SAFARI MONTAGE®
HLS UNICAST ENCODER™

INSTALLATION AND SETUP GUIDE

HLS Unicast Encoder | G1609 Single Stream Encoder
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 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 power from the device.
- This device is supplied with the appropriately rated power cord. The use of any other power cord 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.
Product Description

SAFARI Montage® HLS Unicast 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.

SAFARI Montage® HLS Unicast Encoder encode incoming digital or analog video to deliver an HLS Adaptive Bitrate H.264 unicast stream over the IP network to any SAFARI Montage® user, SAFARI Montage® Digital Signage or Classroom Endpoint and provide efficient remote management via an integrated, password-protected, embedded web server.

The SAFARI Montage® HLS Unicast Encoder offers flexible video input options, supporting HDMI, component and composite inputs, and SD through HD resolutions ranging from 480i to 1080p and allows for the selection of three (3) resolutions to output a dynamic, Adaptive Bitrate (ABR) HLS output stream.
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

- G1609 Standalone HLS Unicast Encoder with:
  - (1) Power Cord
  - (1) 6' RJ45 Cat-5E Patch Cable
  - (1) 6' YPbPr Component Video Cable
  - (1) 6' Video + Stereo Audio Composite Cable
  - (1) 6' HDMI Cable
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<tr>
<td>6' RJ45 Cat-5e Patch Cable</td>
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# SAFARI Montage® HLS Unicast Encoder™ Front Panel

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<td>Reboot button</td>
<td>Reboots the Device (Unsaved Settings Will be Lost)</td>
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| RST / UPG button | To Reset All the Settings of the Device to Factory Default:  
|                 | 1. Disconnect Power.  
|                 | 2. Press and Hold the RST/UPG Button, then Connect Power.  
|                 | 3. Hold the Button Until CFG LED Flashes 10 Times (about 10 seconds).  
|                 | 4. After the CFG LED Stops Flashing, Release the RST/UPG Button.  
|                 | To Upgrade Firmware Using the USB Port (G1609 Only):  
|                 | 1. Disconnect Power.  
|                 | 2. Plug in the USB Drive Containing the Firmware Upgrade.  
|                 | 3. Press and Hold the RST/UPG Button, then Connect Power to Boot-Up the Encoder.  
|                 | 4. The USB LED Will Flash While Copying the Firmware Image from USB Drive (About 3-5 Seconds).  
|                 | 5. Wait Until the CFG LED Stops Flashing.  
|                 | 6. Release the RST/CFG Button, and Wait for the Device to Reboot and Upgrade the Firmware (About 1 Minute).  
|                 | 7. Reset the Cache on your Browser After Upgrading the Firmware.  
|                 | **NOTE**: The Firmware May Also be Upgraded by Uploading the Firmware Image Via the Web UI Administration Page. |
| PWR            | Indicates that the Device is Powered                                        |
| CFG            | Indicates that the Device is in Configuration Mode                          |
| USB            | Indicates that a USB Drive is Mounted                                       |
| 1080p          | Indicates that the Device is Encoding a 1080p Stream                       |
| 720p           | Indicates that the Device is Encoding a 720p Stream                        |
| 480p           | Indicates that the Device is Encoding a 480p Stream                        |
| 360p           | Indicates that the Device is Encoding a 360p Stream                        |
| 288p           | Indicates that the Device is Encoding a 288p Stream                        |
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/](http://www.safarimontage.com/support/).

SAFARI Montage® System Requirements:

- SAFARI Montage® v7.3.x
- SAFARI Montage® Selective Video Streaming software module
- Clients must meet the System Requirements found at: [http://www.safarimontage.com/support/releases/sm-7.3.x.aspx#system](http://www.safarimontage.com/support/releases/sm-7.3.x.aspx#system)

Before You Begin:

- Make all connections before powering the encoder.
- Note that all HLS Unicast Encoders ship with a default:
  - Static IP address: 191.53.51.211
  - Gateway: 191.53.51.1
  - Netmask: 255.255.0.0
- SAFARI Montage strongly recommends that video sources be connected directly to the HLS Unicast Encoder with the supplied cabling. SAFARI Montage cannot provide support for third-party distribution and/or switching equipment placed in-line 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., 191.53.51.100.
   - Be certain to avoid assigning the PC the default encoder IP or gateway addresses (191.53.51.211 and 191.53.51.1).
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 191.53.51.211.
   b. Open a web browser and navigate to http://191.53.51.211/ to view the encoder Overview page.
   c. Click on Network Setup to configure the network settings and login with the default credentials:
      Username: admin
      Password: Admin123
      Note: To change the password for the GUI go to the Administration Tab.
   d. Set the encoder Hostname, IP address and network configuration as required to unique values that conform to the local network address scheme.
e. Click the Save and Confirm button to apply the network changes. At this time the encoder will reboot and connect to the network with the new settings.

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 the new IP address or hostname and continue configuration.
Encoder 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 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.

To the right of the device specifications is the output preview player which can be turned on and off as needed to show the current output of the encoder.
Streaming Setup:
The Streaming Setup page allows users 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.
Video Control:

Set the **Input** connection type as needed. By default, **Auto detect** is set to allow the encoder to locate the active input type.

![Video Control](image)

Stream Control:

The SAFARI Montage® HLS Unicast Encoder™ provides an Adaptive Bitrate (ABR) HLS stream with three resolution and bitrate sub-stream steps. Clients accessing the ABR stream will play the highest quality sub-stream based on real-time conditions.

Each step is configured as Stream 1 through 3 and resolution and bitrate may be customized to tailor the configuration for various requirements.

The SAFARI Montage® HLS Unicast Encoder™ is capable of downscaling the video input resolution.

Available Output Resolutions:


Stream 1 Available Resolutions:

1080p / 720p / 576p / 480p

Setting the three (3) sub-stream video resolutions and bitrates:

![Stream Control](image)

**Note:** Bitrates can be set between 0.5 and 8 mbps.

1. Select **Stream 1** output **Resolution (V)** and **Bitrate**. Stream 1 is the highest resolution sub-stream.

   **Note:** **Stream 1** can be set no higher than the maximum resolution of the input.

2. Select Stream 2 output Resolution (V) and Bitrate. Stream 2 is the middle resolution sub-stream.

3. Select **Stream 3 Resolution (V)** and **Bitrate**. Stream 3 is the lowest resolution sub-stream.
Audio Control:

Use the drop down control to select the Audio Output Bitrate required.

Available Options: 64, 96, 128, 160 Kbps

Once all parameters are set remember to **Save and Confirm** all changes.
Administration:

The Administration page allows authorized users to:

- Reboot the encoder remotely
- Reset the encoder to factory defaults (use with caution)
- Upgrade the encoder firmware by uploading a new firmware image
- Change the password used to secure the encoder
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:
   http://[Encoder IP Address]/hls/master.m3u8
   Ex. http://192.168.1.100/hls/master.m3u8
5. Set Type (for recording) to M3U8.
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 to verify playback.
SAFARI Montage HLS Unicast Encoder Configuration Record

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

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<tr>
<th><strong>SERIAL NUMBER:</strong></th>
<th>____________________________________________</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PURCHASE DATE:</strong></td>
<td>____________________________________________</td>
</tr>
<tr>
<td><strong>INSTALLATION DATE:</strong></td>
<td>____________________________________________</td>
</tr>
<tr>
<td><strong>DEVICE NAME:</strong></td>
<td>____________________________________________</td>
</tr>
<tr>
<td><strong>USER NAME/PASSWORD:</strong></td>
<td>____________________________________________</td>
</tr>
<tr>
<td><strong>FIRMWARE VERSION:</strong></td>
<td>____________________________________________</td>
</tr>
<tr>
<td><strong>STREAMING CONFIGURATION:</strong></td>
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