IP25-R Mini-Converter

SMPTE 2110 IP Rx to HDMI/SDI

Installation and Operation Guide

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AJA VIDEO SYSTEMS

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Contacting AJA Technical Support or Sales

Please have all pertinent information at hand prior to contacting AJA support or sales.

Support Telephone: +1.530.271.3190
Support Website: https://www.aja.com/support/contact
Support Email: support@aja.com
Sales Email: sales@aja.com
Shipping Address: AJA Video Systems
180 Litton Drive
Grass Valley, CA 95945, USA

Contents

Notices 2
Trademarks 2
Copyright 2
Contacting AJA Technical Support or Sales 2

Chapter 1 – Introduction 5
Overview 5
IP25-R Features 5
Supported SFP Models 6
IP25-R Key Connectivity 6
IP25-R I/O Connections 8
LEDs 9
Safeboot Button 9
Safeboot Procedure 10
Test Pattern Toggle Procedure 10
Form Factor 11
Mounting Holes 12
Workflow Diagrams 13
Truck ST2110 Camera & Switcher Monitoring 13
ST2110 UHDp60 to SDI Infrastructure & HDMI Monitoring 14
UHD Multiviewer Monitoring and Distribution 15
ST2110 HDp60 to SDI Infrastructure & HDMI monitoring 16
Simplified Block Diagram 17
IP25-R System Requirements 17
IP25-R Installation Overview 17
Initial Setup By Web Browser 18
Initial Setup By AJA eMini-Setup 18
Hardware Installation 19
Settings Retained 19
REST API Documentation 19

Chapter 2 – eMini-Setup 20
Overview 20
Downloading & Installing eMini-Setup 20
Running eMini-Setup 20
Windows Startup 20
macOS Startup 20
Operating eMini-Setup 21
Control LAN Tab Screen 22
Media LAN 1 & 2 Tab Screens 24
Info Tab Screen 26

Chapter 3 – WebUI 27
Introduction 27
Remote Control 27
Networking Option 27
WebUI Overview 28
Menu Pane 28
Device Info Pane 29
Alarms Pane 29
Network Pane 29
Dynamic Controls 29
Pipeline Select Tabs & Hardware Output Map 30
Pipeline Pane 30
Video Preview 31
Video Preview Status Pane 32
Input and Output Configuration Panes 32
Viewing a Configuration Pane 32

Input Configuration Pane (Source Select) 34
Output Configuration Pane 35
IP Config 37
Inputs Tab 37
Global Ctrl (Control) Tab 42
PTP Tab 44
Presets 45
Presets Controls 45
Using Presets 46
System Settings 51
System Tab 51
Network Tab 53
Firmware Tab 55
Statistics Tab 58

Appendix A – Specifications 60
IP25-R Tech Specs 60

Appendix B – Safety and Compliance 62

5-Year Warranty and Liability Information 70

AJA Software License Agreement. 71

Index. 74

Chapter 1 – Introduction

Overview

The IP25-R is a ST2110 to HDMI and SDI monitoring product housed in AJA's latest mini-converter frame. IP25-R has two SFP28 cages that support 10 and 25 Gigabit (10/25GigE) SFPs to receive ST2110.

ST2110 to baseband is provided via 2x HDMI 2.0 outputs and 4x 12G-SDI capable BNC outputs. It also comes with a 1GbE RJ45 connector for setup and control.

AJA's IP25-R is designed for point of use applications for reception and decoding of IP based video sources to multiple 12G SDI and HDMI outputs for monitoring needs. Rugged and compact, the IP25-R provides the bridge between Baseband and IP video for a range of applications, such as receiving video over IP from remote facilities in post production, source monitoring, digital signage, and video walls. IP25-R eases the cost of extensive monitoring distribution in a facility.

The IP25-R Mini-Converter Receiver decodes SMPTE 2110 and formats the data for HDMI and SDI outputs. The audio associated with each video stream is extracted, aligned, and then embedded in the selected SDI and HDMI signal. The Ancillary associated to each video stream is embedded in the selected SDI signal, HDMI does not support ancillary data embedding.

The IP25-R can provide RGB (rather than YCbCr) to a compatible monitor if the monitor requires it.

IP25-R Features

- 2x SFP28 cages supports 10GbE and 25GbE SFPs for ST2022-7 redundancy
- In-Band (via SFPs): PTPv2/ST2059-2, control via NMOS, AJA REST API and Ember+
- Out-of-band (via 1GbE RJ45): control via NMOS, AJA REST API and Ember+
- ST2110-20 Video: Supports up to 4 RX redundant streams at the same time, bandwidth dependent
  - 10-bit 4:2:2 up to 4096x2160p
- ST2110-30 Audio: Supports up to 4 RX redundant streams at the same time
  - Up to 16 channels per stream
  - 1ms and 125us timing
- ST2110-40 Ancillary: Supports up to 4 RX redundant streams at the same time
- ST2059-2 (PTPv2) accessed only via Media net SFPs
- LLDP

- DNS SD
- Auto-Circulate

Supported SFP Models

- AJA tests common SFPs in the market but does not make specific recommendations for SFP models. AJA has tested several SFP models from FS.com, running Arista firmware, with good success. It is the customers' responsibility to ensure the selected SFP models are validated in their systems.
  - Ensure compatible SFPs are used on both ends of a fiber.
  - Be sure your SFP brand and speed is supported by your Ethernet Switch.

IMPORTANT: Ethernet speeds must match: 25GbE must feed 25GbE, 10GbE must feed 10GbE. Multi-rate 10/25GbE SFPs can be used but ensure the speed is set correctly at each end.

- *25GBASE-SR SFPs (SR => Short range) use 850nm wavelength over Multimode fiber up to 100m of OM4 fiber (70m of OM3).*
- *25GBASE-LR SFPs (LR => Long range) use 1310nm wavelength over Single Mode fiber up to 10km.*

IMPORTANT: Only fiber SFPs are supported. Direct Attach Copper (DAC) are NOT supported. Other options exist so be sure to match SFP capabilities with the correct fiber type.

IP25-R Key Connectivity

YCbCr 10 Bit 4:2:2 ST2110-20 Video Formats

- (4K) 4096 x 2160p 23.98, 24
- (UltraHD) 3840 x 2160p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
- (2K) 2048 x 1080p 23.98, 24
- (HD) 1920 x 1080p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
- (HD) 1920 x 1080i 50, 59.94, 60
- (HD) 1280 x 720P 50, 59.94, 60

Media Transport Interfaces

- SMPTE ST 2110 (-10, -20, -21, -30, -40)
- 2x SFP28 Cages - SFPs not included

Input IP

- SMPTE ST2110-20 Video: Up to 4 Video stream RX support: format and available BW dependent
- ST2022-7 Class A,B,C,D Redundancy
- Rx support for Narrow and Wide Senders
- SMPTE ST2110-30 Audio
  - Up to 4 stream input
  - Up to 16-channel audio per stream, 24-bit per channel, 48 kHz synchronous
  - 1ms and 125us timing
- SMPTE ST2110-40 Ancillary
  - Up to 4 stream input

Output IP

- Not Supported on this product. It is an RX product only

HDMI Output

- 2x HDMI 2.0b outputs
- Support up to 4K video, as supported by ST2110 core
- EDID: Shall create output as defined by incoming signal SDP.
- HDCP is NOT supported
- HDR aware with infoframe passthrough and configuration for Colorimetry and Transfer Characteristic
- Cable strain relief included

SDI Output

- 4x 12G Full size BNC SDI outputs
- Support up to 12G SDI video, as supported by ST2110 core
- HDR aware with infoframe passthrough and configuration for Colorimetry and Transfer Characteristic

Discovery, Registration and Control

- NMOS Tx/Rx support according to standards IS-04 v1.3 and IS-05 v1.1
- LLDP
- REST API

PTP

- Compliant with PTPv2 / IEEE 1588-2008/ST2059-2

Size (w x d x h)

- 5.0" x 8.09" x 1.65" (127 x 205.49 x 41.81 mm)

Weight

- 1.92 lbs (.87 kg)

Power

- Enclosure: 10-18VDC regulated, 4-pin mini-XLR, 16W typical 3G-SDI, 21W typical 12G-SDI, 25W max
- AC Adapter included: 100-240VAC, 50/60 Hz, universal input, 60W
- Optional spare AC adapter sold separately, AJA-PWR-12-60W (109420-00, 100591-00)

Environment

- Safe Operating Temperature Range: 0 to 40 C (32 to 104 F)
- Safe Storage Temperature (Power OFF): -40 to 60 C (-40 to 140 F)
- Operating Relative Humidity: 10-90% noncondensing
- Operating Altitude: <3,000 meters (<10,000 feet)

IP25-R I/O Connections

Figure 1. IP25-R Connections, Top View

Figure 2. Connections, Input (Front) View

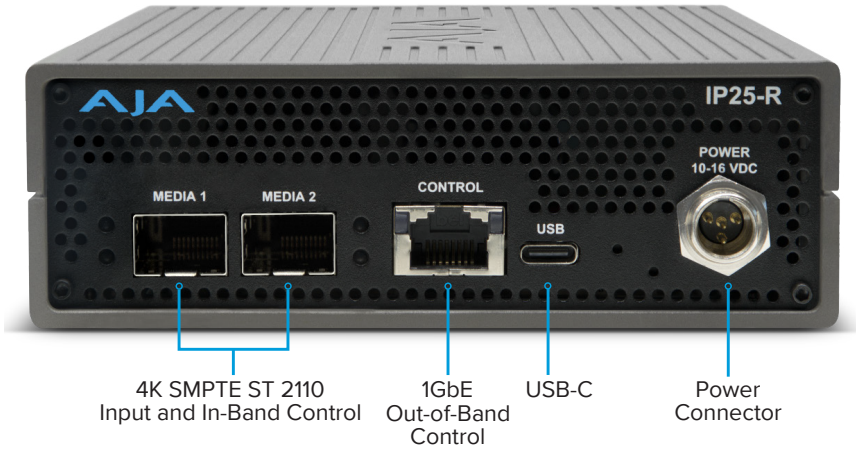
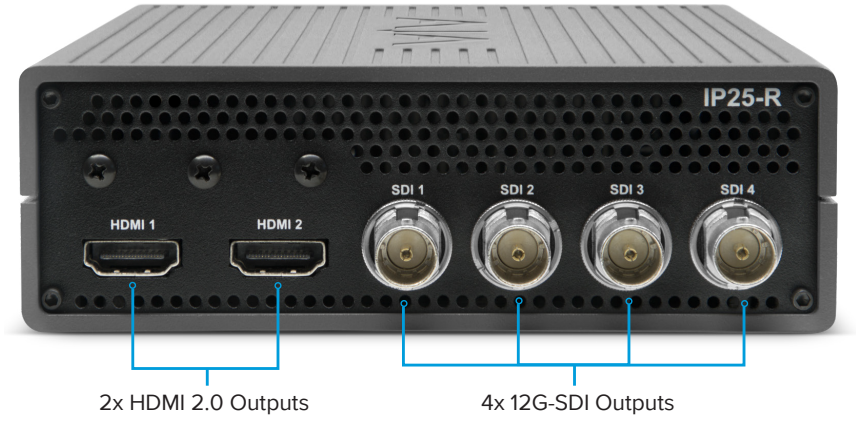
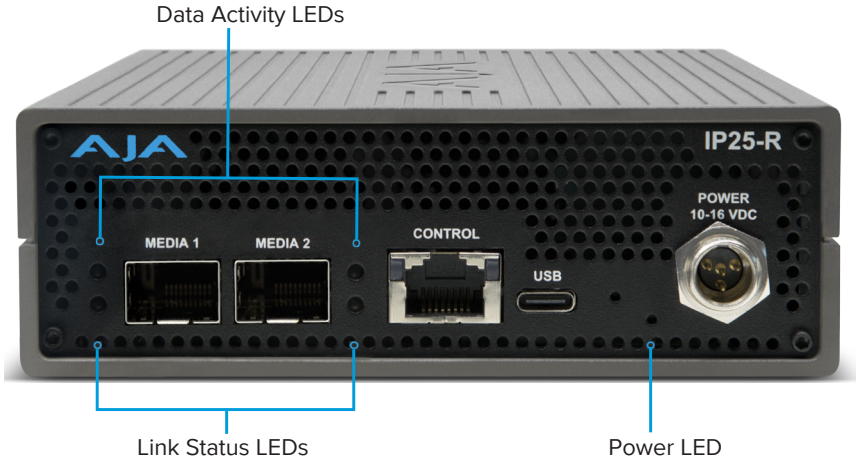


Figure 3. Connections, Output (Rear) View



LEDs

Figure 4. IP25-R (Front View) LEDs



Media 1 & Media 2 Link Status LEDs

- Blue - 25GbE
- Green - 10GbE
- No Light - not connected

Media 1 & Media 2 Data Activity LEDs

- Flashes yellow when there is data activity

Power LED

- No Light - No Power (Off)
- Green - Power (On)

Safeboot Button

Figure 5. IP25-R (Front View) Safeboot Button

On the front of IP25-R, next to the USB port, there is a recessed Safeboot button.

The Safeboot button provides two functions: it powers the IP25-R up into Safeboot mode, or, toggles the Test Pattern off/on which displays details of the IP25-R in case the IP is not known. We detail the steps for both procedures below.

Safeboot Procedure

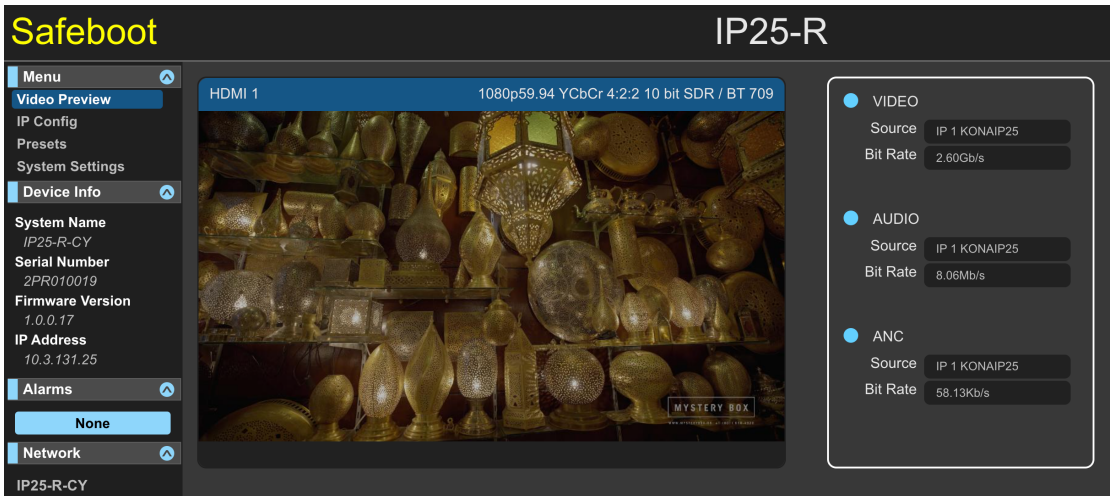
There may be times when it is requested to start the IP25-R in Safeboot mode. To start in Safeboot mode:

1. Disconnect power from IP25-R.
2. Using a nonconducting rod (such as a plastic coated paper clip, a pen tip, or a wooden stick) press and hold the recessed Safeboot button.

CAUTION: *Avoid using metal items.*

3. Apply power to the IP25-R, while continuing to hold the Safeboot button down.
4. You may release the Safeboot button once you see that the WebUI has come back up.
5. Once the IP25-R comes up in Safeboot mode, the top-left of the WebUI will display '**Safeboot**' in yellow. The **Firmware Version** under **Device Info** will show the firmware loaded by the Safeboot and which is currently running.

Figure 6. IP25-R WebUI showing Safeboot status



Test Pattern Toggle Procedure

There may be times where the IP address of the IP25-R is not known and it is acceptable to temporarily set the unit offline in order to determine its IP address.

To Enable the Test Pattern:

1. The IP25-R must be powered-up already.
2. Using a nonconducting rod (such as a plastic coated paper clip, a pen tip, or a wooden stick) press and hold the recessed Safeboot button until the SDI and HDMI outputs all switch to the Test Pattern.

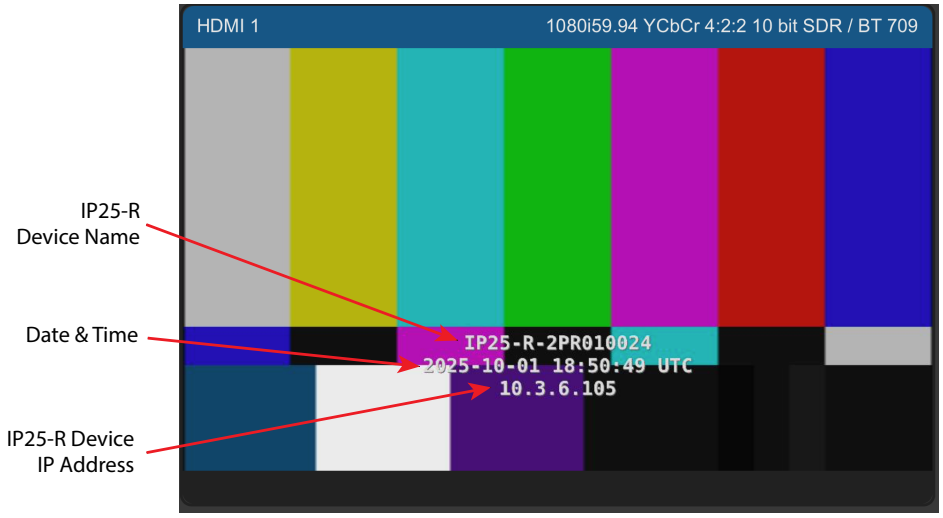
CAUTION: *Avoid using metal items.*

3. The Test Pattern will also include a useful information overlay:
   - **Name** given to the IP25-R
   - **Date and Time**
   - **IP Address** of the IP25-R Device (used to connect the WebUI)

The overlay appears in all video outputs.

*NOTE: The overlays always appear in WebUI **Video Previews** of Test Patterns.*

Figure 7. IP25-R Example Test Pattern with Information Overlay



The above short procedure ensures that a subsequent WebUI instance will be in fact connected to the correct known physical device; (i.e. the device having that overlay IP address on its output Test Patterns).

To Turn Off the Test Pattern:

1. Using a nonconducting rod, press and hold the recessed Safeboot button until the SDI and HDMI outputs return to their normal Pipeline routing setup.

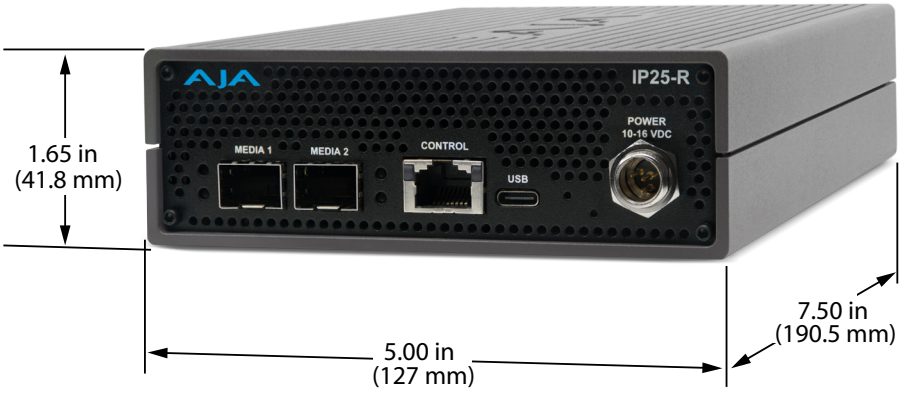
   --or--

1. Under the **System Tab,** use the WebUI to toggle the Test Pattern Off. *(See "System Tab" on page 51).*

NOTE: If you toggle the Test Pattern back on in the WebUI after a Test Pattern Toggle On/Off action (i.e. after previously using the Safeboot button), the information overlays will no longer appear in Test Patterns on the video outputs.

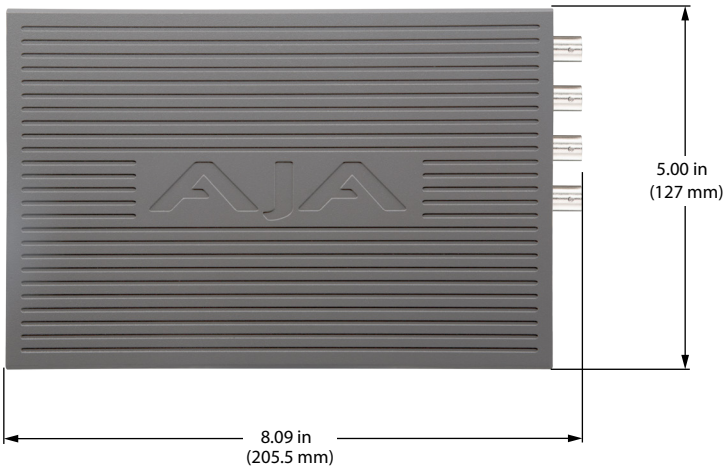
Form Factor

Figure 8. IP25-R Dimensions (oblique view)



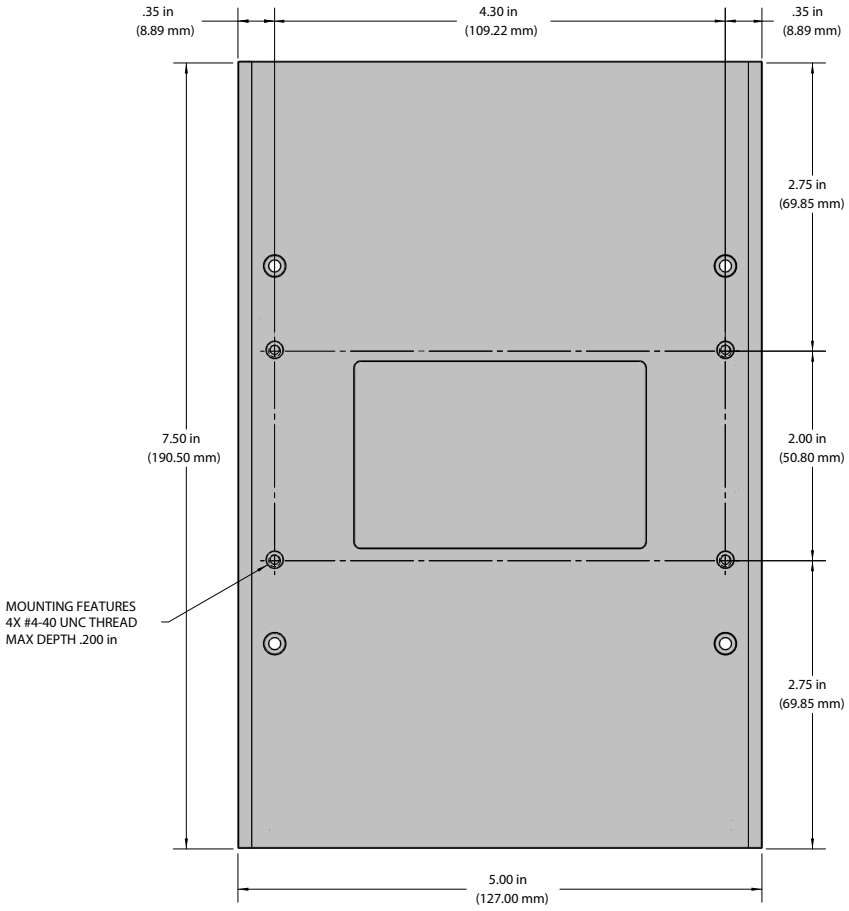
The single-rack-height, <1/3-wide (5.000") form factor supports up to three devices per 1RU high rack space.

Figure 9. IP25-R Dimensions (top view)



Mounting Holes

Figure 10. IP25-R Mounting Holes (bottom view)



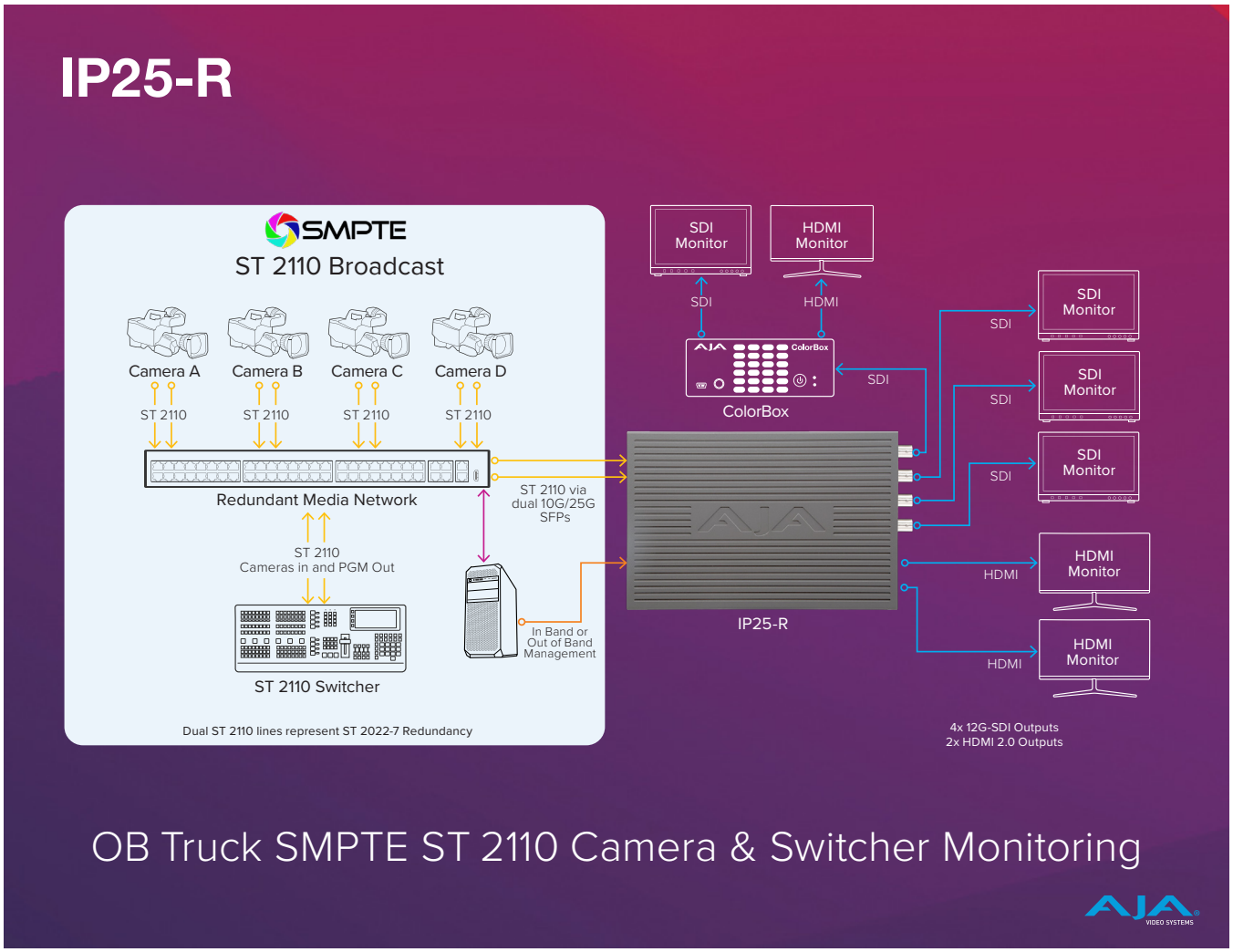
Above we show the bottom mounting holes for IP25-R. They may be used for mounting to available third-party 1RU rack shelves.

NOTE: Threads inside the holes have a maximum depth of 0.20 inches take 4-40 Phillips flat head screws.

Workflow Diagrams

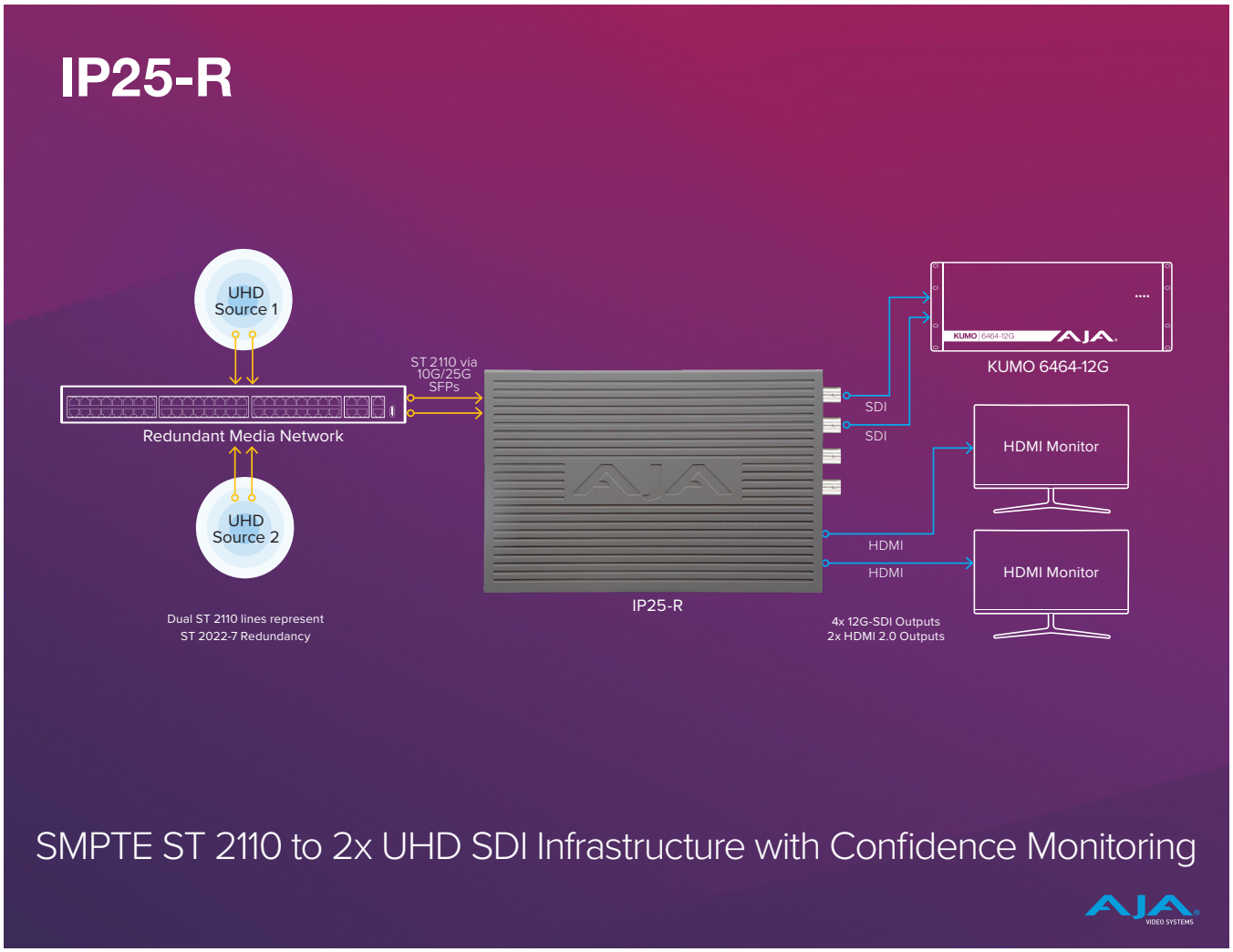
Truck ST2110 Camera & Switcher Monitoring

Figure 11. IP25-R Workflow Example #1



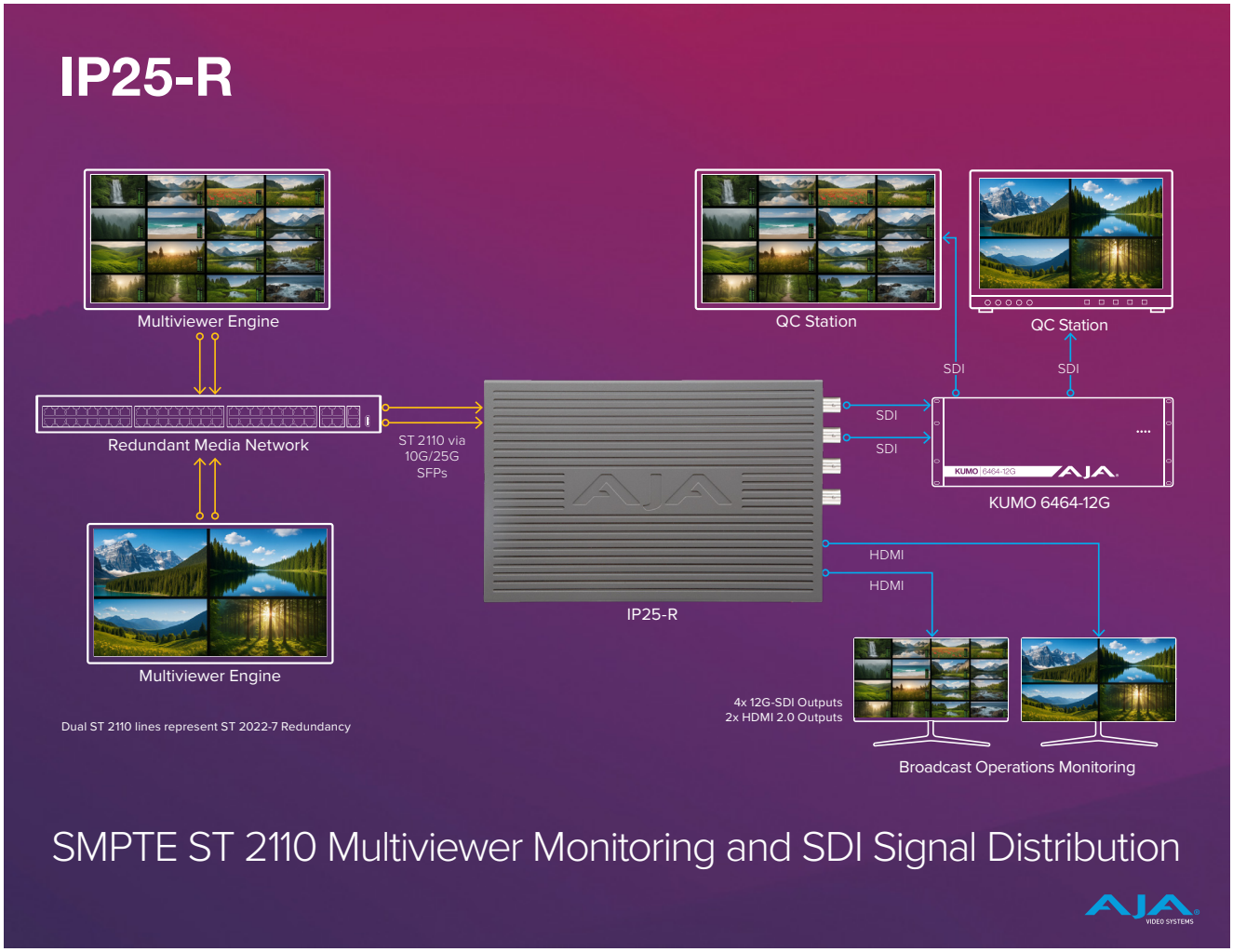
- IP25-R HDMI Out 1 and HDMI Out 2 feed directly to two HDMI monitors.
- IP25-R SDI Out 1 feeds to an AJA Colorbox for Color verification.
- AJA ColorBox HDMI Out sends to an HDMI Monitor.
- AJA ColorBox SDI Out sends to an SDI Monitor.
- IP25-R SDI Out 3 and SDI Out 4 send directly to SDI Monitors.

Figure 12. IP25-R Workflow Example #2



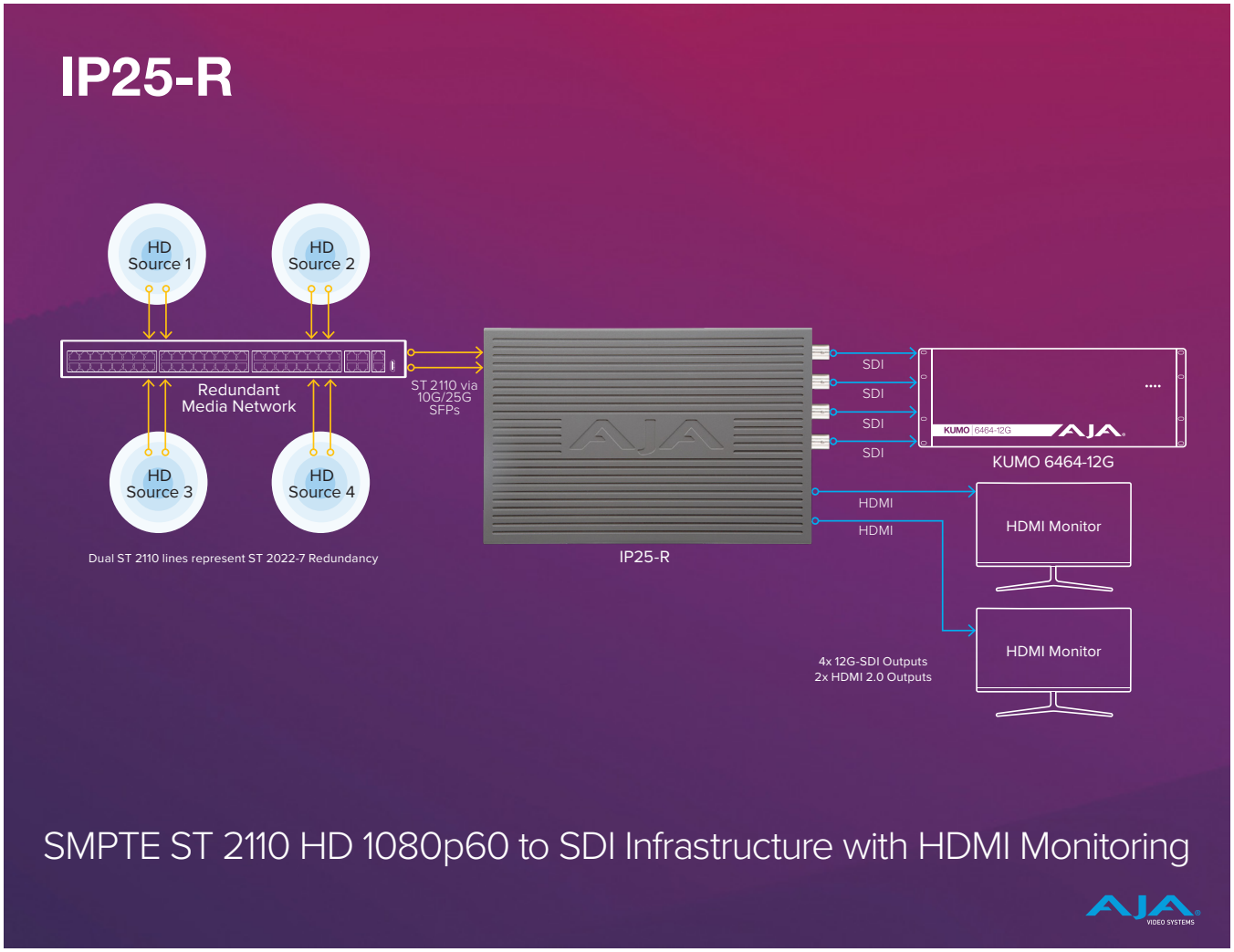
- IP25-R RX1 routes internally to HDMI Out 1 and sends to an HDMI Monitor.
- IP25-R RX1 routes internally to SDI Out 1 and sends to an SDI infrastructure (AJA KUMO 6464 12G Router).
- IP25-R RX2 routes internally to HDMI Out 2 and sends to an HDMI Monitor.
- IP25-R RX2 routes internally to SDI Out 2 and sends to an SDI infrastructure (KUMO 6464 12G Router).

Figure 13. IP25-R Workflow Example #3



- IP25-R RX1 routes internally to HDMI Out 1 and sends to an HDMI Monitor.
- IP25-R RX1 routes internally to SDI Out 1 and sends to an SDI infrastructure (AJA KUMO 6464 12G Router).
- IP25-R RX2 routes internally to HDMI Out 2 and sends to an HDMI Monitor.
- IP25-R RX2 routes internally to SDI Out 2 and sends to an SDI infrastructure (KUMO 6464 12G Router).

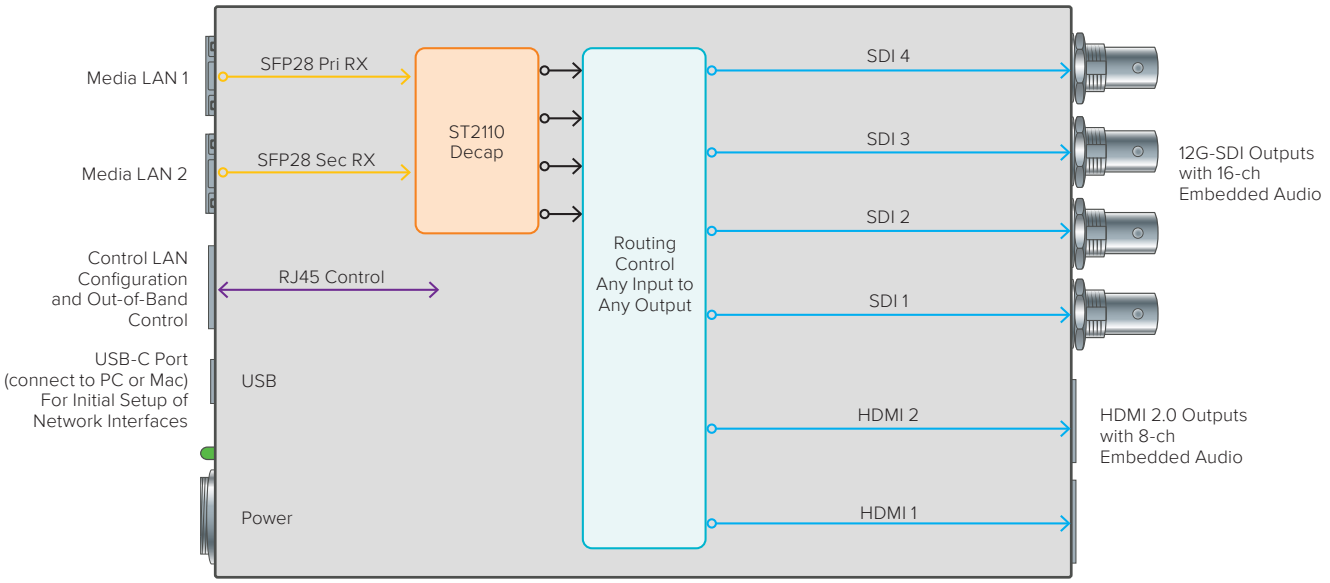
Figure 14. IP25-R Workflow Example #4



- IP25-R RX1-4 routes internally to SDI Out 1-4 into SDI infrastructure (KUMO 6464 12G Router).
- IP25-R HDMI Out 1 and HDMI Out 2 can be fed by existing RX signals.

Simplified Block Diagram

Figure 15. IP25-R Simplified Block Diagram



IP25-R System Requirements

Remote computer configuration and control is accomplished using the IP25-R internal web server ('WebUI'). A macOS or Windows computer with a web browser installed is all that is required. Additionally, initial configuration using eMini-Setup will require a USB cable between the host computer and the IP25-R Mini-Converter.

NOTE: Chrome and Firefox are the preferred web browsers for control on Windows. Safari is the preferred web browser for control on macOS. Other web browsers may work, but AJA cannot guarantee consistent operation for all web browsers or web browser versions.

IP25-R Installation Overview

Detailed instructions are provided in *"Chapter 2 – eMini-Setup" on page 20* and *"Chapter 3 – IP25-R Web Interface" on page 21.*

As an overview, however, there are two methods available for initial setup for IP25-R:

1. Using a web browser on the host computer connected to the same network as the IP25-R Mini-Converter, or
2. Using the AJA eMini-Setup application running on the host computer that is directly connected to the IP25-R Mini-Converter via USB.

Initial Setup By Web Browser

NOTE: Chrome and Firefox are the preferred web browsers for control on Windows. Safari is the preferred web browser for control on macOS. Other web browsers may work, but AJA cannot guarantee consistent operation for all web browsers or web browser versions.

IP25-R requires a network connection for initial configuration, control and firmware updates. IP25-R Mini-converters are shipped from the factory with DHCP enabled, and support automatic network discovery via SSDP and MDNS.

To Set Up the Unit with a Web Browser

1. Connect the IP25-R Control Port to the intended network with an Ethernet cable.
2. The intended network's DHCP Server will assign an IP address and the IP25-R Mini-Converter will join that network.
3. Locate and connect to the IP25-R Mini-Converter.

Windows PC Host

A. Open Windows Explorer.

B. Navigate to the Network.

C. Click on the Network to enumerate network devices.

D. Search for either "IP25-R" or the device's Serial Number.

E. Double-click on the intended IP25-RMini-Converter. The host machine web browser will launch and display the WebUI for the IP25-R device.

macOS Host

A. Go to System Preferences > Sharing and turn on File Sharing.

B. Open the Finder Window.

C. Navigate to Shared > All…

D. Click on **All…** to enumerate network devices.

E. Search for "IP25-R" or the device's Serial Number.

F. Double-click on the intended IP25-RConverter. The host machine web browser will launch and display the WebUI for the device.

NOTE: If the above does not work, then you will need to download and install an MDNS browser to assist with discovering network devices on a macOS host.

Initial Setup By AJA eMini-Setup

1. Acquire AJA eMini-Setup (latest available version) from the AJA website for either macOS or Windows:

   https://www.aja.com/family/software#eminisetup

2. Install eMini-Setup:

   A. Unzip the Installer.

   B. Run the .dmg file on macOS or the .msi file on Windows.

3. Connect Power to your AJA Ethernet equipped Converter.
4. Connect the USB config cable to the computer running eMini-Setup.
5. Open eMini-Setup and configure the device's network settings.

NOTE: DHCP is enabled by default, and if the device is connected to a DHCP server the IP address field will populate.

6. Enter the IP address into a browser window. The WebUI for your AJA device will display.
7. Use the WebUI to fully configure and control your AJA Device.

Hardware Installation

Temperature of Unit

The IP25-R Mini-Converters pack an unprecedented feature set into the mini converter box. As a result, the unit uses approximately 13 watts of power. It will be very warm to the touch, which is normal. The unit is engineered to operate across the full temperature range, from 0 to 40 degrees C.

Access to Air for Proper Cooling

The IP25-R uses front-to-back cooling. Ensure to mount it in a location where it has access to air for proper cooling.

Number of LAN Connections

Three LAN connections to the unit are not necessarily required on an ongoing basis. If it is desirable for your installation, after the IP25-RMini-Converter is set up, you can access all control parameters through one of the Media LANs with the appropriate network configuration. See *"Networking Option" on page 27* for more information.

Settings Retained

The current IP25-RMini-Converter's configuration settings are retained even when powered off, so subsequent installations for an identical decoding session can be done with the following simple steps:

1. Apply power to the IP25-RMini-Converter.
2. Connect the IP25-R unit to your network using the Control LAN, Media LAN 1 and Media LAN 2 and connect the unit's inputs and outputs.

REST API Documentation

AJA's REST automation API provides a platform from which you can issue commands to an AJA device's internal WebUI, allowing remote systems the ability to control AJA embedded or networked devices. With this control framework, you can build integration and automation scripts, using any scripting language, allowing you to take full advantage of the device's functionality.

Please reach out to AJA customer support for more details.

Chapter 2 – eMini-Setup

Overview

AJA's eMini-Setup is an easy way to set up an AJA device's network settings for AJA products that lack a front panel display, which prevents easy observation of the device's current IP address.

The eMini-Setup application, available as a free download from the AJA website, lets you identify an AJA device's IP address and, if necessary, reconfigure its network settings so the unit can operate in your network environment.

Once configured, your IP25-R can be accessed via an Ethernet network using a web browser. It can then be managed and controlled over that network, using the IP25-R's IP address and built-in web server ("WebUI"), to access all of its user-configurable controls.

NOTE: You must use eMini-Setup v2.5 or higher with IP25-R to ensure full compatibility.

Downloading & Installing eMini-Setup

A USB-connected host computer is required. Connect the host computer to the IP25-R using the USB-C port on its front panel.

Download the eMini-Setup installer from the AJA website:

https://www.aja.com/products/aja-emini-setup

Follow the prompts in the eMini-Setup installer.

Launch eMini-Setup, open the Control Tab Window and configure the IP Address.

Once the IP25-R IP address has been set, thereafter the WebUI may used.
If desired, the USB cable may be removed and eMini-Setup app closed.

Running eMini-Setup

If not connected, connect your IP25-R device to the PC or Mac via the supplied USB cable, and also connect the external power supply (supplied) to the IP25-R.

If not already done, Download and Install eMini-Setup (see *"Downloading & Installing eMini-Setup" on page 20)*.

Windows Startup

To run eMini-Setup on a Windows PC, double-click on the AJA eMini-Setup icon on your desktop. Or use the Windows Task Bar Search to enter "eMini-Setup" and the Icon to launch the installed application will appear.

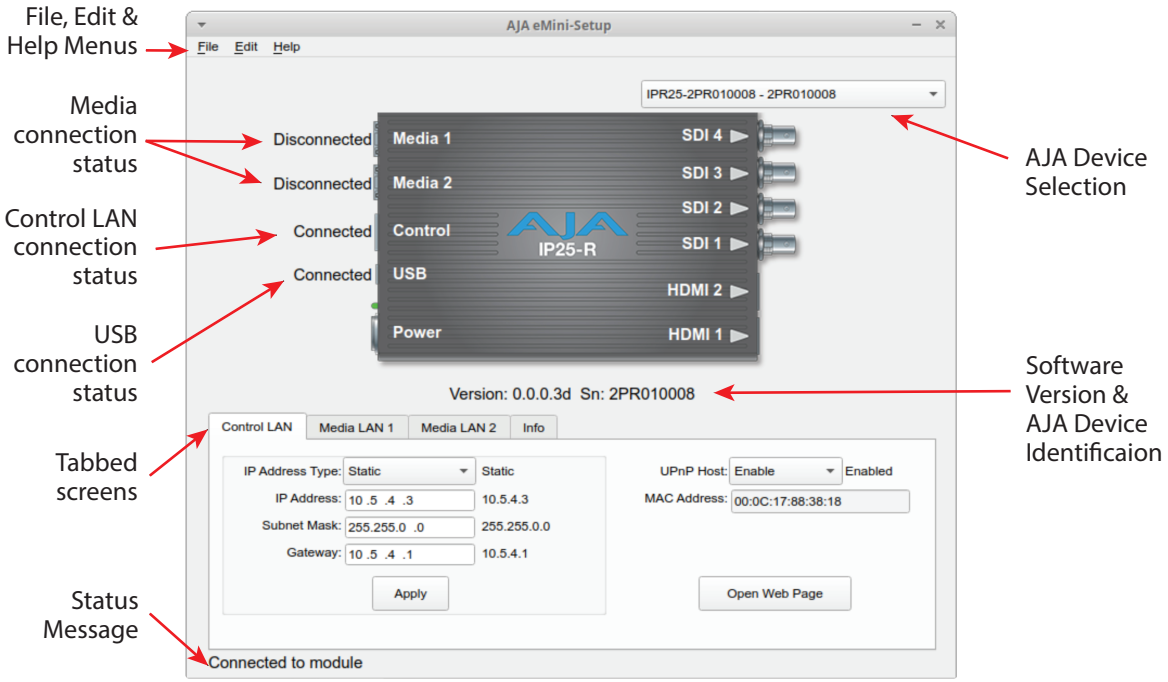
macOS Startup

To run eMini-Setup on a Mac, open the Applications folder and locate the AJA eMini-Setup application. Double-click the application to launch it.

Operating eMini-Setup

The eMini-Setup application provides a graphical user interface for viewing settings, modifying settings, and updating software.

Figure 16. Example eMini-Setup Screen (Control Tab)



AJA Device Selection

Selecting an AJA device with the pull down menu on the upper right connects eMini-Setup to that AJA device.

Software Version & AJA Device Identification

- Version - The version of firmware installed in the AJA device is displayed below the graphic.
- Sn - This is the factory set unique serial number of your AJA device. If you ever call AJA Support for service, you may be asked for this number.

File Menu

The File drop-down menu on the eMini-Setup application bar has a Revert to Factory Settings menu item that allows you to change the settings back to the AJA device's factory defaults.

Edit Menu

The Edit drop-down menu has standard Cut, Copy and Paste functions for editing text.

Help Menu

The Help drop-down menu has a link to the AJA device's manual.

Media 1 & Media 2 Connection Status

Shows as either Connected or Disconnected, for Media LAN Tabs 1 & 2.

Control LAN Connection Status

Shows as either Connected or Disconnected.

USB Connection Status

Shows as either Connected or Disconnected.

Tabbed Screens

Choose from four tabs:

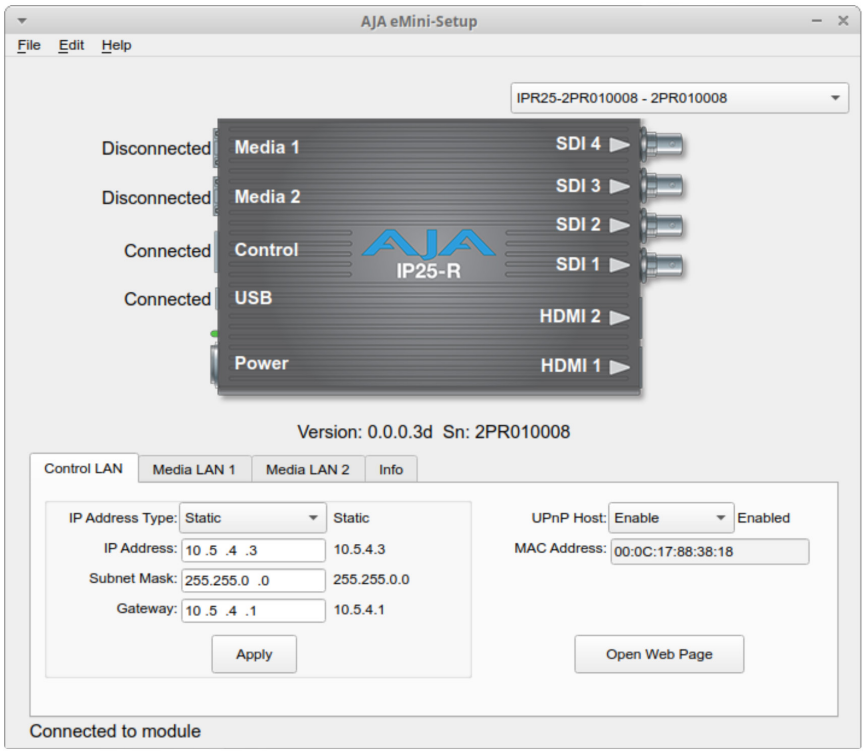
- Control
- Media LAN 1
- Media LAN 2
- Info

Status Message

Shows the status of the eMini-Setup applications connection with the IP25-R.

Control LAN Tab Screen

Figure 17. eMini-Setup Control LAN Tab Screen



Use the Control LAN Tab to change the network setup on the IP25-R. You must click the Apply button to initiate any network configuration changes.

IP Address Type

Choose from:

- DHCP
- Static IP Address.

IP Address

The current IP address is displayed when an IP Address Type of **Static** is selected. A different static IP address can be entered.

Subnet Mask

The current Subnet Mask is displayed. A different netmask can be entered.

Gateway

The current Gateway address is displayed. A different IP address can be entered.

If your IP25-R needs to communicate to servers on another LAN or WAN, you have to enter the address of the computer/router that is making that external connection. If all of your devices, and the systems they need to talk to, are on a single LAN, then you can enter any unused LAN address as the Gateway here.

NOTE: Group functionality requires all participating devices have the same valid Gateway address.

UPnP Host

Select **Enable** or **Disable** to control whether the AJA device makes itself visible for Windows network browsing.

MAC Address

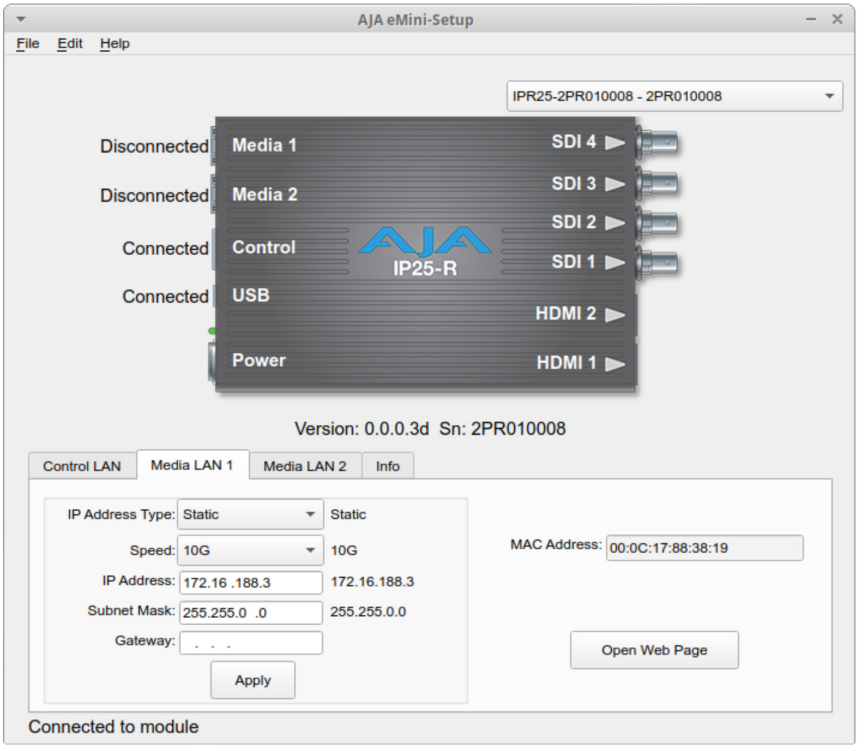
This is the permanent MAC address of the AJA device.

Open Web Page

After successfully configuring the IP25-R's network settings and while connected to the network, clicking on this button opens the IP25-R's internal web page, allowing complete remote control of the device.

Media LAN 1 & 2 Tab Screens

Figure 18. eMini-Setup Media LAN 1 Tab Screen



Use the Media LAN 1 or Media Lan 2 Tabs to change the corresponding media network setup on the IP25-R. You must click the Apply button to initiate any network configuration changes.

NOTE: The Media LAN 1 and Media LAN 2 Tab Screens work identically as to their respective controls and status fields, so we illustrate those once below:

IP Address Type

Choose from:

- Static
- DHCP

Speed

Choose from:

- 10G (10GbE, No FEC*)
- 25G (25GbE, No FEC*)
- 25G FEC74 (25GbE, IEEE 802.3 CL74 FireCode FEC*)
- 25G FEC108 (25GbE, IEEE 802.3 CL108 Reed Solomon FEC*)

*NOTE: * In some networks FEC is utilized and therefore requires products on the network to support FEC. It's use case is typically for reliability improvement where more overhead is acceptable or WAN environments over long distances.*

NOTE: IP25-R does not auto-detect SFP bandwidth. This must be manually set.

IP Address

The current IP address is displayed when an IP Address Type of **Static** is selected. A different static IP address can be entered.

NOTE: If you intend to directly connect an IP25-R to an IP25-R, then you will need to use sequential static IP addresses for both units (Transmit and Receive).

Subnet Mask

The current Subnet Mask is displayed. A different netmask can be entered.

Gateway

The current Gateway address is displayed. A different IP address can be entered.

If your IP25-R needs to communicate to servers on another LAN or WAN, you have to enter the address of the computer/router that is making that external connection. If all of your devices, and the systems they need to talk to, are on a single LAN, then you can enter any unused LAN address as the Gateway here.

NOTE: Group functionality requires all participating devices have the same valid Gateway address.

UPnP Host

Select **Enable** or **Disable** to control whether the AJA device makes itself visible for Windows network browsing.

MAC Address

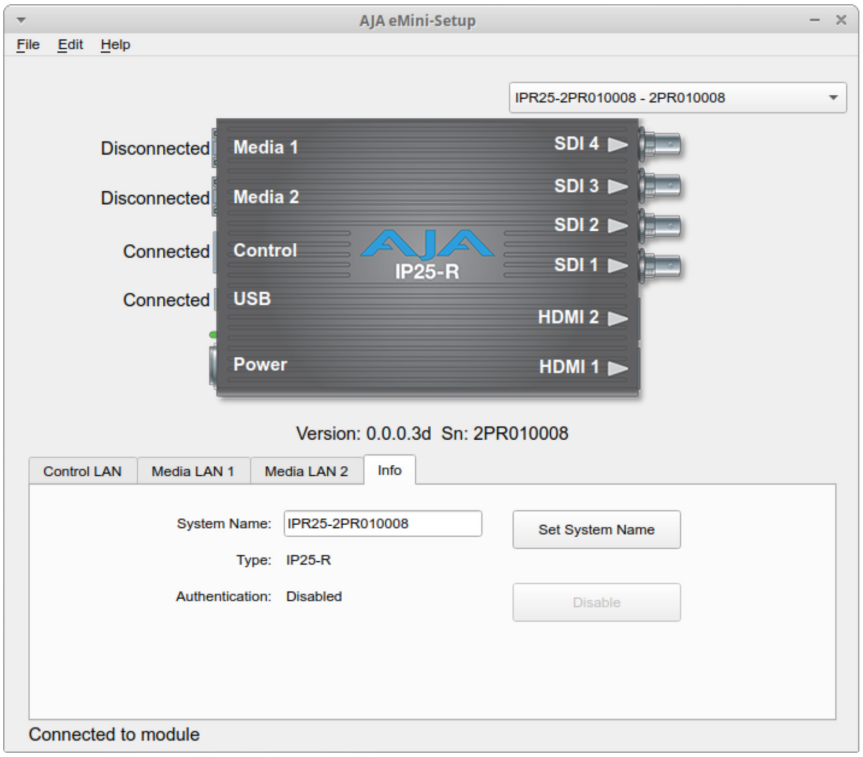
This is the permanent MAC address of the AJA device.

Open Web Page

After successfully configuring the IP25-R's network settings and while connected to the network, clicking on this button opens the IP25-R's internal web page, allowing complete remote control of the device.

Info Tab Screen

Figure 19. eMini-Setup Info Tab Screen



The Info Tab provides basic information about the connected AJA device. This information is mostly useful when calling AJA Support for service or technical support.

System Name

This field allows you to give your AJA device a unique name. This can be useful if you have several attached to a Mac/PC via USB so you can distinguish between them easily.

IMPORTANT: Once the system name has been entered, the name change will not take effect until after you click the Set System Name button.

Type

This is the factory set model name of the AJA device.

Authentication

If Authentication has been Enabled on the web browser Access tab, you can disable the security feature by clicking the Disable button.

Chapter 3 – WebUI

Introduction

Once you have established network connectivity with the IP25-R Mini-Converter, you can further configure and more fully control the unit through its web interface ('WebUI'). Subsequently, eMini-Setup is no longer required to interface with the unit.

NOTE: It is often best to remove the USB connection once you have acquired the web interface. This prevents accidentally using eMini-Setup to change parameters already set via the WebUI.

Remote Control

An optimized web server ('WebUI') in the IP25-R Mini-Converter allows remote control and parameter setting adjustments via a browser client running on a network wired computer. The network can be a closed local area network, a direct connection between a IP25-R Mini-Converter and a computer, or even exposed through a firewall to a WAN.

Each IP25-R Mini-Converter uses a standard RJ-45 connector for the Control LAN connection, and two SFP+ cages for the 10 Gbps Ethernet Media LAN connections.

NOTE: Safari is the preferred web browser for control on the Mac, and additionally Chrome and Firefox on Windows. Other web browsers may work, but AJA cannot guarantee consistent operation for all web browsers or web browser versions.

After using eMini-Setup to establish the IP25-R's IP address, connect it to your network and enter its Control Network IP address into the web browser. If authentication has been configured, you may need to enter a password.

Networking Option

Using Only the Media LAN Port for Control & Media Settings

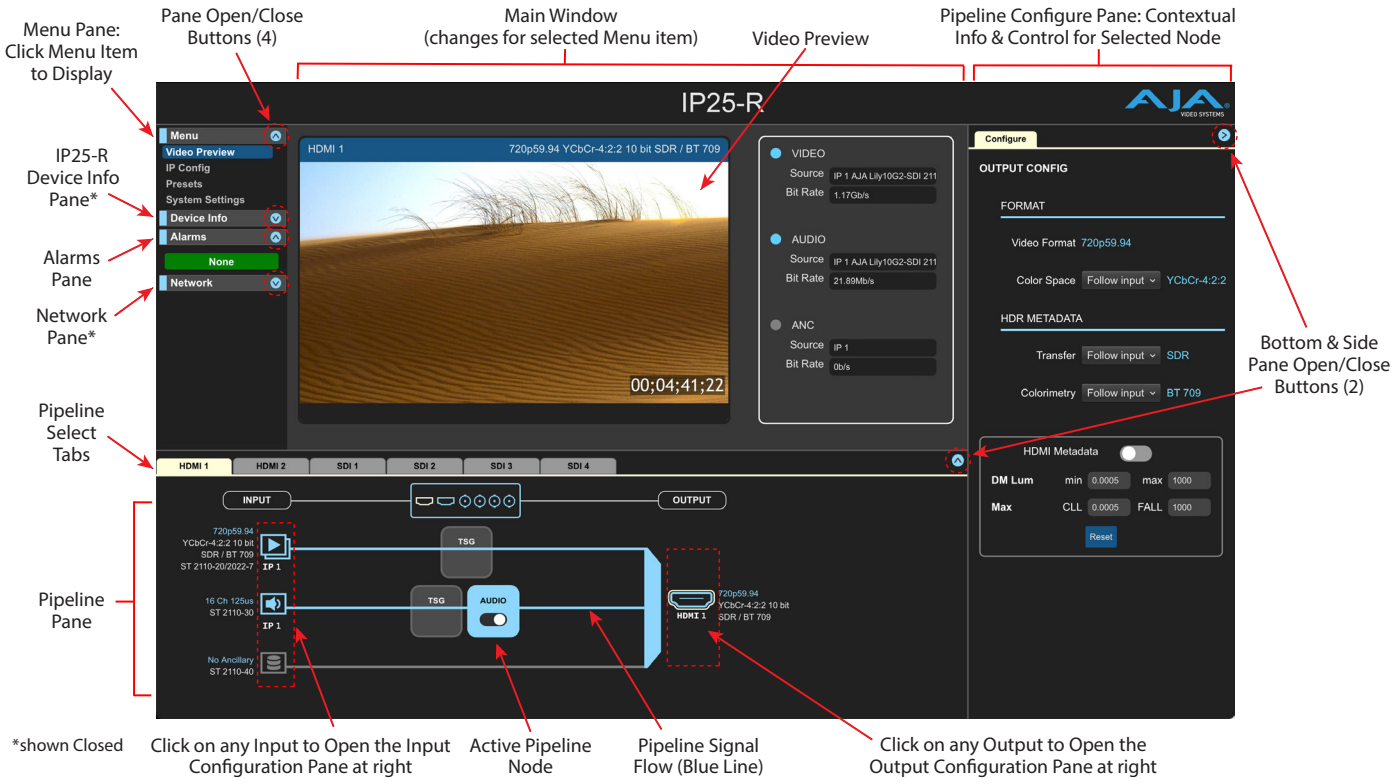
To reduce facility cabling to the IP25-R Mini Converter, it is an option to setup your network connection through an Ethernet switch via the Media LAN ports (rather than using the dedicated Control Port). This means that you will have just one or two cables to the unit, instead of two or three.

To implement this approach, follow these general steps:

1. Note the IP address of the unit's Media LAN 1 or Media LAN 2 port.
2. Connect the controlling computer's Ethernet port that is being used to control the unit into the desired Media network.
3. Connect the Media LAN ports of the unit into the Media Net switch.
4. Set the controlling computer's Ethernet port that is being used to control the IP25-R Mini-Converter to either Static or DHCP, depending on the network topology.
5. From the controlling computer, point a web browser to the IP address noted in step 1. The IP25-R Mini-Converter's web user interface displays in the browser.

WebUI Overview

Figure 20. IP25-R WebUI Window Overview



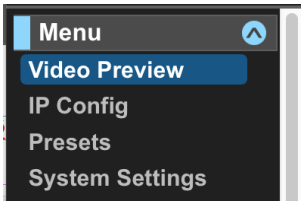
The round blue Up/Down (or Left/Right) Open/Close buttons on each pane opens and closes it and its set of parameters. These allow for the option of a more compact window size. Vertical and/or horizontal scroll bars appear when panel information extends past the border of the panel. In addition, regardless of which Main Screen is shown, the behavior of the bottom Pipeline and right-hand Input/Output Configuration Panels are consistent.

Uses for the controls shown and called out above are fully detailed in this chapter.

Menu Pane

For the IP25-R WebUI, the primary choices of configuration and control are found under the Menu Pane: Video Preview, IP Config, Presets and System Settings.

Figure 21. IP25-R Menu Pane, Video Preview Selected



The Menu Pane is used to select what will be displayed in the central area of the WebUI screen, or 'Main Window'.

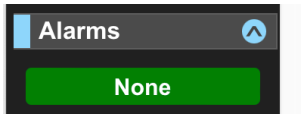
Device Info Pane

Figure 22. IP25-R Device info Pane

The Device Info pane provides name, device serial number, firmware version and IP Address for the IP25-R.

Alarms Pane

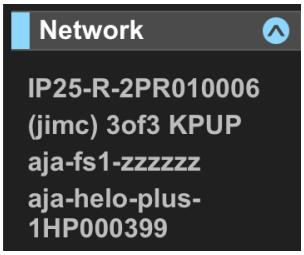
Figure 23. IP25-R Alarms Pane



Alarms are displayed in a panel on the left side of each screen. Clicking on the arrow opens or closes this panel to show or hide the alarms. Hovering the mouse over an alarm (red) or warning (yellow) in most cases provides additional detail about the condition and thus making the issue easier to resolve.

Network Pane

Figure 24. IP25-R Network Pane



The Network pane lists other AJA devices currently on the network. There is no particular limit to the number of devices which might be shown.

Dynamic Controls

- Hovering the mouse on a parameter name displays a brief description of its function.
- From the Config Screen, right clicking on the parameter name resets just that parameter to its factory default.
- For values with sliders, fine control is achieved using the arrow keys on the keyboard to move the slider the minimum amount. The numeric value can also be clicked on to enter a specific value.

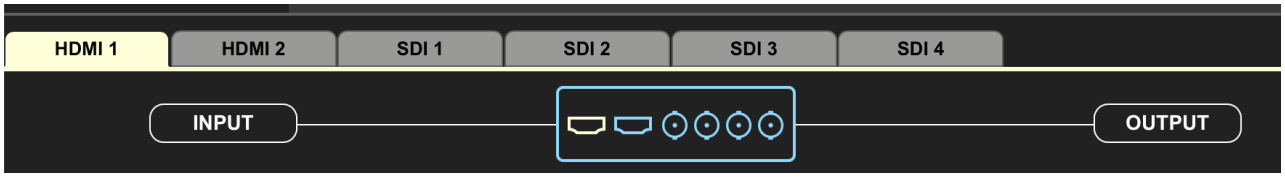
Pipeline Select Tabs & Hardware Output Map

Each Tab in the pipeline panel represents HDMI and SDI outputs. When selected, the pipeline and configuration for the selected output is presented. Each Pipeline Panel (when open) shows Input Sources, Pipeline Signal Flows, Pipeline Nodes, Node Toggles and Output Destinations, all in an intuitive graphical interface.

- HDMI Output Pipelines 1 & 2
- SDI Output Pipelines 1, 2, 3 & 4

Notice how the compact Hardware I/O icon just below the Pipeline Select Tabs changes to indicate the Selected Video Pipeline.

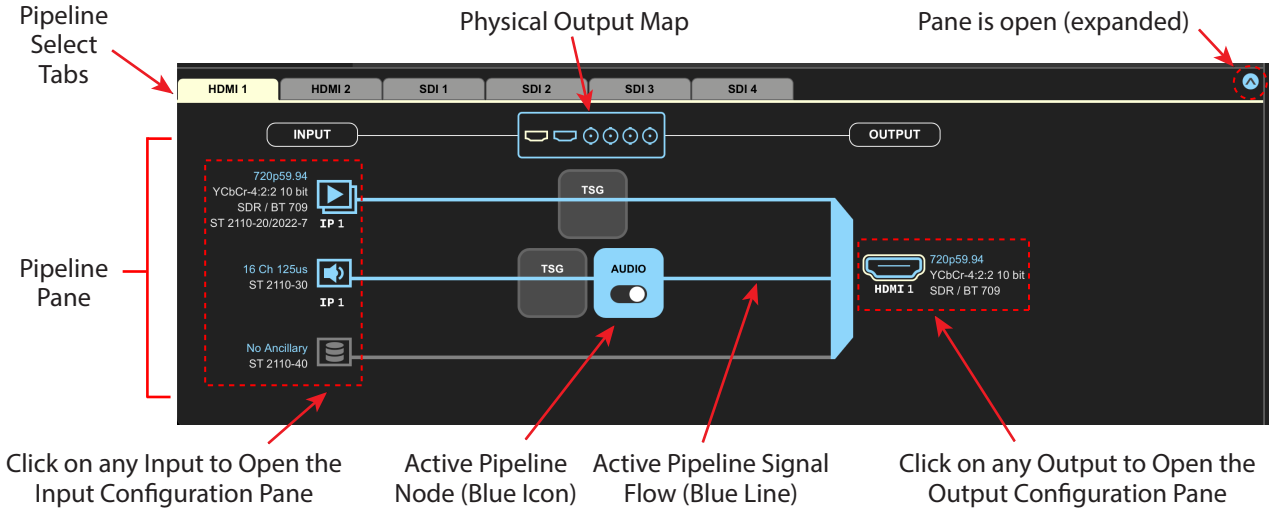
*Figure 25. IP25-R Pipeline Select Tabs and the Hardware Output Map**



*NOTE: *The appearance above is when the Pipeline pane is 'closed' (minimized.)*

Pipeline Pane

Figure 26. IP25-R Pipeline Pane



Pipeline Pane Impact on Configuration Panes

Using the above illustrated Pipeline Pane impacts what appears in the Source Configuration Panes and Output Configuration Panes to the right of the Main Window; see *"Viewing a Configuration Pane" on page 32.*

Pipeline Pane Controls & Icons

Pipeline Pane - Visual map of ST2110 Receivers assigned to the selected output. Provides access to configuration and status of the inputs, any processing, and output.

Physical Output Map - Visual representation of the 2x HDMI and 4x SDI outputs

Input Icons - Represents the ST2110 receivers assigned to the selected output. By selecting the input icon for a stream, the desired receiver can be routed. Provides status of incoming stream details.

Output Icons - Provides configuration and status of the selected output.

Pipeline Nodes - Provides listed function on each pipeline stream.

Pipeline Signal Flow - When a multicast is present on the assigned receiver, the appropriate path will tally blue.

NOTE: HDMI does not support ancillary data in this release.

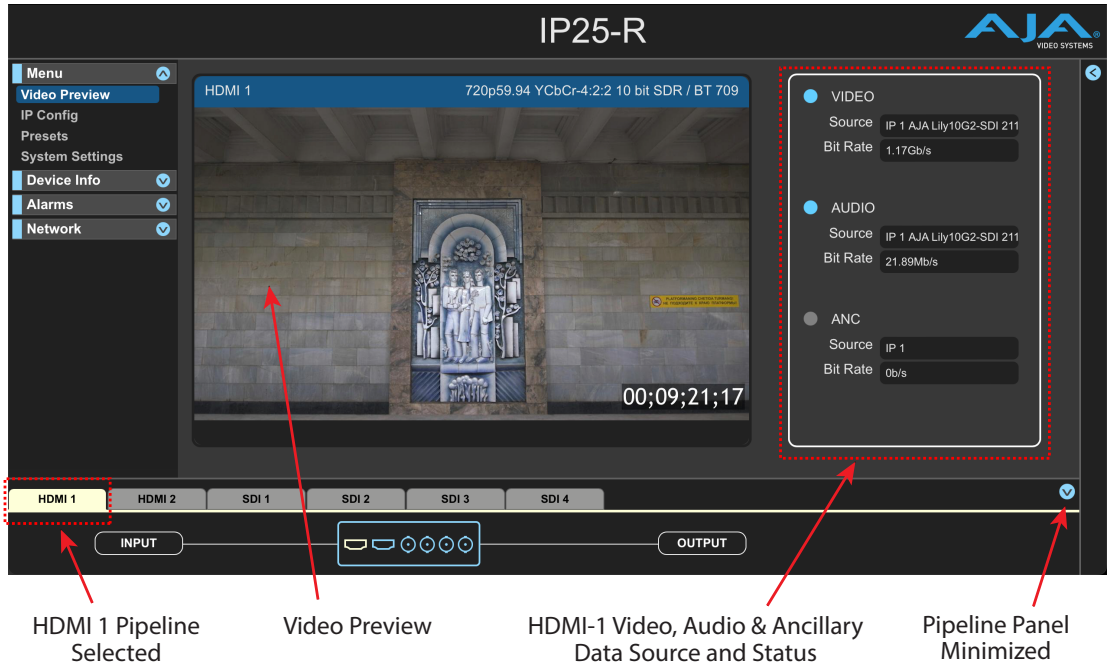
Node Toggles - Turns listed function off or on.

Video Preview

Once Video Preview has been selected under the Main Menu Pane, simply click on the Pipeline Select Tab to view the respective preview. The last WebUI instance that selects a pipeline to preview will show the video.

IMPORTANT: Multiple instances of WebUI looking at preview will show the same video. It is preferable that only one instance of the UI has Video Preview selected at a time.

Figure 27. IP25-R Video Preview Window for HDMI-1



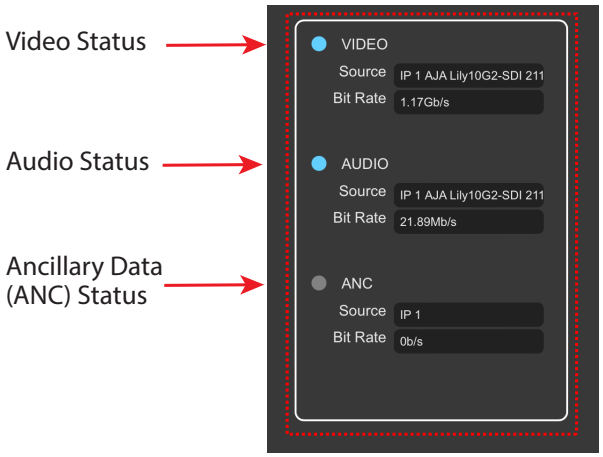
Video Preview Window Elements

Video Preview - IP25-R has one video preview decoder. The video will be shown for the last instance of UI that selected an output pipeline for preview.

Video, Audio & Ancillary Data Status Pane - this is shown in the next topic.

Video Preview Status Pane

Figure 28. IP25-R Video Preview Status Pane



Video, Audio & Ancillary Status

Source - Status of which receiver and source is routed to output.

Bit Rate - Current Bit rate of stream.

Input and Output Configuration Panes

We illustrate below some examples of navigating the Input and Output configuration panes with Video Preview as the active Main Window. However note that these Input and Output Configuration panes, together with the Pipeline Pane, work exactly the same way with any active Main Window.

Viewing a Configuration Pane

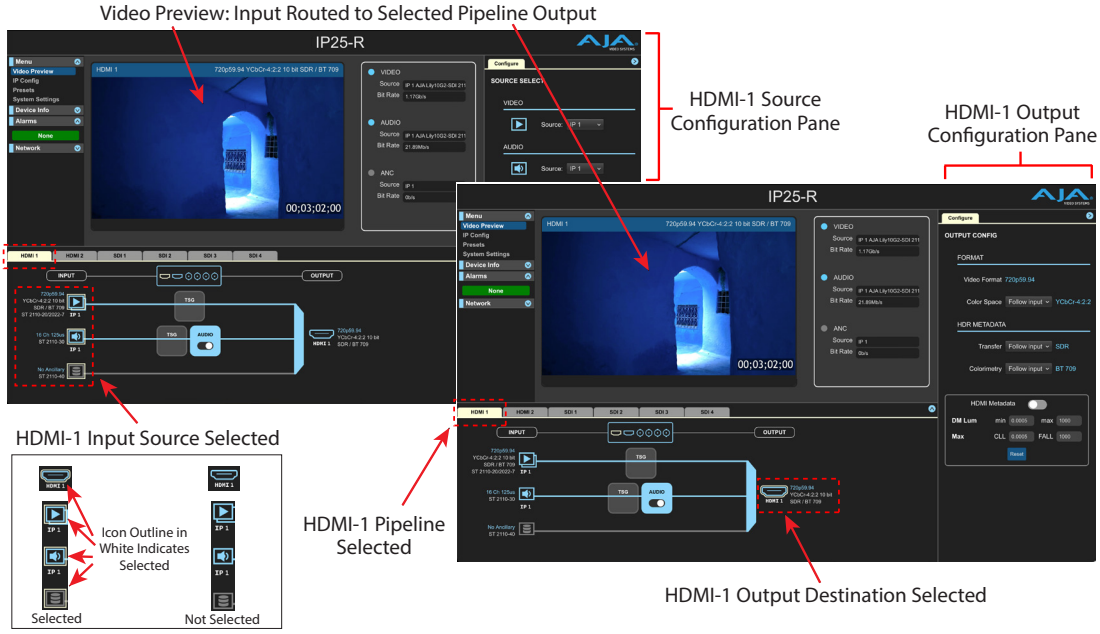
The following quick steps will always work, regardless of what is in the Main Window of the IP25-R: Video Preview, IP Config, Presets or System Settings (including all of their respective sub-tabs.)

1. Select a Video Pipeline Tab (HDMI 1-2 or SDI 1-4.)
2. Expand the Pipeline pane to view the full Pipeline graphic (if not already expanded).
3. Click on any Source Icon at the left side of the Pipeline pane, to view the respective Source Configuration pane to the right of the Main Window.
   -- or --
3. Click on the Output icon at right side of the Pipeline pane, to view the respective Output Configuration Pane to the right of the Main Window.

We show two examples of Inputs and Outputs below, one for HDMI-1 and one for SDI-3.

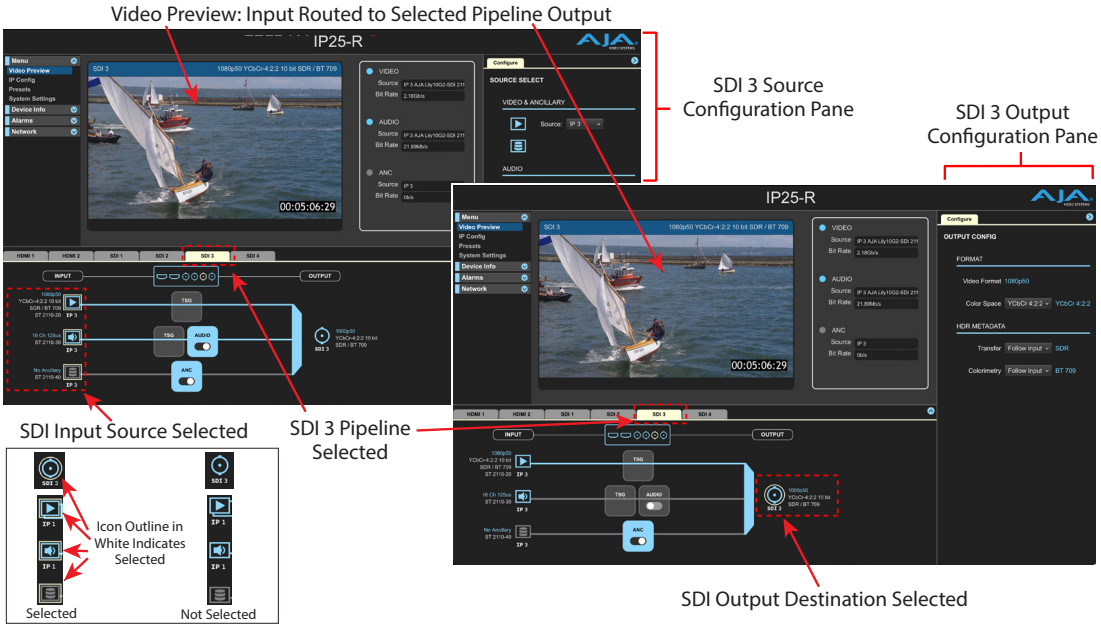
- When INPUT is selected, unprocessed video displays in Video Preview, without color change or overlay text.
- When OUTPUT is selected, processed video displays in Video Preview, with video and overlay text.

Figure 29. Video Preview for HDMI-1, showing Input and Output Config Panes



NOTE: The other HDMI and SDI tabs behave in exactly the same way as those shown above, so far as Input/Output Configuration panes navigation is concerned.

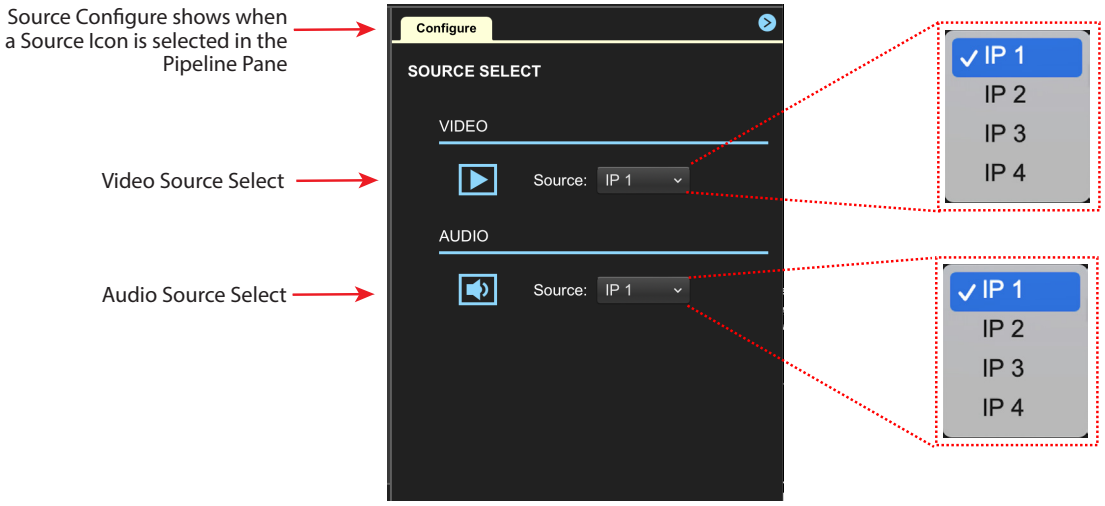
Figure 30. Video Preview for SDI-3, showing Input and Output Configuration Panes



Input Configuration Pane (Source Select)

HDMI 1 & 2 Source Select

Figure 31. HDMI-1 Input Configuration Pane



NOTE: The Input (Source Select) Configuration Pane for HDMI-2 behaves identically to that of HDMI-1 as shown above.

HDMI 1 & 2 Source Select Controls

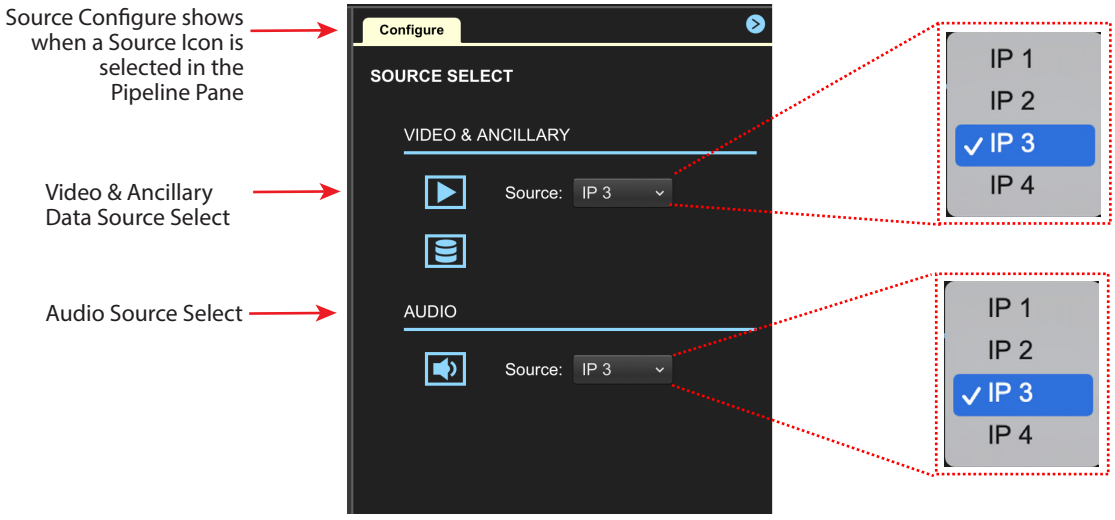
Video Source Select - Select one of the four available IP inputs.

Audio Source Select - Select one of the four available IP inputs.

SDI 1-4 Source Select

For SDI outputs, the Video and Ancillary must use the same RX numbers to allow for using the same RTP timestamp and thereby assuring the ANC data will be aligned with the correct frame.

Figure 32. SDI-3 Input Configuration Pane



NOTE: The Input (Source Select) Configuration Panes for SDI 1, 2 & 4 all behave identically to that of SDI-3 as shown above.

SDI 3 Source Select Controls

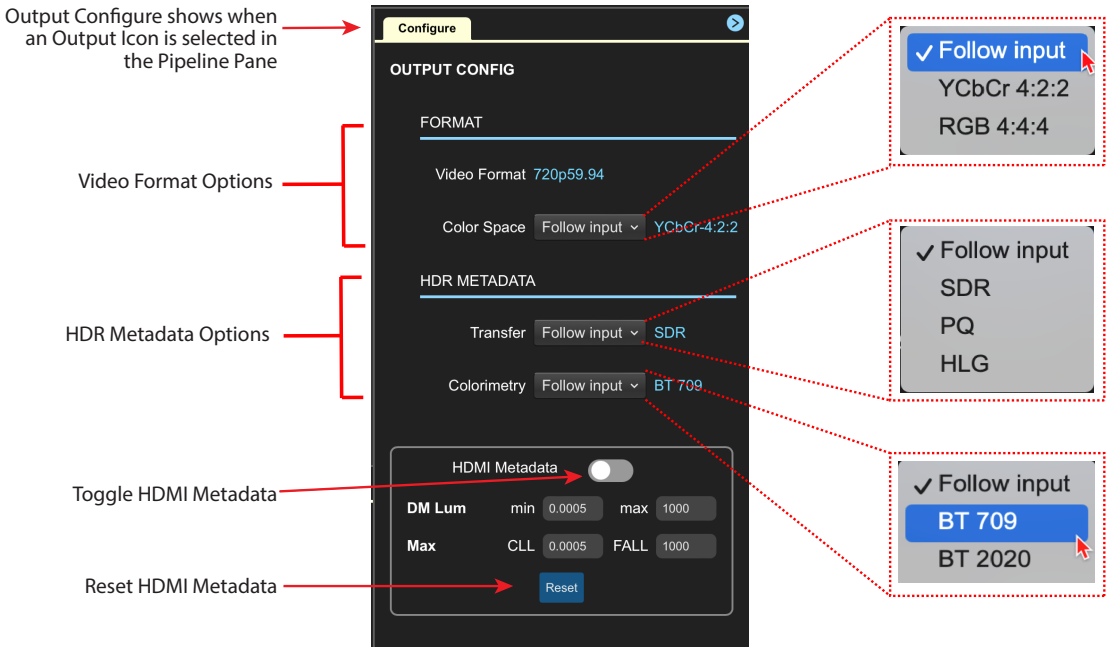
Video & Ancillary Source Select - Select one of the four available IP inputs.

Audio Source Select - Select one of the four available IP inputs.

Output Configuration Pane

HDMI Output Select

Figure 33. HDMI-1 Output Configuration Pane



NOTE: The Output Configuration Pane for HDMI-2 behaves just like HDMI-1.

HDMI Output Configuration Controls

Video Format - Provides status of received Video Format.

Color Space Options - Blue text provides status Input video color space, as derived from SDP.

- Follow Input (default): Sets color space from SDP
- YCbCr 4:2:2
- RGB 4:4:4

HDR Metadata Transfer - Blue text provides transfer characteristic from SDP.

- Follow Input: Passes the SDR/HDR Transfer value from the SDP.
- SDR - An SDR value is applied to the output.
- PQ - A PQ value is applied to the output.
- HLG - An HLG value is applied to the output.

HDR Metadata Colorimetry - Blue text provides Colorimetry from SDP. Controls which Colorimetry metadata value is applied to the video output.

- Follow Input (default): Passes the Colorimetry value from SDP.
- BT.709 and BT.2020 values are passed through. If BT.709 is detected, the HDR Metadata Transfer shall be set to SDR.

NOTE: If a non-supported colorimetry value is received, then BT.709 is signaled for HD/ UltraHD formats and set to SDR.

- BT.709: A BT.709 value is applied to the output. When BT.709 is selected, the HDR metadata transfer shall be set to SDR.
- BT.2020: A BT.2020 value is applied to the output

HDMI Metadata Toggle - Enables or disables insertion of HDMI Metadata.

DM Lum - Defines the Display Mastering Luminance. 'DM Lum min' defines floor of the SMPTE ST 2086 color volume (in the case of HDR) and is determined by the mastering environment.

- Range: 0.00000 cd/m2 to 1.00000 cd/m2 (default value: 0.0005)
- Step size: 0.00002 cd/m2

Max CLL - Represents the highest-value pixel component in an entire scene. It is determined by analyzing each frame of video, and can be determined in the post environment.

- Range: 1 cd/m2 to 65535 cd/m2 (default value: 0.0005)
- Step size: 1 cd/m2

Max FALL - Represents the maximum of frame-based average light levels taken over an entire scene, and can be determined in the post environment.

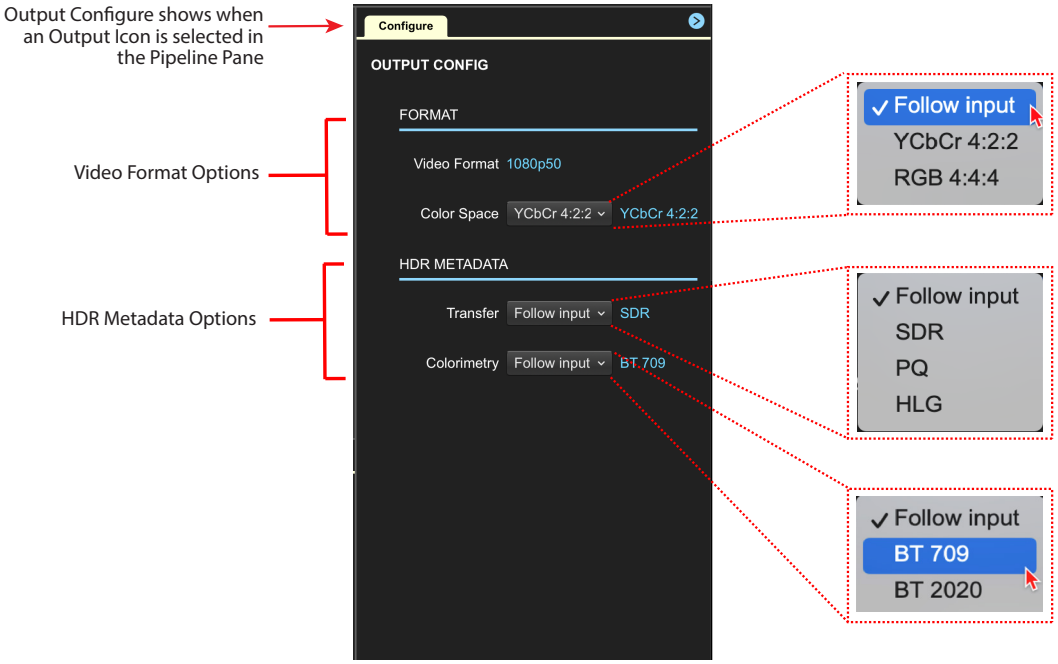
- Range: 1 cd/m2 to 65535 cd/m2 (default value: 1000)
- Step size: 1 cd/m2

Reset HDMI Metadata - Resets the DM Lum min/max, Max CLL, and Max FALL to defaults.

- DM Lum min = 0.0005
- DM Lum max = 1000
- Max CLL = 1000
- Max FALL = 400

SDI Output Select

Figure 34. SDI-1 Output Configuration Pane



NOTE: The Input (Source) Configuration Panes for SDI 2-4 behave just like SDI-1.

SDI Output Configuration Controls

Video Format - Provides status of received Video Format.

Color Space Options - Blue text provides status Input video color space, as derived from SDP.

- Follow Input (default): Sets color space from SDP.
- YCbCr 4:2:2
- RGB 4:4:4

HDR Metadata Transfer - Blue text provides transfer characteristic from SDP.

- Follow Input: Passes the SDR/HDR Transfer value from the SDP.
- SDR - An SDR value is applied to the output.
- PQ - A PQ value is applied to the output.
- HLG - An HLG value is applied to the output.

HDR Metadata Colorimetry - Blue text provides Colorimetry from SDP. Controls which Colorimetry metadata value is applied to the video output.

- Follow Input (default): Passes the Colorimetry value from SDP.
- BT.709 and BT.2020 values are passed through. If BT.709 is detected, the HDR Metadata Transfer shall be set to SDR.

NOTE: If a non-supported colorimetry value is received, then BT.709 is signaled for HD/UltraHD formats and set to SDR.

- BT.709: A BT.709 value is applied to the output. When BT.709 is selected, the HDR metadata transfer shall be set to SDR.
- BT.2020: A BT.2020 value is applied to the output.

IP Config

The IP25-R Config Screen has three tabs: Inputs, Global Ctrl and PTP.

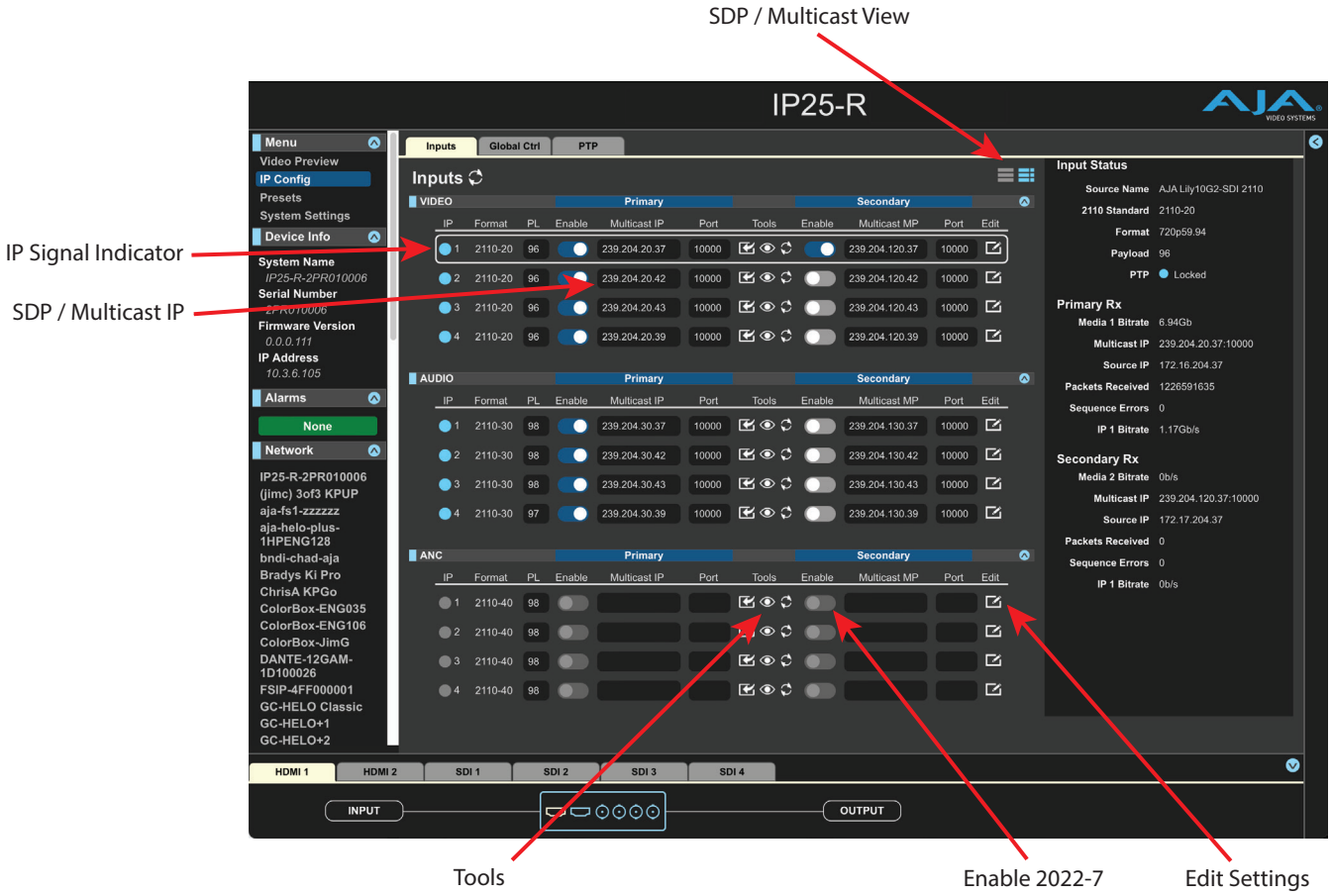
The Inputs Tab gives information and configuration options for the IP25-R input settings via .sdp file or manual configuration and lets you define parameters for receiving inputs to the IP25-R from another device on the network.

Inputs Tab

Multicast View

Provides manual entry of all multicast settings. If an SDP is delivered to the receiver, the entries shall be loaded from SDP. Entries can be overwritten and will not automatically reapply previous settings, unless the SDP is reapplied. All settings must be accurate to receive the incoming multicast stream.

Figure 35. IP Config: Inputs Tab - Multicast View Selected



PL - Presents Payload ID received from SDP.

Primary Port - Manual Port entry for Primary Multicast to be received

Secondary Multicast IP - Manual IP entry for Secondary Multicast to be received

Secondary Port - Manual Port entry for Secondary Multicast to be received

IP Signal Indicator- Indicates the following:

- Valid Signal Detected and Active
- Signal Inactive or Disabled
- Nearing Maximum Bandwidth
- Duplicate Signal or Exceeded Bandwidth/'oversubscribed'

NOTE: Oversubscribed refers to when traffic from all connected sources exceeds the available network bandwidth. When oversubscribed, all streams on the interface will be affected. It is the customer's responsibility to manage network traffic and routing, to ensure a given network path is not oversubscribed.

SDP / Multicast IP - Displays SDP (in SDP view mode) or Multicast (in Multicast view mode) primary and secondary IP details.

SDP Status - Indicates SDP / Multicast status

- When in SDP view mode
  - SDP is Found / Valid
  - SDP is Not Found / Invalid
  - Duplicate Multicast IP

Tools - The following tools are available:

- Import SDP
- View SDP details
- Reset selected stream

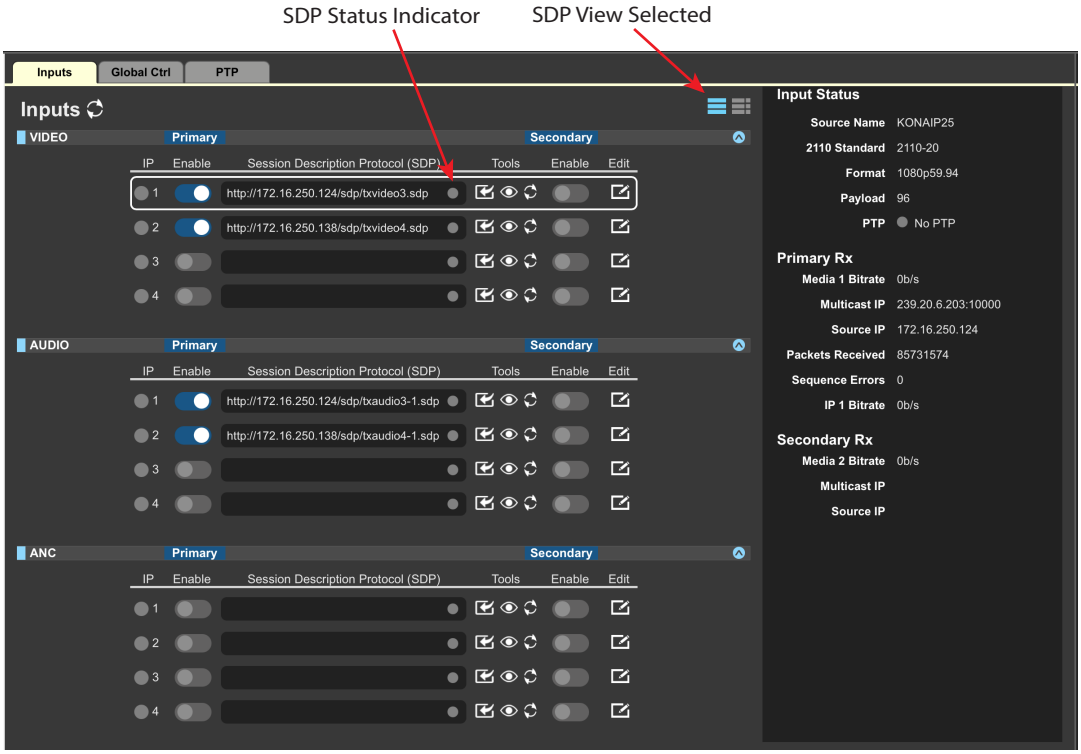
Enable 2022-7 - Enables ST 2022-7 redundant network operations.

Edit Settings - Click on the icon to configure various input IP settings as well as ST 2110-20 Video, ST 2110-30 Audio, and ST 2110-40 Ancillary parameters.

SDP View

SDP View provides configuration when SDP URLs will be pasted into receivers to receive the multicast source.

Figure 36. IP Config: Inputs Tab - SDP View Selected



Video, Audio and Ancillary Panes

Three sections provide separated Video, Audio, and Ancillary configuration. Each item in these sections has identical parameter entry windows. If external control if established (NMOS, Ember+, REST API), these windows will populate as configured externally.

There are two Inputs configuration modes to provide control in you preferred method, SDP view and Multicast View.

Settings shared between both views:

Primary Enable - Setting to enable or disable the IP input.

NOTE: When disabled, the receiver still presents as an available receiver to NMOS. If a new source is sent to the receiver, it will turn on.

Primary Session Description Protocol (SDP) - URL of SDP. Can be typed or pasted in.

Secondary Enable - Enabling will establish ST2022-7 redundancy. Note: Primary multicast must be active to enable.

Secondary Edit - Opens edit window to configure all receiver settings (p37 in IP25-R manual).

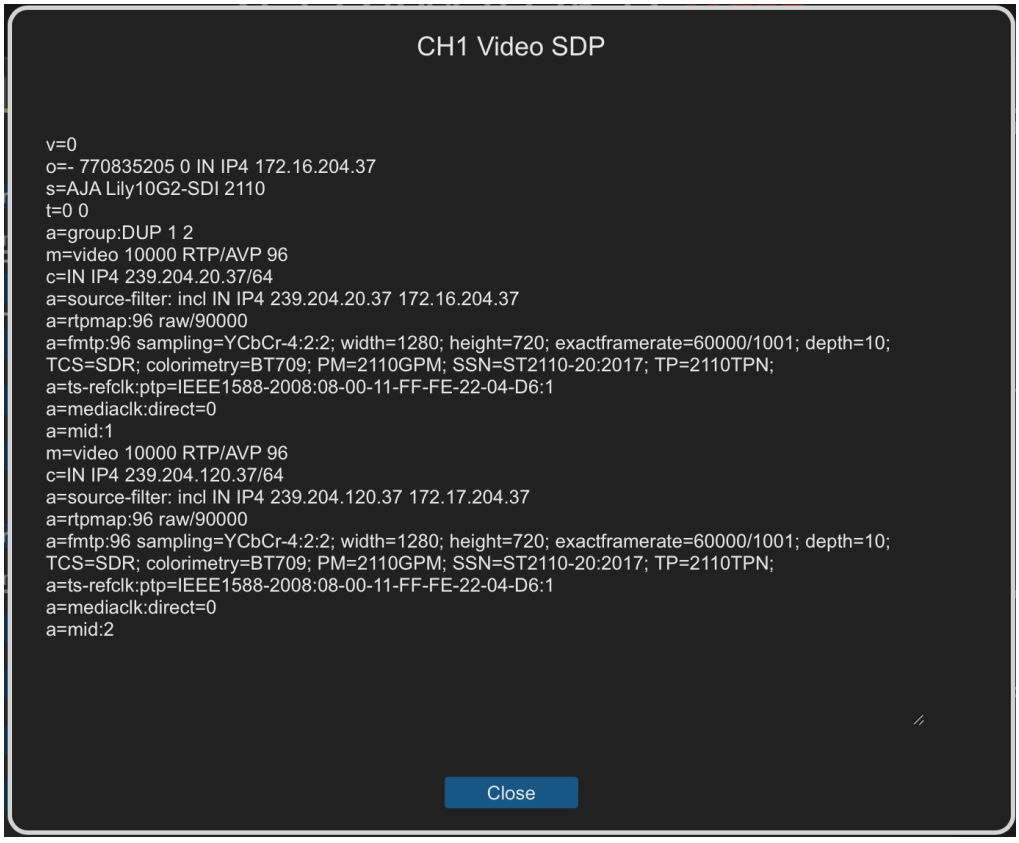
Match - Checked by default for settings read from SDP. If a setting is unchecked, the receiver will ignore that setting and attempt to receive the multicast. This is useful for troubleshooting.

For example, if the Payload ID is suspected to be incorrect in the SDP, unchecking it will allow the receiver to ignore the requirement to have a matched Payload ID in SDP and the stream.

CH1 Video SDP

Clicking on the View SDP icon ( ) opens the CH1 Video SDP popup.

Figure 37. Inputs Tab: CH1 Video SDP Popup



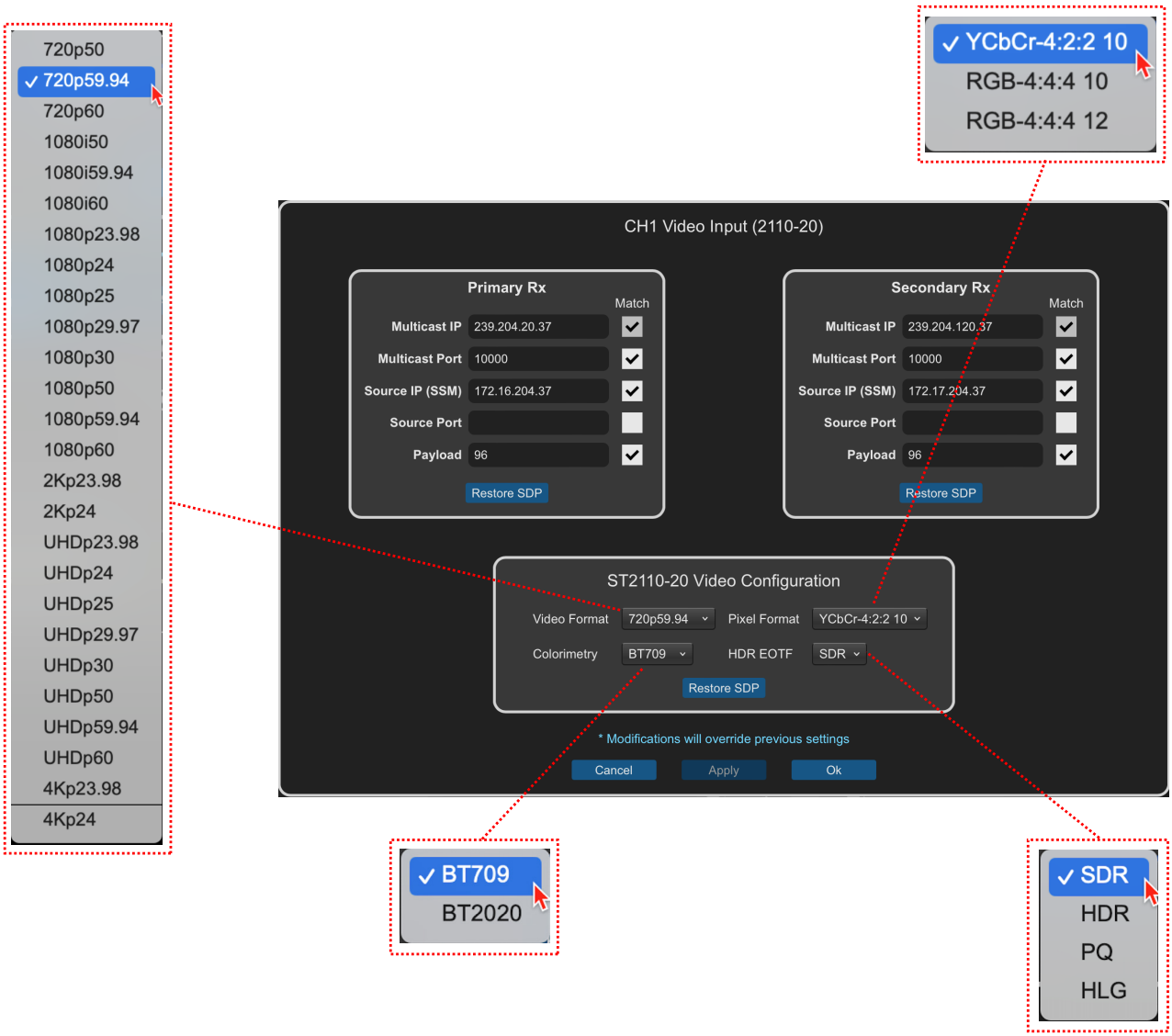
SDP is the Session Description Parameter, which contains the configuration details of a sender or receiver. SDP allows for automated configuration of a receiver to accept the senders signal.

CH1 Video Input (2110-20)

Clicking on IP 1's 'Edit' opens the CH1 Video Input window.

CAUTION: *Any changes made in this window will impact the input stream. This window can be useful for making manual changes or troubleshooting. Proceed with caution.*

Figure 38. Inputs Tab: CH1 Video Input Popup Window



Primary & Secondary Rx

Multicast IP - Multicast source IP.

Multicast Port - Multicast source Port

Source IP (SSM) - Senders IP. Utilized when Source Specific Multicast is implemented

Source Port - Sender's port.

Payload - Payload ID. Must match between SDP and stream.

Restore SDP Button - If any settings are changed, selecting 'Restore SDP' will read the SDP and reapply the settings.

ST2110-20 Video Configuration

Video Format - Provides status of current Video format as read from SDP and provides manual selection, if needed.

Colorimetry - Provides status of current Colorimetry setting as read from SDP and provides manual selection, if needed.

Pixel Format - Provides status of current Pixel format as read from SDP and provides manual selection, if needed.

HDR EOTF - Provides status of current HDR setting as read from SDP and provides manual selection, if needed

Restore SDP Button - Restores to settings as read from SDP.

Global Ctrl (Control) Tab

The Global Control Tab gives information and configuration options for the IP25-R's NMOS and Ember+ settings.

Figure 39. IP Config: Global Control Tab

NMOS Configuration

Enable or disable network discovery for the device. NMOS uses the address of the unit's internal WebUI for communications. When the unit boots up, it actively scans the network for an NMOS registry using MDNS/DNS. If it finds one, it tells the NMOS registry what it is and what its capabilities are. If the unit does not find an NMOS registry, it continues to announce itself through MDNS so that it can be discovered. Once discovered, it registers itself with whatever has discovered the unit through MDNS.

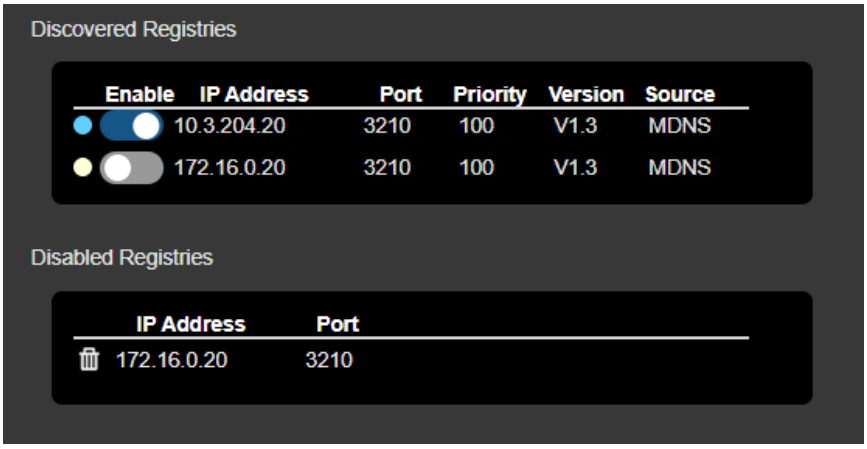
NMOS Enable - Enable/Disable NMOS for the IP25-R.

Discovery mode - Sets mode for discovery of available NMOS registries.

Enable Host - Enables/Disables Media 1, Media 2, Control hosts.

Discovered Registries - Displays available NMOS registry details. Enabled and available active registries will be marked with a indicator and unavailable registries will be marked with an indicator. Disabled registries will appear in a Disabled Registries window with a delete option.)

Figure 40. Discovered Registries



With NMOS enabled, IP25-R receivers support master_enable commands, as defined in the IS-05 specification.

When a master_enable: true is sent, the sender or receiver will be set to enabled and support programmed media. Similarly, if the sender or receiver is set to 'enable" in the UI, the it will report a master_enable:true to NMOS.

When a master_enable:false is sent, the sender or receiver will be set to disabled and media will stop on that sender or receiver. Similarly, if the sender or receiver is set to 'disable" in the UI, it will report a master_enable:false to NMOS.

If ST 2022-7 is enabled, both senders or receivers will abide to the same rules.

Ember+ Configuration

The following controls are available for Ember+ configuration with the IP25-R. AJA recommends consulting with your IT Administrator to properly configure and set up use of Ember+ with your IP25-R.

Ember+ Enable - Enable/Disable Ember+ for the IP25-R.

Ember+ status indicates the following:

- Ember+ Enabled and Detected
- Ember+ Disabled or Not Detected

NOTE: When Ember+ is enabled, a primary stream is required for 2022-7.

Ember+ Port - Allows specification of port to use.

PTP Tab

The PTP (Precision Time Control) Tab gives information and configuration options for the IP25-R's PTP settings.

Figure 41. IP Config: PTP Tab

PTP Control Pane

Domain Number - Select domain number. 0 and 127 are reserved and should not be used.

Preferred Time Transmitter - Select Preferred Transmitter from available sources. Click Apply to apply modified Domain Number and/or Preferred Time Transmitter selections. Click Reset Controls to restore to default settings

Cancel Button - Reverts any not-applied changes to previous settings, within PTP Pane.

Apply Button - Applies any changes made in the PTP Pane.

Reset Counts - Resets incrementing Counts in PTP pane for Announce Count, Sync Count, Delay Request Count, Follow Up Count, Delay Response Count.

Presets

Figure 42. IP25-R Presets Window with no Presets yet saved

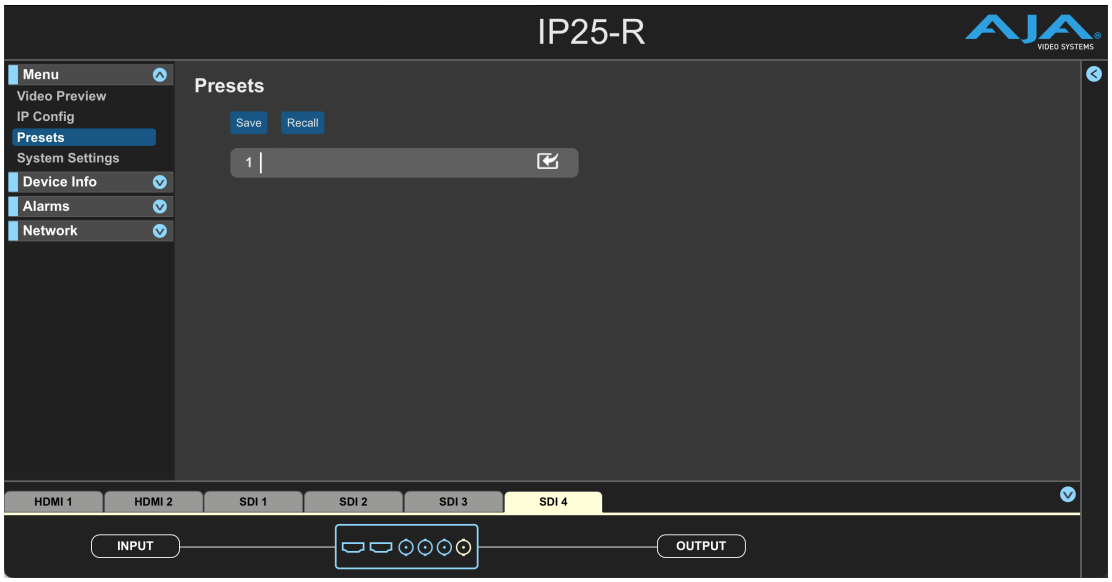
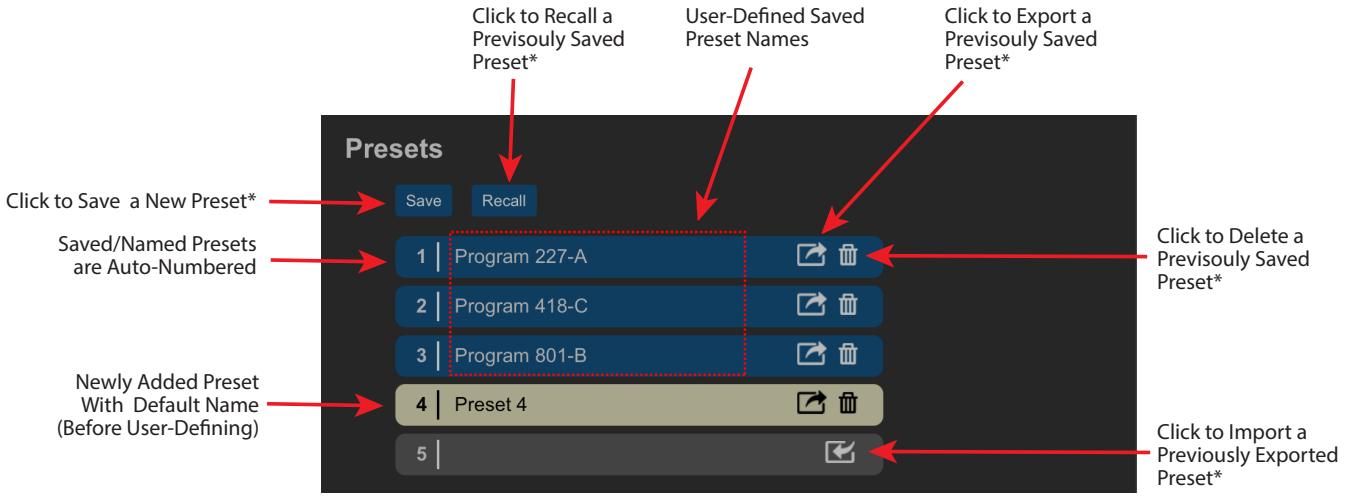


Figure 43. IP25-R Presets Window: Overview



**Note: Each of these actions requires the user's pre-approval before being applied.*

The Presets window allows you to save Preset Configurations into 20 separate memory registers and recall the presets whenever needed.

The Presets panel also includes Export and Import functions that allow exporting one or all presets to your computer as files and importing exported preset files from your computer. A displayed message indicates successful or failed saves, recalls, exports, and imports.

Presets Controls

Recall - The Recall button recalls the saved preset configurations.

CAUTION: *When you recall a Preset Configuration, the recalled preset immediately replaces the system's existing configuration. All previous settings are lost unless you have previously stored them in another preset configuration or an exported file.*

Save - The Save button lets you save the current configuration into the preset register with the associated name and number. A preset is a set of all parameters as they were set at the time the preset was saved. Only editable parameters are saved in the presets. Non-editable parameters are not saved.

To change a preset name, click in the name's text field, type a new name, and press Enter to save the name. After entering text, you can click the mouse outside of the edit box to exit without changing the name.

CAUTION: *IP25-R Mini-Converter stored presets may contain a web server access password. If you share an exported preset to someone, that person can extract the password. Before loaning the device to someone, or returning it as a rental, it is recommended that you clear the device of sensitive information.*

Export - The Export buttons save the associated preset contents to a file on your computer. The file gets exported to the default download location specified in your browser options. The file name is the same as the preset name with the suffix *.json*. If you export multiple files for the same preset, a number gets appended to ensure a unique file name.

Import - The Import buttons let you browse for and import a preset file on your computer into the preset register associated with the selected button.

Erase - The Erase buttons erase the data in that preset.

Using Presets

Presets are Saved on the IP25-R and can be exported to a host PC with a name format of [preset name].json.

IMPORTANT: Powering off the IP25-R will not erase the presets.

Stored from, or Recalled to the Active Device Configuration. Presets are Exported to, and Imported from files on the host computer, with a name format of: '[presetname].json'. There are 20 Preset Registers, however there is no limitation on the number of Exported Preset files on the host computer (except storage space). Router or CP power-off (or host computer shut-off) will not erase reset Registers from the IP25-R; those will be fully restored once IP25-R is again powered-on.

CAUTION: *The Active Device Configuration and Preset Registers are subject to the Erase and Recall Factory Settings functions which will overwrite previous user data.*

Save Button

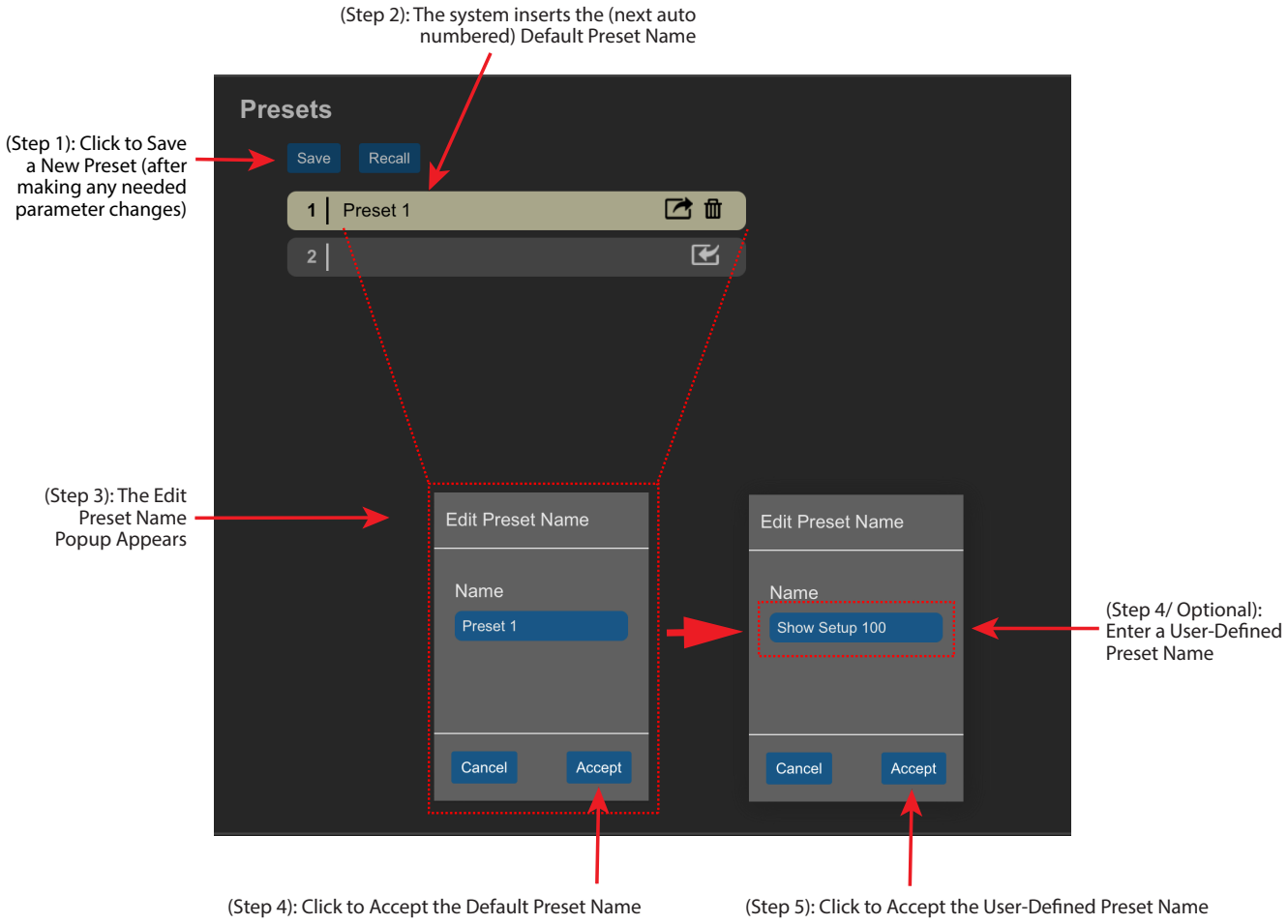
The **Save** button lets you save the IP25-R Active Configuration of parameters into the Preset Register with the associated name and number. A Preset is a set of all of the device parameters as they were set at the time the Preset was stored. Only editable parameters are saved in the Presets. Non-editable parameters are not saved. Note that Stored Preset Registers have no affect on device configuration nor operation until they are explicitly Recalled.

To Save a Preset:

First, be sure to complete editing any IP25-R parameters to be included in the saved Preset.

1. Click the **Save** button for the desired Preset; (#1 in this example).

Figure 44. IP25-R Store Preset #1



2. The IP25-R initially presents the next auto-numbered default Preset name.
3. In the Edit Preset dialog window which appears, choose to either click the Accept button to confirm the default name, or, continue on to the following step.
4. (Optional) Enter your user-defined Preset Name into the Preset Name field.
5. Click the Accept button. (Or click **Cancel** to exit this function) without any Preset action taken.
6. A '**Storing**...' message may flash for a few seconds.

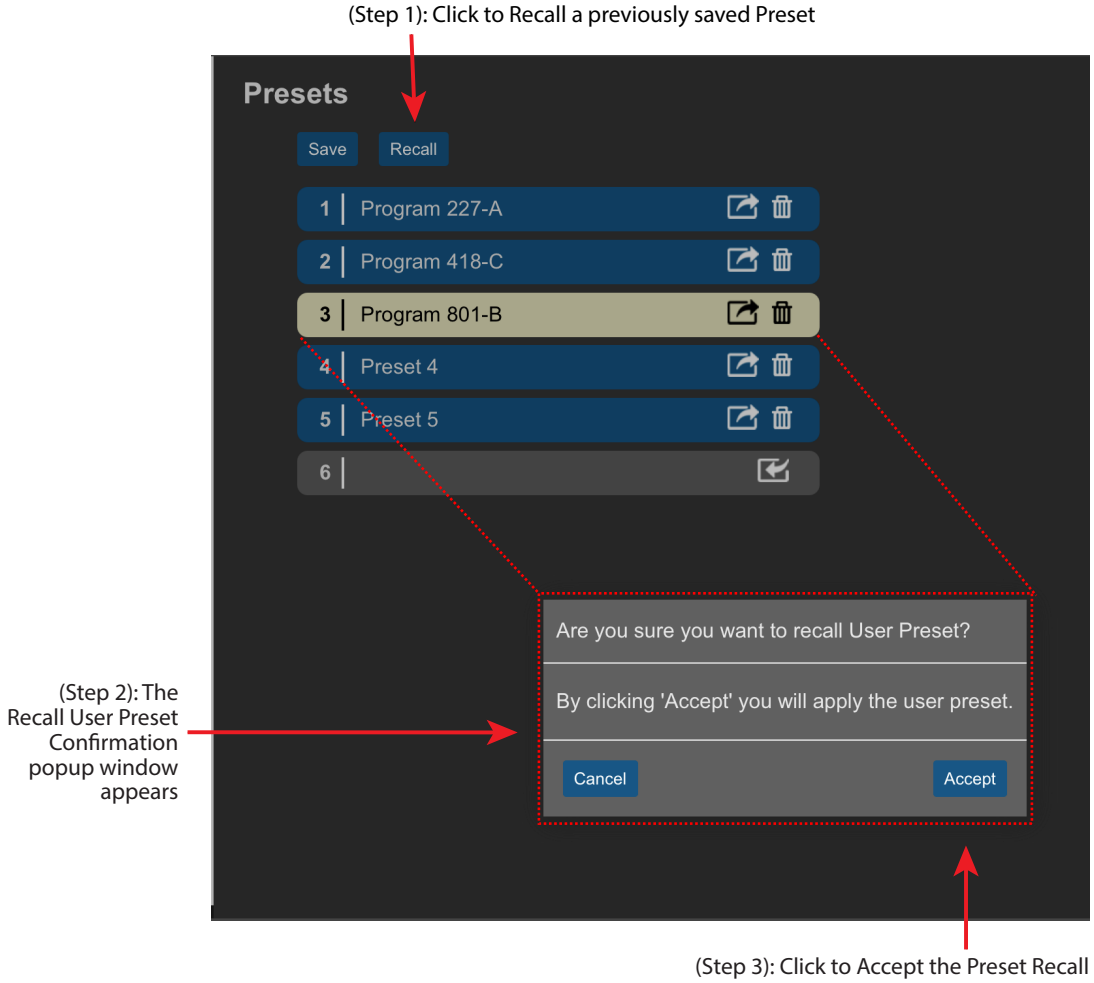
Recall Button

The **Recall** button recalls the saved Preset configuration into the IP25-R Active Configuration of parameters.

To Recall a Preset:

1. Click the **Recall** Button for a selected (highlighted) previously stored Preset.

Figure 45. IP25-R Recall Preset #1 IP25-R.



2. The Confirm Preset Recall popup window appears.
3. Click the **Accept** button to confirm selection. (Or, click **Cancel** to exit this function without any Preset action taken).

The IP25-R Active Device Configuration of parameters is loaded with the Preset and all of its configuration data.

WARNING: When you **Recall** a Preset Configuration, the recalled Preset immediately replaces the system's existing (active) configuration of parameters. All previous user-editable settings that were resident in the IP25-R at the time will be lost, unless you first **Save** them in another Preset or **Export** the Preset to a file.

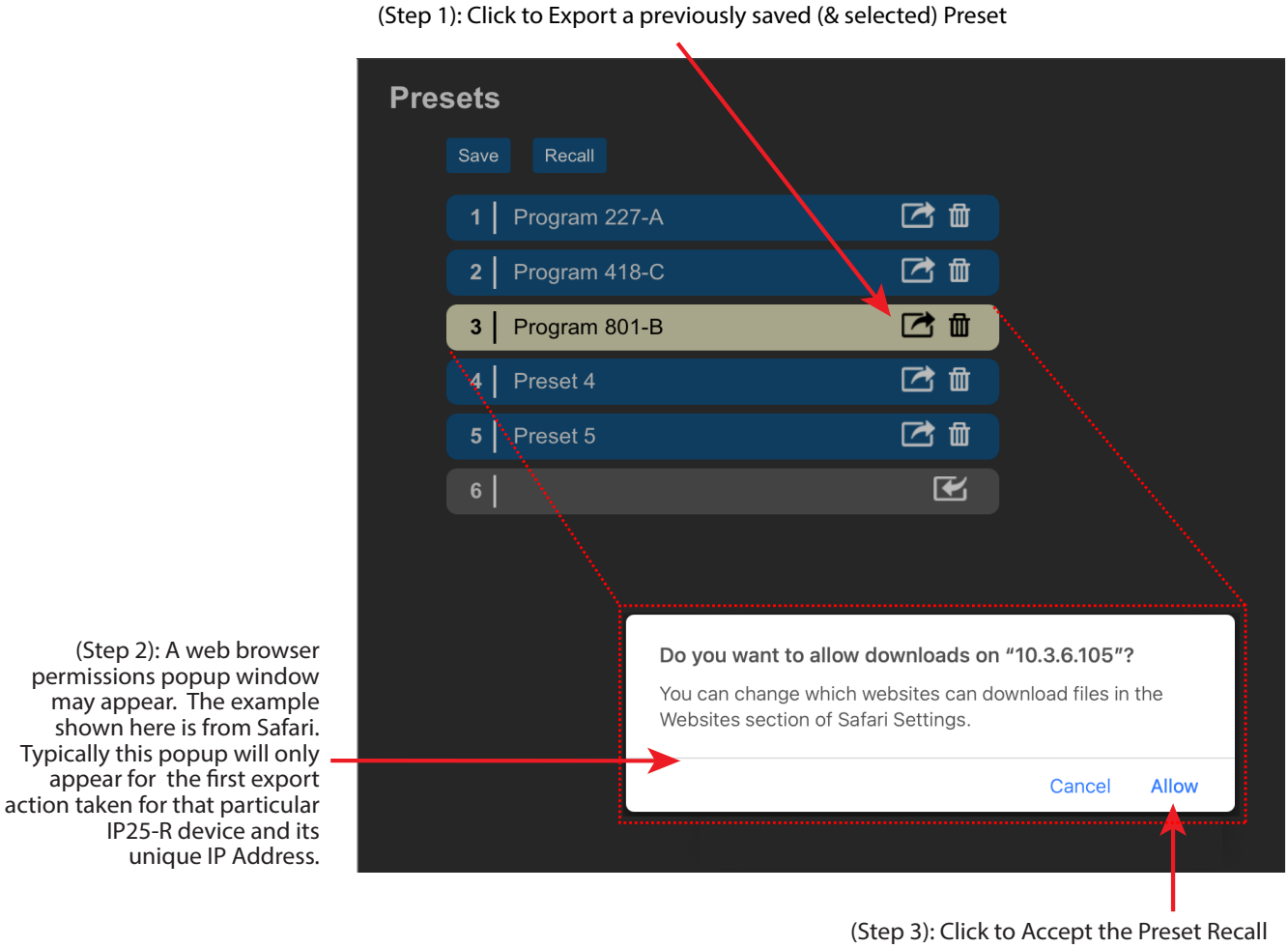
Export Button

The **Export** buttons export a saved Preset from an IP25-R. Export saves the associated Preset contents to a file on your computer. The file name is the same as the Preset Name with the suffix ".json". If you export multiple Presets to the same file name, a number is automatically appended to the filename so it is unique for data safety.

To Export a Preset:

1. Click the **Export** button for the Preset that you would like to export.

Figure 46. IP25-R Export Preset #3



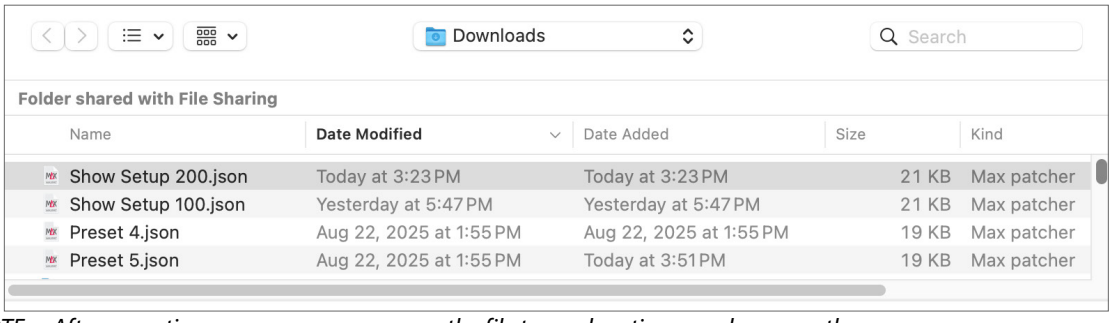
There is no Confirmation Step for Export (other than the first-time browser permission popup that may appear)

NOTE: Exported Preset data is safe from accidental overwrite because export filenames are automatically made unique when needed.

IMPORTANT: IP25-R will never erase any exported Preset files; that can only be done manually by the user in the host computer's directory.

2. The IP25-R **Exports** the Preset to the computer location that is the browser's specified default download directory.

Figure 47. IP25-R: An example of several exported Preset files in connected computer's Downloads folder



NOTE: After exporting, you may move or copy the file to any location you choose on the host computer. The downloads folder is simply the default download location.

Import Button

The **Import** button Imports a previously exported Preset from a local host computer. Import lets you browse for and import a Preset file on your computer into the Preset register associated with the selected button.

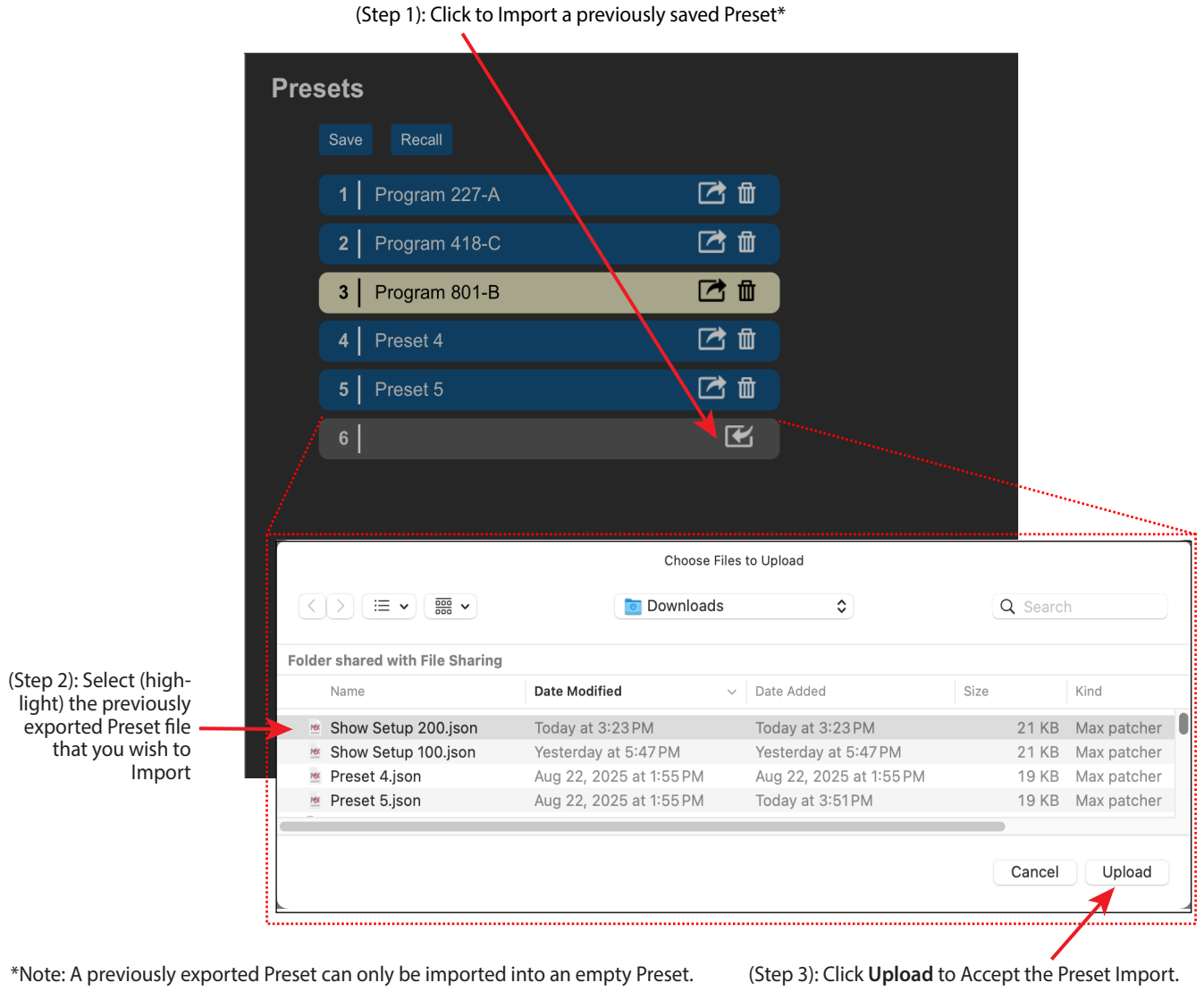
IMPORTANT: For user configuration data protection, an Import can only be applied on an unused Preset "slot." Therefore, there is no chance of accidentally over-writing a valid Preset that hadn't yet been Saved or Exported.

To Import a Preset:

1. Click the **Import** button for any empty Preset location that you would like to import into.
2. Select the Preset file that you wish to **Import**.
3. Click the **Upload** button.

(See figure on the following page.)

Figure 48. IP25-R Import Preset

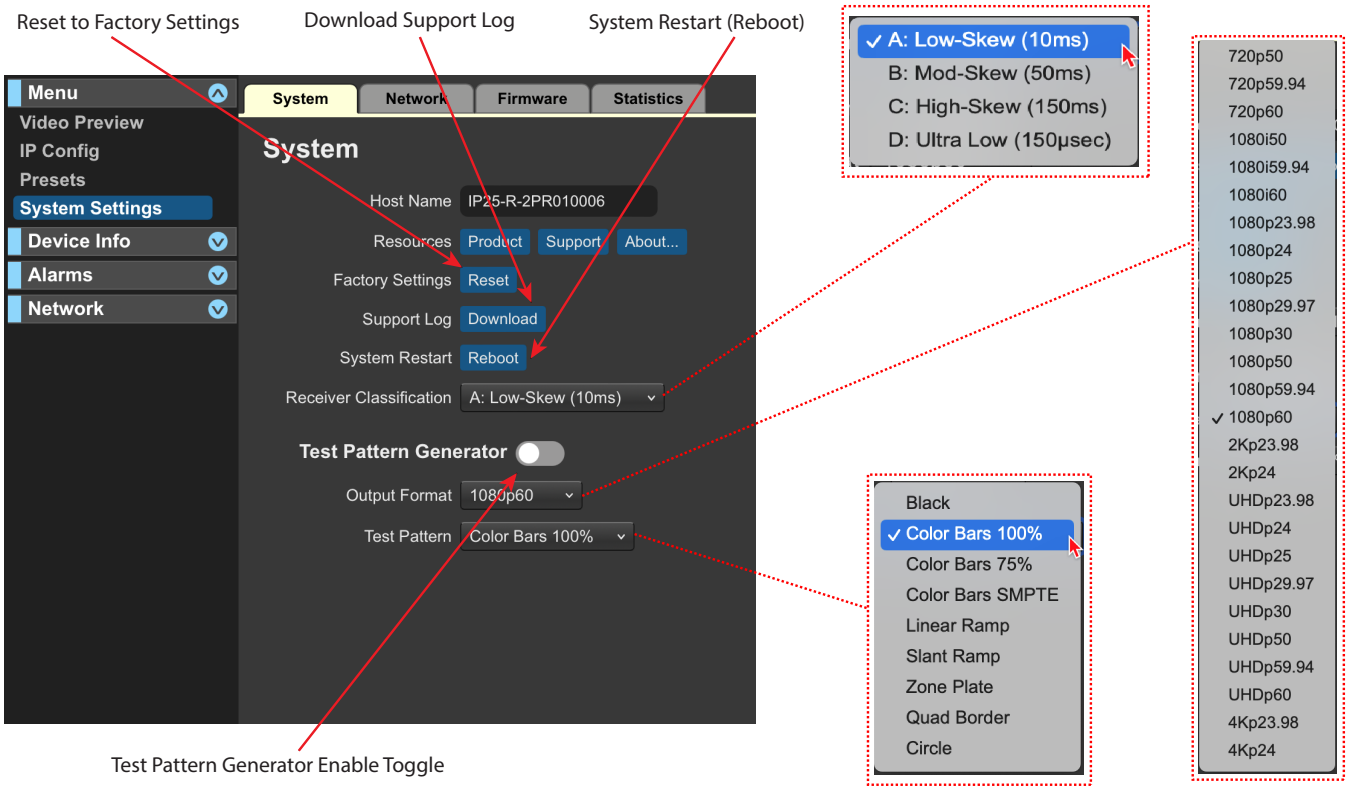


System Settings

The System Setting pane displays various IP25-R system parameters, depending on the tab selected at the top: System, Network, Firmware or Statistics.

System Tab

Figure 49. System Settings: System Tab



System Tab Controls

Host Name - Click the Change button to enter a custom name for this IP25-R, which can be useful if more than one IP25-R is being used in a production. This name appears in the Network tab of AJA devices connected on that network.)

Product - Opens IP25-R page on the AJA website for an overview of the product.

Support - Opens IP25-R page on the AJA website and presents Contact Support information.

About - Opens About IP25-R information panel.

Reset to Factory Settings - Resets your IP25-R to factory settings.

NOTE: Factory reset clears user configurations and cannot be undone.

Download Support Log - Generate and download a support log for your IP25-R. This may be required when working with your AJA Customer Support representative.

System Restart (Reboot Button) - Opens a window allowing you to restart your IP25-R.

Receiver Classification - Used to specify difference in timing or synchronization between two or more signals or data streams within a network. Default is Low-Skew @ 10ms.

NOTE: When changing Receiver Classification settings, it is recommended to disable then re-enable primary and secondary Input streams (see "Inputs" on page 43).

Test Pattern Generator On/Off Toggle - Sends test pattern to HDMI and SDI outputs.

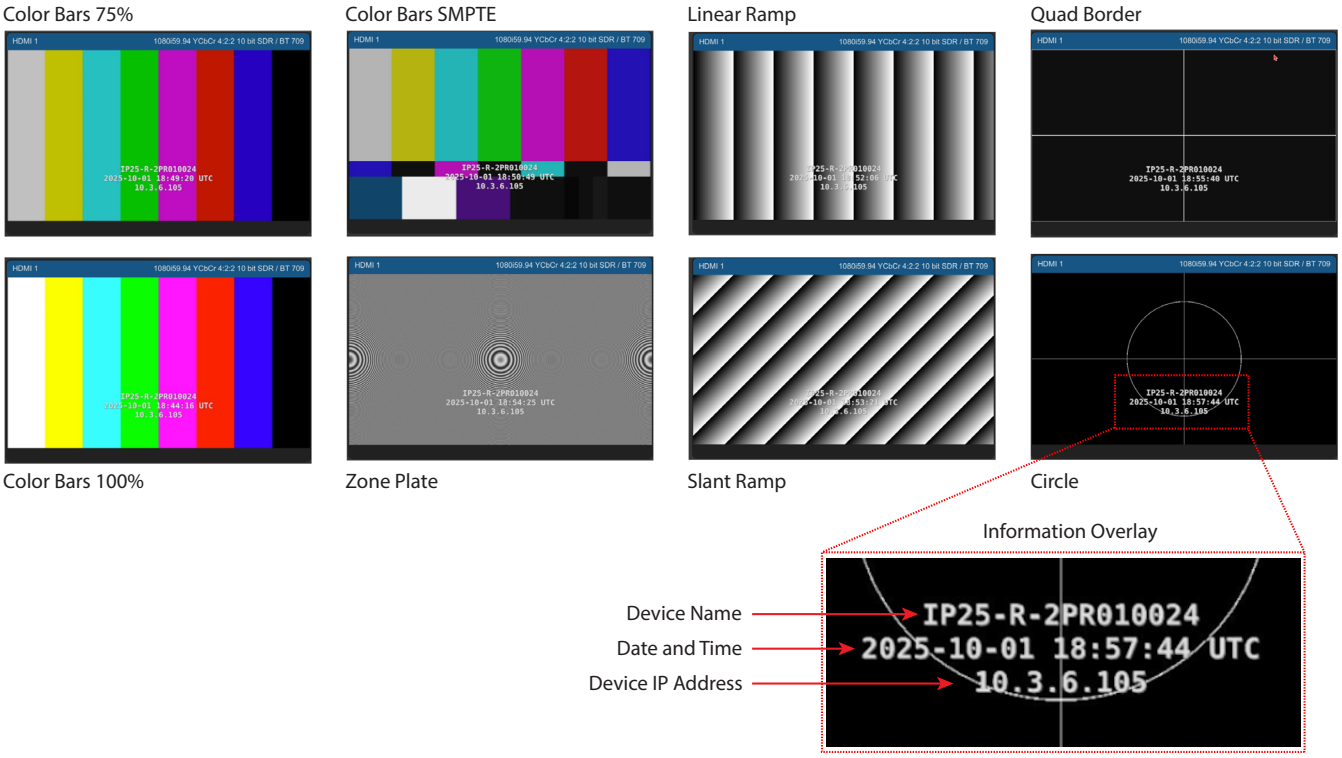
The Test Pattern output includes three information status overlays for the IP25-R: Device Name, Date/Time and Device IP Address. These overlays always appear in WebUI Video Previews, but they only appear in the IR25-R video outputs as a result of a Test Pattern Toggle procedure (see *"Test Pattern Toggle Procedure" on page 10*).

CAUTION: *Enabling test pattern will send the same test pattern to all HDMI and SDI outputs at the same time.*

Output Format - Select desired format of Test Pattern.

Test Pattern - Select Desired Test Pattern.

*Figure 50. System Settings: IP25-R Available Test Patterns with Overlays**



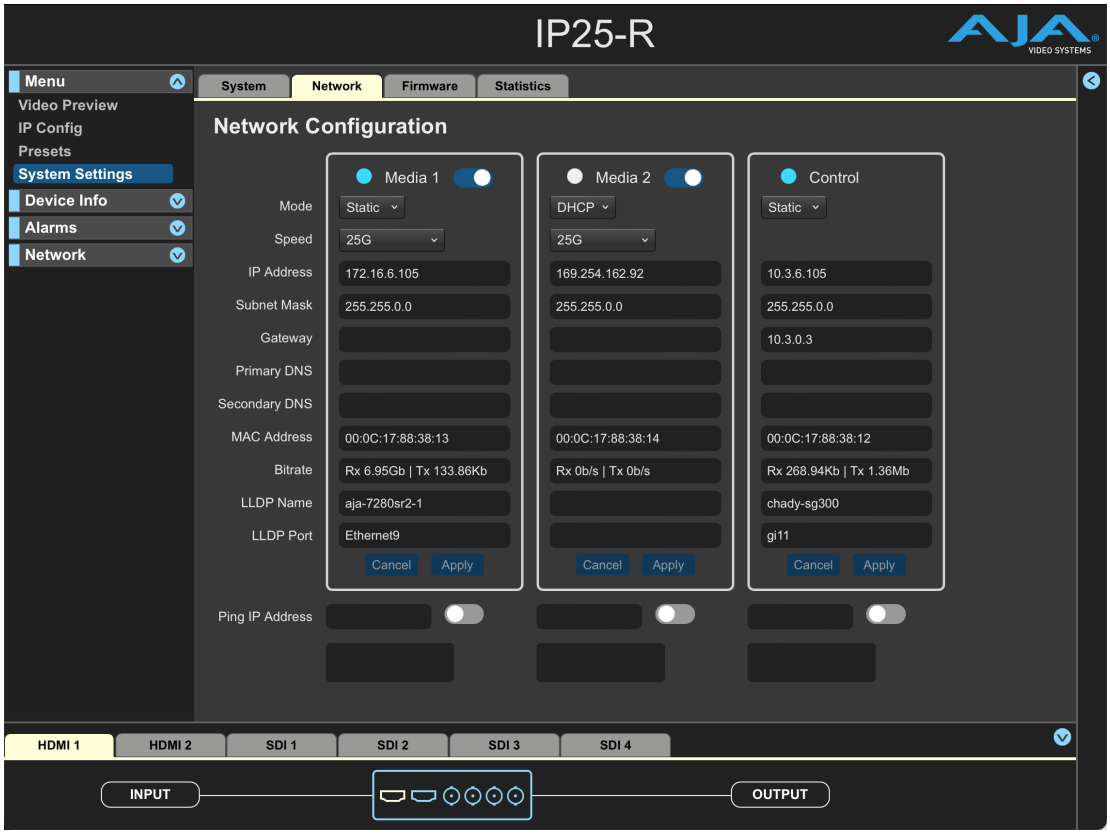
*NOTE: *Test patterns as they (each individually) appear in the IP25-R WebUI Video Preview including information overlays.*

Overlays also appear in all IP25-R video outputs as a result of a Test Pattern Toggle procedure (see *"Test Pattern Toggle Procedure" on page 10*). Otherwise, overlays do not appear in the video outputs.

Network Tab

The Network Tab gives information about the IP25-R's network settings, and allows changing them to meet your network environment. The Media 1, Media 2, and Control Networks each have their own respective controls and status information.

Figure 51. System Settings: Network Tab



Network Tab Controls

Network status indicates the following:

- Enabled and Active
- Disabled / Inactive
- Enabled but Not Active

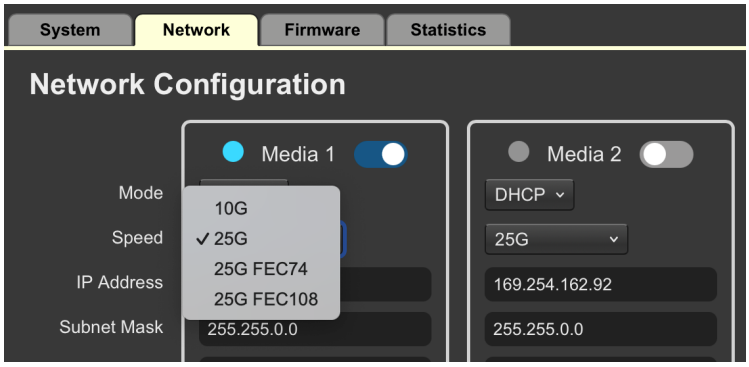
Media 1, Media 2 & Control Network Panes

Mode - Static or DHCP. Mode determines the type of TCP/IP network configuration to be used. DHCP enables connecting to the network DHCP server, which assigns the IP Address, Netmask, and Gateway automatically. Static lets you set these parameters manually.

- DHCP (default) - Selects automatic IP address assignment from the DHCP server. If a DHCP server cannot be found, IP25-R will fall back to a link local static IP address (169.254.x.x).
- Static - Assigns a static IP address manually.

Speed (Media 1 and Media 2 networks only) - 10G, 25G, 25G FEC74 or 25G FEC108

Figure 52. Media 1 & 2 Network Speed pull-down Menu



IP Address - IP Address determines a static IP address to be used for TCP/IP networking. Consult your network administrator about how to set this value.

- If IP Address Type is set to DHCP, the IP address is set automatically by the network DHCP server.
- If IP Address Type is set to Static, enter an IP address compatible with your LAN.
- If IP Address Type is set to DHCP and there is a DHCP failure, the IP address is set to a link local static IP address.

Subnet Mask - Subnet Mask determines the subnet mask to be used for TCP/IP networking.

- Use a subnet mask compatible with your LAN. This is only needed for Static IP configurations. The factory default Subnet Mask is 255.255.255.0.
- If IP Address Type is set to DHCP, the Subnet Mask is set by the DHCP server and cannot be changed by the user

Gateway - Gateway determines the gateway or router used on your LAN for TCP/IP networking. Without a properly configured default gateway (whether you have a router/gateway or not), your IP25-R will be unable to see other IP25-R devices on the network, although you may still be able to control this IP25-R via a web browser. Also, without a proper gateway defined, the discovery feature on the Network web page will not list other units on the network.

- Use a default gateway or router address. This is only needed for Static IP configurations.
- If IP Address Type is set to DHCP, the Default Gateway is set by the DHCP server and cannot be changed by the user.

Primary and Secondary DNS Servers - In DHCP mode, reports the current DNS Server IP addresses. In Static mode, allows entry of DNS Server IP addresses.

CAUTION: *If DNS servers are not present or have incorrectly entered IPs, then wherever IP25-R specifies machines by name the names won't work, although numeric IP addresses will still work.*

CAUTION: *When using Static IP addressing for* IP25-R, *be sure to also enter a valid DNS server address in the "Primary DNS Server" field. If the DNS Server address is not entered or is invalid, URLs in streaming destinations won't work and an Alarm will be displayed:*

MAC Address - Reports the connected IP25-R's Media Access Control Address.

Bitrate - Shows the RX/TX bitrates for all data on the port. Media TX may have some usage due to connections such as PTP

LLDP Name - Presents Link Layer Description Protocol Name.

LLDP Port - Link Layer Discovery Protocol: allows network devices to discover each other's identity, capabilities, and configuration by sending Type-Length-Value (TLV) packets on the data link layer.

Ping IP Address - Troubleshooting tool to find IPs on the network. When enabled, it will continuously ping the entered IP and show status of response.

Firmware Tab

The Firmware Tab gives information about the IP25-R's firmware, and is used to update its firmware. A restart is required after the firmware is loaded.

Figure 53. System Settings: Firmware Tab

Downloading and Installing Updated Firmware

The Firmware Tab allows you to download and install a firmware update from AJA.

To Download and Install Updated Firmware

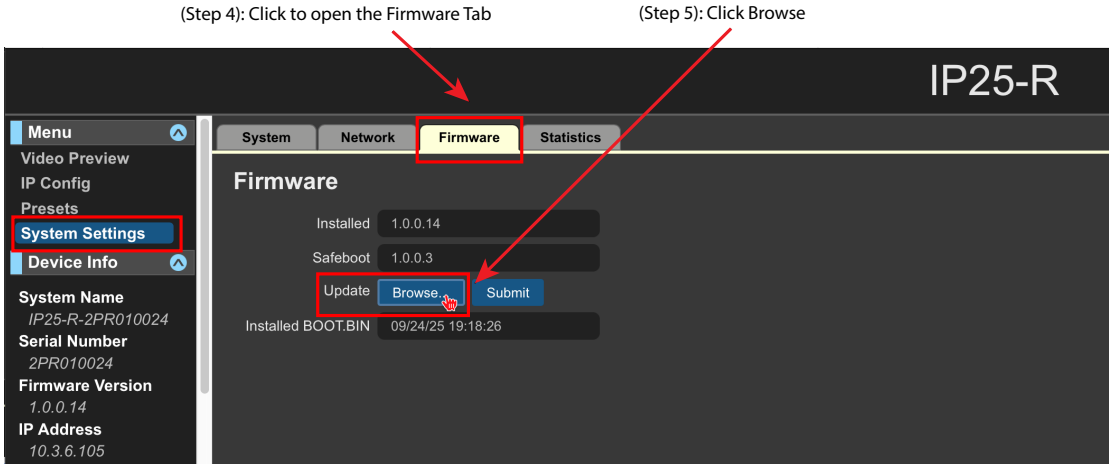
Visit the AJA website (aja.com) to locate the updated software.

1. Go to: https://www.aja.com/products/ip25-r#support
2. Select the **Software** option.
3. **Download** the most recent AJA Software file for the IP25-R.

NOTE: The download location on your host computer is determined by the web browser download preferences. Most often (but not always) this is set to the active user's 'downloads' folder.

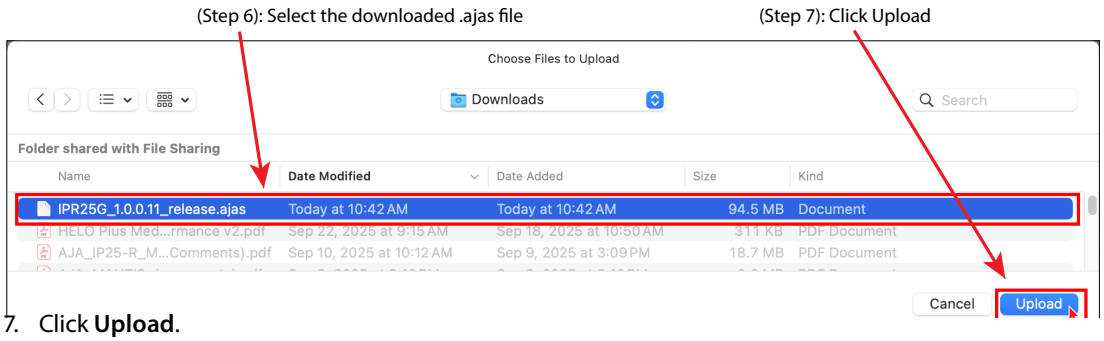
4. In the IP25-R WebUI, (if it was not already open) select the **System Settings Firmware tab**.
5. Click **Browse**.

Figure 54. Initiating a firmware update



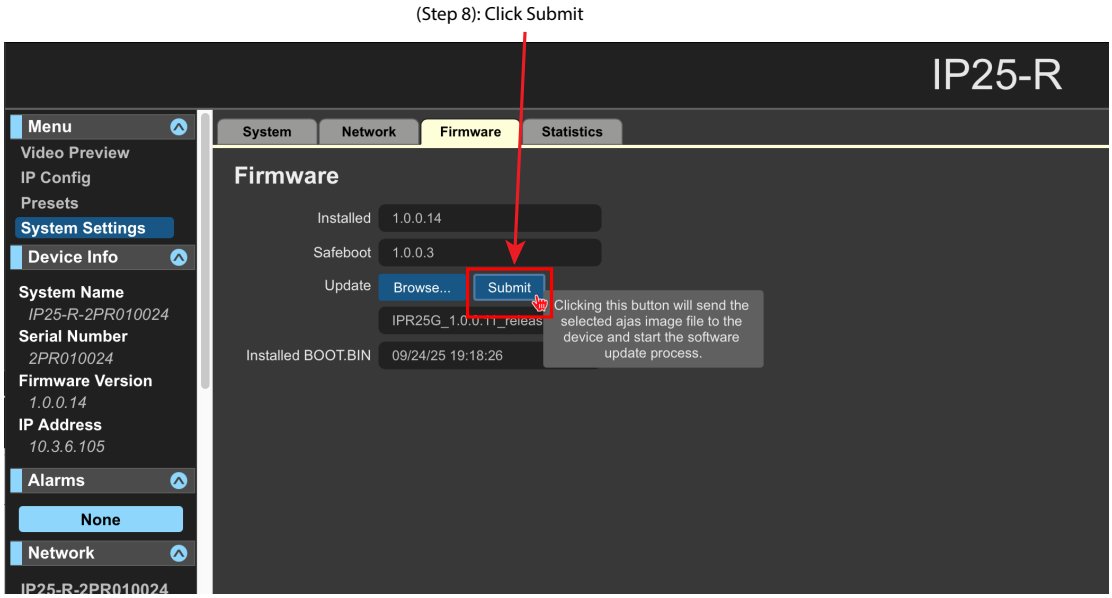
6. Select the *AJA software update file ('filename'.ajas)* previously downloaded in step #3 above.

Figure 55. Click to upload the AJA software update file



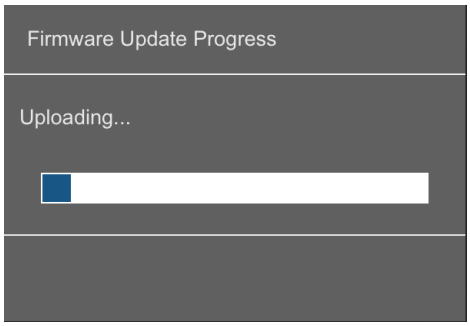
7. Click **Upload**.
8. (Back on the WebUI **Firmware** screen), click **Submit**.

Figure 56. Click Submit to send .ajas file to IP25-R & start update process



9. A Firmware Update Progress Bar will appear, and after several moments it will complete and then disappear.

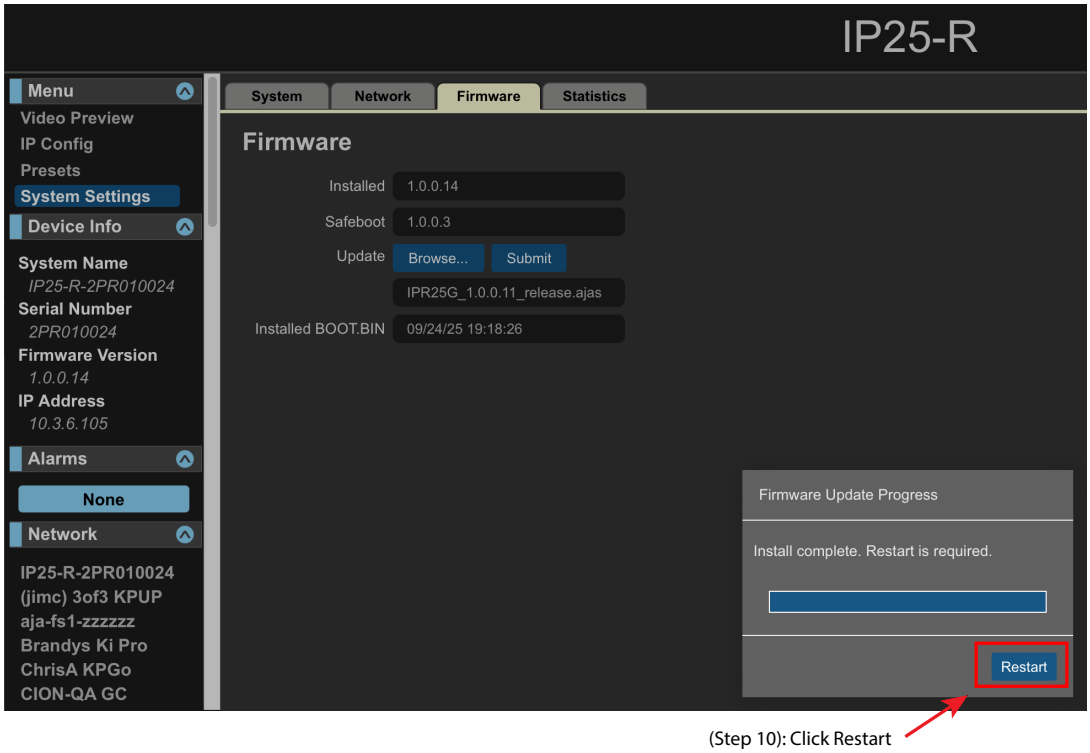
Figure 57. Firmware Update in Progress



CAUTION: *Never disconnect an IP25-R power cable or AC source during a firmware update. Doing so could cause firmware corruption and thus trigger a subsequent 'Safeboot' which restores the "safe" firmware version noted in the* ***Safeboot*** *field.*

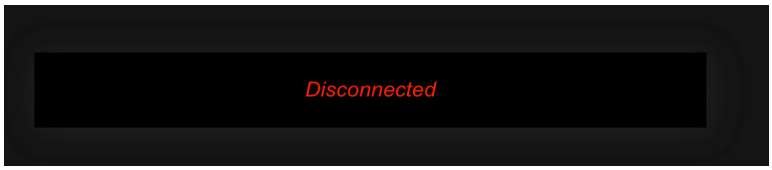
10. Click **Restart** to reboot the IP25-R with the updated firmware.

Figure 58. Click to Restart the IP25-R



11. During the reboot, your web browser will loose its connection to the IP25-R. This is normal.

Figure 59. Disconnected notice during Reboot



12. After pausing for a minute or two to give the IP25-R enough time to reboot, then refresh your web browser.

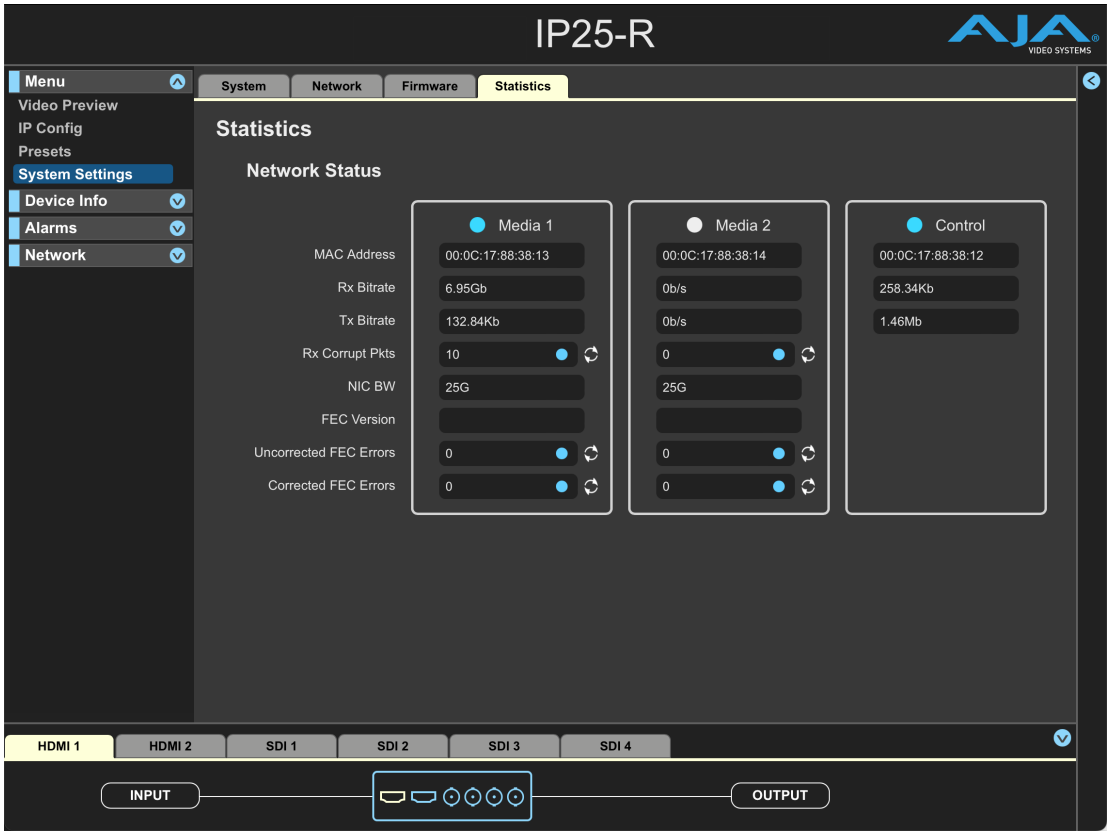
The WebUI will be available as soon as the IP25-R restart has been completed.

Statistics Tab

The round icon at top of the Media 1, Media 2 and Control panes will indicate network status:

- Enabled and Active
- Disabled / Inactive
- Enabled but Not Active

Figure 60. System Settings: Statistics Tab



Media 1 and Media 2 Network Statistics

Mac Address - Reports the connected IP25-R's Media Access Control Address.

Rx Bitrate - Shows the RX bitrates for all data on the port.

Tx Bitrate - Shows the TX bitrate for all data on the port. Media TX may have some usage due to connections such as PTP.

Rx Corrupt Pkts - Provides incrementing count of corrupt packets. Reset button returns count to 0. Status is indicated as follows:

- No Rx Corrupt Packets
- Number of Rx Corrupt Packets

NIC BW - Status of programmed NIC bandwidth.

FEC Version - Status of FEC version active: Firecode or Reed Solomon.

Uncorrected FEC Errors - Status of Uncorrected FEC errors. Only active when FEC is enabled. Reset button returns count to 0. Status is indicated as follows:

- No Uncorrected FEC Errors
- Number of Uncorrected FEC Errors

Corrected FEC Errors - Status of Corrected FEC errors. Only active when FEC is enabled. Reset button returns count to 0. Status is indicated as follows:

-  No Corrected FEC Errors
-  Number of Corrected FEC Errors

Control Network Statistics

Rx Bitrate - Shows the RX bitrate for all data on the port.

Tx Bitrate - Shows the TX bitrate for all data on the port.

Appendix A – Specifications

IP25-R Tech Specs

Video Formats

- (4K) 4096 x 2160p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
- (UHD) 3840 x 2160p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
- (2K) 2048 x 1080p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
- (HD) 1920 x 1080p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
- (HD) 1920 x 1080i 50, 59.94, 60
- (HD) 1280 x 720P 50, 59.94, 60

Media Transport Interfaces (In-Band)

- Uncompressed media (ST2110-20, 30, 40)
- PTP
- Configuration & Control
- 2x SFP28 Cages (redundant only)- SFPs not included
- Supports 10GbE and 25GbE SFPs

RJ45 1GbE Interface (Out-Of-Band)

- Configuration & Control

Input uncompressed IP

- SMPTE ST2110-20 Video
  - YCbCr 4:2:2 10-bit
  - 4-stream input*
  - Rx support for Narrow and Wide Senders
  - RX support for Class-A,B,C,D SMPTE ST2022-7 redundancy

  *Format dependent
- SMPTE ST2110-30 Audio
  - 4-stream input
  - Up to 16-channel audio per stream, 24-bit per channel, 48 kHz synchronous
  - 1ms and 125us timing
- SMPTE ST2110-40 Ancillary
  - 4-stream input

Video Output Digital

- 4x 12G-SDI BNC connectors, (ST-292/424/2081/2082)
  - HDR aware with passthrough and configuration for Colorimetry and Transfer Characteristic
- YCbCr 4:2:2
  - 10-bit
  - 4k/UHD/HD

- 2x HDMI Standard Type A connector
  - HDMI v2.0b
  - HDR aware with infoframe pass-through and configuration for Colorimetry and Transfer Characteristic
  - YCbCr 4:2:2 10-bit
  - RGB 4:4:4 8-bit
  - 4k/UHD/HD

Audio Output Digital

- SDI embedded audio, 24-bit, 16-channel
- HDMI embedded audio, 24-bit, 8-channel

IP Clock

- PTP support compliant with PTP PTPv2, PTPv3 / IEEE 1588-2008
- SMPTE ST 2059-1 compliant

User Interface

- 1x RJ-45 for 1GbE Ethernet
  - Web and REST clients supported for remote network setup and configuration
- 1x USB-C port for initial Static IP configuration using AJA eMini-Setup
- Web and REST configuration is also supported in-band over media ports

Size (w x d x h)

- 5.0" x 8.09" x 1.65" (127 x 205.49 x 41.81 mm)

Weight

- 1.92 lbs (.87 kg)

Power

- Enclosure: 10-18VDC regulated, 4-pin mini-XLR, 16W typical 3G-SDI, 21W typical 12G-SDI, 25W max
- AC Adapter included: 100-240VAC, 50/60 Hz, universal input, 60W

Environment

- Safe Operating Temperature: 0 to 40 C (32 to 104 F)
- Safe Storage Temperature (Power OFF): -40 to 60 C (-40 to 140 F)
- Operating Relative Humidity: 10-90% noncondensing
- Operating Altitude: <3,000 meters (<10,000 feet)

Appendix B – Safety and Compliance

Federal Communications Commission (FCC) Compliance Notices

Class A Interference Statement

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15, Subpart B of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution

This 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.

Canadian ICES Statement

Canadian Department of Communications Radio Interference Regulations

This digital apparatus does not exceed the Class A limits for radio-noise emissions from a digital apparatus as set out in the Radio Interference Regulations of the Canadian Department of Communications. This Class A digital apparatus complies with Canadian ICES-003.

Règlement sur le brouillage radioélectrique du ministère des Communications

Cet appareil numérique respecte les limites de bruits radioélectriques visant les appareils numériques de classe A prescrites dans le Règlement sur le brouillage radioélectrique du ministère des Communications du Canada. Cet appareil numérique de la Classe A est conforme à la norme NMB-003 du Canada.

European Union, European Free Trade Association (EFTA) and United Kingdom Regulatory Compliance

This equipment may be operated in the countries that comprise the member countries of the European Union and the European Free Trade Association. These countries, listed in the following paragraph, are referred to as The European Community throughout this document:

AUSTRIA, BELGIUM, BULGARIA, CYPRUS, CZECH REPUBLIC, DENMARK, ESTONIA, FINLAND, FRANCE, GERMANY, GREECE, HUNGARY, ICELAND, IRELAND, ITALY, LATVIA, LICHTENSTEIN, LITHUANIA, LUXEMBOURG, MALTA, NETHERLANDS, NORWAY, POLAND, PORTUGAL, ROMANIA, SLOVAKIA, SLOVENIA, SPAIN, SWEDEN, SWITZERLAND, UNITED KINGDOM

Declaration of Conformity

Marking by these symbols indicates compliance with the Essential Requirements of the EMC Directive of the European Union 2014/30/EU.

This equipment meets the following conformance standards:

Safety

IEC 62368-1: 2014 + A11 (T-Mark License),

EN 62368-1: 2014 (CB Scheme Report/Certificate)

Emissions

CISPR 32: 2015 + AMD1: 2019, EN 55032: 2015 + A11: 2020,

EN 61000-3-2: 2019,

EN 61000-3-3: 2013 + A2: 2021 + AC: 2022

Immunity

CISPR 35: 2016, EN 55035: 2017 + A11: 2020,

EN 61000-4-2: 2009,

EN 61000-4-3: 2006 + A1: 2008 + A2: 2010,

EN 61000-4-4: 2012,

EN 61000-4-5: 2014 + A1: 2017,

EN 61000-4-6: 2014, EN 61000-4-8: 2010, EN 61000-4-11: 2020

The product is also licensed, as required, for additional country specific standards for the International Marketplace. Additional issued licenses available upon request.

Warning! This is a Class A product. In a domestic environment, this product may cause radio interference, in which case, the user may be required to take appropriate measures.

Achtung! Dieses ist ein Gerät der Funkstörgrenzwertklasse A. In Wohnbereichen können bei Betrieb dieses Gerätes Rundfunkstörungen auftreten, in welchen Fällen der Benutzer für entsprechende Gegenmaßnahmen verantwortlich ist.

Attention! Ceci est un produit de Classe A. Dans un environnement domestique, ce produit risque de créer des interférences radioélectriques, il appartiendra alors à l'utilisateur de prendre les mesures spécifiques appropriées.

Recycling Notice

This symbol on the product or its packaging indicates that this product must not be disposed of with your other household waste. Instead, it is your responsibility to dispose of your waste equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment. The separate collection and recycling of your waste equipment at the time of disposal will help conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where you can drop off your waste for recycling, please contact your local authority, or where you purchased your product.

Korea KCC Compliance Statement

사 용 자 안 내 문
이 기기는 업무용 환경에서 사용할 목적으로 적합성평가를 받은 기기로서 가정 용 환경에서 사용하는 경우 전파간섭의 우려가 있습니다.

Taiwan Compliance Statement

警告: 為避免電磁干擾，本產品不應安裝　或使用於住宅環境。

This is a Class A product based on the standard of the Bureau of Standards, Metrology and Inspection (BSMI) CNS 15936: 2016, Class A. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Japan Compliance Statement

この装置は、クラスA情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。　VCCI－A

This is a Class A product based on the standard of the VCCI Council (VCCI 32: 2016). If this equipment is used in a domestic environment, radio interference may occur, in which case, the user may be required to take corrective actions.

Translated Warning and Caution Messages

The following caution statements, warning conventions, and warning messages apply to this product and manual.

 Warning Symbol  Caution Symbol

Before Operation Please Read These Instructions

Warning! Read and follow all warning notices and instructions marked on the product or included in the documentation.

Avertissement! Lisez et conformez-vous à tous les avis et instructions d'avertissement indiqués sur le produit ou dans la documentation.

Warnung! Lesen und befolgen Sie die Warnhinweise und Anweisungen, die auf dem Produkt angebracht oder in der Dokumentation enthalten sind.

¡Advertencia! Lea y siga todas las instrucciones y advertencias marcadas en el producto o incluidas en la documentación.

Aviso! Leia e siga todos os avisos e instruções assinalados no produto ou incluídos na documentação.

Avviso! Leggere e seguire tutti gli avvisi e le istruzioni presenti sul prodotto o inclusi nella documentazione.

Warning! Do not use this device near water and clean only with a dry cloth.

Avertissement! N'utilisez pas cet appareil près de l'eau et nettoyez-le seulement avec un tissu sec.

Warnung! Das Gerät nicht in der Nähe von Wasser verwenden und nur mit einem trockenen Tuch säubern.

¡Advertencia! No utilice este dispositivo cerca del agua y límpielo solamente con un paño seco.

Aviso! Não utilize este dispositivo perto da água e limpe-o somente com um pano seco.

Avviso! Non utilizzare questo dispositivo vicino all'acqua e pulirlo soltanto con un panno asciutto.

Warning! Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.

Avertissement! Ne bloquez aucune ouverture de ventilation. Suivez les instructions du fabricant lors de l'installation.

Warnung! Die Lüftungsöffnungen dürfen nicht blockiert werden. Nur gemäß den Anweisungen des Herstellers installieren.

¡Advertencia! No bloquee ninguna de las aberturas de la ventilación. Instale de acuerdo con las instrucciones del fabricante.

Aviso! Não obstrua nenhuma das aberturas de ventilação. Instale de acordo com as instruções do fabricante.

Avviso! Non ostruire le aperture di ventilazione. Installare in conformità con le istruzioni del fornitore.

Warning! Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

Avertissement! N'installez pas l'appareil près d'une source de chaleur telle que des radiateurs, des bouches d'air de chauffage, des fourneaux ou d'autres appareils (amplificateurs compris) qui produisent de la chaleur.

Warnung! Nicht in der Nähe von Wärmequellen wie Heizkörpern, Heizregistern, Öfen oder anderen Wärme erzeugenden Geräten (einschließlich Verstärkern) aufstellen.

¡Advertencia! No instale cerca de fuentes de calor tales como radiadores, registros de calor, estufas u otros aparatos (incluidos amplificadores) que generan calor.

Aviso! Não instale perto de nenhuma fonte de calor tal como radiadores, saídas de calor, fogões ou outros aparelhos (incluindo amplificadores) que produzam calor.

Avviso! Non installare vicino a fonti di calore come termosifoni, diffusori di aria calda, stufe o altri apparecchi (amplificatori compresi) che emettono calore.

Warning! Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

Avertissement! La sécurité de la prise polarisée ou de la prise de type mise à la terre ne doit en aucun cas être empêchée de fonctionner. Une prise polarisée a deux broches, l'une étant plus large que l'autre. Une prise de type mise à la terre a deux broches et une troisième broche pour la mise à la terre. La broche large ou la troisième broche sont fournies pour votre sécurité. Si la prise fournie ne s'insère pas dans votre prise femelle, consultez un électricien pour le remplacement de la prise femelle obsolète.

Warnung! Der Sicherheitszweck des gepolten bzw. Schukosteckers ist zu berücksichtigen. Ein gepolter Stecker verfügt über zwei Pole, von denen einer breiter als der andere ist. Ein Schukostecker verfügt neben den zwei Polen noch über einen dritten Pol zur Erdung. Der breite Pol bzw. der Erdungspol dienen der Sicherheit. Wenn der zur Verfügung gestellte Stecker nicht in Ihren Anschluss passt, konsultieren Sie einen Elektriker, um den veralteten Anschluss zu ersetzen.

¡Advertencia! No eche por tierra la finalidad del tipo de enchufe polarizado con conexión a tierra. Un enchufe polarizado tiene dos espigas, una más ancha que la otra. Un enchufe con conexión a tierra tiene dos espigas iguales y una tercera espiga que sirve para la conexión a tierra. La expiga ancha, o la tercera espiga, sirven para su seguridad. Si el enchufe suministrado no encaja en el tomacorriente, consulte con un electricista para reemplazar el tomacorriente obsoleto.

Aviso! Não anule a finalidade da segurança da ficha polarizada ou do tipo ligação terra. Uma ficha polarizada tem duas lâminas sendo uma mais larga do que a outra. Uma ficha do tipo de ligação à terra tem duas lâminas e um terceiro terminal de ligação à terra. A lâmina larga ou o terceiro terminal são fornecidos para sua segurança. Se a ficha fornecida não couber na sua tomada, consulte um electricista para a substituição da tomada obsoleta.

Avviso! Non compromettere la sicurezza della spina polarizzata o con messa a terra. Una spina polarizzata ha due spinotti, di cui uno più largo. Una spina con messa a terra ha due spinotti e un terzo polo per la messa a terra. Lo spinotto largo o il terzo polo sono forniti per motivi di sicurezza. Se la spina fornita non si inserisce nella presa di corrente, contattare un elettricista per la sostituzione della presa obsoleta.

Warning! Since the Mains plug is used as the disconnection for the device, it must remain readily accessible and operable.

Avertissement! Puisque la prise principale est utilisée pour débrancher l'appareil, elle doit rester aisément accessible et fonctionnelle.

Warnung! Da der Netzstecker als Trennvorrichtung dient, muss er stets zugänglich und funktionsfähig sein.

¡Advertencia! Puesto que el enchufe de la red eléctrica se utiliza como dispositivo de desconexión, debe seguir siendo fácilmente accesible y operable.

Aviso! Dado que a ficha principal é utilizada como a desconexão para o dispositivo, esta deve manter-se prontamente acessível e funcional.

Avviso! Poiché il cavo di alimentazione viene usato come dispositivo di sconnessione, deve rimane prontamente accessibile e operabile.

Warning! Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the device.

Avertissement! Protégez le cordon d'alimentation pour que l'on ne marche pas dessus ou qu'on le pince, en particulier au niveau des prises mâles, des réceptacles de convenance, et à l'endroit où il sort de l'appareil.

Warnung! Vermeiden Sie, dass auf das Netzkabel getreten oder das Kabel geknickt wird, insbesondere an den Steckern, den Steckdosen und am Kabelausgang am Gerät.

¡Advertencia! Proteja el cable de corriente para que no se le pise ni apriete, en especial cerca del enchufe, los receptáculos de conveniencia y el punto del que salen del equipo.

Aviso! Proteja o cabo de alimentação de ser pisado ou de ser comprimido particularmente nas fichas, em tomadas de parede de conveniência e no ponto de onde sai do dispositivo.

Avviso! Proteggere il cavo di alimentazione in modo che nessuno ci cammini sopra e che non venga schiacciato soprattutto in corrispondenza delle spine e del punto in cui esce dal dispositivo.

Warning! Unplug this device during lightning storms or when unused for long periods of time.

Avertissement! Débranchez cet appareil pendant les orages avec éclairsou s'il est inutilisé pendant de longues périodes.

Warnung! Das Gerät ist bei Gewitterstürmen oder wenn es über lange Zeiträume ungenutzt bleibt vom Netz zu trennen.

¡Advertencia! Desenchufe este dispositivo durante tormentas eléctricas o cuando no se lo utilice por largos periodos del tiempo.

Aviso! Desconecte este dispositivo da tomada durante trovoadas ou quando não é utilizado durante longos períodos de tempo.

Avviso! Utilizzare soltanto i collegamenti e gli accessori specificati e/o venduti dal produttore, quali il treppiedi e l'esoscheletro.

Warning! Refer all servicing to qualified service personnel. Servicing is required when the device has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the device, the device has been exposed to rain or moisture, does not operate normally, or has been dropped.

Avertissement! Référez-vous au personnel de service qualifié pour tout entretien. L'entretien est exigé quand l'appareil a été endommagé de quelque manière que ce soit, par exemple lorsque le cordon d'alimentation ou la prise sont endommagés, que du liquide a été versé ou des objets sont tombés dans l'appareil, que l'appareil a été exposé à la pluie ou à l'humidité, ne fonctionne pas normalement ou est tombé.

Warnung! Das Gerät sollte nur von qualifizierten Fachkräften gewartet werden. Eine Wartung ist fällig, wenn das Gerät in irgendeiner Weise beschädigt wurde, wie bei beschädigtem Netzkabel oder Netzstecker, falls Flüssigkeiten oder Objekte in das Gerät gelangen, das Gerät Regen oder Feuchtigkeit ausgesetzt wurde, nicht ordnungsgemäß funktioniert oder fallen gelassen wurde.

¡Advertencia! Consulte al personal calificado por cuestiones de reparación. El servicio de reparación se requiere cuando el dispositivo ha recibido cualquier tipo de daño, por ejemplo cable o espigas dañadas, se ha derramado líquido o se han caído objetos dentro del dispositivo, el dispositivo ha sido expuesto a la lluvia o humedad, o no funciona de modo normal, o se ha caído.

Aviso! Remeta todos os serviços de manutenção para o pessoal de assistência qualificado. A prestação de serviços de manutenção é exigida quando o dispositivo foi danificado mediante qualquer forma, como um cabo de alimentação ou ficha que se encontra danificado/a, quando foi derramado líquido ou caíram objectos sobre o dispositivo, quando o dispositivo foi exposto à chuva ou à humidade, quando não funciona normalmente ou quando foi deixado cair.

Avviso! Fare riferimento al personale qualificato per tutti gli interventi di assistenza. L'assistenza è necessaria quando il dispositivo è stato danneggiato in qualche modo, ad esempio se il cavo di alimentazione o la spina sono danneggiati, è stato rovesciato del liquido è stato rovesciato o qualche oggetto è caduto nel dispositivo, il dispositivo è stato esposto a pioggia o umidità, non funziona correttamente o è caduto.

Warning! Do not open the chassis. There are no user-serviceable parts inside. Opening the chassis will void the warranty unless performed by an AJA service center or licensed facility.

Avertissement! Ne pas ouvrir le châssis. Aucun élément à l'intérieur du châssis ne peut être réparé par l'utilisateur. La garantie sera annulée si le châssis est ouvert par toute autre personne qu'un technicien d'un centre de service ou d'un établissement agréé AJA.

Warnung! Öffnen Sie das Gehäuse nicht. Keine der Geräteteile können vom Benutzer gewartet werden. Durch das Öffnen des Gehäuses wird die Garantie hinfällig, es sei denn, solche Wartungsarbeiten werden in einem AJA-Service-Center oder einem lizenzierten Betrieb vorgenommen.

¡Advertencia! No abra el chasis. El interior no contiene piezas reparables por el usuario. El abrir el chasis anulará la garantía a menos que se lo haga en un centro de servicio AJA o en un local autorizado.

Advertência! Não abra o chassi. Não há internamente nenhuma peça que permita manutenção pelo usuário. Abrir o chassi anula a garantia, a menos que a abertura seja realizada por uma central de serviços da AJA ou por um local autorizado.

Avvertenza! Non aprire lo chassis. All'interno non ci sono parti riparabili dall'utente. L'apertura dello chassis invaliderà la garanzia se non viene effettuata da un centro ufficiale o autorizzato AJA.

Warning! Disconnect the external AC power supply line cord(s) from the mains power before moving the unit.

Avertissement! Retirez le ou les cordons d'alimentation en CA de la source d'alimentation principale lorsque vous déplacez l'appareil.

Warnung! Trennen Sie die Wechselstrom-Versorgungskabel vom Netzstrom, bevor Sie das Gerät verschieben.

¡Advertencia! Cuando mueva la unidad desenchufe de la red eléctrica el/los cable(s) de la fuente de alimentación CA tipo brick.

Advertência! Remova os cabos CA de alimentação brick da rede elétrica ao mover a unidade.

Avvertenza! Scollegare il cavo dell'alimentatore quando si sposta l'unità.

Warning! Only use attachments and accessories specified and/or sold by the manufacturer.

Avertissement! Utilisez seulement les attaches et accessoires spécifiés et/ou vendus par le fabricant.

Warnung! Verwenden Sie nur Zusatzgeräte und Zubehör angegeben und / oder verkauft wurde durch den Hersteller.

¡Advertencia! Utilice solamente los accesorios y conexiones especificados y/o vendidos por el fabricante.

Aviso! Utilize apenas equipamentos/acessórios especificados e/ou vendidos pelo fabricante.

Avviso! Utilizzare soltanto i collegamenti e gli accessori specificati e/o venduti dal produttore.

5-Year Warranty and Liability Information

Limited Warranty on Hardware

AJA Video Systems, Inc. (AJA Video) warrants that the hardware product, not including software components, will be free from defects in materials and workmanship for a period of five years from the date of purchase. AJA Video provides a separate software warranty as part of the license agreement applicable to software components.

If the Customer brings a valid claim under this limited warranty for a hardware product (hereafter, a "product") during the applicable warranty period, AJA Video will, at its sole option and as the Customer's sole remedy for breach of the above warranty, provide one of the following remedies:

- Repair or facilitate the repair the product within a reasonable period of time, free of charge for parts and labor.
- Replace the product with a direct replacement or with a product that performs substantially the same function as the original product.
- Issue a refund of the original purchase price less depreciation to be determined based on the age of the product at the time remedy is sought under this limited warranty.

To obtain service under this warranty, the Customer must notify AJA Video of the defect before expiration of the warranty period and make suitable arrangements for the performance of service by contacting AJA Video support through the channels set forth on the support contacts web page at https://www.aja.com/support. Except as stated, the Customer shall bear all shipping, packing, insurance and other costs, excluding parts and labor, to effectuate repair. Customer shall pack and ship the defective product to a service center designated by AJA Video, with shipping charges prepaid. AJA Video shall pay to return the product to Customer, but only if to a location within the country in which the AJA Video service center is located. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OF IMPLIED WARRANTIES OR LIMITATIONS ON APPLICABLE STATUTORY RIGHTS OF A CONSUMER, SO SOME OR ALL OF THE TERMS OF THIS PARAGRAPH MAY NOT APPLY TO YOU.

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Governing Law and Language; Your Rights

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Index

Symbols

5-Year Warranty and Liability Information 70

A

Access to Air for Proper Cooling 19
Acquiring eMini-Setup 20
AJA Device Identification 21
AJA Device Selection 21
AJA Support 2
Alarms Pane 29
Audio Pane 40
Authentication 27
  Disabling 26

B

Block Diagram 17

C

Cable
  Ethernet 27
  USB Cable Supplied 20
CH1 Video Input (2110-20) 40
CH1 Video SDP 40
Compliance 62
Configuration
  Initial 17
Control LAN Connection Status 22
Control LAN Tab Screen 22
Control & Media LAN, Ready, Link/Act, & Lock LED Behavior
Control Network Statistics 59

D

Decoding 19
Device Info Pane 29
DHCP
  Controlling Computer's Ethernet Port 27
Discovery, Registration and Control 7
Downloading and Installing Updated Firmware 55
Dynamic Control 29

E

Edit Menu 21
Ember+ Configuration 43
eMini-Setup 17, 20
  Acquiring 20
  Operating 21
  Running 20
  Screen 21
Environment 7
Export Button 48

F

File Menu 21
Firmware
  Downloading 55
  Updating from Web UI 55
Firmware Tab 55
Form Factor 9, 10, 11

G

Gateway 23, 25
Global Control Tab 42
Global Ctrl (Control) Tab 42

H

Hardware Installation 19
HDMI 1 & 2 34
HDMI 1 & 2 Source Select 34
HDMI Output 7
HDMI Output Configuration Controls 35
HDMI Output Select 35
Help Menu 21

I

Import Button 50
Info Tab Screen 26
Initial Setup By AJA eMini-Setup 18
Initial Setup By Web Browser 18
Input and Output Configuration Panes 32
Input Configuration Pane (Source Select) 34
Input IP 6
Inputs Tab 37
Installation
  Overview 17
IP25-R Features 5
IP25-R I/O Connections 8
IP25-R Key Connectivity 6
IP25-R System Requirements 17
IP Address 24, 27
  Applying Changes with eMini-Setup 22
  Media LAN Port 27
  Using to Access Web UI 20, 27
IP Address Type 22, 24
IP Config 37

L

LAN
  Connecting Unit to Network with Control LAN and Media LAN 19
  Using Media LAN for Control and Media 19, 27
  Using Standard RJ-45 Connector 27
LED Behavior
  Ready, Lock and LAN
LEDs 9

M

MAC Address 23, 25
macOS Host 18
macOS Startup 20
Main Screen 28
Media 1 and Media 2 Network Statistics 58
Media 1 & Media 2 Connection Status 21
Media 1, Media 2 Panes 53
Media LAN 1 & 2 Tab Screens 24
Media Transport Interfaces 6
Menu Pane 28
Mounting Holes 12
Multicast View 37
Multiviewer Monitoring and Distribution as SDI ST2110 UHDp60 to SDI Infrastructure & HDMI monitoring 15

N

Network Configuration
  Accessing Control and Media Parameters Through Media LAN Only 19
Networking Option 27
Network Pane 29
Network Screen
  Configuring Settings for Control LAN Ethernet Port 60
Network Statistics Control Pane 59
Network Statistics Media 1 and Media 2 Panes 58
Network Tab 53
Network Tab Controls 53
NMOS Configuration 42
Number of LAN Connection 19

O

Open Web Page 23, 25
Operating eMini-Setup 21
Output Configuration Pane 35
Output (Destination) Configuration Pane 35
Output IP 6
Overview 5
  eMini-Setup 20
  Installation 17
  Web Interface 27

P

Pipeline Pane 30
Pipeline Pane Controls & Icons 30
Pipeline Pane Impact on Configuration Panes 30
Pipeline Select Tabs 30

Power 7
Presets 45
Changing Name 46
Erasing 46
Exporting 45, 46
File Name Suffix 46
Importing 46
Recalling 45
Register 46
Saving 45
Screen Controls 45
Preset Save
Web UI 47
Primary & Secondary Rx 41
PTP 7
PTP Control Pane 44
PTP Tab 44

R

Recall Button 47
Remote Control
Overview 27
REST API Documentation 19
RJ-45
Connector 27
Running eMini-Setup 20

S

Safeboot Button 9
Safeboot Mode 9
Safeboot Procedure 10
Safety and Compliance 62
SDI 1-4 34
SDI 1-4 Source Select 34
SDI Output 7
SDI Output Configuration Controls 37
SDI Output Select 36
SDP View 39
Settings Retained 19
Simplified Block Diagrams and Logic Diagrams 17
Size (w x d x h) 7
Specifications 60
Technical 60
Speed 24
ST2110-20 Video Configuration 41
ST2110 HDp60 to SDI Infrastructure & HDMI monitoring 16
ST2110 UHDp60 to SDI Infrastructure & HDMI Monitoring 14
Statistics Tab 58
Status Message 22
Store Button 46
Subnet Mask 23, 25
Supported SFP Models 6
System Name 26
System Settings 51
System Tab 51
System Tab Controls 51

T

Tabbed Screens 22
Temperature of Unit 19
Test Pattern Toggle Procedure 10
To Export a Preset: 48
To Import a Preset: 50
To Recall a Preset: 47
To Set Up the Unit with a Web Browse 18
To Store a Preset: 46
Truck ST2110 Camera & Switcher Monitoring 13
Type 26

U

UHD Multiviewer Monitoring and Distribution 15
Updated Software
Downloading 55
Update Tab 26
UPnP Host 23, 25
USB Cable
Running eMini-Setup 20
USB Connection Statu 22
USB Port
Required for Initial Configuration Using eMini-Setup 17
Using Only the Media LAN Port for Control & Media Settings 27
Using Presets 46

V

Video, Audio & Ancillary Status 32
Video, Audio and Ancellary Panes 39
Video Pane 39
Video Preview 31
Video Preview Status Pane 32
Video Preview Window Elements 31
Video Status 32
Viewing a Configuration Pane 32

W

Web Browser
Accessing Unit Via IP Address 20
Preferred 17
System Requirements 17
Web Server
Access Password 46
Built In 20, 27
Unit's Internal 17
Web UI
Preset Save Button 47
WebUI 27
WebUI Overview 28
Weight 7
Windows PC Host 18
Windows Startup 20
Workflow Diagrams 13

Y

YCbCr 10 Bit 4:2:2 ST2110-20 Video Formats 6