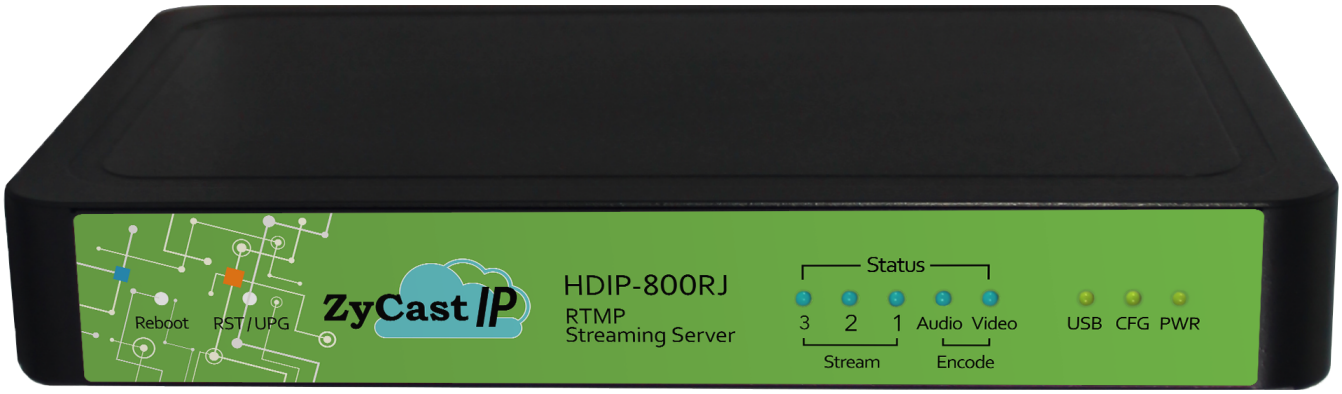
INSTALLATION & CONFIGURATION MANUAL

ZyCast

HDIP-800RJ

Live Streaming RTMP/S, RTP, UDP Encoder



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Safety Precaution

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 12VDC power supply with the center pin positive. The use of any other power supply could cause damage and invalidate the manufacturer's warranty.
- 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.
- If the device has been in a cold environment allow it to warm to room temperature for at least 2 hours before connecting power.

Package Contents

This package contains:

- One HDIP-800RJ
- One 12VDC 1.5A Power Adapter
- One installation / configuration manual

Inspect the package before starting installation to ensure there is no damage and all supplied contents are present. Contact your distributor or dealer should the device be damaged, or package contents are incomplete

Section 1 Introduction to HDIP-800RJ

ZyCast's new HDIP-800RJ Professional HD IP Live Streamer allows users to send live RTMP/S streams to three (3) different URLs simultaneously. The Live Streamer accepts a HDMI, Component, or Composite video input and the unit is designed to deliver a rich HD/SD Streaming experience for its users. The HDIP-800RJ will also simulcast via RTP/UDP (Unicast/Multicast) to Local network.

The HDIP-800RJ HD Encoder enables high-definition streaming with resolutions up to 1080p over a LAN System providing a high-quality viewing experience for your customer.

Features

The HDIP-800RJ series features:

- **Video resolution up to 1080p**
- **HDMI, Component, Composite inputs with auto detection**
- **Variable Bit Rate Control**
- **H.264 Profile Control**
- **AAC Video Codec**
- **GUI for setup and control**
- **GigE output port**
- **Front panel LED Status Display**

Specifications

Video/Audio Input	
HDMI	
Connectors	Single
Component	
Connectors	Single
Composite	
Connectors	Single
Analog Audio	
Connectors	L & R
IP Output & Web Management	
GigE	
Connector	RJ-45
Standard	100/1000Base-T Ethernet, Full / Half Duplex, Auto-Negotiation
IP Streaming Protocol	RTMP/RTMPS/RTP/UDP
Management Protocol	HTTP/UPnP

Video / Audio Encoding Profile	
Video	
Input Resolution	1080p / 1080i / 720p / 576p / 480p / 576i / 480i
Output Resolution	1080p / 720p / 576p / 480p (Deinterlace)
Video Codecs H.264 (HD)	> 1080p30, HP@Level 4.2 / ≤1080p30, HP@Level 4 >720p30, MP@Level 3.2 / ≤720p30, MP@Level 3.1
Video Codecs H.264 (SD)	Frame Rate≥25, BP@Level 3.1 / <25, BP@ Level 2.2 (Default)
Aspect Ratio	4:3 & 16:9
Video Bitrate	H.264: 2.0~10.0 Mbps (HD) / 1.0~4.0 Mbps (SD)
Audio (Only Support 44.1 kHz Sampling Frequency)	
Audio Codecs	AAC
General	
Local Monitoring	8 LEDs
GUI Supported	FireFox, Chrome
Password Protected	GUI: Changeable
Fan Cooled	Internal
Power Supply	12VDC 1.5Amp
Consumption	5W Typical
Dimension	1RU, Housing: 236mm x 145mm x 35mm
Language	English

Specifications subject to change without prior notice

Section 2 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 Installation and Connections

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

1. Connect the media source (Video Camera, Satellite STB, Media player, or other media device) to the HDIP-800RJ via HDMI, Component, or CVBS (Composite) cable.
2. Connect the HDIP-800RJ to the network.
3. Plug the power adapter to the device and power up.
4. Network Setup

Limitations

1. The HDIP-800RJ can stream live up to 3 CDNs & 3 UDP/RTP streams at once.

Front View

Buttons/LEDs	Description
Reboot Button	Reboots the device (unsaved settings will be lost)
RST/UPG Button	To reset all the settings of the device to factory default: 1.Press and hold the RST/UPG button and boot-up the device 2.Hold the button until CFG led to flashes 10 times (about 10 seconds) 3.After the CFG led stops flashing release the button To upgrade firmware using the USB port: 1.Plug-in the USB drive with the upgraded firmware image (“hdip_upg.img”) 2.Press and hold the RST/UPG button and boot-up the device 3.USB led will flash while copying the image from USB drive (about 3~5 seconds) 4.Wait until the CFG led stop flashing 5.Release the RST/CFG button and wait for the device to reboot and upgrade the firmware (about 1 minutes)
PWR	LED ON indicates Power is ON
CFG	LED ON indicates device is in configuration mode
USB	LED ON indicates USB drive is mounted
Video	LED ON indicates device is encoding video using H.264, flashing when free run
Audio	LED ON indicates device is encoding audio using AAC+44.1k, others shows LED OFF
Stream 1	LED ON indicates RTMP1 in connection
Stream 2	LED ON indicates RTMP2 in connection
Stream 3	LED ON indicates RTMP3 in connection

Procedure to connect to the Streaming Server via the Network port

Factory Default IP: 192.168.1.9

1. Connect a standard CAT6e cable from HDIP-800RJ Network port directly to a PC.

   Connect using an ethernet cable to the device's remote setup port either directly to a laptop or PC or connect the device into the network.

2. Modify your PC/Laptop IP address to 192.168.1.11.

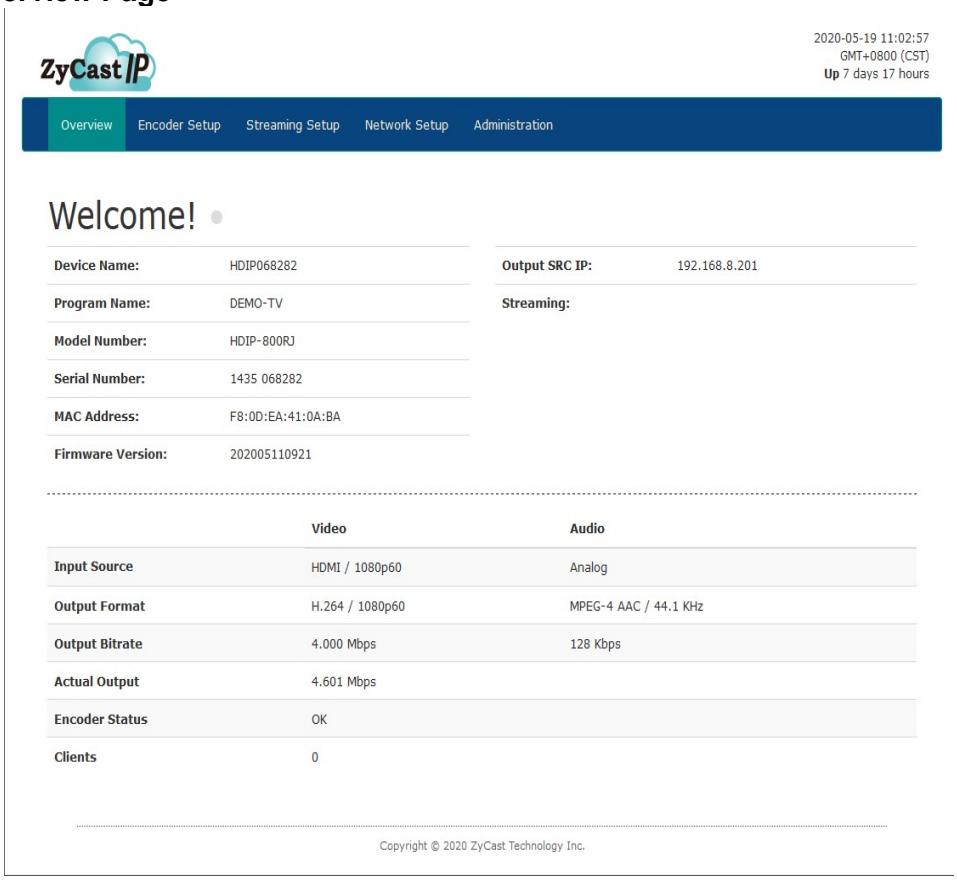
   Confirm your device is on the same IP scheme as the HDME-I/P-3's default IP.

3. Enter '192.168.1.9' into your web browser.

   Open a web browser such as Chrome, Firefox. Enter the devices default IP address in the browser.

Section 3 Configuring the HDIP-800RJ

Overview Page



The Overview page of the HDIP-800RJ offers a quick status of the device.

On the Welcome Screen, we have added a tool to help the installer locate a unit in a rack or headend. Press the LED ON button (shown below). This will cause the CFG LED light to flash continuously for the installer to identify and locate the HDIP-800RJ. To turn off, simply press the LED tool again.

Login User and Password

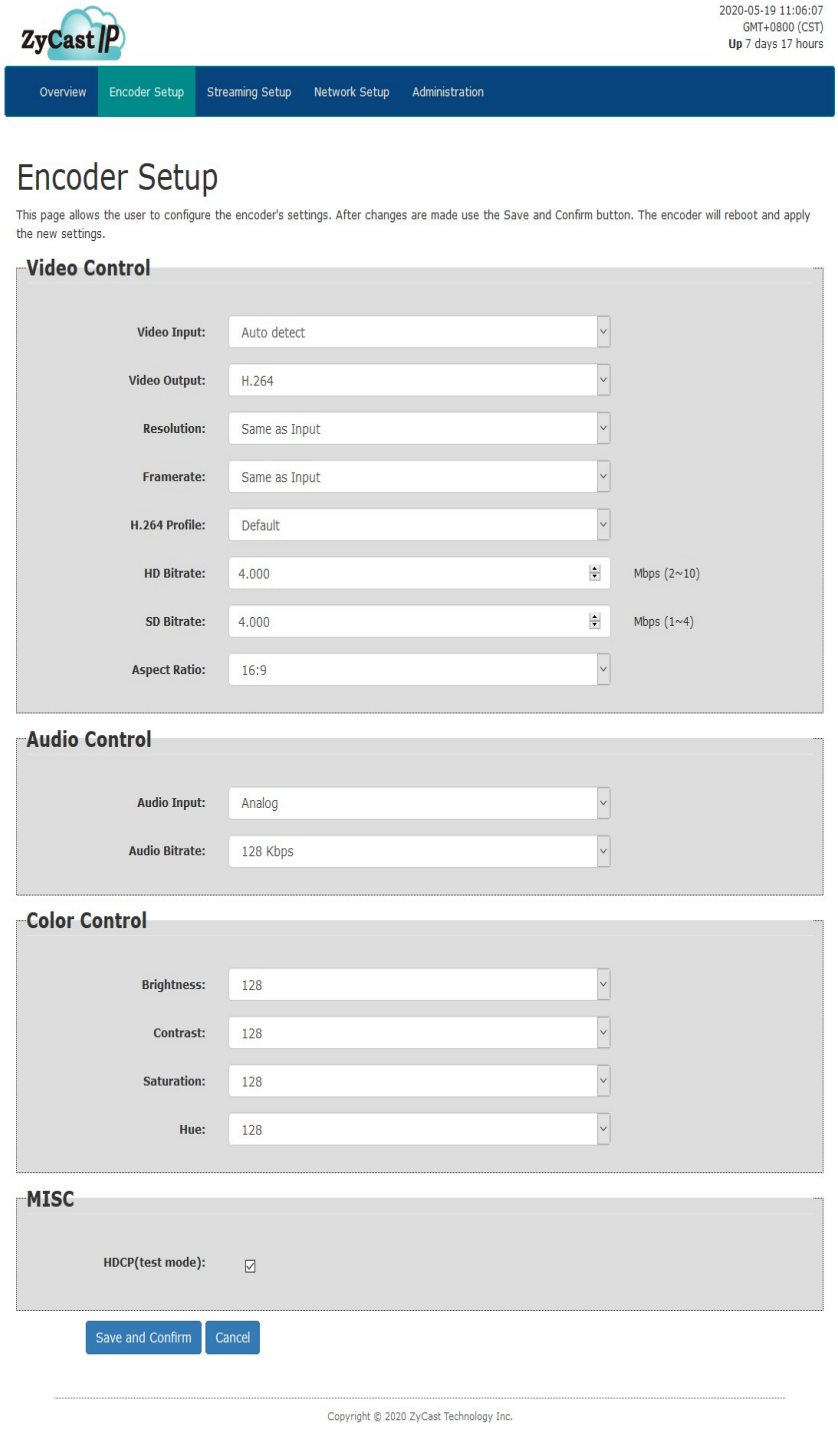
User Name: **admin** Default Password: **Admin123**

Once the Welcome Page is displayed select the Encoder Setup tab and the below Login "Authentication Required" screen will be presented. Enter the User Name and Password then click Login.

Note: User Password can be changed – ***See Administration Page***.

Section 4 Encoder Setup

Use the Encoder Setup page to Set Video Input Type, Video Output Type, Video Output Resolution, Framerate, Profile, Video Bitrate, and other encoder parameters.



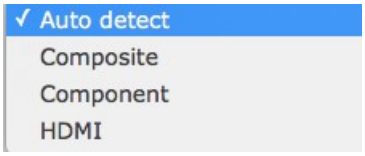
Saving Changes

Save any/all changes made on the Encoder Page. Leaving any Setup page without using the ***'Save and Confirm'*** button will cause the encoder to keep the previous saved settings.

Video Control

Video Input: Select Video Input.

Setting the device to ***Auto Detect*** allows the Encoder to automatically recognize which video source the user is using.



Selecting HDMI, Component, or Composite “locks” the encoder to detect only the input type selected.

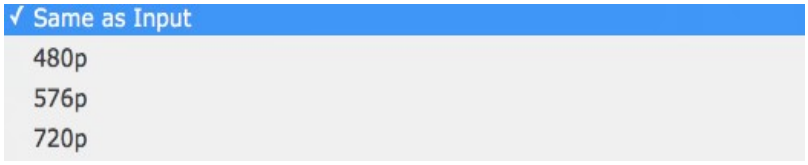
Note: We recommend using the Factory default 'Auto Detect.'

Video Output: Select Video Output.

The HDIP-800RJ outputs High Quality HD/SD video streams in H.264 and H.264 CBR formats.

Video Output Format: Factory Default: H.264 CBR

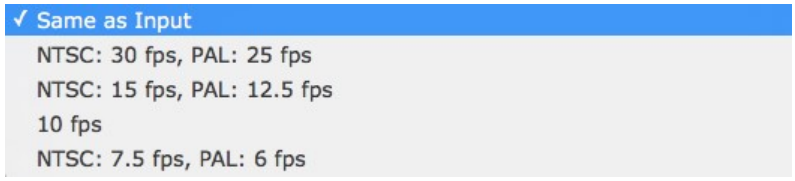
Resolution: Select Resolution required.



Resolutions: 480i/480p/576i/576p/720p/1080i/1080p (for 1080i/p – select “Same as Input”)

Note: The HDIP-800RJ can scale down the input video content.

Frame rate: Select Frame rate required.

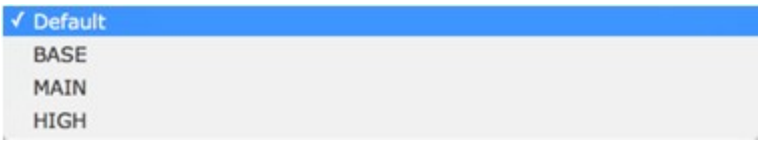


The HDIP-800RJ also offers Frame rate control.

H.264 Profile

The HDIP-800RJ offers Profile if **H.264** is the Video Output type.

H.264 Profile: Select H.264 Profile as required. (Factory Default: Default)

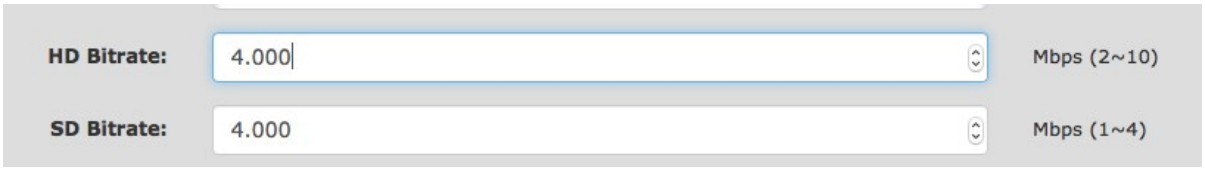


Set Video Bitrate: HD / SD

H.264 Video Bitrates

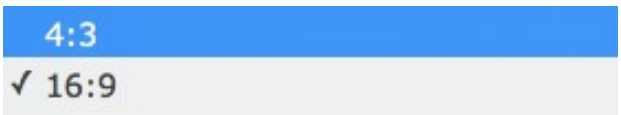
HD: 2 ~10 Mbps (default- 4 Mbps)

SD: 1 ~ 4 Mbps (default- 4 Mbps)



Set Video Bitrate or use the default settings as required.

Aspect ratio: Select Aspect ratio



Select: 16:9 **(default)** or 4:3

Audio Control

Audio Input: Select Audio Input

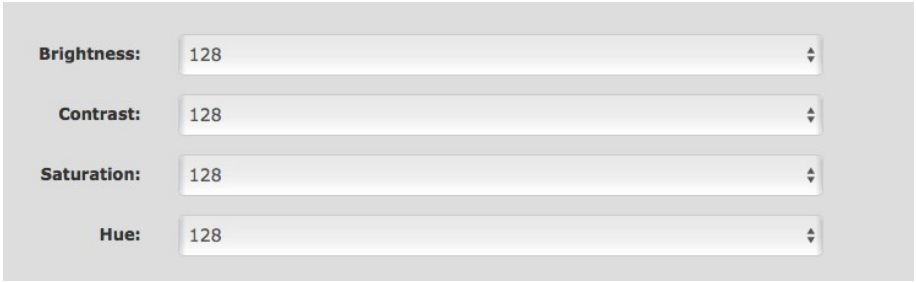
Setting the device to ***Auto Detect*** allows the Encoder to automatically recognize which Audio Input source the user is using.

Audio Bitrate: Select Audio Bitrate

Use the Drop-Down tool to Select the Audio Bitrate required.

Color Control

Modify Brightness/Contrast/Saturation/Hue



Change the above settings as required on the Encoder.

Factory Default: 128

SAVE AND CONFIRM ALL CHANGES MADE ON THE ENCODER PAGE

'Save and Confirm' *the changes made on the Encoder Page.*

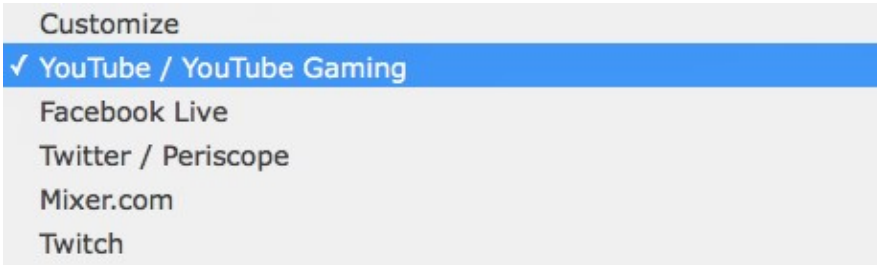
Note: To reset all changes made or saved go to the Administration Page and select **'Reset to Default'.**

***Leaving the encoder page without saving changes will cause the previous settings to be used.**

Section 5 Streaming Setup

The HDIP-800RJ was designed to allow the user to stream simultaneously to 3 CDN's at once.

1. **Select** from the drop-down tool for Stream Service and select either a preset Stream service or a "custom" (CDN) not listed or shown in the drop down.



Note: Select Custom if your CDN is not listed in the drop-down list above.

2. **Copy, paste, and enter** the Stream key for your stream.

3. Select "Add" once the Stream Key has been added.

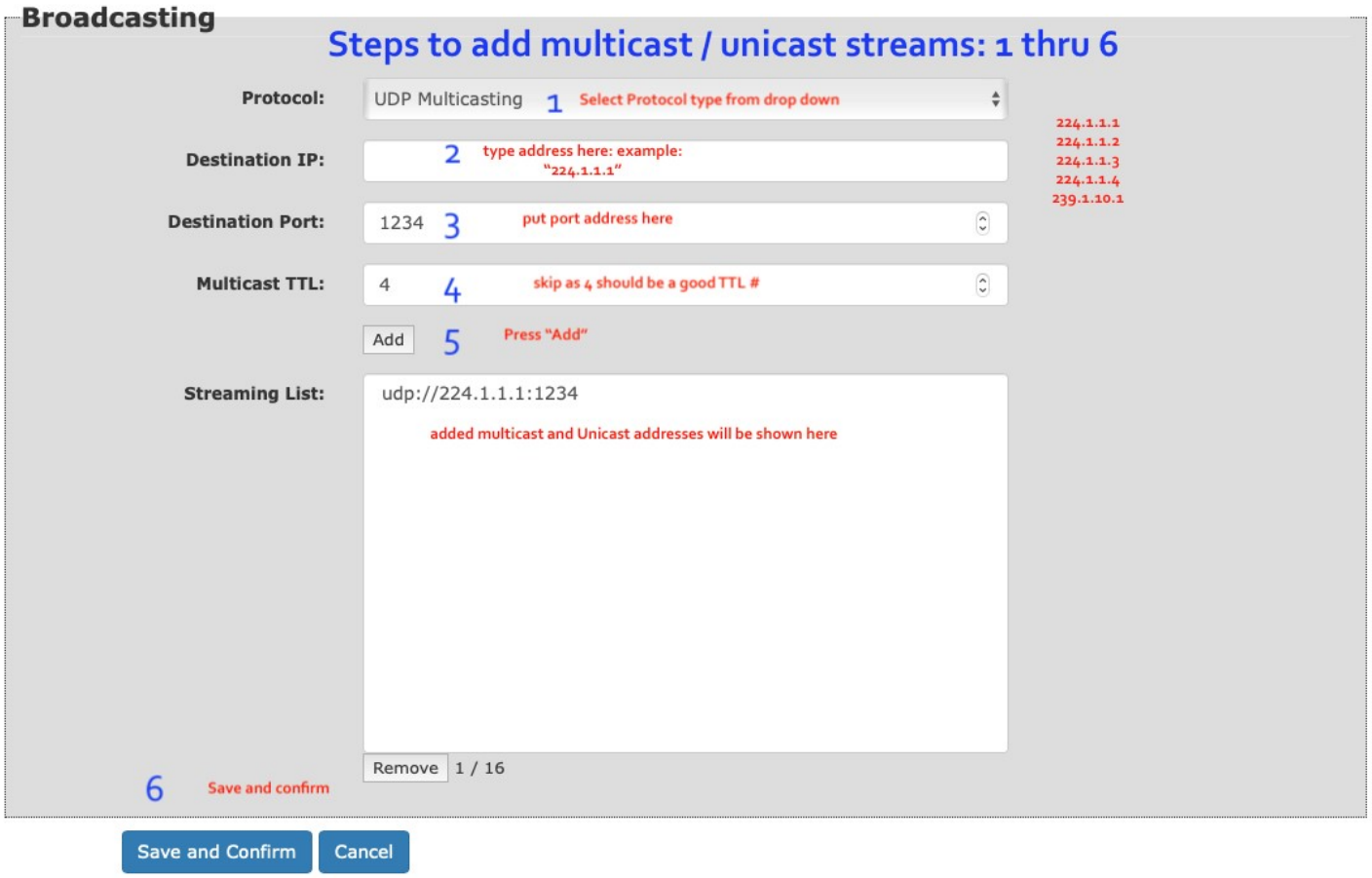
   The added URL will be displayed in the RTMP List.

4. **SAVE AND CONFIRM** all changes made on the Streaming Setup page.

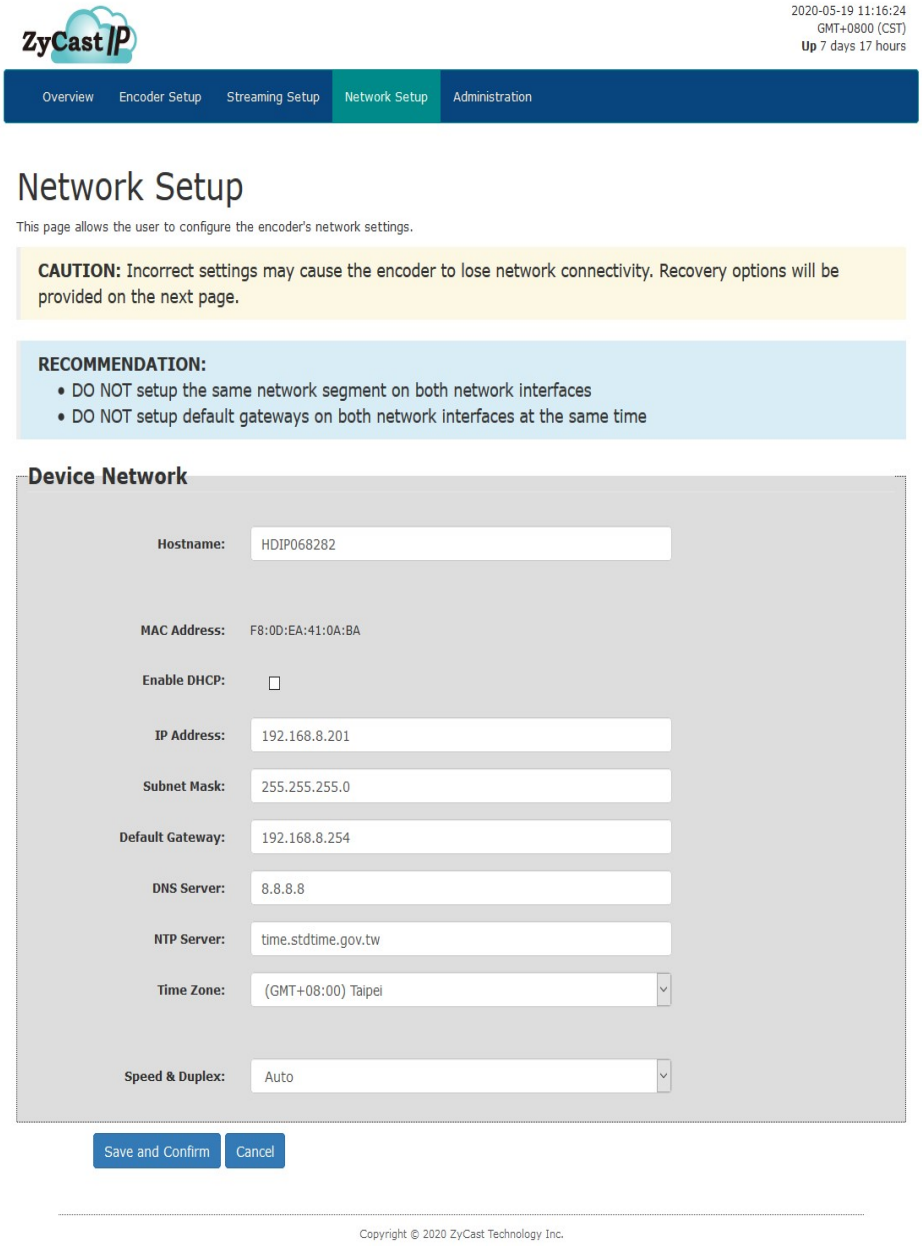
To remove a stream from the RTMP list simply select the stream and click **'Remove'**.

Facebook, Facebook Live, Twitter/Periscope, Twitch, YouTube, Livestream, and all other entities mentioned are registered trademarks of the listed entities.

Section 6 Broadcasting Configuration



Section 7 Network Configuration



Device Network

Host Name

User definable. If required enter a new Host Name.

Device IP Address (Factory Default: Static IP 192.168.1.9)

DHCP

To Enable DHCP check the DHCP Checkbox.

Setting Static IP

1. To set a Static IP **'Uncheck** *' Enable DHCP'.*
2. Enter IP Address, Subnet Mask, Default Gateway, and DNS Server.
3. **SAVE AND CONFIRM** all changes made on the Network Configuration page.

NTP Server

Enter NTP Server address.

Time Zone

Select required Time Zone.

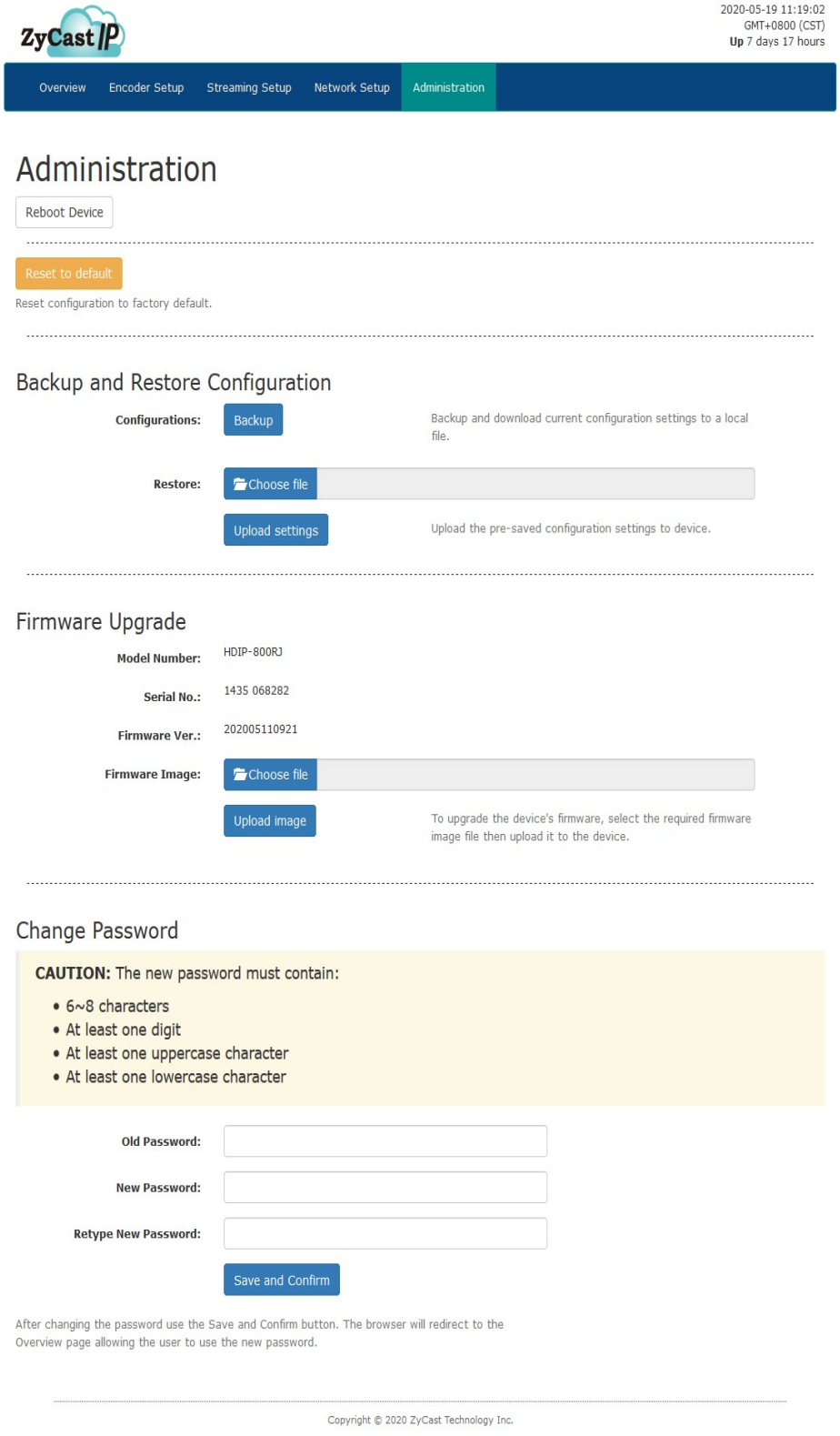
Speed & Duplex

Select using the drop-down tool the required Speed/Duplex parameter (if required).

Factory Default: Auto

****** SAVE AND CONFIRM ALL CHANGES MADE ON THE NETWORK SETUP PAGE***

Section 8 Administration



Reboot Device

Click the 'Reboot Device ' button to reboot the device from within the GUI.

Note: The Streamer can be rebooted using pressing the 'Reboot' button on the front of the device. All unsaved changes will be lost.

Reset to Default

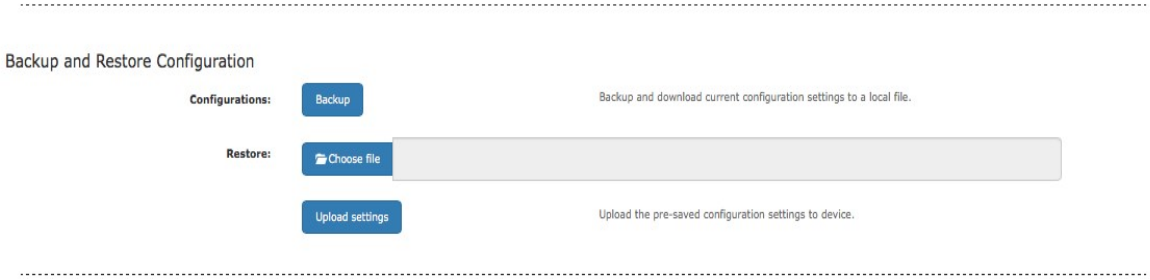
Click the 'Reset to Default' button to disregard any parameter changes made to the device.

Note: Device settings will revert to factory default settings.

Backup and Restore Configuration

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.



A "**config.cfg"** file will be created. Locate the file My Computer> C Directory > Documents and Settings> User>My Documents>Downloads>configs.cfg.

Backup

We highly recommend saving your device's setting.

1. Select Administration tab.
2. Select backup from the menu.
3. Locate and name file for future use.

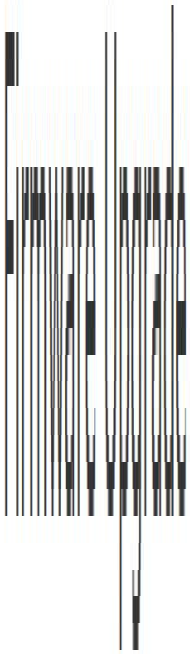
Restore

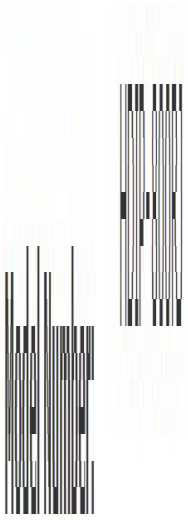
1. Select Administration tab.
2. Select "Choose file" menu.
3. Locate the required file to be imported.
4. Select "Upload settings" to import the selected file into the device.

   Note: backup can be imported to assist in setting up new or multiple devices onsite.

   Remember to save and backup any and all changes.

Firmware Upgrade

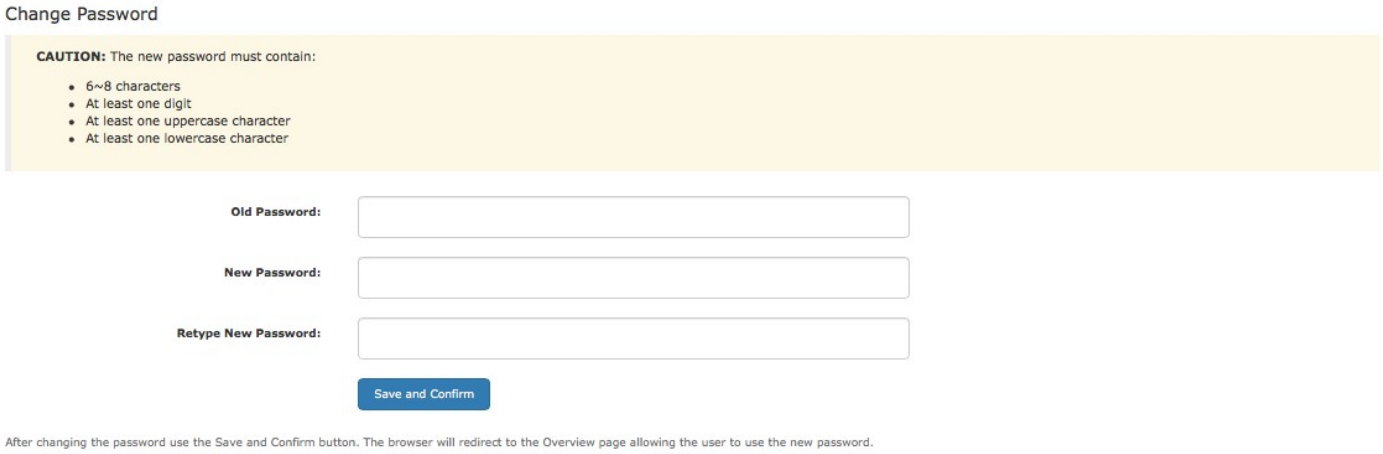




Use the Firmware upgrade function to import new FW versions.

1. Select Administration tab.
2. Select “Choose file” menu.
3. Locate the required image file to be imported.
4. Select “Upload image” to import the selected file into the device.

Change Password



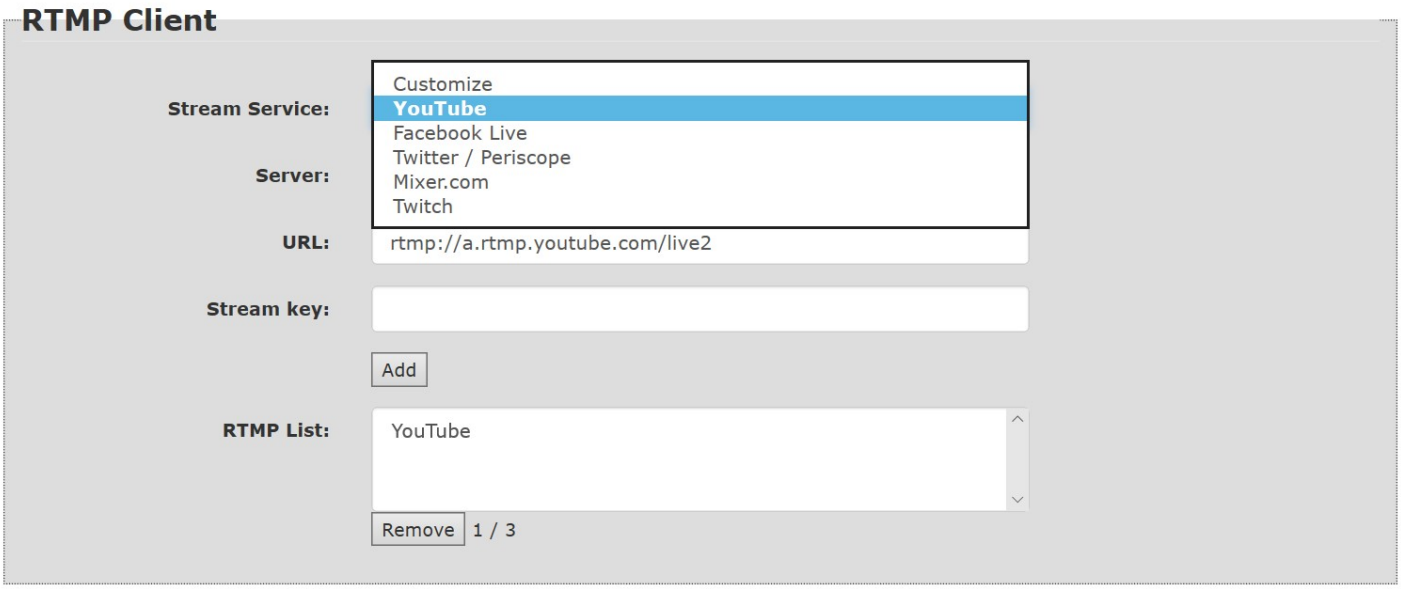
Change Password:

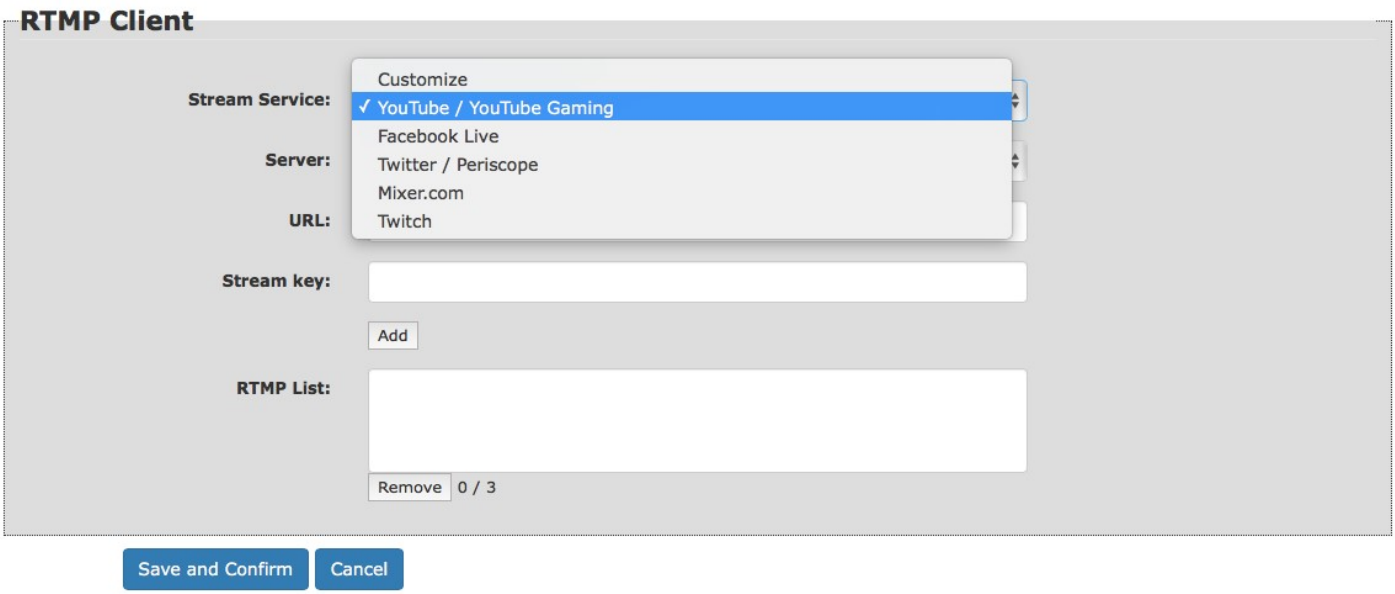
Use the Change Password section to change or modify the device’s password as desired.
Remember to **Click** *'Save and Confirm*' button to save new password.

Section 9 Streaming Examples

Streaming Setup Example: **YouTube Live Streaming**

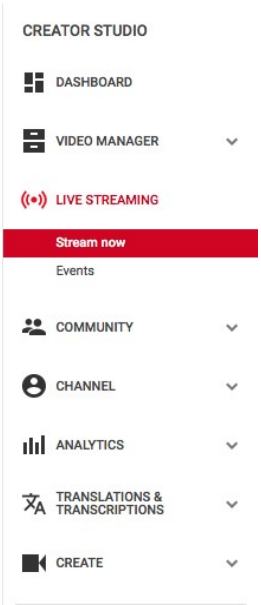
Step 1: On the Streaming Setup page **select** “YouTube”



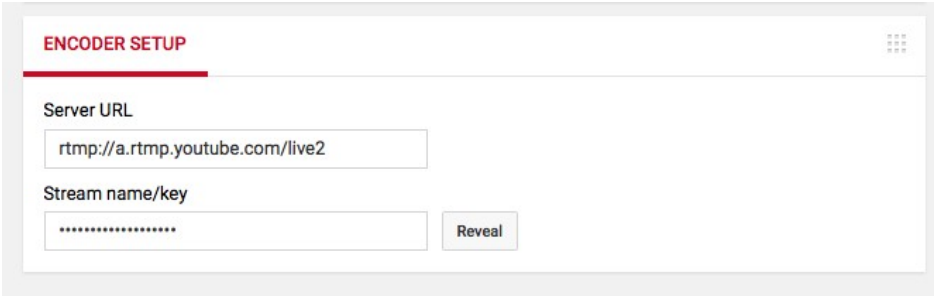


Step 2: **Open** your Youtube Live DashBoard on any browser.

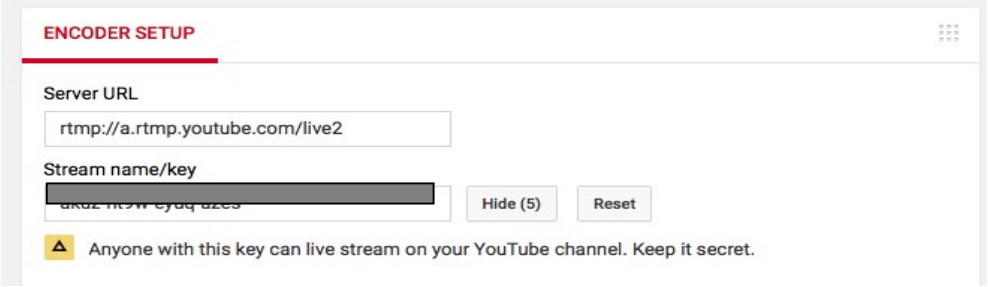
Step 3: **Select** 'Live Streaming' Stream Now.



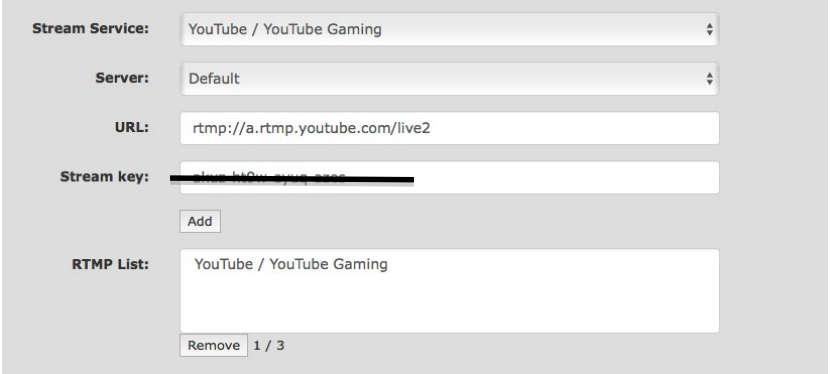
Step 4: **Scroll** Down to locate Encoder Setup.



Step 5: Select Reveal 'Stream name/key'.

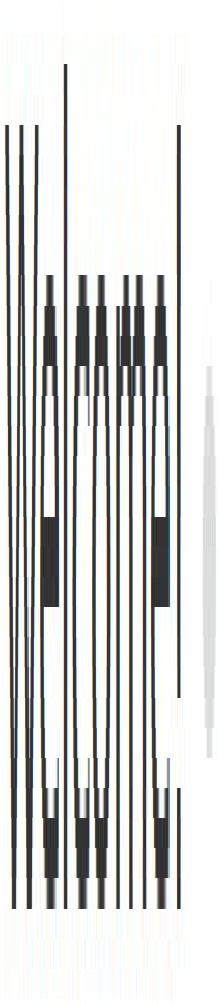


Step 6: Copy and Paste Stream Key into HDIP-800RJ Stream Key IO field.



Step 7: Click Add to add the YouTube Live Stream to the RTMP List.

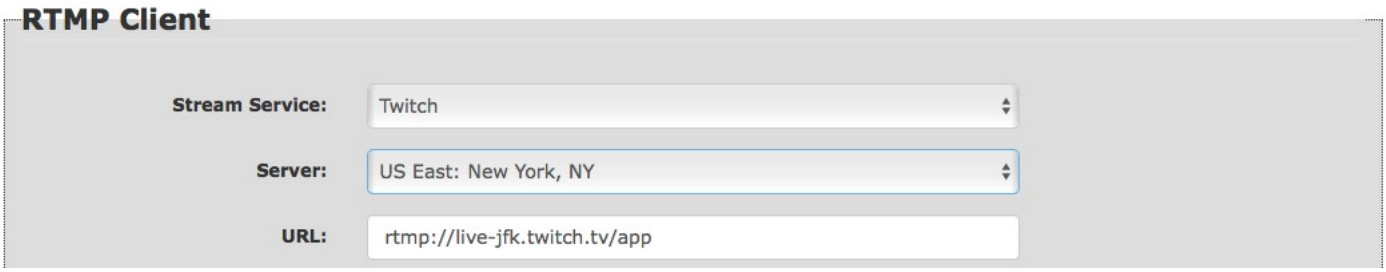
Step 8: Select Save and Confirm.



Note: You can check the Overview page to see the status of the stream.

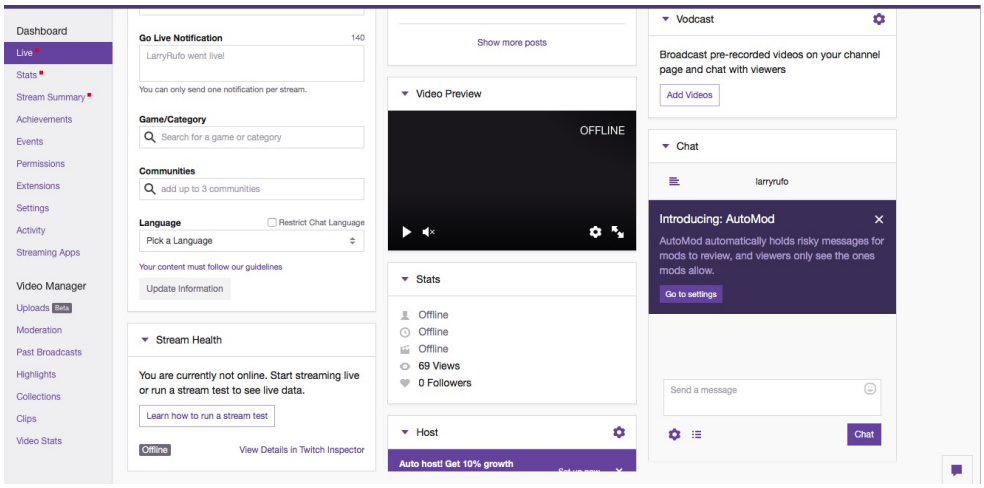
Streaming Setup Example: **Twitch Streaming**

Step 1: On the Streaming Setup page **select** "Twitch"

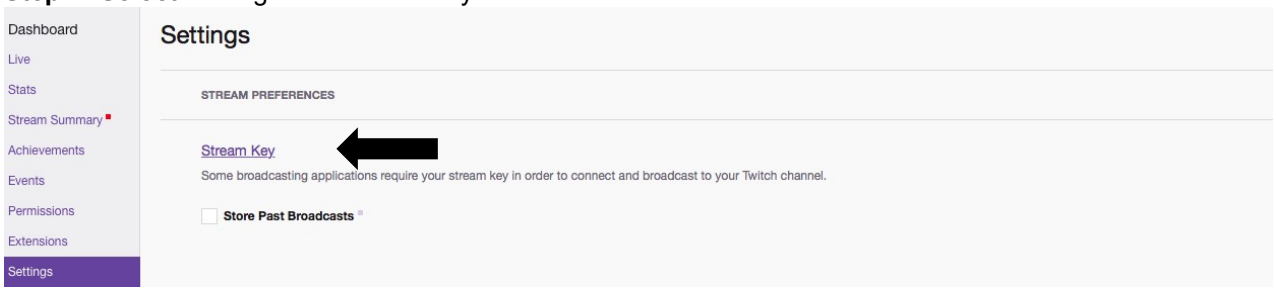


Step 2: **Select** the local Twitch Server for your loction.

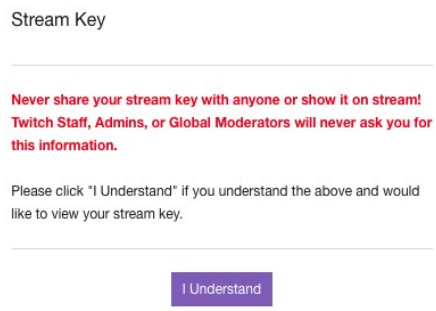
Step 3: Open the Twitch DashBoard.



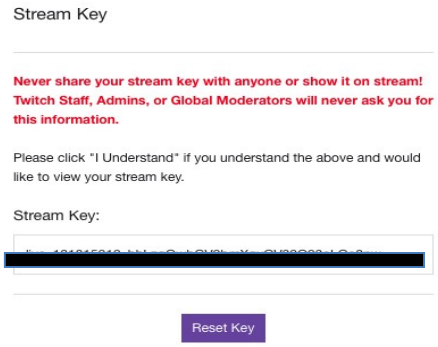
Step 4: **Select** Setting then Stream Key



Step 5: **Select** Show Key then Click "I Understand."



Step 6: Copy and Paste Stream Key into HDIP-800RT Stream Key IO field.



Step 7: Click Add to add the Twitch Stream to the RTMP List.

Step 8: Select Save and Confirm.

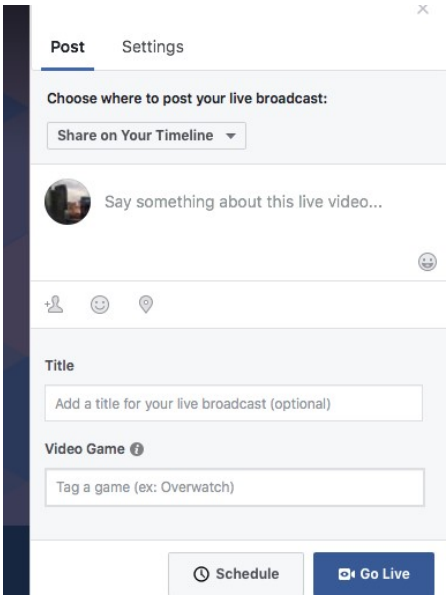
Streaming Setup Example: Facebook Live Streaming
Step 1: On the Streaming Setup page **select** “Facebook”

Step 2: Using

Step 6: Click Add to add the Twitch Stream to the RTMP List.

Step 7: Select Save and Confirm.

Step 8: Click GoLive on the bottom right of th page.



Note: Users who stream temporarily will need to remove the Facebook RTMP from the list and acquire a New Stream key before streaming live again.

Custom Streaming

Streaming Setup Example:

The HDIP-800RJ can stream to almost any CDN. Those CDN's not listed can be manually added using the Customize Stream Service Type.

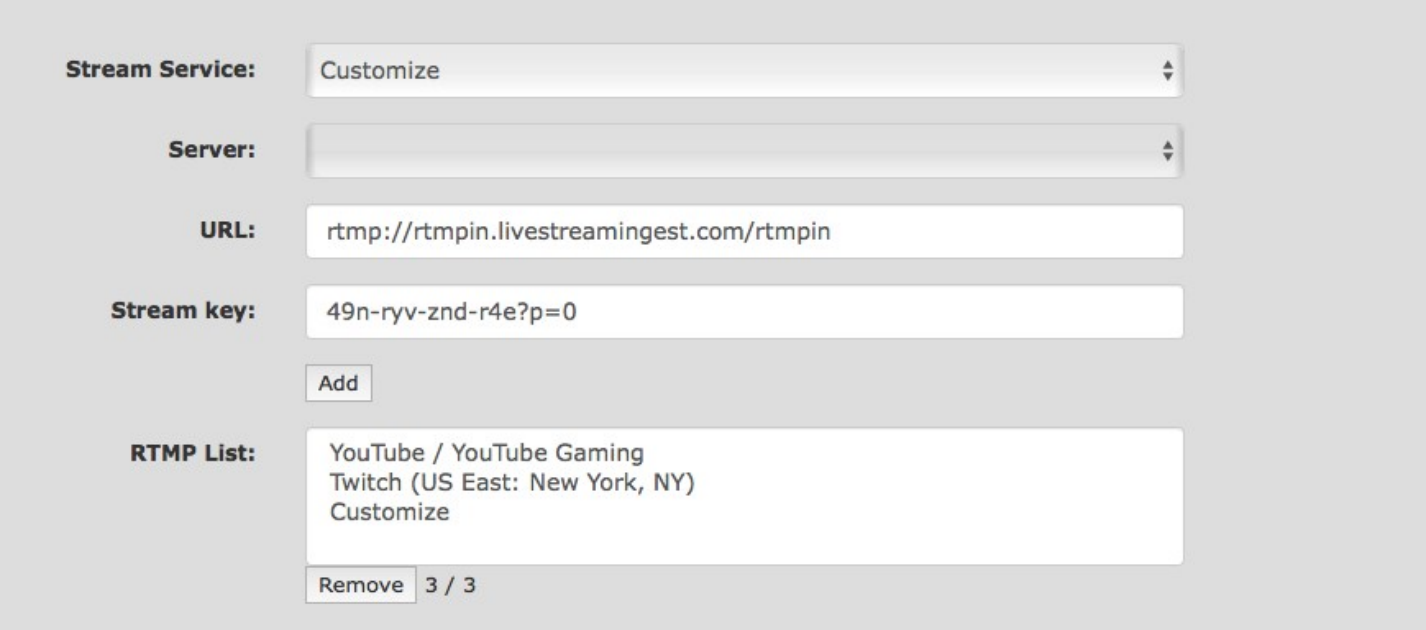
Step 1: On the Streaming Setup page **select** "Customize"

Step 2: **Copy and Paste** the Stream URL int URL IO field.

Step 3: **Copy and Paste** the Stream Key.

Step 4: Click Add to add the Stream to th RTMP List.

Step 5: **Select** Save and Confirm.



The above example used LiveStream RTMP Ingest URL.

Private Address Ranges, IPv4
Private IPv4 addresses are addresses set aside by the IANA (Internet Assigned Numbers Authority) for use within networks that will not directly communicate or not be seen by the internet. These private addresses cannot be used on the Internet or be used to communicate with the Internet. ISP's filter out and delete packets using private IP addresses. Any organization that uses private IP addresses on devices that communicate with the internet must use a device that performs Network Address Translation.

Anyone can us private addresses and they are not required to seek permission to use them. Again, networks using private IP addresses cannot communicate directly with the internet.

There are three blocks of addresses that are set aside by IANA for use in private internets and are not publicly routable on the global internet:

Private Class A Range: 10.0.0.0 - 10.255.255.255
Private Class B Range: 172.16.0.0 - 172.31.255.255
Private Class C Range: 192.168.0.0 - 192.168.255.255

It is important to note that only *some* of the 172.xx.xx.xx and the 192.xx.xx.xx address ranges are designated for private use. The remaining addresses are public and can be routable via the global Internet.

More information regarding private addresses can be found at http://www.iana.org and https://www.arin.net.

For More information on ZyCast products visit: **www.zycasttech.com**

PRODUCT NOTES

ITEM	VALUE
USERNAME / PASSWORD	
SERIAL NUMBER	
INSTALLATION DATE	
PURCHASE DATE	
DEVICE NAME	
FIRMWARE VERSION	
Device IP Address	

Distributed by: