

IP-MOD 64

IPTV To RF Modulator Module

The IP-MOD-64 converts up to 64 IPTV streams to RF channels over 4 Coaxial Multiplex Frequencies.

Each of the 4 Frequencies can assign multiple IP Streams coming from the IPTV input RJ45 Ethernet port.

Each assigned stream can be NAMED as wanted as well Numbered to list in the wanted sequence on the TVs remote controls

- 1) Connect the IP-MOD-64 Ip to RF Modulator module to the switch.

BOTH PORTS CAN BE CONNECTED TO THE SWITCH

The computer will be connected to the switch to manage everything at once.

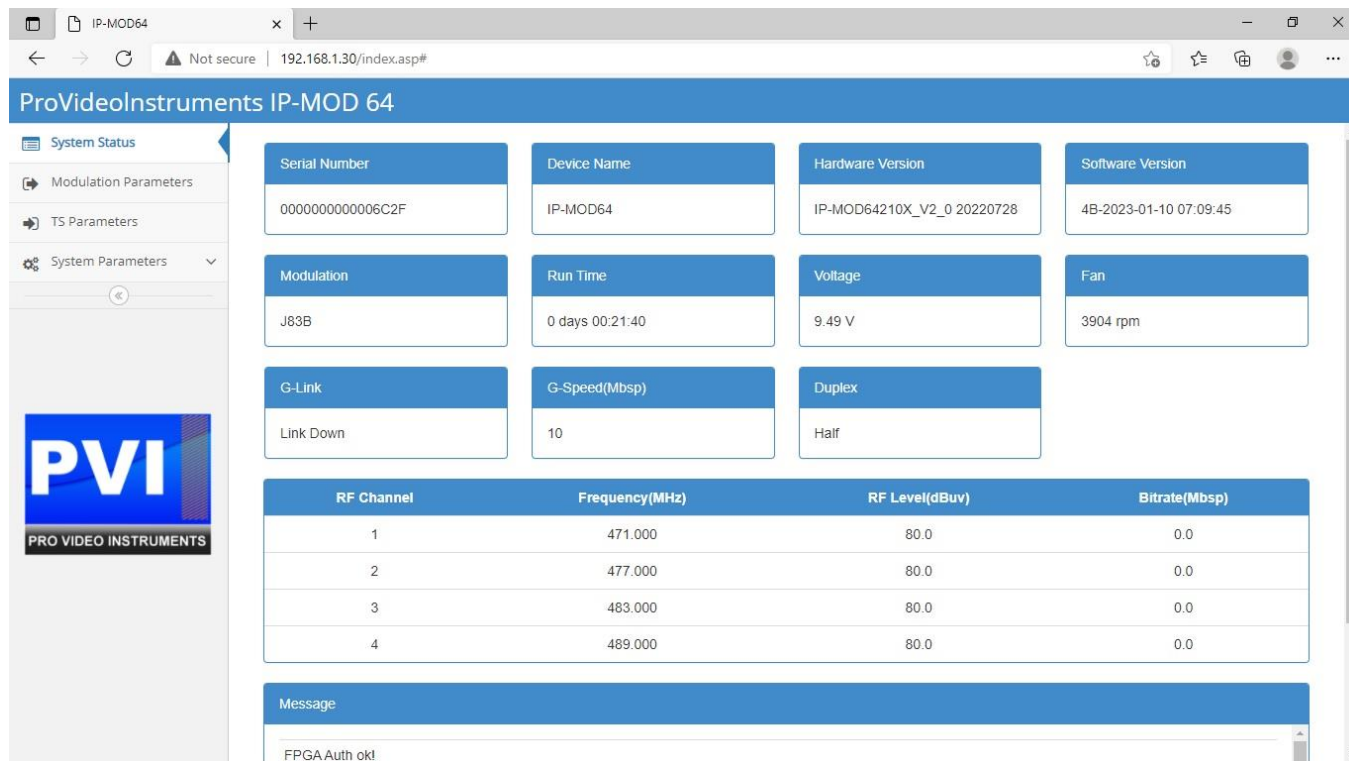
- The TOP ETHERNET PORT on the IP MOD receives the ip streams
- The BOTTOM ETHERNET PORT on the IP MOD is to control the IP MOD web interface
- The **DEFAULT IP ADDRESS** of the IP MOD is **192.168.1.30**

user name: user

password: user



- 2) Use the WEB BROWSER of your control computer to login to the IP-MOD web interface typing the address 192.168.1.30



The screenshot shows a web browser window with the address bar displaying "192.168.1.30/index.asp#". The page title is "ProVideoInstruments IP-MOD 64". The left sidebar contains a menu with "System Status" selected, along with "Modulation Parameters", "TS Parameters", and "System Parameters". The main content area displays various system status metrics in a grid of boxes:

- Serial Number:** 0000000000006C2F
- Device Name:** IP-MOD64
- Hardware Version:** IP-MOD64210X_V2_0 20220728
- Software Version:** 4B-2023-01-10 07:09:45
- Modulation:** J83B
- Run Time:** 0 days 00:21:40
- Voltage:** 9.49 V
- Fan:** 3904 rpm
- G-Link:** Link Down
- G-Speed(Mbsp):** 10
- Duplex:** Half

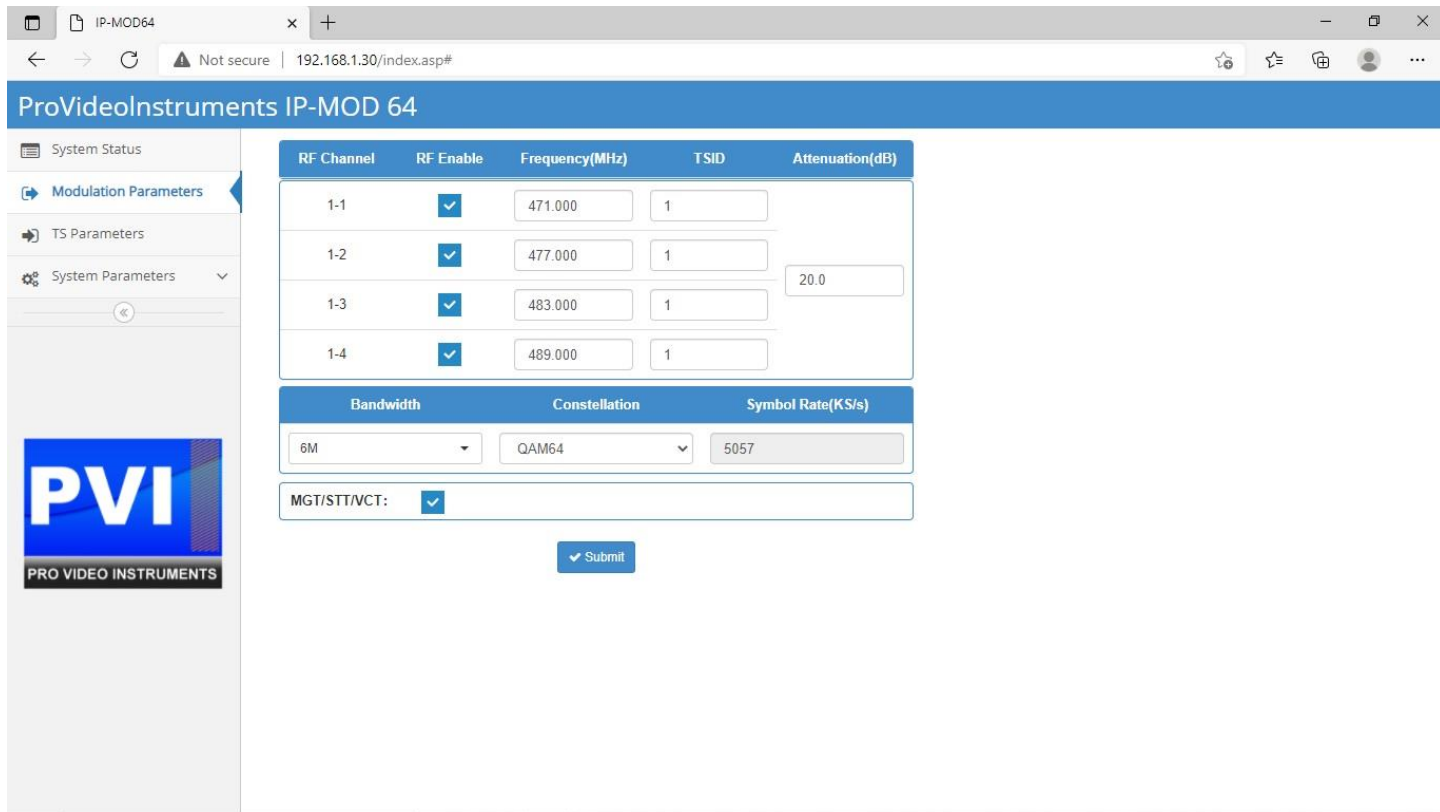
Below these boxes is a table with 4 columns: RF Channel, Frequency(MHz), RF Level(dBuv), and Bitrate(Mbsp).

| RF Channel | Frequency(MHz) | RF Level(dBuv) | Bitrate(Mbsp) |
|------------|----------------|----------------|---------------|
| 1 | 471.000 | 80.0 | 0.0 |
| 2 | 477.000 | 80.0 | 0.0 |
| 3 | 483.000 | 80.0 | 0.0 |
| 4 | 489.000 | 80.0 | 0.0 |

At the bottom, there is a "Message" section displaying "FPGAAuth ok!".

The SYSTEM STATUS shows the actual main settings and status of this IP MOD CARD.

3) Click on MODULATION PARAMETERS to set the 4 frequencies of this module



The screenshot shows the web interface for the IP-MOD 64 device. The left sidebar contains navigation links: System Status, Modulation Parameters (selected), TS Parameters, and System Parameters. The main content area is titled "ProVideoInstruments IP-MOD 64" and contains the following configuration fields:

| RF Channel | RF Enable | Frequency(MHz) | TSID | Attenuation(dB) |
|------------|-------------------------------------|----------------|------|-----------------|
| 1-1 | <input checked="" type="checkbox"/> | 471.000 | 1 | 20.0 |
| 1-2 | <input checked="" type="checkbox"/> | 477.000 | 1 | |
| 1-3 | <input checked="" type="checkbox"/> | 483.000 | 1 | |
| 1-4 | <input checked="" type="checkbox"/> | 489.000 | 1 | |

Below the table, there are three dropdown menus: Bandwidth (set to 6M), Constellation (set to QAM64), and Symbol Rate(KS/s) (set to 5057). At the bottom, there is a checkbox for MGT/STT/VCT (checked) and a blue "Submit" button.

RF ENABLE : turn on/off the output of this frequency on the coaxial spectrum

FREQUENCY : Set the wanted frequency per each channel (in mhz). Use the CENTER FREQUENCY of the channel you need. Refer to our frequencies chart for QAM / ATSC / DVBT / ISDBT / DVBC standard.

TSID : TRANSPORT STREAM ID number per each of the frequency. Leave to 1 if no need to change.

BANDWIDTH: 6M for QAM J83B USA CABLE STANDARD. See our frequencies chart for other settings.

CONSTELLATION: use QAM64 if you have few channels, or switch to QAM 256 for the maximum capacity of bitrate on the frequencies to fit more channels.

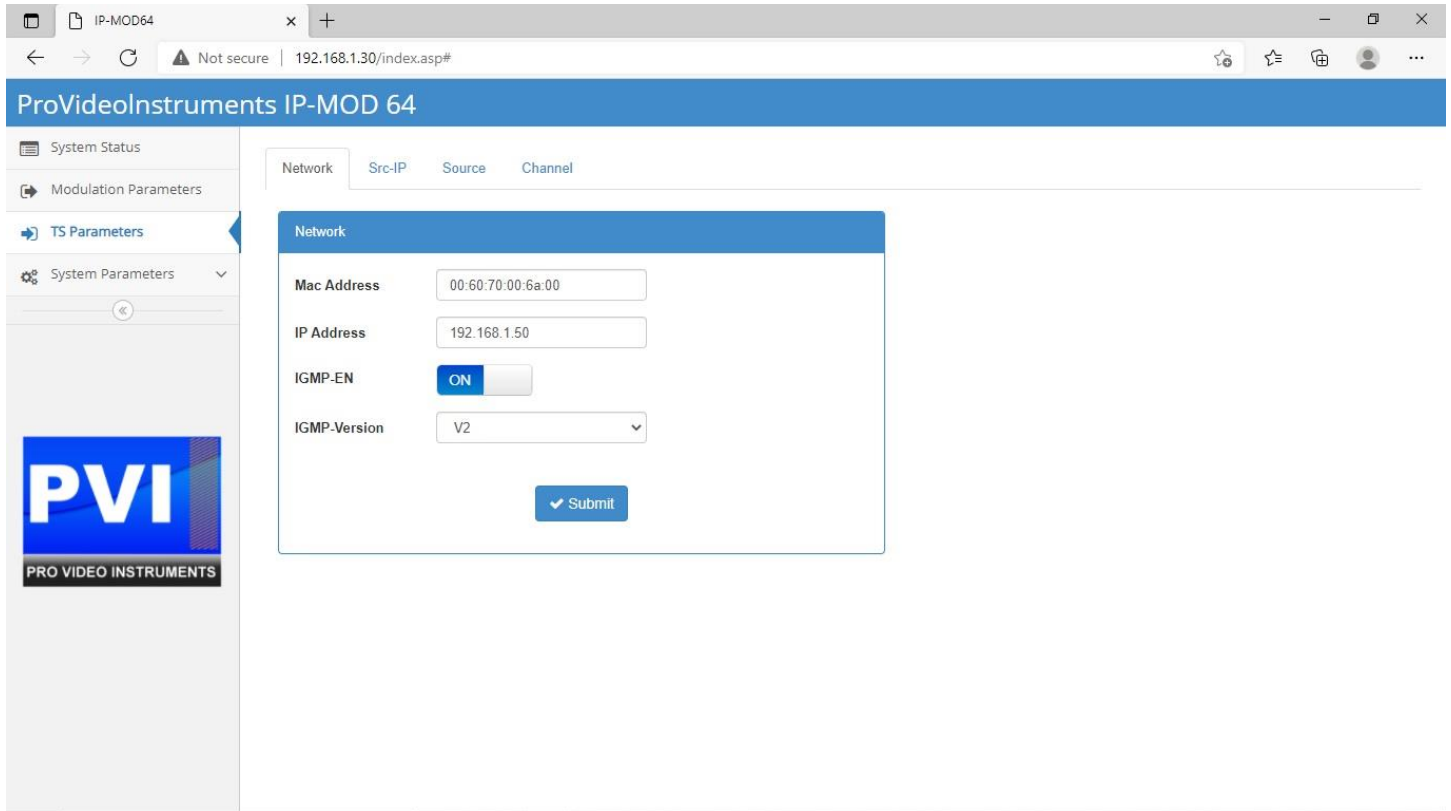
MGT/STT/VCT : descriptors tables injection - Must be ON or the TV will not recognize the channels.

IMPORTANT: This example is for QAM J83B USA CABLE TV use. This modulator supports ATSC / DVBT / DVBC also

To change please email to support@provideoinstruments.com your request so we can provide you with the specific instructions.

- 4) Select TS PARAMETERS to add the incoming streaming to the IP MOD ethernet port receiver

NETWORK TAB: do not change these parameters unless needed.



The screenshot shows a web browser window with the address bar displaying "192.168.1.30/index.asp#". The page title is "ProVideoInstruments IP-MOD 64". On the left sidebar, the "TS Parameters" menu item is selected. The main content area has four tabs: "Network", "Src-IP", "Source", and "Channel". The "Network" tab is active, showing the following configuration fields:

| Network | |
|---|--|
| Mac Address | <input type="text" value="00:60:70:00:6a:00"/> |
| IP Address | <input type="text" value="192.168.1.50"/> |
| IGMP-EN | <input checked="" type="checkbox"/> ON |
| IGMP-Version | <input type="text" value="V2"/> |
| <input type="button" value="✓ Submit"/> | |

SRC-IP TAB : the source IP tab is where you add the INCOMING MULTICAST STREAMS to the modulator STREAM LIST

IP-MOD64

Network settings-HD Encoder

+

192.168.1.168/SetNetE.html

PVI

HD Encoder System Platform

Version: 2.18A

Internet access

IP-MOD64

System settings-HD Encoder

System settings-HD Encoder

+

192.168.1.30/index.asp#

ProVideoInstruments IP-MOD 64

System Status

Modulation Parameters

TS Parameters

System Parameters

Network

Src-IP

Source

Channel

+ New

Remove

Submit

| All | NO. | IP Address | Port |
|--------------------------|-----|------------|------|
| <input type="checkbox"/> | 1 | 238.0.0.1 | 1234 |
| <input type="checkbox"/> | 2 | 238.0.0.2 | 1234 |

PVI

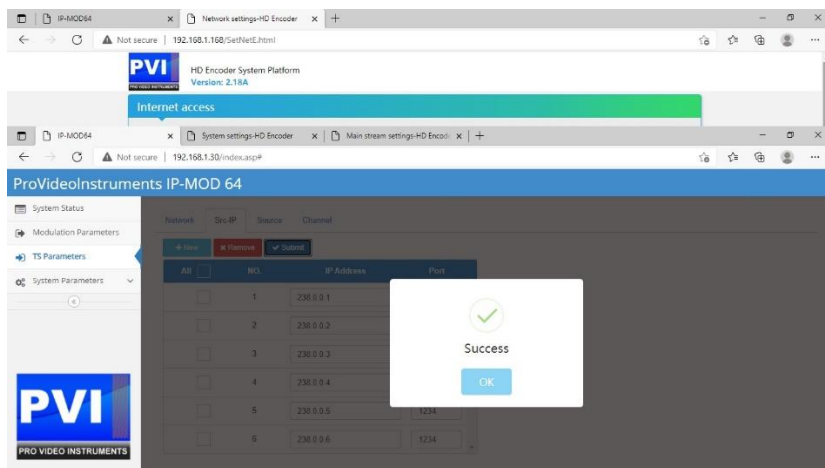
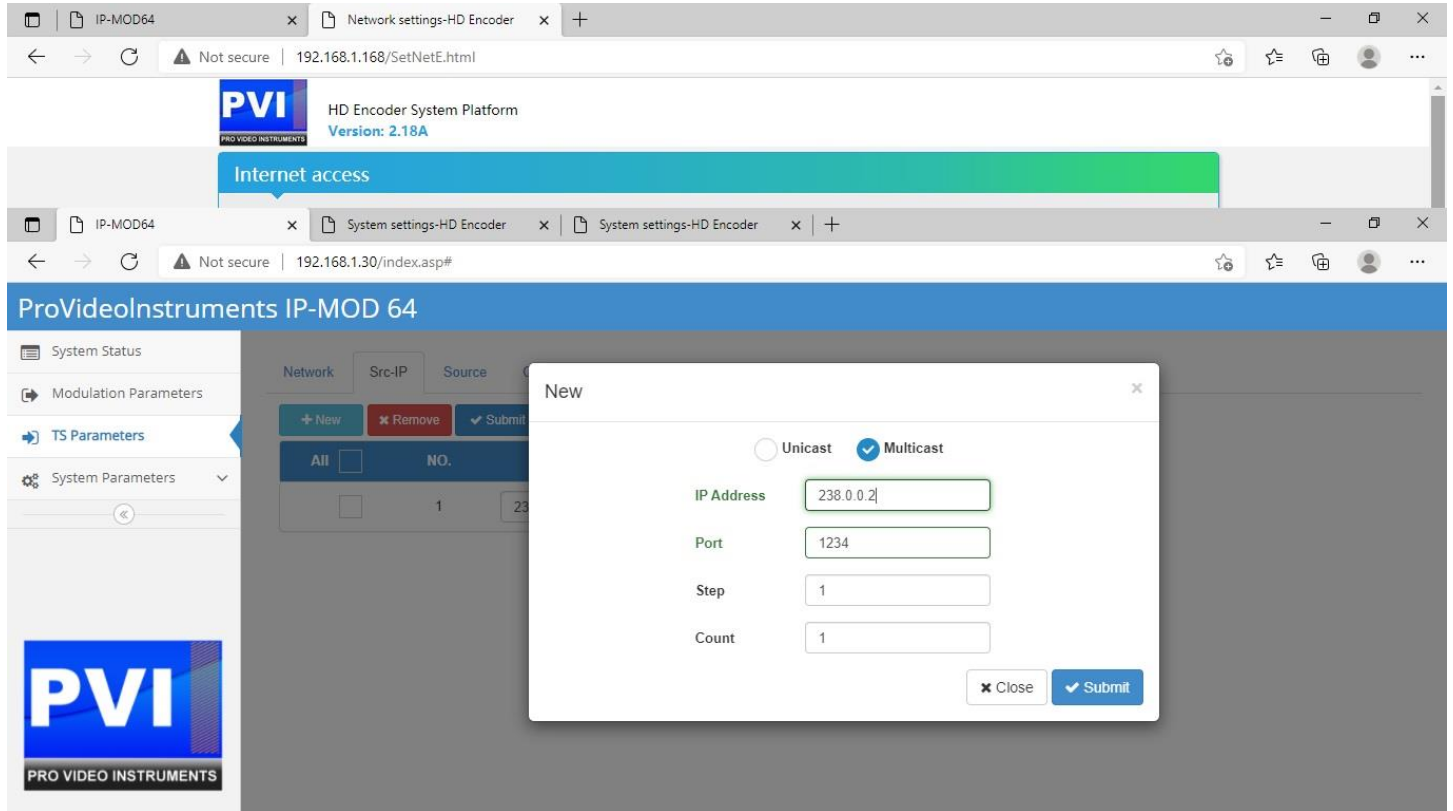
PRO VIDEO INSTRUMENTS

Click on NEW to add a new stream to the list

select MULTICAST then enter the IP and PORT for the multicast stream you want to add.

In our example we will repeat this to add to the list all the multicast ip addresses from the encoders.

You can also add external third party streams from your network and add them to the coaxial tv distribution




The list of incoming streams will show like this picture. You can add up to 64 streams.

IP-MOD64

Network settings-HD Encoder

192.168.1.168/SetNetE.html



HD Encoder System Platform
Version: 2.18A

Internet access

IP-MOD64

System settings-HD Encoder

System settings-HD Encoder

192.168.1.30/index.asp#

ProVideoInstruments IP-MOD 64

System Status

Modulation Parameters

TS Parameters

System Parameters

Network

Src-IP

Source

Channel

+ New

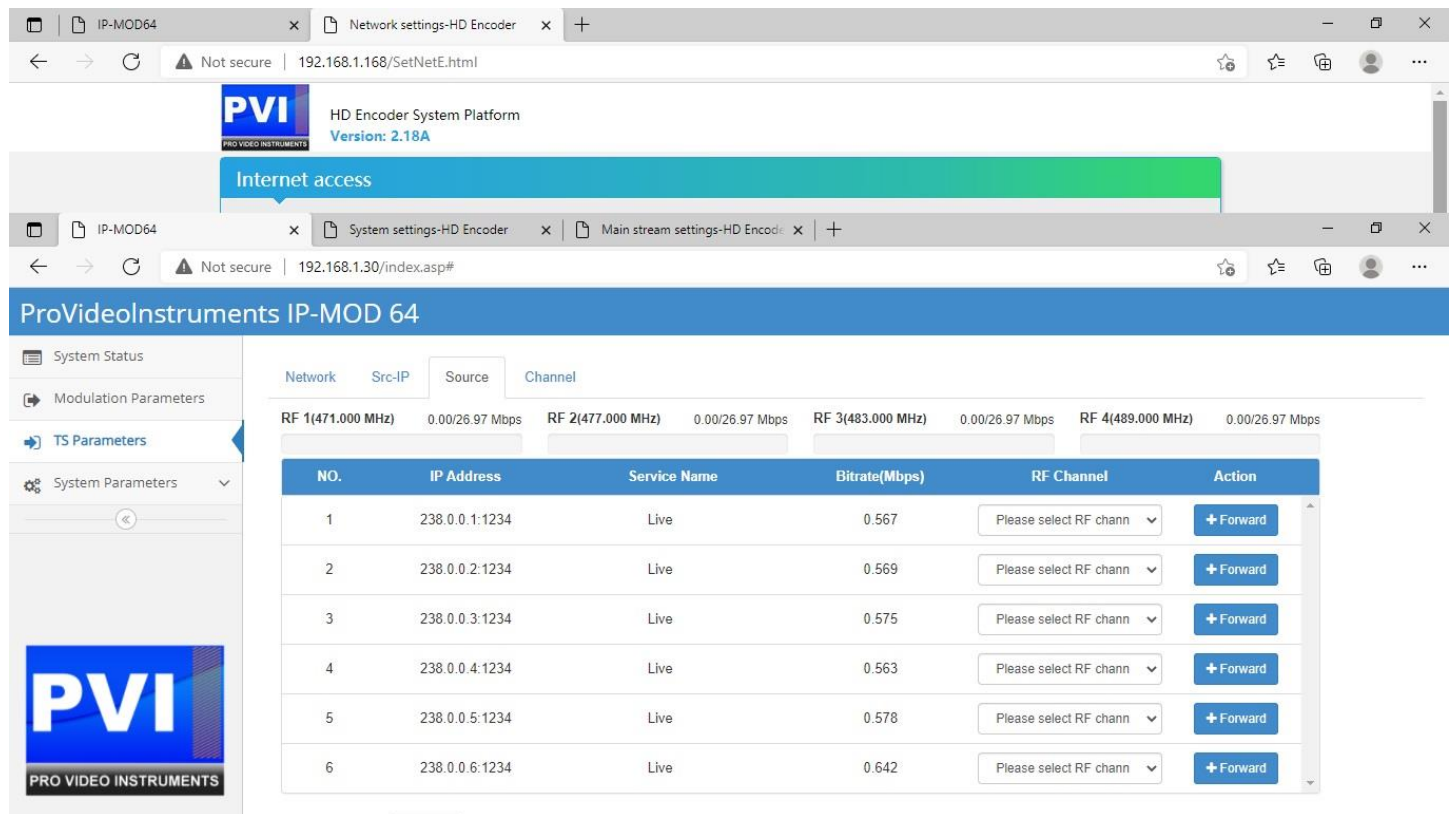
Remove

Submit

| All | NO. | IP Address | Port |
|--------------------------|-----|------------|------|
| <input type="checkbox"/> | 1 | 238.0.0.1 | 1234 |
| <input type="checkbox"/> | 2 | 238.0.0.2 | 1234 |
| <input type="checkbox"/> | 3 | 238.0.0.3 | 1234 |
| <input type="checkbox"/> | 4 | 238.0.0.4 | 1234 |
| <input type="checkbox"/> | 5 | 238.0.0.5 | 1234 |
| <input type="checkbox"/> | 6 | 238.0.0.6 | 1234 |



SOURCE TAB : in this tab you assign the streams to the 4 Frequencies channel out up to the maximum bandwidth capacity of each frequency.



The screenshot shows the PVI HD Encoder System Platform interface. The top navigation bar includes tabs for IP-MOD64, Network settings-HD Encoder, and Main stream settings-HD Encoder. The main content area is titled "Internet access" and displays the "Source" tab configuration.

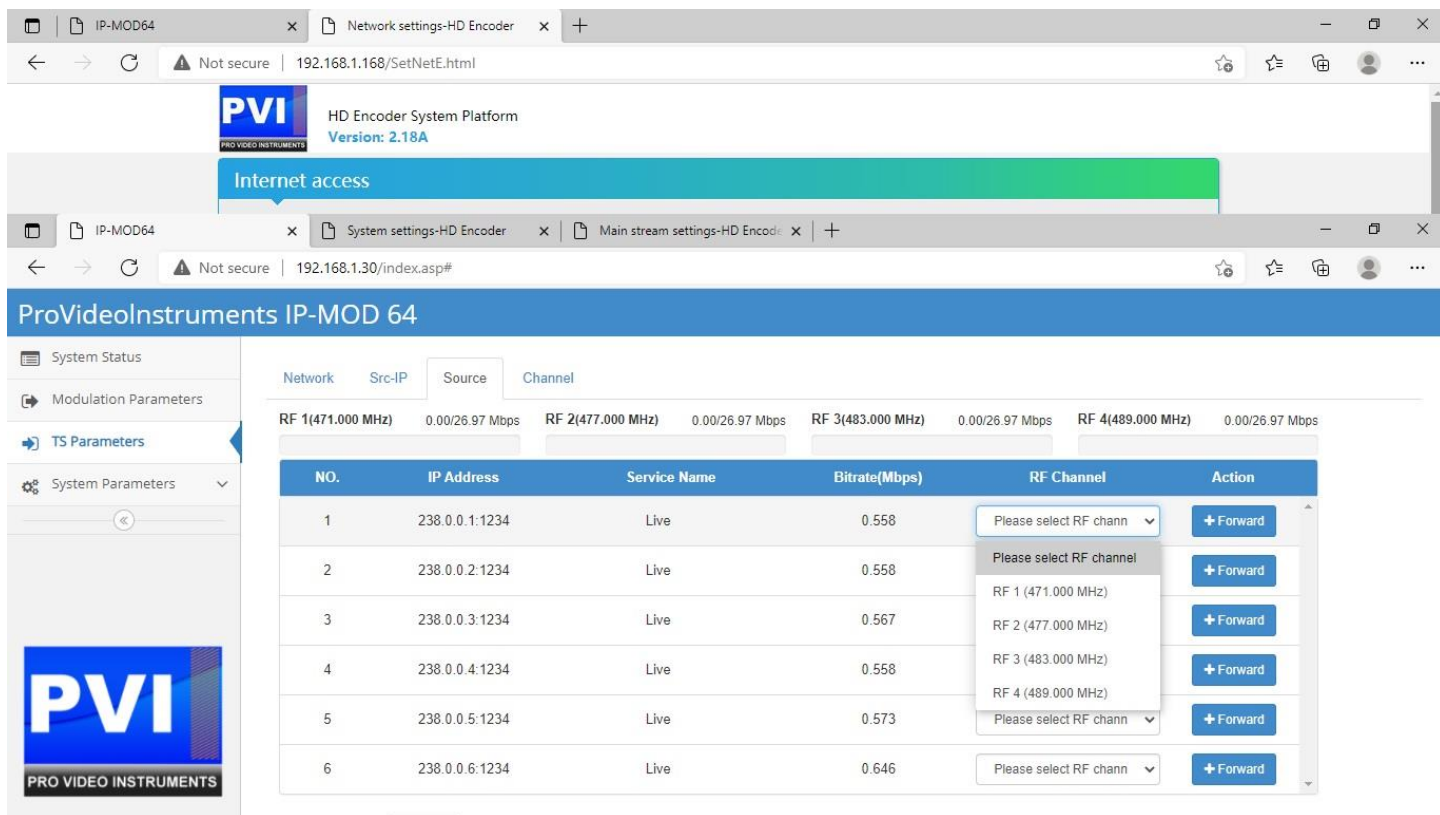
The interface shows four RF channels at the top, each with a frequency and bandwidth:

- RF 1(471.000 MHz) 0.00/26.97 Mbps
- RF 2(477.000 MHz) 0.00/26.97 Mbps
- RF 3(483.000 MHz) 0.00/26.97 Mbps
- RF 4(489.000 MHz) 0.00/26.97 Mbps

Below these, a table lists the source streams:

| NO. | IP Address | Service Name | Bitrate(Mbps) | RF Channel | Action |
|-----|----------------|--------------|---------------|------------------------|-----------|
| 1 | 238.0.0.1:1234 | Live | 0.567 | Please select RF chann | + Forward |
| 2 | 238.0.0.2:1234 | Live | 0.569 | Please select RF chann | + Forward |
| 3 | 238.0.0.3:1234 | Live | 0.575 | Please select RF chann | + Forward |
| 4 | 238.0.0.4:1234 | Live | 0.563 | Please select RF chann | + Forward |
| 5 | 238.0.0.5:1234 | Live | 0.578 | Please select RF chann | + Forward |
| 6 | 238.0.0.6:1234 | Live | 0.642 | Please select RF chann | + Forward |

Use the DROP DOWN SELECTOR on the side of each stream to MAP THAT STREAM TO THE WANTED FREQUENCY MUX OUT. After selected, click FORWARD to add this stream to the multiplex of that frequency.



When a stream is assigned, the FORWARD BUTTON becomes red. You can use the RED button to cancel that stream to go out on a frequency.

IMPORTANT: A GREEN COLOR BAR on top of the list shows per each frequency the actual channel occupation. The more streams you add to a frequency, the more the GREEN BAR fills up.

When the frequency is FULL, the bar can become RED in case the mapped streaming EXCEEDS the available bandwidth on that frequency. If so, please CANCEL the stream and add it to the next frequency channel.


To maximize the available bandwidth per each frequency, please consider to use the QAM 256 mode as seen in the modulation parameters on page #13 here above.

IP-MOD64

Network settings-HD Encoder

192.168.1.168/SetNetE.html

Not secure



HD Encoder System Platform

Version: 2.18A

Internet access

IP-MOD64

System settings-HD Encoder

Main stream settings-HD Encoder

192.168.1.30/index.asp#

Not secure


ProVideoInstruments IP-MOD 64

System Status

Modulation Parameters

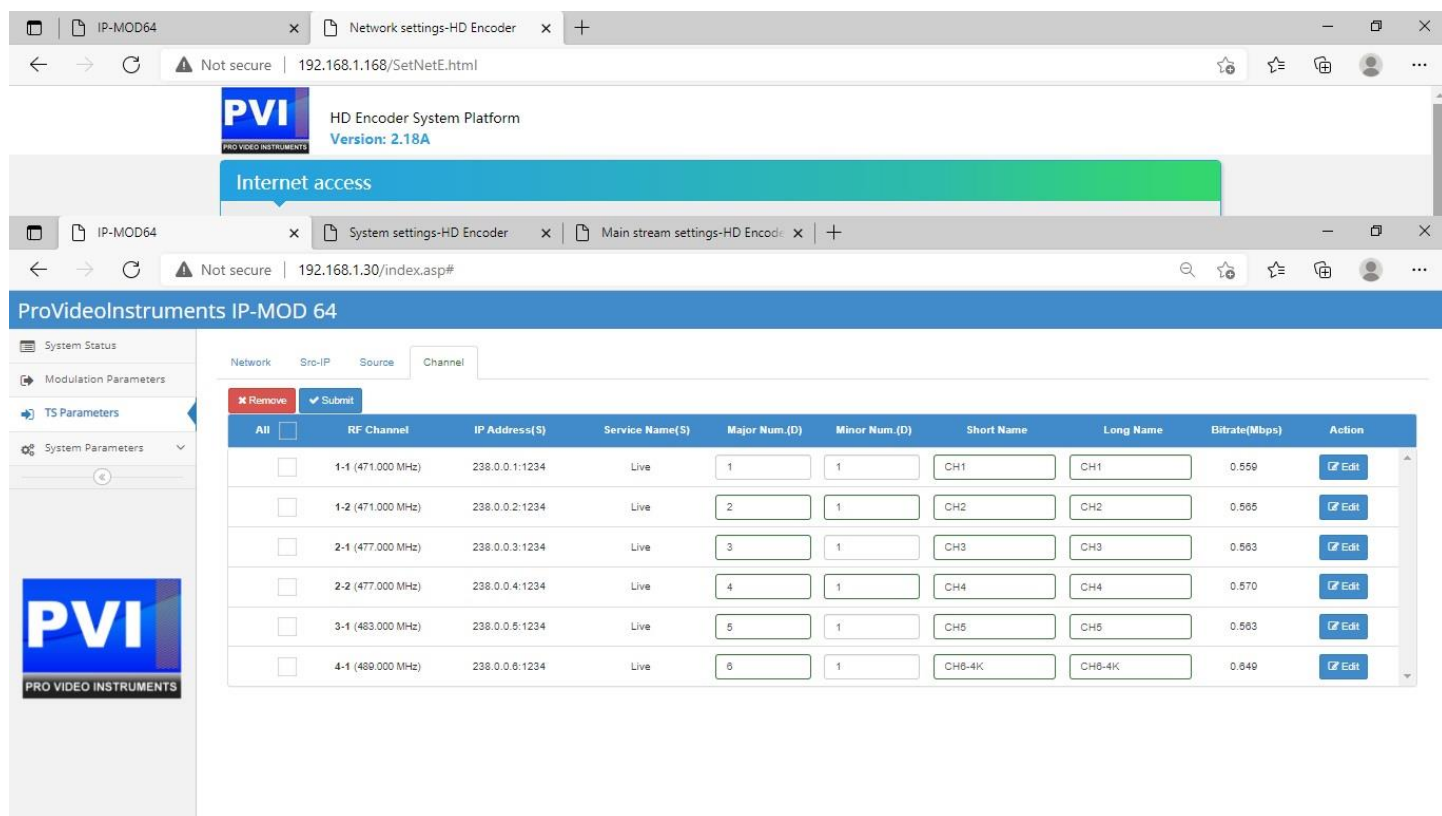
TS Parameters

System Parameters



| Network | | | | | |
|--|----------------|--------------|---------------|--------------------|--------|
| Src-IP | | | | | |
| Source | | | | | |
| Channel | | | | | |
| <div> <div>RF 1(471.000 MHz)</div> <div>1.49/26.97 Mbps</div> <div>RF 2(477.000 MHz)</div> <div>1.49/26.97 Mbps</div> <div>RF 3(483.000 MHz)</div> <div>0.00/26.97 Mbps</div> <div>RF 4(489.000 MHz)</div> <div>1.02/26.97 Mbps</div> </div> | | | | | |
| NO. | IP Address | Service Name | Bitrate(Mbps) | RF Channel | Action |
| 1 | 238.0.0.1:1234 | Live | 0.558 | RF 1 (471.000 MHz) | Cancel |
| 2 | 238.0.0.2:1234 | Live | 0.576 | RF 1 (471.000 MHz) | Cancel |
| 3 | 238.0.0.3:1234 | Live | 0.566 | RF 2 (477.000 MHz) | Cancel |
| 4 | 238.0.0.4:1234 | Live | 0.569 | RF 2 (477.000 MHz) | Cancel |
| 5 | 238.0.0.5:1234 | Live | 0.555 | RF 3 (483.000 MHz) | Cancel |
| 6 | 238.0.0.6:1234 | Live | 0.645 | RF 4 (489.000 MHz) | Cancel |

CHANNEL TAB : here you set the channel NAME and NUMBER per each of the stream as they will show on TVs



The screenshot shows the PVI HD Encoder System Platform web interface. The top bar indicates 'Internet access' and 'Version: 2.18A'. The main interface is divided into two tabs: 'Network' and 'Channel'. The 'Channel' tab is active, displaying a table of channel configurations. The table has columns for 'All', 'RF Channel', 'IP Address(S)', 'Service Name(S)', 'Major Num.(D)', 'Minor Num.(D)', 'Short Name', 'Long Name', 'Bitrate(Mbps)', and 'Action'. There are six rows of channel data, each with an 'Edit' button in the 'Action' column.

| All | RF Channel | IP Address(S) | Service Name(S) | Major Num.(D) | Minor Num.(D) | Short Name | Long Name | Bitrate(Mbps) | Action |
|--------------------------|-------------------|----------------|-----------------|---------------|---------------|------------|-----------|---------------|----------------------|
| <input type="checkbox"/> | 1-1 (471.000 MHz) | 238.0.0.1:1234 | Live | 1 | 1 | CH1 | CH1 | 0.558 | Edit |
| <input type="checkbox"/> | 1-2 (471.000 MHz) | 238.0.0.2:1234 | Live | 2 | 1 | CH2 | CH2 | 0.565 | Edit |
| <input type="checkbox"/> | 2-1 (477.000 MHz) | 238.0.0.3:1234 | Live | 3 | 1 | CH3 | CH3 | 0.563 | Edit |
| <input type="checkbox"/> | 2-2 (477.000 MHz) | 238.0.0.4:1234 | Live | 4 | 1 | CH4 | CH4 | 0.570 | Edit |
| <input type="checkbox"/> | 3-1 (483.000 MHz) | 238.0.0.5:1234 | Live | 5 | 1 | CH5 | CH5 | 0.563 | Edit |
| <input type="checkbox"/> | 4-1 (489.000 MHz) | 238.0.0.6:1234 | Live | 6 | 1 | CH6-4K | CH6-4K | 0.649 | Edit |

MAJOR NUMBER: is the number for this channel on the TV remote control

MINOR NUMBER: is the SUB number for this channel on the TV remote control

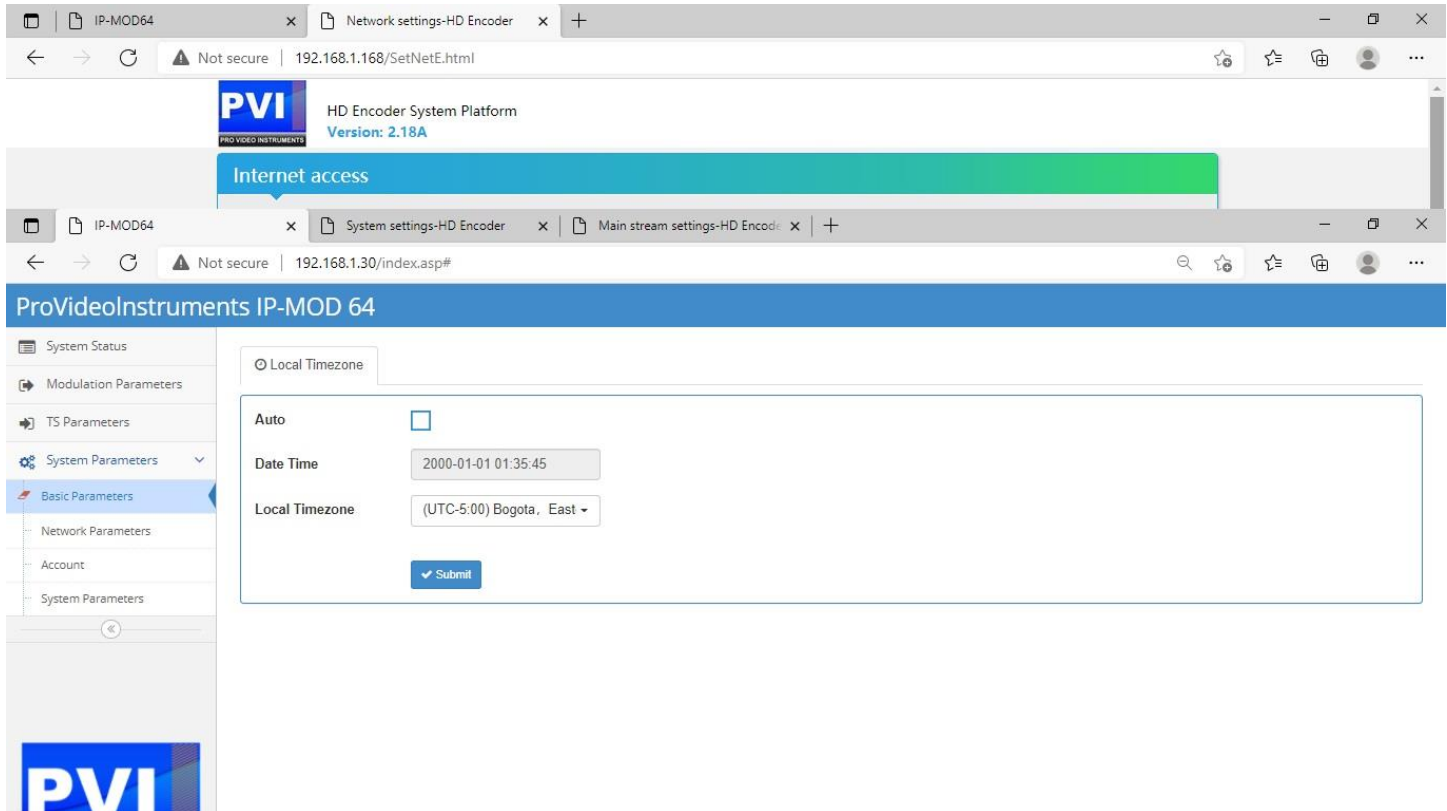
SHORT NAME / LONG NAME : the channel name used by the TVs to display the available channels list

After this is set you can connect a local TEST TV and rescan the channels to find these channels to confirm all is working

IMPORTANT: THE IP-MOD DOES NOT DO ANY TRANSCODING, SO IF A STREAM IS 4K OR HEVC OR H264 THE TVS WILL NEED TO BE ABLE TO DECODE THESE FORMATS OR WILL PLAY ONLY THE AUDIO. MOST OF THE MODERN 4K 8K TVs can play any format so will play H264 and HEVC formats from our encoders.

5) SYSTEM PARAMTERS

LOCAL TIMEZONE : Set the parameters for the TIME TABLE of the modulator, useful when DVR RECORDERS are used to record customers-side the channels. AUTO will take the automatic time sync from the internet IF available to the IP MOD management port.



The screenshot displays the PVI HD Encoder System Platform web interface. The top navigation bar includes the PVI logo and the text "HD Encoder System Platform Version: 2.18A". Below this, a blue banner reads "Internet access". The main content area is titled "ProVideoInstruments IP-MOD 64" and features a sidebar menu on the left with options: System Status, Modulation Parameters, TS Parameters, System Parameters (expanded), Basic Parameters (selected), Network Parameters, Account, and System Parameters. The main panel shows the "Local Timezone" settings. It includes a radio button for "Auto" (unchecked), a "Date Time" field showing "2000-01-01 01:35:45", and a "Local Timezone" dropdown menu set to "(UTC-5:00) Bogota, East". A blue "Submit" button is located at the bottom of the form.

IP-MOD64 x Network settings-HD Encoder x +

Not secure | 192.168.1.168/SetNetE.html

PVI HD Encoder System Platform
Version: 2.18A

Internet access

IP-MOD64 x System settings-HD Encoder x Main stream settings-HD Encoder x +

Not secure | 192.168.1.30/index.asp#

ProVideoInstruments IP-MOD 64

System Status
Modulation Parameters
TS Parameters
System Parameters
Basic Parameters
Network Parameters
Account
System Parameters

Local Timezone

Auto ☐

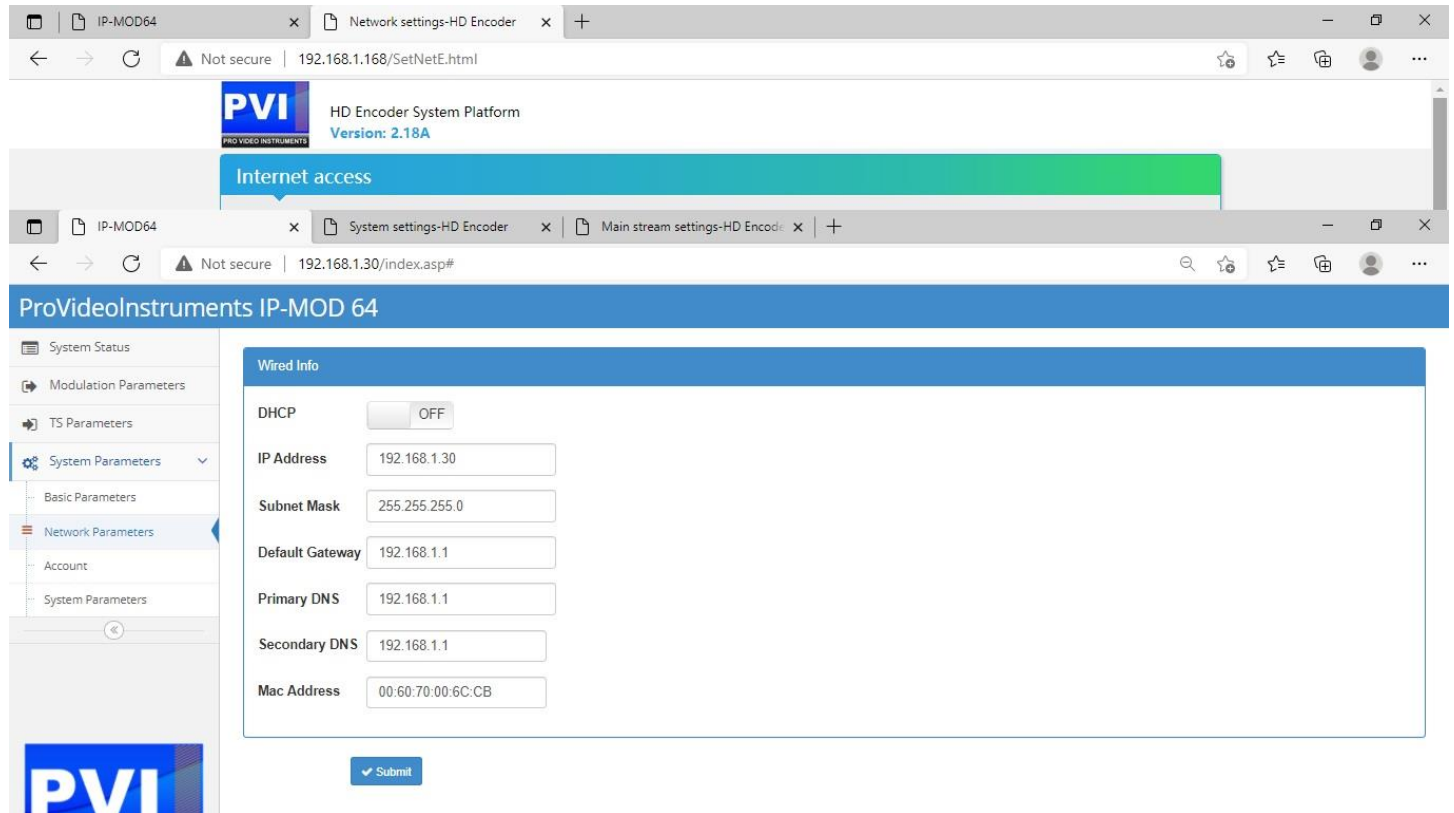
Date Time 2000-01-01 01:35:45

Local Timezone (UTC-5:00) Bogota, East

Submit

NETWORK PARAMTERES: set the IP ADDRESS of the modulator to access the control

DO NOT CHANGE UNLESS IT IS NEEDED. IF YOU CHANGE THE IP AND YOU FORGET THE IP YOU WILL NEED TO USE A NETWORK SCANNER (WIRESHARK) TO FIND THE ACTUAL IP OF THIS MODULE, OR RESET TO FACTORY THE WHOLE SYSTEM



The screenshot displays the PVI HD Encoder System Platform web interface. The top navigation bar includes the PVI logo and the text "HD Encoder System Platform Version: 2.18A". Below this, a blue banner reads "Internet access". The main content area is titled "ProVideoInstruments IP-MOD 64" and features a sidebar menu with options: System Status, Modulation Parameters, TS Parameters, System Parameters (selected), Basic Parameters, Network Parameters, Account, and System Parameters. The "Network Parameters" section is active, showing a "Wired Info" panel with the following fields:

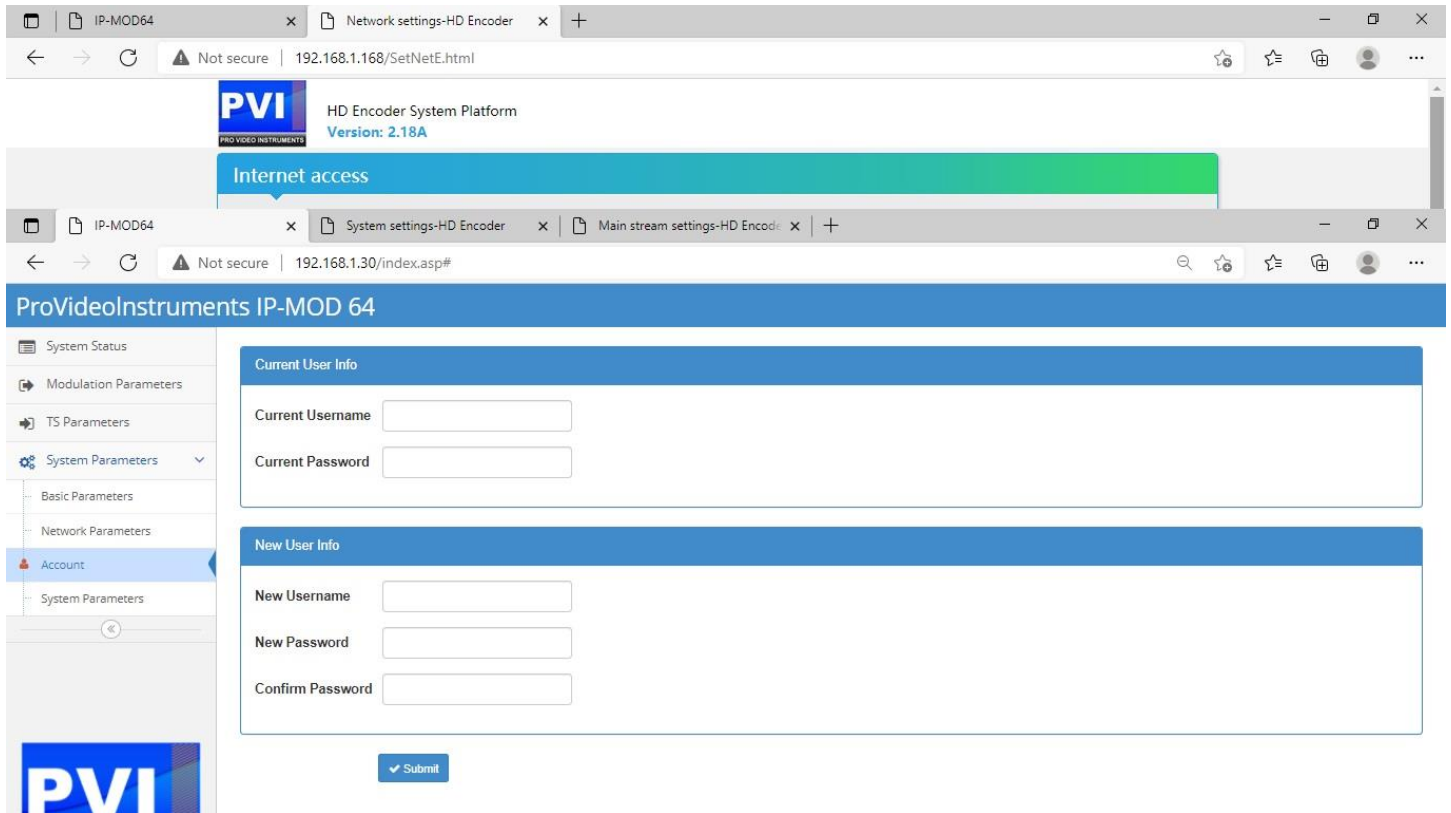
| Wired Info | |
|-----------------|--|
| DHCP | <input type="checkbox"/> OFF |
| IP Address | <input type="text" value="192.168.1.30"/> |
| Subnet Mask | <input type="text" value="255.255.255.0"/> |
| Default Gateway | <input type="text" value="192.168.1.1"/> |
| Primary DNS | <input type="text" value="192.168.1.1"/> |
| Secondary DNS | <input type="text" value="192.168.1.1"/> |
| Mac Address | <input type="text" value="00:60:70:00:6C:CB"/> |

A "Submit" button is located at the bottom of the "Wired Info" panel.

ACCOUNT: this sets the USER NAME AND PASSWORD for the WEB INTERFACE of the IP MOD.

default is user / user

DO NOT CHANGE UNLESS NECESSARY. USE A FIREWALL TO DISTRIBUTE THE PUBLIC STREAMING AND DIVIDE THE MAIN INFINIUM SWITCH FROM THE PUBLIC NETWORK.



The screenshot displays the PVI HD Encoder System Platform web interface. The top navigation bar includes the PVI logo and the text "HD Encoder System Platform Version: 2.18A". Below this, a green banner reads "Internet access". The main content area is titled "ProVideoInstruments IP-MOD 64" and features a sidebar menu on the left with options: System Status, Modulation Parameters, TS Parameters, System Parameters (expanded), Basic Parameters, Network Parameters, Account (selected), and System Parameters. The main content area contains two sections: "Current User Info" and "New User Info". The "Current User Info" section has input fields for "Current Username" and "Current Password". The "New User Info" section has input fields for "New Username", "New Password", and "Confirm Password". A "Submit" button is located at the bottom of the "New User Info" section.

IP-MOD64 x Network settings-HD Encoder x +

Not secure | 192.168.1.168/SetNetE.html

PVI HD Encoder System Platform
Version: 2.18A

Internet access

IP-MOD64 x System settings-HD Encoder x Main stream settings-HD Encode x +

Not secure | 192.168.1.30/index.asp#

ProVideoInstruments IP-MOD 64

System Status
Modulation Parameters
TS Parameters
System Parameters
Basic Parameters
Network Parameters
Account
System Parameters

Current User Info

Current Username

Current Password

New User Info

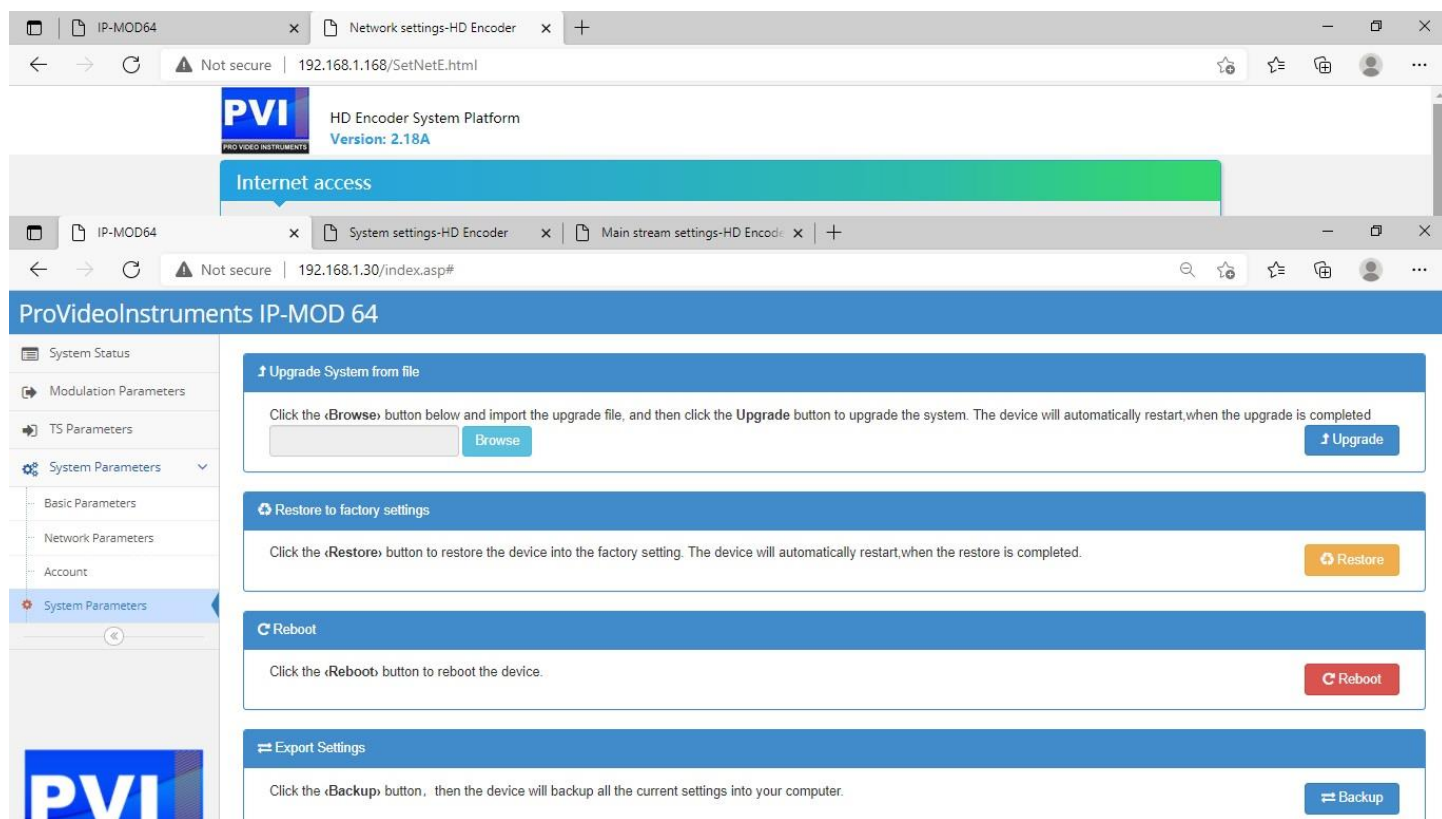
New Username

New Password

Confirm Password

Submit

UPGRADE: this page is to upgrade the module firmware or the restore factory default or to reboot the module



The screenshot displays the PVI HD Encoder System Platform web interface. The top navigation bar shows the PVI logo and the text "HD Encoder System Platform Version: 2.18A". Below this, a blue banner reads "Internet access". The main content area is titled "ProVideoInstruments IP-MOD 64" and contains four sections:

- Upgrade System from file:** A section with a blue header. It contains a text box with instructions: "Click the «Browse» button below and import the upgrade file, and then click the Upgrade button to upgrade the system. The device will automatically restart, when the upgrade is completed." Below the text is a "Browse" button and an "Upgrade" button.
- Restore to factory settings:** A section with a blue header. It contains a text box with instructions: "Click the «Restore» button to restore the device into the factory setting. The device will automatically restart, when the restore is completed." Below the text is a "Restore" button.
- Reboot:** A section with a blue header. It contains a text box with instructions: "Click the «Reboot» button to reboot the device." Below the text is a "Reboot" button.
- Export Settings:** A section with a blue header. It contains a text box with instructions: "Click the «Backup» button, then the device will backup all the current settings into your computer." Below the text is a "Backup" button.

The left sidebar contains a menu with the following items: System Status, Modulation Parameters, TS Parameters, System Parameters (expanded), Basic Parameters, Network Parameters, Account, and System Parameters (selected). The PVI logo is also visible at the bottom left of the sidebar.