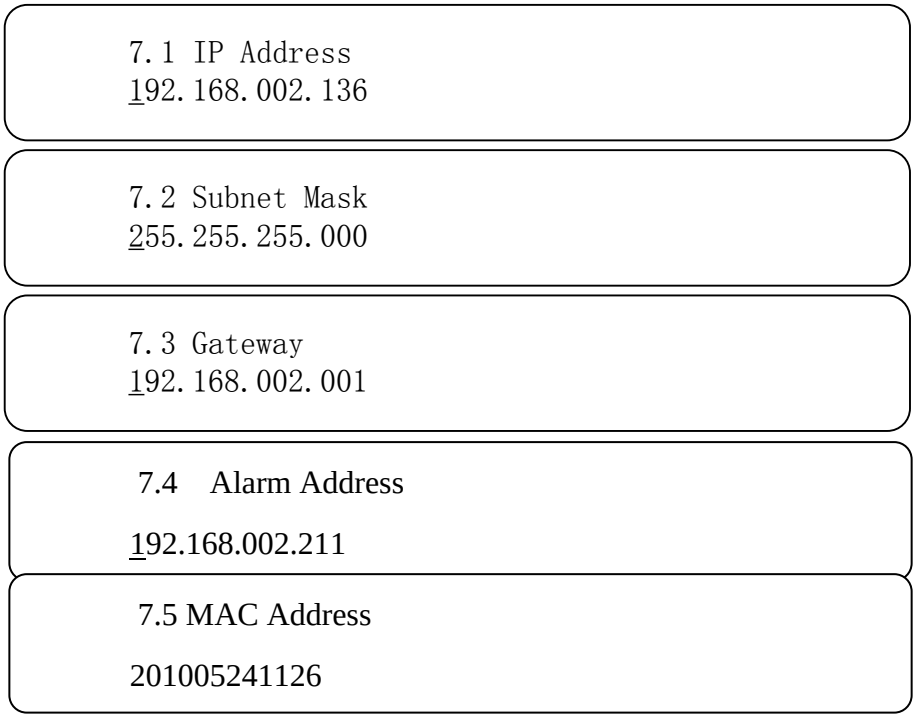
3.2.6 Network Setting

By pressing "Up/Down" to choose this item, "Enter" and "Left/Right" to set the parameters. The system displays following pages.



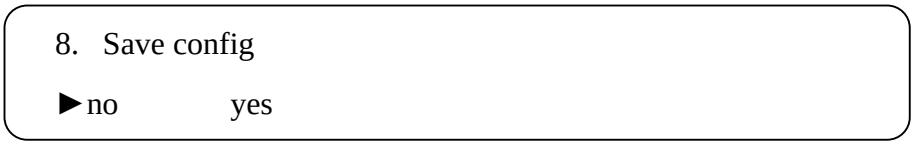
Note: The MAC address is the factory default setting, and it's unique.

Under the following submenus, user can set relevant parameters by pressing "Enter" key and "Up/Down" key. The system displays following pages.



3.2.7 Save Setting

User can save configuration parameters with the following menu.



3.2.8 Load config

3.2.8.1 Loading Saved Configuration

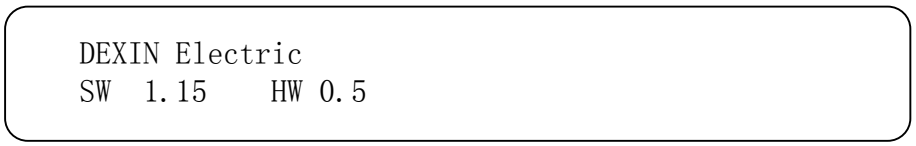
User can restore the device into the last saved configuration by choosing **yes**.

3.2.8.2 Restoring Default Configuration

User can restore the device into factory configuration by choosing **yes**.

3.2.9 Version

User can check the device hardware and software version in this interface:



Chapter 4 NMS Setting

Network Management System Profile

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

4.1 Installation

The software doesn't need special installation. Users 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 4.01E.exe is 4.01 English version). When the network management software is running, it will generate two files as follows:

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

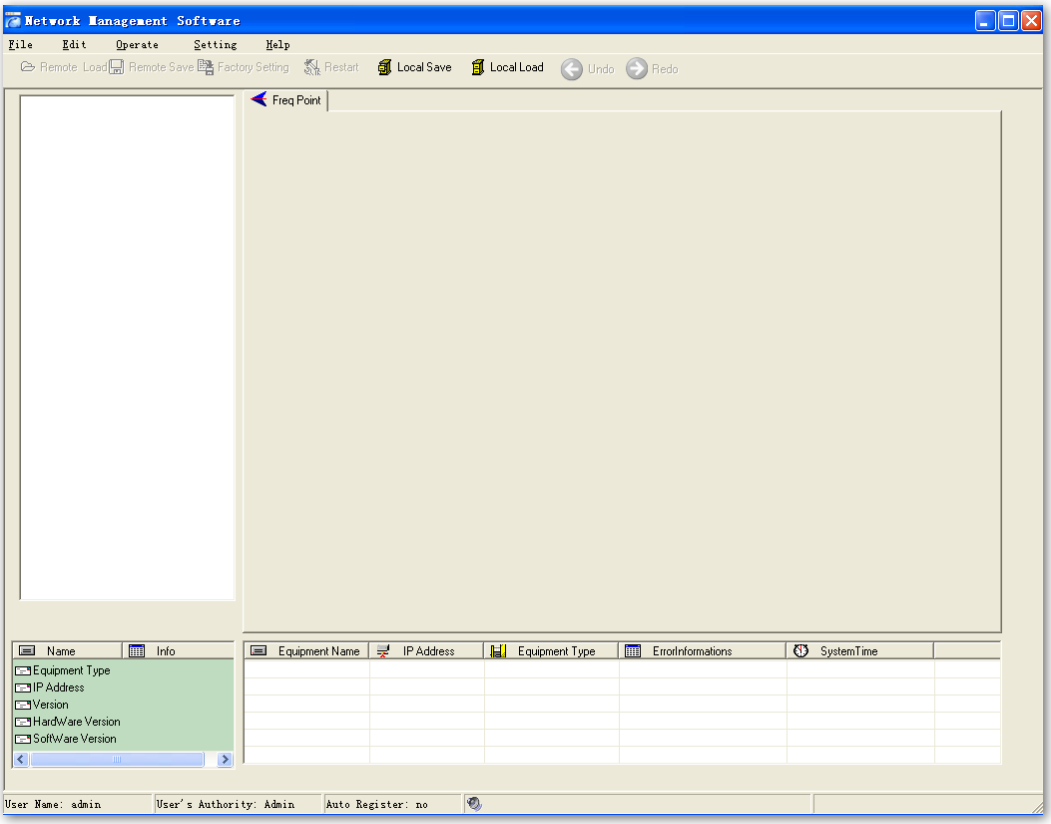
4.2 Software Operation

4.2.1 Login Interface

After executing the NMS software, user can input username and password at the pop-up "User sign In" window.

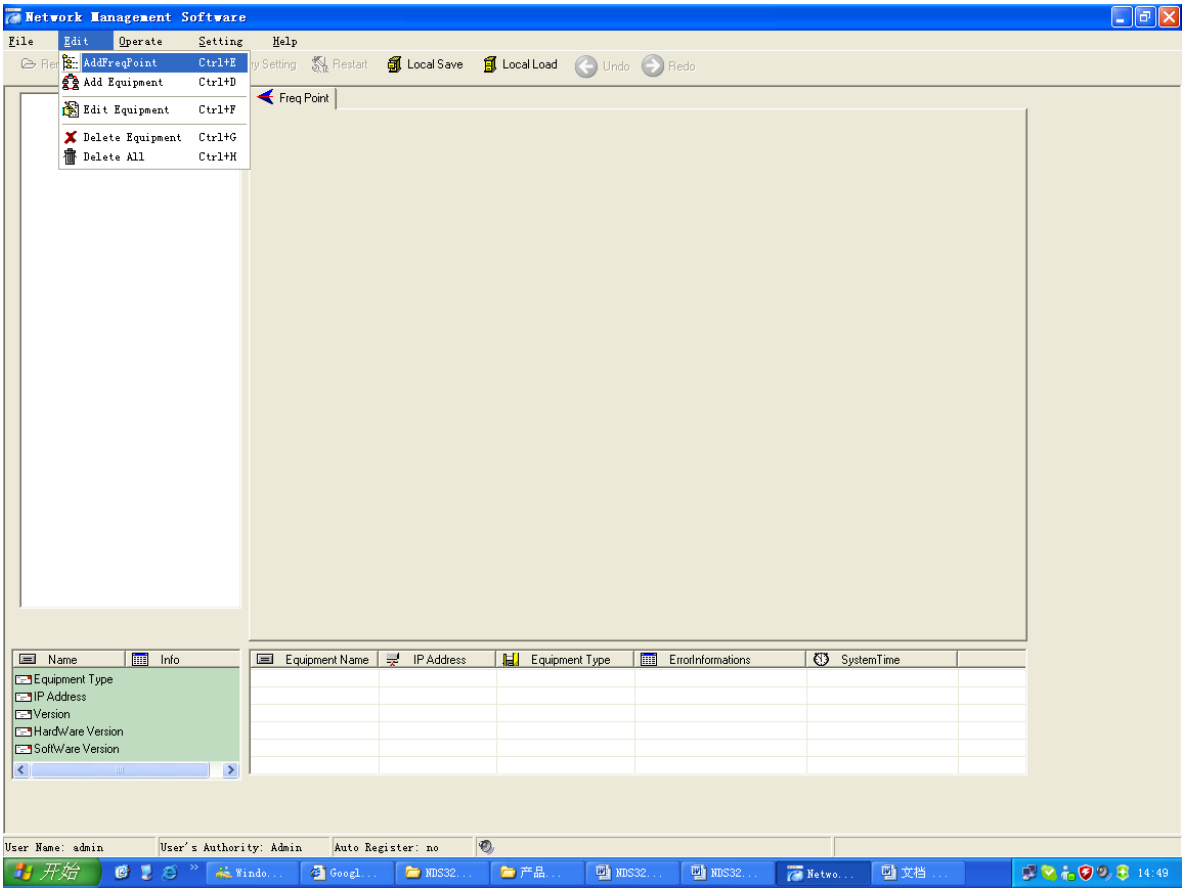
User can login the NMS by pressing **Confirm** key after inputting user name and password. Upon the inputs, the software will verify them with database record automatically. If both of them are correct, the main interface will appear. Both of the default user name and password are **admin**.

4.2.2 Main Interface

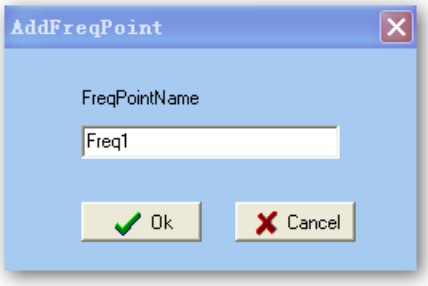


User can create a device node tree in the left column by adding, modifying and deleting the device node. This software provides a powerful node operation function, and the user can edit various parameters in the device tree for management and classification.

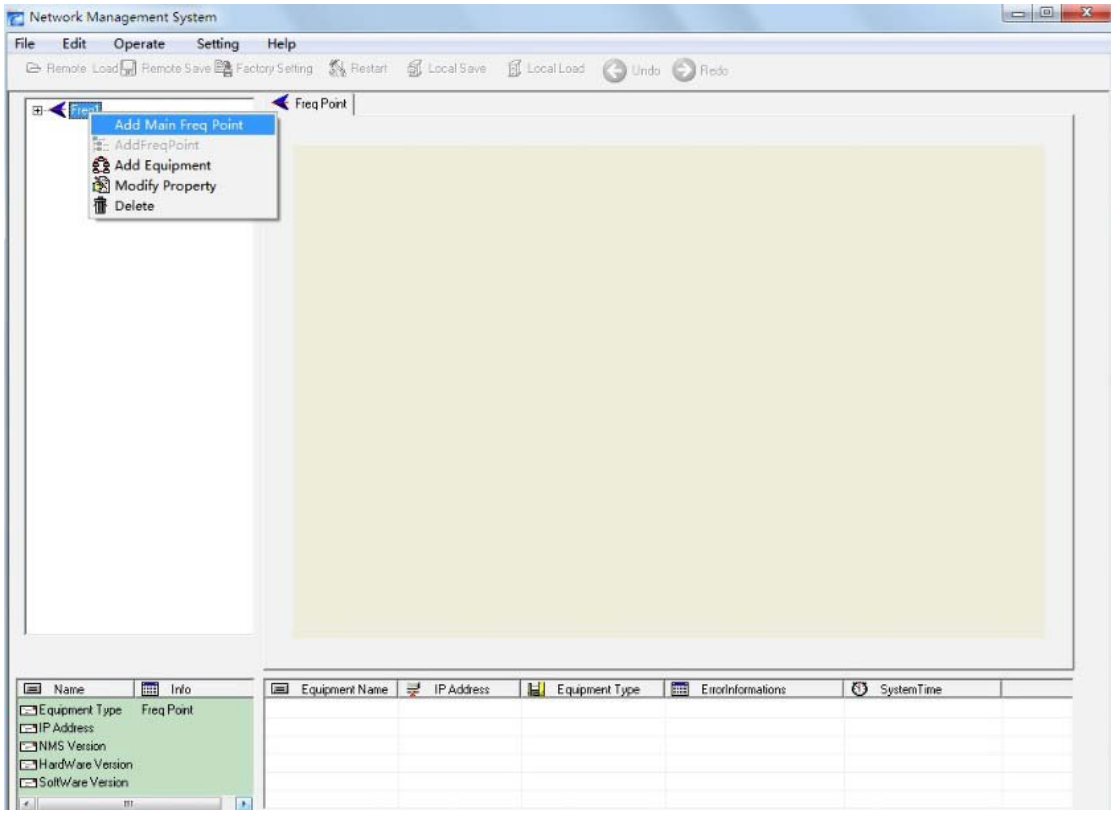
4.2.3 Adding Frequency Point



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

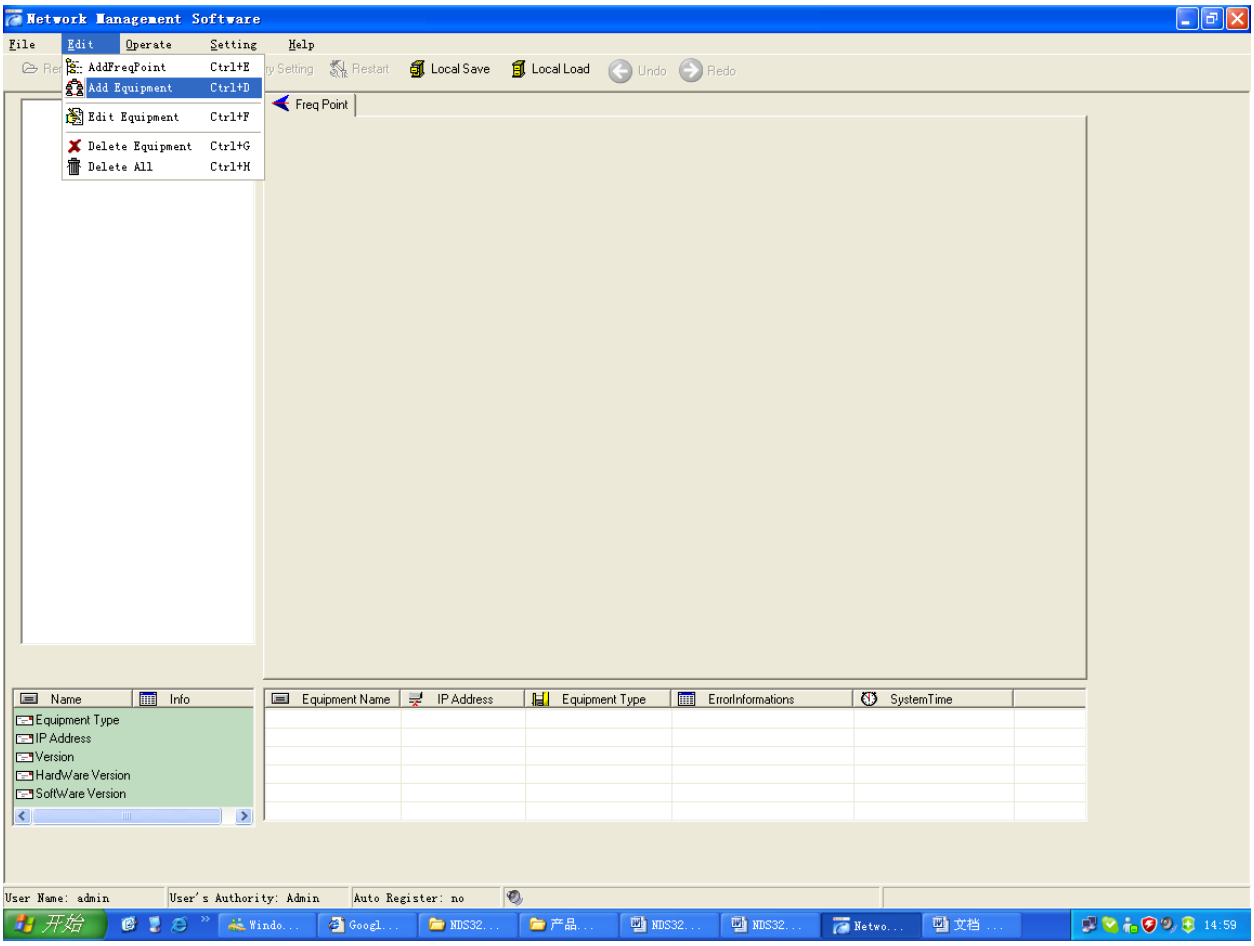


User can also click right mouse key to pop up the short-cut menu in device tree or in the left blank column, then the corresponding dialog box will pop up by choosing **Add Main Freq Point.** The device will confirm the given frequency while user clicks **OK.**

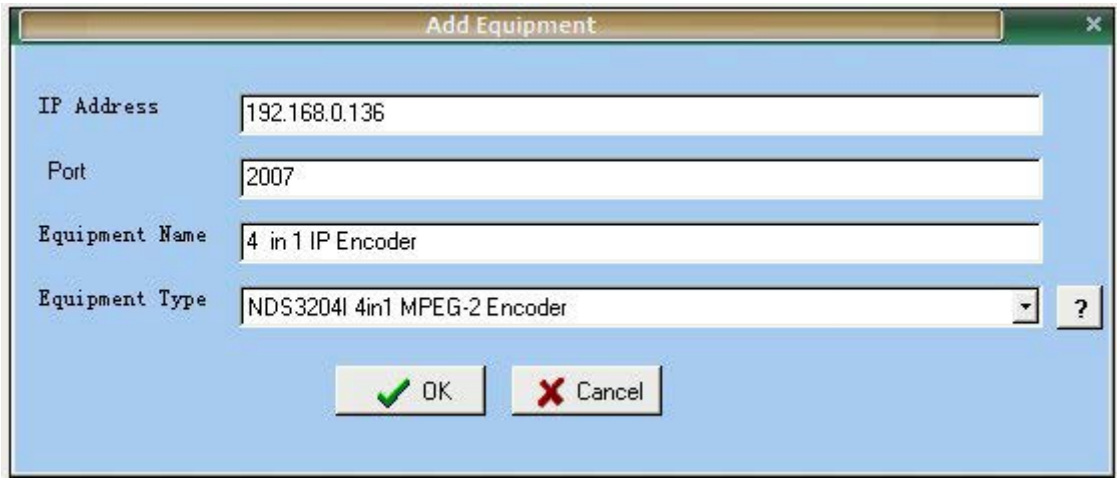


4.2.4 Adding Equipment under Given Frequency Point

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.



4.2.5 Edit Equipment Interface

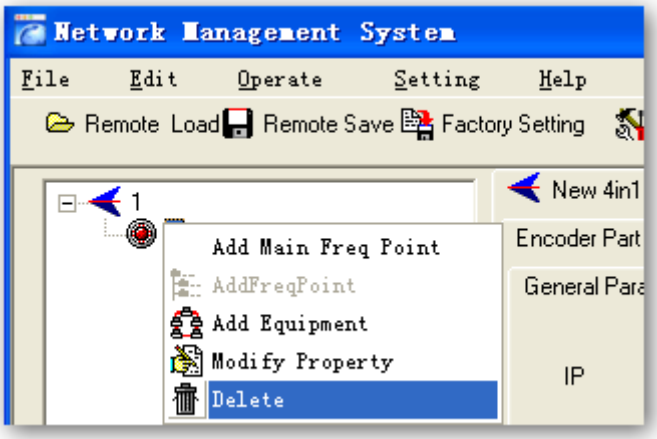


User should follow the steps as below:

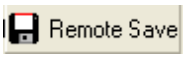
- Choosing the connected equipment type in drop down list of Equipment Type by clicking the "▼" in the above dialog box.
- Inputting the equipment name
- Inputting the device IP address
- Inputting the device port number

4.2.6 Delete Equipment

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



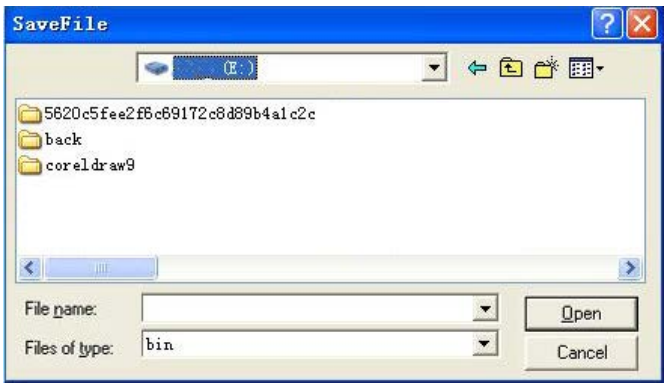
4.2.7 Save Configuration

After finishing all the parameters setting, user can click 

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 

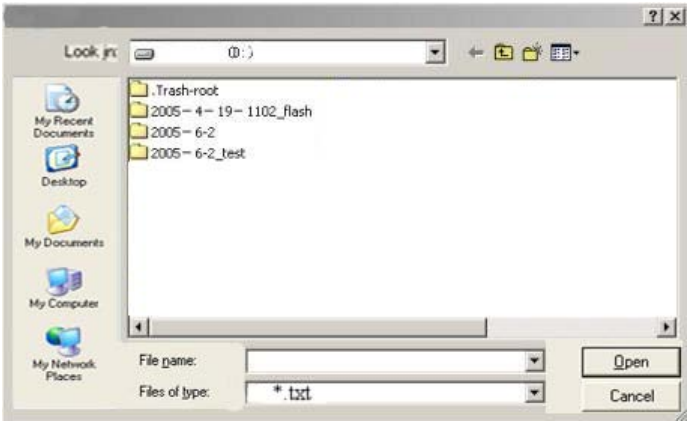
Alternatively, user can also click the 

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 

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.



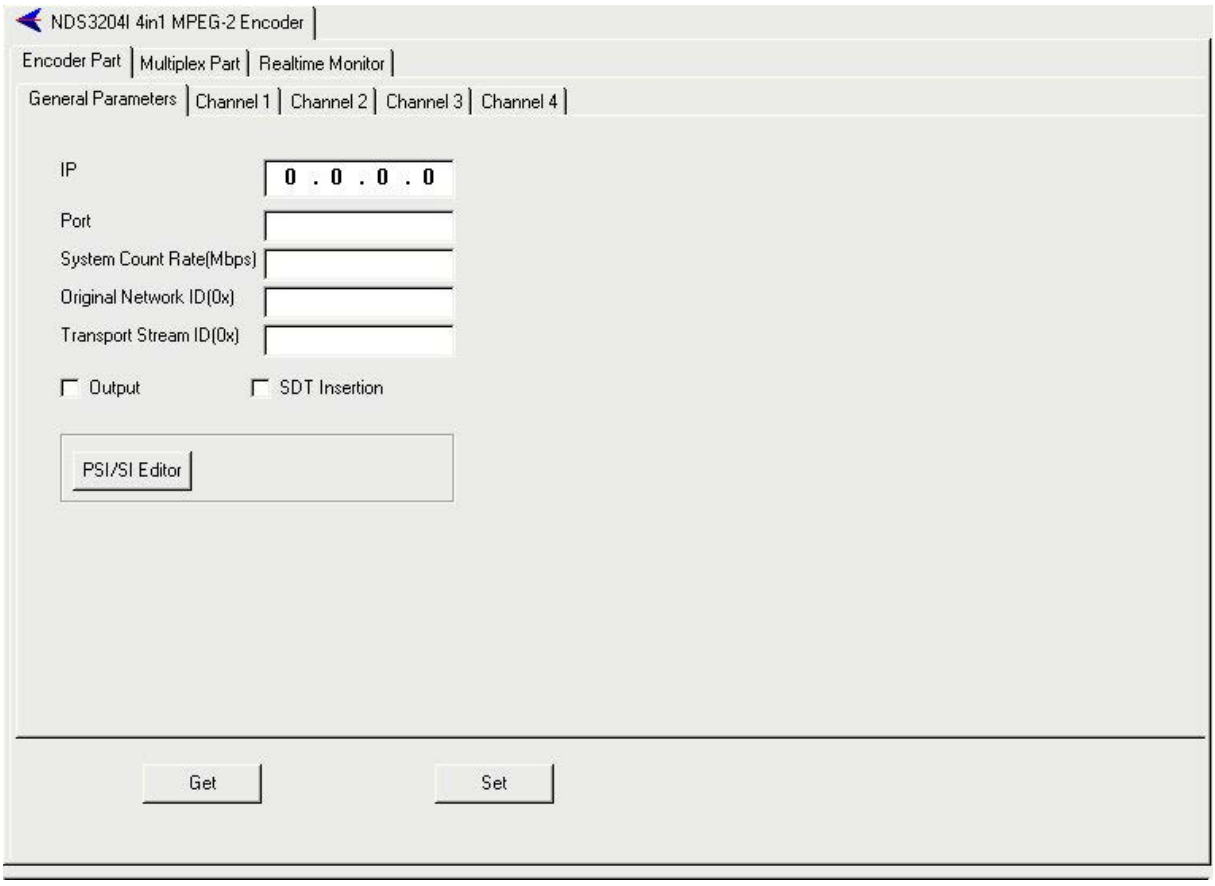
4.3 4 in 1 MPEG-2 Encoder Operation

User can choose the 4 in 1 MPEG-2 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, etc.

Set: making the current parameters, which shows in the NMS software, activate.

Get: reading the current device's activating parameters and showing them on NMS software.

4.3.1 General Parameters Setting



4.3.1.1 Output IP address

This 4 in 1 IP Encoder has one IP output address stream (MPTS over UDP).This field indicates the destination of the IP output.

4.3.1.2 Port of the IP output

The field indicates that the IP output stream is going to the IP output port.

4.3.1.3 System Count Rate

This field indicates the effective output bit-rate of this device.

4.3.1.4 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.

4.3.1.5 Transport Stream ID

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

4.3.1.6 Enable or Disenable IP Output

This checkbox indicates the device's IP output is activated or not.

4.3.1.7 Insert SDT

This checkbox indicates whether the device insert SDT or not.

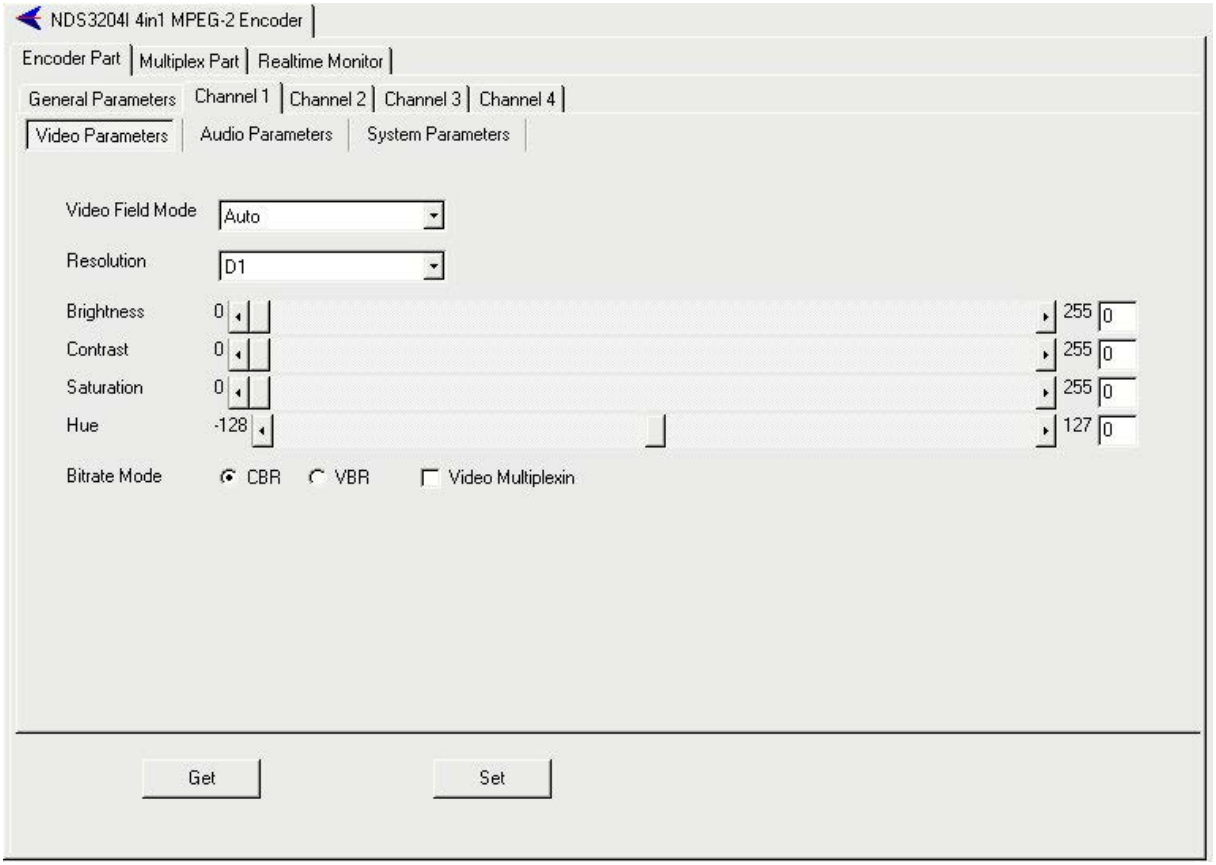
4.3.1.8 PSI/SI Editor

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

PSI: Program Specific Information

SI: Service Information

4.3.2 Video Parameters



4.3.2.1 Video Field Mode

The pull-down list indicates the device input video signal's format. User can choose PAL or NTSC according to the video input, or set AUTO to make device automatically detect the field mode from input.

4.3.2.2 Resolution setting

Users can set the program's resolution for encoding and this resolution must be in accordance to the input video signal source. This 4 in 1 Encoder can take five kinds of resolution video sources as input. (D1, HD1, SIF, 2/3D1 and 3/4D1)

4.3.2.3 Brightness, Contrast, Saturation and Hue Setting

Users can set the parameters of the video brightness, contrast and saturation information by moving respective scrollbar. The adjustment range is 0~255. Moreover, users can also set the parameters of the hue information whose adjustable range is -128~127 in this field.

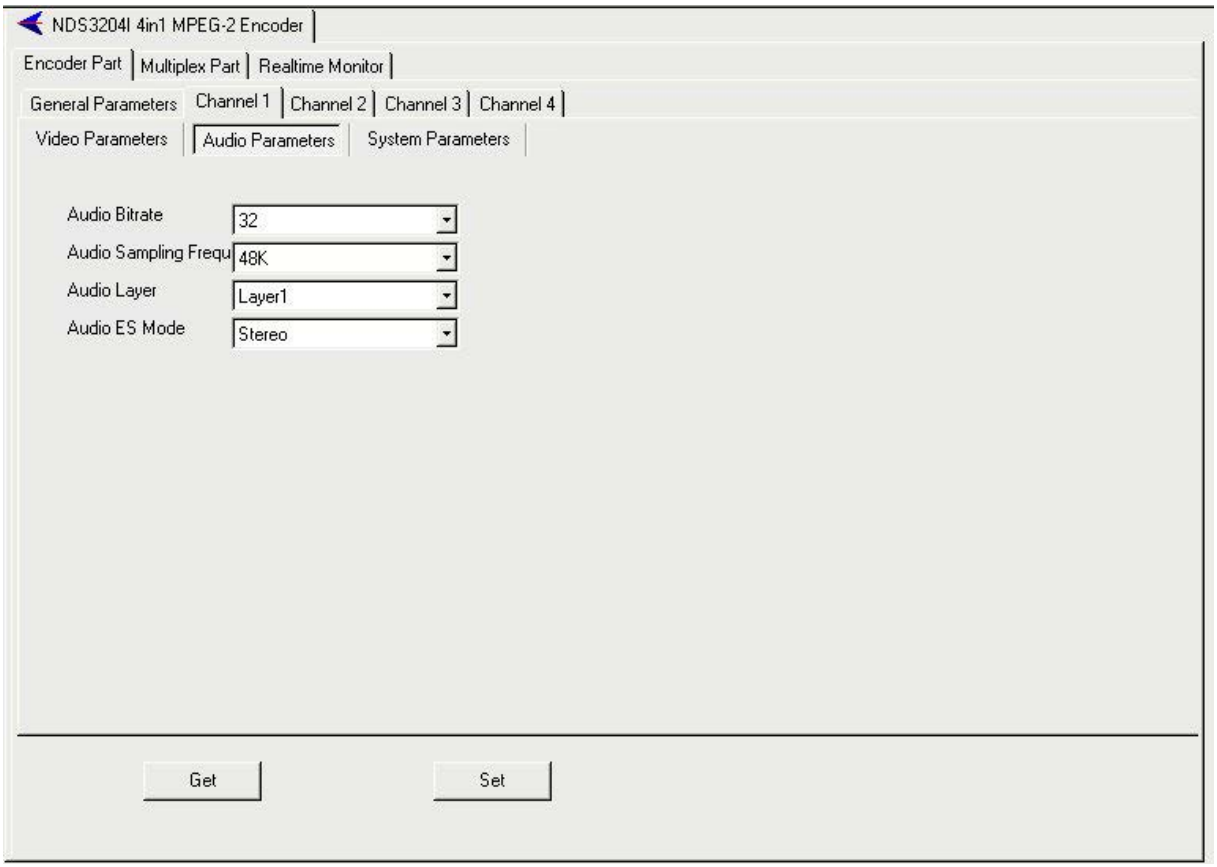
4.3.2.4 Bit- rate Mode

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.

4.3.2.5 Video Multiplexing

This radio button indicates whether to multiplex video or not.

4.3.3 Audio parameters



4.3.3.1 Audio Bit-rate

This pull-down list decides the encoding chipset will adopt what bit-rate to encode the input signal, and users can refer 3.2.1.2 for detail.

4.3.3.2 Audio Sampling

Users can select one of the following three audio sampling frequencies in this pull-down list. Users can also refer 3.2.1.3 for detail.

4.3.3.3 Audio Layer

This pull-down list indicates the audio input format. There are two options for this (layer 1 and layer 2)

4.3.3.4 Audio ES Mode

In this pull down list, users can choose one of the following four kinds of encoding audio mode (stereo, joint stereo, dual channel and single channel), users can also refer 3.2.1.5 for detail.

4.3.3.5 Audio Gain

User can set the parameters of the audio gain by moving respective scrollbar, the adjustable range is -11～11.

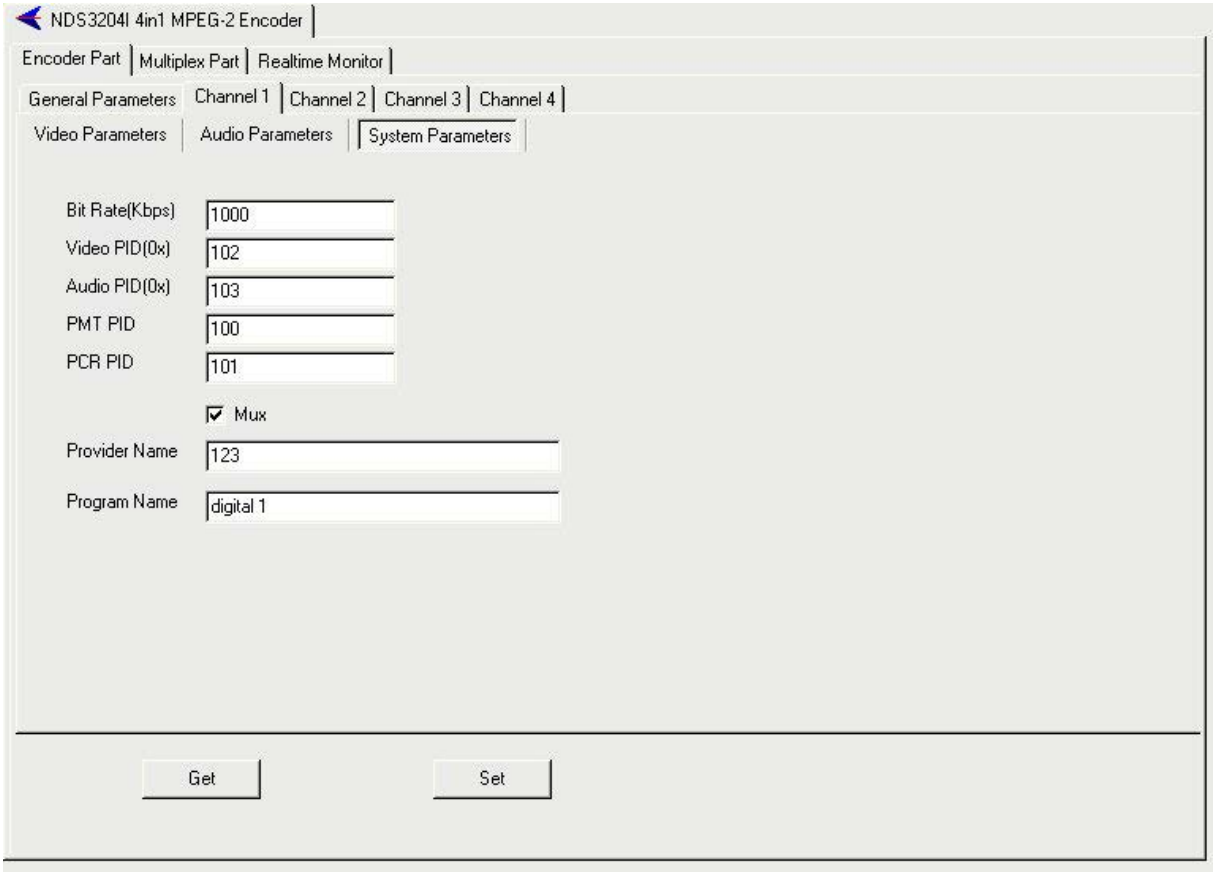
4.3.4 System parameters

Each channel has a system parameter icon button. User can click **Get** to read the default settings from encoder, or separately set the system information such as encoding bit-rate and PMT/PCR/video/audio PID video format of every channel on this table, and then click **Set** to save the settings. And the provider name and program name can be modified on this table.

PMT: The PMT (Program Map Table) identifies and indicates the locations of the streams that make up each service and the location of the Program Clock Reference fields for a service.

PCR: Program Clock Reference

PID: Packet Identifier



4.3.4.1 Output Bit-rate

This radio button indicates the relevant parameter of encoding rate.

4.3.4.2 Video PID

This field sets Video PID. The value ranges from 0 to 0x1FFF.

4.3.4.3 Audio PID

This field sets Audio PID. The value ranges from 0 to 0 x1FFF.

4.3.4. 4PMT PID

This field sets PMT PID. The value ranges from 0 to 0 x1FFF.

4.3.4.4 PCR PID

This field sets PCR PID. The value ranges from 0 to 0 x1FFF.

4.3.4.5 Provider Name

This field sets the name of the program provider.

4.3.4.6 Program Name

This field sets the name of the program.

4.3.4.8 Multiplexing Enable

This checkbox “MUX” decides whether the program will be multiplexed to output TS.

4.3.5 ASI Input Multiplexing Setting

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. The CH1, CH2, CH3 and CH4 represent the 4 encoding Channels of this 4 in1 encoder and the CH5 represents the ASI input. 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.

4.3.5.1 Select Program

User can select the program from input port and click this button to send it to output including ASI and IP.

4.3.5.2 Cancel Program

User can delete the selected program from output TS.

4.3.5.3 Modify Program

User can trigger a window to modify the program's properties and attributes.

4.3.5.4 Refresh Input

User can select one of the input ports and then click this button to get the program list of this input port.

4.3.5.5 Refresh Output

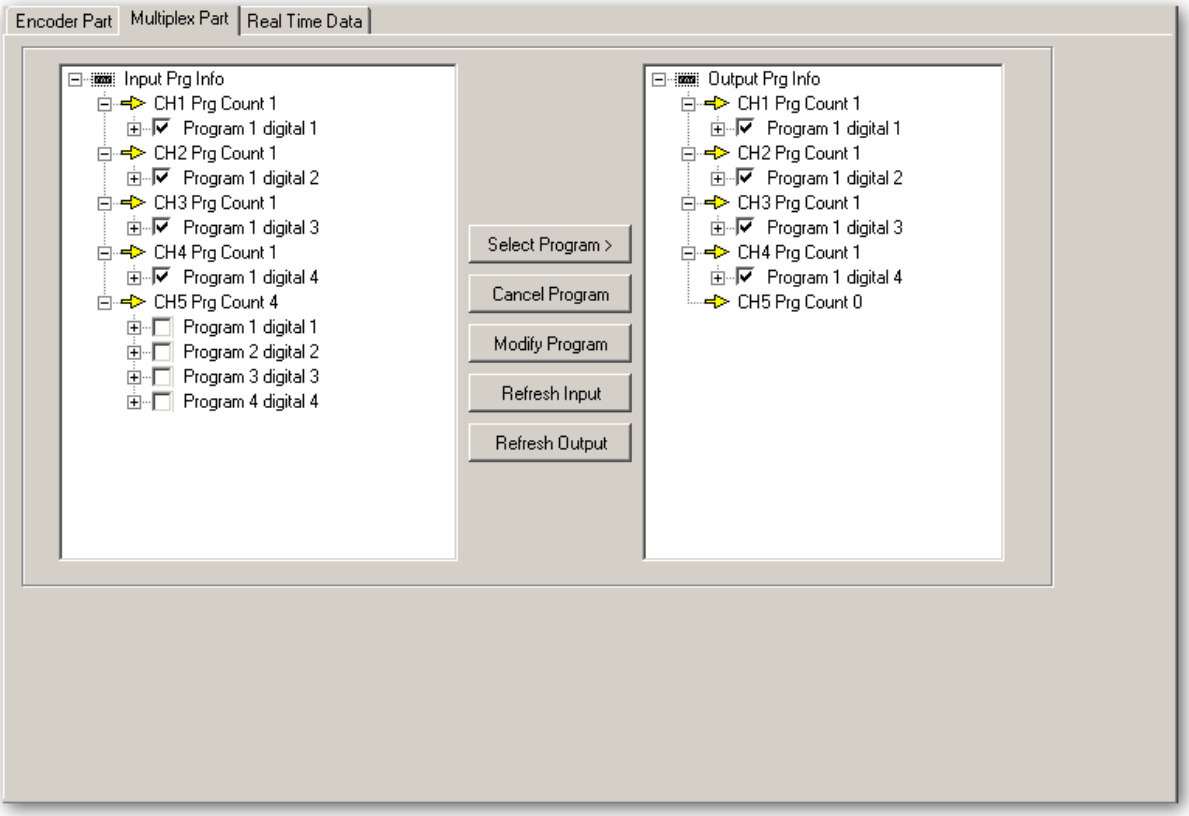
User can get the output program list and from which they came.

4.3.5.6 Multiplexing Operation

Initially, system would not show any programs at any port. CH1, CH2, CH3, and CH4 are single program transport stream from the 4 encoding channel. User can select given channel, say, 

and then click 

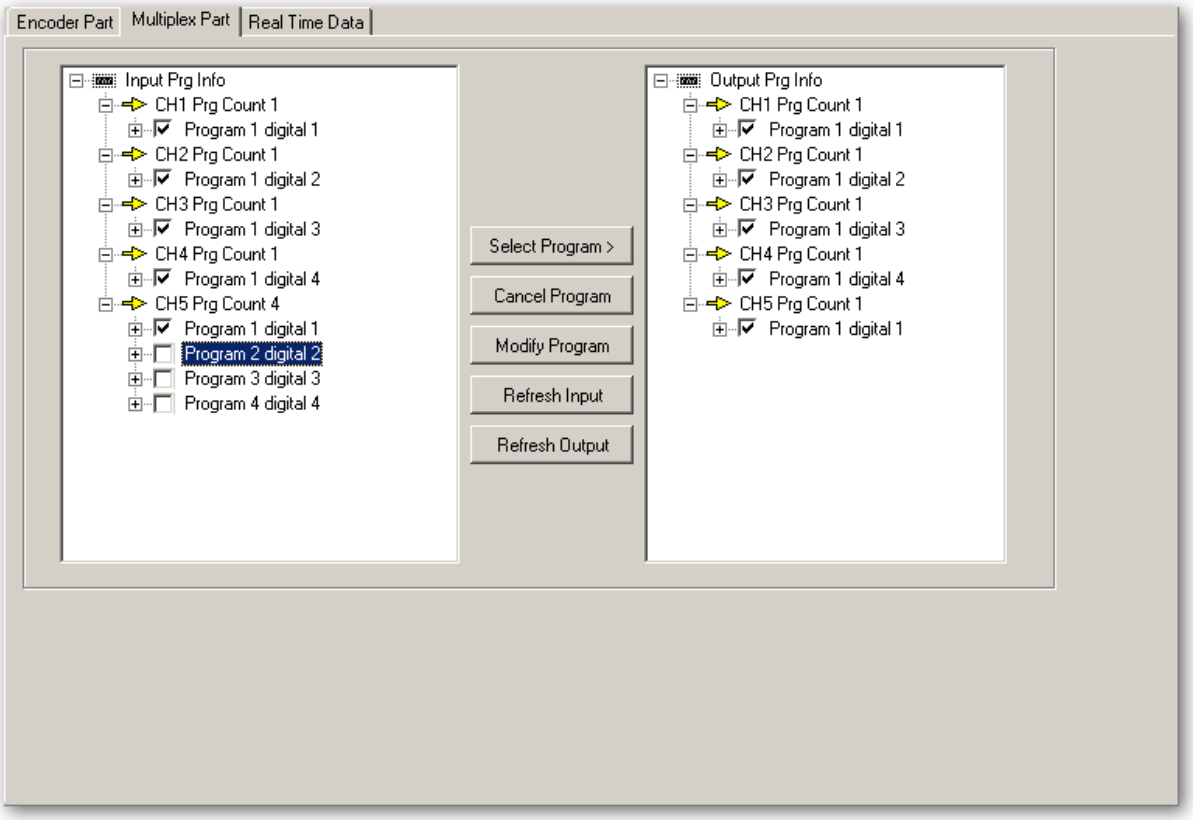
button, the device will show the program list of the channel of "CH1". (CH2, CH3, CH4 are similar) Because the program in CH1 is the program from encoding channel, it is multiplexed to output by default. The "√" symbol means the program has been multiplexed to Output.



CH5 is ASI input channel. By default, all programs will not be multiplexed. User can multiplex those programs by clicking the specified program, say, 

, and then clicking 

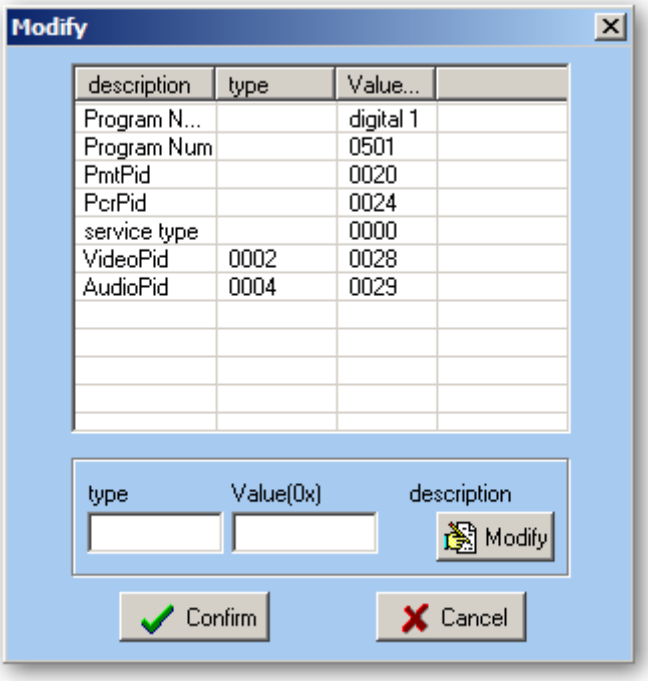
button. The selected program will be multiplexed to the output TS, and the CH5 will automatically refresh and display the program.



User can choose any program of the output channels, and then click 

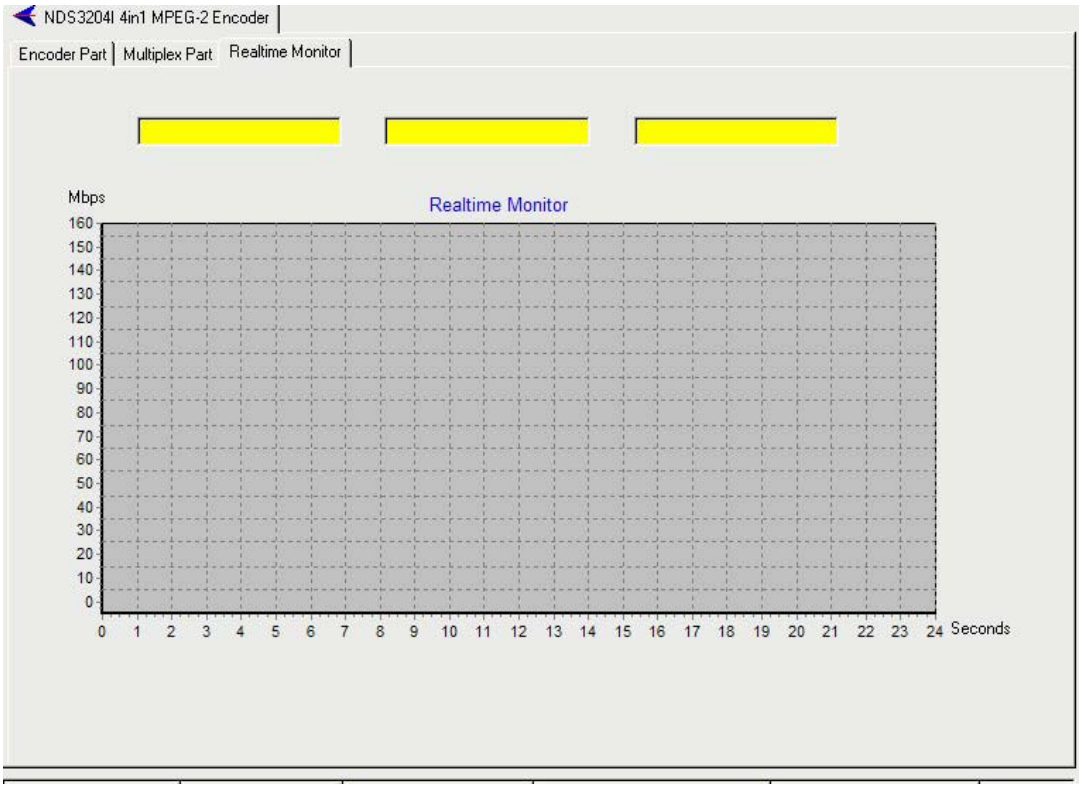
button to pop up the program modify interface. After modification, user can click 

to confirm. System will automatically refresh new output program.



4.3.6 Real-time Monitoring of Output Stream

The current effective total output stream and the number of output programs will be displayed on this table, and users can also clearly observe the changing output stream on it.



4.3.6.1 Current Program Number

This field indicates the number of the programs in the output TS.

4.3.6.2 Current Bit-rate

This field indicates the output TS's real-time effective bit-rate.

4.3.6.3 Maximum Bit-rate

This field indicates the maximum bit-rate which outputs TS's real-time effective bit-rate ever reached.

Chapter 5 Troubleshooting

DEXIN's ISO9001 quality assurance system has been approved by CQC organization. For guaranteeing the products' quality, reliability and stability, all DEXIN products pass the testing and inspection before products are shipped out factory. The testing and inspection scheme already covers all the Optical, Electronic and Mechanical criteria which have been published by DEXIN. To prevent potential hazard, please strictly follow the operation conditions.

Preventive Measures

- Installing the device at the place in which the environment temperature is 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 all signal cables have been properly connected
- Frequently switching on/off device is prohibited; the interval between every switching on/off must be greater than 10 seconds.

Conditions need to unplug the power cord

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

Chapter 6 Packing list

- DCH2400EC 4 in 1 MPEG-2 Encoder 1pcs
- User's manual 1pcs
- Analog Audio/Video Composite Input Cable 4pcs
- ASI cable 1pcs
- Power cord 1pcs