

# CLEAR VIEW

## HD4112 Quad HDMI MPEG2 HD DVBT Encoder Modulator *USER MANUAL*



# Contents

## **1. GENERAL**

- 1.1 Description
- 1.2 Specifications

## **2. INSTALLATION**

- 2.1 What's in the Box
- 2.2 Connection
  - 2.2.1 DEVICE Programming and Setup

## **3. OPERATING INSTRUCTIONS**

- 3.1 Description of controls and components
- 3.2 Starting
  - 3.2.1 Beginning Setup
  - 3.2.2 Step 1: Login and Adjust RF and stream settings
  - 3.2.3 Step 2: Adjust System Settings

## **4. FLOW CHART**

## **5. QUICK MENU GUIDE**

- 5.1 Sub Menu

## **6. OPERATION VIA FRONT BUTTONS**

- 6.1 System and Info
- 6.2 Modulation Setting
- 6.3 Streaming Settings

## **7. SYSTEM SETTINGS**

## **DIGITAL MODULATOR**

### **1. GENERAL**

#### **1.1 Description**

The HD4112 modulator is able to generate 4 x RF signals in DVB-T format (Digital Terrestrial Television) from 4 x HDMI inputs.

HD4112 is MPEG-2 encoding, 1080p, DVB-T modulation integrated into one device to convert 4 x HDMI signals to 4 DVB-T RF out.

The HD4112 is HDCP Compliant and works up to 1080p resolution.

## 1.2 Specifications

INPUT	
Video Input	1080P25, 1080P30,1080i,576i,480i
Input Connectors	4 x HDMI
OUT PUT	
Frequency Range	177 -226.5 MHz, 522.5 -816.5 MHz, 4 Carriers Out
Output Level	102 dBuV Max
Channel Bandwidth	7-8 MHz
RF Level Adjustment	70 to 102 dBuV
Attenuation step	1dB per step
MER	36 dB typically
MODULATION	
Video Resolution	1920 x 1080, 30p
Video Compression	MPEG2
Audio Compression	MPEG2, AAC
Video Bit Rate	Adjustable 1 to 22Mb/sec
Audio Bit Rate	384Kbits
Editable Field	Service Name, Network ID, Original NET ID, LCN, Network Name, Bitrate, Modulation Parameters.
Carrier (OFDM Mode)	2K/8K
Guard Intervals	¼, 1/8, 1/16, 1/32
Code Rate (FEC)	½, 2/3, ¾, 5/6, 7/8
Constellation	QPSK/16QAM/64 QAM
MANAGEMENT / CONTROL	
Front panel LCD control	6 Local keys on front panel
Web Management	RJ-45 Ethernet port
GENERAL	
Power Supply	AC 100~240V 50/60Hz
Consumption	20 W
Languages	English
Dimensions	19" x 12.5" x 1.75"
Weight	1.8Kg

\*Specifications subject to change without prior notice.

## 2. INSTALLATION

### 2.1 What's in the Box

One HD4112 Encoder / Modulator  
One power cable

### 2.2 Connection

The HD4112 unit comes standard with 4 x HDMI inputs.

Use a quality 75Ω coaxial cable with “F” connectors from the unit's RF OUT jack to the distribution system or directly to a television.

Connect the power cord to an appropriately rated AC power outlet.

Once connected to power, the device turns on and it takes about 80 seconds to be operational. Then the message “Initial Please wait” appears on the display. After 80 seconds the message “CLEARVIEW and the Frequency Out” will be displayed from RF output 1. Other output channels can be displayed by pressing right or left arrow buttons.



CLEARVIEW  
A06, (177.5MHz)

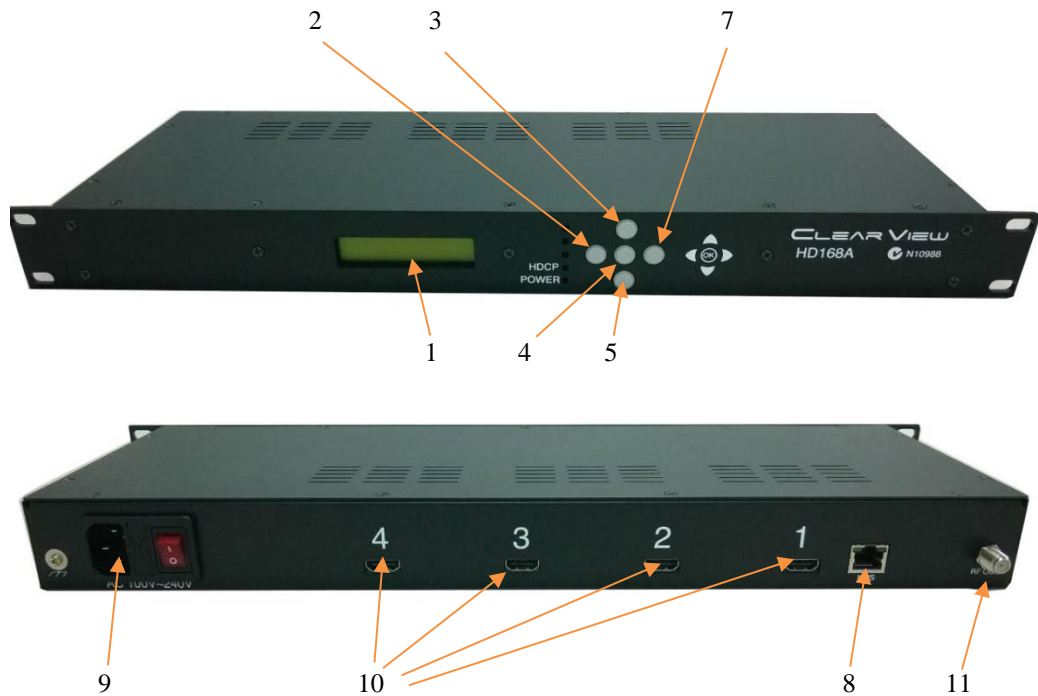
#### 2.2.1 DEVICE Programming and Setup

Connect an Ethernet cable directly (no Cross Over cable required) to the Ethernet Port on the rear panel of the encoder and then connect the Ethernet cable to an Ethernet switch or connect an Ethernet Cable to your PC. The default IP address is **192.168.1.138**

Make sure your PC has the same first 3 IP sections, eg. 192.168.1.xx and the 4<sup>th</sup> is different from 138.

### 3. OPERATING INSTRUCTIONS

#### 3.1 Description of controls and components



	HD168A	Description
1	LCD Display	Configuration and system status
2	Key PAD / Left	Exit from previous menu.
3	Key PAD / Up	Move between menu selections.
4	Key Centre	OK Button to select item
5	Key PAD / Down	Move between menu selections.
7	Key PAD / Right	Move between menu selections.
8	Ethernet Port	RJ-45 Chrome
9	AC input	AC 100 to 240V / 50~60Hz
10	HDMI Inputs	Up to 1080p resolution
11	RF output	"F"-Female 75Ω

**ATTENTION!**  
FOR THIS CONFIGURATION YOU SHOULD USE OUTPUT FREQUENCIES DIFFERENT FROM THE ONES THAT YOUR TV IS CURRENTLY USING

## 3.2 Starting

### 3.2.1 Beginning Setup

DEVICE Programming and Setup

1. Apply power.
2. Connect Audio / Video source

Connecting to the GUI Interface:

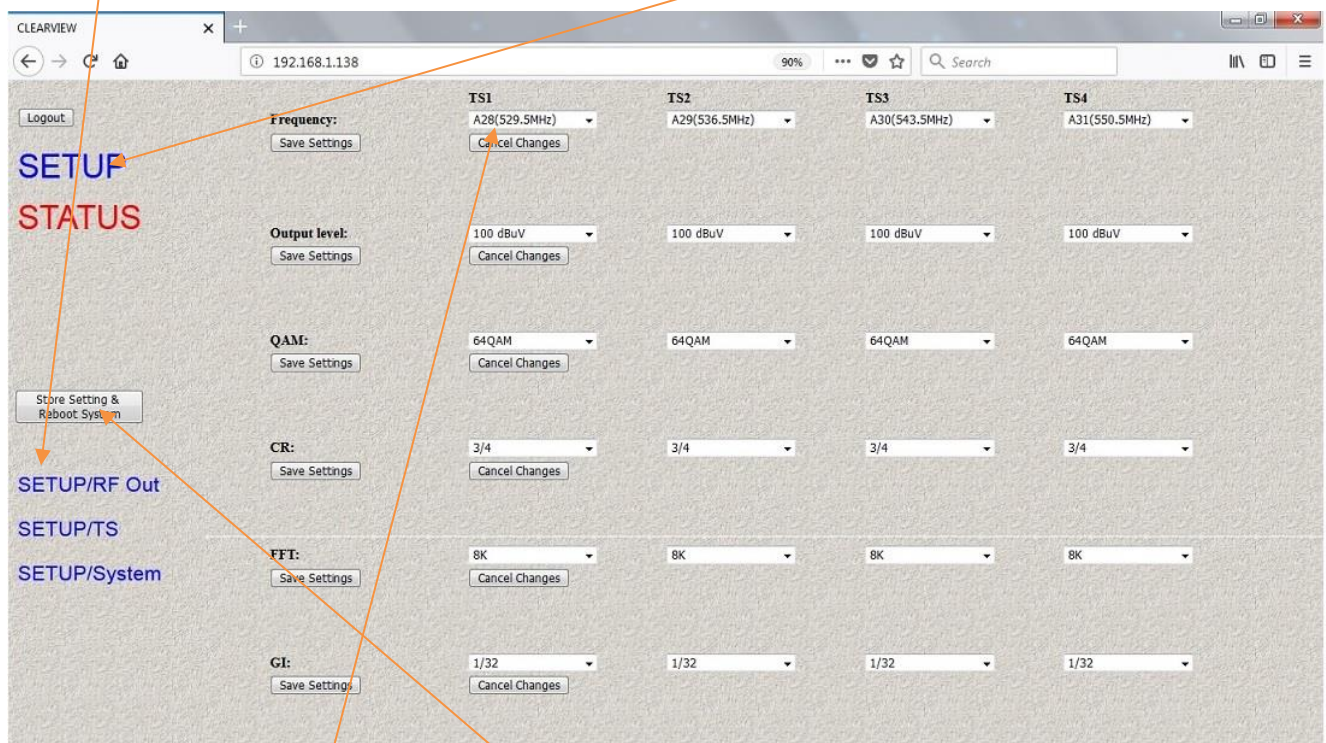
1. Connect an Ethernet cable directly to the Ethernet port on the rear panel of the encoder and then connect the Ethernet cable to an Ethernet switch /router or connect an Ethernet Cable to your PC.
2. Using a Windows-based PC Select Windows Icon
3. The default IP address is **192.168.1.138** Make sure your PC has the same 3 first section IP range.
4. Key in the IP address in web browser 1 9 2 . 1 6 8 . 1 . 1 3 8

### 3.2.2 Step 1: Login and Adjust RF and Stream Settings

Login Password:

Default Password: 1 2 3 4

Encoder Programming and Setup via GUI Interface and click on **SETUP** then on **SETUP/RF Out**:



Set your channel **here** for each channel. Once set press the **Save Settings** button to the left. It is the same with Output Level, QAM, LCNs, CN, FFT and GI. After setting parameters and Saving, make sure you press '**Save Setting & Reboot System**' so settings are permanently stored.



### 3.2.3 Step 2: Adjust Transport Stream Settings

Click on **SETUP** then on **SETUP/TS**:

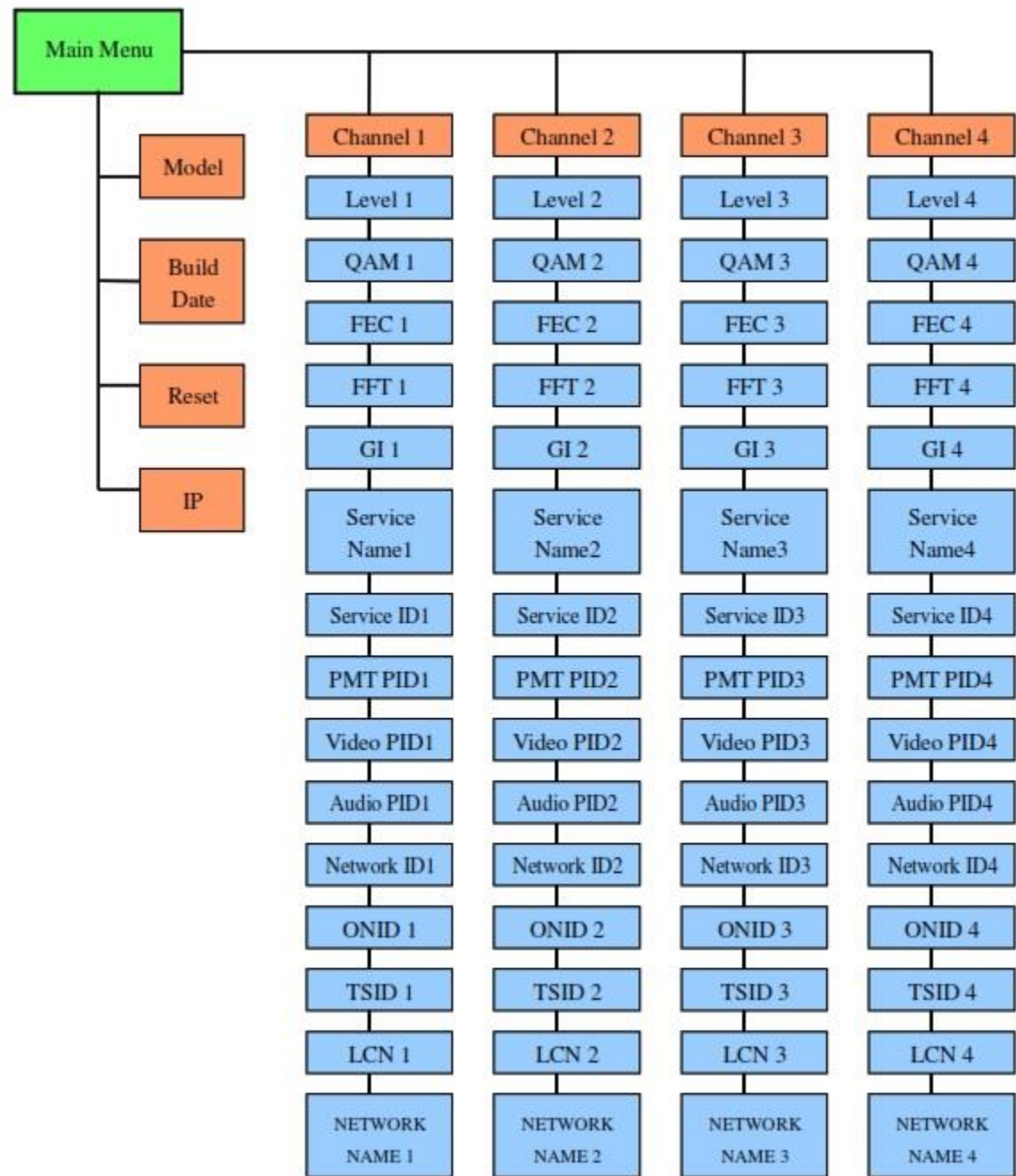
The screenshot shows the CLEARVIEW web interface. On the left sidebar, there are tabs for 'SETUP' (highlighted in blue) and 'STATUS' (highlighted in red). Below these are links for 'SETUP/RF Out', 'SETUP/TS' (highlighted in blue), and 'SETUP/System'. The main content area is divided into four columns for TS1, TS2, TS3, and TS4. Each column has a 'Save Settings' button at the bottom. Arrows from the text above point to the 'SETUP' tab, the 'SETUP/TS' link, and the 'Save Settings' buttons for TS1 and TS2.

Set your **TS settings** for each channel then press **Save Settings** at the left-hand side. Once you have set all parameters and pressed Save Settings, finally press **Save Setting and Reboot System** to store permanently. The Bitrate setting must not exceed The allowable amount according to your modulator parameter settings. Please use the Chart below to determine the maximum bitrate value.

CR	GI	QPSK	16QAM	64QAM
1/2	1/32	4.486	8.972	13.458
	1/16	4.354	8.708	13.062
	1/8	4.112	8.224	12.336
	1/4	3.701	7.401	11.103
2/3	1/32	5.981	11.962	17.945
	1/16	5.805	11.611	17.414
	1/8	5.483	10.965	16.449
	1/4	4.934	9.869	14.804
3/4	1/32	6.729	13.458	20.188
	1/16	6.531	13.062	19.594
	1/8	6.168	12.336	18.506
	1/4	5.551	11.103	16.654
5/6	1/32	7.477	14.954	22.431
	1/16	7.257	14.514	21.771
	1/8	6.854	13.707	20.562
	1/4	6.168	12.336	18.506
7/8	1/32	7.851	15.702	23.552
	1/16	7.620	15.239	22.859
	1/8	7.196	14.393	21.590
	1/4	6.477	12.954	19.431

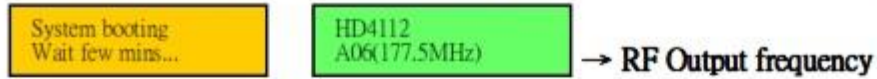


#### 4. Flow Chart



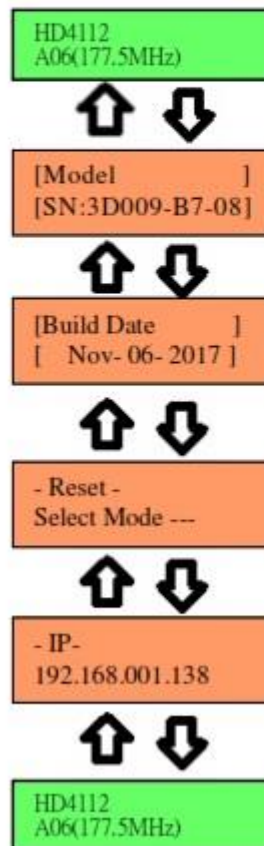
## 5. Quick Menu Guide

### System Booting =====

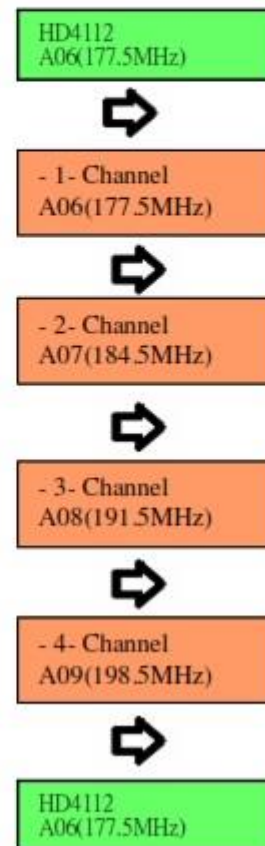


### Main Menu =====

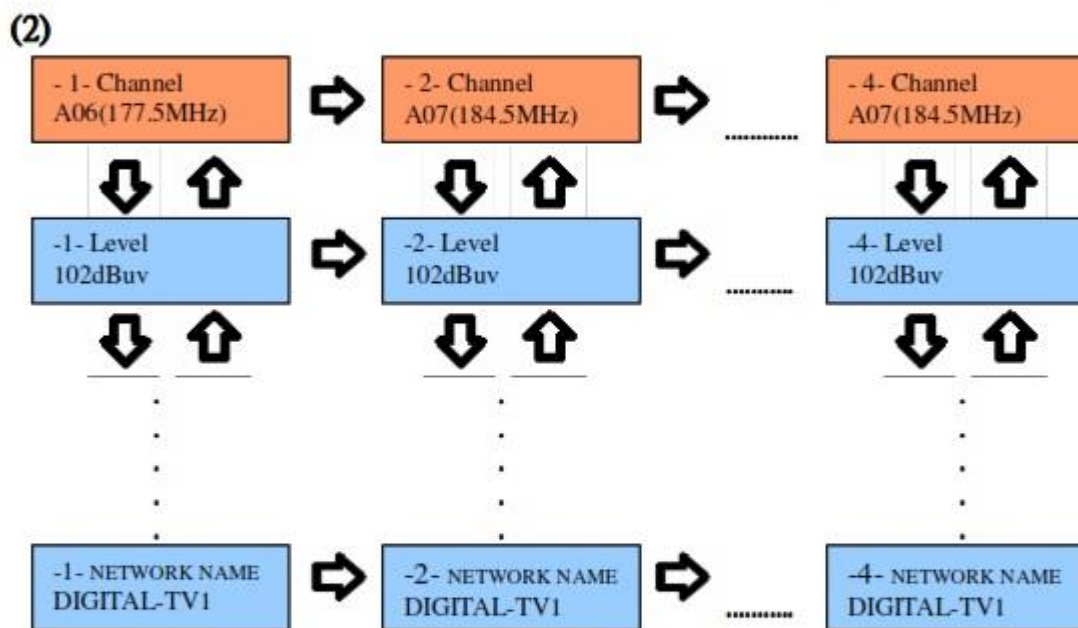
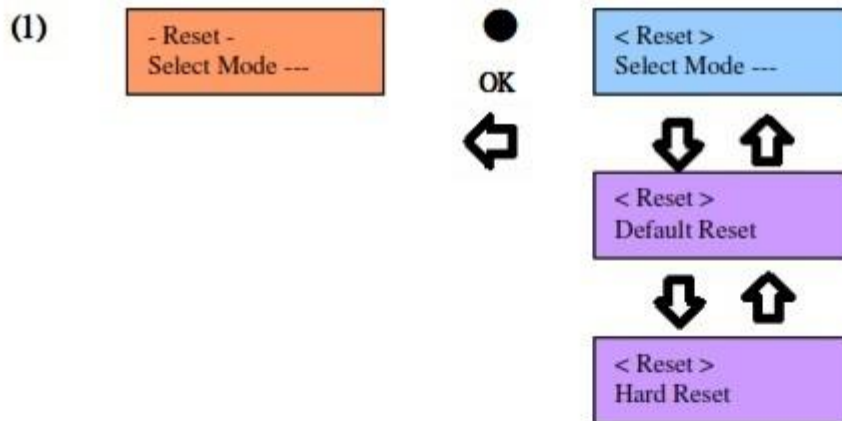
#### (1)SYSTEM & INFO:



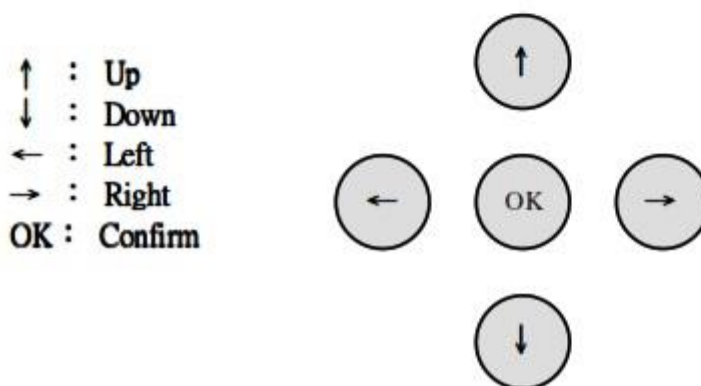
#### (2)SETUP RF TS:



## 5.1 Sub Menu



Buttons definition =====



## 6. Operation Via Front Buttons

### 6.1 System & Info

- Reset - Select Mode ---	Following the main Submenu flow charts to enter the 'Reset' mode.
<Reset> Select Mode ---	Press the OK button to access the adjustment mode. "<>" will be on both sides of "Reset". Press Up or Down button to select and press the OK button to save.
[Model           ] [SN:3D009-B7-08]	Press the Up button to enter the next page for Model.
[Build Date       ] [NOV- 06- 2017]	Press the Up button to enter the next page for Build Date .
- Reset - Select Mode ---	Hard Reset, Default Reset
- IP - 192.168.001.138	IP Address   192.168.001.001 ~ 192.168.254.254
Save &        Yes Reboot        No	After finishing all settings of "Reset" or "IP", press the Left button, a confirmation request will be shown on the display. Press Up or Down button to select Yes or No. Select Yes, all the settings will be stored in the memory. Select No to cancel.

### 6.2 Modulation Setting

-1- Channel A06(177.5MHz)	A06(177.5MHz) ~ A69(816.5MHz) for Australia
-1- Level 102dBuV	70~102dBuV
-1- QAM 64QAM	QPSK · 16QAM · 64QAM
-1- FEC 3/4	1/2 · 2/3 · 3/4 · 5/6 · 7/8
-1- FFT 8K	2K or 8K
-1- GI 1/32	1/4 · 1/8 · 1/16 · 1/32.



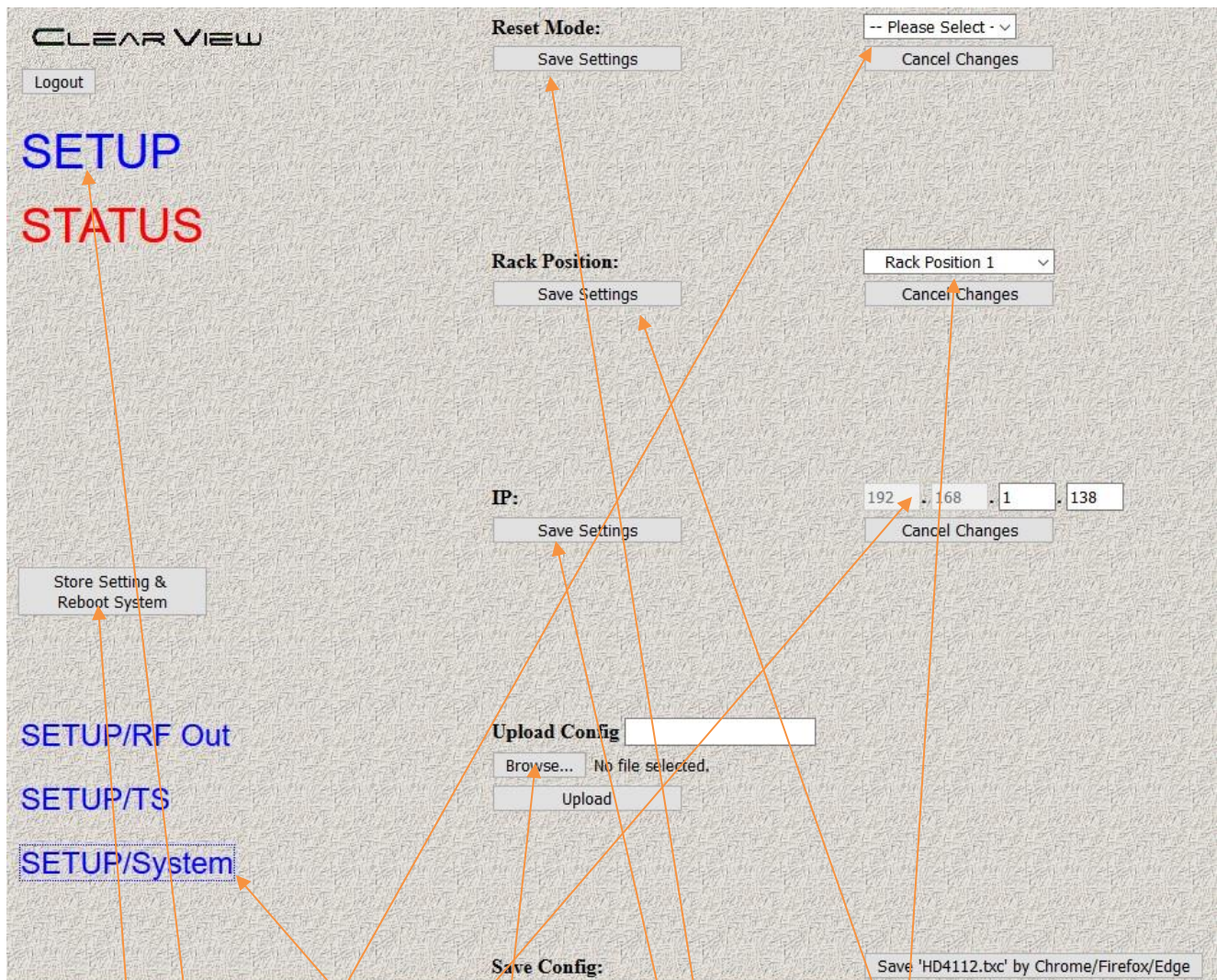
## 6.3 Stream Setting

-1- Service Name TV-101	Press the Down button to enter the next page for Service Name. (A~Z,0~9,_,", " ")
-1- Service ID 00256	Press the Down button to enter the next page for Service ID. (number from 00001~65535)
-1- PMT PID 04096	Press the Down button to enter the next page for PMT PID. (number from 00001~65535)
-1- Video PID 02000	Press the Down button to enter the next page for Video PID. (number from 00001~65535)
-1- Audio PID 02256	Press the Down button to enter the next page for Audio PID. (number from 00001~65535)
-1- Network ID 01009	Press the Down button to enter the next page for Network ID.
-1- ONID 01009	Press the Down button to enter the next page for Ori Network ID.
-1- TSID 00032	Press the Down button to enter the next page for TSID.
-1- LCN 0100	Press the Down button to enter the next page for LCN.
-1- NETWORK NAME DIGITAL-TV 1	Press the Down button to enter the next page for Network Name.
Save & Reboot      Yes No	After finishing all settings of "RF1(-1-) · RF2(-2-) · RF3(-3-) · RF4(-4-) TS", press the Left button, a confirmation request will be shown on the display. Press Up or Down button to select Yes or No. Select Yes, all the settings will be stored in the memory. Select No to cancel.

## USB Upgrade

- 1) Download software to USB disk. Unzip. Only 'image.hex' from the HD4112 folder should be on the USB stick.
- 2) Insert the USB stick to the slot of USB Upgrade while HD4112 is powered off.
- 3) Keep pressing the OK button and power on HD4112. One LED illuminates and flickers.
- 4) Release the OK button. LED continues to flicker. Software upgrade is finished when LED stops flickering, and the unit says upgrade complete on the LCD panel.
- 5) Power off HD4112 and then power on again.

## 7. System Setting



Press **Setup** then **Setup System**

You can **reset** the unit to Factory Default or just Hardware Reset by clicking on this dropdown **here**. Be sure to always press the **Save Settings** to the left after selecting your option. The IP Address of the unit can be adjusted in the 192.168 range. The last 2 sections are adjustable **here**.

You can save the Modulator Config by pressing **This Button**.

It can be re-loaded by **Choosing the File** then uploading it into the Modulator.

After all settings have been adjusted always press the-

**Store Settings and Reboot System** for them to be saved completely.

When using more than one unit in an installation, use the **RACK POSITION** feature

To set parameters differently in each modulator in the rack so they do not interfere with each other. The values can be overridden and saves in the SETUO RF and TS menus if you have other units in the system with same parameters. Press Rack Position **SAVE SETTINGS** to save rack position. It will take a little time to re-boot and save.

If the buttons turn grey while you are adjusting settings, Log out then back in again To activate them.

The **STATUS** but only shows you status of the device and changes cannot be made in this menu.