

# **H.264 IP HD encoder User Manual**

**V1.0**

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# Chapter 1 Introduction

## 1.1、 overview

The latest H.264 HD IP encoder which be published by our company, Support 1-8 channel HDMI HD video source input, Supports H.264-HP, BP and other encoding modes, support simultaneous multiple bit rate encoding, encoding delay is less than 200ms, output bit rate, resolution can be customized, GOP length also can be customized.

Provide solutions for Based on Windows, Linux client receive audio and video, recording audio and video, Convenient for storing live streams, Suitable for various occasions of needing Mobile live

## 1.2、 Features

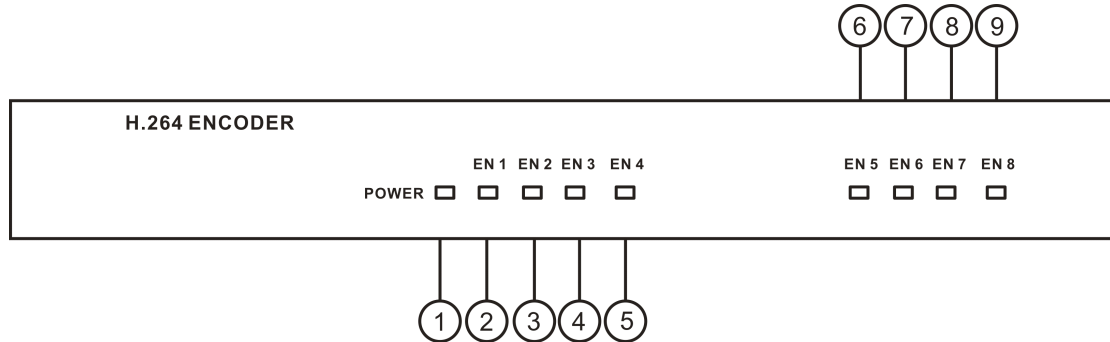
- ※、 High-definition, low stream: using the most advanced encoding video compression standard H.264-HP(High-Profile)、 BP(Baseline Profile), to achieve high-definition signals, low bit rate encoding transmission;
- ※、 Support setting DHCP, PPPoE, set a fixed IP and other network access ways
- ※、 interface support HDMI HD video source input,convenient for carry portable broadcast applications;
- ※ Support video and audio bit rate adjustment, video support 3000kpbs to 8Mbps adjustable, video support 64k、 96k、 128k、 192k adjustable; Audio sampling rate support 44.1K, 48K adjustable
- ※、 Support RTMP streaming media protocol, It can push live stream directly to many streaming media servers, like Flash Media Server、 Media Server、 RED5 and so on, watched by variety player(Flash Player, VLC、 MX etc. )
- ※、 System uses a high-performance DSP processing chip, higher coding efficiency and transmission efficiency, Good real-time performance,Good video and audio synchronization, delay is less than 300ms
- ※、 support a variety network protocol (TCP/IP、 RTMP、 HTTP)
- ※、 Built-in Web Server, Easily achieved remote monitoring, control, set and other operations through the IE browser
- ※、 Support function of equipment remote security upgrade
- ※、 High reliability design, stable operation, high performance and low cost;
- ※、 1U Standard case unit,

### 1.3、Performance index

project	index
Signal Input Interface	HDMI ,1-8 routes HDMI audio and video input interface (1/2/4/6/8 optional)
Signal output interface	1RJ45 100M network interface
GOP structure	adjustable
resolution	720P- 50、1080i-50、1080i-60
The default video coding algorithm	H.264 High Profile 5.0、BP(Baseline Profile)
Encoding mode	Support CBR/VBR
Automatically detects resolution	Support
Picture delay	< 200ms(LAN)
protocol	Support IP/TCP、RTMP、HTTP etc
Audio algorithms	AAC
Audio sampling rate	44.1K、48K adjustable
Audio bit rate	64K 96k、128K、192K adjustable
Bit rate	3000kpbs-8Mbps adjustable
performance	The maximum output frame rate is 30fps, the minimum bandwidth is 32Kbps
Embedded WEB service	Support IE browser, Firefox, Maxthon, Opera browse,configure, upgrade
The maximum number of user connections	1
Working temperature	-20~45℃
Relative Humidity	5~95%
weight	1.5kg
power	AC110V~240V-50/60Hz
Power Consumption	< 30W
size	1UStandard case

## 1.4 、 Appearance and Description

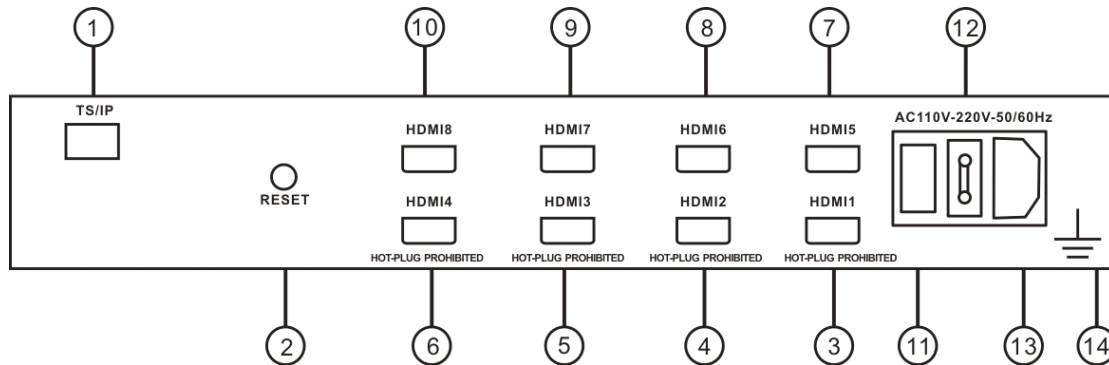
### HD IP Encoder Front Panel:



1: the power indicator;

2-9: 1-8 channels lock Indicator light, light up lock light when the video source input normally.

### HD IP Encoder Rear Panel:



1、 Encoding 1-8 channels IP output interface/ network management port。

2、 Reset button。

3、 4、 5、 6、 7、 8、 9、 10 Encoding 1-8 channels HDMI Video/Audio input interface。

11、 power switch。 12: Fuse。 13: Power Jack。 14: Ground terminal。

## Chapter 2 Installation guide

### 2.1、Acquisition Check

When users open the package of the device, it is necessary to check the packaging materials of widgets, check items in the package according to packing list or the following items:

- Encoder 1
- User Manual 1
- AC input power plug wire 1

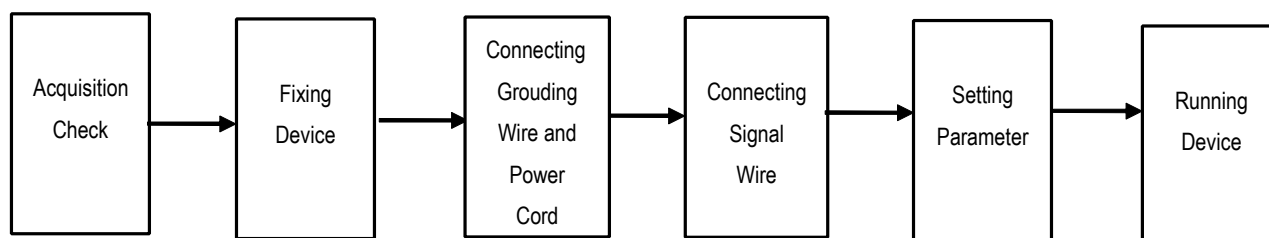
If any item is missing or mismatches with the list above, Please contact the company immediately

### 2.2、Installation Preparation

When users install the device, please follow the following steps. The details of installation will be described at the rest part of this chapter. Users also can refer to the rear panel chart. This chapter mainly includes the following content

- Checking the possible device missing or damage during the transportation
- Preparing relevant environment for installation
- Installing Encoder
- Connecting signal wires
- Connecting communication port (optional)

#### 2.2.1 Device's Installation Flow Chart Illustrated as follows:



#### 2.2.2 Environment Requirement

Items	Requirement
Installation space	When the devices are installed in several rows in the device room, their distance should be between 1.2~1.5m, and the distance to the wall should be no less than 0.8m.
Floor of the equipment room	No conduction, and no dusting. Mass resistivity of the antistatic flooring: $1 \times 10^7 \sim 1 \times 10^{10} \Omega$ . Grounding current limiting resistance: $1M \Omega$ Floor bearing: more than 450Kg/m <sup>2</sup>
Environment Temperature	5~40℃ (sustainable); 0~45℃ (short term). The air conditioner is recommended to install.

Relative temperature	20%~80% sustainable, 10%~90% short time.
Pressure	86~105KPa。
Window&door	They must be sealed with dustproof ruber strip. And the windows should be installed with double glass and sealed strictly.
Wall	Wall paper can be pasted, and flat paint can be used, but powdered paint isn't applicable.
Fire prevention	fire alarm system and extinguisher.
Power supply	It requires three sets of separate power supply system :device power, air-conditioner power and lighting power. device power provided by AC power.

### 2.2.3 Grounding System design Requirements

Each function modules' good grounding designs will guarantee reliable and stable operation of the Device, Also guarantee against lightning, anti-interference. Therefore, the system grounding must follow this rule.

- outer conductor of coaxial cable and both ends of shielding layer should keep good electrical contact with surface of the metal chassis of connected devices
- Grounding conductor must use copper conductor to reduce the high frequency impedance, grounding wire must be as thick and short as possible
- Both ends of the ground wire connection point should confirm the electrical contact is good, and should be done anticorrosive processing;
- Prohibit using the other equipment as the part of the ground wire's electrical connection;
- Conductor cross-sectional area between Cabinet and grounding wire of lightning protection should be equal or greater than 25mm<sup>2</sup>

### 2.2.4 Cabinet Grounding

- Grounding terminal of each cabinet in same room should be separately connected to protected copper platoon, The grounding wire should be as short as possible, If the wiring is too long when the project installed, should be cut off to avoid grounding wire circling, Conductor cross-sectional area between Ground terminal and ground platoon should be equal or greater than 25mm<sup>2</sup>.

### 2.2.5 Device Grounding

Connect protective grounding terminal to protective grounding wire of assembly cabinet with wire

### 2.3、 The power wire Connection

Power jack located in left side of the rear panel, Next to the power socket. is the power switch, Under the left of the power socket is the connective screw of protective grounding wire

- Connect the power wire:

Insert one end of the power wire into AC power socket, and another end connected to AC power.

- Connect the grounding wire:

When the device connects separately to protective ground, it should adopt independent grounding way, That is, grounded together with other devices (such as transmission equipment), Grounding resistance of Joint Ground is less than  $1\Omega$ .

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 Caution:

Before connecting the power wire, encoder power switch must be placed in "OFF" position. And requires grounded together with the power supply system

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### 2.4、 Input, output signal wire connection

Signal wire connections include connection of output and input signal wire, signal wire of input HDMI high-definition connected with HDMI high-definition interface of encoder, the other end connect with the output interface of the front-end source equipment. The output of HD encoder has 1 RJ45 IP network port, It can connected to the device of transmission network With network wire.

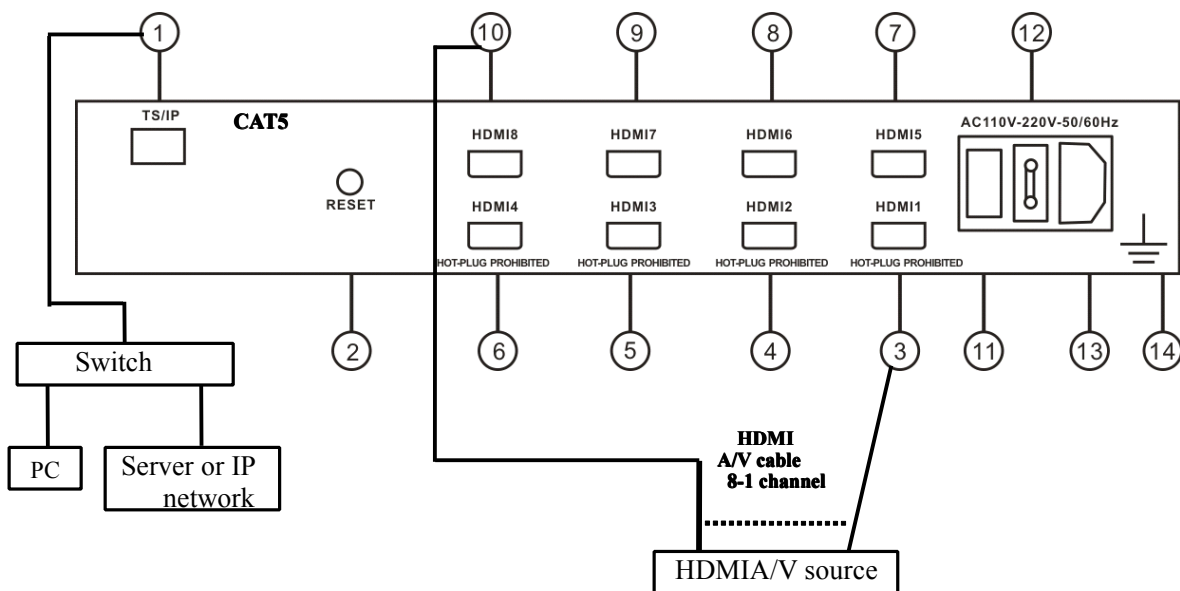
Important note: the HDMI source requirements which input by HDMI HD encoder meet HDMI1.1, HDMI1.3 standard, frequency stability reached 5 %.

## Chapter 3 operation

HD Encoder adopt embedded WEB Service, In computer multiple browsers (support IE browser Firefox, Maxthon, Opera browse) interface, set each parameter, system maintenance and upgrade set, the default Settings of device can be used before the normal business, also can modify or reconfigured the device parameter Settings.

### 3.1、 The connection and use of device:

Connect the device as figure below, The device is IP encoder of 1-8 channel user optional, Here described a case of a 8-channel encoder, If encoder is single channel, 2、 4、 6 channels encoder, Please connect according to the actual situation.



After Connected, Turn on the power of the all device, use default set parameters of the device ,The analog signal compression coding for digital IP signal enter the network transmission.

### 3.2 、 Enter the WEB interface of the device

After Connected, Turn on the power of the all device, select any browser on computer, such as IE browser Firefox, Maxthon, Opera browse, Enter in the browser address bar: <http://192.168.1.100/> Complete IP address, (Note: The default IP address 100 is encoded 1-channel, 101 is encoded 2-channel, 102 is encoded 3-channel, 103 is encoded 4-channel, 104 is encoded 5-channel; 105 is encoded 6-channel; 106 is encoded 7-channel; 107 is encoded 8-channel), Click the search button to enter the following interface, (the following part 1 #- 8# encoding channel network management interface are the same) :

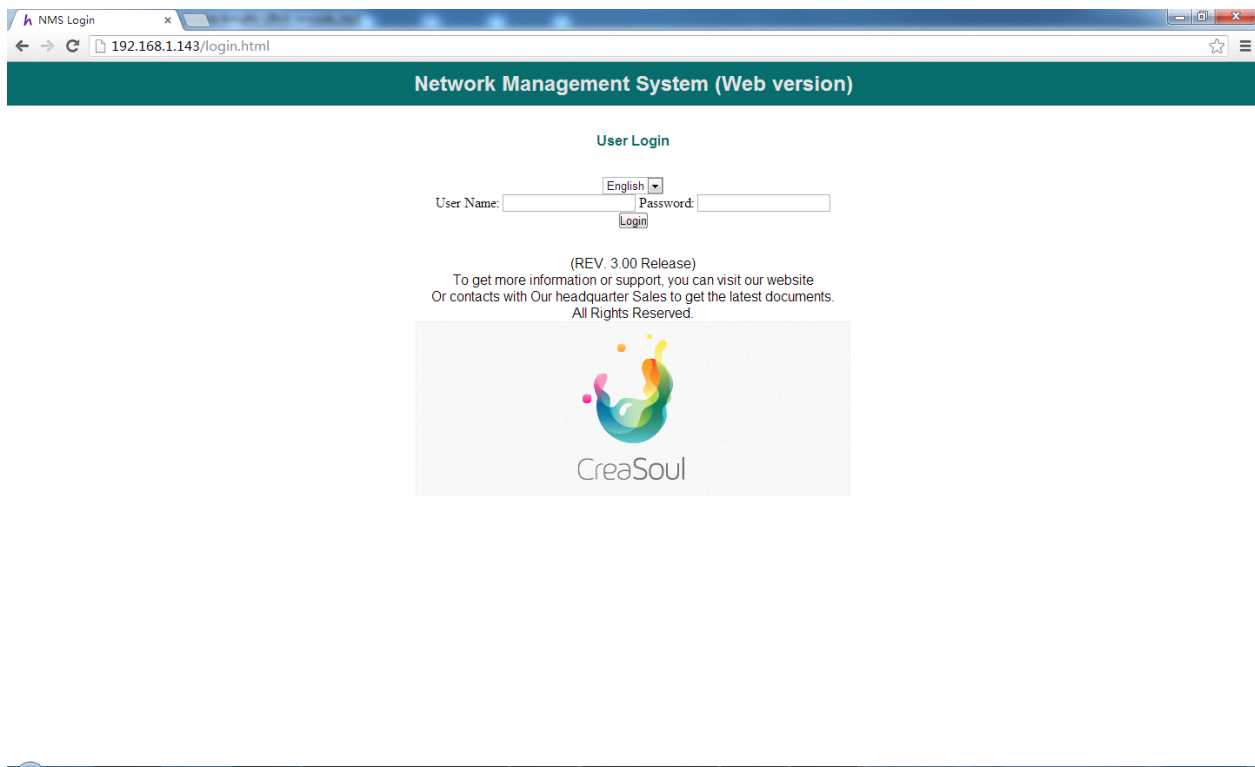


Figure 1 English interface

### 3.3、 Enter the Home page interface of network management :

Type admin in the "User Name " bar box and “pwss”bar box, Click "Login" button to enter device network management interface. Click on the left sidebar of the first option " Home ", Can provide device information of IP encoder as shown in figure 2 below



Figure 2 English interface

### 3.4、Enter status monitoring interface of the device

In the above conditions, click "Monitor" (status Monitoring) button to enter the status monitoring interface of the device. As is shown in figure 3 , can provides status information of input source lock instruction, input resolution; client connection status; client information .

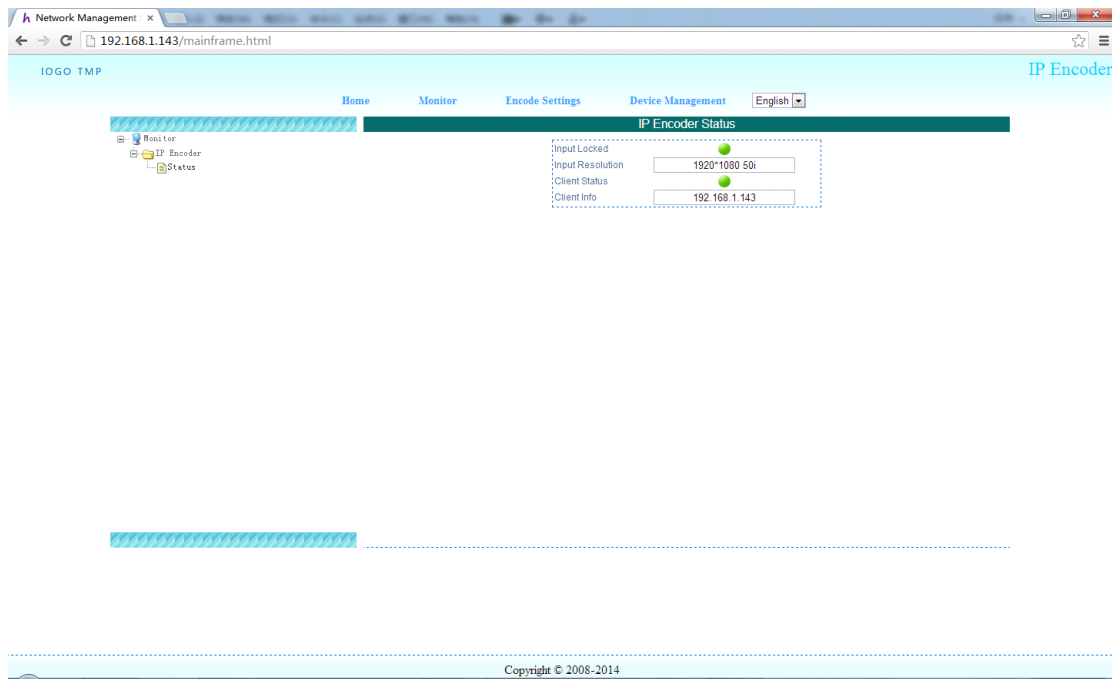


Figure 3 English interface

### 3.5、Enter the encoding parameter setting interface of the device:

In the above conditions, click "Encode Settings" button enter the encoding parameter setting interface of the device. As shown in Figure 4.

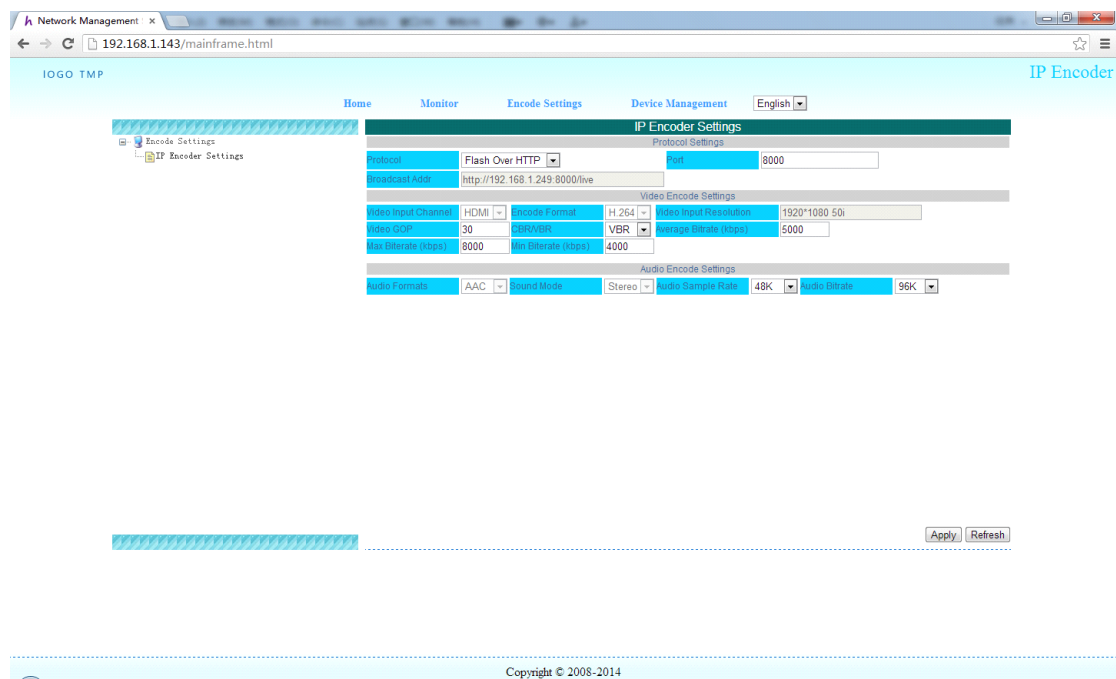


Figure 4 English interface

Output Settings include: output protocol, RTMP, HTTP optional; Port number can be modified; Broadcast address, fixed, http://192.168.1.249:8000/ive; Video encoding settings include: video input channels, fixed HDMI; encoding format, H.264, input resolution, 1920 \* 1080 50i; video GOP, 30; CBR / VBR, VBR optional; average bit rate, 5000Kbps; bit rate upper limit , 8000Kbps; bit rate lower limit, 4000Kbps; Audio encoding Settings include: audio compressed format, AAC; Sound mode, Stereo; The audio sampling rate, 48 K / 44.1 K optional; The audio bit rate, 96 k, 64 k / 96 k / 128 k / 192 k optional.

### 3.6、Enter the management interface of the device

In the above conditions, click "Device Management" button to enter management interface of the device. As shown in figure 5. Click "IP Encoder" button on the left, to provide basic information of device (modules).

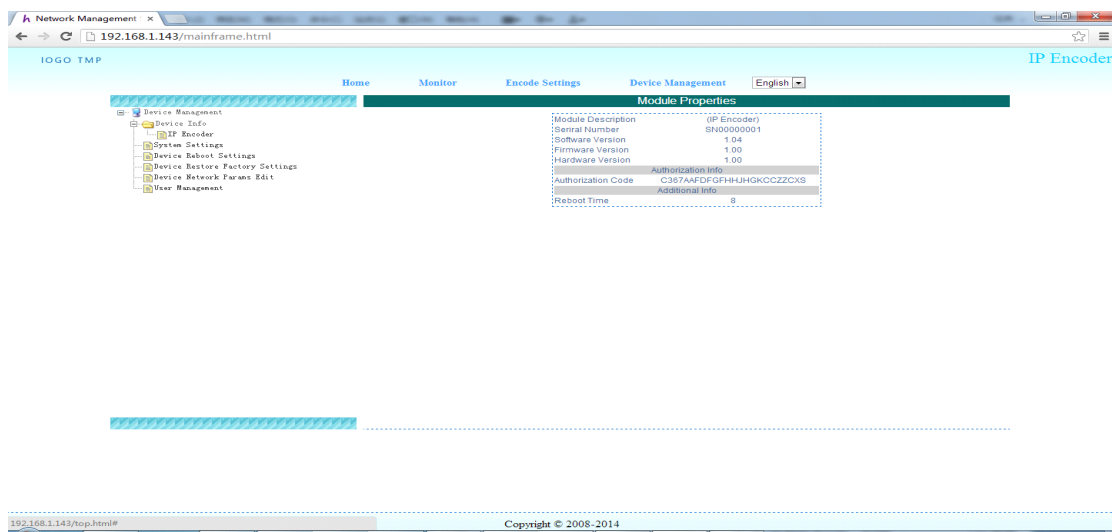


Figure 5 English interface

Click the "System Settings" button on the left, enter the following interface in Figure 6, which provides parameter import / export and operation interface of upgrade system.

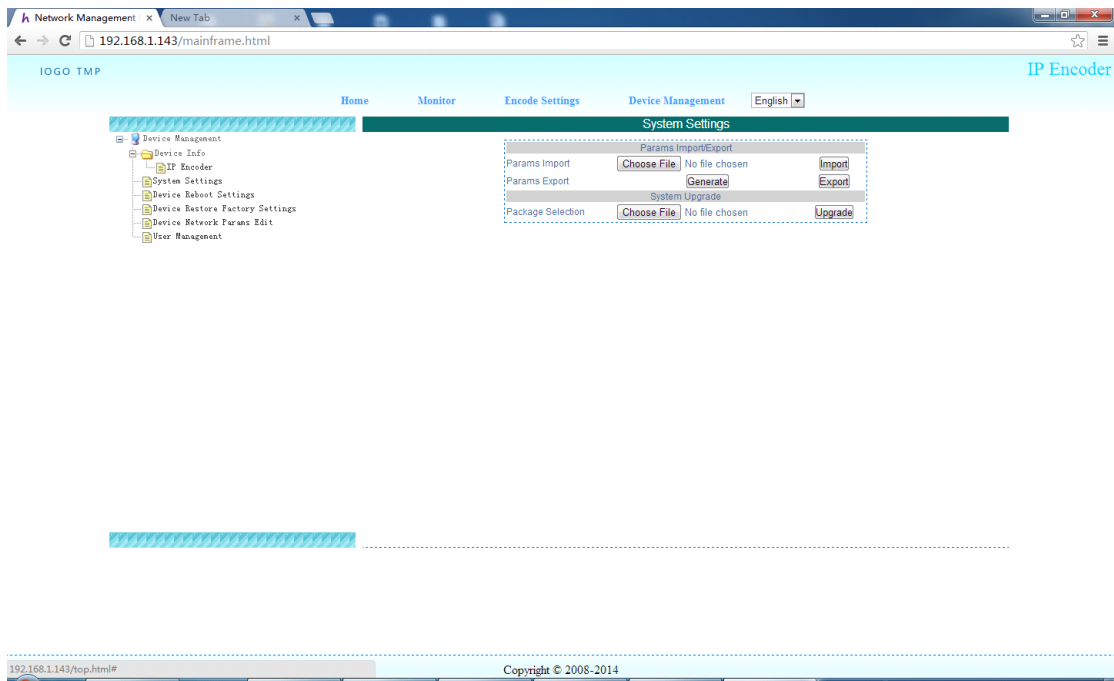


Figure 6 English interface

Click "Device reboot Settings" button on the left, enter the following interface in Figure 7 , which provides operation interface of device reboot , click "Restart" button to reboot the device.

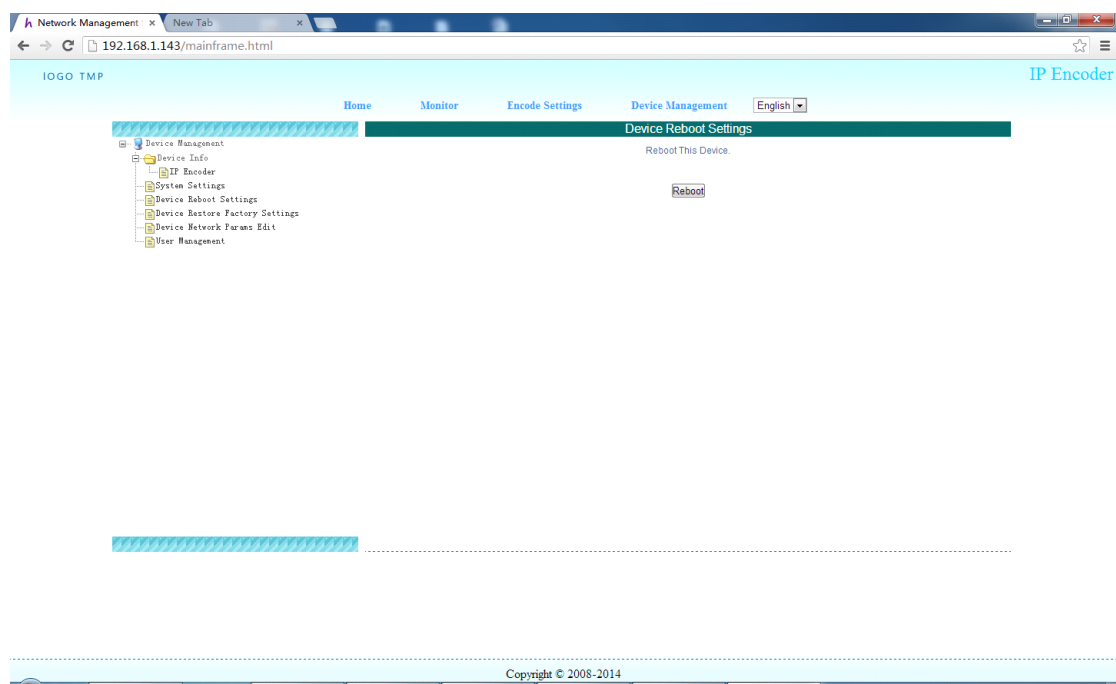


Figure 7 English interface

Click on the "device restore factory Settings" button on the left, enter the following interface in Figure 8, which provide operation interface of restore factory setting, click the " reset " button to complete device restore factory Settings (if you don't know how to configure the device, please use this option with caution).

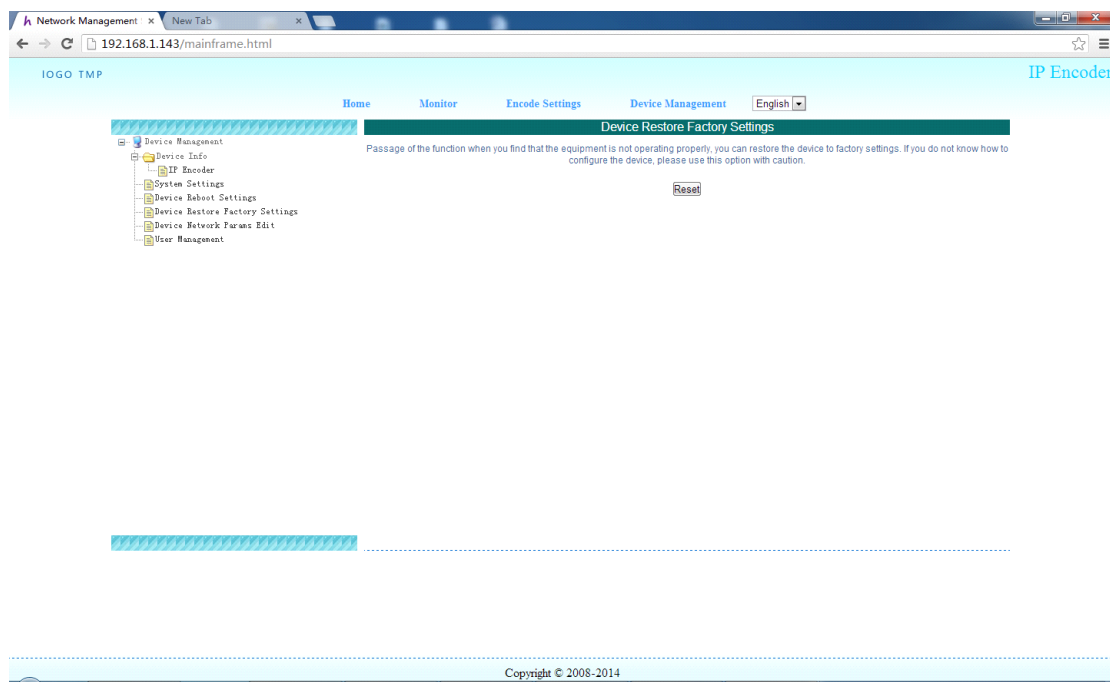


Figure 8 English interface

Click "Device Network params Edit" button on the left, enter the following interface in Figure 9, which provide operation interface of device network parameters modified (network address, gateway address, subnet mask), after modified the network parameter, click the "Apply" button to complete modified the device network params.

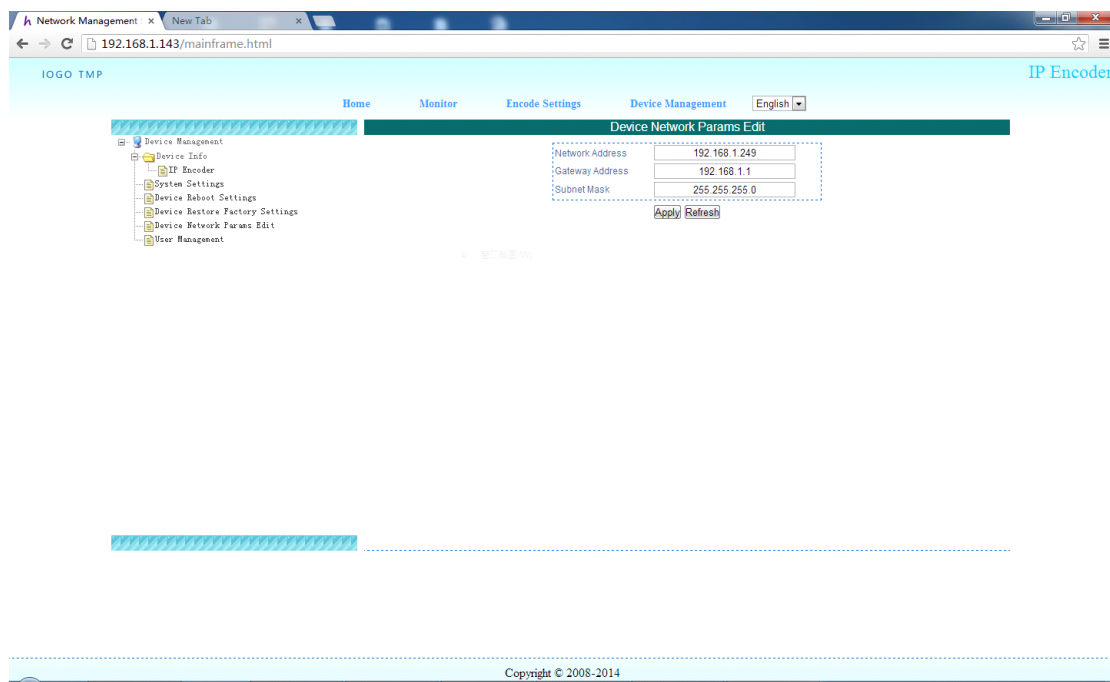


Figure 9 English interface

Click "User Management" button on the left, enter the following interface in Figure 10, which provides user management operation interface (existing user name 、 existing password, new username 、 new password), after modified the user management information, click "Edit" button to complete modified the user management information.

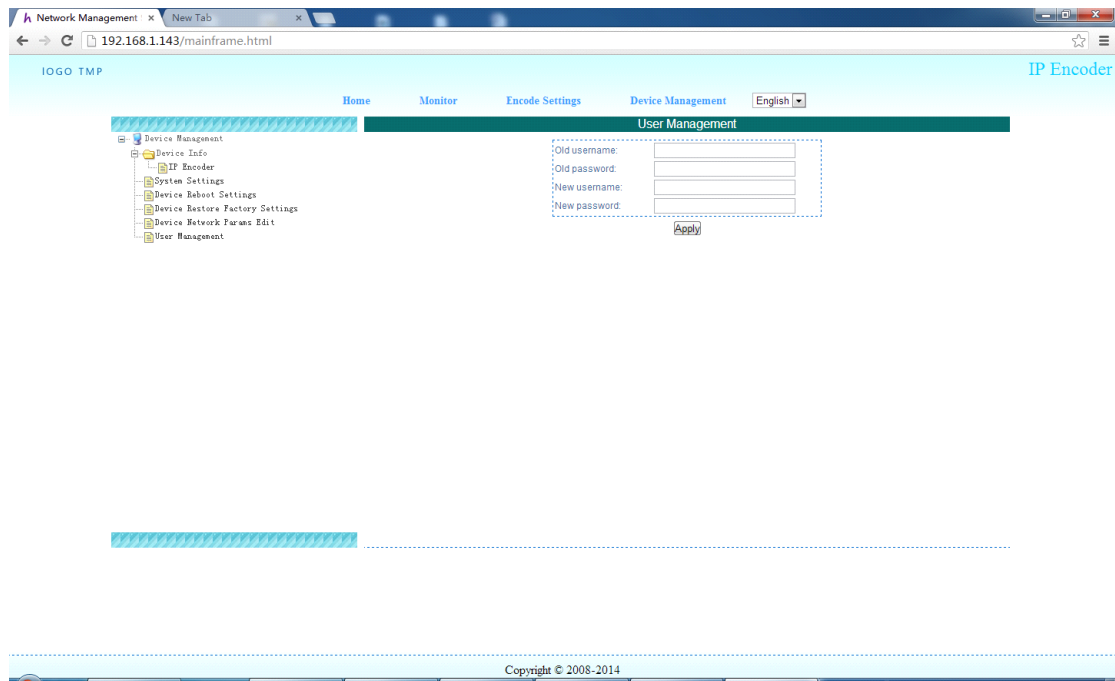


Figure 10 English interface

**Caution:** Please do not cut off the power of the encoder during upgrading ,it will restart automatically after upgrading be finished(Process needs 3 minutes)

**Important note:** if it's IP encoder , needs to turning off the power switch,when restart, please turn off the power switch, wait 15 minutes and then turn on the power switch.