HDMI / IP Digital RF Modulator

KC101

SAFETY INSTRUCTIONS

⚠ **CONNECTING TO THE MAINS SUPPLY**

This product has to be connected to the mains supply.
Before carrying out maintenance operation or modification of the installation, the device has to be disconnected.

⚠ **OVERVOLTAGE**

An over-voltage cause short-circuits or fire. Never overload the power lines. Always use the power supply provided for single channel series.

⚠ **LIQUIDS**

should be protected from splashes;
Do not place objects filled with liquids on it;
If any liquid should accidentally fall into the cabinet, disconnect the power plug.

⚠ **CLEANING**

Disconnect the module before cleaning. Use only a humid cloth without solvent.

⚠ **VENTILATION**

the ventilation holes should not be obstructed;
not be installed in a hermetically sealed environment;
Other electronic products or heat producing items keep a minimum distance of 15 cm around the apparatus for sufficient ventilation;

⚠ **ACCESSORIES**

Only use the supplied power adaptor;
The use of accessories not manufactured by the manufacturer can cause damage to the module.

⚠ **INSTALLATION OF THE MODULE**

Do not expose the unit to rain or moisture;
Do not installed in direct sunlight or in humid place;
Respect the minimum and maximum temperature specifications

PACKAGE CONTENT

IP QAM Modulator   1pc
Power Adapter   1pc

GENERAL DESCRIPTION

The IF101 is a portable IP QAM modulator that can bring IP streaming, USB storage to RF coax output.

The IF101 can be widely used in digital headend system,broadcasting and Hotel TV systems and etc.

FEATURES

- Support 1* 10/100 Mbps IP and HDMI input

- USB playback (Format FAT32)

- LCD & web controlled, updated via web

- Support DVB-C/ DVB-T RF output

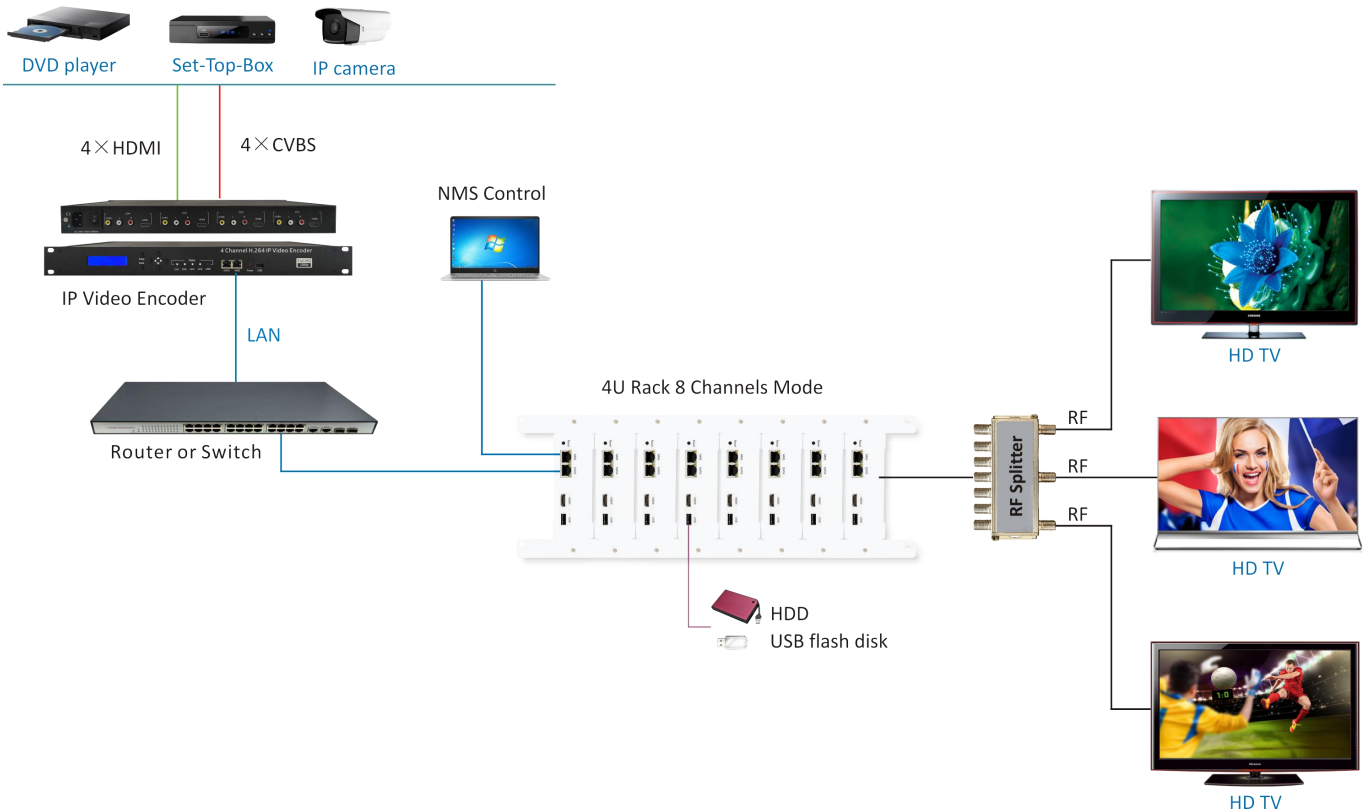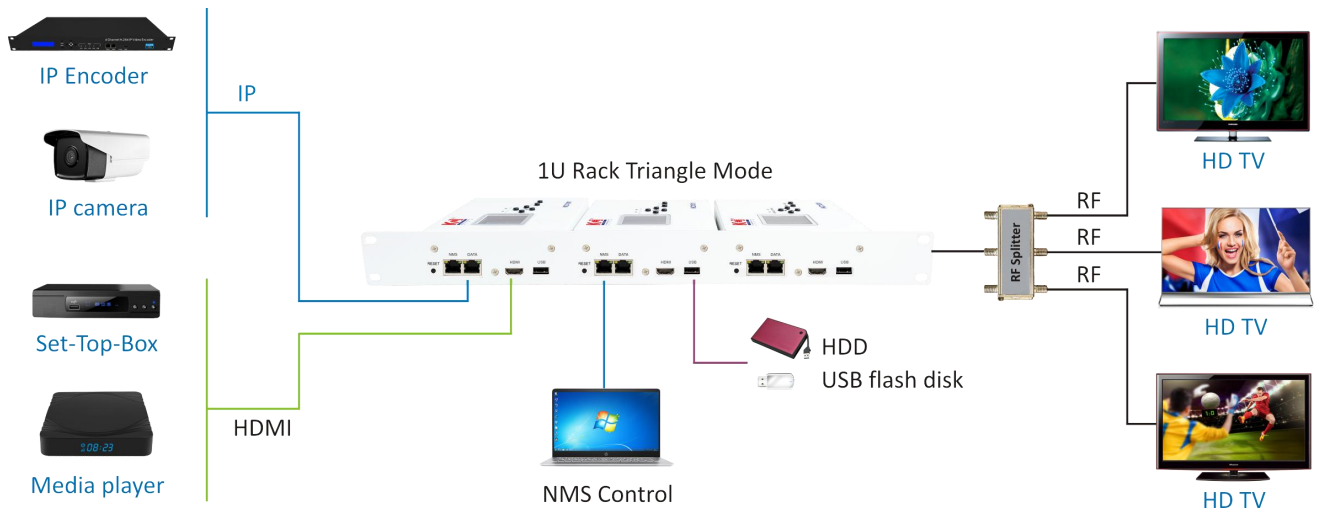- Support multiple network streaming protocols

APPEARANCE INTRODUCE
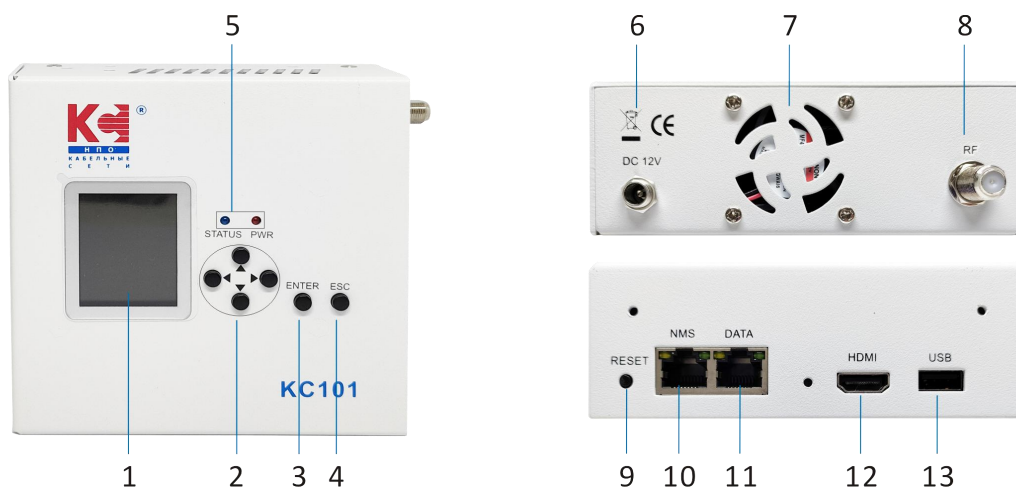
1. LCD Screen
2. Directional keys (up,down,left,right)
3. Enter Key
4. ESC(Cancel/Return)
5. Status & Power LED
6. Power input
7. Fan

8. RF output
9. Reset Button
10. NMS Control
11. IP DATA
12. HDMI input
13. USB Port

TECHNICAL SPECIFICATIONS

Input	
IP	1x RJ45, 10/100 Mbps
Protocol	IPv4/v6, TCP, UDP, HTTP, HLS, RTP, RTSP, RTMP, IGMP (Multicast)
Control	LCD with 6 keys & NMS
USB	1x USB(Media formats:MPEG-TS, MPEG4, AVI, MOV, MPEG, MKV)
HDMI	1x HDMI
Encoding	
Encoding Format	MPEG4/H.264
Resolution	Max output: 1080 60P
Modulation	
MER	Typ. 35dB
RF range	100~950MHz, 1KHz step
RF output level	95dBμV(30dB Attenuation)

Standard	DVB-T		DVB-C	
Bandwidth	6,7, 8M		Constellation	16QAM,32QAM 64QAM, 128QAM, 256QAM
Constellation	QPSK, 16QAM, 64QAM			
Code Rate	1/2, 3/5, 2/3, 3/4, 5/6, 7/8			
Guard interval	1/4, 1/8, 1/16, 1/32		Symbol rate	5.000-8.000Msps ADJ
FFT	2K, 8K			

System	
Management	LCD + Control buttons/Ethernet
Language	English
Upgrade	Ethernet
General	
Power Supply	DC 12V 2A
Dimension	128 x 125 x 44mm
Weight	450g
Environmental For Operating	Temperature: 5°C- 40°C Relative Humidity: 80% @ 30°C
19" Rack	1U Rack Mount, 4U Rack Mount

APPLICATION DIAGRAM

IP Encoder

IP camera

Set-Top-Box

Media player

IP

HDMI

1U Rack Triangle Mode

NMS Control

HDD
USB flash disk

RF Splitter

RF

RF

RF

HD TV

HD TV

HD TV

DVD player   Set-Top-Box   IP camera

4×HDMI   4×CVBS

NMS Control

IP Video Encoder

LAN

Router or Switch

4U Rack 8 Channels Mode

HDD
USB flash disk

RF Splitter

RF

RF

RF

HD TV

HD TV

HD TV

The solution used the following our products
1.HCI421 - 4 x HDMI/CVBS to IP Video Encoder
2.KC101 - HDMI / IP Digital RF Modulator(H.264-1080/60P)

WEB OPERATION INSTRUCTION

The device is configured using NMS. Access to the NMS is via the network connection

1. IP Address of Computer Setting

We must choose the static IP address according to the default gateway address. The first three numbers must be the same (192.168.0.x in the example).
System Control> Network Connections> LAN Connection> Properties> Internet Protocol Version 4 TCP/IPv4 > Properties> Use the following IP address: IP address Computer: 192.168.0.20 and Subnet mask: 255.255.255.0.
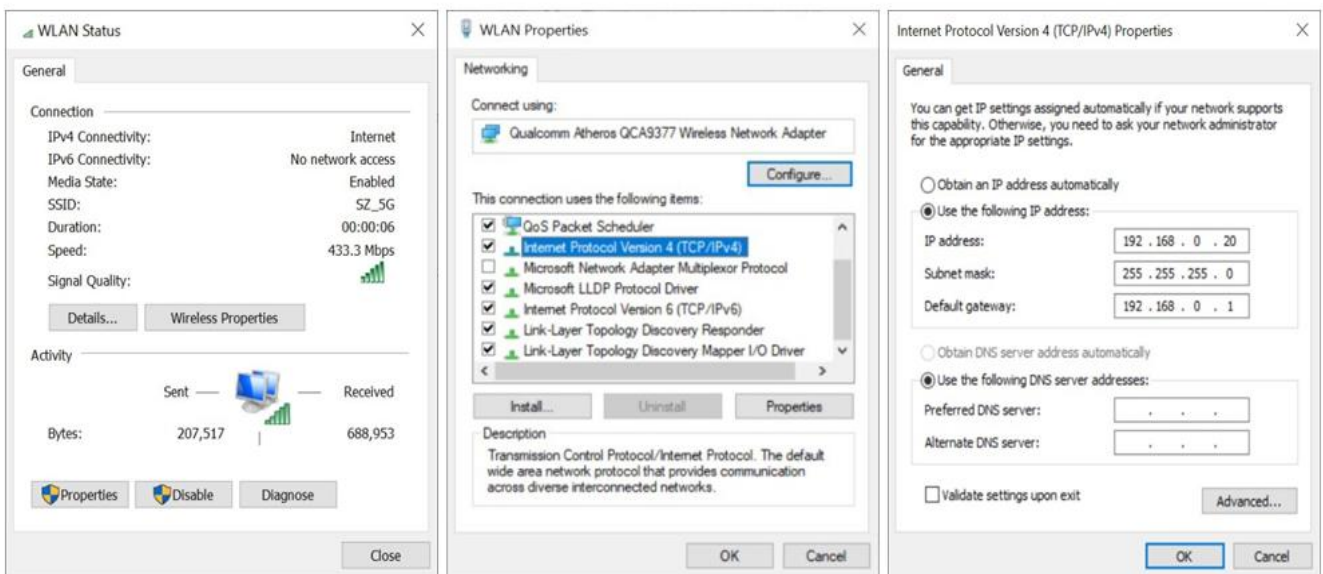
2. NMS Log in

Each machine can have different username and password settings.
Please log in before operation. Default IP is 192.168.0.168;
Username: admin   Password: admin
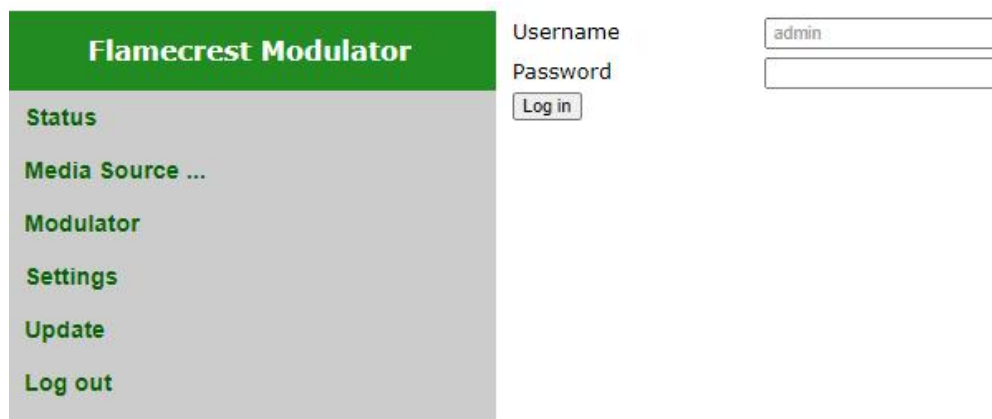
3.NMS Home Page &Status

Contents of the home page includes : **Status/Media Source/Modulator/Setting/ Update/ Log out.**

Click "Status" label and click the " Refresh "button to read the current status.Here you can know the NMS , Modulator and Player information.

4.Media Source

4.1 IP streaming

Click IP Streaming item in Media Source.
Enter your URL of Network streaming in the Full URL field.
(ex. UDP://@239.1.1.1: 3990)
(ex. RTP://@239.1.1.1: 3990)
(ex. RTSP://192.168.1.100:8554/1.mp4)
(ex.rtmp://202.69.69.180:443/webcast/bshdlive-pc)
(ex.http://125.12.7.172:9981/stream/channelid/086640851)
(ex. http://ivi.bupt.edu.cn/hls/cctv1hd.m3u8)
(ex. https://www.youtube.com/watch?v=cSUtWVFaG4I)
Click the "Apply" button to start playing.

Remark:
**You can enter the URL of the network stream such as UDP/RTP, RTSP, RTMP, Http, etc.**

4.2 Videos

Insert the USB flash drive, and then click "Videos" in Media Source.

After selecting USB in the Storage option, click the "Refresh" button, and the USB video files will be listed below.

One file playback： Check the box on the left and click "Play" button or click icon ▶ on the same line.

Multi-files playback： Select the desired video or click the "Select All" button and then click the "Play" button to play.
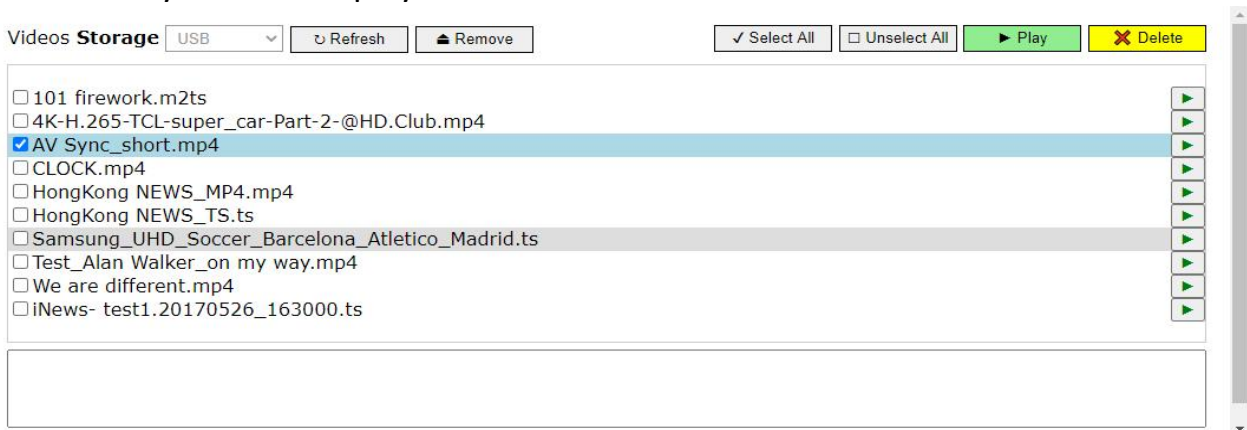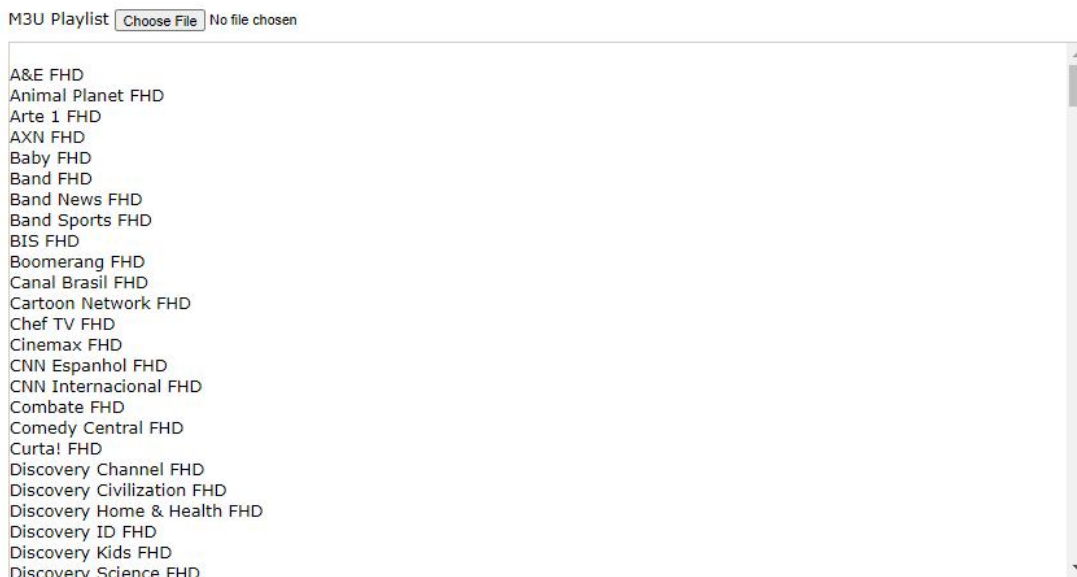

Remark:

a. USB Flash Driver support FAT32 format

b. Unsupported: filename contains #, please remove the special symbol.

c. Before unplugging the storage device, please click the "Remove" button to avoid the warning message from the computer.

4.3 M3U Playlist

Click M3U Playlist item in Media Source, then click the **"Choose file"** button to select your m3u or m3u8 file.

It will list which you select from network streaming file. Click the program what you want to start playing.

Remark :

Current implementation of playlist.

(m3u) is intended for live stream selection only. Continuous file playback with m3u file will be added later.

4.4 HDMI Input

Click the "Apply" button to change to HDMI as source input.

HDMI Input

[Apply]

5.Modulator

5.1 Modulator(DVB-T)

Modulator

Standard	DVB-T		Bitrate	19	Mbps
RF Freq.(MHz)	474		Latency	500	ms
Bandwidth(MHz)	8				
Modulation	64QAM		FHD Output	Auto	
RF Atten.(dB)	0		Audio format	MPEG1	
LCN	1		Half FPS	On	
Service ID	1				
TS ID	1		HDCP	Off	
Network ID	1				
ON ID	1				
Provider Name	KSETI				
Service Name	KSETI HD1				
Private Data Spec ID:	EACEM	0x28			
PMT PID	32				
Video PID	48				
Audio PID	49				
PCR PID	50				
FFT	8K				
Guard Interval	1/16				
Code Rate	5/6				

[Apply] [Refresh]

Parameter	Range
Standard	DVB-T
Frequency(MHz)	100000-950000
Bandwidth(MHz)	6, 7, 8
Modulation	QPSK, 16QAM, 64QAM
RF Attenuation(dB)	0-30
LCN	1-1023
Service ID	1-65535
TS ID	1-65535
Network ID	1-65535
ON ID	1-65535
Provider Name	up to 15 alphanumeric characters
Service Name	up to 15 alphanumeric characters
Private Data Spec ID	Australian TTN, EACEM, FreeView(NZ), ITC, Nordig, other
Parameter	Range
PMT PID	32-8190
Video PID	32-8190
Audio PID	32-8190
PCR PID	32-8190
FFT	2K, 8K
Guard Interval	1/4, 1/8, 1/16, 1/32
Code Rate	1/2, 2/3, 3/4, 5/6, 7/8
Bitrate	Max.20Mbps
Latency	500, 800, 1000 ms
FHD Output	Auto, Interlace
Audio format	AAC, MPEG1
Half FPS	On/Off
HDCP	On/Off

5.2 Modulator(DVB-C)

Parameter	Range
Standard	DVB-C
Frequency(MHz)	100000-950000
Symbol Rate(Ksps)	5000-8000
Modulation	16QAM, 32QAM, 64QAM, 128QAM,256QAM
RF Attenuation(dB)	0-30
LCN	1-1023
Service ID	1-65535
TS ID	1-65535
Network ID	1-65535
ON ID	1-65535
Provider Name	up to 15 alphanumeric characters
Service Name	up to 15 alphanumeric characters
Private Data Spec ID	Australian TTN, EACEM, FreeView(NZ), ITC, Nordig, other

Parameter	Range
PMT PID	32-8190
Video PID	32-8190
Audio PID	32-8190
PCR PID	32-8190
Bitrate	Max.20Mbps
Latency	500, 800, 1000 ms
FHD Output	Auto, Interlace
Audio format	AAC, MPEG1
Half FPS	On/Off
HDCP	On/Off

6. Settings

Setting Page including Network Setting/Software & Firmware Update/Log in Password Changed.

6.1 NMS Network Setting

The Default IP of NMS is 192.168.0.168. In these fields, enter the IP address/ Subnet Mask /Gateway/MAC Address you want to change.
Click "Apply" button and wait a moment, it will change to the IP information of your choice.

6.2 Player Network Setting

In the MAC Address field, click the back grid to modify the content.
Click "**Apply**" button to save settings.

Remark:
A. IP addresses of KC101 player and SMB server need to be in the same area network.

B. Please do not set the IP of NMS and player to the same

6.3 Password

In the New password field, enter the new password you want to change, also the same password as the new password to confirm. Click **"Apply"** button and wait a moment, it will Change the password and reload.
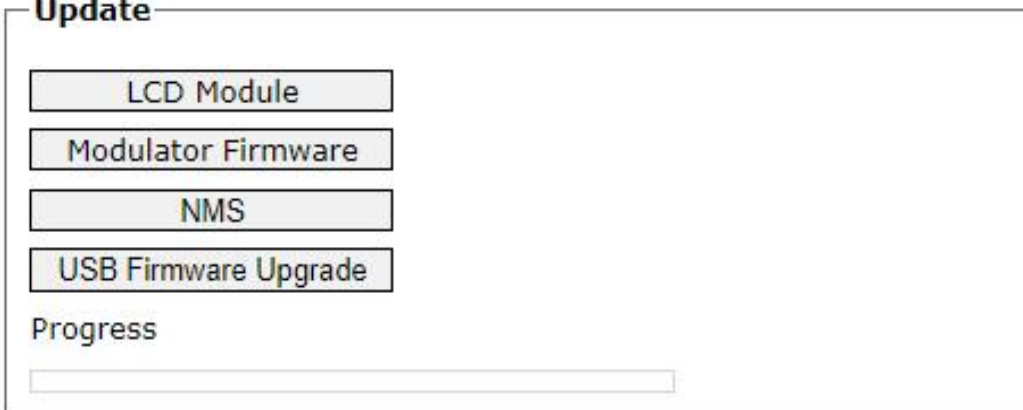
7. Update

Which has four items **LCD Module /Modulator Firmware/NMS and USB Firmware Upgrade.**

Notes：

a. **Make sure the network is stable before operation.**

b. **Avoid opening two pages with the same URL.**

c. **The update process ensures that the route and power supply are not separated.**

d. **After the update, it takes a while for the machine to automatically restart. At this time, it is absolutely impossible to turn off the power.**

8. Log Out

Log out of the MNS control page, please click **"Log out"**, it will show a message box, then click **"OK"** to log out.