HW-OMNI-E4521

HW-OMNI-E4111

HW-OMNI-E4111-WP

OmniStream Encoder

Instructions for Use

Version August 14, 2026



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Version Information

This section lists document revisions. Update the table whenever the manual is revised.

Version	Date	Notes
August 14, 2026	[Release Date]	Initial draft release

Sales & Customer Support

Main Office	Hall Research, 1234 Lakeshore Dr Suite #150, Coppell, TX 75019
Support Hours	Monday – Friday, 8:00 a.m. – 5:00 p.m. (CST)
Website	https://www.hallresearch.com
Product Page	https://www.hallresearch.com/product/HW-OMNI-E4521 https://www.hallresearch.com/product/HW-OMNI-E4111 https://www.hallresearch.com/product/HW-OMNI-E4111-WP

IMPORTANT: Visit https://www.hallresearch.com/product/HW-OMNI-E4521 for the latest firmware updates and Instructions for Use.

Warranty

To view the product warranty, use the following link: https://hallresearch.com/warranty

Important Safety Information

CAUTION: Risk of electric shock. Do not open the enclosure or expose to rain or moisture. No user-serviceable parts inside. Refer servicing to qualified service personnel.

- Do not expose this apparatus to rain, moisture, dripping, or splashing and ensure no objects filled with liquids are placed on the unit.
- Do not install in a bookcase, cabinet, or other confined space. Ensure the unit is well ventilated.
- Do not obstruct ventilation openings with newspapers, tablecloths, curtains, or similar items.
- Do not install near any heat sources such as radiators, heat registers, stoves, or amplifiers.
- Do not place sources of naked flames, such as lighted candles, on the unit.
- Clean this apparatus only with a dry cloth.
- Unplug this apparatus during lightning storms or when unused for long periods of time.
- Protect the power cord from being walked on or pinched, particularly at plugs.
- Only use attachments and accessories specified by the manufacturer.
- Refer all servicing to qualified service personnel.

FCC Compliance

This hardware device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Introduction

OmniStream products operate on a similar basic concept as matrix switch endpoints: A/V signals are transmitted from one location to another over category cable. However, OmniStream differs from traditional matrix switchers because it is an IP-based solution, allowing data to be distributed over a standard IP network.

These endpoints are referred to as encoders and decoders. Encoders function like transmitters, while decoders function like receivers.

Figure 1.1 shows an encoder and decoder connected through a network switch. Like all network devices, each encoder and decoder must have a unique IP address. By default, OmniStream encoders and decoders are DHCP-enabled. This means that when a unit is connected to a network with a DHCP server available, it will automatically receive an IP address.

If no DHCP server is available, the unit will assign itself an IP address in the 169.254.xxx.xxx/16 range. OmniStream devices can also be configured with a static IP address when needed. Static IP addressing is covered in a later section.

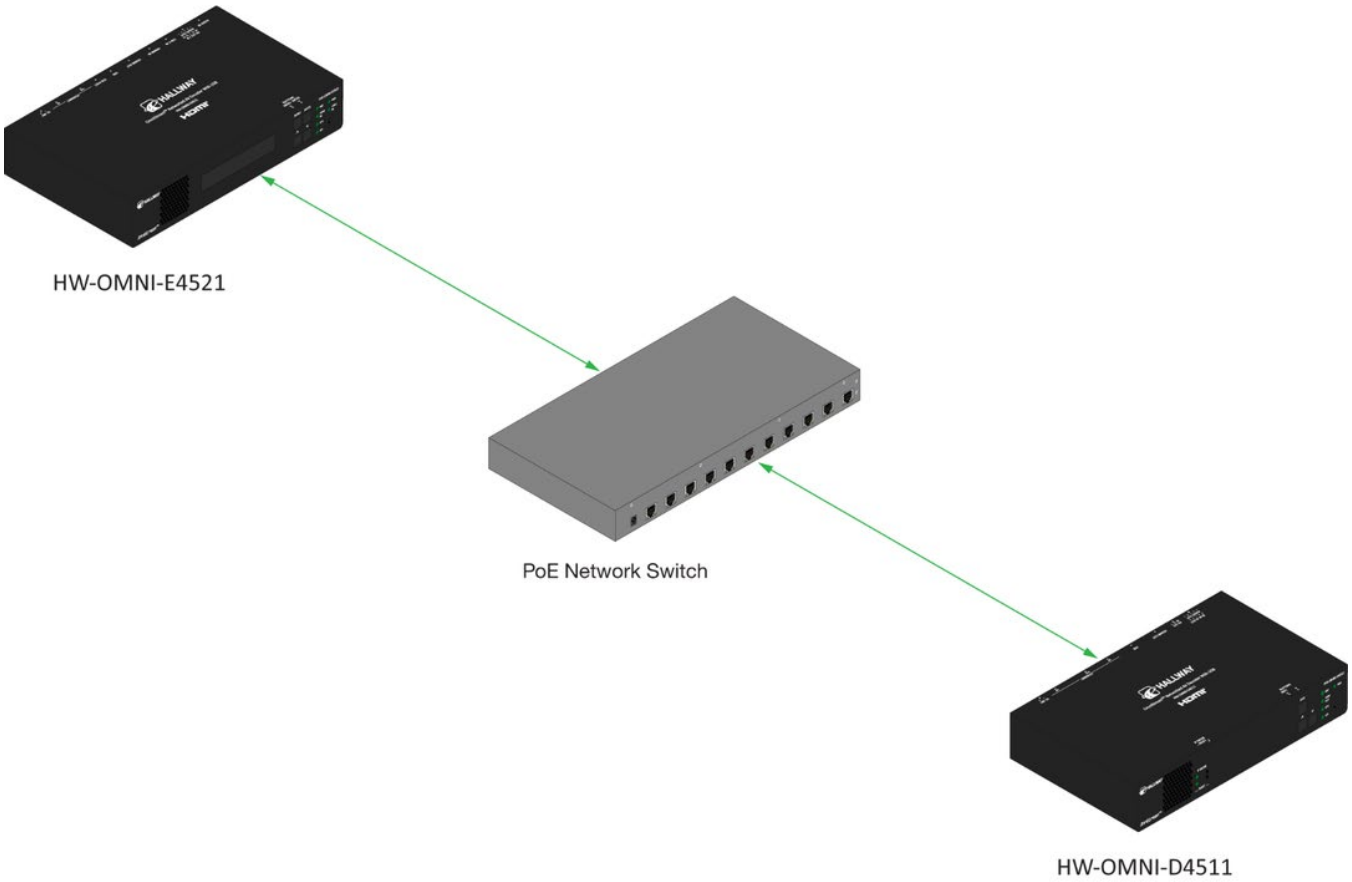


Figure 1.1

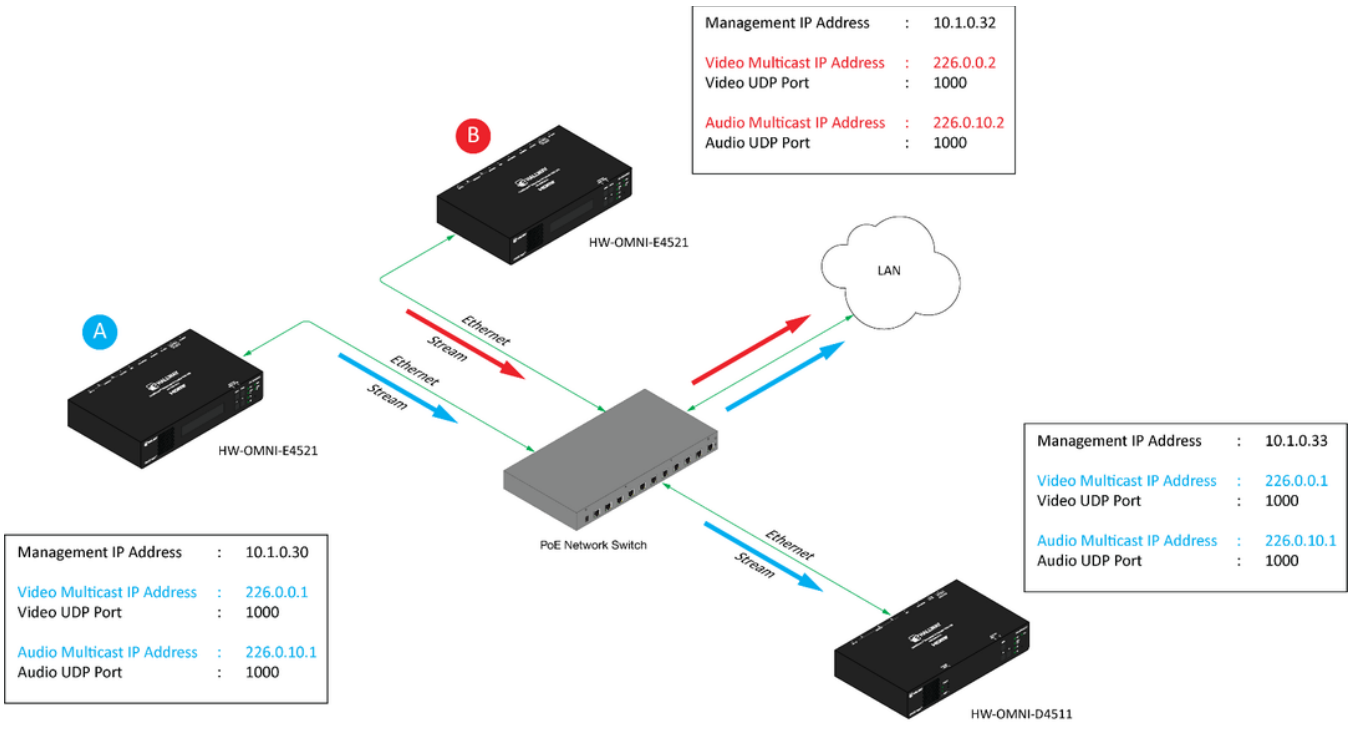
Subscribing to a Stream

To receive content from an encoder, the decoder must subscribe to the multicast IP address and UDP port of the stream or streams. The decoder does not subscribe to the session itself, but rather to the individual streams within that session.

This process is like changing channels on a set-top box. For example, to view content on channel 213, the set-top box must be tuned to channel 213. For a decoder to receive content from an encoder stream, the decoder's multicast IP address and UDP port must match those of the encoder stream it is intended to receive.

NOTE: The encoder and decoder management IP (class C) address is different from its multicast IP address. The device IP address identifies the encoder or decoder on the network, while the multicast IP (class D) address identifies the stream being transmitted.

Figure 1.2 shows two encoders and a single decoder connected to a network switch. The decoder is receiving content from encoder "A" because the decoder is set to the same multicast IP address and UDP ports for both the video and audio stream. If the decoder were set to the multicast IP Address and UDP ports for encoder "B", then the decoder would receive the content from encoder "B".



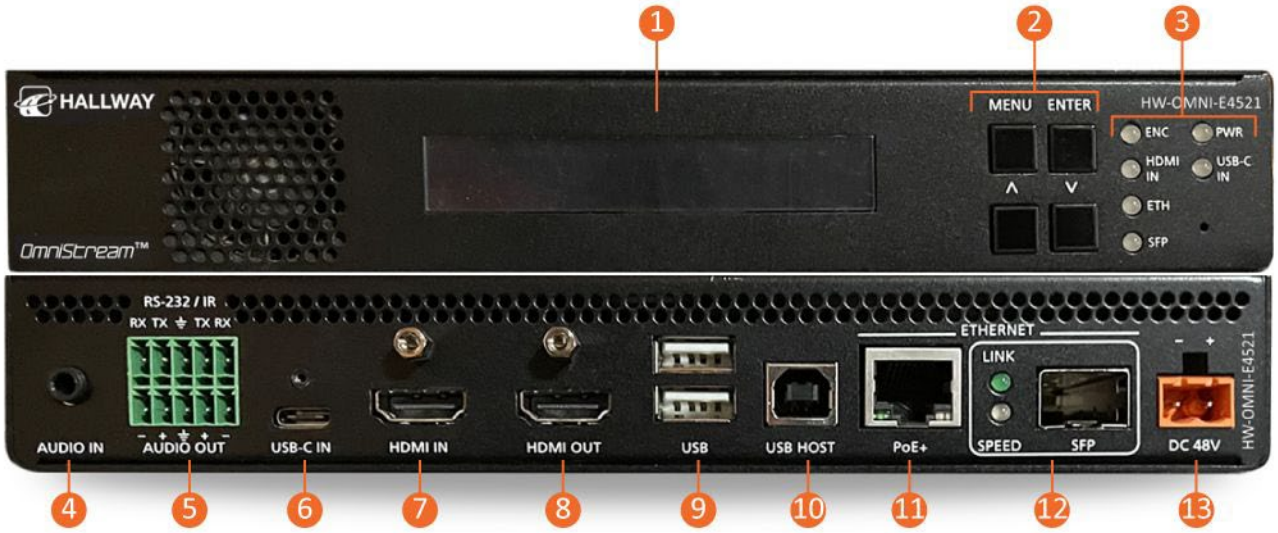
Configuration

Typically, it is required that installers configure each encoder and decoder endpoint, individually, by specifying the multicast addresses, ports, stream settings, and decoder stream selection. OmniStream simplifies this task by incorporating that intelligence directly into the endpoints.

When powered on and connected to the network, each encoder automatically boots, assigns itself a multicast stream based on its MAC address, and begins transmitting video. By default, decoders select an available stream automatically. However, if multiple encoders are already active when the decoders boot, the decoders will typically join the lowest stream in the available list. This allows the system to display content quickly with no installer intervention, making it easy to confirm that the network, encoders, decoders, and displays are operating correctly.

Panel Description

Panel Description – HW-OMNI-E4521



HW-OMNI-E4521 Panel

1. **LCD Display** - Displays the Menu System and other information about the source and the encoder.
2. **Buttons**
   MENU – Press this button to display the menu system in the LCD display.
   ENTER – Press this button to select the current Menu System entry.
   UP – Press this button to scroll up in the Menu System.
   DOWN – Press this button to scroll down in the Menu System.
3. **LED Indicators**
   ENC – This LED will be green when encoding is active.
   HDMI IN – This LED will be green when an active source is connected to the HDMI IN port.
   ETH – This LED is green when a valid Ethernet link is established between the encoder and the network switch.
   SFP – This LED is green if the decoder is using an SFP module and indicates SFP network activity/status.
   PWR – This LED will be green when the encoder is powered.
   USB-C IN – This LED will be green when a USB host is connected to the encoder.
4. **AUDIO IN** – Connect a 3.5 mm TRS jack to this port. This port supports analog or stereo signals.
5. **AUDIO OUT / RS-232 / IR**
   AUDIO OUT – Connect this 5-pin terminal block output to a balanced or unbalanced stereo analog audio input on the destination device. For balanced audio, connect the positive (+), negative (-), and shield/ground conductors for the left and right channels to the corresponding terminals. For unbalanced audio, connect the left and right signal conductors to L+ and R+, and connect ground/shield to G. Leave L- and R- unconnected unless otherwise specified.

RS-232 / IR – Connect an RS-232 and/or IR blaster to this port using the included 4-pin captive screw connector.

6. **USB-C IN** – Connect a USB-C cable from this port to a source device. This port supports audio, video, and USB data and also acts as a host port for USB data transport.
7. **HDMI IN** – Connect an HDMI cable from this port to a source.
8. **HDMI OUT** – Connect an HDMI cable from this port to a confidence monitor.
9. **USB –** Connect USB devices to these ports.
10. **USB HOST** – Connect a USB host device to this port.
11. **PoE+** - Connect the PoE+ port to a PoE+ (IEEE 802.3at) compliant network switch using a standard Ethernet cable. This connection provides both data and power to the device. If a PoE+ switch is not available, use the 48 V DC power supply (part no. AT-PS-48083-C, sold separately). NOTE: The encoder can be powered by either a 48 V DC power adapter or a PoE+ switch. When both power sources are connected, the device gives priority to the 48 V DC power adapter.
12. **SFP** – Connect an SFP module to the SFP port.
    LINK – This LED will be green when SFP network activity is detected.
    SPEED – This LED will be green when a 1000 Gb connection is detected.
13. **DC 48V** – Connect a 48 V DC power supply (part no. AT-PS-48083-C, sold separately) to this receptacle to power the unit when a PoE+ (IEEE 802.3at) switch is not being used. NOTE: The encoder can be powered by either a 48 V DC power adapter or a PoE+ switch. When both power sources are connected, the device gives priority to the 48 V DC power adapter.

Panel Description – HW-OMNI-E4111



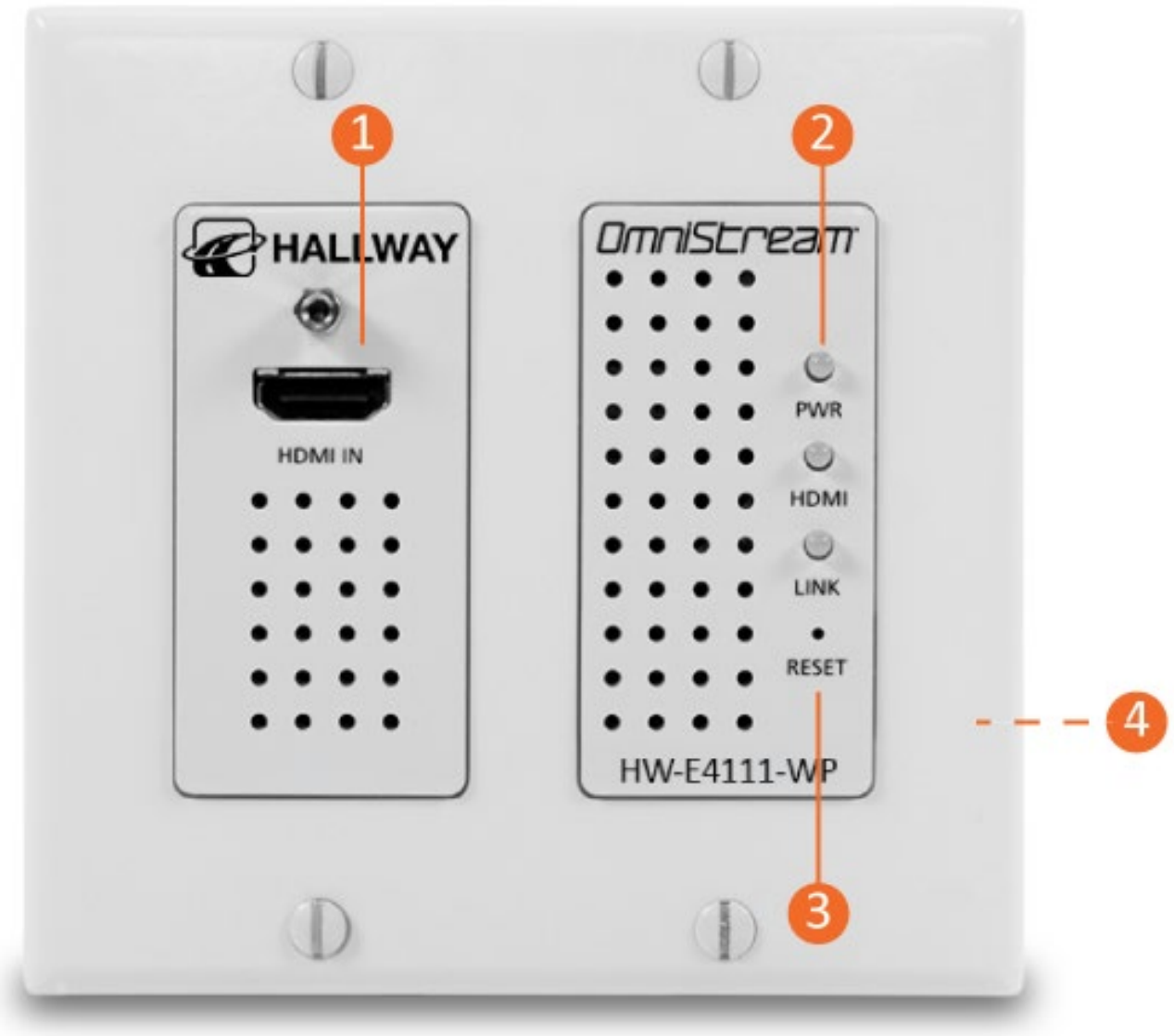
HW-OMNI-E4111 Panel

1. **LCD Display** - Displays the Menu System and other information about the source and the encoder.
2. **Buttons**
   MENU – Press this button to display the menu system in the LCD display.
   ENTER – Press this button to select the current Menu System entry.
   UP – Press this button to scroll up in the Menu System.
   DOWN – Press this button to scroll down in the Menu System.
3. **LED Indicators**
   ENC – This LED will be green when encoding is active.
   HDMI IN – This LED will be green when an active source is connected to the HDMI IN port.
   ETH – This LED will be green when a valid Ethernet link is established between the encoder and the network switch.
   PWR – This LED will be green when the encoder is powered.
4. **AUDIO IN** – Connect a 3.5 mm TRS jack to this port. This port supports analog or stereo signals.
5. **AUDIO OUT** – Connect this 5-pin terminal block output to a balanced or unbalanced stereo analog audio input on the destination device. For balanced audio, connect the positive (+), negative (-), and shield/ground conductors for the left and right channels to the corresponding terminals. For unbalanced audio, connect the left and right signal conductors to L+ and R+, and connect ground/shield to G. Leave L- and R- unconnected unless otherwise specified.
6. **HDMI IN** – Connect an HDMI cable from this port to a source.
7. **HDMI OUT** – Connect an HDMI cable from this port to a confidence monitor.
8. **PoE+** - Connect the PoE+ port to a PoE+ (IEEE 802.3at) compliant network switch using a standard Ethernet cable. This connection provides both data and power to the device. If a PoE+ switch is not available, use the 48 V DC power supply (part no. AT-PS-48083-C, sold separately). NOTE: The encoder

can be powered by either a 48 V DC power adapter or a PoE+ switch. When both power sources are connected, the device gives priority to the 48 V DC power adapter.

9. **DC 48V** – Connect a 48 V DC power supply (part no. AT-PS-48083-C, sold separately) to this receptacle to power the unit when a PoE+ (IEEE 802.3at) switch is not being used. NOTE: The encoder can be powered by either a 48 V DC power adapter or a PoE+ switch. When both power sources are connected, the device gives priority to the 48 V DC power adapter.

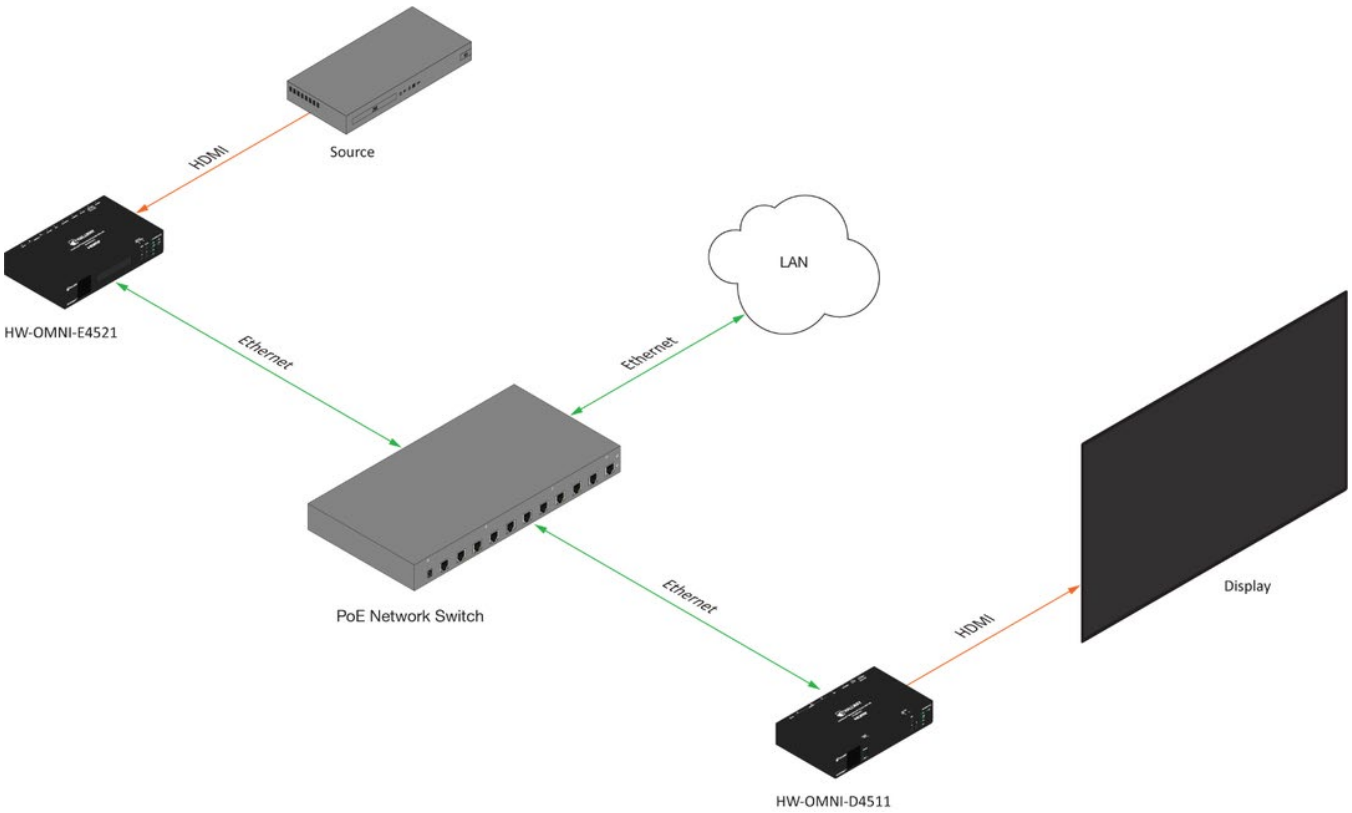
Panel Description – HW-OMNI-E4111-WP (White Decora® Wall Plate)



1. **HDMI IN** – Connect an HDMI cable from this port to a source.
2. **LED Indicators**
   PWR – This LED will be green when the encoder is powered.
   HDMI – This LED will be green when an active source is connected to the HDMI IN port.
   LINK – This LED will be green when a valid Ethernet link is established between the encoder and the network switch.

3. **RESET** - Press and hold this recessed button using a small pointed object, such as a paper clip, to restore the unit to factory-default settings. Do not use excessive force or sharp objects that may damage the button.
4. **ETHERNET (not shown)** – This port is located on the back of the wall plate. Connect an Ethernet cable from this port to a PoE+ (IEEE 802.3at) compliant network switch using a standard Ethernet cable. This connection provides both data and power to the device.

Connection Diagram



Encoder OSD Menu System

To display the menu system on the encoder, press the MENU button on the front panel. The main menu screen appears.



The first menu screen displays the hostname and the encoder's management IP address.

Press the UP or DOWN button to scroll through the available screens. When pressing the DOWN button, the screens appear in the following order:

1. Input Select – This menu item is only available on the HW-OMNI-E4521. This menu displays the currently selected input and allows it to be changed. Press the ENTER button to toggle between the USB-C IN and HDMI IN inputs.



Press the MENU button to return to the main menu system.

2. Network Status - Displays the current IP mode, the encoder's management IP address, and subnet mask.



Press the ENTER button to enter the Network menu.



Press the DOWN buttons to display each of the following screens.





Press the MENU button to return to the main menu system.



3. Type - Displays the currently selected IP mode.



Press the ENTER button to enter the Type menu.



Press the ENTER button to change the current IP mode.

Press the MENU button to return to the main menu system.

4. Streaming – Allows streaming to be enabled or disabled.



Press the ENTER button to enter the Streaming menu.



Press the ENTER button to toggle between enabling or disabling the current stream.

Press the MENU button to return to the main menu system.

5. AV Input – Displays stream information, including the audio type, audio multicast IP address, and UDP port number.



Press ENTER to enter the AV Input menu.



Press the UP or DOWN buttons to cycle through each of the following screens:







Press the MENU button to return to the main menu system

6. USB Status - This menu is only available on the HW-OMNI-E4521. Displays USB information.



Press ENTER to enter the USB Status menu.



Press the DOWN button to display the following screen:



Press the MENU button to return to the main menu system.

7. System - Displays the system information.



Press ENTER to enter the System menu.

Press the UP or DOWN buttons to cycle through each of the following screens:















To perform a factory reset from the Factory Reset screen, press and hold the ENTER button for 5 seconds.

Press the MENU button to return to the main menu system.

Web Server

To access the web server of the encoder, the encoder's IP address must first be identified. This can be done in the following ways:

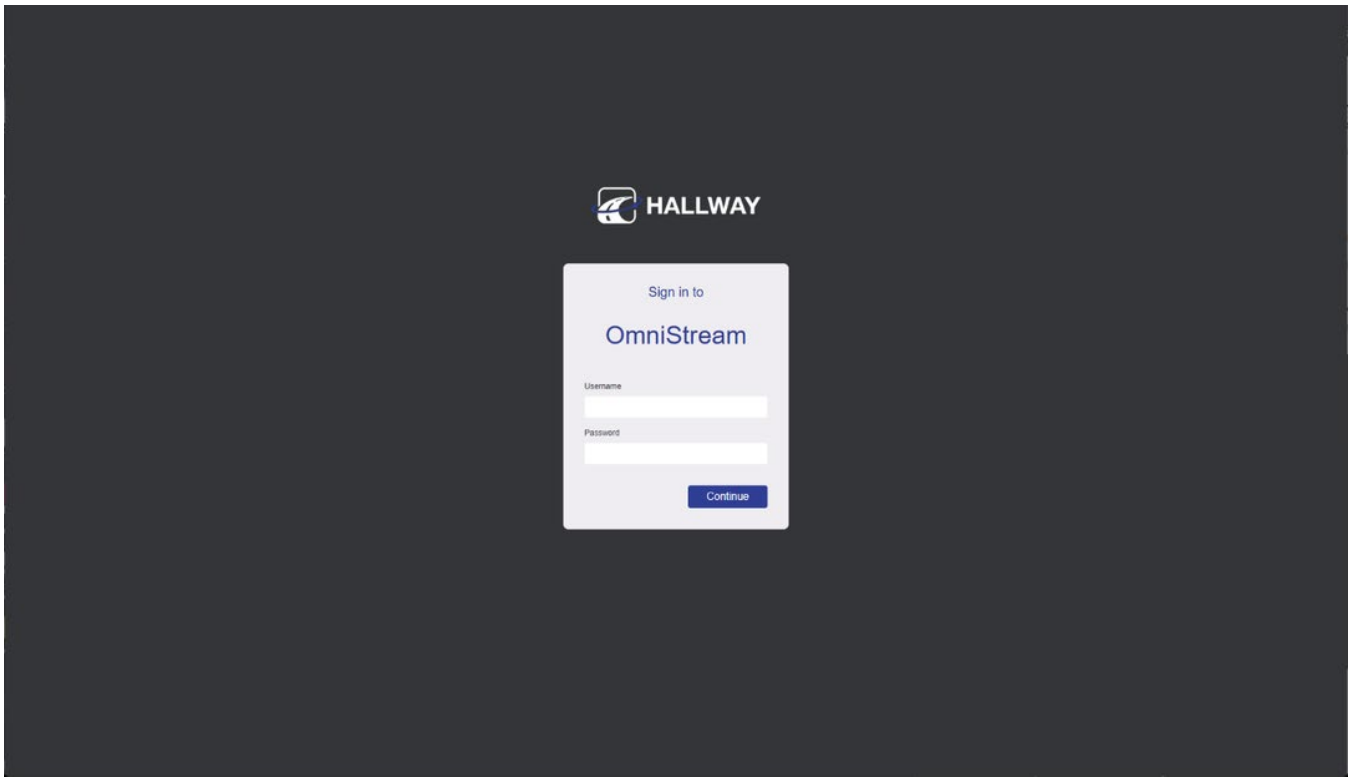
- Using the LCD screen on the front panel of the encoder.
- Use IP scanner software.
- Access the unit by its domain name.

When using IP scanner software, the computer and the OmniStream decoder must be connected to the same network.

Logging in for the first time

Launch the desired web browser and enter the IP address or domain name of the decoder in the address bar.

- In the Username field enter admin.
- Enter password in the Password field.
-

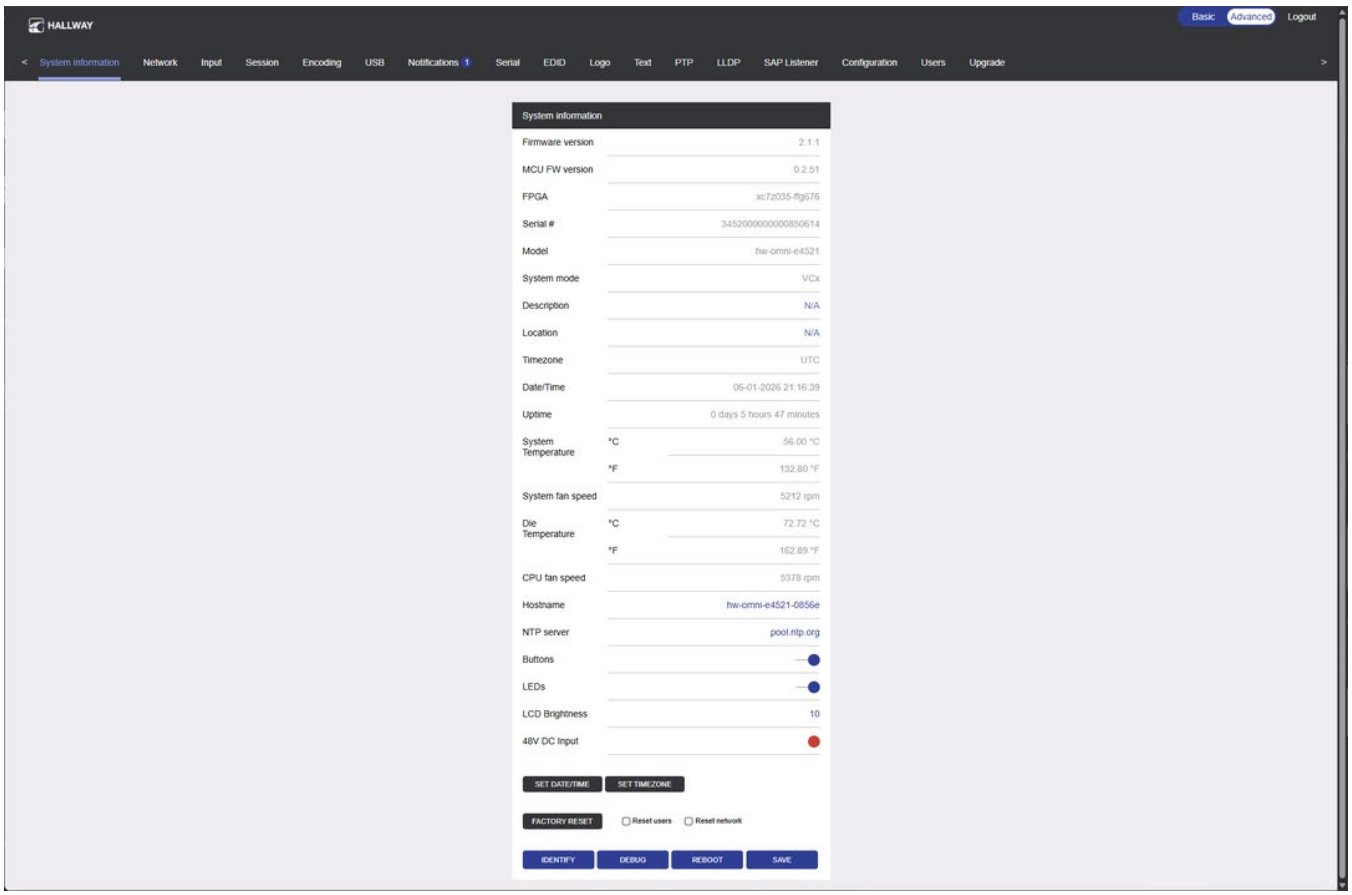


Web Server — Login screen

- Click the Continue button. The System Information screen will be displayed.

System Information

The System Information page provides a summary of the decoder's status and basic device information. This page displays identification and firmware details, input and network connection status, and current power consumption. It also includes a thumbnail preview of the input stream, when enabled, for quick visual monitoring.



Web Server — System Information page

Firmware version – Displays the current firmware version installed on the device.

MCU FW version – Displays the firmware version for the device microcontroller.

FPGA - Displays the FPGA device or FPGA firmware identifier.

Serial # – Displays the device serial number.

Model – Displays the device model number.

System mode – Displays the current operating mode of the device. The VCx codec is the only available mode and uses Atlona's latest codec technology, providing strong support for computer graphics and motion video. VCx supports 4K60 4:4:4 fast switching, dual streaming from OmniStream encoders, and multiview on OmniStream decoders. To use HW-OMNI encoders with legacy OmniStream units, the legacy devices must be running firmware version 2.0.0 or later and must be configured to use the VCx codec.

Description – Displays the user-defined device description, when configured.

Location – Displays the user-defined device location, when configured.

Timezone – Displays the current timezone used by the device.

Date/Time – Displays the current device date and time.

Uptime – Displays the amount of time the device has been running since the last reboot.

System Temperature – Displays the current system temperature in Celsius and Fahrenheit.

System fan speed – Displays the current system fan speed in RPM.

Die Temperature – Displays the value returned from the die temperature sensor (DTS) on the chip of the PCB

CPU fan speed – Displays the current CPU fan speed in RPM.

Hostname – Displays the hostname of the decoder. By default, OmniStream decoders are assigned a default hostname, which is constructed as follows: hw-omni-[SKU]-[last five digits of serial number]. If using a custom hostname, it must meet the hostname standards, defined here: https://tools.ietf.org/html/rfc1123.

NTP server – Displays the NTP server. This field is set to pool.ntp.org by default. Click this field to enter the desired NTP server address.

Buttons – Enables or disables the front-panel buttons.

LEDs – Enables or disables the front-panel LEDs.

Set Date/Time – Opens the date and time setting control. Use this to manually set the device date and time.

Set Timezone – Opens the timezone setting control. Use this to assign the correct timezone for the device.

Factory Reset – Click this button to reset the decoder to factory-default settings. When performing a factory reset, the following options can be selected, by clicking the check box. If no options are selected, then the decoder is reset with no factory-default settings.

- **Reset user** – Resets the decoder to factory-default settings and resets custom user information.
- **Reset network** – Resets the decoder to factory-default settings and resets network information.

Identify – Click this button to physically identify a unit on the network. Clicking this button will cause all front-panel LED indicators to flash for 10 seconds.

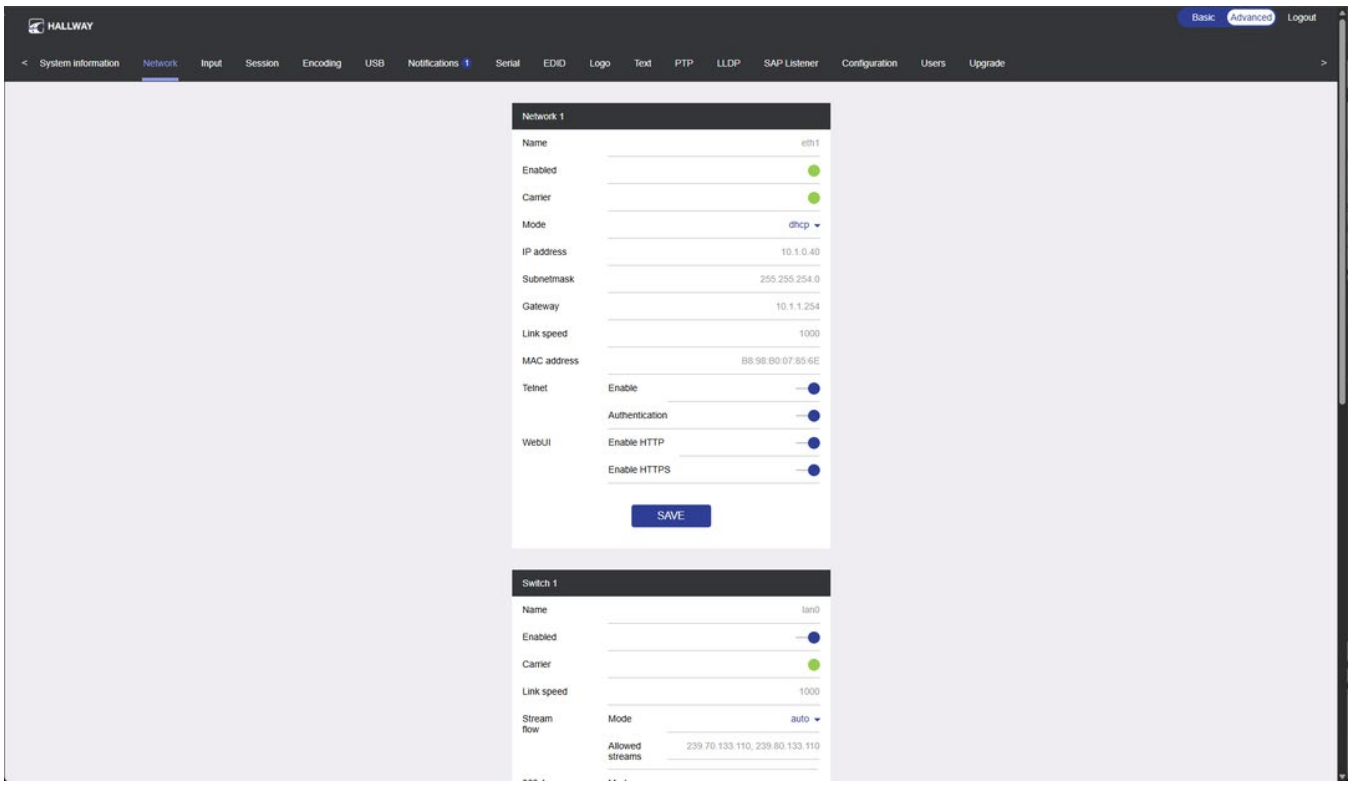
Debug – Click this button to instruct the unit to create a debug file. This file is used by Atlona Technical Support Engineers to diagnose internal issues with the unit.

Reboot – Click this button to perform a soft reboot of the decoder.

Save – Click this button to commit changes to the settings on this page.

Network

The Network page is used to configure the encoder's network communication settings. This page provides options for selecting DHCP or static IP addressing, specifying DNS settings, viewing Link Layer Discovery Protocol (LLDP) information for the connected network switch, and enabling or configuring 802.1X authentication for secured network environments.



Web Server — Network page

Network 1

Name – Displays the name of the Ethernet interface. This field cannot be changed.

Enabled – This indicator displays the state of the Network Interface Card (NIC). If the indicator is green, then the NIC is in the up/up state.

Carrier – If this indicator is green, then an active link exists. Otherwise, if no link exists, this indicator will be red.

Mode – Click this drop-down list to select the desired IP mode. Select DHCP to let the DHCP server (if present) assign the encoder the IP settings. When static is selected, the information for the IP Address, Subnetmask, and Gateway fields must be entered.

IP Address – Displays the IP address used by the channel. This field can only be changed if Mode is set to static.

Subnetmask – Displays the subnet mask for the channel. This field can only be changed if Mode is set to static.

Gateway – Displays the gateway (router) address for the channel. This field can only be changed if Mode is set to static.

Link Speed – Displays the link speed at the Ethernet port.

MAC Address – Displays the Media Access Control (MAC) address of the decoder.

Telnet

- **Enable** – Click this toggle switch to enable or disable Telnet sessions on the decoder. When enabled, the toggle switch will be blue.
- **Authentication** – Click this toggle switch to enable or disable Telnet authentication. When enabled, the toggle switch will be blue.

WebUI

- **Enable HTTP** – Click this toggle switch to enable or disable HTTP. When enabled, the toggle switch will be blue.
- **Enable HTTPS** – Click this toggle switch to enable or disable HTTPS sessions. When enabled, the toggle switch will be blue.

Switch 1 – Switch 3

Name – Displays the name of the Ethernet interface. This field cannot be changed.

Enabled – This indicator displays the state of the Network Interface Card (NIC). If the indicator is green, then the NIC is in the up/up state.

Carrier – If this indicator is green, then an active link exists. Otherwise, if no link exists, this indicator will be red.

Stream flow – Controls whether multicast stream traffic is permitted through the selected switch port. This setting determines whether the port can send, receive, or block multicast streams according to the selected mode and allowed stream list.

- **Mode** – Selects how multicast stream traffic is handled on the selected switch port. auto allows the switch to manage stream forwarding automatically. allow permits configured multicast streams. deny blocks configured multicast streams. The default setting is auto.
- **Allowed streams –** Lists the multicast streams permitted on the selected switch port.

802.1x – 802.1x is a port-based network access control protocol used to prevent unauthorized devices from connecting to a Local Area Network (LAN). In a typical 802.1x environment, three parties are involved: the supplicant (client device), the authenticator (such as an Ethernet switch or wireless access point), and the authentication server. Before the device is granted access to the network, communication is limited to Extensible Authentication Protocol over LAN (EAPOL) traffic. If authentication is successful, the authentication server notifies the authenticator, and the decoder is allowed onto the LAN.

Mode – Click this drop-down list to select the desired authentication method.

- **None** – 802.1x not enabled.
- **PEAP-MSCHAPv2**: Protected EAP. Requires user credentials and a CA (certificate authority) certificate.
- **EAP-TLS**: EAP Transport Layer Security. Requires a client certificate, client private key, and CA certificate.

Identity – Enter the username in this field. This field is only available when Mode is set to PEAP/MSCHAPv2.

Password – Enter the password in this field. This field is only available when Mode is set to PEAP/MSCHAPv2.

CA Certificate – Specifies the trusted Certificate Authority certificate used by the device to validate the 802.1x authentication server certificate. This field is only available when Mode is set to either PEAP/MSCHAPv2 or EAP-TLS.

Client certificate – Specifies the certificate used to identify the device to the 802.1x authentication server when EAP-TLS is selected. This field is only available when Mode is set to EAP-TLS.

Client private key – Specifies the private key associated with the client certificate. This field is only available when Mode is set to EAP-TLS.

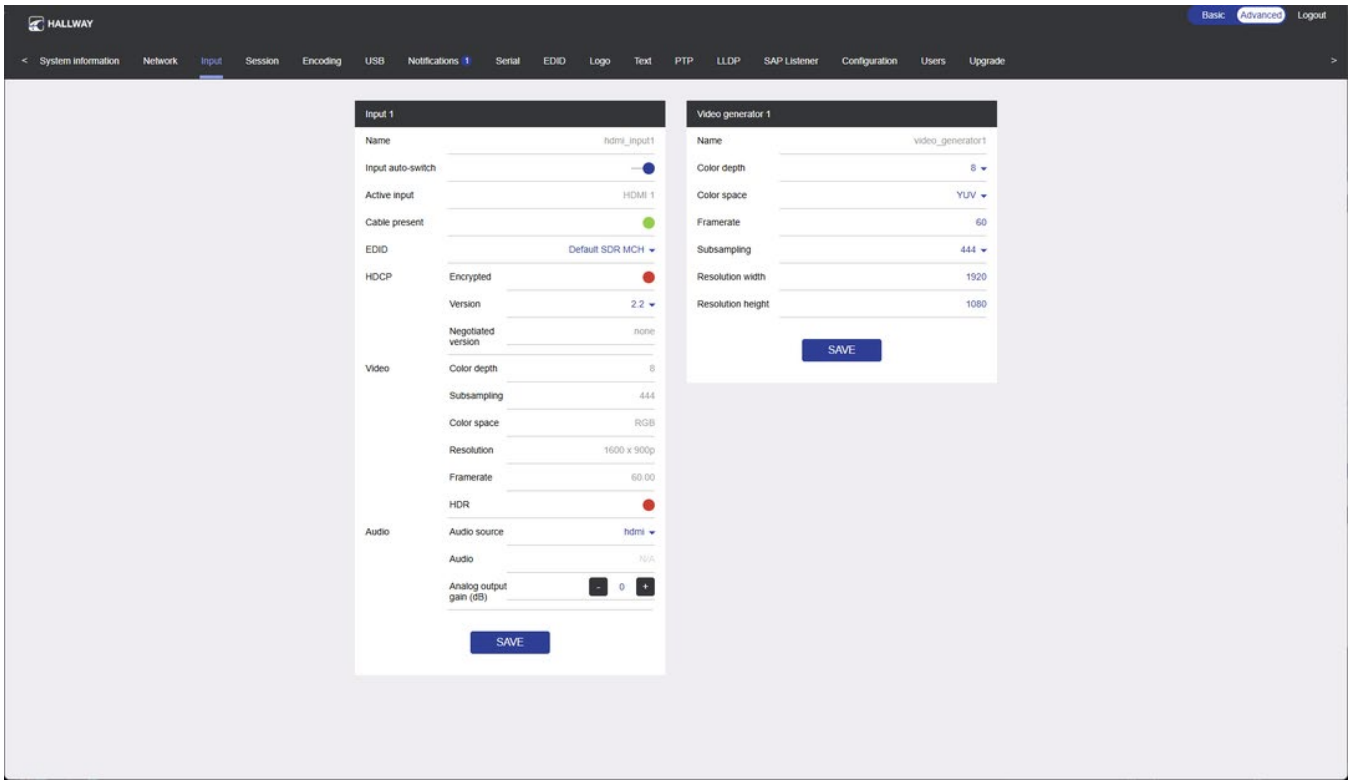
SFP – Displays read-only identification information for the installed SFP module. These fields are populated automatically when a compatible SFP module is installed. If no module is installed, or if module information is unavailable, the fields display N/A.

- Vendor – Displays the manufacturer name reported by the installed SFP module.
- Vendor SN – Displays the serial number reported by the installed SFP module.
- Vendor PN – Displays the part number reported by the installed SFP module.

Save – Click this button to commit any changes.

Input

The Input page configures the HDMI input and the internal video generator. Use this page to view HDMI input status, select EDID and HDCP behavior, configure audio source behavior, and define the video format generated when the internal video generator is used.



Web Server — Input page

Input 1

Name - Displays the name assigned to the HDMI input.

Input auto-switch - Enables or disables automatic input switching.

Active input - Displays the current active input. In the example shown, the active input is HDMI 1.

Cable present - Indicates whether an HDMI cable or source connection is detected.

EDID - Selects the EDID presented to the connected HDMI source. EDID tells the source which video and audio formats are supported.

HDCP

- **Encrypted** - Indicates whether the HDMI input signal is HDCP encrypted.
- **Version** - Selects the supported HDCP version for the HDMI input.
- **Negotiated version** - Displays the HDCP version negotiated with the connected HDMI source.

Video

- **Color depth** - Displays the detected color depth of the active input signal.
- **Subsampling** - Displays the detected chroma subsampling format of the active input signal.
- **Color space** - Displays the detected color space of the active input signal.
- **Resolution** - Displays the detected input resolution.
- **Framerate** – Displays the detected input frame rate.
- **HDR** - Indicates whether HDR is detected on the active input signal.

Audio

- **Audio source** - Selects the audio source used by the encoder. In the example shown, the audio source is HDMI.
- **Audio** - Displays the current audio status for the selected source.
- **Analog output gain (dB)** - Adjusts the analog audio output gain in decibels.
- **Save** - Saves changes made to the HDMI input settings.

Video generator

Name - Displays the name assigned to the internal video generator.

Color depth - Selects the color depth used by the generated video signal.

Color space - Selects the color space used by the generated video signal.

Framerate – Sets the frame rate used by the generated video signal.

Subsampling - Selects the chroma subsampling format used by the generated video signal.

Resolution width - Sets the horizontal resolution, in pixels, for the generated video signal.

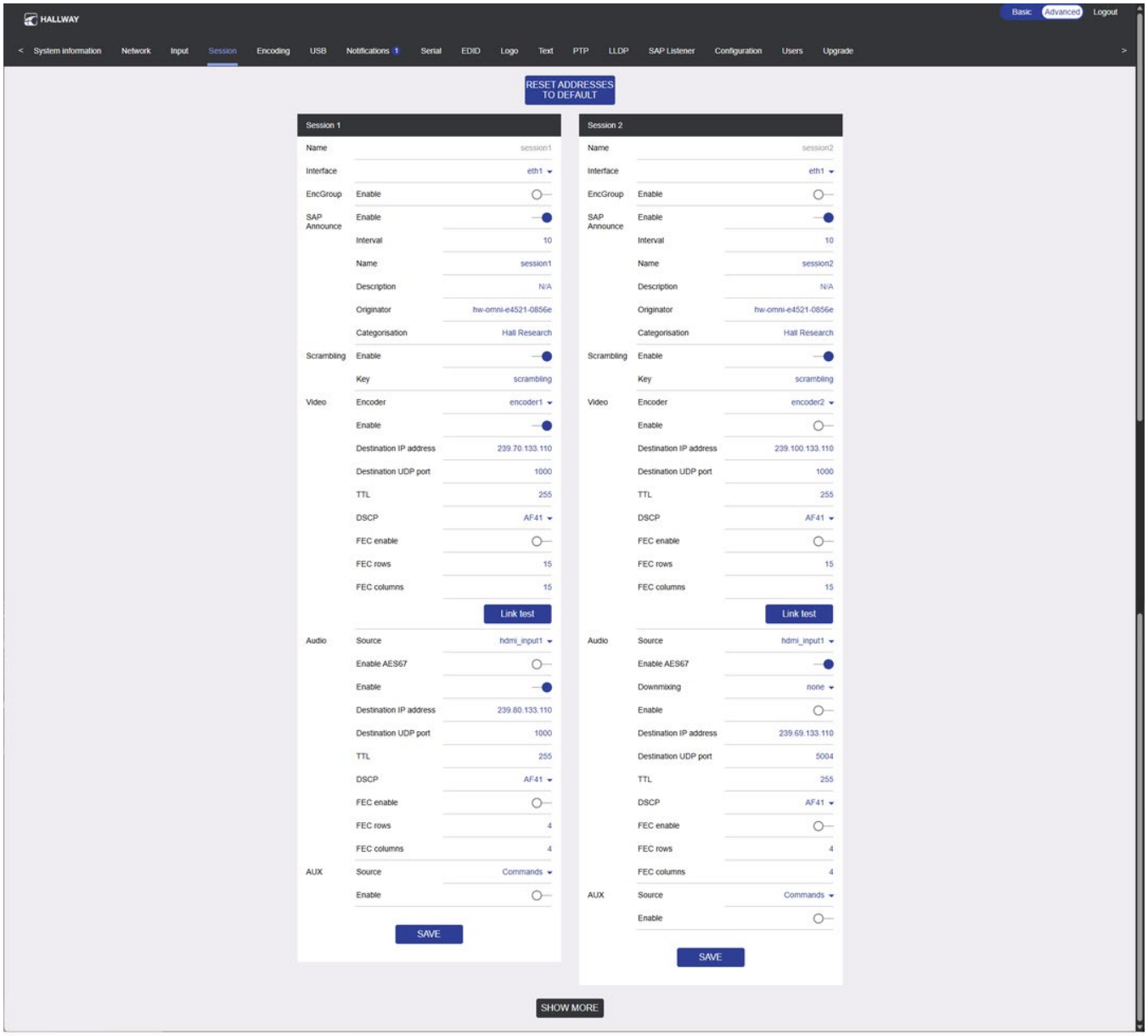
Resolution height - Sets the vertical resolution, in pixels, for the generated video signal.

Save - Saves changes made to the video generator settings.

Session

The Session page configures the multicast sessions generated by the encoder. Each session can include video, audio, and auxiliary data streams. It also includes SAP announcement settings, scrambling, destination multicast address and port settings, QoS marking, and optional forward error correction.

SAP (Session Announcement Protocol) is used to announce multicast session information, which helps decoders discover available streams. DSCP is part of the Differentiated Services field used for QoS classification in IPv4 and IPv6 packet headers.



Web Server — Session page

Reset addresses to default - Restores the session destination addresses to the factory-default values.

Session 1 – Session 6

Name - Displays the name assigned to the session.

Interface - Selects the network interface used by the session.

EncGroup / Enable - Enables or disables encoder group behavior for the session.

SAP Announce

- **Enable -** Enables or disables SAP announcements for the session.
- **Interval -** Sets how often SAP announcements are sent.
- **Name -** Specifies the SAP session name announced to decoders.
- **Description -** Specifies the session description included in the SAP announcement.
- **Originator -** Displays the device or host name included as the SAP announcement originator.
- **Categorisation** - Specifies the session category included in the SAP announcement.

Scrambling

- **Enable** - Enables or disables stream scrambling for the session.
- **Key** - Specifies the scrambling key used for the session. The same key must be used by the decoder to descramble the stream.

Video

- **Encoder** - Selects the video encoder used by the session.
- **Enable** - Enables or disables the video stream for the session.
- **Destination IP address** - Specifies the multicast destination IP address used for the video stream.
- **Destination UDP port** - Specifies the UDP port used for the video stream.
- **TTL** - Sets the Time-To-Live value for video stream packets.
- **DSCP** - Selects the DSCP value used to mark video stream packets for network QoS handling.
- **FEC** enable - Enables or disables forward error correction for the video stream.
- **FEC** rows - Sets the number of FEC rows used for the video stream.
- **FEC** columns - Sets the number of FEC columns used for the video stream.
- **Link** test - Runs a link test for the video stream.

Audio

- **Source** - Selects the audio source used by the session.
- **Enable** AES67 - Enables or disables AES67 audio support for the session. AES67 is an Audio Engineering Society standard for high-performance audio-over-IP interoperability. It uses PTP for synchronization.
- **Downmixing** - Selects the audio downmixing mode, when available.

- **Enable** - Enables or disables the audio stream for the session.
- **Destination IP address** - Specifies the multicast destination IP address used for the audio stream.
- **Destination UDP port** - Specifies the UDP port used for the audio stream.
- **TTL** - Sets the Time-To-Live value for audio stream packets.
- **DSCP** - Selects the DSCP value used to mark audio stream packets for network QoS handling.
- **FEC enable** - Enables or disables forward error correction for the audio stream.
- **FEC rows** - Sets the number of FEC rows used for the audio stream.
- **FEC columns** - Sets the number of FEC columns used for the audio stream.

Scrambling

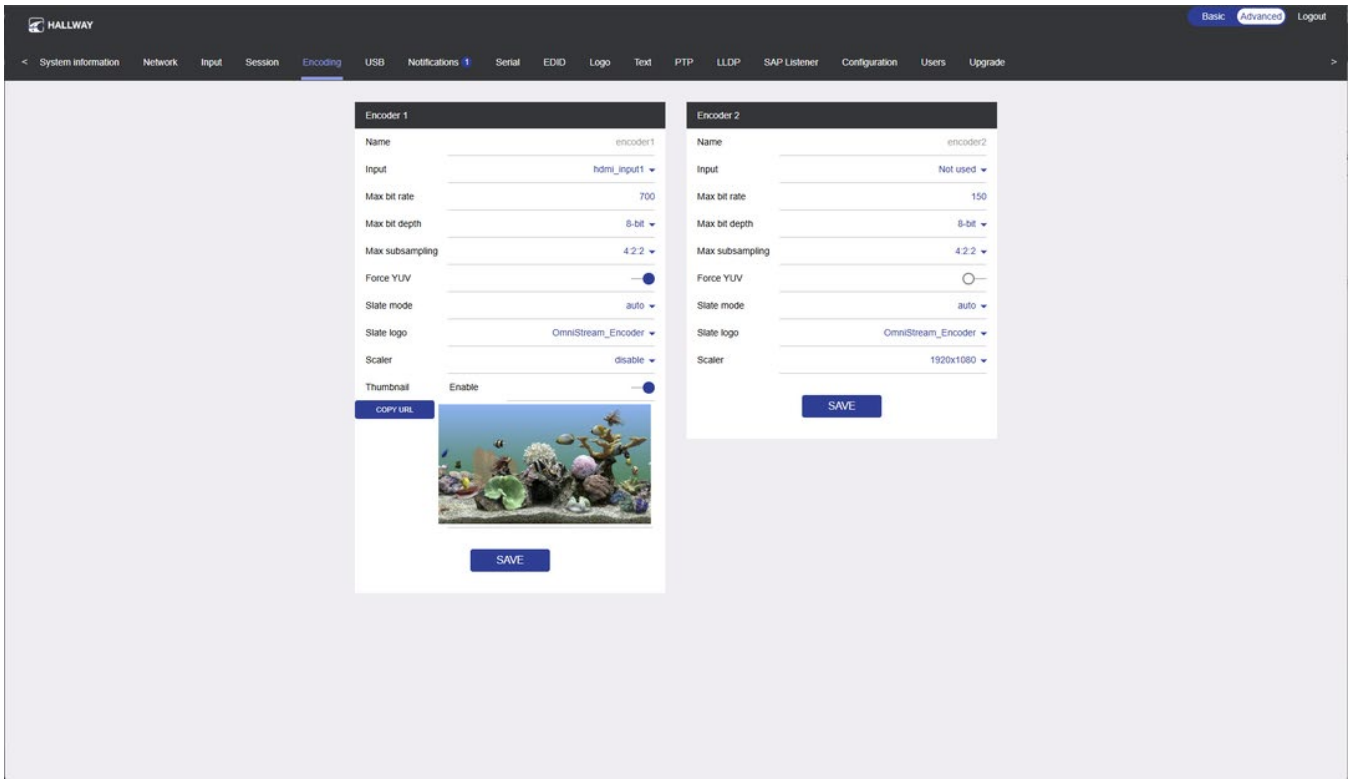
- **Source** - Selects the auxiliary data source used by the session.
- **Enable** - Enables or disables the auxiliary data stream for the session.

Save - Saves changes made to the session settings.

Show More - Displays additional session configuration options.

Encoding

The Encoding page configures the encoder instances used to generate network video streams. Each encoder can be assigned to an input, given bandwidth and format limits, configured with slate behavior, and set to generate a thumbnail preview.



Web Server — Encoding page

Encoder 1 / Encoder 2

Name - Displays the name assigned to the encoder.

Input - Selects the input source used by the encoder. Select Not used when the encoder should not be assigned to an input.

Max bit rate - Sets the maximum video bit rate for the encoded stream. Higher values can improve image quality but use more network bandwidth.

Max bit depth - Selects the maximum color bit depth used by the encoded stream.

Max subsampling - Selects the maximum chroma subsampling format used by the encoded stream. For example, 4:2:2 uses less chroma information than 4:4:4, which can reduce bandwidth while preserving more detail than lower subsampling formats.

Force YUV - Forces the encoded stream to use a YUV color format instead of RGB, when supported by the selected input and encoder settings.

Slate mode - Selects when the encoder outputs a slate image instead of normal input video. When set to Auto, the slate image is used automatically when no valid input video is available. When set to Manual, the selected slate image is used until the mode is changed. When set to Off, slate output is disabled.

Slate logo - Selects the logo or graphic used as the slate image.

Scaler - Selects whether the encoder scales the input video before encoding. When disabled, the encoder uses the input format without scaler conversion. When a resolution is selected, the encoder scales the video to that output resolution.

Thumbnail

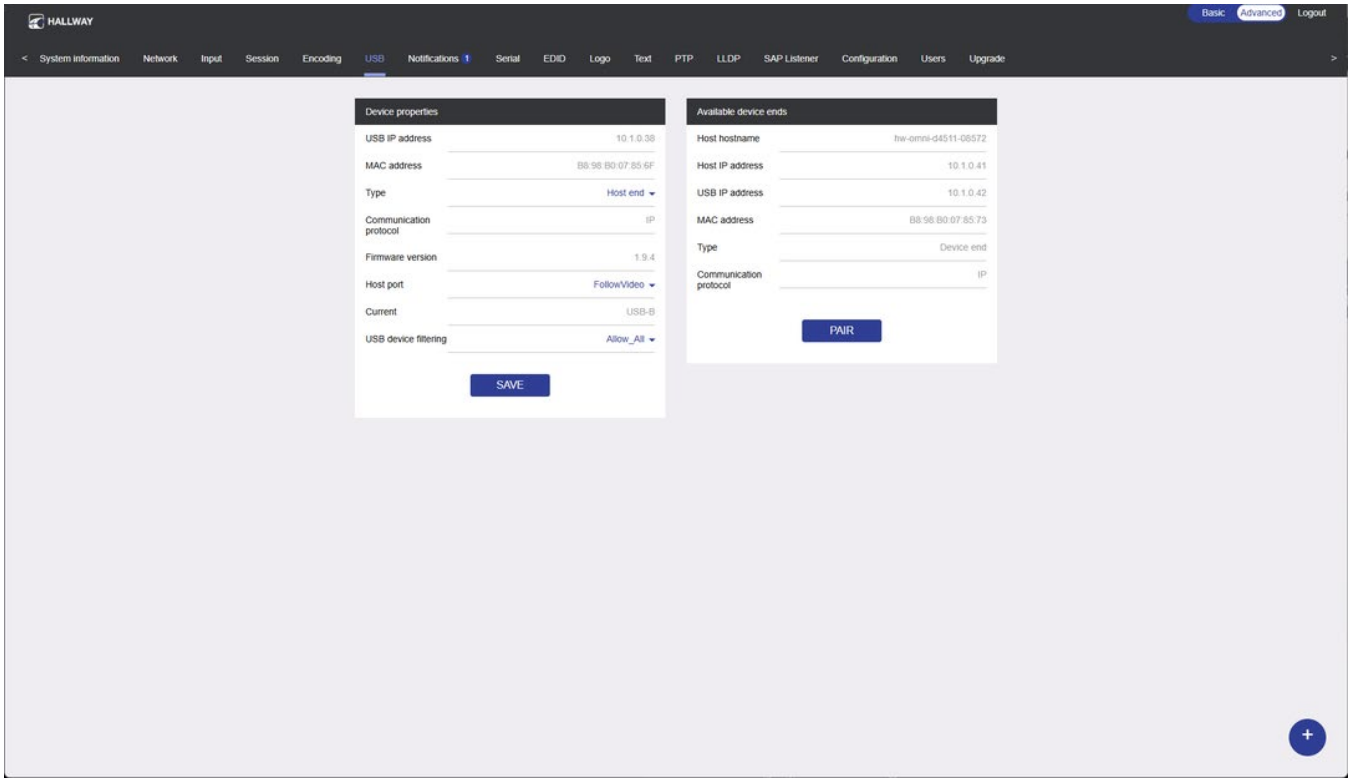
- **Enable** – Click this toggle to enable or disable thumbnails. When enabled, the toggle switch will be blue and a thumbnail preview image will be displayed. Thumbnail images are refreshed every 2 seconds.

Copy URL - Copies the thumbnail URL.

Save - Saves changes made to the encoder settings.

USB

This page is only available on the HW-OMNI-E4521. The USB page manages USB pairing between this encoder's USB host end and available USB device ends. In a typical USB extension setup, the host end connects toward the computer or USB host, while the device end connects toward USB peripherals. The page displays USB extension network information, endpoint type, firmware version, host-port behavior, filtering mode, and available device endpoints that can be paired.



Web Server — USB page

Device properties

USB IP address - Displays the IP address assigned to this device's USB extension interface.

MAC address - Displays the hardware address assigned to this device's USB extension interface.

Type - Displays the USB endpoint type. Host end indicates the USB side associated with the host computer or upstream USB host.

Communication protocol - Displays the protocol used for USB extension communication. In the example shown, the protocol is IP.

Firmware version - Displays the firmware version used by the USB extension subsystem.

Host port - Selects how the USB host port is assigned. In the example shown, FollowVideo indicates that USB host routing follows the selected or active video route.

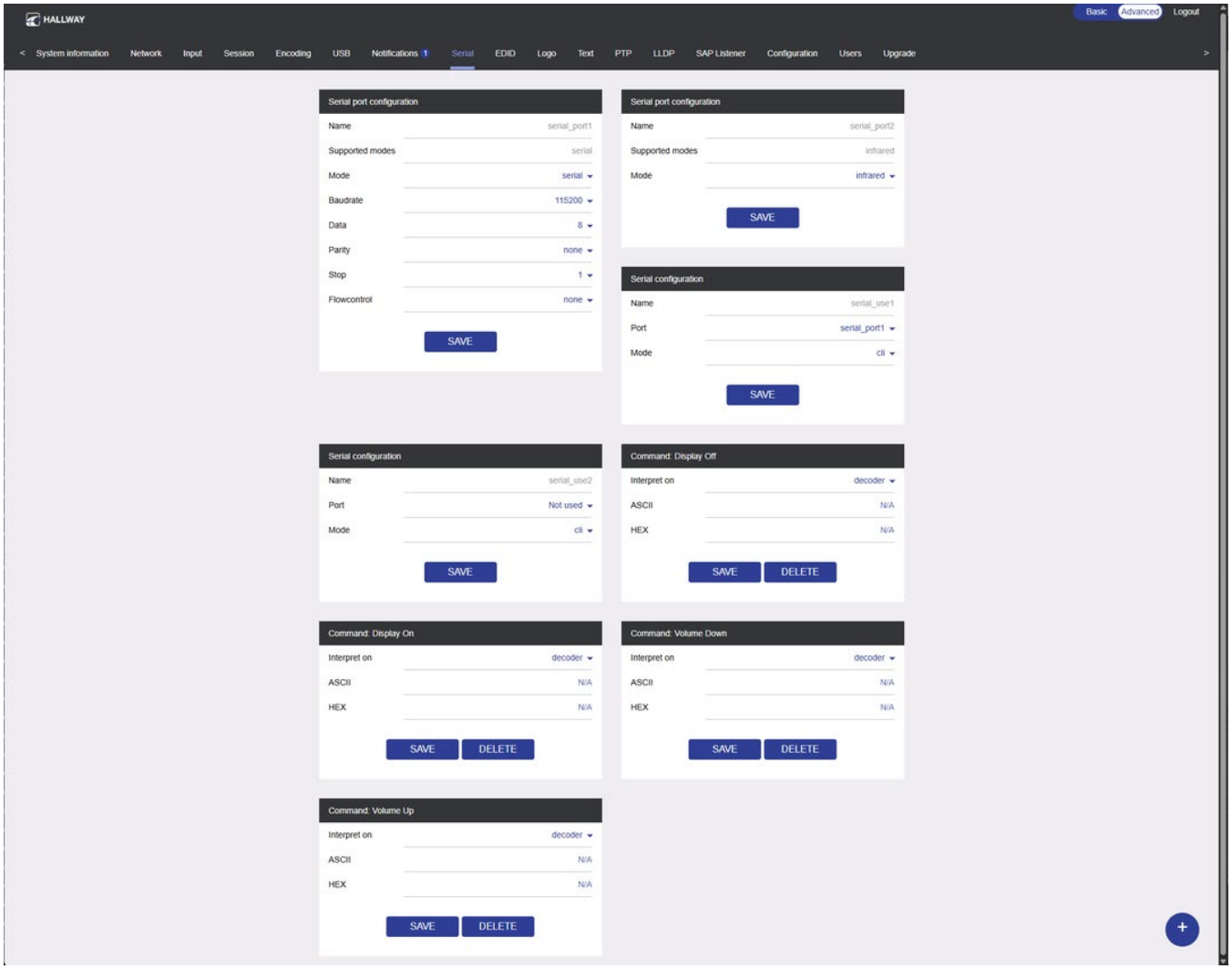
Current - Displays the currently active USB host connection or port.

USB device filtering - Selects which USB device types are allowed or blocked through the USB extension connection.

Save - Saves changes made to the USB device properties.

Serial

The Serial page configures RS-232 and IR control behavior. It includes port-level settings, serial-use assignments, and stored control commands for common display actions.



Web Server — Serial page

Serial port configuration

Name - Displays the name assigned to the serial or IR port.

Supported modes - Displays the control mode supported by the selected port, such as serial or infrared.

Mode - Selects the operating mode for the port. Available modes depend on the port hardware and supported mode.

Baudrate - Click this drop-down list to select the desired baud rate: 115200, 57600, 38400, 19200, or 9600.

Data - Selects the number of data bits used for RS-232 communication.

Parity - Selects the parity setting used for RS-232 communication.

Stop - Selects the number of stop bits used for RS-232 communication.

Flowcontrol – Selects the flow-control method used for RS-232 communication.

Save - Saves changes made to the selected serial port configuration.

Serial configuration

Name - Displays the name assigned to the serial-use configuration.

Port - Selects the serial or IR port assigned to this configuration. Select Not used when no port is assigned.

Mode - Selects how the assigned serial port is used. In the example shown, cli indicates command-line control behavior.

Save - Saves changes made to the selected serial configuration.

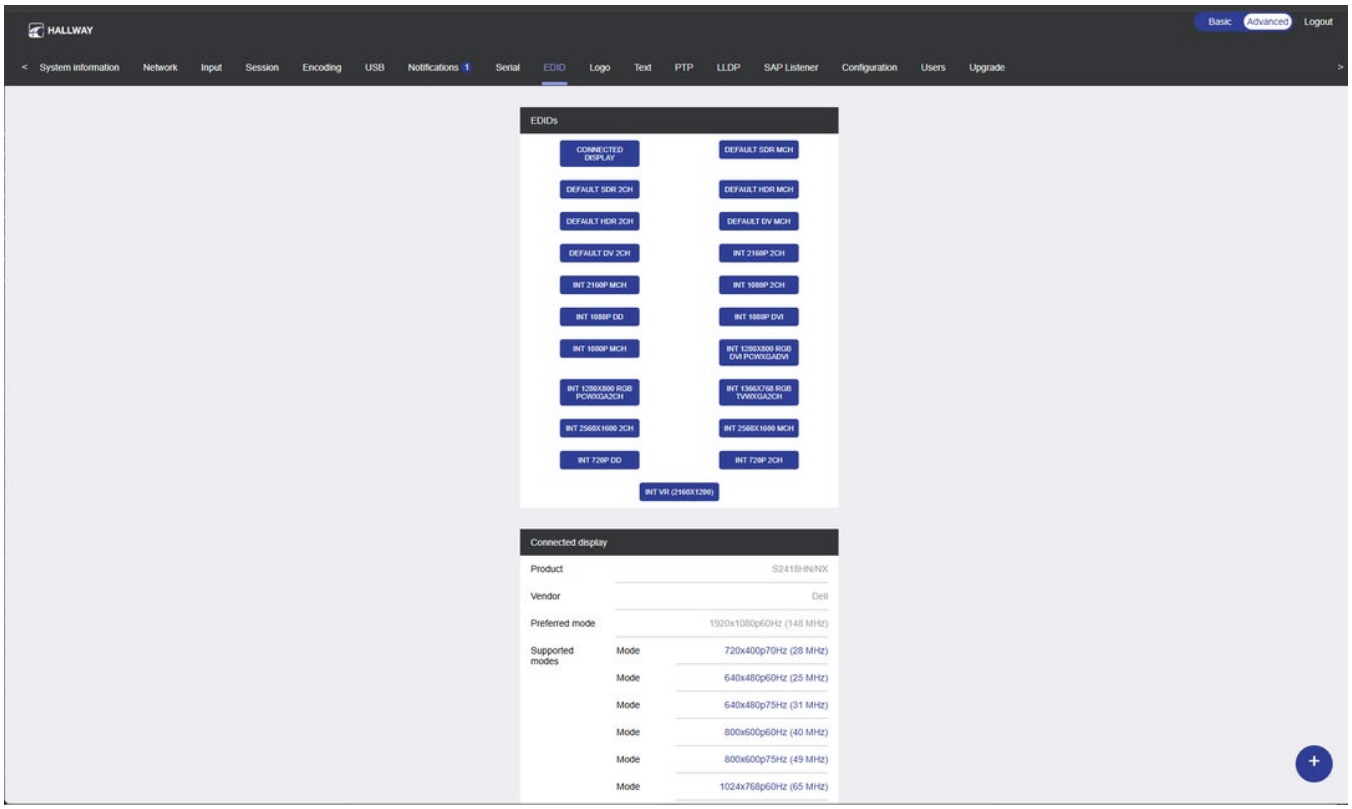
Command (Display On, Volume Up, Volume Down)

Mode - Selects the command format. In the example shown, raw indicates that the command is entered directly as ASCII or hexadecimal data

- **ASCII** - Specifies the command string in ASCII format.
- **HEX** - Specifies the command string in hexadecimal format.
- **SAVE** - Saves the command settings.
- **DELETE** - Deletes the stored command.

EDID

The EDID page selects the EDID presented by the encoder to the connected HDMI source. EDID tells the source what video and audio formats are supported, including supported resolutions, refresh rates, color formats, and audio capabilities. This helps the source choose a compatible output format.



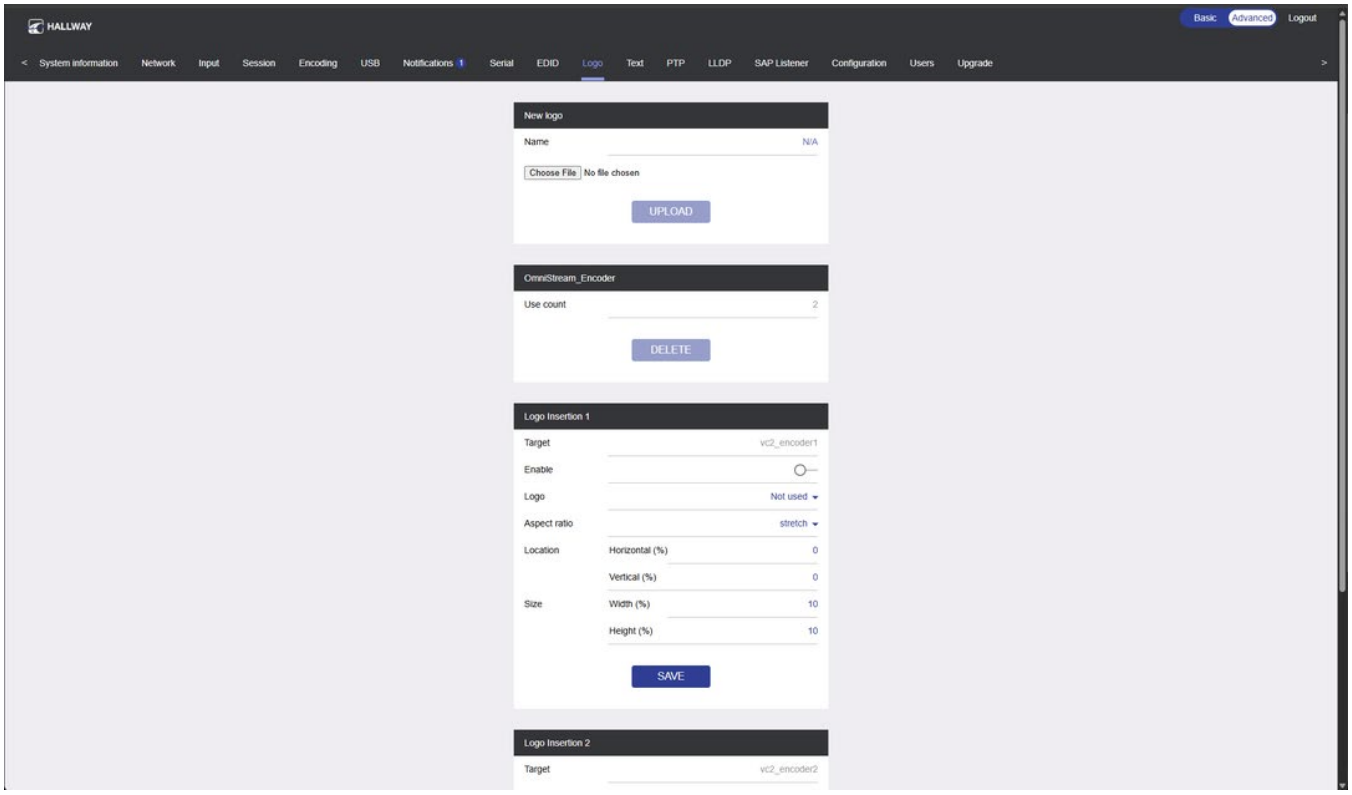
Web Server — EDID page

EDIDs

Click these buttons to select the EDID presented to the HDMI source. The detailed EDID information shown below the buttons is read-only and cannot be edited from this page.

Logo

The Logo page manages uploaded logo graphics and logo insertion settings for encoder streams. Uploaded logos can be assigned to one or more encoder outputs and displayed over the encoded video image.



Web Server — Logo page

New logo

Name - Displays the name of the selected logo file or the name assigned to a newly uploaded logo.

Choose File - Opens a file browser for selecting a logo image to upload.

Upload – Click this button to upload the selected logo image to the device.

Uploaded logo (OmniStream_Encoder)

Use count - Displays the number of times the uploaded logo is currently used by logo insertion or slate/logo settings.

Delete - Deletes the uploaded logo from the device. A logo should not be deleted while it is assigned to an active logo insertion or slate setting.

Logo insertion 1 / Logo insertion 2

Target - Displays the encoder where the logo will be inserted. In the example shown, the targets include vc2_encoder1 and vc2_encoder2.

Enable - Enables or disables logo insertion for the selected target encoder.

Logo - Selects the uploaded logo image to insert into the selected encoder stream. Select Not used when no logo should be inserted.

Aspect ratio - Selects how the logo image is scaled. Use Keep to preserve the logo's original aspect ratio. Use Stretch to scale the logo to the selected width and height.

Location / Horizontal (%) - Sets the horizontal position of the logo as a percentage of the encoded video image.

Location / Vertical (%) - Sets the vertical position of the logo as a percentage of the encoded video image.

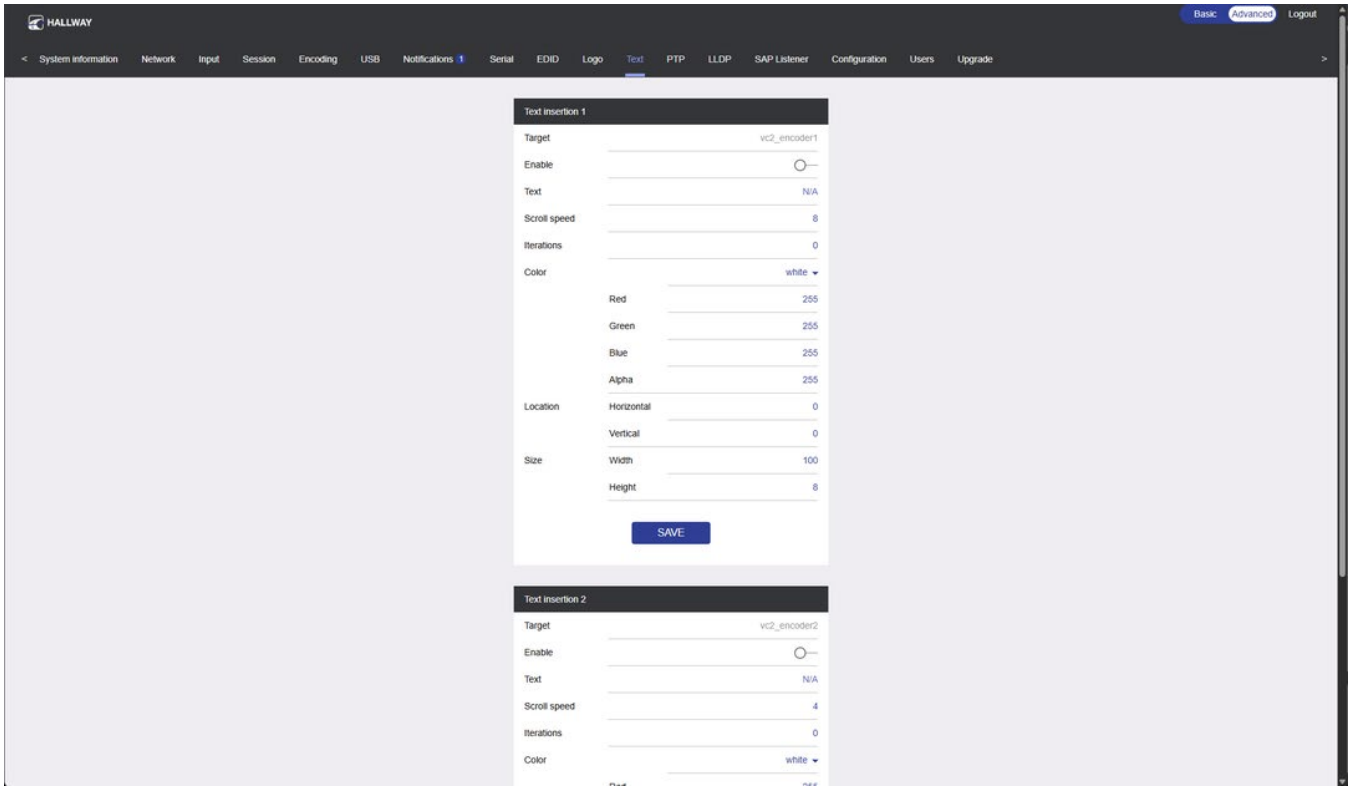
Size / Width (%) - Sets the logo width as a percentage of the encoded video image width.

Size / Height (%) - Sets the logo height as a percentage of the encoded video image height.

Save - Saves changes made to the logo insertion settings.

Text

The Text page configures text overlay insertion for encoder streams. Text insertion can be used to place a message, label, or scrolling text over the encoded video image.



Web Server — Text page

Text insertion 1 / Text insertion 2

Target - Displays the encoder where the text will be inserted. In the example shown, the targets include vc2_encoder1 and vc2_encoder2.

Enable - Enables or disables text insertion for the selected target encoder.

Text - Specifies the text string inserted into the encoded video image.

Scroll speed - Sets the scrolling speed for the inserted text.

Iterations - Sets the number of times the inserted text scrolls or repeats. A value of 0 indicates continuous scrolling.

Color - Selects the text color preset.

Red - Sets the red color value for the inserted text.

Green - Sets the green color value for the inserted text.

Blue - Sets the blue color value for the inserted text.

Alpha - Sets the transparency value for the inserted text. Higher values are more opaque; lower values are more transparent.

Location / Horizontal - Sets the horizontal position of the inserted text on the encoded video image.

Location / Vertical - Sets the vertical position of the inserted text on the encoded video image.

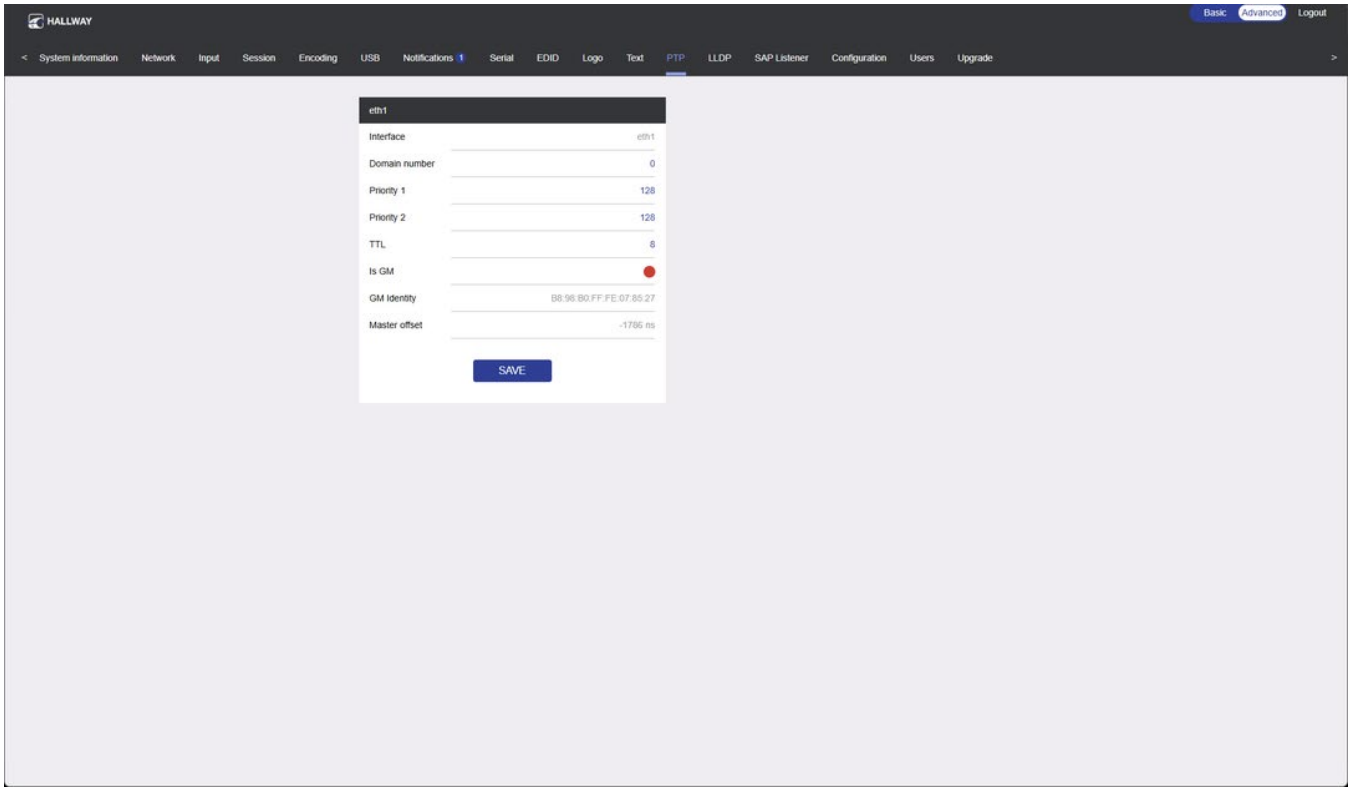
Size / Width - Sets the width of the text insertion area.

Size / Height - Sets the height of the text insertion area.

Save - Saves changes made to the text insertion settings.

PTP

The PTP page displays and configures Precision Time Protocol settings for the selected network interface. PTP is used to synchronize clocks across a packet network. PTP helps keep endpoints synchronized for time-sensitive audio and video transport. PTP synchronizes clocks of different precision, resolution, and stability to a grandmaster clock. PTP uses a Best Master Clock Algorithm to select the grandmaster clock. Priority 1 and Priority 2 influence that selection.



Web Server — PTP page

eth1

Interface - Displays the network interface used for PTP communication.

Domain number - Specifies the PTP domain used by the interface. Devices must use the same PTP domain to synchronize with one another.

Priority 1 - Sets the first priority value used when selecting the PTP grandmaster clock. Lower values have higher priority.

Priority 2 - Sets the second priority value used when selecting the PTP grandmaster clock. This value is used later in the selection process when other clock properties are equal.

TTL - Sets the Time-To-Live value for PTP multicast packets.

Is GM - Indicates whether this device is currently operating as the PTP grandmaster. The grandmaster is the primary timing source for the PTP domain.

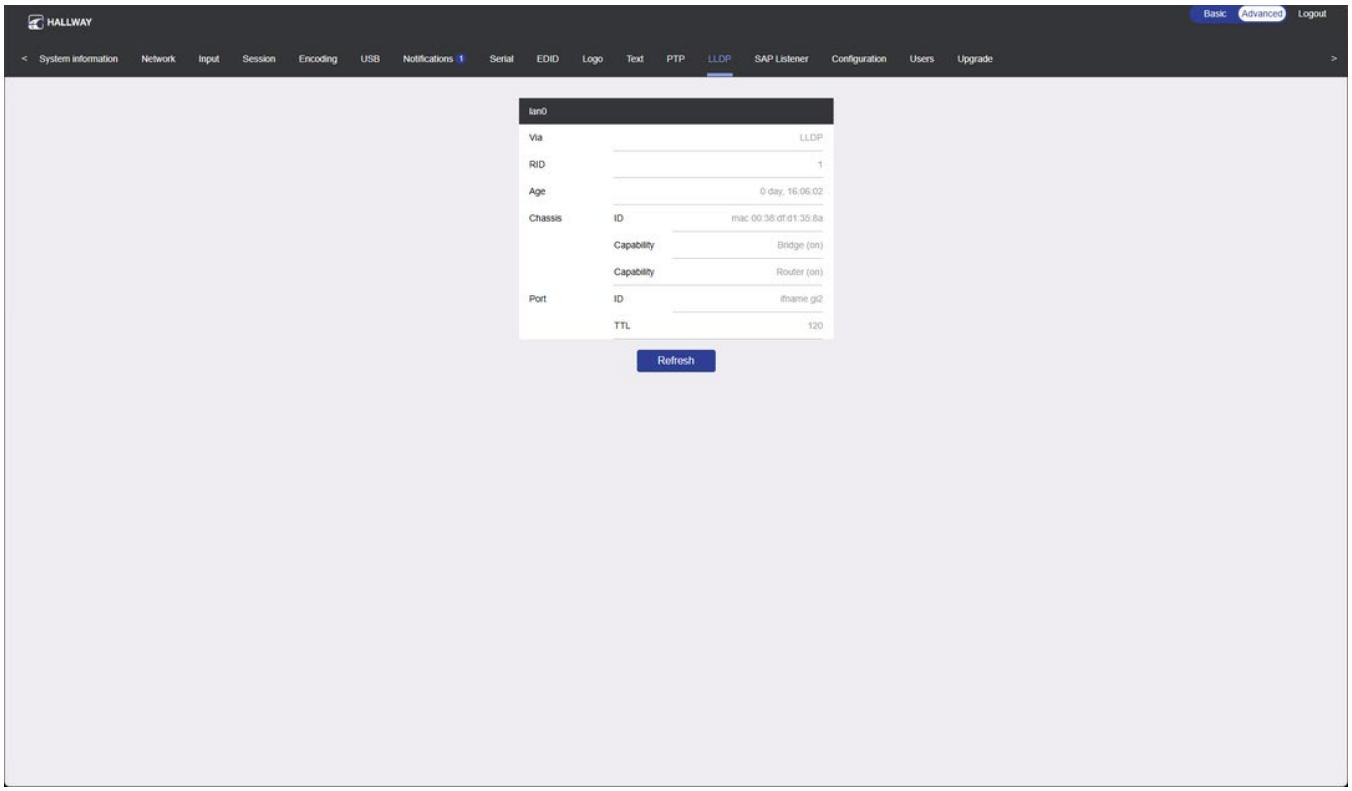
GM Identity - Displays the clock identity of the current PTP grandmaster.

Master offset - Displays the measured time offset between this device and the current PTP grandmaster. In the example shown, the value is reported in nanoseconds.

Save - Saves changes made to the PTP settings.

LLDP

The LLDP page displays Link Layer Discovery Protocol information received from the connected network device. LLDP is a Layer 2 discovery protocol used by network devices to advertise identity, capability, and neighbor information on a local Ethernet network.



Web Server — LLDP page

lan0

Via - Displays the discovery protocol used to receive the neighbor information. In the example shown, the information was received by LLDP.

RID - Displays the remote identifier for the discovered LLDP neighbor entry.

Age - Displays how long the current LLDP neighbor information has been available or retained.

Chassis

- **ID -** Displays the chassis identifier reported by the connected LLDP neighbor. This is often based on the neighbor device MAC address.
- **Capability -** Displays a capability advertised by the LLDP neighbor, such as Bridge or Router. These values describe the type of network functions supported by the connected device.

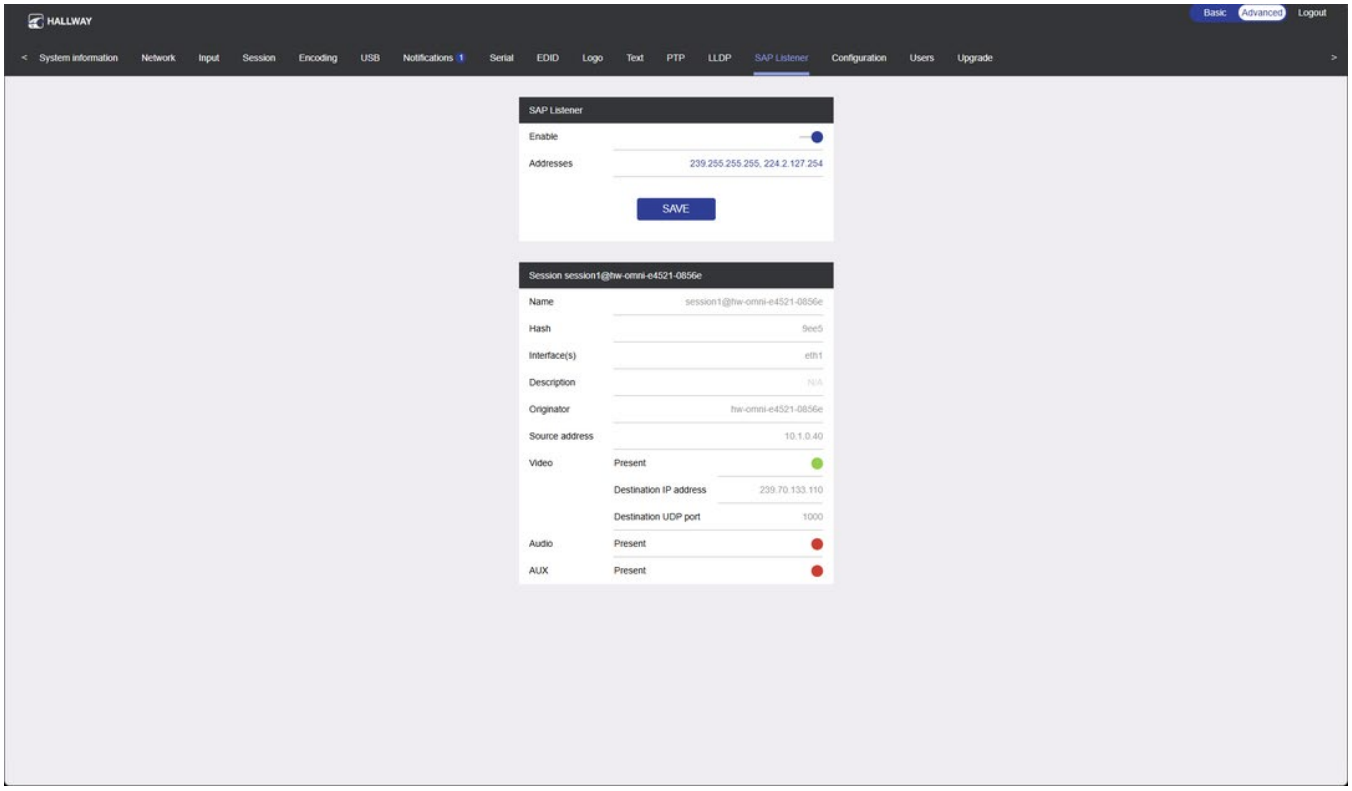
Port

- **ID -** Displays the port identifier reported by the LLDP neighbor. This identifies the switch or network device port connected to this unit.
- **TTL -** Displays the Time-To-Live value for the LLDP information, in seconds. LLDP frames include mandatory Chassis ID, Port ID, and TTL information.

Refresh - Updates the LLDP information displayed on the page.

SAP Listener

The SAP Listener page enables the encoder to listen for SAP announcements from compatible multicast stream sources. SAP (Session Announcement Protocol) is used to announce multicast session information.



Web Server — SAP Listener page

SAP Listener

Enable - Enables or disables the SAP listener. When enabled, the device listens for SAP session announcements on the configured multicast addresses.

Addresses - Specifies the multicast addresses used by the SAP listener. The device listens on these addresses for advertised stream sessions.

Save - Saves changes made to the SAP listener settings.

Session

Name - Displays the name of the discovered SAP session.

Hash - Displays the SAP session hash value used to identify the announced session.

Interface(s) - Displays the network interface on which the SAP session was discovered.

Description - Displays the session description, when provided by the stream source.

Originator - Displays the device or host that originated the SAP announcement.

Source address - Displays the source IP address of the device advertising the session.

Video

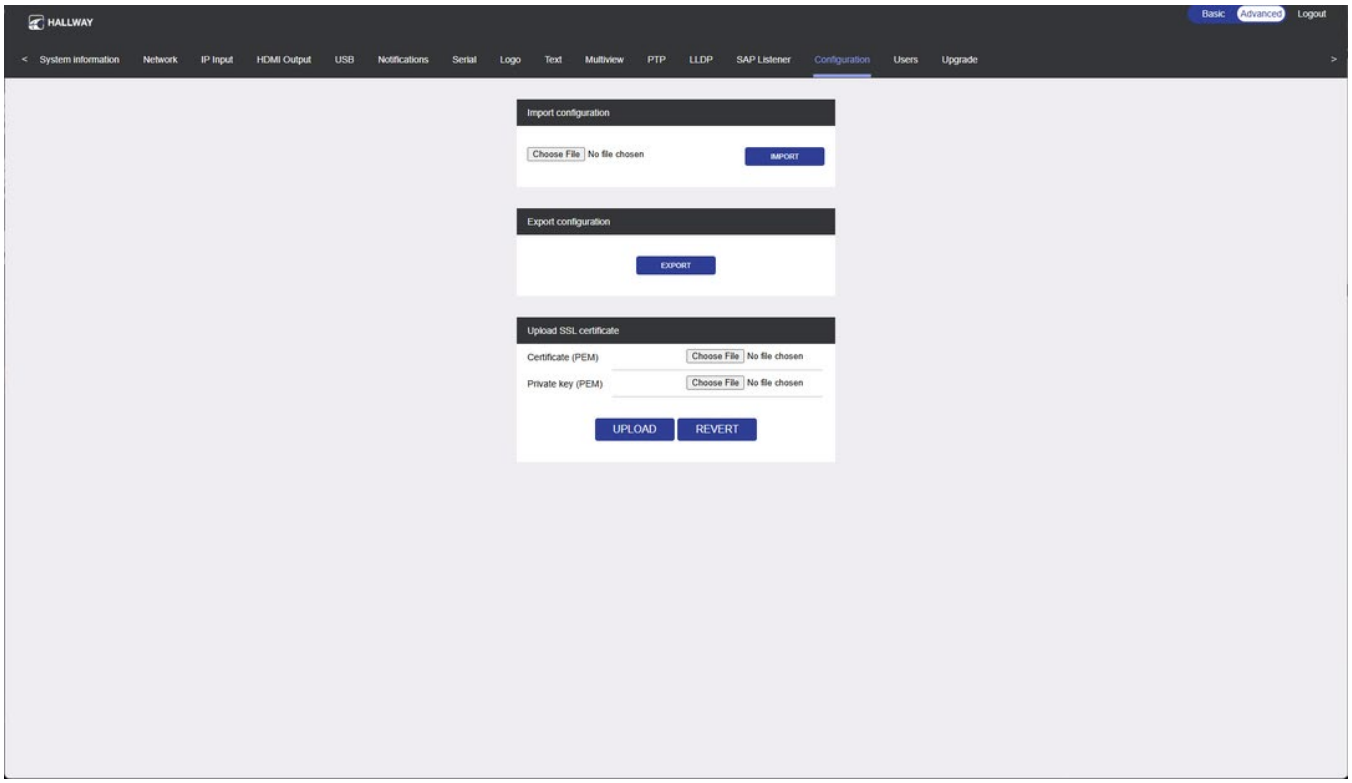
- **Present -** Indicates whether the announced session includes a video stream.
- **Destination IP address -** Displays the multicast destination IP address for the video stream.
- **Destination UDP port -** Displays the UDP port used by the video stream.

Audio Present - Indicates whether the announced session includes an audio stream.

AUX Present - Indicates whether the announced session includes auxiliary data.

Configuration

The Configuration page provides tools for importing and exporting the device configuration file and uploading an SSL/TLS certificate for the built-in web server. A server certificate and matching private key are used for HTTPS server authentication, allowing a browser to verify the device identity during a secure web connection.



Web Server — Configuration page

Import configuration

Choose File - Opens a file browser for selecting a configuration file to import.

Import - Imports the selected configuration file to the device.

Export configuration

Export - Exports the current device configuration to a file.

Upload SSL certificate

Certificate (PEM) - Selects the SSL/TLS certificate file to upload to the device. The certificate is used by the built-in web server for HTTPS authentication.

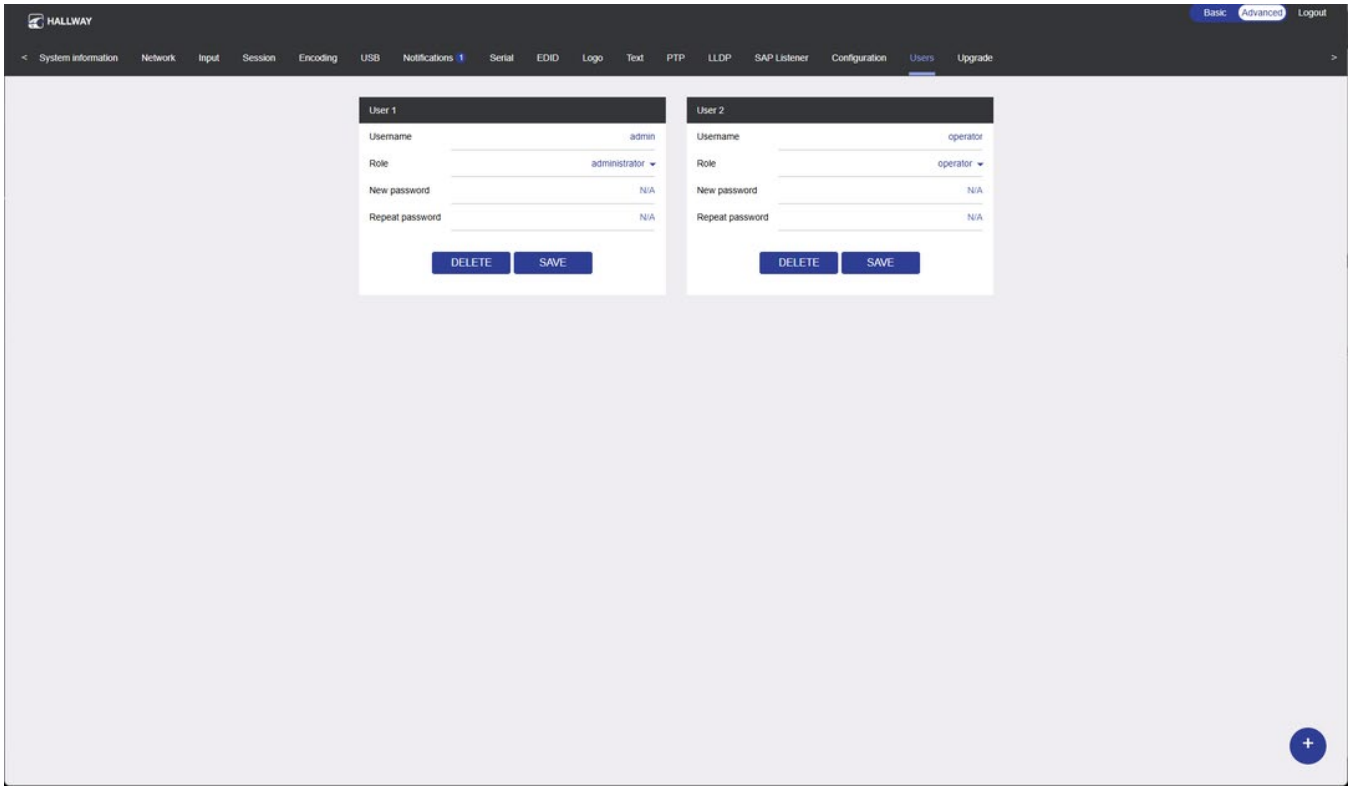
Private key (PEM) - Selects the private key file associated with the SSL/TLS certificate. The private key must match the uploaded certificate.

Upload - Uploads the selected SSL/TLS certificate and private key files to the device.

Revert - Restores the previous or default SSL/TLS certificate settings.

Users

The Users page manages local web interface user accounts. Each user entry includes a username, access role, password fields, and account management controls.



Web Server — Users page

User 1 / User 2

Username - Displays the username for the account.

Role - Selects the access level assigned to the user account. In the example shown, available roles include administrator and operator.

New password - Specifies a new password for the selected user account.

Repeat password - Confirms the new password. This value must match the New password field before the password can be saved.

Delete - Deletes the selected user account.

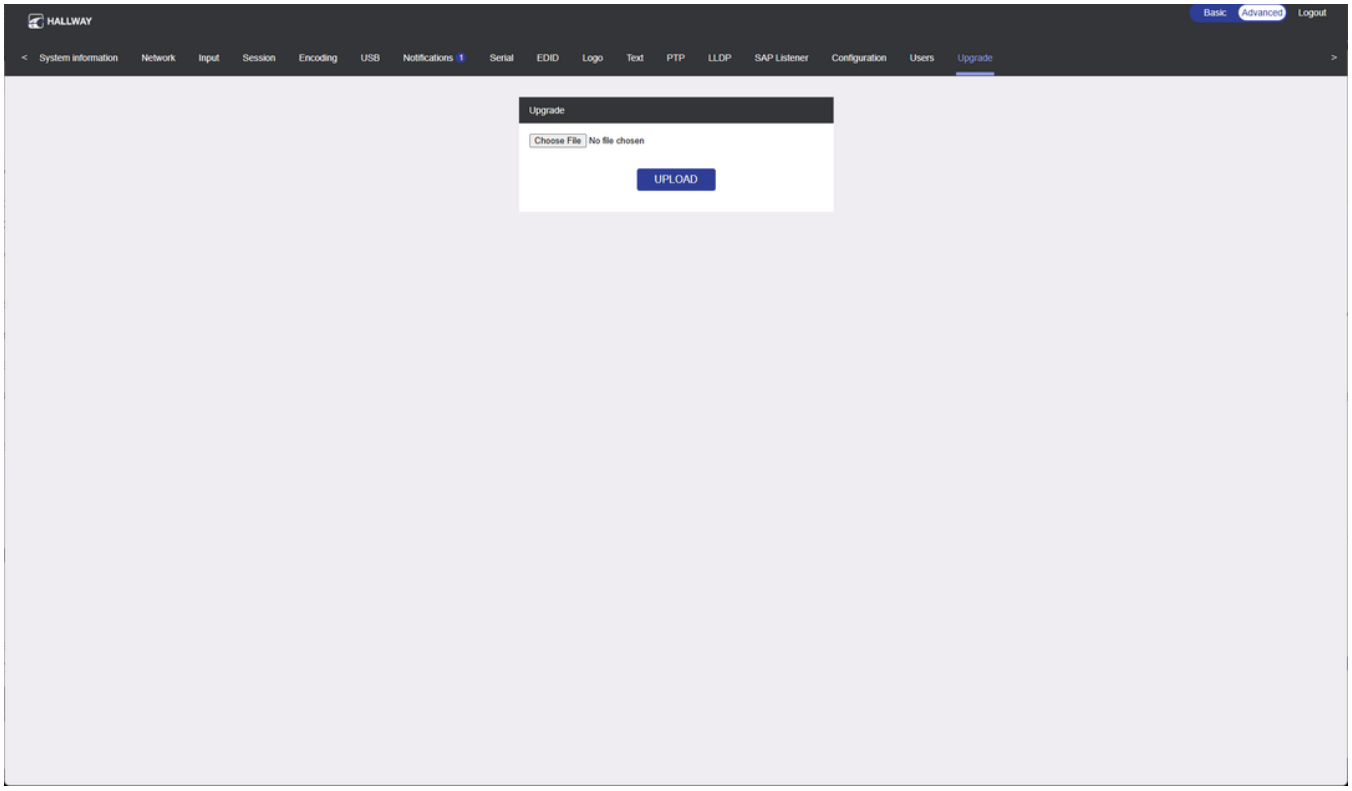
Save - Saves changes made to the selected user account.

Add user (+) - Adds a new user account.

> **NOTE:** Administrator accounts typically have full access to device configuration and user management. Operator accounts typically have limited access for day-to-day operation.

Upgrade

The Upgrade page is used to upload a firmware file and update the decoder. Use this page only with firmware provided by Atlona or an approved support source.



Web Server — Upgrade page

Choose File - Opens a file browser for selecting the firmware update file.

Upload - Uploads the selected firmware file to the device and starts the upgrade process.

> **NOTE:** Do not remove power, disconnect the network, or reboot the device while the firmware upgrade is in progress. Interrupting the upgrade process may cause the device to stop operating correctly. After the upgrade is complete, the device will reboot automatically