



# SAFARI MONTAGE® SD/HD MPEG DIGITAL ENCODER™

## INSTALLATION AND SETUP GUIDE



*SD/HD MPEG Digital Encoder | G1571 Standalone*



*QUAD SD/HD MPEG Digital Encoder | G1572 Rack Mount*



## 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, AND DO NOT OPEN THE DEVICE. REFER SERVICING TO QUALIFIED PERSONNEL ONLY.**

- DO NOT apply power to the device 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 power from the device.
- Use only the supplied 12VDC power supply with the center pin positive or power cord. The use of any other power supply or cord may cause damage and void the warranty.
- The device must be installed in an environment consistent with its operating temperature specifications. Placement next to heating devices, ducts or areas of high humidity is to be avoided, as doing so may cause damage and void the warranty.
- 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.



## Product Description

SAFARI Montage® SD/HD MPEG Digital Encoders™ provide a powerful and ultra-reliable, “out of the box” solution for your entire IP Television, digital signage and digital media encoding and distribution requirements.



*G1571 Standalone SD/HD MPEG Digital Encoder*



*G1572 Quad SD/HD MPEG Digital Encoder*

SAFARI Montage® SD/HD MPEG Digital Encoders™ encode incoming digital or analog video to deliver an MPEG-4 H.264 or MPEG-2 network stream over the IP network to any SAFARI Montage® user, SAFARI Montage® Digital Signage or Classroom Media Controller (CMC) and provide efficient remote management via an integrated, password-protected, embedded web server.

Both the G1571 Standalone and G1572 Quad SD/HD MPEG Digital Encoders offer flexible video input options, supporting HDMI, component and composite inputs, and SD through HD resolutions ranging from 480i to 1080p.

The compact G1571 standalone unit is ideal for single source server room, office or classroom use, while the G1572 quad rack-mount encoder model is designed for server room or “head end” use.

This manual describes the setup and use of both the G1571 standalone and G1572 quad rack-mount models.

# Unpacking and Inspection

Ensure that all items are removed and inspected prior to discarding any packing material.

Thoroughly inspect the unit and all contents to make certain all components are present and no damage has occurred in shipping, paying particular attention to connectors. If there is any sign of damage to the unit or items are missing, please contact SAFARI Montage Technical Support. SAFARI Montage Technical Support is available Monday – Friday from 8 a.m. to 6 p.m. Eastern Time, and they may be contacted by telephone at 800-782-7230 or online via <http://www.safarimontage.com/support/>.

## Package Contents

- G1571 Standalone SD/HD MPEG Digital Encoder with:
  - (1) 12V Power Adapter
  - (1) 6' RJ45 Cat-5E Patch Cable
  - (1) 6' YPbPr Component Video Cable
  - (1) 6' Video + Stereo Audio Composite Cable
  - (1) 6' HDMI Cable
  
- One G1572 Quad SD/HD MPEG Digital Encoder with:
  - (1) Power Cord
  - (4) 6' RJ45 Cat-5E Patch Cable
  - (4) 6' YPbPr Component Video Cable
  - (4) 6' Video + Stereo Audio Composite Cable
  - (4) 6' HDMI Cable

# SAFARI Montage® SD/HD MPEG Digital Encoder™ Specifications

<b>Video Input</b>	HDMI 1.4 Digital – 480i to 1080p Component YPbPr – 480i to 1080i Composite CVBS – 480i
<b>Video Encoding</b>	H.264 SD - Supported bit rates 1 - 4 Mbps H.264 HD - Supported bit rates 2 - 10 Mbps MPEG-2 SD - Supported bit rates 2 - 8 Mbps MPEG-2 HD - Supported bit rates 10 - 20 Mbps Unicast, Multicast and DNLA Streams
<b>Audio Input</b>	HDMI, Digital Stereo Audio Dual RCA, Analog Stereo Audio <i>G1571 Standalone only</i> Coaxial (S/PDIF RCA), Digital Stereo Audio Optical (S/PDIF TOSLINK), Digital Stereo Audio
<b>Audio Encoding</b>	MPEG-4 ACC; 128, 256 and 384 kbps MPEG-1 Layer 2; 128, 256 and 384 kbps
<b>Management</b>	Configuration/Remote Status Monitoring Via On-Board Web Server
<b>Software Updates</b>	Remotely Upgradeable Via Web Interface <i>G1571 Standalone only</i> USB Via Front Panel USB Port
<b>PC</b>	Windows Vista® Windows 7® Windows 8®
<b>MAC</b>	OS X® v10.6 – 10.9
<b>Network</b>	10/100/1000 Base-T Ethernet
<b>Power</b>	12VDC @ 1.5 A – G1571 Standalone 12VDC @ 3A – G1572 Quad Rack-Mount
<b>Dimensions</b>	9.3" (W) x 6.1" (D) x 1.4" (H) – G1571 Standalone 17.5" (W) x 7.2" (D) x 1.75" (H) – G1572 Quad Rack-Mount
<b>Included</b>	6' RJ45 Cat-5e Patch Cable 6' YPbPr Component Video Cable 6' Dual RCA Audio Cable 6' HDMI Cable <i>Note: G1572 Quad Rack-Mount Contains Four (4) Sets</i>
<b>Warranty</b>	3 Years

# SAFARI Montage® SD/HD MPEG Digital Encoder™ Front Panel

Buttons/LEDs (Each encoder on the G1572 has one of the following buttons/LEDs unless otherwise noted)	Description
Reboot button	Reboots the Device (Unsaved Settings Will be Lost)
RST / UPG button	<p>To Reset All the Settings of the Device to Factory Default:</p> <ol style="list-style-type: none"> <li>1. Disconnect Power.</li> <li>2. Press and Hold the RST/UPG Button, then Connect Power.</li> <li>3. Hold the Button Until CFG LED Flashes 10 Times (about 10 seconds).</li> <li>4. After the CFG LED Stops Flashing, Release the RST/UPG Button.</li> </ol> <p>To Upgrade Firmware Using the USB Port (G1571 Only):</p> <ol style="list-style-type: none"> <li>1. Disconnect Power.</li> <li>2. Plug in the USB Drive Containing the Firmware Upgrade.</li> <li>3. Press and Hold the RST/UPG Button, then Connect Power to Boot-Up the Encoder.</li> <li>4. The USB LED Will Flash While Copying the Firmware Image from USB Drive (About 3-5 Seconds).</li> <li>5. Wait Until the CFG LED Stops Flashing.</li> <li>6. Release the RST/CFG Button, and Wait for the Device to Reboot and Upgrade the Firmware (About 1 Minute).</li> <li>7. Reset the Cache on your Browser After Upgrading the Firmware.</li> </ol> <p><b>NOTE:</b> The Firmware May Also be Upgraded by Uploading the Firmware Image Via the Web UI Administration Page.</p>
PWR	Indicates that the Device is Powered
CFG	Indicates that the Device is in Configuration Mode
USB	Indicates that a USB Drive is Mounted ( <b>G1571 only</b> )
MPEG-2	Indicates that the Device is Encoding Video in MPEG-2 Format
AVC	Indicates that the Device is Encoding Video in H.264/MPEG-4 Part 10/AVC Format
MP2	Indicates that the Device is Encoding Audio in MPEG-1 Layer 2 Format
AAC	Indicates that the Device is Encoding Audio in AAC Format
AC-3	Indicates that the Device is Encoding Audio in AC-3 Format

# Installation and Configuration

## Please read these instructions in their entirety before you begin:

- Review any questions with Technical Support in advance. Please note that SAFARI Montage Technical Support is available Monday – Friday from 8 a.m. to 6 p.m. Eastern Time, and they may be contacted by telephone at 800-782-7230 or online via <http://www.safarimontage.com/support/>.

## SAFARI Montage® System Requirements:

- SAFARI Montage® v5.8.x
- SAFARI Montage® Media Player v5.9.x with VideoLAN VLC Media Player v2.03 32-bit
- SAFARI Montage® Digital Signage Controller Software v6.0.x


## Before You Begin:

- Make all connections before powering the encoder.
- Note that all G1571 standalone encoders ship with a default static IP address of 191.53.51.207.
- Note that all G1572 quad encoders ship with the following default static IP addressing scheme.
  - 191.53.51.207 – 1<sup>st</sup> encoder
  - 191.53.51.208 – 2<sup>nd</sup> encoder
  - 191.53.51.209 – 3<sup>rd</sup> encoder
  - 191.53.51.210 – 4<sup>th</sup> encoder
- If using UPnP/DLNA, all devices, including the encoder, SmartTV and the configuration PC, should be located within the same local network segment.
- SAFARI Montage strongly recommends that video sources be connected directly to the SD/HD MPEG Digital Encoder with the supplied cabling. SAFARI Montage cannot provide support for third-party distribution and/or switching equipment placed inline between the video source and the encoder.
- The encoder is designed to work with input sources set to 30 or 60 FPS. Please make certain your video source equipment is set for 30 or 60 frames per second.



## Initial Network Configuration:

1. Connect the encoder to an isolated network switch for configuration.
2. Connect a PC to the network switch, and configure the PC with an IP address in the 191.53.51.xxx subnet, e.g., 191.53.51.10.
  - o Be certain to avoid assigning the PC the default encoder IP address (191.53.51.207).
3. Power the encoder via the supplied power adapter or cord.
4. Configure the network settings as required to conform to the local network addressing scheme.
  - a. All encoders ship with a default static IP address of 191.53.51.207.
  - b. Open a web browser and navigate to <http://191.53.51.207:8888> to view the encoder Overview page.

2014-06-26 15:18:31  
GMT-0400 (EDT)  
Up 54 minutes


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IP Streamer

- Overview
- Encoder Setup
- Streaming Setup
- Network Setup
- Administration

### Welcome!

**Device Name:** G1571QA  
**Program Name:** DEMO-TV  
**Model Number:** G1571  
**Serial Number:** 1350 039726  
**MAC Address:** F8:0D:EA:30:9B:2E  
**Firmware Version:** 2014061610  
**Streaming:** [HTTP](#), Multicast



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	Video	Audio
<b>Input Source</b>	HDMI / 1080i60	HDMI
<b>Output Format</b>	AVC CBR / 1080p30	AC-3 passthrough
<b>Output Bitrate</b>	4.000 Mbps	Passthrough
<b>Actual Output</b>	5.388 Mbps	
<b>Encoder Status</b>	OK	
<b>Clients</b>	2	

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- c. Click on Network Setup to configure the network settings and login with the default credentials:

Username: **admin**

Password: **Admin123**

- d. Set the encoder Hostname, IP address and network configuration as required to unique values that conform to the local network address scheme.

**SAFARI MONTAGE** 2014-06-30 16:27:35 GMT-0400 (EDT) Up 4 days 2 hours

**IP Streamer**

**Network Configuration**

This page allows the user to configure the encoder's network settings.

**CAUTION:** Incorrect settings may cause the encoder to lose network connectivity. Recovery options will be provided on the next page.

**Device Network**

Hostname: BRG1571  
MAC Address: F8:0D:EA:30:9B:2E  
 Enable DHCP  
IP Address: 172.21.230.200  
Subnet Mask: 255.255.255.0  
Default Gateway: 172.21.230.1  
DNS Server: 172.21.1.55  
NTP Server: 129.6.15.30  
Time Zone: (GMT-05:00) Eastern Time (US, Canada)  
Speed & Duplex: Auto

**DLNA Settings**

Device Name: Broadcast Room  
Program Name: School News  
HTTP/SOAP Port: 8888

Save and Confirm Cancel

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5. If configuring multiple encoders, repeat the process for each unit, assigning a unique IP address and hostname to each encoder.
6. Once networking configuration is complete, reconfigure the client PC to the local network addressing scheme, confirm the encoder(s) may be reached via [http://\[New IP Address\]:8888](http://[New IP Address]:8888) and continue configuration.

## Encoding Configuration:

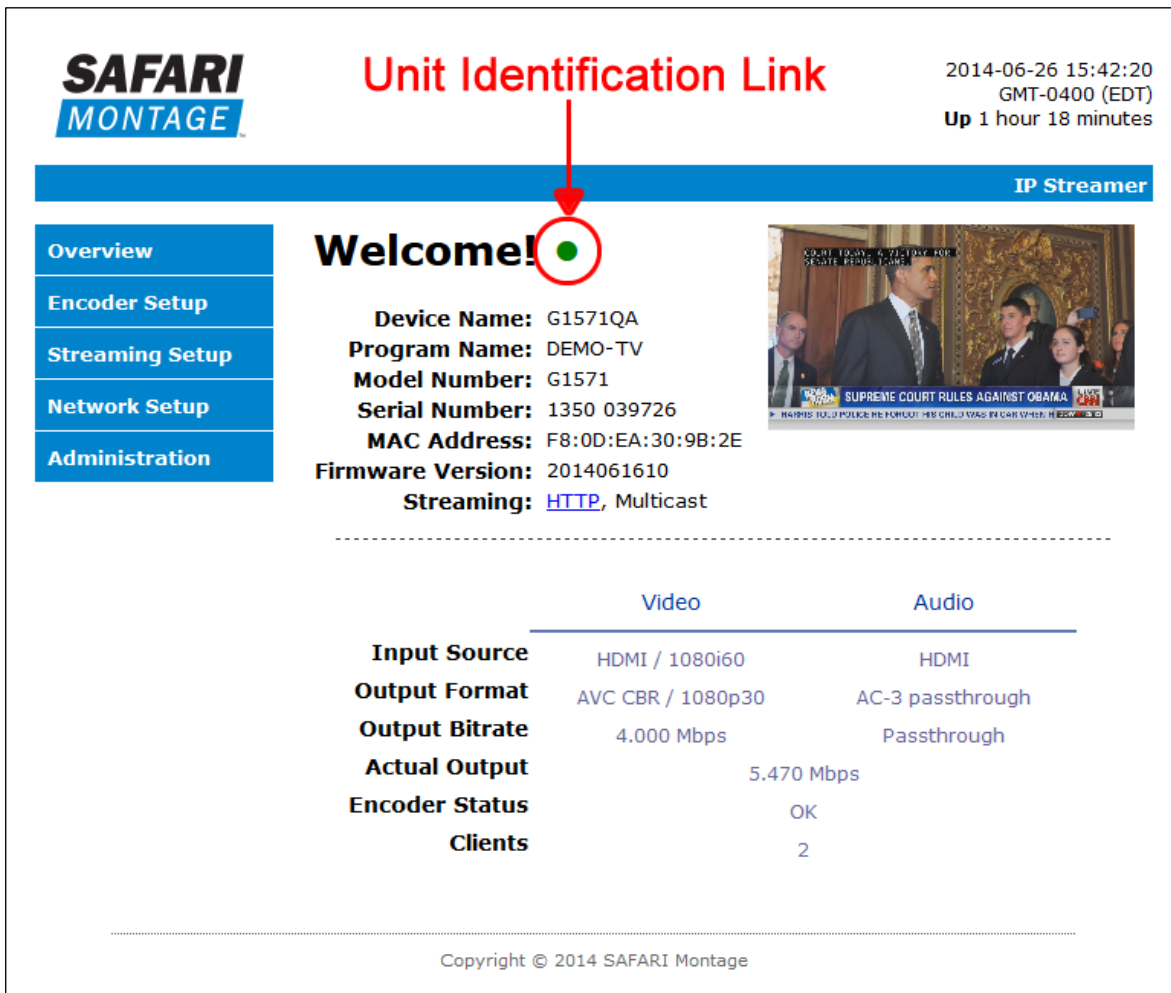
Once the encoder(s) have been configured for your network, you may proceed to configure the remaining settings.

1. Power off the encoder.
2. Connect the media source (cable tuner or other device) to the encoder by using the HDMI, component (YPbPr) or composite (CVBS) cables included.
3. Power on the encoder and continue encoder configuration.

## Encoder Overview:

The encoder Overview page provides an overview of the current encoder settings and a preview of the encoder output. The Overview page is accessible without a username and password.

Directly to the right of the “Welcome!” label is the unit identification link. Clicking on this link allows administrators to easily identify a specific encoder by flashing the CFG LED on the encoder front panel. To disable, simply click on the unit identification link again.



**SAFARI MONTAGE**

**Unit Identification Link**

2014-06-26 15:42:20  
GMT-0400 (EDT)  
Up 1 hour 18 minutes

IP Streamer

**Overview**

**Welcome!**

**Device Name:** G1571QA  
**Program Name:** DEMO-TV  
**Model Number:** G1571  
**Serial Number:** 1350 039726  
**MAC Address:** F8:0D:EA:30:9B:2E  
**Firmware Version:** 2014061610  
**Streaming:** [HTTP](#), Multicast

**Video**

**Audio**

<b>Input Source</b>	HDMI / 1080i60	HDMI
<b>Output Format</b>	AVC CBR / 1080p30	AC-3 passthrough
<b>Output Bitrate</b>	4.000 Mbps	Passthrough
<b>Actual Output</b>	5.470 Mbps	
<b>Encoder Status</b>	OK	
<b>Clients</b>	2	


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## Encoder Setup:

Recommended initial configuration values for the encoder are depicted below.

It is recommended that you begin with the settings below and adjust as required, based on specific needs.

Note: The encoder will use the Video Bitrate set for SD Source or HD Source based on the resolution of the input source, e.g., an input source of 480p will use the SD Source value while a 720p or 1080p source will use the HD Source value.

2014-06-26 16:06:23  
GMT-0400 (EDT)  
Up 1 hour 42 minutes

**IP Streamer**

**Overview**

**Encoder Setup**

**Streaming Setup**

**Network Setup**

**Administration**

## Encoder Setup

This page allows the user to configure the encoder's settings. After changes are made use the Save and Confirm button. The encoder will reboot and apply the new settings.

<b>Device Name:</b>	<input type="text" value="BroadcastRoom"/>
<b>Program Name:</b>	<input type="text" value="School News"/>

<b>Video Input:</b>	<input type="text" value="Auto detect"/>
<b>Video Output:</b>	<input type="text" value="AVC CBR"/>
<b>AVC Profile:</b>	<input type="text" value="Default"/>
<b>AVC Level:</b>	<input type="text" value="Default"/>
<b>Video Bitrate:</b>	
<b>HD Source:</b>	<input type="text" value="4"/> Mbps (2~10 Mbps)
<b>SD Source:</b>	<input type="text" value="2"/> Mbps (1~4 Mbps)
<b>Audio Input:</b>	<input type="text" value="Auto detect"/>
<b>Audio Output:</b>	<input type="text" value="MPEG4 AAC"/>
<b>Audio Bitrate:</b>	<input type="text" value="128 Kbps"/>

<b>Brightness:</b>	<input type="text" value="128"/>
<b>Contrast:</b>	<input type="text" value="128"/>
<b>Saturation:</b>	<input type="text" value="128"/>
<b>Hue:</b>	<input type="text" value="128"/>

<b>HDCP Enable:</b>	<input checked="" type="checkbox"/>
<b>Closed Caption:</b>	<input checked="" type="checkbox"/>

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## Device Name and Program Name:

Set the **Device Name** and **Program Name** as desired. The encoder will appear with the configured **Device Name** when browsing the local network segment via UPnP.

## Closed Captioning:

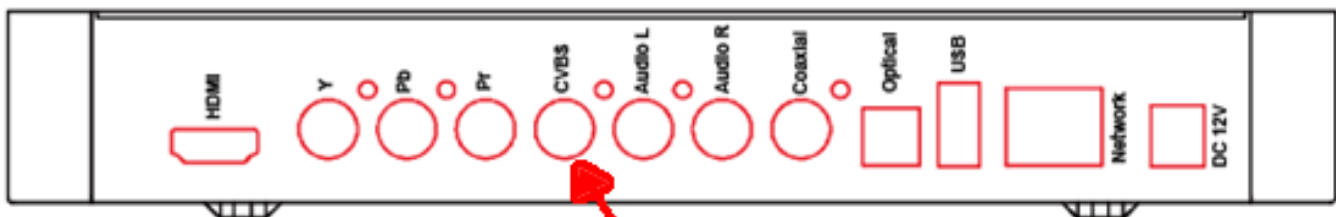
The encoder supports the display of analog closed captioning via the Composite (CVBS) input when used with a compatible display or media player.

Note that the encoder also supports closed captioning when using an HDMI or Component (YPbPr) source that supports analog captioning and simultaneous output via Composite (CVBS).

Closed-captioning support is dependent on your video source equipment and display capabilities, and it is recommended that equipment capabilities be verified and tested to confirm captioning support.

To enable closed captioning for display:

1. Enable closed captioning on the Encoder Setup page.
2. Connect a video source with analog closed-captioning support to the Composite (CVBS) port.




## Closed Captioning Input

3. If using an HDMI or Component (YPbPr) video source, connect via HDMI or Component (YPbPr).

## Streaming Setup:

The encoder supports flexible streaming configurations to meet various needs, including multicasting, unicasting and DLNA/HTTP streaming.

2014-06-26 16:25:01  
GMT-0400 (EDT)  
Up 2 hours 1 minute

**IP Streamer**

- Overview
- Encoder Setup
- Streaming Setup**
- Network Setup
- Administration

## Streaming Setup

This page allows the user to configure the streaming settings.

**HTTP (DLNA Default)**

Enable HTTP:

Enable Auth.:

RADIUS IP:

RADIUS Secret:

**Multicasting**

Enable Multicast:

Group IP:

Multicast Port:

Multicast TTL:

Enable RTP:

**Unicasting**

Protocol:

Destination IP:

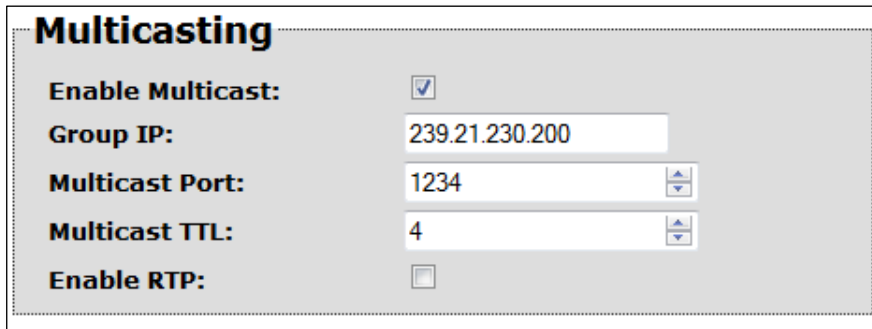
Destination Port:

Casting List:

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## Multicasting Configuration:

SAFARI Montage® typically utilizes a UDP multicast streaming configuration as described below. The encoder also supports RTP multicast for applications where required.



<b>Enable Multicast:</b>	<input checked="" type="checkbox"/>
<b>Group IP:</b>	239.21.230.200
<b>Multicast Port:</b>	1234
<b>Multicast TTL:</b>	4
<b>Enable RTP:</b>	<input type="checkbox"/>

**Enable Multicast:** Enables/Disables multicast

**Group IP:** Enter a multicasting address e.g. 239.xxx.xxx.xxx

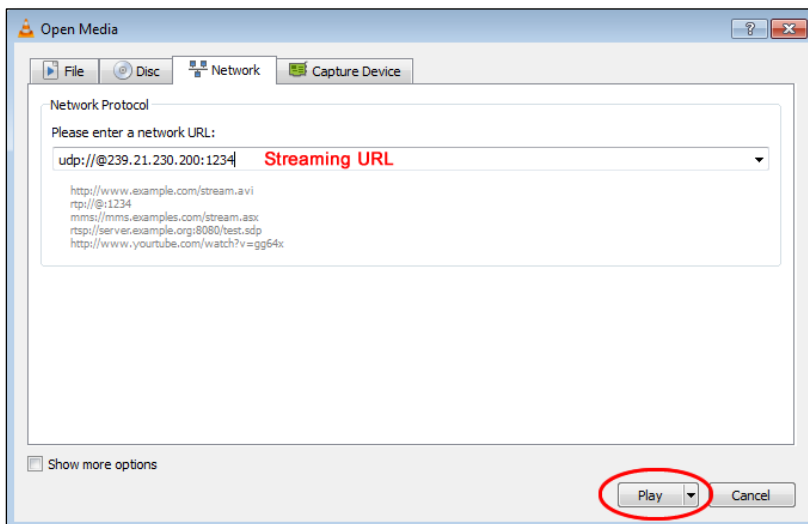
**Multicast Port:** Enter a multicasting port ranging between 1024 and 65535

**Multicast TTL:** Enter a Time To Live (TTL) limit value ranging between 1 and 255

**Enable RTP:** Enables/Disables RTP

To verify the multicast streaming configuration:

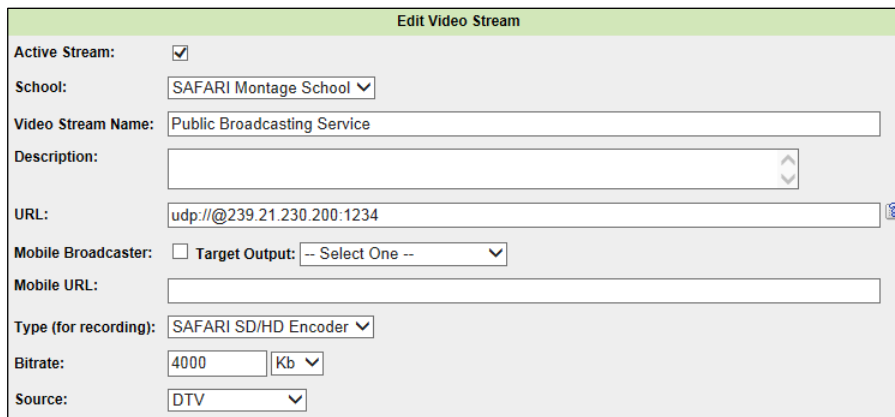
1. Using the VLC media player, select Media > Open Network Stream.
2. Enter the encoder streaming URL in the following format:  
udp://@[Multicast Group IP Address]:[Multicast Port]  
Ex. udp://@ 239.21.230.200:1234
3. Click on the Play button to view the video stream.



## Using With SAFARI Montage Products:

To configure in SAFARI Montage® Selective Video Streaming:

1. Login to SAFARI Montage as an administrator.
2. Navigate to Admin > Selective Video Streaming > Video Streaming.
3. Click on the New Stream link.
4. Select a school, enter a descriptive name and enter the streaming URL in the following format:  
udp://@[Multicast Group IP Address]:[Multicast Port]  
Ex. udp://@239.21.230.200:1234
5. Set Type (for recording) to SAFARI SD/HD Encoder.



**Edit Video Stream**

Active Stream:

School: SAFARI Montage School

Video Stream Name: Public Broadcasting Service

Description:

URL: udp://@239.21.230.200:1234


Mobile Broadcaster:  Target Output: -- Select One --

Mobile URL:

Type (for recording): SAFARI SD/HD Encoder

Bitrate: 4000 Kb

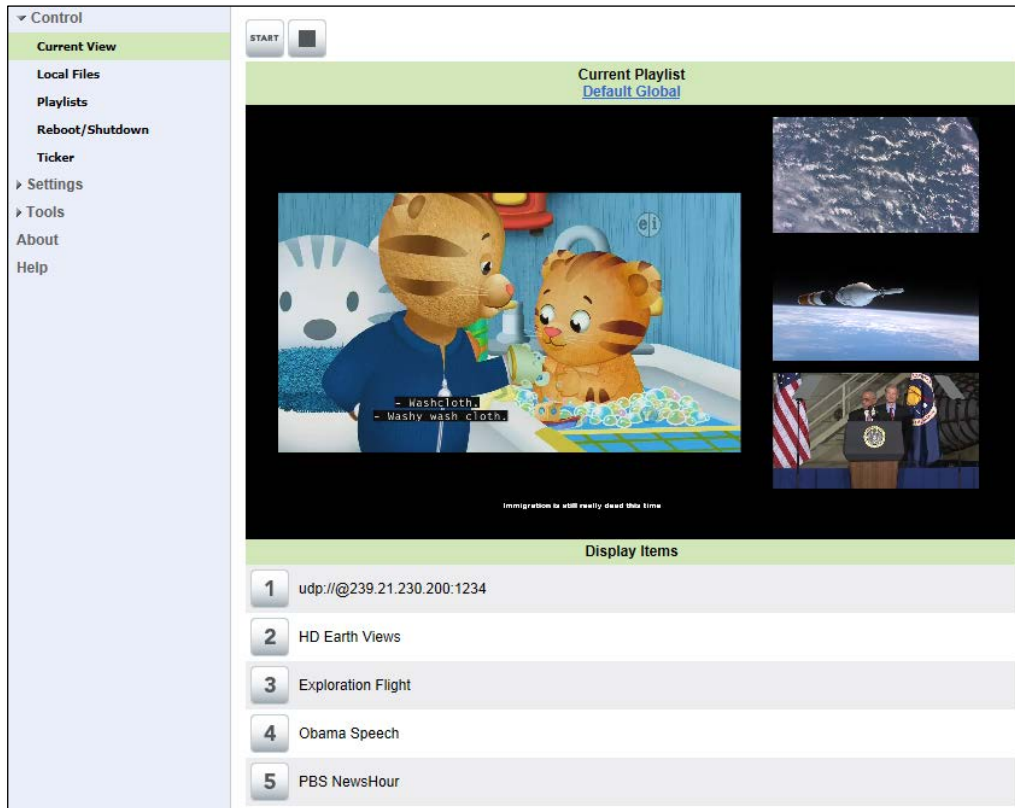
Source: DTV

6. Configure additional stream settings as desired, and click on Add to save the new stream.
7. Click on the stream name to navigate to the stream detail page.
8. Click on the Play icon  **PLAY** to verify playback.



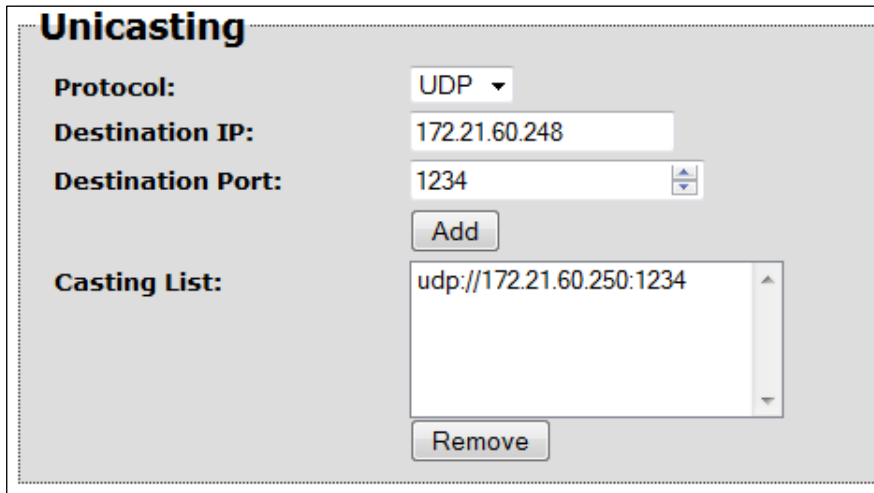
To configure for use with SAFARI Montage® Digital Signage Controller:

1. Access the SAFARI Montage Digital Signage Controller web UI.
2. Navigate to Control > Playlist.
3. Select Edit from the Action dropdown list.
4. Enter a descriptive name for the encoder stream and select New URL from the dropdown then click the Add button.
5. Enter the streaming URL in the following format into the Media URL and click Save:  
udp://@[Multicast Group IP Address]:[Multicast Port]  
Ex. udp://@239.21.230.200:1234
6. Click Control > Current View to return to the Current Playlist view.



## Unicast Configuration:

Note that SAFARI Montage® does not typically utilize a unicast streaming configuration; however, the encoder supports TCP/UDP/RTP encoding for applications that require it.



**Unicasting**

**Protocol:** UDP

**Destination IP:** 172.21.60.248

**Destination Port:** 1234

Add

**Casting List:** udp://172.21.60.250:1234

Remove

**Protocol:** Select TCP, UDP or RTP

**Destination IP:** Enter the IP address of the client receiving the encoder stream

**Destination Port:** Enter a port ranging between 1024 and 65535

**Add (button):** Use to add clients to the Casting List

**Casting List:** List of clients, up to eight, that can receive the unicast stream

**Remove (button):** Use to remove clients from the casting list

To verify the multicast streaming configuration:

1. Using the VLC media player, select Media > Open Network Stream.
2. Enter the encoder streaming URL in the following format:  
udp://@[Unicast Port]  
Ex. udp://@1234
3. Press the Play button to view the video stream.

## DLNA / HTTP Configuration:

Note that SAFARI Montage® does not typically utilize a DNLA/HTTP streaming configuration; however, the encoder supports TCP/UDP/RTP encoding for applications that require it.

**HTTP (DLNA Default)**  
**Enable HTTP:**   
**Enable Auth.:**   
**RADIUS IP:**   
**RADIUS Secret:**

**Enable HTTP:** Enable/Disable HTTP streaming

**Enable Auth.:** Enable/Disable authentication

**RADIUS IP:** Enter a RADIUS IP if required

**RADIUS Secret** Enter RADIUS secret if required

1. To verify the HTTP streaming configuration:
2. Using the VLC media player, select Media > Open Network Stream
3. Enter the encoder streaming URL in the format:  
http://[IP address]:[HTTP Port]/VideoInput/play.ts  
Ex. http://172.21.230.200:8888/VideoInput/play.ts
4. Press the Play button to view the video stream.

## Administration:

The Administration page allows authorized users to:

- Reboot the encoder remotely
- Reset the encoder to factory defaults (use with caution)
- Back up the current encoder configuration
- Restore a backed-up encoder configuration
- Upgrade the encoder firmware by uploading a new firmware image

**SAFARI MONTAGE** 2014-06-26 19:13:32 GMT-0400 (EDT) Up 4 hours 49 minutes

IP Streamer

**Administration**

Reboot Device

Reset to default

Reset configuration to factory default.

**Maintain Channel List**

Download

Download current channel list from this device to a local file.

Channel List:  No file selected.

Upload the prepared channel list to device.

**NOTE:** The channel list will be reset when the firmware is upgraded.

**Backup and Restore Configuration**

Backup

Backup and download current configuration settings to a local file.

Config File:  No file selected.

Upload the pre-saved configuration settings to device.

**Firmware Upgrade**

**Model Number:** G1571  
**Serial No.:** 1350 039726  
**Firmware Ver.:** 2014061610

Firmware Image:  No file selected.

To upgrade the device's firmware, select the required firmware image file then upload it to the device.

**Change Password**

**CAUTION:** The new password must contain:

- 6~8 characters
- At least one digit
- At least one uppercase character
- At least one lowercase character

Old Password:   
New Password:   
Retype New Password:

After changing the password use the Save and Confirm button. The encoder will reopen to the Welcome page allowing the user to use the new password.

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- Change the password used to secure the encoder

## **Backing Up Encoder Configuration:**

We highly recommend that you back up your encoder configuration.

To do so, click on the “Backup” button to download the encoder configuration and save to your local computer as a “config.cfg” file.

To upload a previously saved configuration file, click on “Choose File,” select the desired “config.cfg” file and click on “Upload Settings.”

This function may be helpful when installing a large number of encoders, noting that the IP address, hostname and device name should be set uniquely for each encoder.

# SD/HD MPEG Digital Encoder Configuration Record

Use the table below to record key information regarding your encoder and configuration.

SERIAL NUMBER: \_\_\_\_\_

PURCHASE DATE: \_\_\_\_\_

INSTALLATION DATE: \_\_\_\_\_

DEVICE NAME: \_\_\_\_\_

USER NAME/PASSWORD: \_\_\_\_\_

FIRMWARE VERSION: \_\_\_\_\_

STREAMING CONFIGURATION: \_\_\_\_\_



