User Guide and Installation Manual

HDME-804
Eight Input QAM Encoder / Modulator

MPEG-2 / H.264 HD ENCODER with QAM /IP/ & ASI Outputs

Table of Contents

Safety Precautions

The presence of this symbol is to alert the installer and user to the presence of uninsulated dangerous voltages within the product's enclosure that may be of sufficient magnitude to produce a risk of electric shock.

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS DEVICE TO RAIN OR MOISTURE. DO NOT OPEN THE UNIT. REFER SERVICING TO QUALIFIED PERSONNEL ONLY.

- DO NOT apply power to the unit until all connections have been made, all components have been installed and all wiring has been properly terminated.
- DO NOT terminate, change or uninstall any wiring without first disconnecting the unit's power adapter from the device.
- This device is supplied with the appropriately rated power supply. The use of any other power supply could cause damage and invalidate the manufacturer's warranty.
- DO NOT connect the power cord to the device if the power cord is damaged.
- DO NOT cut the power cord.
- DO NOT plug the power cord into an AC outlet until all cables and connections to the device have been properly connected.
- The device should be installed in an environment consistent with its operating temperature specifications. Placement next to heating devices and ducts is to be avoided as doing so may cause damage. The device should not be placed in areas of high humidity.
- DO NOT cover any of the device's ventilation openings.
- DO NOT cover or obstruct the device's fan or fan openings.
- If the device has been in a cold environment allow it to warm to room temperature for at least 2 hours before connecting to an AC outlet.

Package Contents

This package contains:

- HDME-804 Encoder / Modulator
- One power cable
- One installation / configuration manual

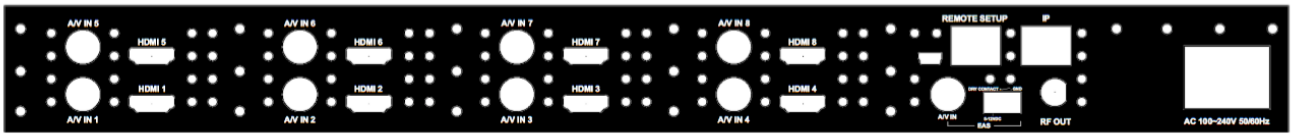
Inspect the package before starting installation to ensure there is no damage and all supplied contents are present.

Product Description

The HDME-804 Encoder/Modulator simultaneously provides QAM, IP, and ASI output streams making it ideal for any Commercial RF or IP Network integration. The high quality HD design allows for watching action packed movies and sports channels on any HDTV. The HDME-804 Encoder/Modulator supports a variety of DTV standards. The Dolby® Digital Encoding capabilities rounds out this feature rich product. This space saving design delivers up to 8 High Quality HD/SD QAM/IP/ASI channels in a single 1RU space.

*Dolby is a trademark of Dolby Laboratories.

- ✓ High Resolution up to 1080i/1080p
- ✓ 3 VCN Modes available
- ✓ HDMI (unencrypted), Component / Composite via DIN cable.
- ✓ MPEG2 or H.264 (AVC) Video (Selectable) Output
- ✓ Individual IP Stream Enable / Disable Control
- ✓ > +40dB MER
- ✓ Closed Captioning Support
- ✓ +45dBmV Output
- ✓ EAS Functionality
- ✓ Rack mountable 1RU height



Specifications

INPUTS	
HDMI	1.4v (x8)
DIN	Component / Composite via DIN cable
AUDIO Inputs	
Audio Input	via DIN or HDMI embedded
VIDEO Encoder	
Video Codecs	MPEG-2, MPEG-4(AVC) Selectable
Video Resolutions	1080p (MPEG-4 Only), 1080i, 720p, 576p, 576i, 480p, 480i
AUDIO Encoder	
Audio Compression	MPEG-1 Layer II, AAC, Dolby Stereo AC-3
RF QAM SUPPORT	
Frequency	57-861 MHz (CH 2-CH 135)
RF Channel Output (programs/QAM)	2 programs / QAM
QAM	J.83 Annex B
Constellation	256 QAM
Bandwidth	6 MHz
RF Level Output	+45dBmV Typical
MER	>42dB (43 dB Typical)
Interleaver	Supported (12 presets)
Channel Type	STD, HRC, IRC
VCN	VCN Auto, VCN Manual, VCN 1-Part
Attenuation	1 – 20dB (1 db Steps)
RF Output	"F"- Female 75Ω
Closed Captioning Control	Supported
IP Output	
Type	1RJ-45, GbE
Stream Type	UDP/RTP Unicast, Multicast
TS Format	SPTS
Stream Control	Enable / Disable Control per Stream
ASI Output	
Connection	BNC 75Ω (front-end mounted)
Output	MPTS Multiplexed
EAS Support	
Connection	Dry Contact
Audio/Video Input	DIN
Management / Control	
GUI Supported	IE9, FireFox, Chrome, Safari
GUI Control	RJ45 10/100
Password Protected	GUI
General	
Rack mountable (1RU)	482.7mm x 240mm x 44.4mm (19" x 9.45" x 1.75"), 19" EIA
Fan Cooled	Internal
Front Panel	LED System Indicators (Power, up to 8 Encoder Status LEDs)

*Subject to change without notifications
*Manufactured under License of Dolby Laboratories

Installation

System Installer must adhere to Article 820-40 of the NEC that provides guidelines for proper grounding and specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as possible.

Unpacking and Inspection

Each unit is shipped factory tested. Ensure all items are removed from the container prior to discarding any packing material.

Thoroughly inspect the unit for shipping damage with particular attention to connectors and controls. If there is any sign of damage to the unit or damaged or loose connectors contact your distributor immediately. Do not put the equipment into service if there is any indication of defect or damage.

Hardware Installations and Connections

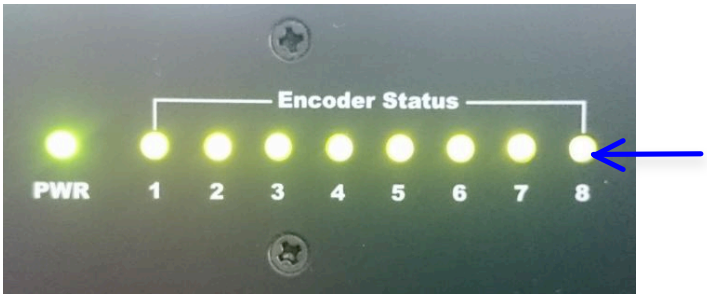
It is highly recommended that quality cables and connectors be used for all video and audio source connections.

1. The unit is designed to be rack mounted in a standard EIA 19" rack.
2. The unit comes standard with HDMI and DIN inputs (Component and Composite video inputs). The HDME-804 encoder / modulator is intelligently designed to detect the video input from the video source. **HDMI Connection:** Connect the HDMI cable(s) from the video source(s) into the HDMI input(s). Or, Connect the DIN Cable to the back of the encoder as required using the DIN to DIN or DIN to breakout cable.

   Repeat this step for each video source connection required.

   Be sure the connections for each source are consistent with the unit's inputs (IN1…IN8).
3. Use a quality 75Ω coaxial cable with "F" connectors from the unit's **RF OUT jack** to the **distribution system** (combiner or reverse splitter) or directly to a television.
4. If connecting to an IP network- connect the Ethernet cable to the IP output RJ45 connector.

   (IGMP capable and enabled switch is required)
5. If connecting the ASI output- connect the BNC cable to the ASI output.
6. If connecting to an EAS Receiver make the proper connections (connect relay and Video /Audio Inputs) to the EAS receiver.
7. Connect the included power cord to the unit's **POWER** plug.
8. Connect the power cord to an appropriately rated AC power outlet.



Encoder Status Lights:
Solid Green Encoder connected to Input source
Flashing Green: No connection / free run
Flashing Red: EAS Event

DEVICE Programming and Setup:

Connecting to the GUI Interface:

Factory Default IP: 192.168.1.9

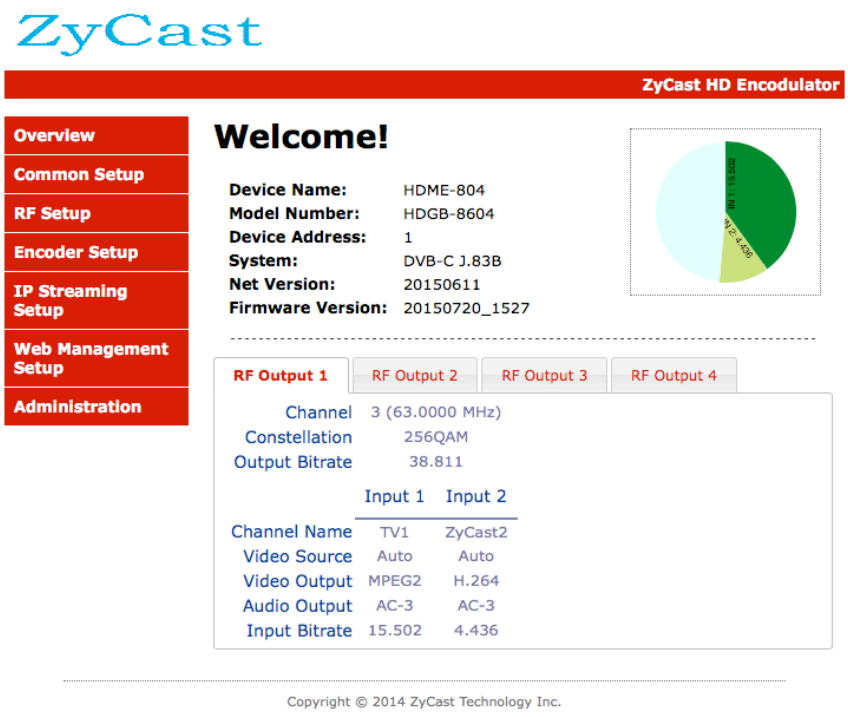
1. Connect an Ethernet cable directly (**no Cross Over cable required**) to the Web Management Port on the rear panel of the encoder or connect the Ethernet cable to an Ethernet switch. Connect an Ethernet Cable to your PC/Laptop.
2. Modify your PC/Laptop IP address to 192.168.1.11.
3. Enter '192.168.1.9' into your web browser.
4. Enter GUI and make required device changes.
5. Save all changes as required, upload and reboot changes.
6. Verify parameters then end web session.

Encoder Programming and Setup via GUI Interface:

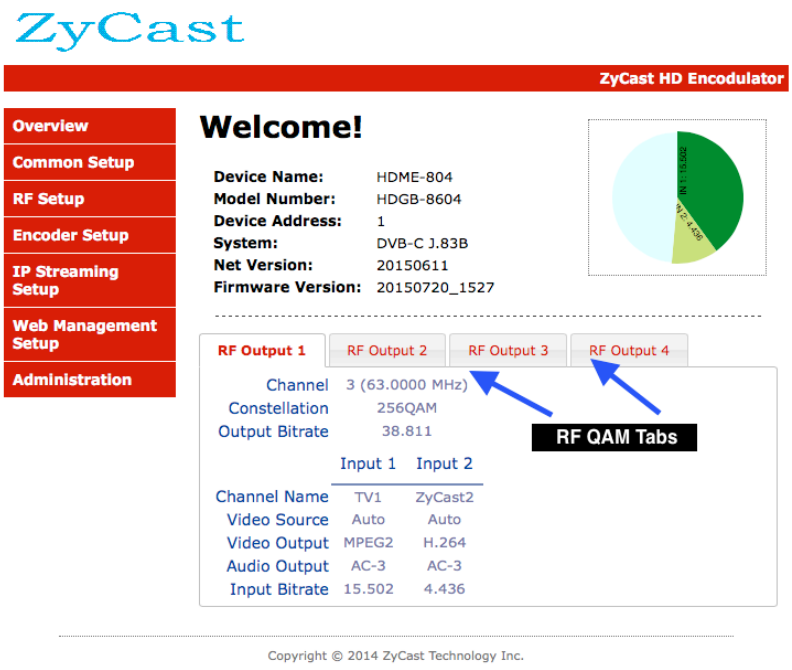
After connecting the device to the "Web Management" port located on the rear of the device and connecting to a PC / Laptop.

Step 1: Enter Device's IP address in web browser.

Overview Page of Encoder



Overview Page of HDME-804



Welcome page showing overview status of the HDME-804 when fully functioning**.**
Alternate between viewing status of **RF Output 1, RF Output 2, RF Output 3, RF Output 4** by selecting the RF Output tab of the device you want to monitor.

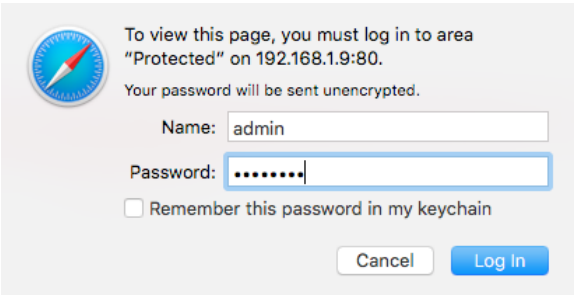
Step 2: Login

Select Common Setup

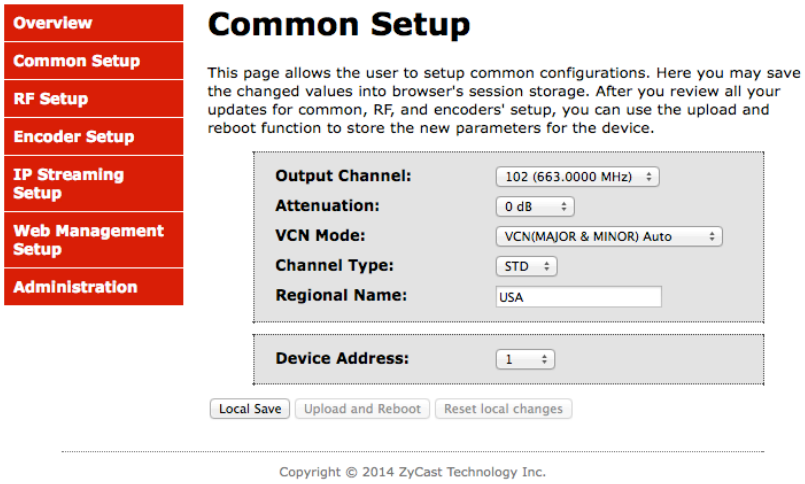
Once the Common Setup Tab is selected you will be prompted to enter the user name and password for device.

GUI Login Password:

Default User Name: **admin**
Default Password: **Admin123**



Note: To change the Password for the GUI go to the Administration Tab.



Use the Common Setup Page to set the Output channel, Select VCN Mode, and Device Address.

Step 4: Local Save

Perform a **Local Save** once all parameters are set.

Application Note:

When installing more than 1 device in a headend, the integrator must select a unique Device Address for each Encoder being installed in the system.

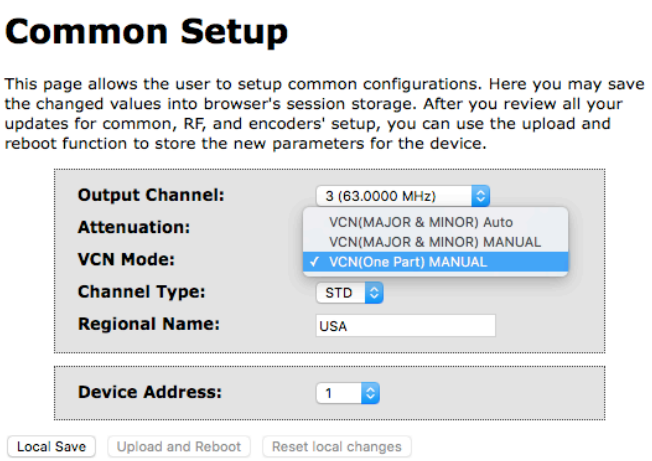
If outputting directly into a HDTV, you must first attenuate the output (+45dBmV typical).

Notes on Changes:

Changes made to an individual setup tab may require the installer to perform a **Local Save** *AND* **Upload and Reboot** if only making changes to one parameter of the encoder.

Example: Installer is required to change only the output channel for the device (No other changes to the device are required). Once the channel has been changed, the installer is required to perform **1) Local Save *AND* 2) Upload and Reboot.**

VCN Modes Available:



VCN (Major & Minor) Auto: Factory Default

When selecting this VCN, unit will automatically set the output channels.

Example:

Output Channel (2)

2.1 & 2.2 (**QAM 1**), 3.1 & 3.2 (**QAM 2**), 4.1 & 4.2 (**QAM 3**), and 5.1 & 5.2 (**QAM 4**)

VCN (Major & Minor) Manual

Using the VCN Major & Minor Manual setting offers the integrator the ability to set the channel manually. Although the Output Channel is set to 102 (663.0000MHz) the Major & Minor Channels do not have to follow or correspond to the output channel.

Example:

Output Channel (102).

5.1 & 5.2 (**QAM 1**), 6.1 & 6.2 (**QAM 2**), 7.1 & 8.1 (**QAM 3**), 11.1 & 12.1 (**QAM 4**)

VCN (One Part) Manual

Using the VCN (One Part) Manual setting offers the integrator the ability to set the channel manually. Although the Output Channel is set to 102 (663.0000MHz) the Channels do not have to follow or correspond to the output channel.

Example:

Output Channel (102).

102, 103 (**QAM 1**), 104, 105 (**QAM 2**),106, 107 (**QAM 3**), 108, 109 (**QAM 4**)

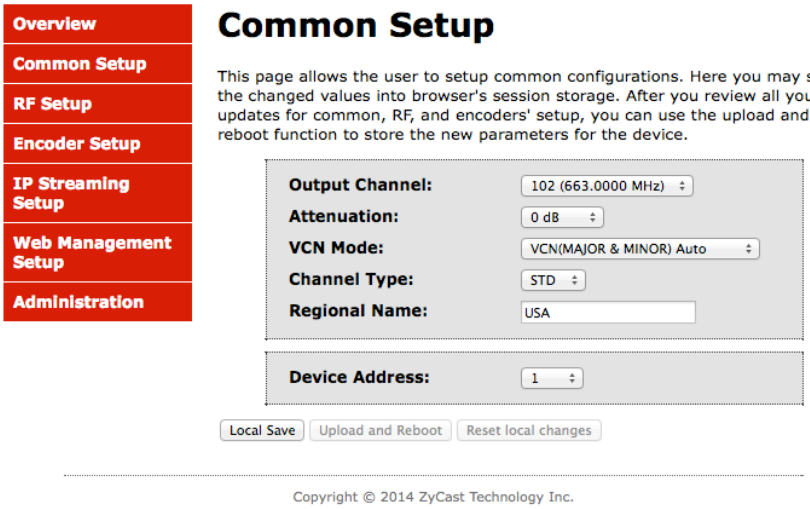
Application Note:

Regardless of the VCN channel set using VCN Major & Minor (Manual) or VCN 1-Part Method, the RF Carrier Frequency of the Output Channel will still be occupied for all (4) four QAM channels of the HDME-804.

The HDME-804 will automatically set the RF QAM frequency for the device once the Output Channel has been selected and saved. (RF QAM channel 1, RF QAM channel 2, RF QAM channel 3, and RF QAM channel 4).

Go to Encoder Page to Set/Modify the VCN Channel (if VCN Manual or VCN One-Part selected).

Notes on Channel Selection: The image below shows the Output Channel is set to CH # 102.



The examples below show how each input on the Encoder is placed in RF1, RF2, RF3, and RF 4 output QAMs.
Note: The RF2, RF3, and RF4 Physical Channel Output is determined by the selection of output channel RF1.

HDME-804 example 1:

RF1 (QAM 1)	**RF2 (QAM2)**	**RF3 (QAM 3)**	**RF4 (QAM 4)**
IN-1 IN-2	IN-3 IN-4	IN-5 IN-6	IN-7 IN-8
CH # 102.1 **CH # 102.2**	**CH # 103.1** **CH # 103.2**	**CH # 104.1** **CH # 104.2**	**CH # 105.1** **CH # 105.2**

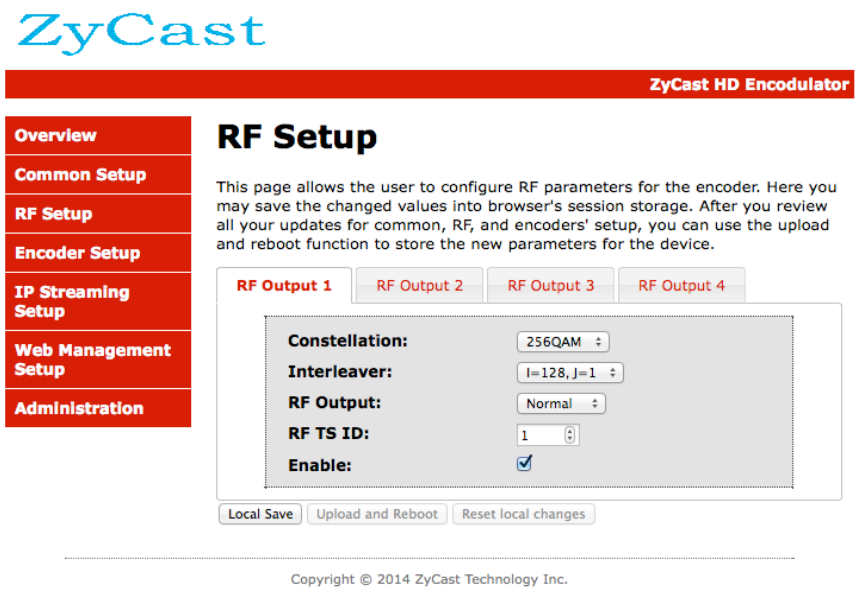
HDME-804 example 2:

Setting the Output Channel to CH# 2 would result in the following RF1/RF2/RF3/RF4 configuration below.

RF1 (QAM 1)	RF2 (QAM2)	RF3 (QAM 3)	RF4 (QAM 4)
IN-1 IN-2	IN-3 IN-4	IN-5 IN-6	IN-7 IN-8
CH # 2.1 **CH # 2.2**	**CH # 3.1** **CH # 3.2**	**CH # 4.1** **CH # 4.2**	**CH # 5.1** **CH # 5.2**

Step 5:RF Setup

RF Setup



Use the RF Setup Page to setup each RF Output
Select **RF Output 1**, **RF Output 2, RF Output 3, or RF Output 4**
Select and set the required parameters you require for your installation.

The HDME-804 offers the integrator the ability to disable a RF QAM. To Disable the a RF Output (QAM) simply "uncheck"
the "enable" checkbox on any RF Output tab.

Application Note:
When installing more than 1 device into a system, each device must have an unused RF TS ID.

Step 6: Local Save

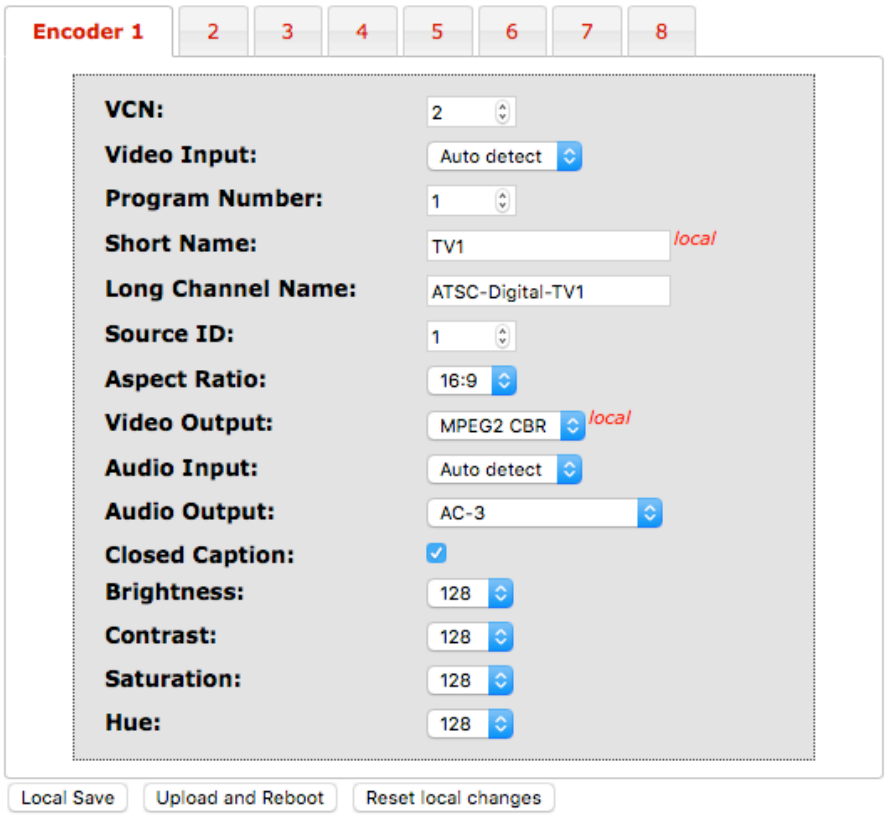
Perform a **Local Save for each** RF Output tab.

Setting up Multiple devices within the same system.

Device Address	RF TS ID			
	RF1	RF2	RF3	RF4
1	1	2	3	4
2	5	6	7	8
3	9	10	11	12
4	13	14	15	16

Step 7: Encoder Setup

Encoder Setup



Select Encoder 1, 2, 3, 4…. 8 tabs to program any individual encoder. **Select** and **change** all desired parameters.

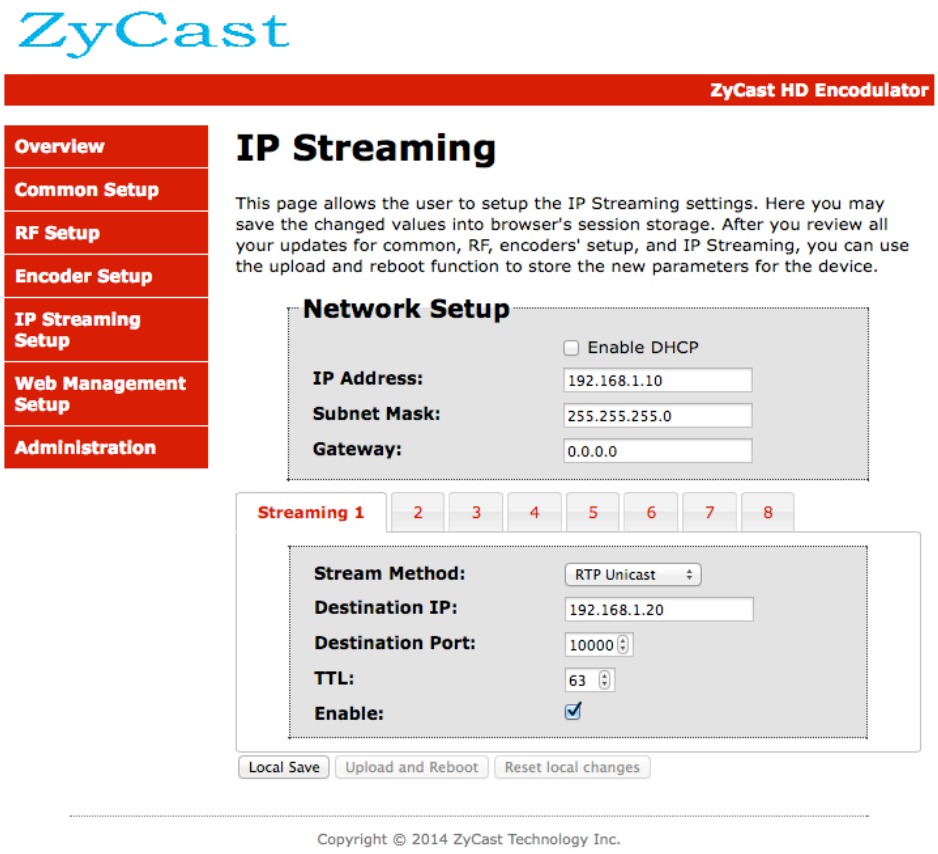
VCN Channels can be set if VCN Mode was set to Major & Minor Manual or VCN 1-Part on the Common Setup page.

Step 8: Local Save for each Encoder tab

Performa a '**Local Save'** on Each Encoder Tab where changes were made.

Step 9: IP Streaming

IP Streaming Setup



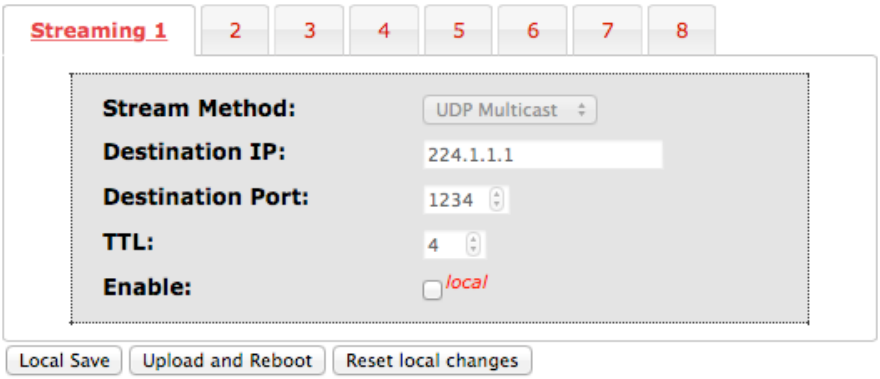
Use the IP Streaming setup page to set your device's IP streaming IP Address, and select your streaming method protocol and Destination IP, Port, and TTL settings.

Network Setup:
IP address for IP Output Port. Default: 192.168.1.10

Streaming Methods Available:
RTP / UDP Unicast and RTP / UDP Multicast

Disabling IP Streams
The HDME-804 offers the user a SPTS output stream. Each Stream can be disabled as required.

To disable an IP Stream uncheck ‘Enable’ on the appropriate IP Stream tab.



Select Streaming 1, Streaming 2, Streaming 3, Streaming 4….. Streaming 8 tabs as required.

Step 10: Local Save

Perform a **Local Save** one each Stream tab once all parameters are set.

***** Ensure all Encoder changes have been locally saved before performing Step 11 *****

Step 11: Upload and Reboot

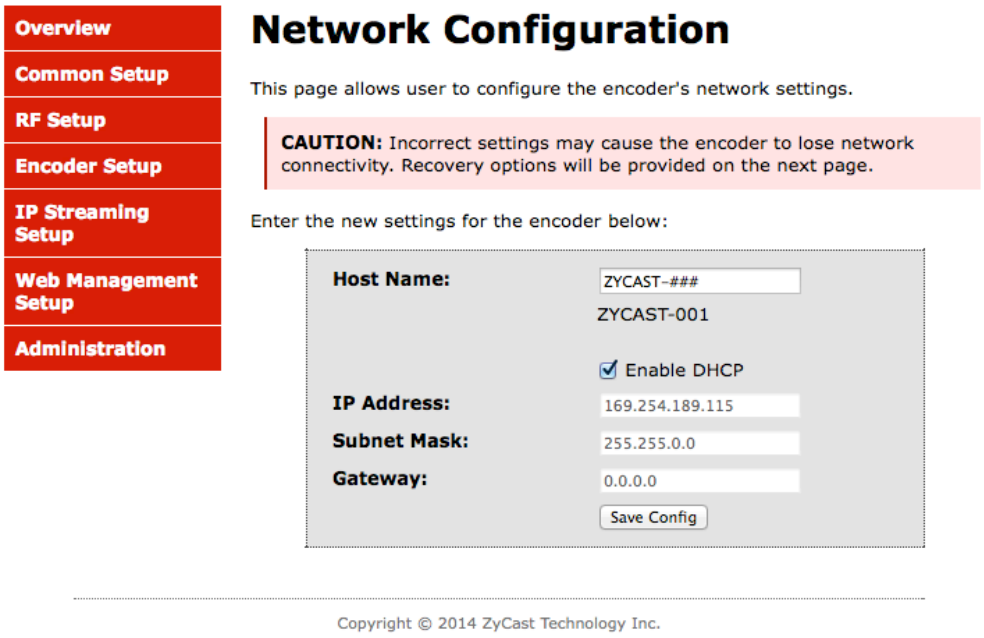
Once all the encoder's settings are changed and a **Local Save** was performed for each Setup tab **Select** "**Upload and Reboot**" on the IP Streaming page. This function will upload and save all parameters set in the Common, RF, Encoder, and IP Streaming sections of the device. Your device will reboot.

Reminder: If changing only a setting on a specific setup page- remember to **perform** a **Local Save** and **Upload and Reboot**.

We highly recommend you save your encoder configuration files.
See Administration tab for how to backup your device settings.

Step 12: Network Configuration Tab

Network Configuration



Use the Network Setup Tab to configure the device's IP address, Subnet Mask, Gateway, Enable/Disable DHCP, and set Host Name.

Step 13: Save Network Configuration

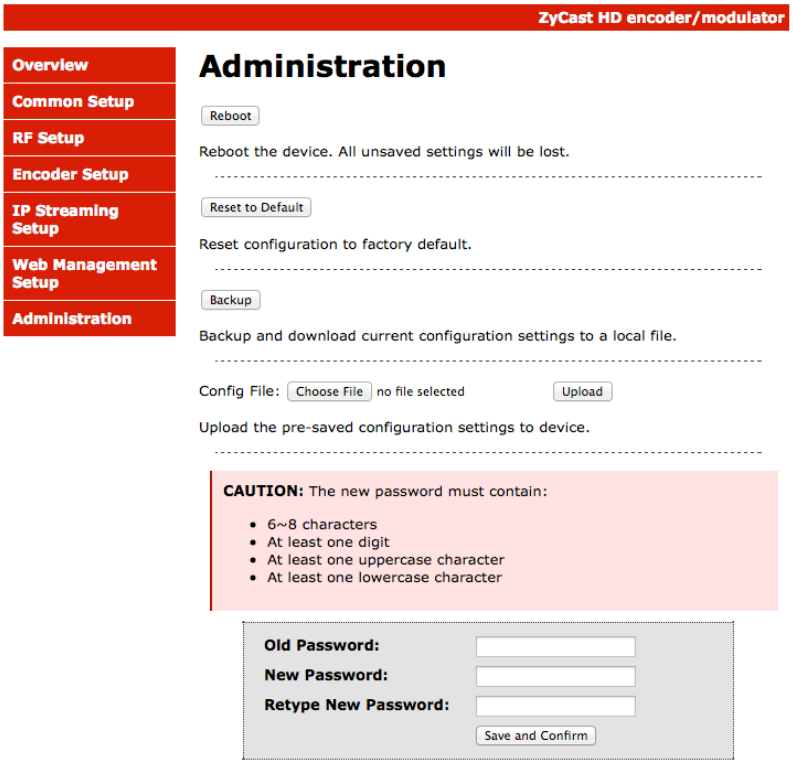
Save Config: Once all parameters are set you are **required** to select **Save Config.** This function will reboot and save the changes setting for the Network Configuration.

Note: Only the Network Configuration (GUI IP address) changes will be saved.

When setting the Subnet Mask ensure the Subnet Mask of the device and the PC have the same Subnet Mask.

Step 14: Administration

Administration



Administration Page Functions	Actions
Reboot	Reboot device. All unsaved settings will be lost.
Reset to Default	Reset all settings back to original factory settings
Backup	Download all settings of device
Upload	Upload a saved config file
New Password	Create and save new password for GUI

****Caution****

Selecting "Reset to Default" will automatically reset all saved settings back to factory default settings. All saved settings will be lost.

Step 15: If required- change GUI Password and Submit.

Note: When setting a new password you must use the **Submit** button.
This password is for access to the GUI only. The LCD front Panel Password will not be changed and is set to prevent unauthorized users access to your device.

Saving your configuration files

We highly recommend you save your encoder configuration files. Simply Click the "Backup" button and the config files will be saved to your computer.

To upload a configuration file- simply click **"Choose File"** then locate the file you want to upload.
Click "**Upload**" to install the configuration files. This function is helpful when installing a large number of encoders in a single system.

ASI Output

This device is equipped with an ASI combined (MPTS) output. Connect a BNC cable to the ASI output connector (75 Ω) and to your Broadcast capable device.

EAS

This device is equipped with EAS Terminals/connections and 1 Video/Audio input (DIN Audio / Video Input).

Connect your EAS Alert Device System output to the Encoder using the DIN to breakout cable.
Connect the devices as recommended by your EAS System,

Operation:
If the encoder receives the proper Event signal from your EAS device, the normal input audio/video will replaced by the audio and video from the EAS system device. Once the encoder has received the proper signal from your EAS device the normal input video and audio will return to a normal operating mode.

****THIS DEVICE IS NOT AN EAS RECEIVER****

Note: It is the responsibility of the Integrator/System Operator /Installer/User to properly connect, verify, and test the EAS functionality of this device with the EAS receiver.

Note: It is the responsibility of the Integrator/System Operator /Installer/User to properly perform the required EAS tests as required by the FCC or your specific Government Agency.

If the EAS functions on this device fail for any reason it is the responsibility of the Integrator/System Operator /Installer/User to replace this device as required by the FCC or your specific Government Agency.

Product Notes:

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