NVD980

H.264 HD Network Decoder

User Manual

Contents

1 Introduction

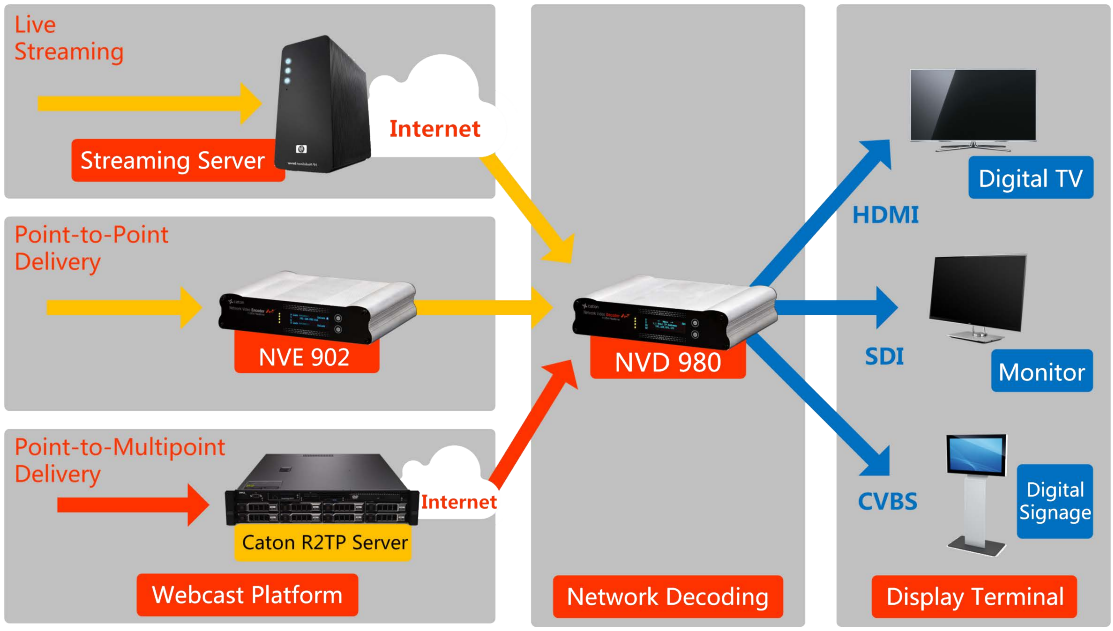
1.1 Abstract

Caton NVD980 is a portable network video decoder, especially for high definition video transmission and playing over internet. NVD980 can be deployed in various streaming applications such as point to point transmission, live streaming, video conference, digital signage and so on.

NVD980 applies H.264 advanced video processing standard, supports FULL-HD 1080P60 video decoding and display. Portable design and Web UI control enable user configure NVD980 conveniently and efficiently.

The NVD980 also supports TS streaming output and can achieve low latency HD video transmission over the Internet by combining with Caton NVE series products. NVD980 supports R2TP (Reliable Real time Transport Protocol), which is Caton proprietary transport protocol especially designed to solve the QoS problems for live video transmission over Internet.

1.2 Applications

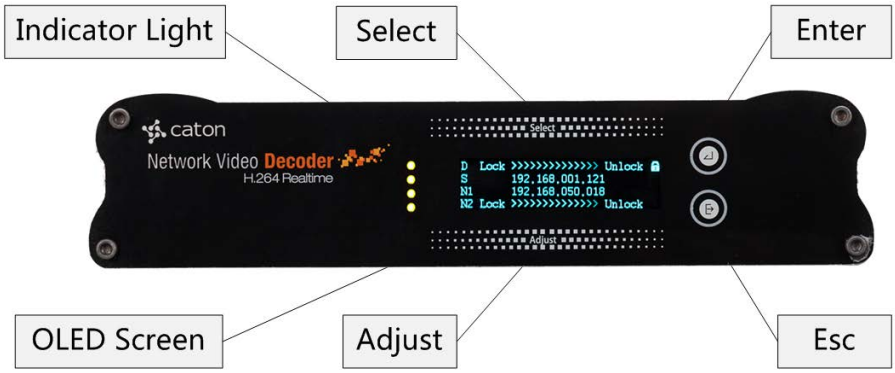


1.3 Main Features

- Support FULL-HD 1080P/60fps decoding and display, support HD/SD-SDI, HDMI or CVBS video output;
- Various streaming protocols, TS Over UDP, TS Over RTP, TS Over HTTP and R2TP(Reliable Real time Transport Protocol)
- Support Caton proprietary protocol R2TP, which applies virtual QoS mechanism to ensure high quality and reliable transmission over unmanageable network environment;
- Easy to configure, support OLED screen and front panel control, support web browser control;
- Embedded Linux OS, reliable and virus proof, provides open API based on HTTP for system integration;
- Aluminum magnesium alloy portable enclosure, small and convenient to carry;

1.4 Panel design

1.4.1 Front Panel



(1) Indicator Light: Indicate the current device status. The 4 lights represent (from top to bottom):

i. Decoding Light: Green represent right decoding status, Red represent abnormal decoding status.

ii. Input Light: Green represent right IP input status, Red represent abnormal IP input status.

iii. Streaming Light: Green represent right Streaming interface connecting status, Red represent abnormal Streaming interface connecting status.

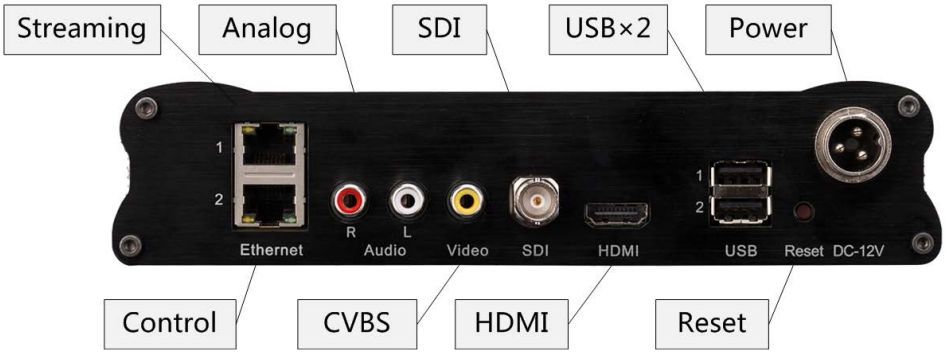
iv. Control Light: Green represent right Control interface connecting status, Red

represent abnormal Control interface connecting status.

(2) OLED Screen: Display the basic configuration & parameters of the device.

(3) Control Buttons: Include “Select”, “Adjust”, “Enter” and “Esc”.

1.4.2 Rear Panel



(1) SDI: Output HD/SD-SDI HD/SD Video & Audio Signals.

(2) HDMI: Output HDMI HD Video & Audio Signals.

(3) CVBS & Analog: Output Analog SD Video & Audio Signals.

(4) Streaming: Network interface to input IP Streaming for decoding.
Control: Network interface to control the device through Internet.

(5) USB(x2): Mount USB flash disk to save or apply the configuration file.

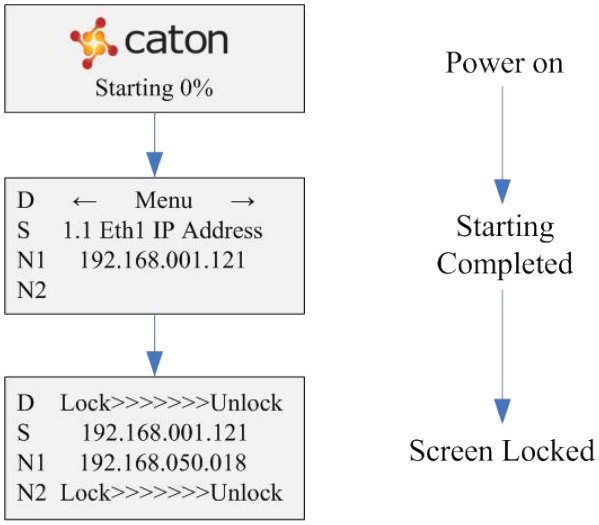
(6) Reset: To recover to the default settings.

(7) Power: Connect the power adapter to power up the device.

2 Front Panel Control

2.1 Power up

Power up NVD980, OLED screen will display as follows:



2.2 Control Method

2.2.1 Basic Operations

Through the NVD980 front panel, user can do the following operations:

(1) Unlock: Slide the "Select" button and the "Adjust" button from left to right at the same time to unlock the OLED screen. The screen will be locked if there is no operation over 1 minute.

(2) Enter: Press the "Enter" button to enter the submenu or save the modifications.

(3) Esc: Press the "Esc" button to return to the upper menu or cancel the modifications.

(4) Select: Press the "Select" button to select the menu or select the position of parameters.

(5) Adjust: Press the "Adjust" button to select the option or modify the parameter value.

Steps to configure parameters through front panel:

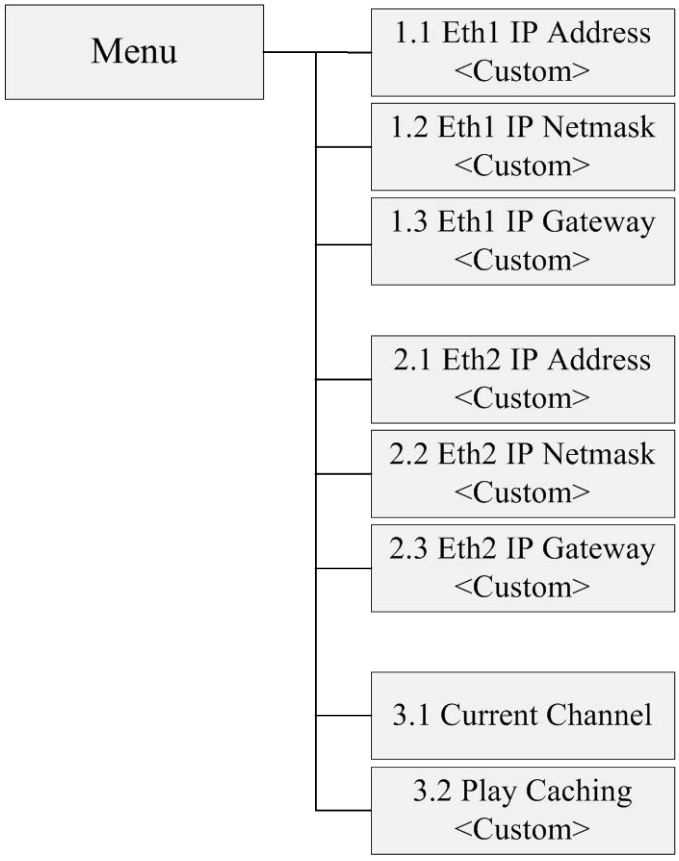
Slide the "Select" button to select the menu, press the "Enter" button to enter the edit mode:

To modify the value of parameters, slide the "Select" button to select the position of parameters. After the cursor moved to the right position, slide the "Adjust" button

to adjust the value of parameters (Slide the “Adjust” button towards the left to decrease the value, Slide towards the right to increase the value). Press the “Enter” button to save the modifications, press the “Esc” button to cancel the modifications.

To change the option of parameters, slide the “Adjust” button to select the option. Press the “Enter” button to save the modifications, press the “Esc” button to cancel the modifications.

2.2.2 Menu Overview



- **Eth1 IP Address:** To view or set the Streaming IP address of device.

  User can set custom Streaming IP address of device.

- **Eth1 IP Netmask:** To view or set the Streaming IP subnet mask of device.

  User can set custom Streaming IP subnet mask of device.

- **Eth1 IP Gateway:** To view or set the Streaming IP gateway of device.

  User can set custom Streaming IP gateway of device.

- **Eth2 IP Address:** To view or set the Control IP address of device.

User can set custom Control IP address of device.

- **Eth2 IP Netmask:** To view or set the Control IP subnet mask of device.

  User can set custom Control IP subnet mask of device.

- **Eth2 IP Gateway:** To view or set the Control IP gateway of device.

  User can set custom Control IP gateway of device.

- **Current Channel:** To view or select the current channel of programs to decode.

- **Play Caching:** To view or set the decode buffering.

3 Web Control

3.1 Log In

User can configure the device via Internet. Take the follow steps to log in before using web UI control:

(1) Prepare a PC with web browser.

Tips: IE 8.0 or Firefox6.0 or higher version is recommended.

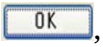
(2) Connect PC and the device through network interface.

(3) Make sure that the IP address of the device and PC are in the same network segment:

☞ Click 

, then click 

, and input “CMD” in the textbox.

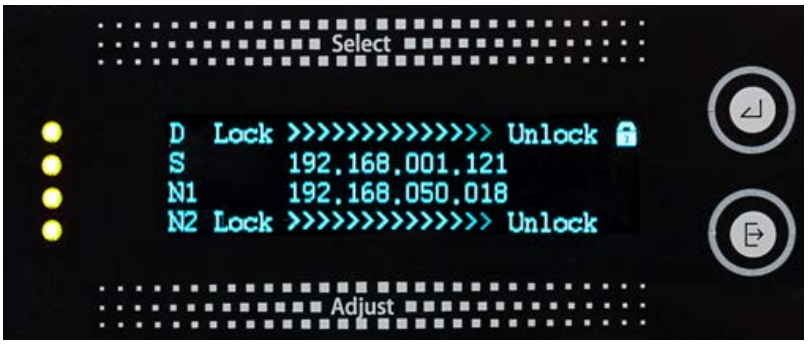
☞ Click 

, it will display the following window:

☞ Input “ipconfig”, and press the “Enter” Key:

Tips: 202.0.0.100 is the local IP address of PC.

☞ Confirm the IP address of the device through the front panel:



☺ **Tips: 192.168.50.18 is the Control IP address of the device.**

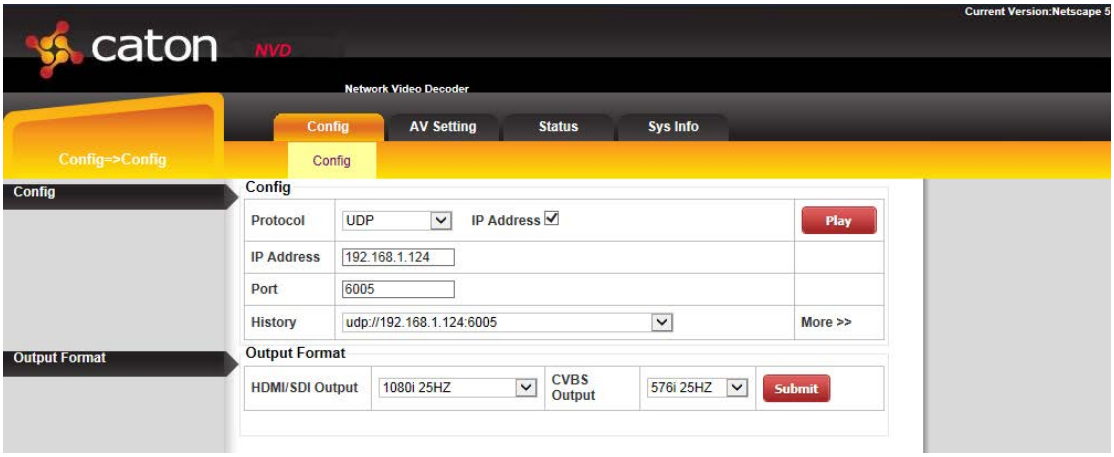
As the IP address of the device and PC are not in the same network segment, user needs to modify the device local IP address to make sure that the IP address of the device and PC are in the same network segment (eg. Set the device Control IP address to be 202.0.0.18). And make sure the IP address is not occupied by other devices, which might cause IP address conflict.

(4) Open the web browser of PC, input the IP address of the device, and it will display the following window:

(5) Input the account name and the password to log in. The default account name and password are both “admin”.

3.2 Basic Setting

Select **Config** in the main menu:



User can configure the basic settings of device.

The configuration of different transport protocol: (Click ☑ to unfold the optional term)

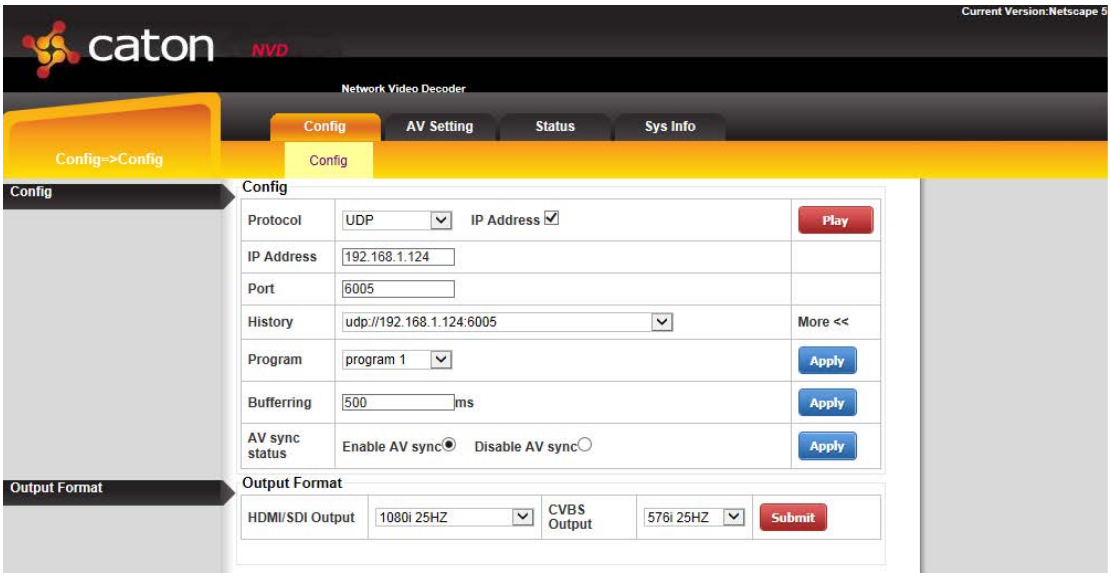
Protocol	Configuration
UDP	udp://Address:Port Protocol: UDP ☑ IP Address IP Address: Port:
RTP	rtp://Address:Port Protocol: RTP ☑ IP Address IP Address: Port:
HTTP	http://Address:port http://Address/ID http://Address:port/ID Protocol: HTTP ☑ Port ☑ ID IP Address: Port: ID: live

R2TP	r2tp://Address:Port Protocol: R2TP Port:
R2TP-S	r2tps://Address:Port/ID Protocol: R2TP-s IP Address: Port: ID: live

- **History:** To select the history IP address.

Click Play to save the modification.

Click More >> to unfold the advanced setting.



- **Program:** To select the program to decode.
- **Bufferring:** To set the decoding buffer.
- **AV sync status:** To select to apply audio & video synchronisation.

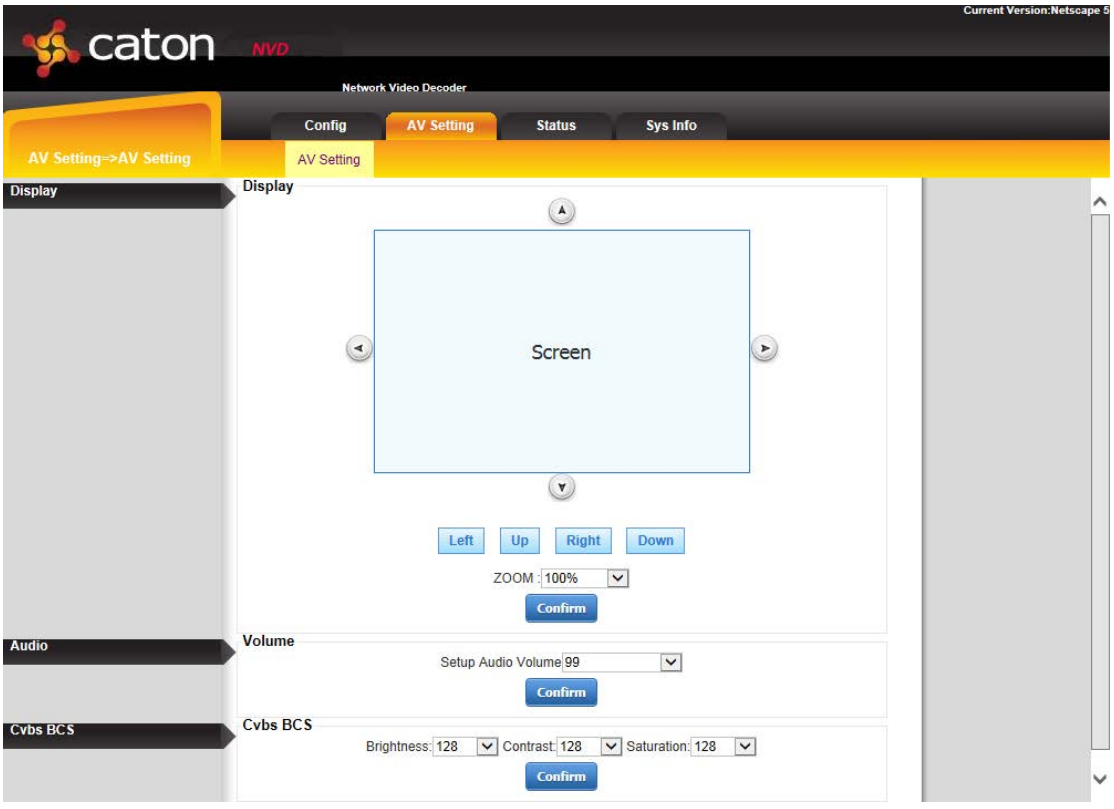
Click Apply to save the modification.

Output Format	
HDMI/SDI Output	1080p 60HZ（HDMI Only）， 1080p 50HZ（HDMI Only）， 1080i 30HZ，1080i 25HZ， 720p 60HZ，720p 50HZ， 576i 25HZ，480i 40HZ
CVBS Output	576i 25HZ，480i 40HZ

Click Submit to save the modification.

3.3 AV Setting

Select **AV Setting** in the main menu:



- **Display:** To adjust the video position in the screen.

Choose the picture scaling in the ZOOM menu, then click the direction button to adjust the video position.

- **Volume:** To set the decoding audio volume. Range is 0~99.

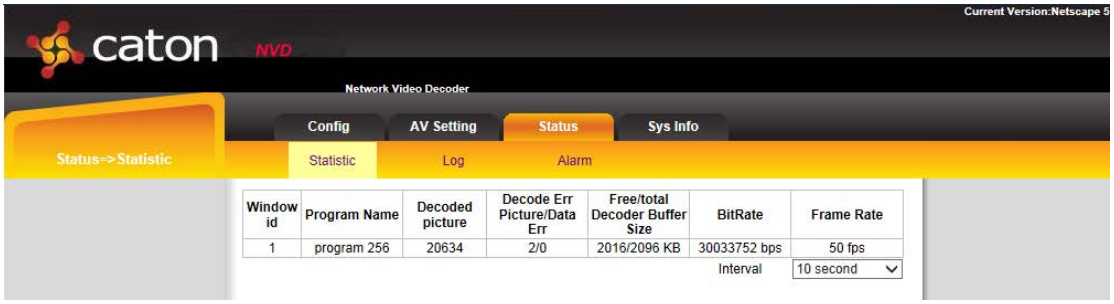
- **CVBS BCS:** To set the parameters of CVBC video. Range is 0~99.

Click Confirm to save the modification.

3.4 Status

3.4.1 Decoding Status

Select **Status** in the main menu:

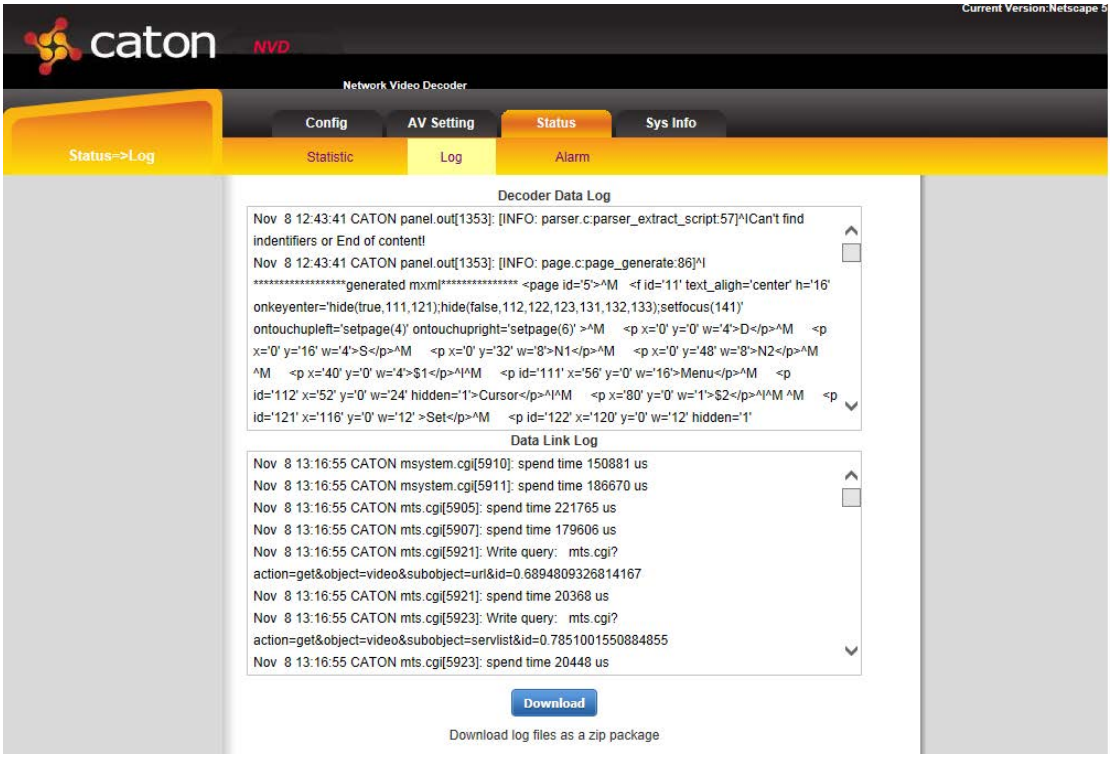


User can view the decoding status of the device.

- **Interval:** To select the refreshing frequency of the status page.

3.4.2 Log

Select **log** in the submenu:

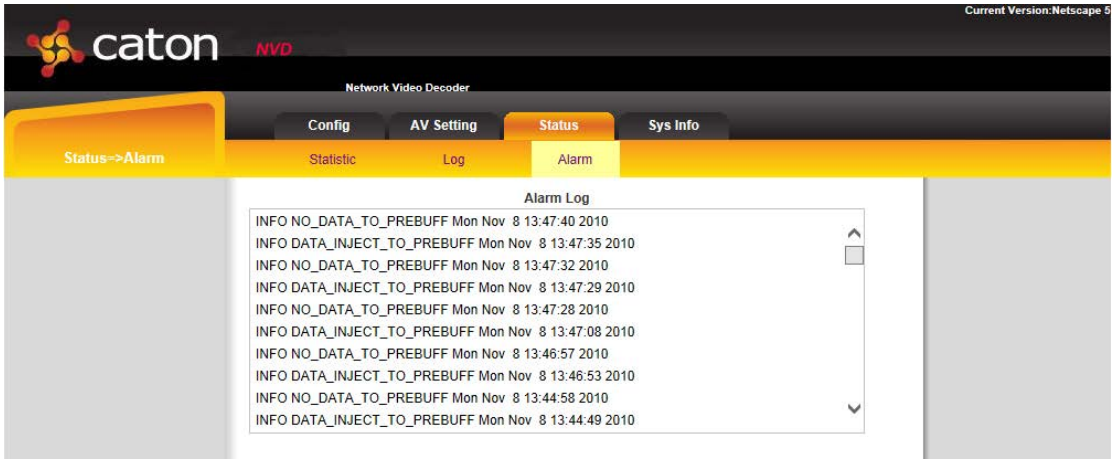


User can view the log file of the device.

Click  to download the log file, saving as zip compressed file.

3.4.3 Alarm

Select **Alarm** in the submenu:

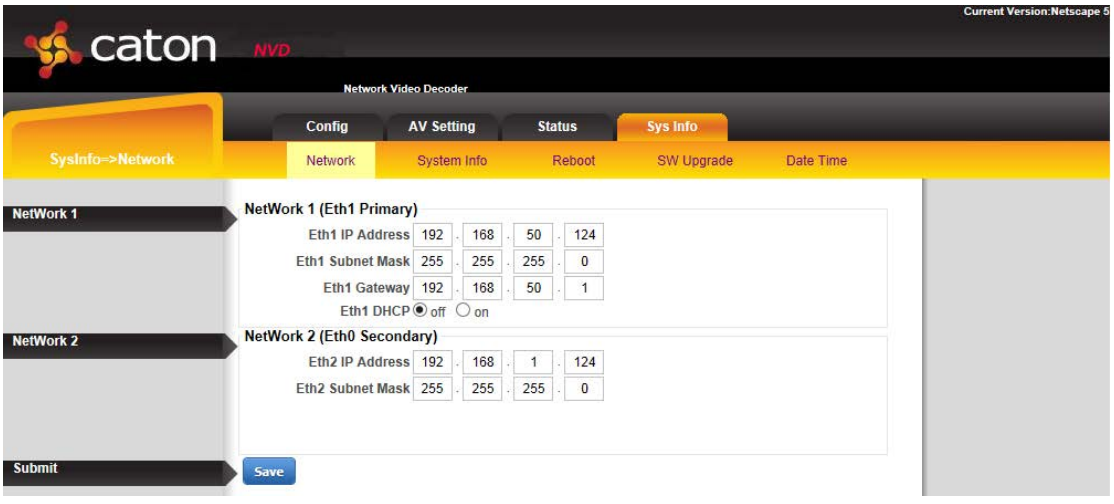


User can view the alarm record of the device.

3.5 System Information

3.5.1 Network

Select **Alarm** in the main menu, and select **Network** in the submenu:



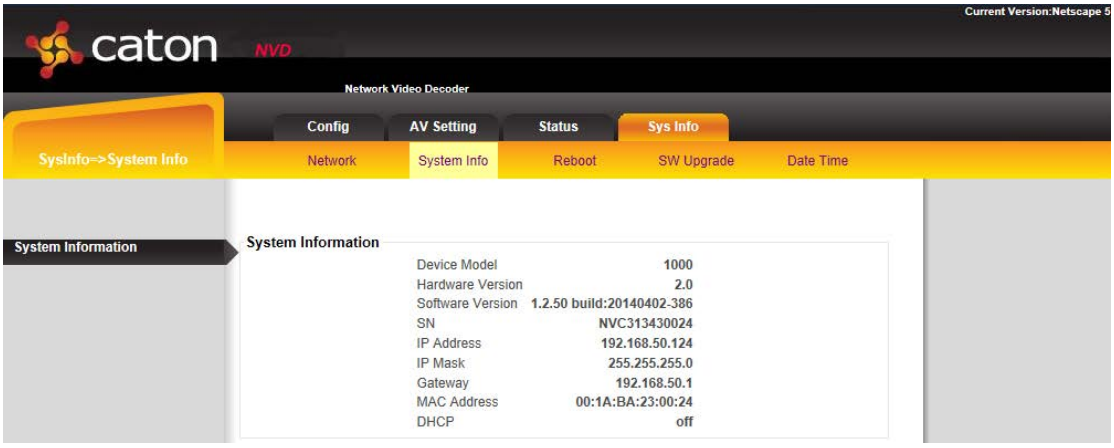
User can set the IP address of the device.

- **Network 1 (Eth1 Primary):** the IP address of the Streaming network interface.
- **Network 2 (Eth2 Secondary):** the IP address of the Control network interface.

Click  to save the modification.

3.5.2 System Info

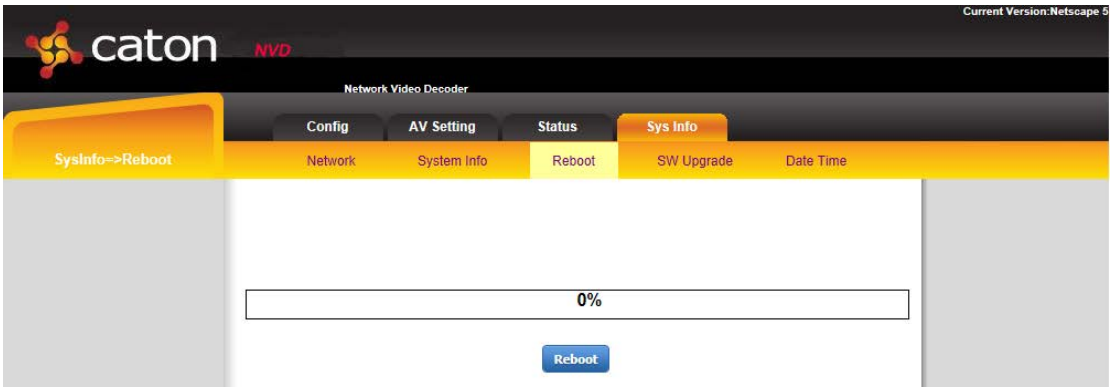
Select **System Info** in the submenu:



User can view system information of the device.

3.5.3 Reboot

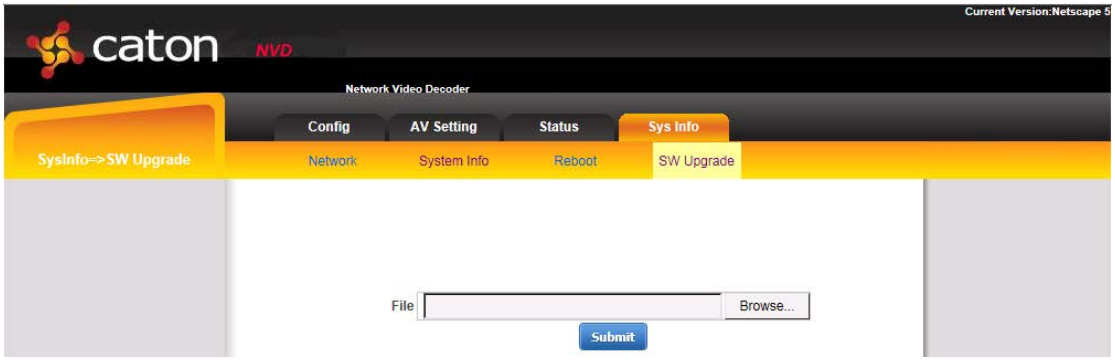
Select **Reboot** in the submenu:



Click  to reboot the device.

3.5.4 Upgrade

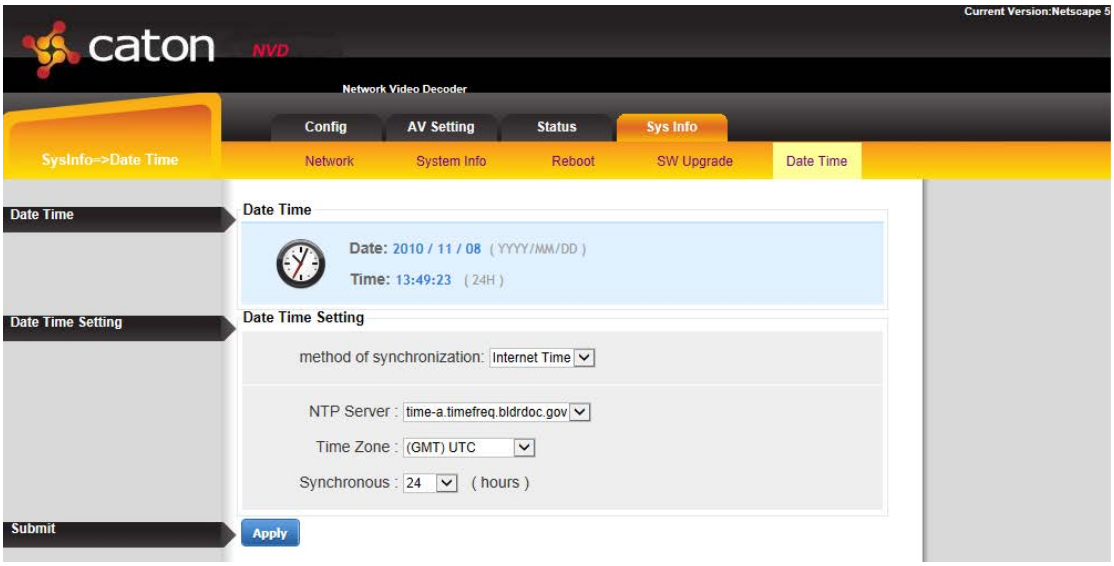
Select **SW Upgrade** in the submenu:



Click Browse... to select the upgrade file, and click Submit to upgrade the device. The upgrade process will last about half a minute. The device will restart automatically after upgraded, and recover to the default settings.

3.5.5 Date Time

Select **Date Time** in the submenu:



User can set the date and time of the device.

4 Technical Parameters

4.1 Video Decoding Index

Video Decoding	H.264(MPEG-4 Part 10/MPEG-4 AVC)
Profile & Level	Support High/Main Profile, Support 4.1/3.0 Level
Video Format	1080p@60/50: 1920 x 1080; 1080i@30/25: 1920 x 1080; 720p@60/50: 1280 x 720; 576i@25: 720 x 576; 480i@30: 720 x 480;
Audio Decoding	AAC-LC, MPEG1-Layer Ⅱ（MP2）

4.2 Network Index

Streaming Protocol	TS Over UDP, TS Over RTP, TS Over HTTP, R2TP(Reliable RTP, Caton Proprietary Transport Protocol)
Network Interface	Streaming: RJ-45 (10/100/1000 BASE-T), Support WAN transmission; Control: RJ-45 (10/100 BASE-T), Support LAN only;
Bit Rate	Up to 12Mbps

4.3 Interface Index

Output Interface	1xHD/SD-SDI (Up to 1080i30)
	1xHDMI (Up to 1080p60)
	1xAV (3xRCA)
Input Interface	2xRJ45: Streaming 10/100/1000Base-T, Control 10/100 Base-T
Other	2 x USB 2.0, support USB storage

4.4 Environment Index

Room Temperature	10°C~40°C
Working Temperature	0°C~50°C

Storing Temperature	-20°C~70°C
Power	DC 12V
Power Consumption	≤6W

4.5 Physical Index

Height	44.5mm
Width	155.0mm
Depth	200.0mm
Weight	1000g