HELIX

HDMI-IR DISTRIBUTION

IP32PAL

32 CHANNEL
IP TO ANALOG MODULATOR

NMS IP: 192.168.1.30
User Name: user
Password: user

A Note from Helix about this Manual

Intended Audience

This user manual has been written to help people who have to use, integrate and to install the product. Some chapters require some prerequisite knowledge in electronics and especially in broadcast technologies and standards.

Disclaimer

Copy Warning

Table of Contents

1. INTRODUCTION

IP32PAL is a high density IP to analog RF platform that carries 32 free adjacent channels in a 2U box. Browser based user interface facilitate system setup and maintenance efficiency. This outstanding headend system consume much less power then other competitors, eventually reduce operating cost and extend life cycle.

2. FEATURES

1. System provides 1 GE input ports for both MPTS and SPTS video streams
2. Receive IP streams and output up to 32 channels in NTSC or PAL standard
3. Easy configuration and software upgrade by built-in Web UI
4. Support running text and image overlay
5. Support BISS decryption as an option
6. Support multi sound tracks and subtitles selection

3. SPECIFICATION

GbE INPUT			
Input Connector	1 x RJ45	Addressing	Unicast, Multicast
Transport Protocol	UDP, RTP	MPEG Transport	SPTS, MPTS
TS DECODING			
Video Resolutions	Up to 1080P	MAX decoding stream	32 channels
Video Form	MPEG1/2/4; H.264; H.265; AVS; AVS+; VC1	Audio Form	MPEG-1 Layer I/II/III; WMA, AAC, AC3
Additional capabilities	Teletext; BISS decrypt	Aspect Ratio Control	4:3(Letterbox&PanScan); 16:9
Multi-sound track	Support	Multi language subtitle	Support
RF OUTPUT			
Connector	F female connector	Output Level	≥ 53dBmV combined
Number of RF channels	Max 32 agile modulated channels	Adjust Range	10dB per 1CH
Supported Standard	NTSC, PAL BG/DI/DK	Audio Output Format	MONO
STD,HRC and IRC	Support	Audio Level Adjust Range	0 ~ 100%
Output Frequency	48 ~ 860 MHz	RF Test Point	-20dB Relative to output
Out-band Rejection	≥ 60dB	Differential Gain	≤ 5%
Flatness	-2dB per carrier	Group Delay Response	≤ 100nS
Return Loss	12 dB (min)	2K Factor	≤ 2%
GENERAL			
Management	NMS	Consumption	<X/X/320W
Language	English	Weight	11.46/12.62/13.78KG
Power Supply	AC 90~264V	Dimension	471.5*430*88.6 (MM)

TO REDUCE THE RISK OF ELECTRICAL SHOCK,
DO NOT REMOVE COVER FROM THIS UNIT.
NO USER-SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

WARNING: TO PREVENT SHOCK HAZARD, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE

CAUTION

RISK OF ELECTRIC SHOCK
DO NOT OPEN

4. SAFETY INSTRUCTIONS

1. Read all safety and operating instructions before you operate the modulator
2. Retain all safety and operating instructions for future reference
3. Heed all warnings on the modulator and in the safety and operating instructions
4. Follow all installation, operating and use instructions.
5. Unplug the modulator from the AC power outlet before cleaning. Use only a damp cloth for cleaning the exterior of the modulator
6. Do not use accessories or attachments not recommended by us, as they may cause hazards, and will void the warranty
7. Do not operate the modulator in high-humidity areas, or expose it to water or moisture.
8. Do not place the modulator on an unstable cart, bracket or table. The modulator may fall, causing serious personal injury and damage to the modulator. Install the modulator only in a mounting rack designed for 19” rack-mounted equipment.
9. Do not block or cover slots and openings in the modulator. These are provided for ventilation and protection from overheating. Never place the modulator near or over a radiator or heat register.
10. We strongly recommend using an outlet that contains surge suppression or ground fault protection. For added protection during a lightning storm, or when the modulator is left unattended for long periods of time, unplug it form the wall outlet or PDU and disconnect the lines between the modulator and its source. This will prevent damage caused by lightning or power line surges.
11. Do not overload wall outlets or extension cords, as this can result in a risk of fire or electrical shock.
12. Never insert objects of any kind into the modulator through openings as the objects may touch dangerous voltage and will void the warranty. Refer all servicing to authorized service personnel.
13. Unplug the modulator from the wall outlet or PDU and refer servicing to authorized service personnel whenever the following occurs:
    - The power supply cord or plug is damaged
    - Liquid has been spilled into or objects have fallen into modulator
    - The modulator has been exposed to rain or water
    - The modulator has been dropped or the chassis has been damaged
    - The modulator exhibits a distinct change in performance

When replacement parts are required, ensure that the service technician uses replacement parts specified by us. Unauthorized substitutions may damage the modulator or cause electrical shock or fire, and will void the warranty.

5. Unpacking and Handling:

A full IP32PAL is shipped with all equipment assembled, wired, factory tested, and then packaged in an appropriate shipping container.

INTERNET CABLE * 1PCS

30 dB ATTENUATOR * 1PCS

AU/NZ POWER CORD * 1PCS

5.1 Mechanical Inspection

Inspect the front and rear of the equipment for shipping damage. Make sure the equipment is clean, and no wire, cable, or connectors are broken, damaged or loose.

5.2 Precautions

Avoid heat buildup
Ensure easy access to rack wiring
Facilitate servicing and maintenance
Avoid direct heating or air conditioning
Make sure rack supports are sufficiently rigid to support racks
Beware of dripping water onto equipment form leaky roofs, waveguide roof entries and cold water pipe condensations

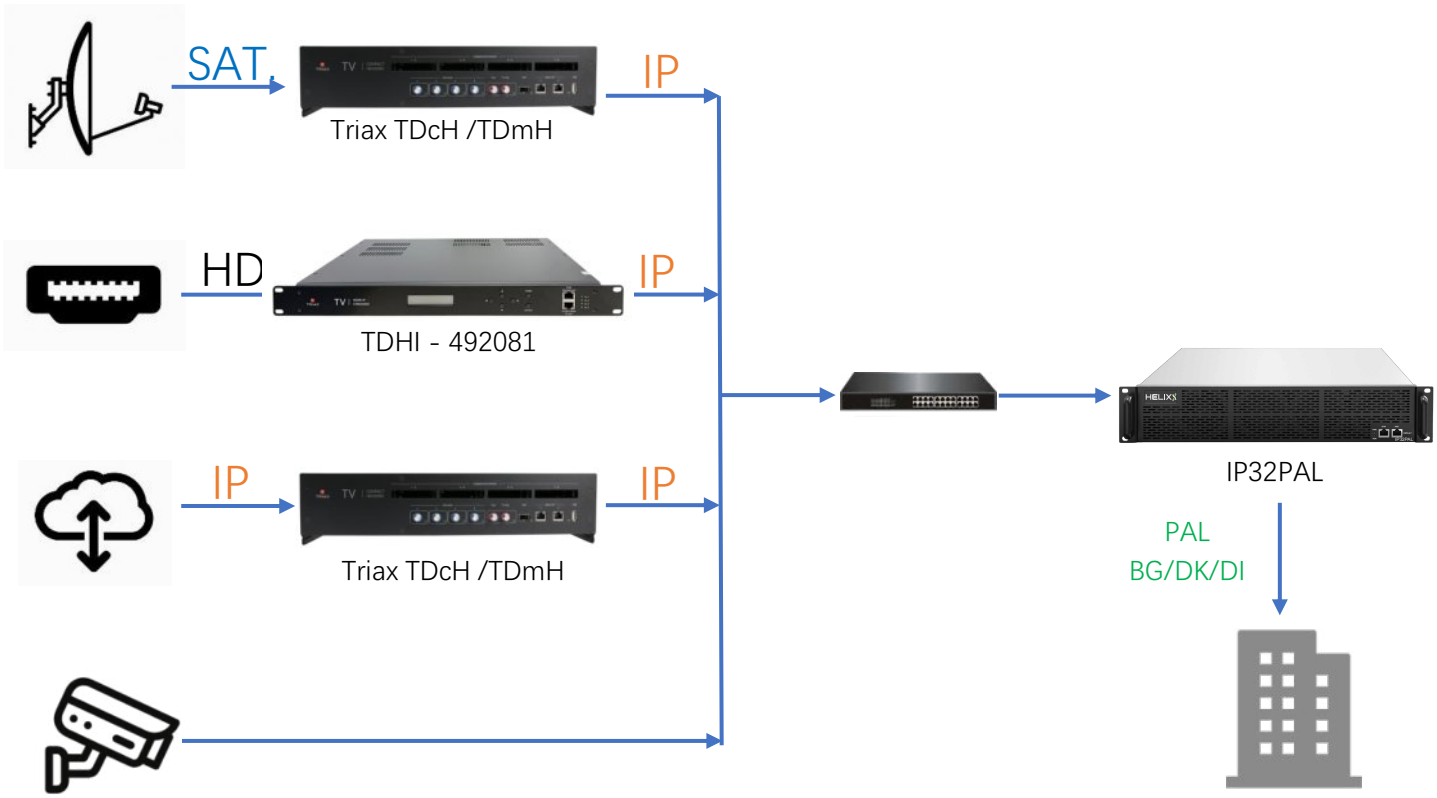
5.3 Damage in Shipment

Should any damage be discovered after unpacking the unit, immediately file a claim with the carrier. A full report of the damage shall be made and a copy forwarded to Seller.

6. INSTALLATION

Please follow the instructions below to install the IP32PAL

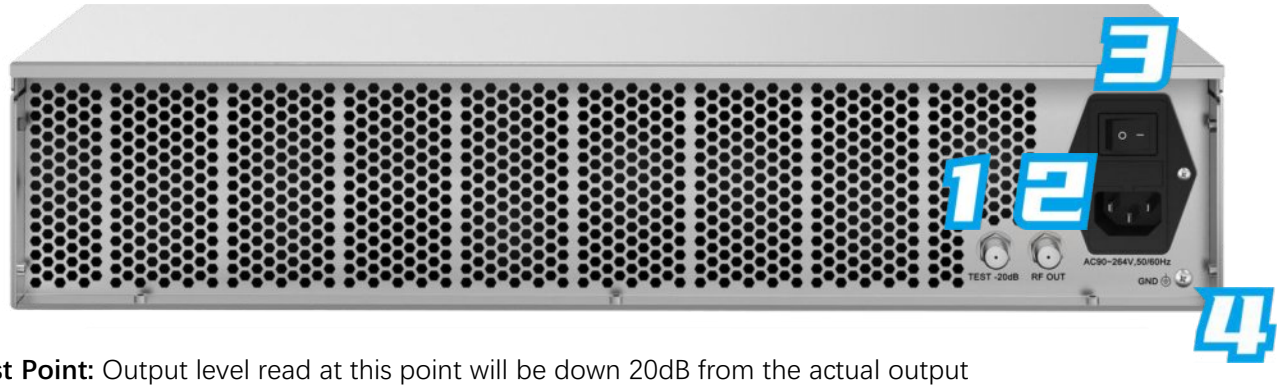
- Connect the power plug to the jack. Do not power up the modulator at this step.
- Connect to the proper earthing wire
- Connect the video source to the IP32PAL
- Power up the modulator
- Log into the modulator and set up the frequency



NOTICE:

1. Pay attention to the VLAN setting in the switch to avoid data conflict.
2. Use the attenuator to low the output level in case you are testing the modulator with the output cable to the TV directly.
3. Enable the VLAN settings in the modulator whenever it is needed.

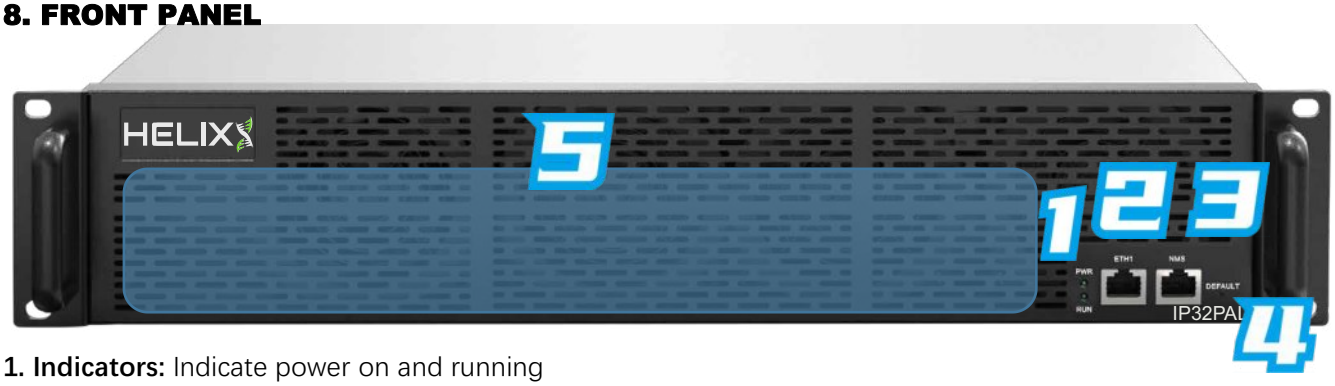
7. REAR PANEL



1. **Test Point:** Output level read at this point will be down 20dB from the actual output
2. **RF Output:** 32 modulated signal output is provided at this port
3. **Power Cord Socket and Cord:** Input power source from 90V to 264V
4. **GND:** For modulator grounding

WARNING:
For the protection of your equipment and its proper working, it is necessary to connect the IP32PAL to a ground connection.

8. FRONT PANEL



1. **Indicators:** Indicate power on and running
2. **ETH01:** To input IP signal here.
3. **NMS:** Net management system port [IP:192.168.1.30; USER NAME: user; PASSWORD: user]
4. **Default:** Press it for 10 seconds to restore the modulator settings.
5. **Ventilation Holes**: The heat-sink holes with dust-proof screen inside

STOP

DO NOT block the unit's ventilation holes.

9 SET UP THE MODULATOR

9.1 LOGIN

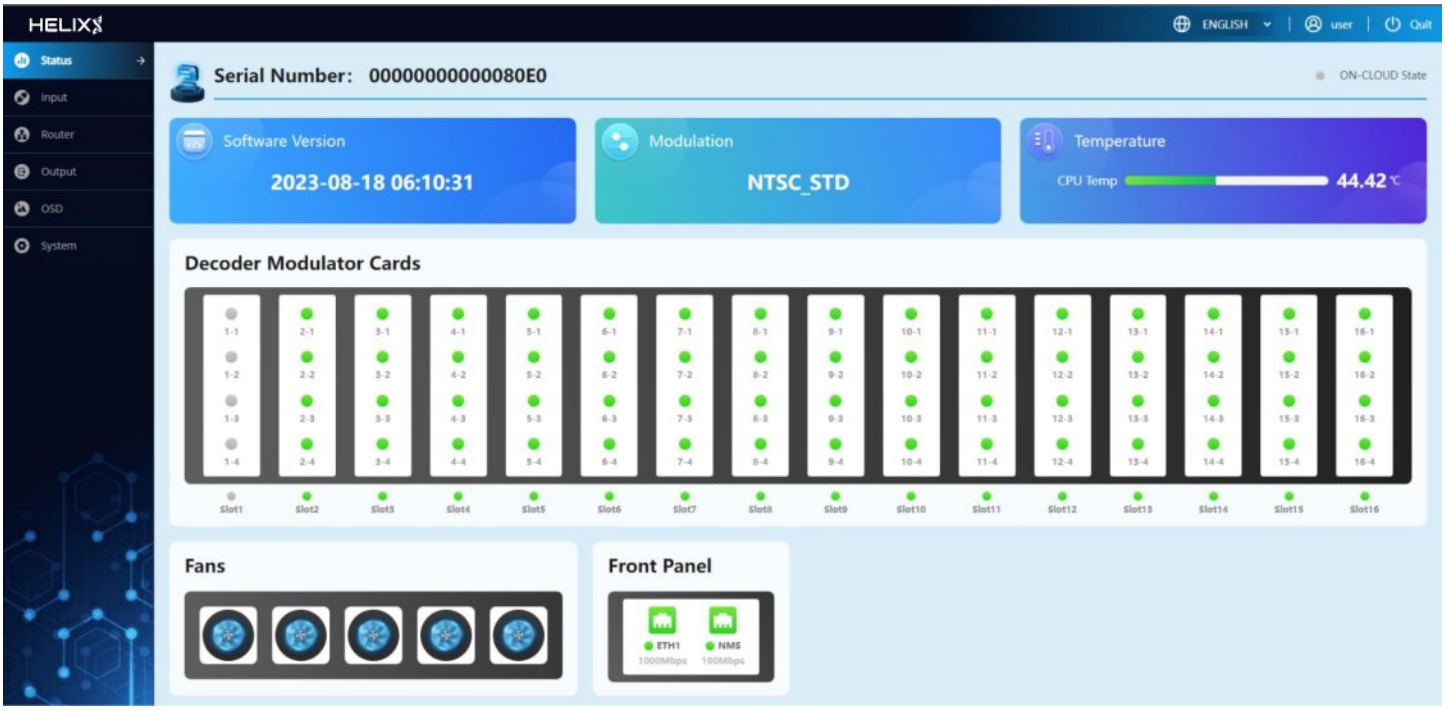
The IP32PAL has a friendly user interface for programming and monitoring the device. The user can get access to the built-in web UI by logging into Google Chrome, Firefox or Microsoft Edge accounts. (The best browsers)

The default user name and the default password are the following:
Username: ***user***
Password: ***user***

Please make sure your computer address is in the same IP segment as the modulator is.
Remind: 1. Please change the user name and password if needed.
2. Username/password are case-sensitive and may contain letters or numbers.
3. Username/password must be a minimum of 1 byte and a maximum of 32 bytes in length.

9.2 SYSTEM STATUS

This page is a read-only one which displays the general health of the unit, such as temperature, Input and output ports and Serial number. The information is provided as a quick way to monitor the system or assist with troubleshooting issue.

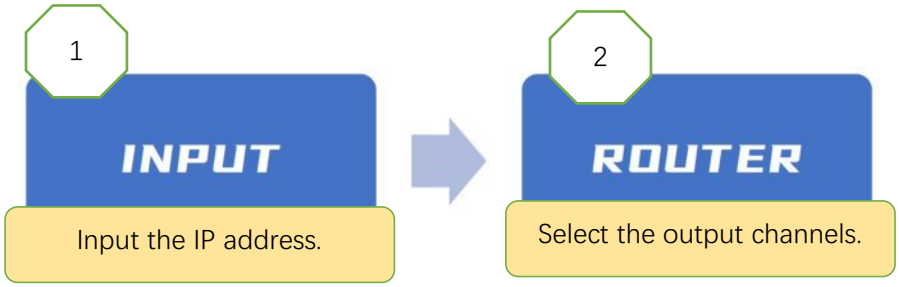


In the left side, it is the MENU while the settings will be displayed in the right side.
Serial Number: The unique ID for this modulator.
Modulation: Indicates the RF output modulation.
Software Version: If there's something wrong with this device, please send this information to us.
Temperature: Indicates the CPU working temperature in real-time.
Decoder Modulator Cards: Indicates the output channels status. The green color means the output is good while the gray means no output..
Cooling Fans: There are four cooling fans installed in the left side of the case.

The fan is working in good condition.

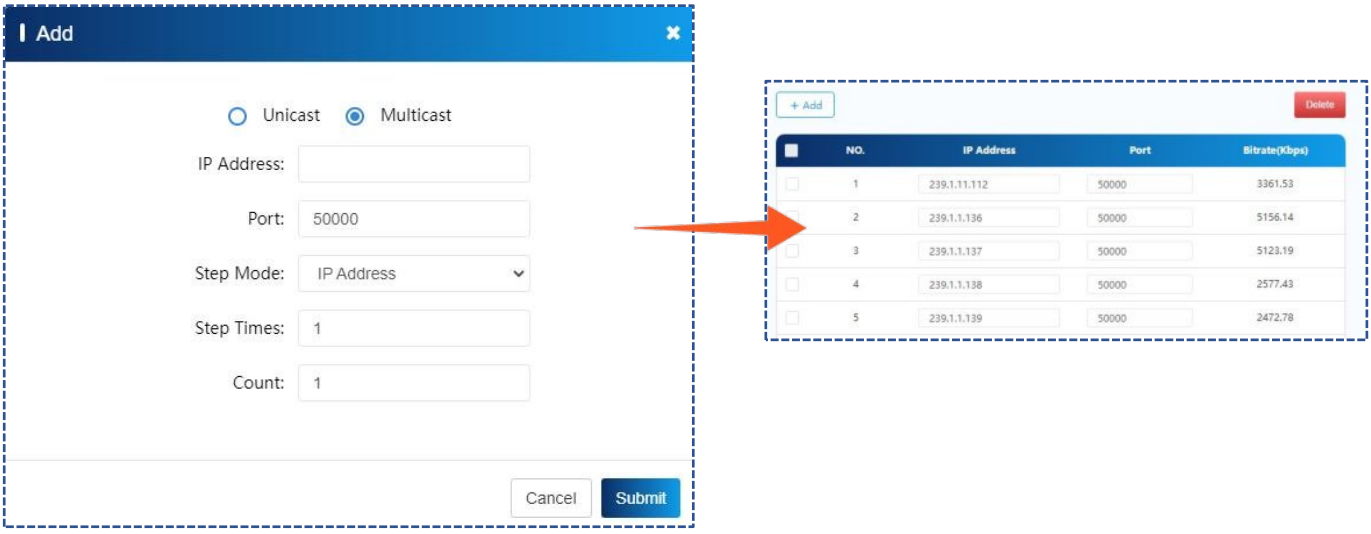
The fan is down. Please replace it.

9.3 SETTING FLOW:



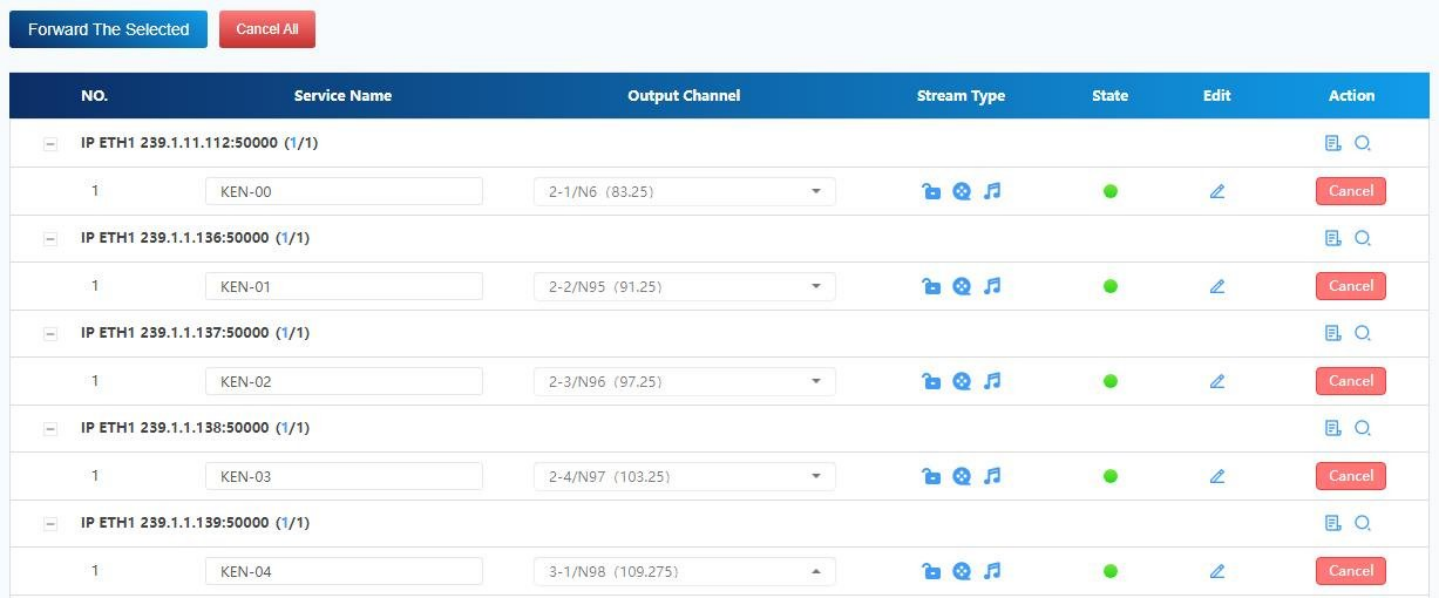
9.4 INPUT
Click the **+Add** button to add the IP address. >>>Choose the Multicast in normal situation and input your IP address. >>>Click **Submit** and the system will analysis the programs in IP address, which will be listed out in the Router.

For quick input, we also provide step mode. There are three modes in it -- IP address, Port and IP address with port. Choose any of them to meet your plan.



Step : The value range is from 1 to 10.
Count : The maximum value is 256. Notice that the note for this box is the available input number.

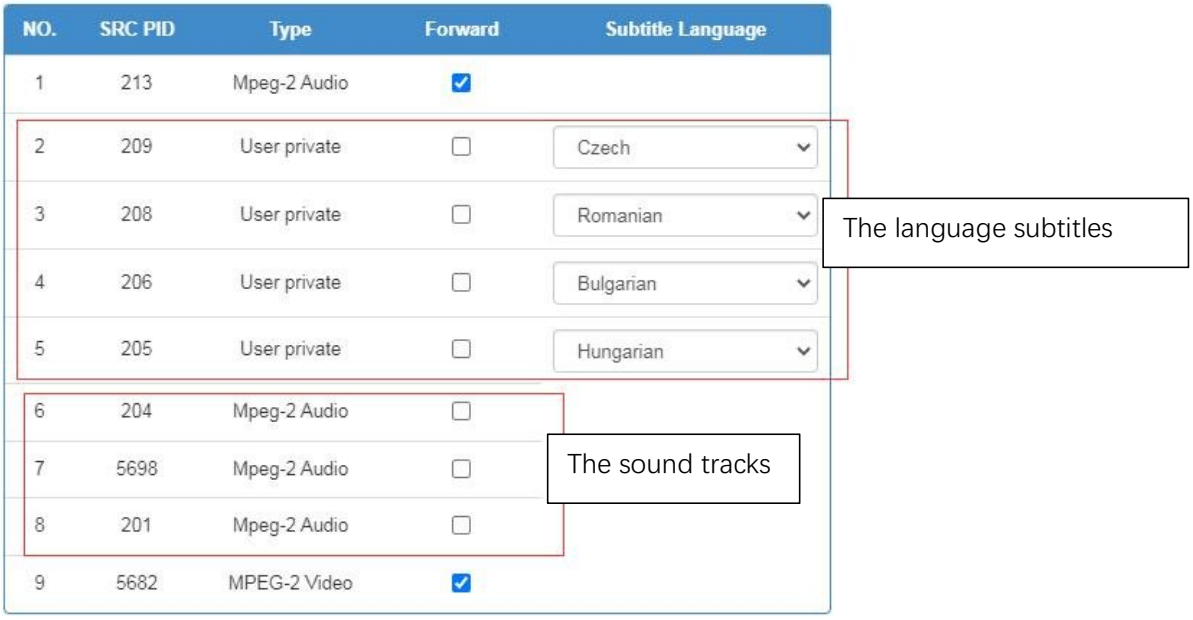
9.5 ROUTER



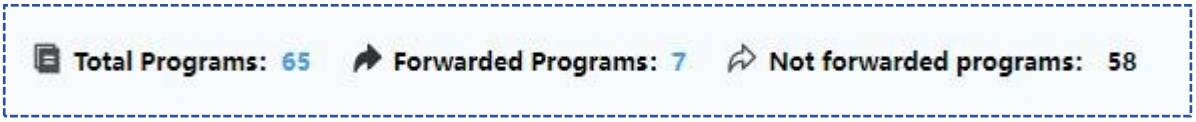
In this list, you can see all the input streams and send the programs to the preset frequencies with the Forward button.

	Common PID edit : Video PID/ Audio PID/ Private PID
Stream Type ICON	 : encrypted stream;  :clear stream ;  : video data;  : audio data;  :text data
	PSI/SI viewer. It will display the PSI/SI table here.
	Refresh. Click this ICON and the system will analysis the stream again.

In PID Edit, you can select the subtitles and sound tracks



Stream Information:

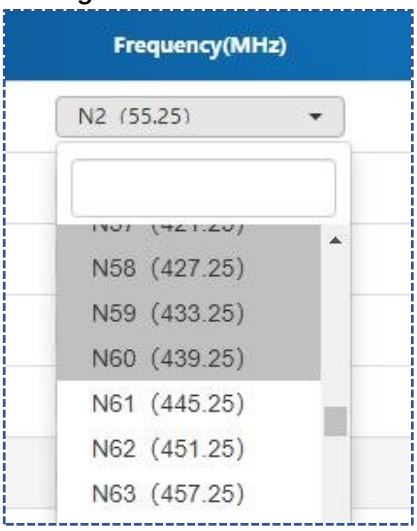


This information is a summary of the router list, which is very helpful to the operators.

9.6 OUTPUT

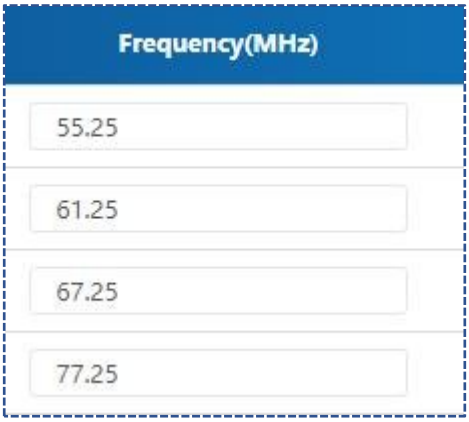
There are two input modes for setting up the output frequency: Input From List and Manual Input.
We would like to recommend you to use the Input From List to save time.

Setting from list: Select the channels from the drop box



In the **Setting from list**, you can select the frequency in the drop box list. The used frequency will be in grey and the unused ones are in white as the picture shown in the left.

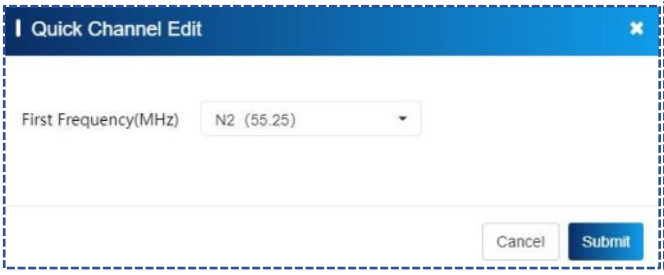
Manual Input: Set the channels by inputting the frequencies



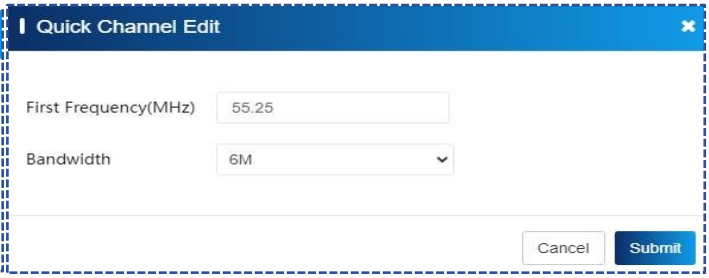
In the **Manual Input**, you can input the frequency as you have.

Quick Channel Edit: Quickly generate 32 channels by plan

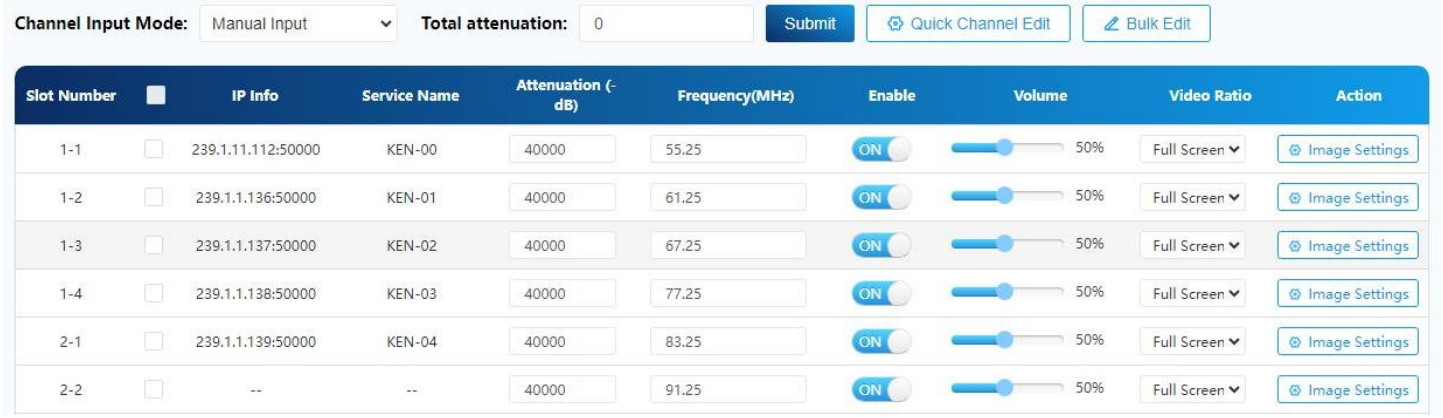
In the Setting from list mode



In the Manual input mode



Other settings in the OUTPUT SETTING



Total attenuation : Adjust the combined output level

Slot Number 1-1: the first 1 stands for the first card while the second 1 stands for the first output channel in the first card

Attenuation: The current channel output level adjustment. The range is 20dB max and the step is 1dB.

Enable: To enable or disable the RF output. When one channel is disable, its settings will be frozen.

Frequency: Input the frequency or select from the list. All frequencies and channels are agile and free from 48~860MHz.

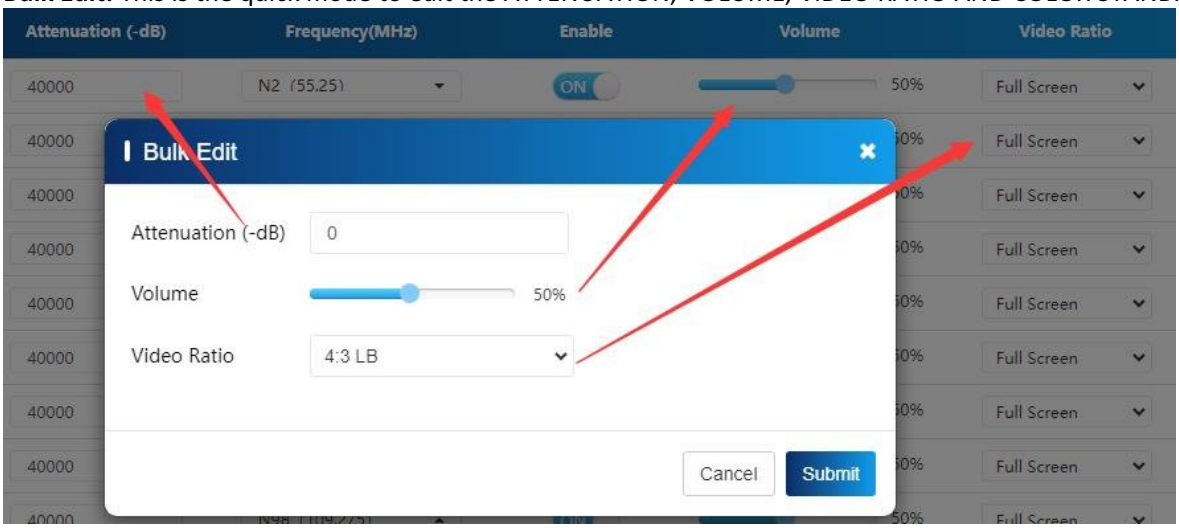
Volume: Adjust the sound level by the slide bar

Display Ratio: The picture ratio—4:3 letter box/ 4:3 Pan Scan/ 16:9 / Full Screen. Choose the right ratio to match your TV.

Image Settings: To fine tuner the color standard, brightness, contrast, hue, Saturation and Sharpness for each channel.

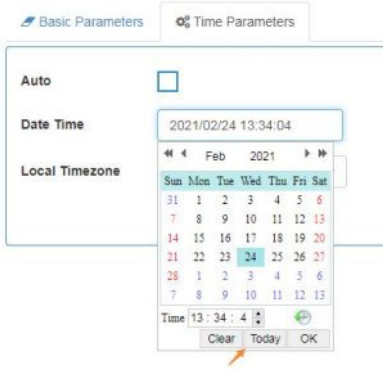
NOTICE: The system will submit the ATTENUATION, IMAGE SETTINGS and VOLUME automatically. The other settings need to be saved by clicking the SUBMIT button.

Bulk Edit: This is the quick mode to edit the ATTENUATION, VOLUME, VIDEO RATIO AND COLOR STANDARD for all channels.



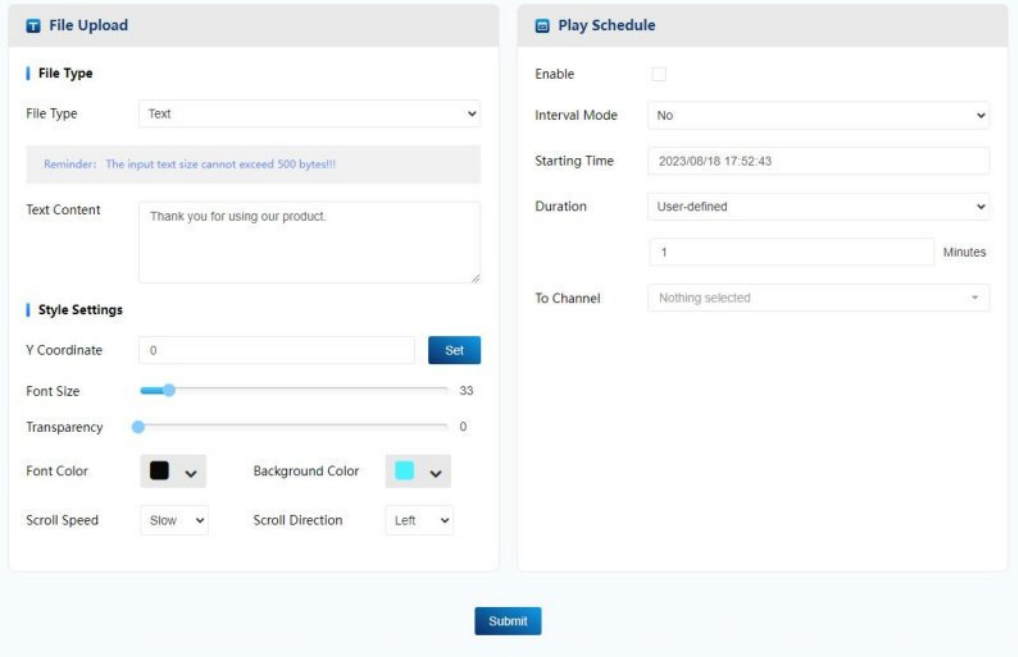
10. OSD (On Screen Display)

NOTICE: To activate the function, please set up the modulator time first. You can go with **System>>>Time Parameters>>>Time and Date>>>TODAY**



Press TODAY and the modulator will read the time from your laptop.

In the OSD setting, you can set the running text and logo



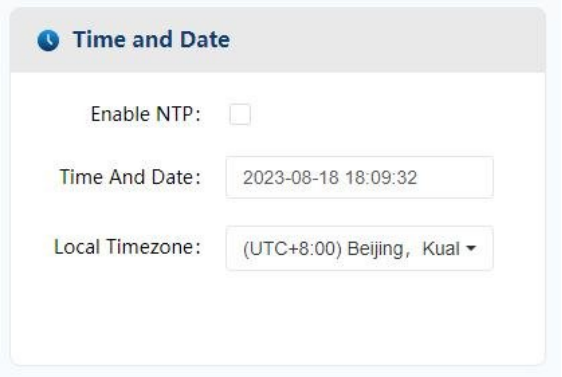
Click SUMIT and the modulator will display the running text and logo in the TV

11. System Parameters

11.1 Basic Parameters

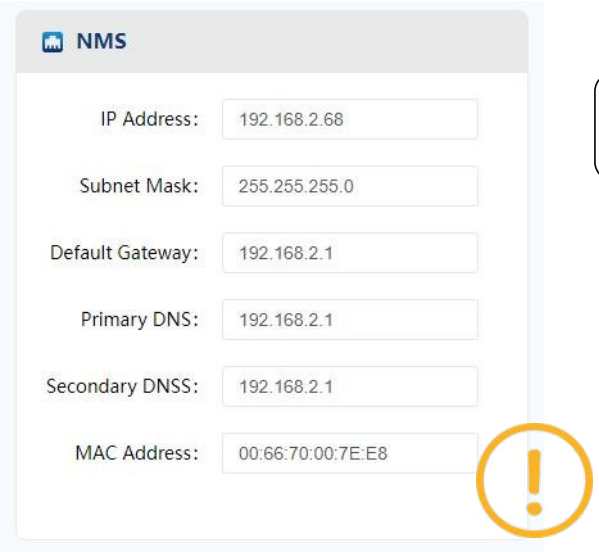
Device name: Input name for the modulator
TS Subtitles : Enable the subtitle function

11.2 Time Parameters



Please set up the right time to activate the OSD function

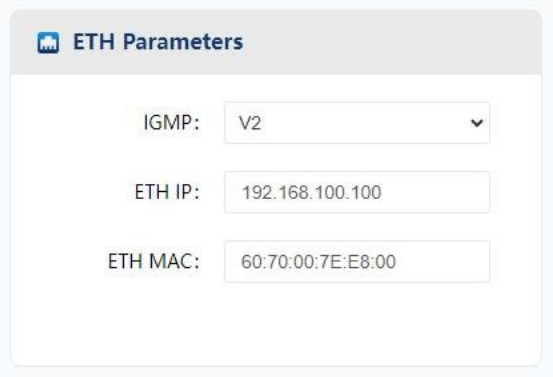
11.3 Network Parameters:



Set up modulator's NMS IP address and Unicast IP address.

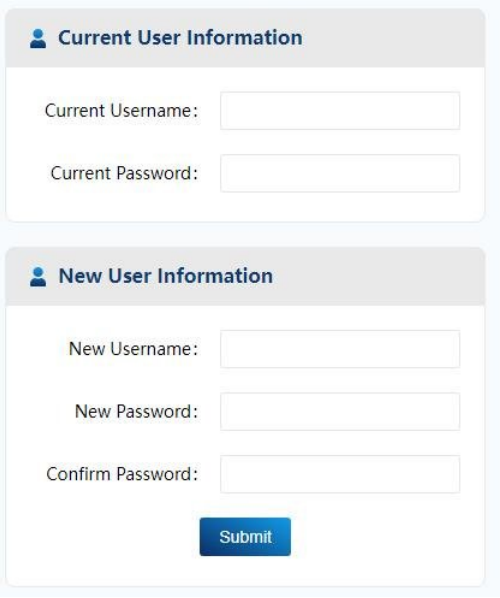
Making changes in this area can affect the system communication.
PROCEED WITH CAUTION.

11.4 ETH Parameter



IGMP: Please select the right IGMP version according to your input streams.
ETH IP: This modulator's input port IP address, which should be different from the NMS port.
ETH MAC: It is not recommended to change it.

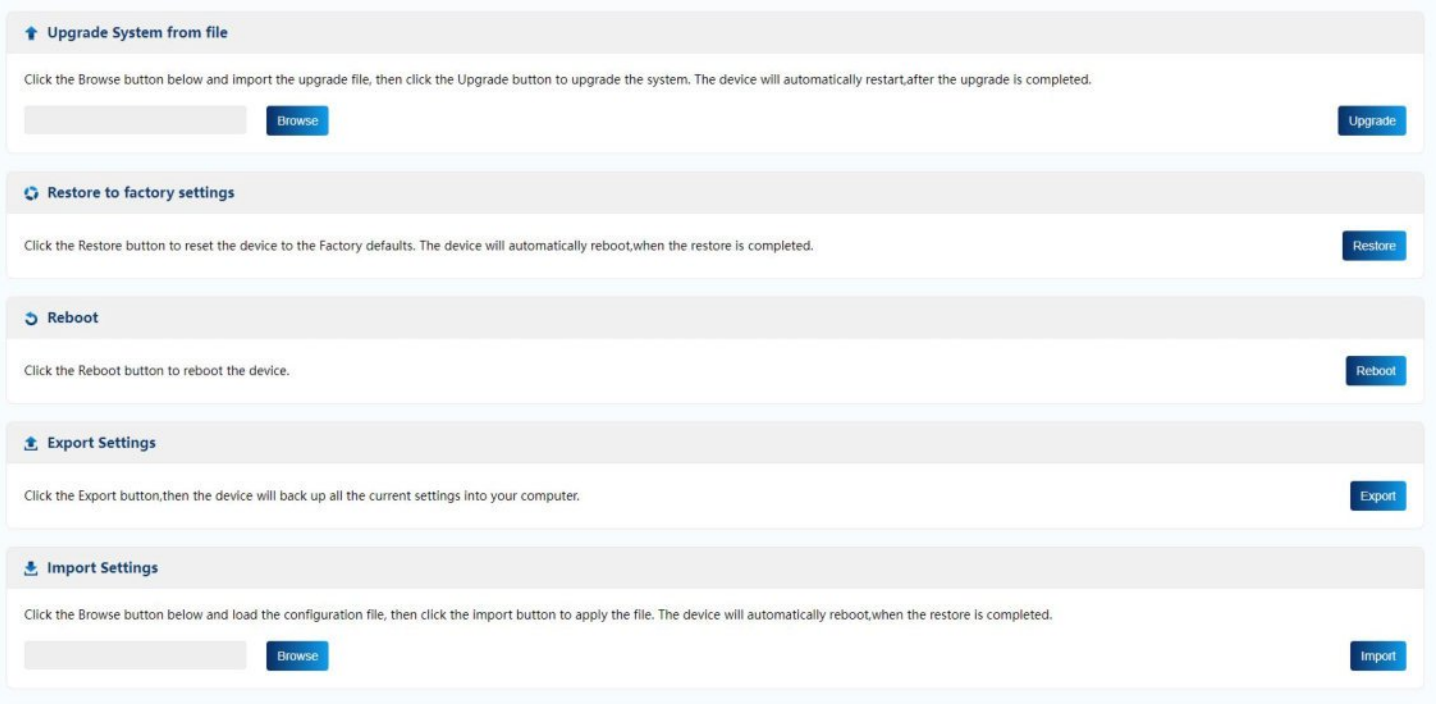
11.5 Account



To verify the user name and the password, please input your current user name and password. **Please notice that they are both case-sensitive.**
If you forget your new user name or new password, you can use the reset button in the front panel to restore.

Making changes in this area can affect the system communication.
PROCEED WITH CAUTION.

11.5 System Parameter



Upgrade system from file: Upgrade the modulator with the latest software. The upgrade time for the decoder part will take about 10 minutes.

Restore to factory settings: The restore function will recover the input and output settings and the IP address to the factory mode.

Reboot: To reboot the modulator.

Export Settings: Back up the input and output settings to your computer.

Import Settings: Recover the settings to the modulator from your computer.

NOTICE: Another way to restore the settings
Press the default button in the front panel for 3 to 5 seconds. If you see the running light is flashing, that means the restore is completed.

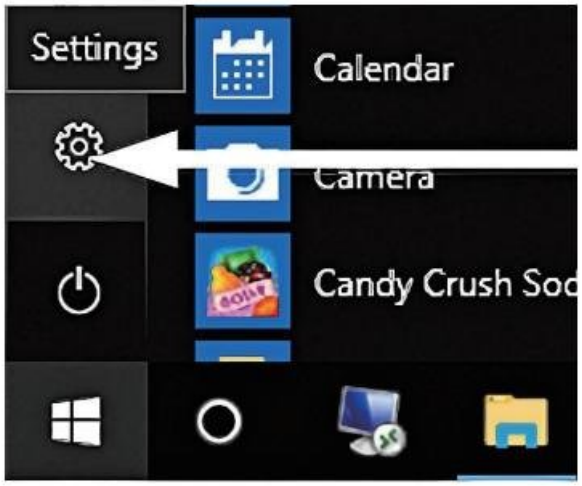
12.Terms and Abbreviations

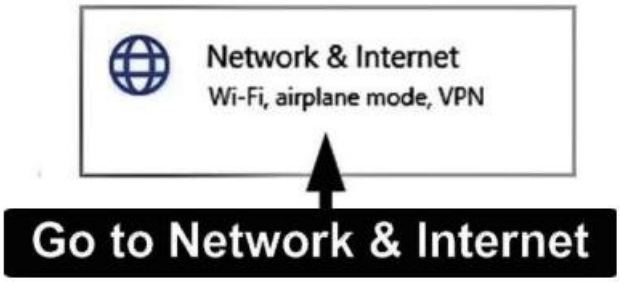
Term	Explanation
PID	Packet Identification
SID	Service Identification
TSID	Transport Stream Identification
NIT	Network Identification Table
NID	Network Identification used in NIT
ONID	Original Network Identification used in NIT
STB	Set Top Box, DVB receiver that is connected to a TV set
TS	Transport Stream
ES	Elementary Stream
MPTS	Multi-program Transport Stream
SPTS	Single-program Transport Stream
IGMP	Internet Group Management Protocol
UDP	User Datagram Protocol
RTP	Real-time Transport Protocol
HLS	HTTP Live Streaming

13.Quick IP Ethernet Connection Guide

NOTICE: Make sure you login your system as the administrator.

14.1 Go to " Windows Start"

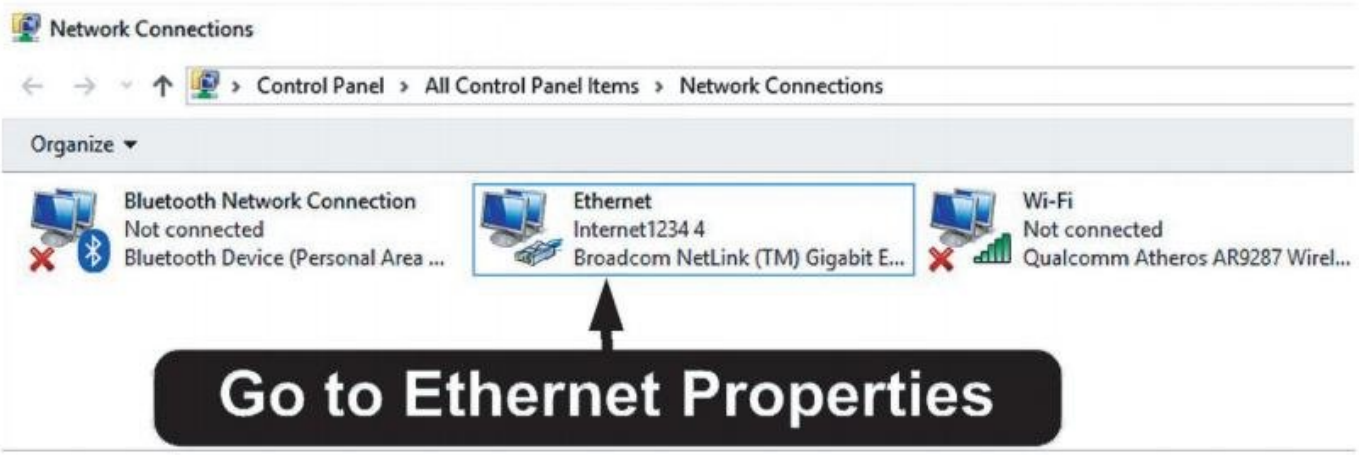




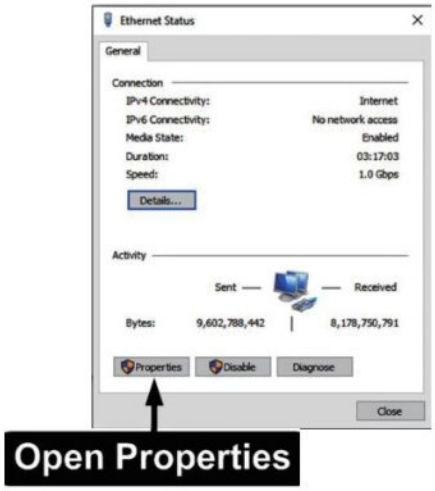
14.2 Go to Windows Settings
14.3 Go to " Network & Internet"
14.4 Go to "Ethernet" on the left side of the menu

14.5 Go to " Change adapter options"

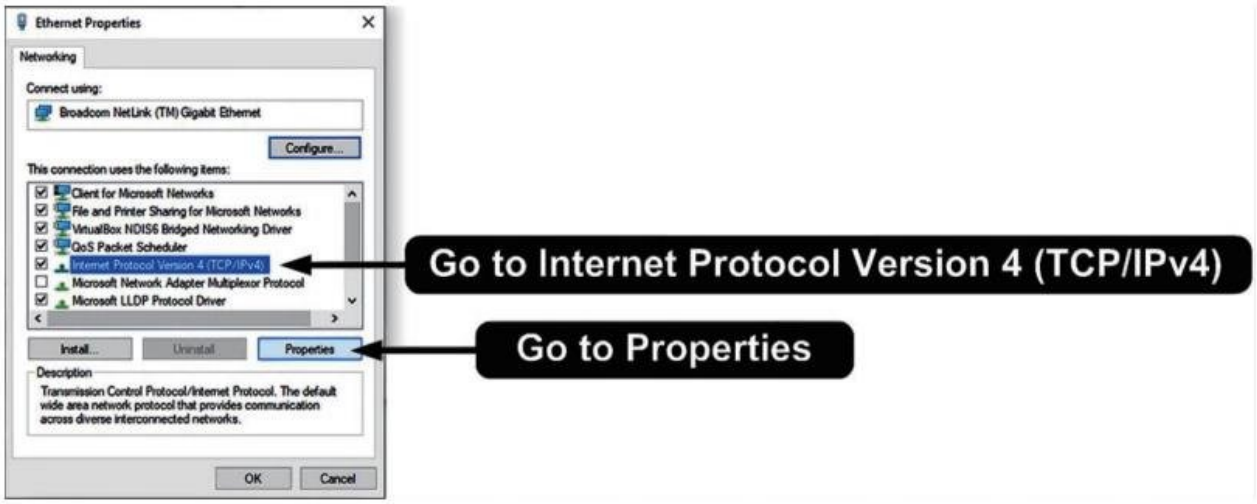
14.6 Double click on the Ethernet Source or Right Click and select "Properties"



14.7 Open Properties

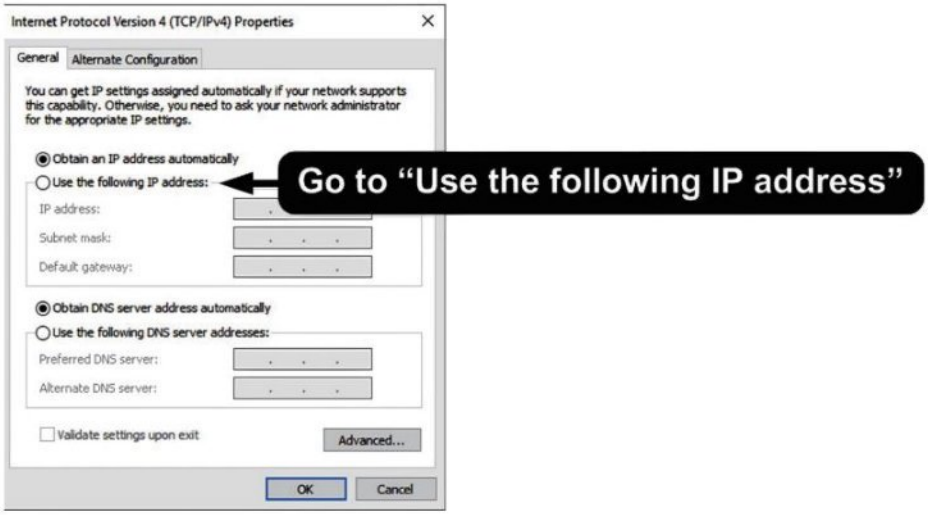


14.8 Go to "Internet Protocol Version 4 (TCP/IPv4)

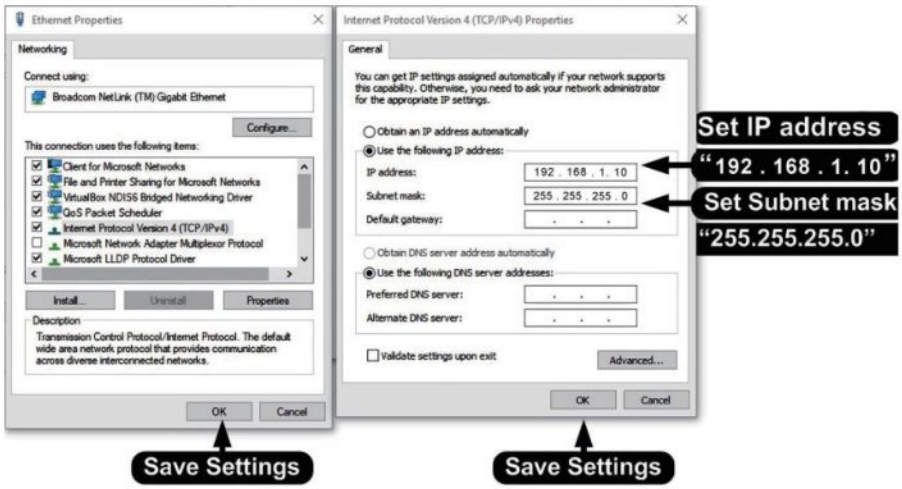


14.9 Go to “Properties”

14.10 Go to “Use the following IP address”



14.11 Set IP address



Set IP address: 192.168.1.10

Set Subnet mask: 255.255.255.0

Set Default gateway: 192.168.1.1

14.12 Save all the settings.

14.Common Troubleshooting

SN	Symptom	Recommended Action
1	LED is not lit.	Check the power cord connection
2	Can't login to the NMS	Check Chapter 15
3	The WEB UI is not in order and can't save the settings	Clear your browsing data
4	No RF output	Check the output setting
		Check the output modulation
		Check the cable connection
5	No video and audio in TV	Check the video and audio in another TV
		Check the input video resolution
		Check the output frequency
6	Bad picture and on-off sound	Check the connection of the video source
		High output level: Add the attenuator to low the level
		Low output level: Add an amplifier to boost up the level
7	No service available	Check the internet cable
		Check the input IP stream address
		Check the IP streamer
8	Other issue	Please contact us for technical support

15.WARRANTY

Helix Electronics equipment has been thoroughly tested and found to be in proper operating condition when shipped from the factory and is warranted to be free from defects in materials or workmanship that may develop within one year of the date of purchase. Helix agrees to remedy such or furnish a new part, or at its option an entire unit, or any part of a unit that disclosed such defect, provided that the unit or part is returned to Helix or Helix authorized service facility according to the terms listed below.

Prior authorization with a return authorization number issued by Helix or its representative is required for all returns. The purchaser shall be responsible for all freight charges on shipment to Helix unless otherwise authorized. Charges to return a unit or part to purchaser will be paid by Helix. Claim for damage in shipment to the purchaser must be filed by the purchaser with the carrier in accordance with the carrier's regulations.

Helix shall not be responsible for the shipping charge if the returned unit turns out to be flawless.

A Return Material Authorization (RMA) Number is required on all products returned to Helix. Regardless if the product is being returned for repair or credit. Before returning product,

please contact the Helix sales stockest who you contact with.

Buyer :		RMA Number:
Mode Number	Products ID Number	Problem

If there's not enough space in this form, please attach a separate sheet of paper.

Thanks for using our products.
For more Helix products,
please visit our website:
digitalimports.co.nz