ASCENT
Communication Technology

ACT EC2400

HD Encoder

User Guide

Revision A

ACT EC2400 4-in-1 MPEG-4 AVC / H.264 HD Encoder User Manual

ACT Document Number: ACT EC2400 User Manual Revision A

This document is produced to assist professional and properly trained personnel with installation and maintenance issues for the product. The capabilities, system requirements and/or compatibility with third-party products described herein are subject to change without notice.

For more information, contact ACT: sales@ascentcomtec.com

Revision History

Revision	Date	Reason for Change
A	1/18/2016	Initial Release

Table of Contents

Chapter 1. Product Introduction

1.1 Outline

The ASCENT EC2400 4 in 1 MPEG-4 AVC/H.264 HD encoder is a professional HD audio & video encoding and multiplexing device with powerful functionality. It is equipped with 4 HDMI (or SDI) input channels allowing for 4 HD programs can be processed simultaneously. It adopts the MPEG-4 AVC/H.264 High Profile encoding format to guarantee the highest picture quality. The EC2400 has an ASI input and can multiplex the input TS with the 4 encoded programs to generate a stream output through ASI and IP. In addition, the PSI/SI information can be inserted into an MPTS output. In conclusion, the EC2400's highly integrated and cost-effective design makes the device widely used in varieties of digital distribution systems.

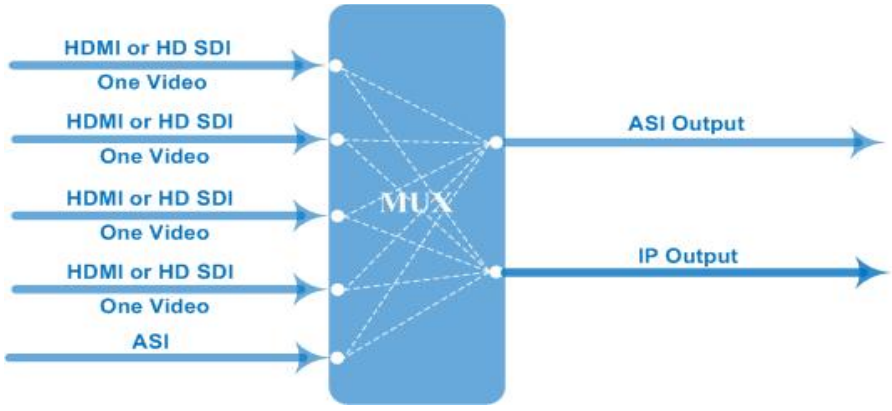
1.2 Main Features

- Supports AVC/H.264 High Profile Level 4.0 video encoding
- Supports advanced video pretreatment algorithm
- Supports MPEG-1 Layer II, HE-AAC (V2), and LC-AAC audio encoding formats
- 4 channel HDMI (or SDI) inputs and 1 ASI input with mux
- Supports PSI/SI editing and inserting
- Supports VBR or VBR video bitrate mode
- Supports 720P, 1080I, and 1080P HD video formats
- Supports ASI output MPTS or 4 × SPTS
- Supports IP output (UDP) MPTS and 4 channel SPTS, unicast/multicast
- Supports IP null packet filter
- Supports PID filter and transparent transport
- Real-time effective output bitrate monitoring
- Supports device updates through NMS port
- Supports LCD / keyboard operation and network management (SNMP)

1.3 Specifications

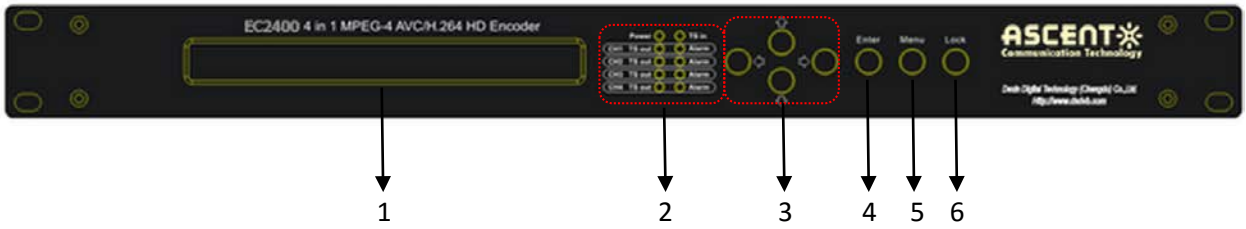
Input	4 × SDI input	EC2400-SDI
	4 × HDMI input	EC2400-HDMI
	1 × ASI input, BNC interface	
Video	Resolution	1920×1080_59.94P, 1920×1080_50P
		1920×1080_59.94i, 1920×1080_50i
		1280×720_59.94p, 1280×720_50p
		720x576_50i, 720x480_59.94i
	Encoding	MPEG-4 AVC/H.264 High Profile Level 4.0
	Bitrate	0.8 Mbps ~ 19 Mbps (each channel)
	Rate Control	CBR, VBR
	GOP Structure	IBBP
	Advanced Pretreatment	De-interlacing, noise reduction, sharpening
Audio	Encoding	MPEG-1 Layer II, HE-AAC(V2), LC-AAC
	Sampling rate	48 kHz
	Resolution	24-bit
	Bitrate	64 Kb/s ~ 384 Kb/s each channel
Multiplexing	1 × ASI input multiplexed and 4 encoding channel SPTS	
output	2 × ASI outputs, BNC interface	
	MPTS and 4 SPTS over UDP	
	10/100Base-T Ethernet interface	
	Supports unicast / multicast	
System	LCD/keyboard operation, net manager (SNMP)	
	Chinese-English control interface	
	Ethernet software upgrade	
General	Dimensions (W×D×H)	440mm × 410mm × 44.5mm
	Approx. weight	4 kg
	Temperature range	0 ~ 45°C(operating), -20 ~ 80°C(storage)
	Power Requirements	AC 110V±10%, 50/60 Hz
		AC 220V±10%, 50/60 Hz
	Power consumption	25W

1.4 Principle Chart



1.5 Appearance and Illustration

Front Panel Illustration:



Indicated 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 TS out – CH4 TS out: device starts to encode and output TS

CH1 Alarm – CH4 Alarm: device has stopped encoding or there is an encoding error

3 UP / DOWN, LEFT / RIGHT Keys

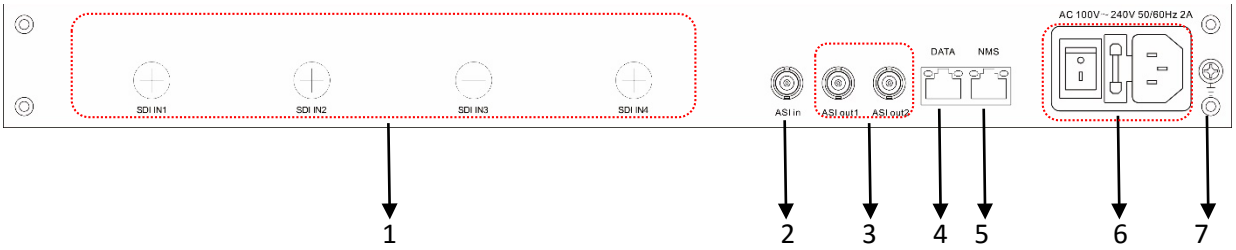
4 Enter Key

5 Menu Key

6 Lock Key

Rear Panel 1

Rear Panel Illustration (EC2400-SDI):



1 4 × HDMI Input Ports-- EC2400-HDMI

4 × SDI Input Ports-- EC2400-SDI

2 ASI Input Port

3 2 × ASI Output Ports

4 Data Port (for IP Signal Output)

5 NMS (Network Management Port)

6 Power Switch and Socket

7 Grounding Pole

Chapter 2. Installation Guide

2.1 Acquisition Check

Users should check the contents of the package of the device prior to installation to ensure that all items on the packing list are included. Items contained within the package:

- EC2400 4-in-1 MPEG-4 AVC/H.264 HD Encoder
- User Manual
- 4 × HDMI Cable for EC2400-HDMI
- 4 × SDI Cable for EC2400-SDI
- ASI Cable
- Power Cord

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

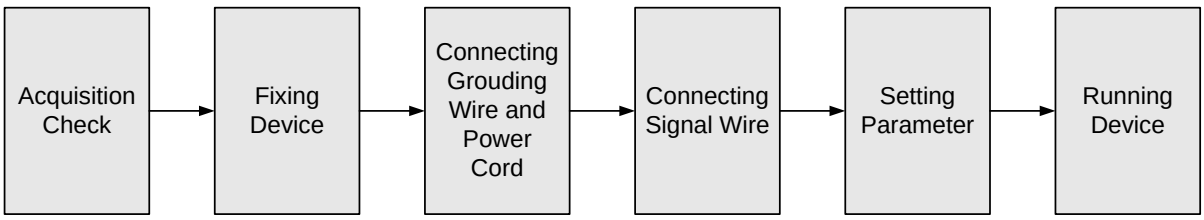
2.2 Installation Preparation

Please follow the below steps to install the device. The details of installation will be described in this chapter. Users can also refer to the rear panel chart in Chapter 1 during the installation.

The main contents of this chapter include:

- Checking the device for possible missing or damaged components
- Preparing a suitable environment for installation
- Installing the encoder
- Connecting signal cables
- Connecting communication port (if necessary)

2.2.1 Device Installation Flow Chart:



2.2.2 Environment Requirements

Item	Requirement
Machine Hall Space	When installing the machine frame array into a machine hall, the distance between 2 rows of machine frames should be 1.2 ~ 1.5 m and the distance between a machine frame and a wall should be no less than 0.8 m.
Machine Hall Floor	Electric Isolation, Dust Free Volume resistivity of ground anti-static material: 1×10^{7} ~ $1\times10^{10\Omega}$ Grounding current limiting resistance: 1M (Floor bearing should be greater than 450 kg/㎡)
Environment Temperature	5 ~ 40℃ (sustainable), 0 ~ 45°C(temporary) Installing air-conditioning is recommended
Relative Temperature	20% ~ 80% (sustainable), 10% ~ 90% (temporary)
Pressure	86 ~ 105 kPa
Door & Window	Install rubber strips to seal door gaps and dual-level window glasses.
Wall	Can be covered with wallpaper or non-bright paint.
Fire Protection	Fire alarm system and extinguisher
Power	Device power, air conditioning power, and lighting power should all be independent of each other. Device power requires AC power 220V 50 Hz. Please check carefully before running.

2.2.3 Grounding Requirements

- Good grounding designs are the basis of reliability and stability for these devices. Good grounding is also the best guarantee against lightning arresting and interference rejection.
- All machine frames should be connected by protected copper strips
- Coaxial cable outer conductors and isolation layers should maintain proper electrical conduction with the metal housing of the device.
- The grounding conductor should be copper in order to reduce high frequency impedance.
- The grounding wire should be as thick and short as possible and avoid circling.
- Users should make sure both ends of the grounding wire are good conductors and rust-resistant.
- Users should not use any other device as part of the grounding electric circuit.
- The area of conduction between the grounding wire and device's frame should be no less than 25 mm^2.
- Connect the device's grounding rod to the frame's grounding pole with copper wire.

2.3 Wire's Connection

The grounding wire conductive screw is located at the right end of the rear panel, and the power switch, fuse, and power supply socket are right next to that. The power switch is on the left, the power supply socket is on the right, and the fuse is between them.

- Connecting Power Cord

Insert one end into the power supply socket, and insert the other end to an AC power source.

- Connecting Grounding Wire

The grounding resistance should be less than 1Ω.

⚠ **Caution**	Before connecting power cord to EC 2400 4-in-1 MPEG-4 AVC/H.264 HD Encoder, user should set the power switch to "OFF."

2.4 Signal Cable Connection

The signal connections include the input signal cable and the output signal cable. The cables look like the following:

2.4.1 HDMI input cable illustration (EC2400-HDMI):

2.4.2 SDI input cable illustration (EC2400-SDI):

2.4.3 2.4.3 ASI output cable illustration:

2.4.4 Network Cable illustration (CAT5):

2.4.5 HDMI or SDI input interface connection

First find the HDMI or SDI interface on the device according to the connector mark described on the rear panel illustration in section 1.6, and then connect the HDMI or SDI cable (in the accessories). One end is connected to the head-end equipment and the other end to the encoder's HDMI or SDI input port. The encoder's HDMI or SDI input port and its connection are illustrated as follows:

2.4.6 ASI output interface connection

User can find the ASI output interface on the device according to the connector mark described on the rear panel illustration in section 1.6, and then connect the ASI cable (in the accessories). One end is connected to the encoder's ASI out connector (ASI out1, ASI out2) abd 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:

2.4.7 IP Output Interface connection

Users can find the DATA interface on the device according to the connector mark described on the rear panel illustration in section 1.6, and then connect the network cable (CAT5). One end of the network cable is connected to the encoder's DATA output connector, and the other end to the TS stream multiplexer IP input port or other device which can handle IP signal inputs. The encoder's DATA connection is illustrated as follows:

2.4.8 NMS Connection

Users can find the NMS interface on the device according to the connector mark described on the rear panel illustration in section 1.6, and then connect the network cable (CAT5). One end of the network cable is connected to the encoder's NMS connecter, while the other end should be attached to the computer or PC. The encoder's NMS connection is illustrated as follows:

Chapter 3. Operation

The EC2400 4 in 1 MPEG-4 AVC/H.264 HD Encoder's front panel is its user operating interface. Before operating, users can decide whether to use default settings or to customize the input and output parameters settings.

Keyboard Function Description:

ENTER: Activates the parameters which need modifications, or confirms changes after modifications are done.

MENU: Cancels presently entered value, or restores previous settings and returns to the previous menu.

LEFT/RIGHT: Moves the "►" to choose or set the parameters.

UP/DOWN: Modifies selected parameters or page up/down when no parameter is selected.

LOCK: Locks the screen / cancels the lock state. After pressing the lock key, the system will ask users whether or not they want to save present settings. If not, the LCD will display the current configuration state.

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

3.1 Initializing

After powering on the device, it will take a few seconds to initialize the system. The LCD will show the device name and output real-time bit rate data in the first row, and the 4 channels' input video resolution, frame rate, and real-time encoding bit rate in the second row in that order.

3.2 General Settings

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

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

3.2.1 Input Settings

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 4 submenus from Encoding Channel 1 to Encoding Channel 4. The setting principle is the same for Encoding Channels 1-4, so this manual only explains the process for one channel. After pressing the **ENTER** key, the LCD will display the following page:

After users enter a submenu, they can enter the corresponding interface to modify device parameters.

3.2.1.1 Video Settings

- **Bitrate**

By pressing the **Enter** key, users can modify relevant encoding rate parameters (adjustable range: 0.8M ~ 19M), the specific steps are displayed as follows:

- **Bitrate Mode**

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

```
1.1.1.2 BitrateMod          01/01
        [CBR]          VBR
```

- **Profile**

User can select the H.264 profile configuration it this menu. The H.264 High Profile code format and the Main Profile code format are the available options.

```
1.1.1.3 Profile             01/01
        [HIGH]         MAIN
```

- **Level**

User can select the H.264 level at this menu. The option with brackets is the current choice.

```
1.1.1.4 Level               01/03
        [1.2]  1.3   2.0   2.1
```

```
1.1.1.4 Level               02/03
        [2.2]  3.0   3.1   3.2
```

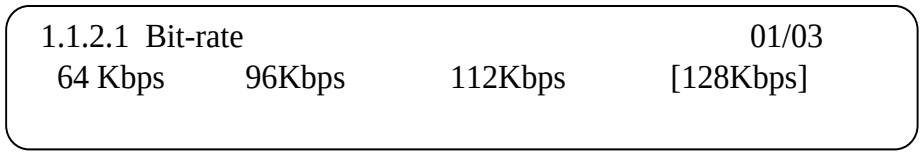
```
1.1.1.4 Level               03/03
      [4.0]  4.1   4.2
```

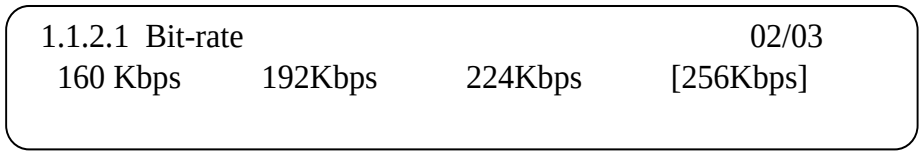
3.2.1.2 Audio Settings

```
1.1.2.1 Bit Rate        1.1.2.2 Format
```

- **Audio Bit Rate Settings**

Users can set the input audio bit rate by pressing the **ENTER** key to enter the main editing interface. Options are: 64 kbps, 96 kbps, 112 kbps, 128 kbps, 160 kbps, 192 kbps, 224 kbps, 256 kbps, 320 kbps, and 384 kbps. After modifications have been made, users can press the **ENTER** key again to put the modifications into effect.



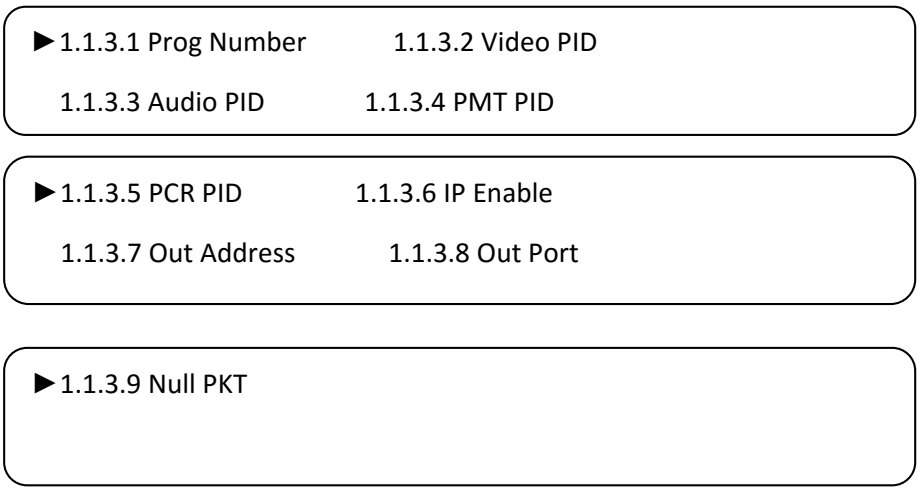


- **Audio Format Settings**

AAC: Advanced Audio Coding

Users can set the input audio format in this interface. The 3 options are MPEG-1 Layer Ⅱ, LC-AAC, and HE-AAC. When users enter the main editing menu, the LCD will display the following pages:

3.2.1.3 System Settings



Under this interface, users can set the corresponding system parameters. After modifications have been made, users can press the **ENTER** key to put the modifications into effect.

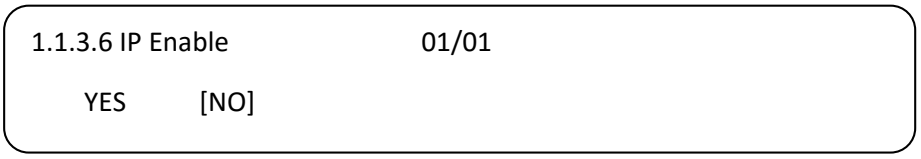
- **Program Number Setting**

Users can set the program number by pressing **ENTER** to enter this submenu.

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

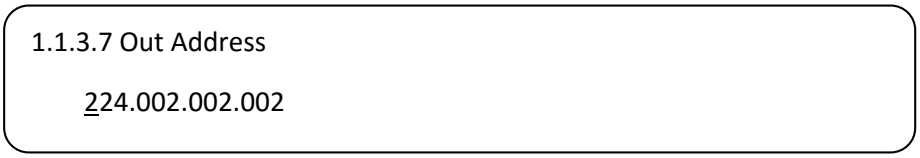
Users can set these parameters by pressing **ENTER** to enter these submenus. The maximum PID number cannot exceed 0x1fff.

- **IP Enable**

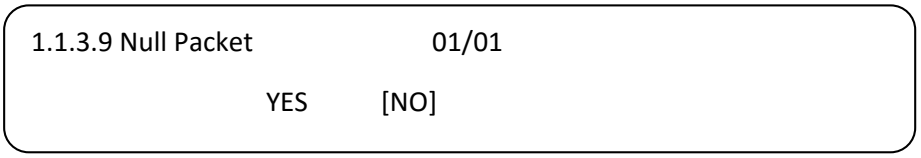


- **Out Address/Out Port Settings**

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



- **Null Packet**



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

3.2.1.4 Program Mux Settings

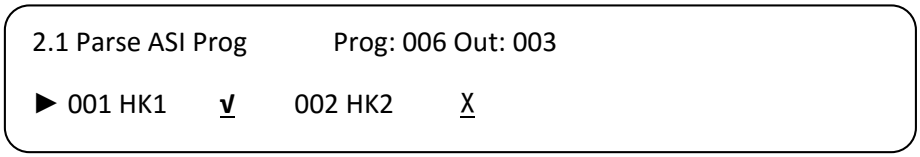
Users can decide whether or not to open the multiplexing function of the device.

- **Channel Mux**

Under this interface, users can decide whether or not 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.

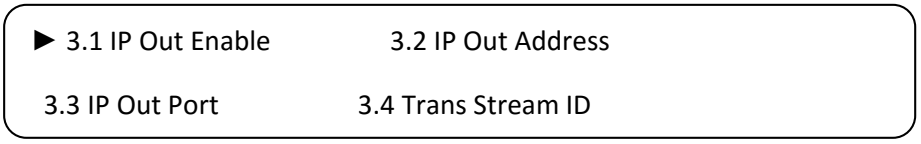
3.2.2 ASI Setting

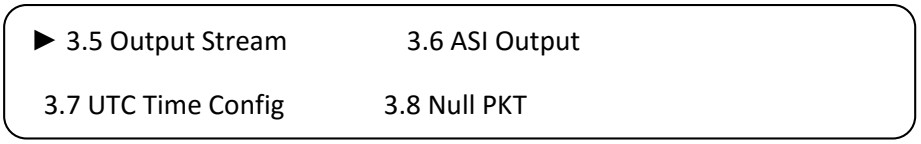
Users can check the ASI input program amount in this interface. Prog: 006 means the input program is 6 and Out:003 means that 3 of the 6 programs have been multiplexed.



3.2.3 Output Setting

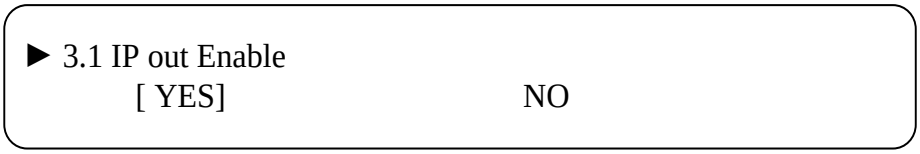
By pressing the **enter** key in the main editing interface, users can set device output parameters.





3.2.3.1 IP Out Enable

This is a new function of the encoder. Users can decide whether or not to open the IP output function by pressing the ENTER key in this menu.



3.2.3.2 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:

3.2.3.3 IP Out Port

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

3.2.3.4 Trans Stream ID

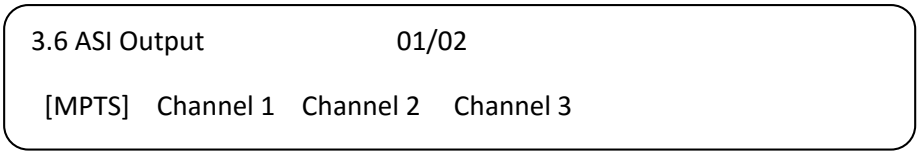
Users can set the device TS ID in this interface after pressing the **ENTER** key to enter the main editing page.

3.2.3.5 Output Stream

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

3.2.3.6 ASI Output

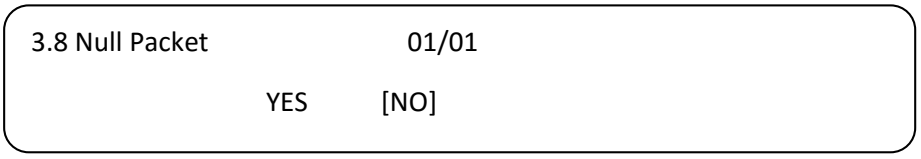
Users can set the ASI output in the interface under this menu. There are 5 options: MPTS and Channels 1-4.



3.2.3.7 UTC Time

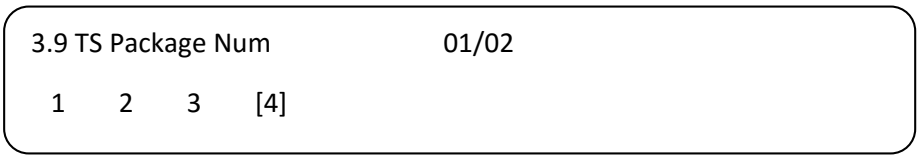
UTC refers to Universal Time Coordinated. Users can enter this menu to set the time as needed. The TDT table will be generated and shown in the user's STB.

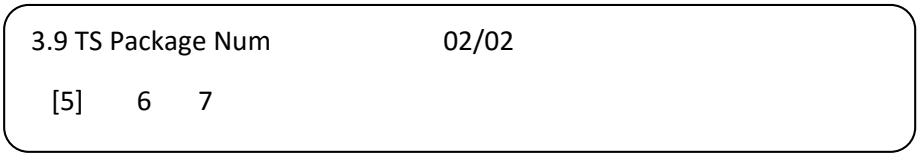
3.2.3.8 Null Packet



3.2.3.9 TS Package Num

Users can set the amount of TS packages by entering into the below interface.





3.2.4 Network Settings

Users can set the network parameters by pressing the **ENTER** key.

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

Note

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

3.2.5 Saving Configuration

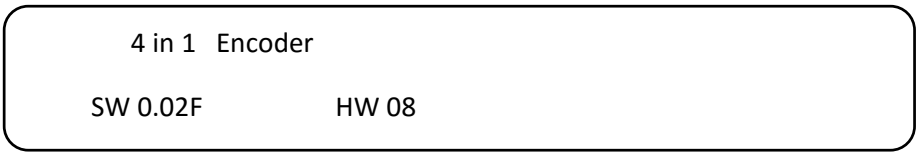
Users can save the modification by pressing the **ENTER** key.

3.2.6 Loading Configuration

In this interface, users can choose between the modified configuration and the factory default configuration. Users can enter the corresponding menu to select the configuration.

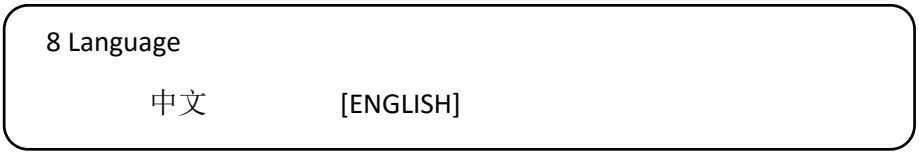
3.2.7 Version

Users can check the device software version and hardware version.



3.2.8 Language

Users can select the interface language in this submenu:



Chapter 4. SNMP Operation

Network Management System

The SNMP network management system is applied to digital TV equipment operation, control and management, parameters setting, etc. It centralizes digital TV equipment across network.

4.1 Installation

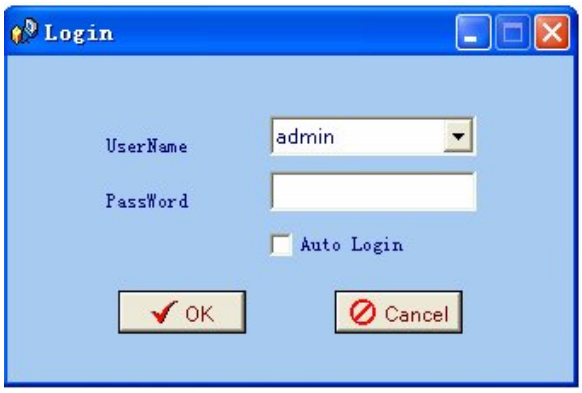
The software doesn't need any special installation. User can just open the folder SnmpNMS x.xy.z to find the icon 

and double click it to open the login interface.

4.2 Software Operation

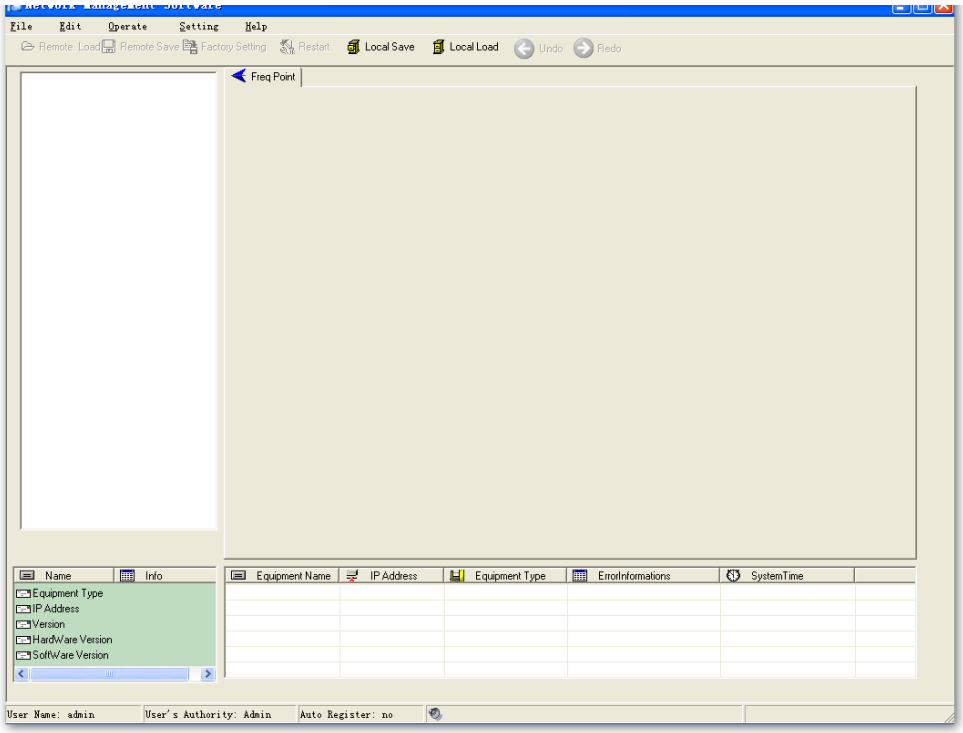
4.2.1 Login Interface

A login interface will pop up when the software is running and gives users a prompts to input a username and password (The default user name is **admin** with no password. Users can add usernames and passwords as needed. Please refer to section 4.4.3 for details). The menu is shown as follows:



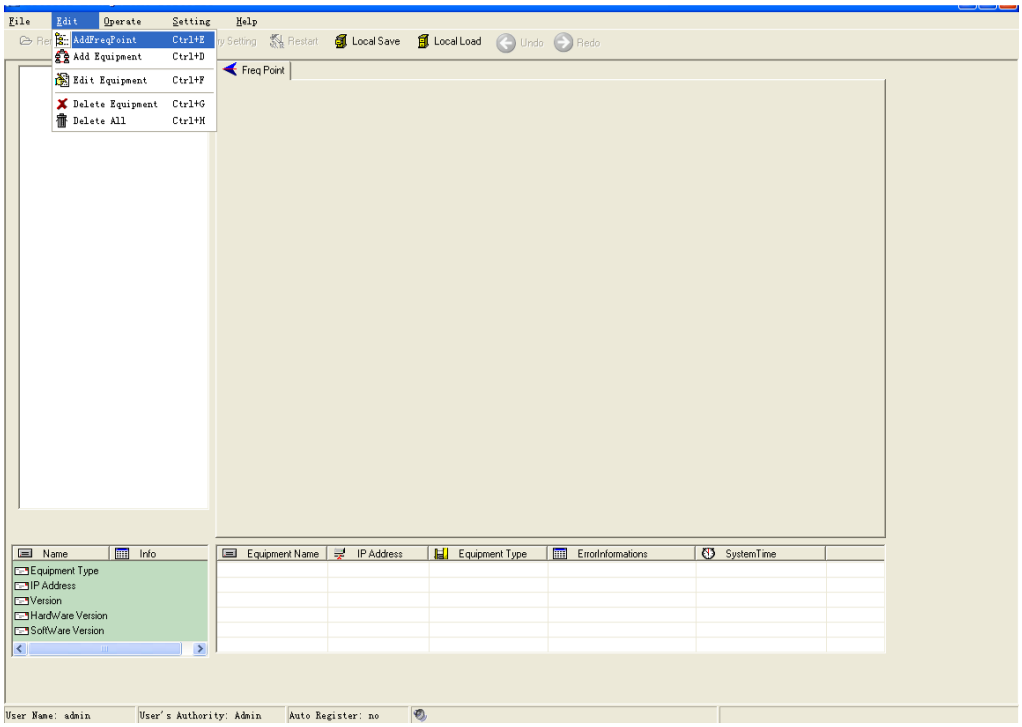
Users can log into the NMS by pressing the **OK** key after inputting their user name. Upon the input, the software will verify them with a database record automatically and the main interface will appear.

4.2.2 Main Interface



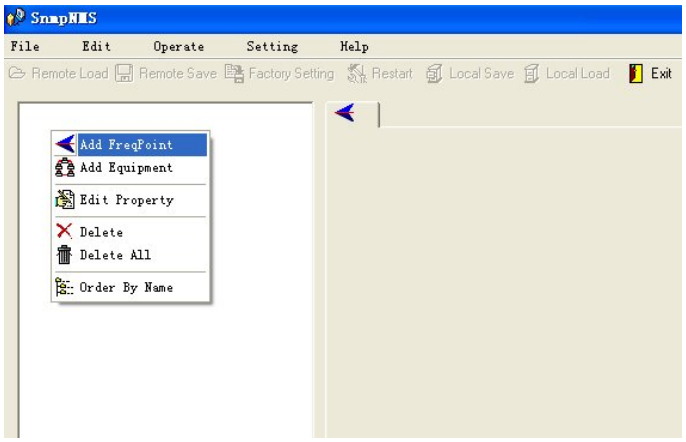
Users can create a device node tree in the left column by adding, modifying, and deleting device nodes. This software provides a powerful node operation function, and users can edit various parameters in the device tree for management and classification.

4.2.3 Adding Frequency Point



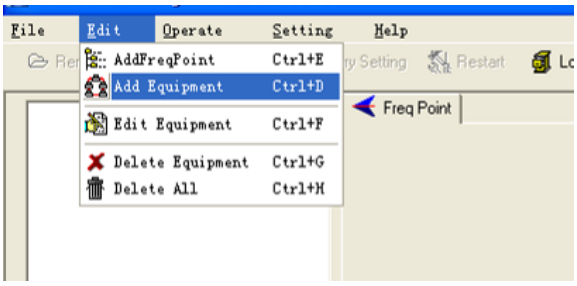
The Add Freq Point dialog box popes up when the user clicks the **Add Freq Point** item in the **Edit** drop-down menu on the menu row. The device will confirm the given frequency when the user clicks **OK**.

Users can also right-click to pop up the shortcut menu in the device tree or in the left blank column, and the corresponding dialog box will pop up by choosing **Add Main Freq Point**. The device will confirm the given frequency when the user clicks OK.

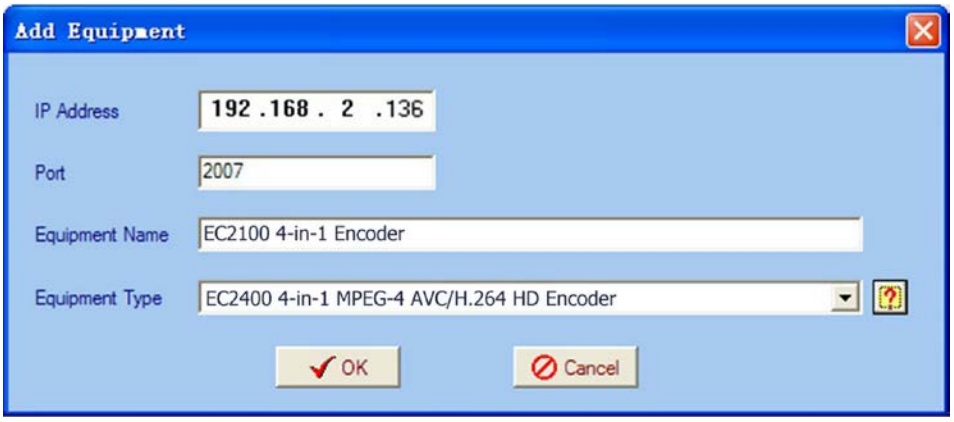


4.2.4 Adding Equipment under Given Frequency Point

Users should choose a frequency point in advance. The dialog box for **Add Equipment** will pop up when the user clicks the **Add Equipment** item in the **Edit** pull down menu on the menu row.



4.2.5 Edit Equipment Interface



Users should follow the steps as below:

- Input the device **IP Address**
- Input the **port**
- Input the **Equipment Name**

- Choose the connected equipment type in the **Equipment Type** drop down list by clicking the "▼" Or clicking "**?**" to auto-search for the type of device.

Note

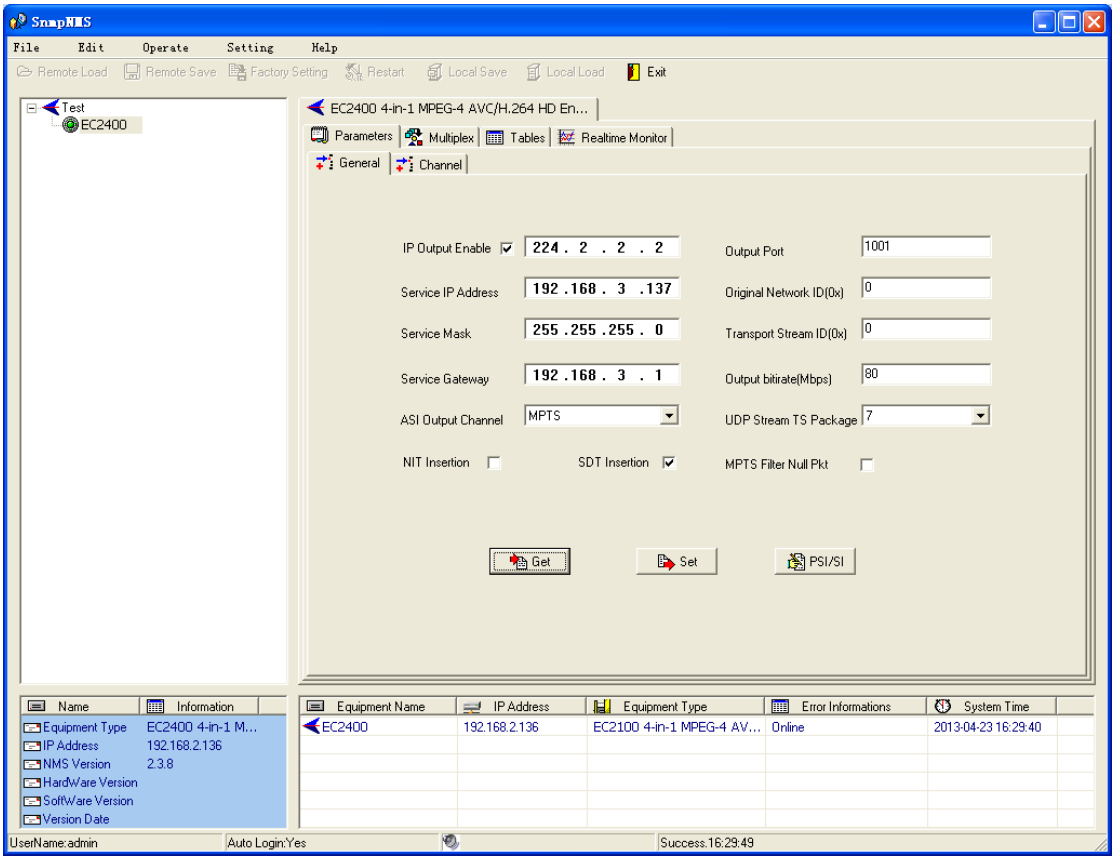
1. The default IP of the EC2400 HD Encoder is 192.168.2.136. You can check its IP address in the front panel of the device in case the IP has changed.

2. The PC IP address and device IP address should be in the same network. For example: if the Device IP is 192.168.2.136 and the sub mask is 255.255.255.0, the PC IP address should be 192.168.2.X (1<X<255) and the sub mask should be 255.255.255.0. Users can use a ping command to confirm whether or not these two are in same network.

1. The default IP of the EC2400 HD Encoder is 192.168.2.136. You can check its IP address in the front panel of the device in case the IP has changed.

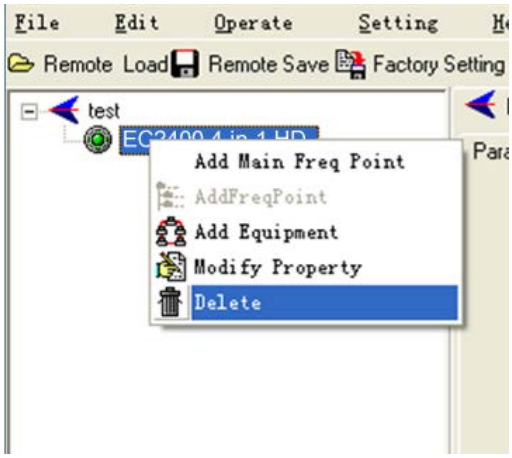
2. The PC IP address and device IP address should be in the same network. For example: if the Device IP is 192.168.2.136 and the sub mask is 255.255.255.0, the PC IP address should be 192.168.2.X (1<X<255) and the sub mask should be 255.255.255.0. Users can use a ping command to confirm whether or not these two are in same network.

Click **OK** and the following screen should appear:



4.2.6 Delete Equipment

User can choose the equipment to be deleted in the left column. Click the **delete** item in the drop-down menu which appears by right-clicking on the equipment name.



4.2.7 Save Configuration

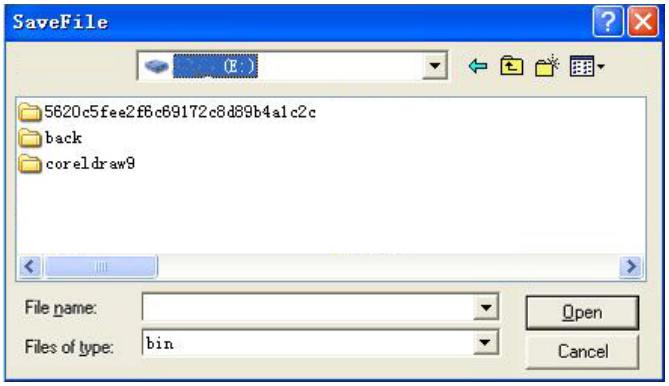
After finishing setting parameters, users can click the 

button on the toolbar to save the modifications to the device's flash memory. Users can reload saved parameters from the device's flash memory and refresh the device's parameters according to the loaded values by clicking on 

.

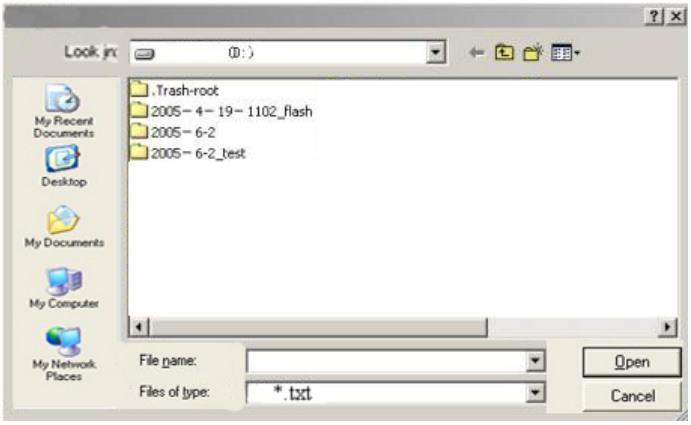
Alternatively, users can click the 

button on the toolbar to pop up the **save file** dialog box, which gives a prompt to save all the device's parameters as binary files in the computer's hard disk.



Similarly, users can click the 

button on the toolbar to pop up the read file dialog box, to read the stored binary file and set the device's parameters according to the loaded binary files.



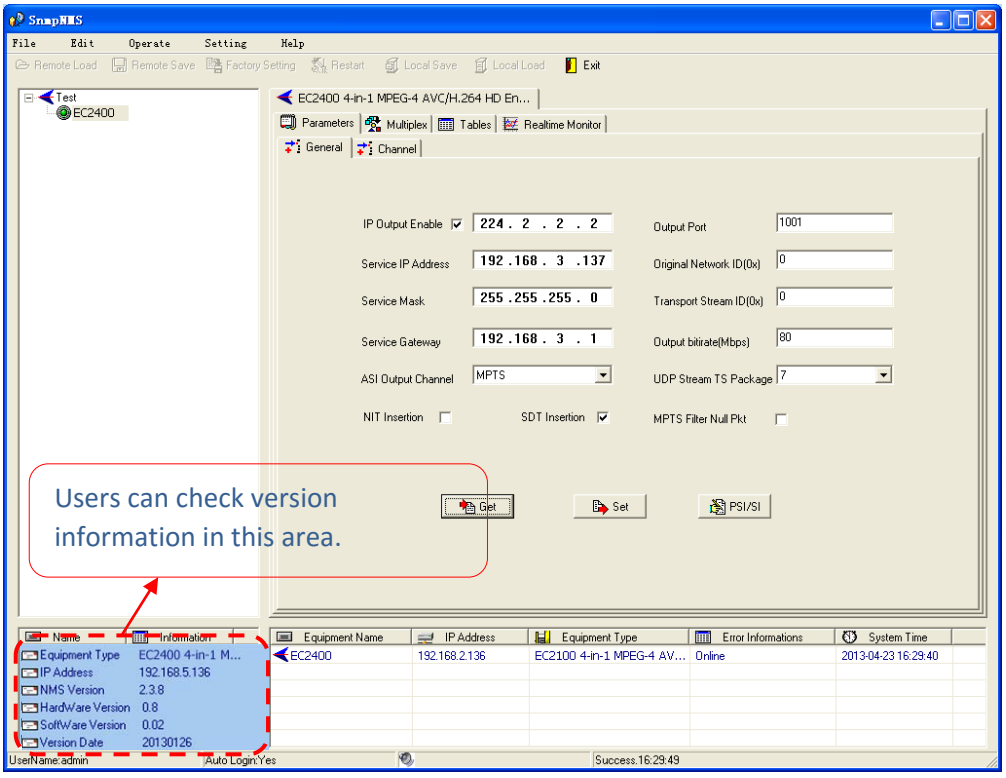
4.3 EC2400 4 in 1 MPEG-4 AVC/ H.264 HD Encoder Operation

Users can choose an encoder in the device tree. The encoder interface will be displayed in the operating area. The interface is mainly composed of encoding video parameters, audio parameters, encoding system parameters, output parameters, etc.

4.3.1 Parameters Setting

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

4.3.1.1 General Parameters



Set: Activates the current parameters shown in the SNMP software.

Get: Reads the current device's activating parameters and shows them in the SNMP software.

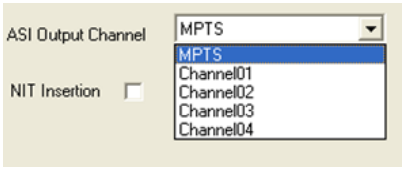
- **IP Out Enable**

Check the checkbox to enable IP output. Users can modify the IP address here as well.

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

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

- **ASI Output Channel**



This device supports 1 MPTS (Multiple Programs Transport Stream) or 4 SPTS (Single Programs Transport Stream) outputs. User can click to to select the output type from a drop-down list.

- **Output Port**

Set the output port by modifying the value in this field.

- **Original Network ID**

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

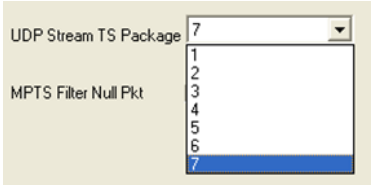
- **Transport Stream ID**

This 6-bit field serves as a label for identification of this TS from any other multiplex device within the delivery system. The value ranges from 0 to 0xFFFF.

- **Output Bit Rate (Mbps)**

This includes the effective bitrate of encoding channels 1-8, the effective bitrate from the ASI input, and the bitrate of stuffed null packets.

- **UDP Stream TS Package**



Users can set the amount of TS packages here.

- **NIT Insertion**

  In this field, users can activate the NIT (Network Information Table) insertion function.

- **SDT Insertion**

  In this field, users can activate the SDT insertion function.

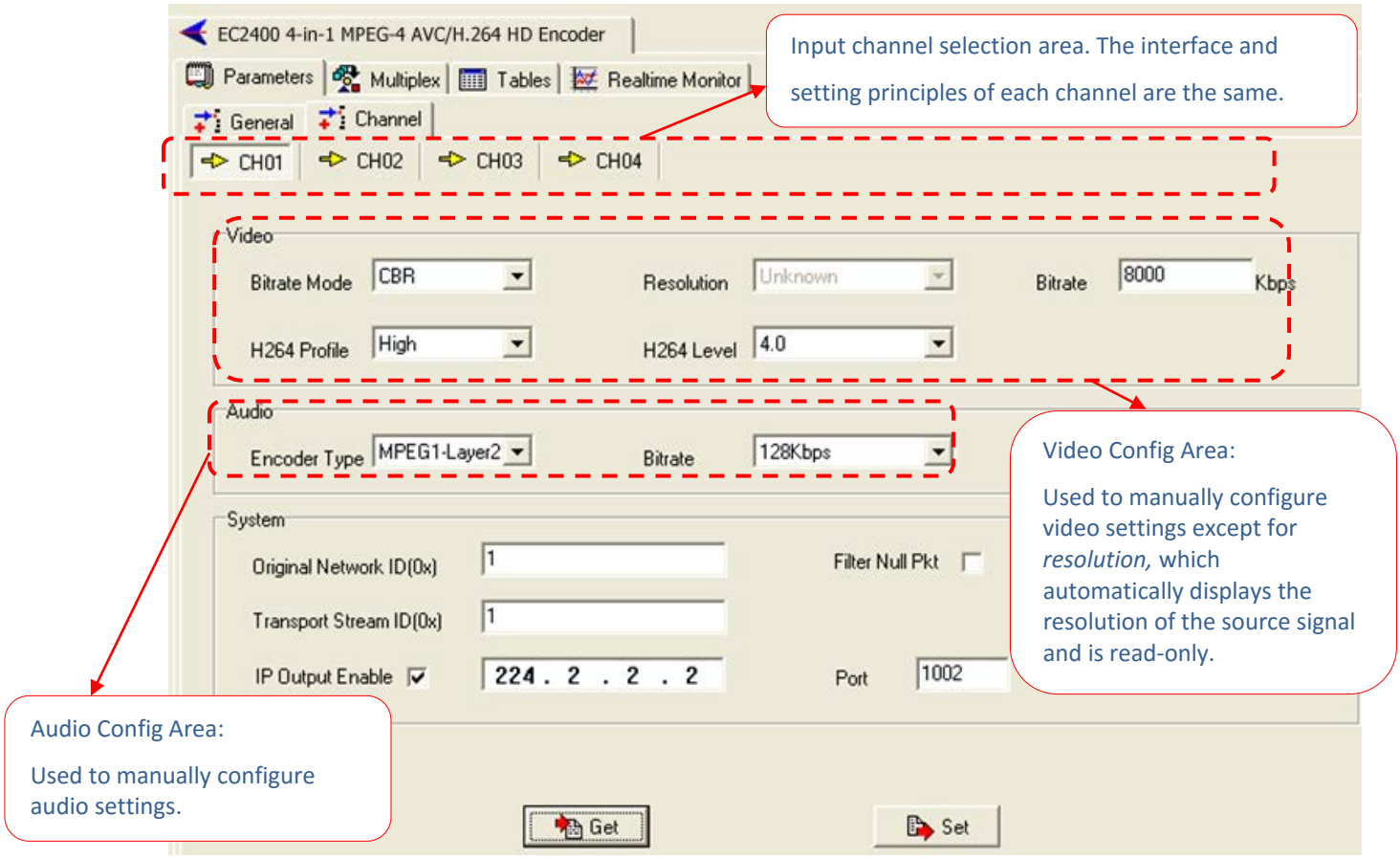
- **MPTS Filter Null Packet**

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

- **PSI/SI Editor**

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

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

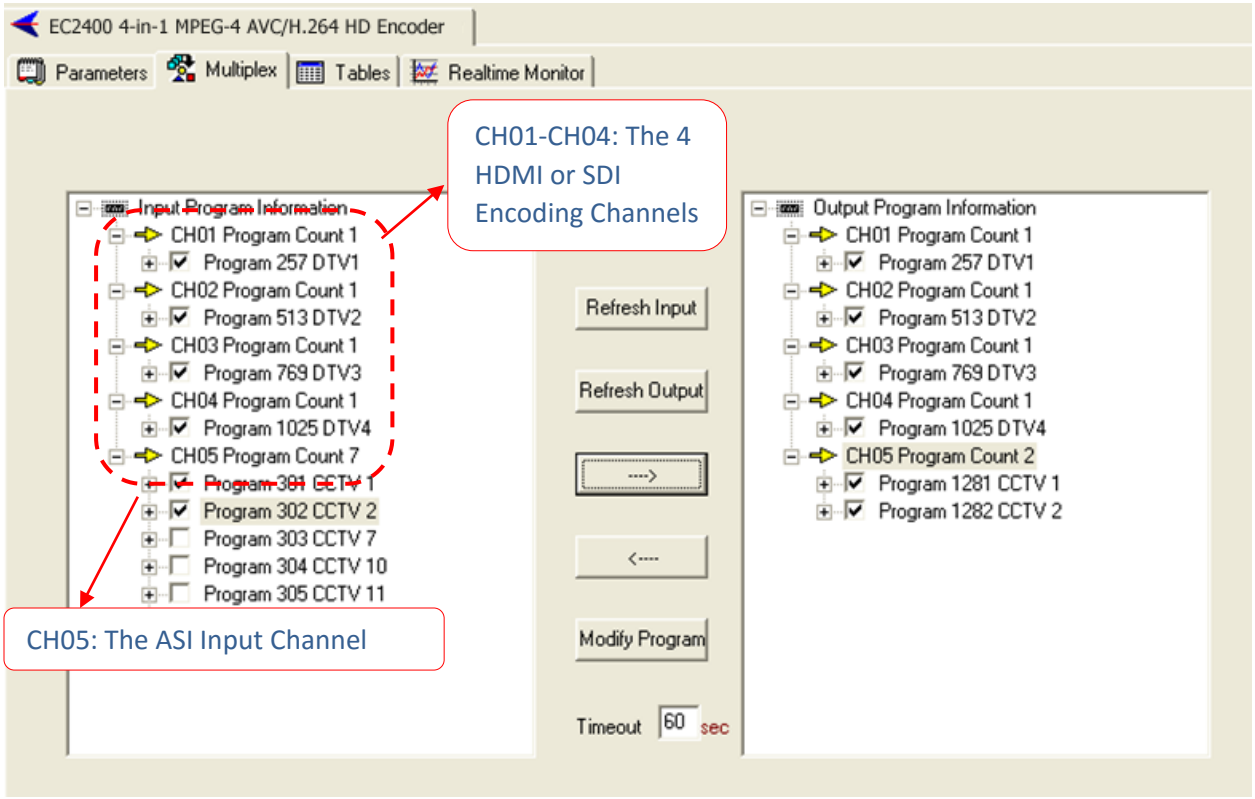


If any parameter is modified, click 

to activate the modified parameters and click 

to read and put into effect the current device's activating parameters.

4.3.2 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 which port they are from. Users can parse the programs of each channel and multiplex those programs to the output. Users can also modify the output programs' Program Name, PMT, PCR, video, and audio PID.

Pid Mapping ☑ : Check this box the set the PID Mapping

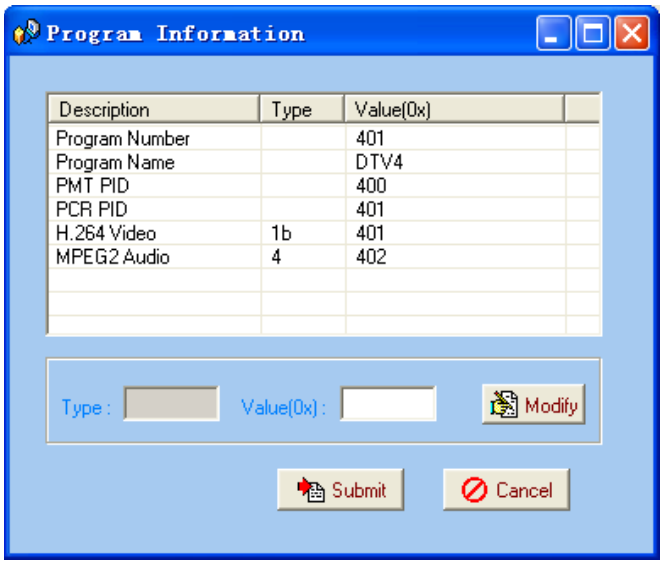
Refresh Input : Refreshes the input terminal and retrieves the input information

Refresh Out : Refreshes the output terminal and retrieves the output information

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

<--- : Cancels the multiplexed programs.

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



Select the target item and input the new value in the box below, then click 

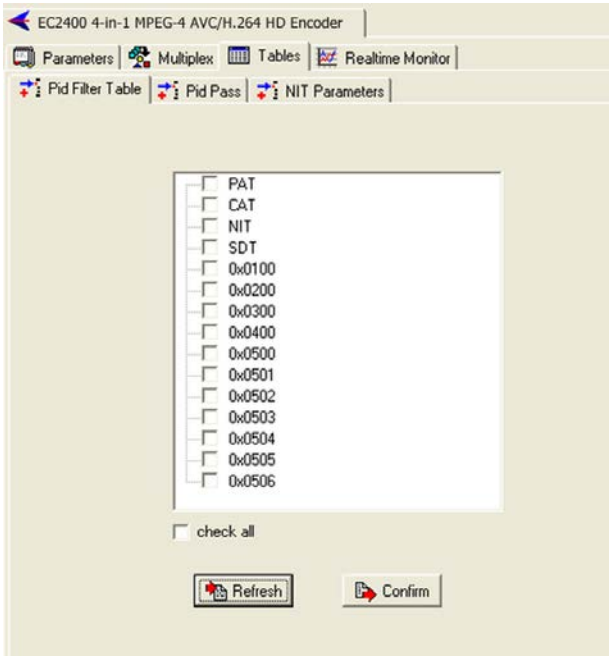
and 

to put into effect the modification.

: The parsing overtime value

4.3.3 Tables

4.3.3.1 PID Filter Table



Users can operate the PID filter in this table by checking the checkboxes of corresponding items and clicking **Confirm**.

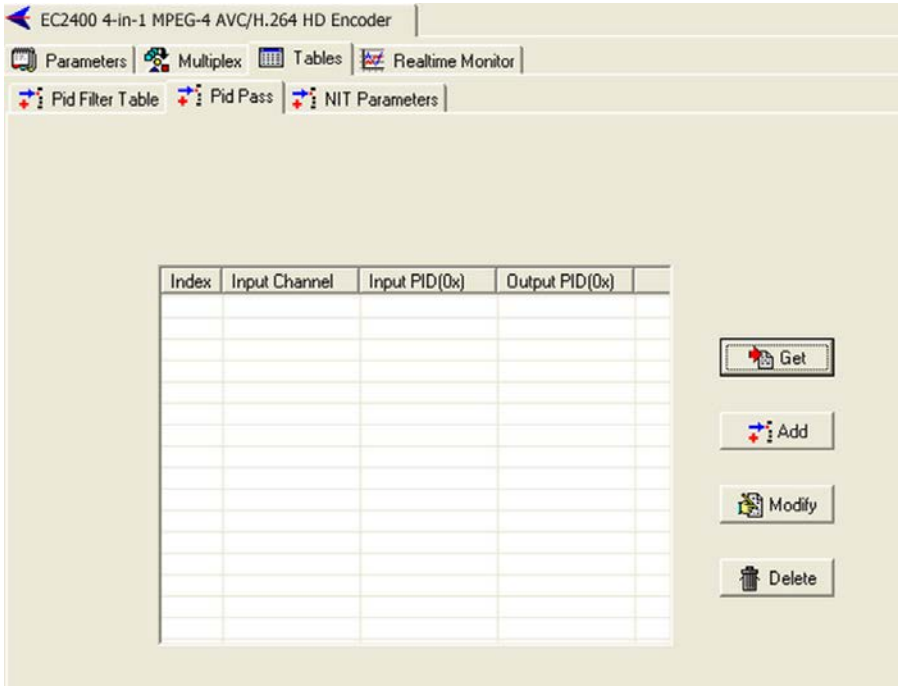
Refresh: Retrieves the PID filter table from the device

Confirm: Submits the PID filter table to the device

Check all: Selects all items on the list

After a PID in the table is selected, the corresponding output PSI/SI table will not be sent to the output stream.

4.3.3.2 PID Pass

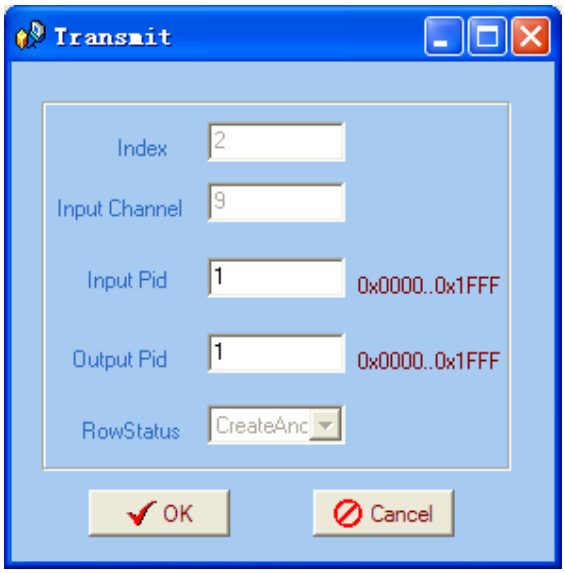


Users can choose to bypass input PID in this interface.

Occasionally, there are PIDs which won't belong to any program, such as EPG, NIT tables, and so on, but users might want to pass them through the multiplexing module without changing anything. That is the main purpose of this function.

The display will be shown as below when user clicks the 

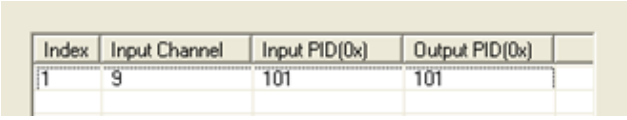
button.



- **Input PID and Output PID**

The Old (Input) PID is the PID number in the TS from a given Port. The corresponding New (output) PID number could be same as the input PID number, or it could also be different if a PID remapping is needed.

Modify the data as needed and click **OK** to confirm. The PID then will then be bypassed and listed in the table as shown below.



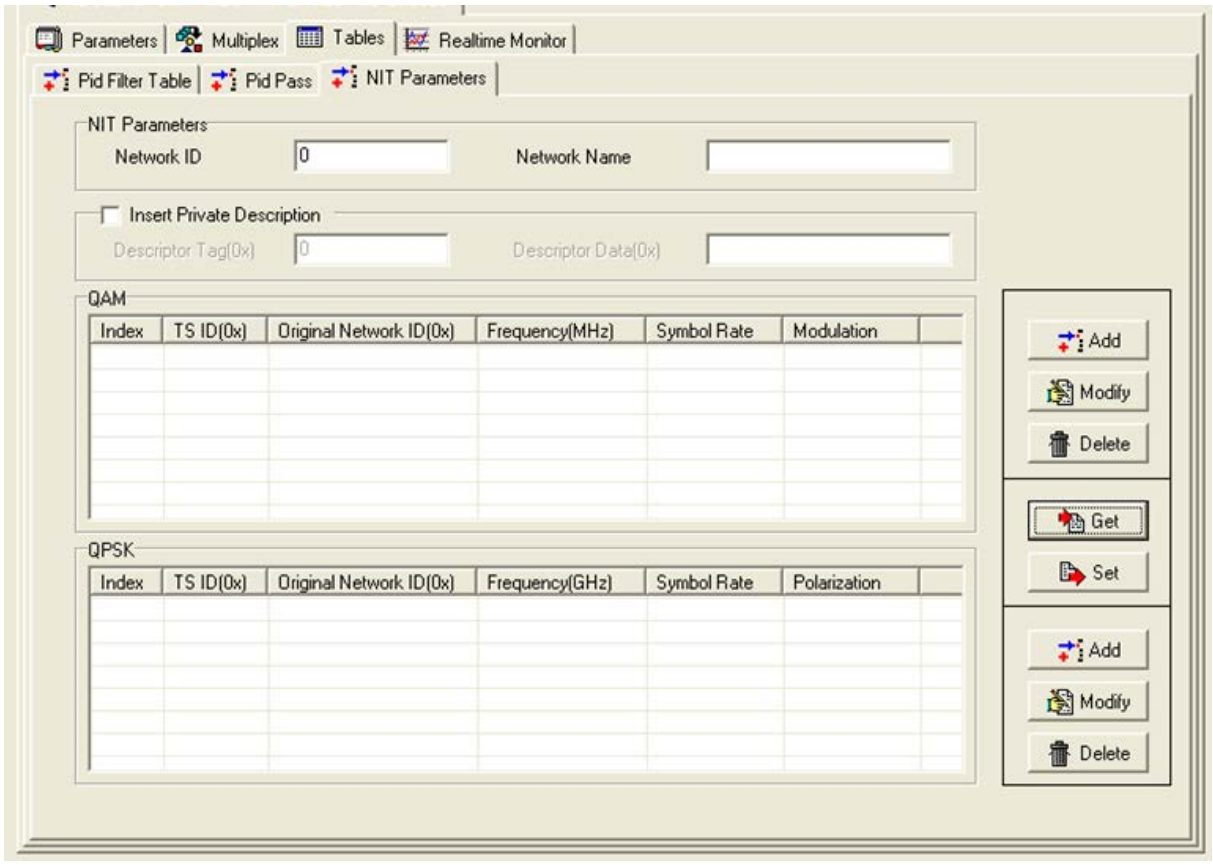
Index	Input Channel	Input PID(0x)	Output PID(0x)
1	9	101	101

Users can also modify or delete the added PID through the corresponding buttons on the right.

4.3.3.3 NIT Parameters

NIT: Network Information Table.

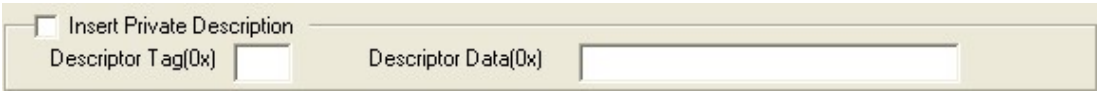
The NIT table is a very important table for describing the network and TS. Users can set the parameters of the output NIT table in this interface.



Network ID : Describes the output TS's network ID

Network Name : Describes the output TS's network name

➢ Insert private description

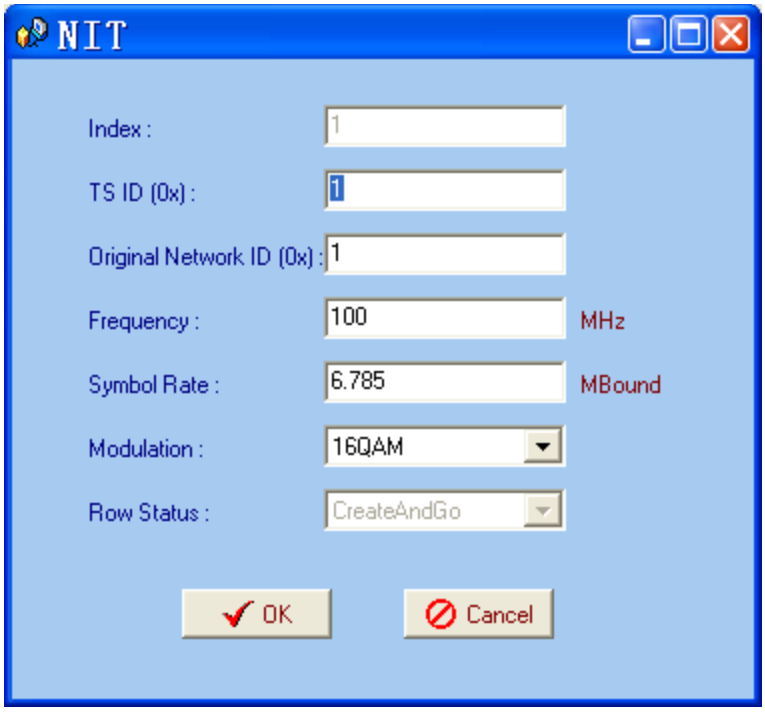


Insert Private Description : This checkbox will allow users to insert a private description into the output TS. The private description includes two parts. One is the descriptor tag, and the other is the descriptor information.

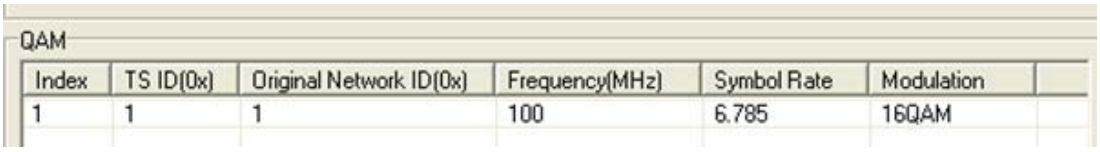
Descriptor Tag(0x) : The Descriptor Tag is an 8-bit field which identifies each descriptor.

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

Add : Users can add the cable transmission descriptor by clicking this **Add** button. The following dialogue box should pop up, confirming that the added descriptor has been applied for the DVB-C network.



The interface will be shown as below after the NIT parameters have been added :



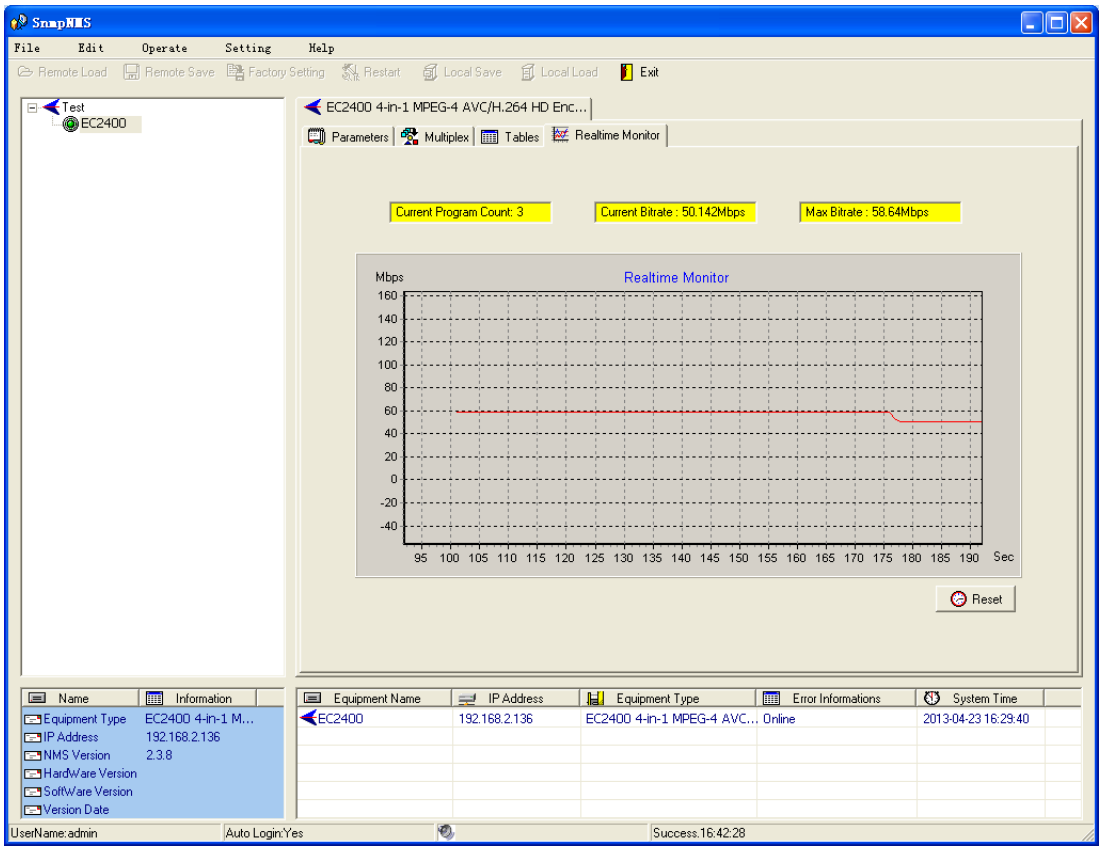
Modify : The **Modify** button will open a window allowing users to modify selected items in the NIT.

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.

4.3.4 Real-time Monitor

A real-time bit rate chart will be generated in the monitor for users to check the bit rate information.



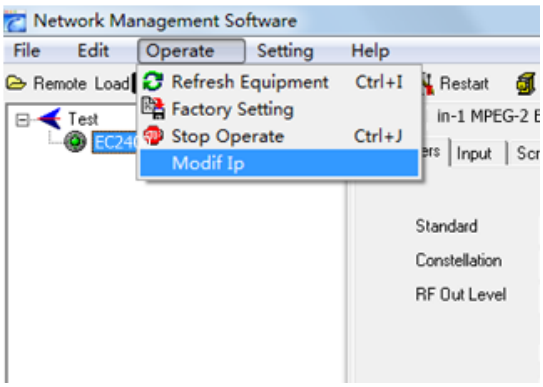
4.4 Other Settings

4.4.1 Difference between Set and Remote Save

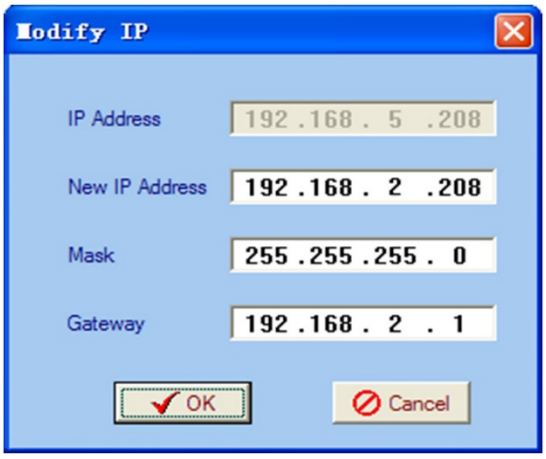
In many cases during the configuration of parameters in the NMS, users save the modified configuration by clicking **Set**, which will temporarily save the configuration and will restore the last saved configuration if the device reboots. To save the configuration permanently, it is necessary to make modifications using **Remote Save** on the toolbar as explained in section 4.2.7.

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

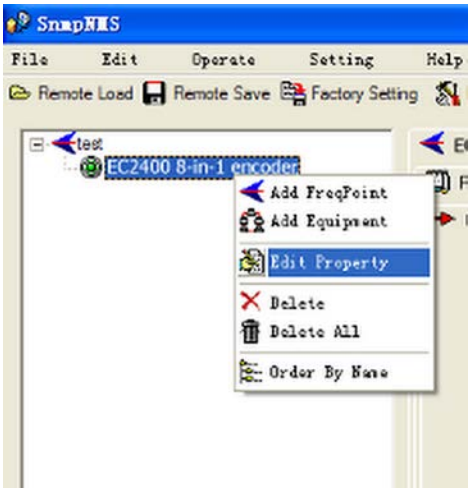
4.4.2 IP Modification



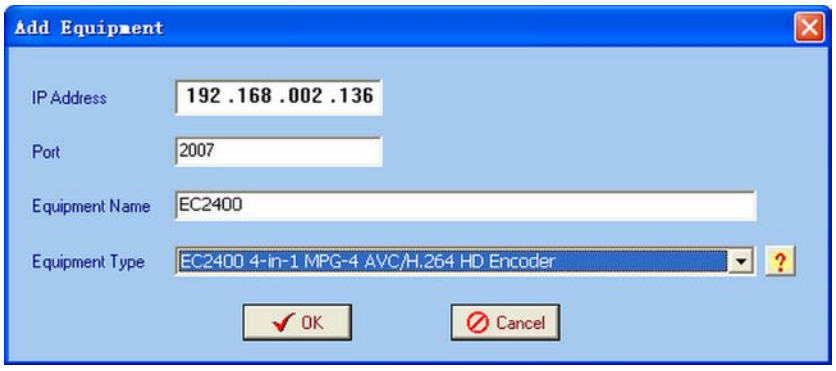
Users can click **Operate** and select **Modify IP** in the drop-down list, and a dialog box presents itself as shown below. Input the new NMS IP Address for the device and click the **OK** button to confirm.



The indicator light will turn red, which means the equipment has disconnected. Users can then refer to the below prompts to edit the property by inputting the new IP to reconnect the equipment.



Input the new IP Address in the box and click the **OK** button to reconnect the device.



After finishing with parameters setting, click the 

button on the toolbar to save the modifications to the device's flash.

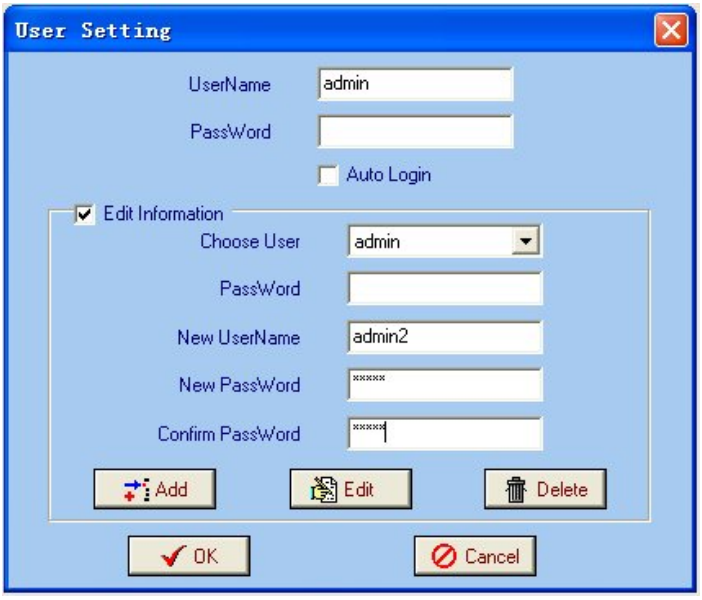
4.4.3 User Add

When logging in, users will note that the default user name is **admin** with no password. Additional users and passwords can be added as needed.

Click **Setting** in the menu bar and select **User Setting** in the drop-down list to open the dialog box shown below. Select **Edit Information** by marking the check box with "√" and input the new username and new password as prompted below. Click 

to add the new user and then click 

to save the new settings.



Chapter 5. Troubleshooting

Ascent's ISO9001 quality assurance system has been approved by the CQC organization to guarantee the products' quality, reliability and stability. All Ascent products have passed testing and inspection before being shipped out from the factory. The testing and inspection covers all optical, electronic and mechanical criteria which have been published by Ascent. To prevent potential hazards, please strictly follow the operation conditions.

Accident Prevention Measures

- Install the device in a place with an environment temperature between 0 to 45 °C
- Make sure there is good ventilation for the heat-sink on the rear panel and other heat-sink bores
- Check the input AC within the power supply working range and make sure the connection is secure before switching on the device
- Check if the RF output level varies within a tolerable range
- Make sure all signal cables have been properly connected
- Do not frequently switch on/off the device; the interval between every switching on/off should be greater than 10 seconds.

Unplug the Power Cord under these Conditions

- Power cord or socket is damaged
- Any liquid flowed into the device
- There is a circuit short
- Device is in a damp environment
- Device has suffered from physical damage
- Device is idle for a long period of time
- After switching on and restoring to factory settings, device still cannot work properly
- Maintenance needed

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