

# 10 GigE IP Mini-Converters

## SMPTE 2110 IP Transmit/Receive



## Installation and Operation Guide

Version 2.1  
Published May 10, 2019



# Notices

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## Contacting AJA Support

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When calling for support, have all information at hand prior to calling. To contact AJA for sales or support, use any of the following methods:

Telephone	+1.530.271.3190
FAX	+1.530.271.3140
Web	<a href="https://www.aja.com">https://www.aja.com</a>
Support Email	<a href="mailto:support@aja.com">support@aja.com</a>
Sales Email	<a href="mailto:sales@aja.com">sales@aja.com</a>

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# Chapter 1 – Introduction

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## Overview

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AJA 10 GigE IP Mini-Converters are designed for point of use applications for encoding, transport, reception and decoding of IP based video sources. Rugged, compact and fanless, the 10 GigE IP Mini-Converters provide the bridge between Baseband and IP video for a range of applications, such as sending and receiving video over IP from remote facilities in post production, source monitoring, digital signage, and video walls. 10 GigE IP Mini-Converters ease the cost of extensive monitoring distribution in a facility.

The 10 GigE IP Mini-Converter Transmitters take baseband HDMI or SDI input and encode the data as SMPTE 2110. The embedded audio associated with the video stream is also encoded to SMPTE 2110. Alternatively, analog audio can be encoded and sent with the video stream instead.

The 10 GigE IP Mini-Converter Receivers decode SMPTE 2110 and format the data for either HDMI or SDI output. The audio associated with the video stream is extracted, synchronized, and then embedded into the HDMI or SDI signal as well as output on a stereo analog RCA audio output.

UltraHD p30 can be received only by the IPR-10G-HDMI.

Both the IPR-10G2-HDMI and the IPR-10G-HDMI can provide RGB (rather than YCbCr) to a compatible monitor if the monitor or other sink device indicates this availability via EDID.

# 10 GigE IP Mini-Converters Features

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## IPT-10G2-SDI Features

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- SMPTE ST 2110 audio, video transmitter
- Rugged, fanless design
- 2x 10 GigE SFP+ cages for media LAN (providing support for hitless switching) with status light
- 1x 1 GigE RJ45 socket for control LAN (with status light)
- 1x 3G-SDI Input
- 1x 3G-SDI Loop Out
- Support for HD up to 1080 60p, YCbCr4:2:2
- Full 10-bit pixel processing pipeline
- Embedded SDI audio input (up to eight channels)
- 2x RCA analog audio input
- 1x BNC Reference Out
- 1x mini-USB port for initial network configuration with AJA eMini-Setup software
- Complete control interface on any web browser from a built-in web server
- Customizable control with AJA REST API
- 5-year international warranty and support

## IPT-10G2-HDMI Features

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- SMPTE 2110 audio, video transmitter
- Rugged, fanless design
- 2x 10 GigE SFP+ cages for media LAN (providing support for hitless switching) with status light
- 1x 1 GigE RJ45 socket for control LAN with status light
- Dedicated HDMI transmitter with full size HDMI 1.4b video input port
- Support for HD up to 1080 60p, YCbCr 4:2:2
- Full 10-bit pixel processing pipeline
- Embedded HDMI audio input (up to eight channels)
- 2x RCA analog audio input
- 1x BNC Reference Out
- 1x mini-USB port for initial network configuration with AJA eMini-Setup software
- Complete control interface on any web browser from a built-in web server
- Customizable control with AJA REST API
- 5-year international warranty and support

## IPR-10G2-SDI

---

- SMPTE ST 2110 audio, video receiver
- Rugged, fanless design
- 2x 10 GigE SFP+ cages for media LAN (providing support for hitless switching) with status light
- 1x 1 GigE RJ45 socket for control LAN (with status light)
- 2x 3G-SDI Output
- Support for HD up to 1080 60p, YCbCr4:2:2
- Full 10-bit pixel processing pipeline

- Embedded SDI audio output (up to eight channels)
- 2x RCA analog audio output
- 1x BNC Reference (reserved for future potential features)
- 1x mini-USB port for initial network configuration with AJA eMini-Setup software
- Complete control interface on any web browser from a built-in web server
- Customizable control with AJA REST API
- 5-year international warranty and support

## IPR-10G2-HDMI

---

- SMPTE 2110 audio, video receiver
- Rugged, fanless design
- 2x 10 GigE SFP+ cages for media LAN (providing support for hitless switching) with status light
- 1x 1 GigE RJ45 socket for control LAN with status light
- Dedicated HDMI transmitter with full size HDMI 1.4b video output port
- Support for HD up to 1080 60p, YCbCr 4:2:2
- Full 10-bit pixel processing pipeline
- Embedded HDMI audio output (up to eight channels)
- 2x RCA analog audio output
- 1x BNC Reference (reserved for future potential features)
- 1x mini-USB port for initial network configuration with AJA eMini-Setup software
- Complete control interface on any web browser from a built-in web server
- Customizable control with AJA REST API
- 5-year international warranty and support

## IPR-10G-HDMI

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- SMPTE 2110 audio, video receiver
- Rugged, fanless design
- 1x SFP+ Cage for 10G Ethernet media, control, and timing input – SFP+ modules not included
- 1x RJ-45 (IEC 60603-7) for 10/100/1000 Base-T Ethernet for control
- Dedicated HDMI transmitter with full size HDMI 1.4b video output port
- Essence support: SMPTE 2110-10, 2110-20, 2110-30
- Support for receiving UltraHD p23.98, p24, p25, p29.97, p30
- Full 10-bit pixel processing pipeline
- Embedded and analog audio outputs
- Networked Media Open Specifications (NMOS) Support
- Ember Plus Support
- Network (LAN) control and status
- 1x mini-USB port for initial network configuration with AJA eMini-Setup software
- Complete control interface on any web browser from a built-in web server
- Customizable control with AJA REST API
- 5-year international warranty and support

# Frequently Asked Questions

To access responses to frequently asked questions about the 10 GigE IP Mini-Converters, please use the following links:

- <https://www.aja.com/products/ipt-10g2-sdi#support>
- <https://www.aja.com/products/ipt-10g2-hdmi#support>
- <https://www.aja.com/products/ipr-10g2-sdi#support>
- <https://www.aja.com/products/ipr-10g2-hdmi#support>
- <https://www.aja.com/products/ipr-10g-hdmi#support>

# System Requirements

Remote computer configuration and control is accomplished using the 10 GigE IP Mini-Converters' internal web server. A macOS X or Windows computer with a web browser installed is all that is required. Additionally, initial configuration using eMini-Setup will require a USB port between the host computer and the 10 GigE IP 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.*

# Simplified Block Diagrams

Figure 1. IPT-10G2-SDI/HDMI Simplified Block Diagram

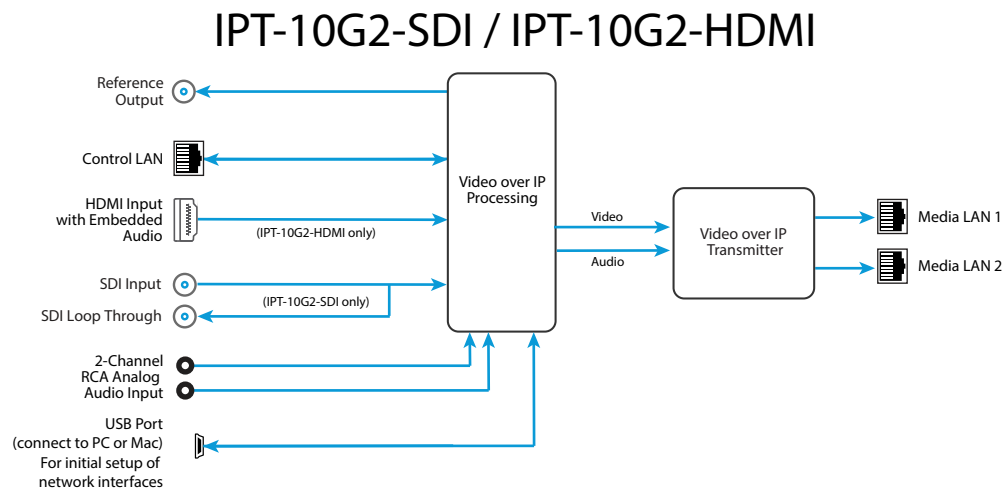




Figure 2. IPR-10G2-SDI/HDMI Simplified Block Diagram

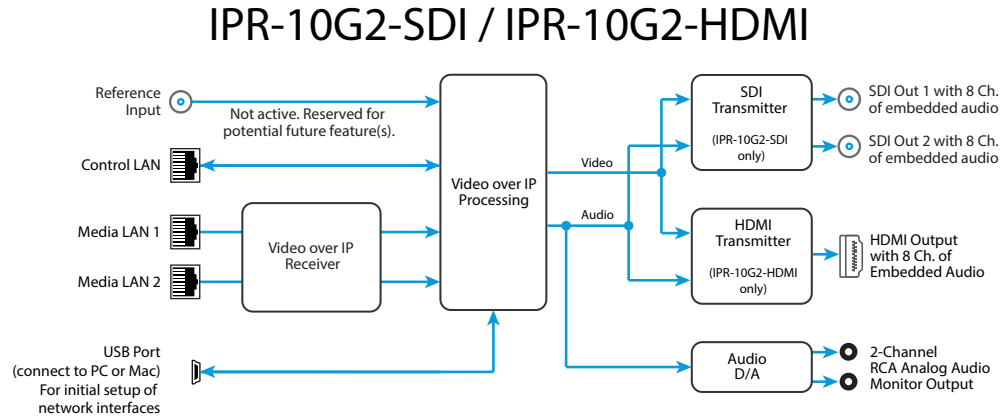
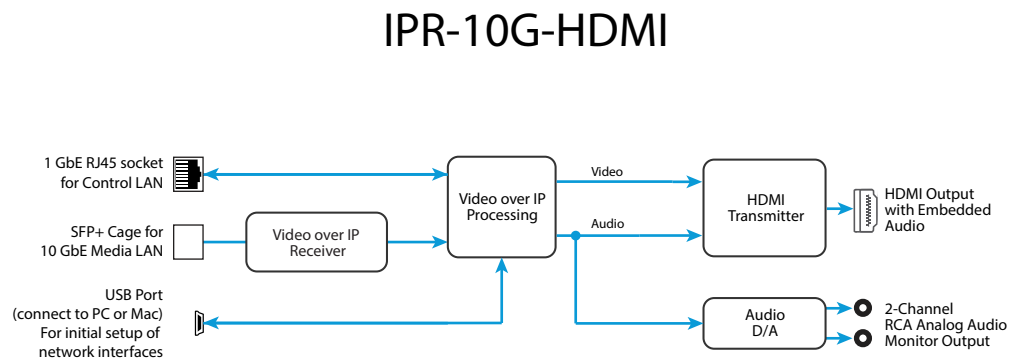


Figure 3. IPR-10G-HDMI Simplified Block Diagram



## I/O Connections

Figure 4. IPT-10G2-SDI Connections

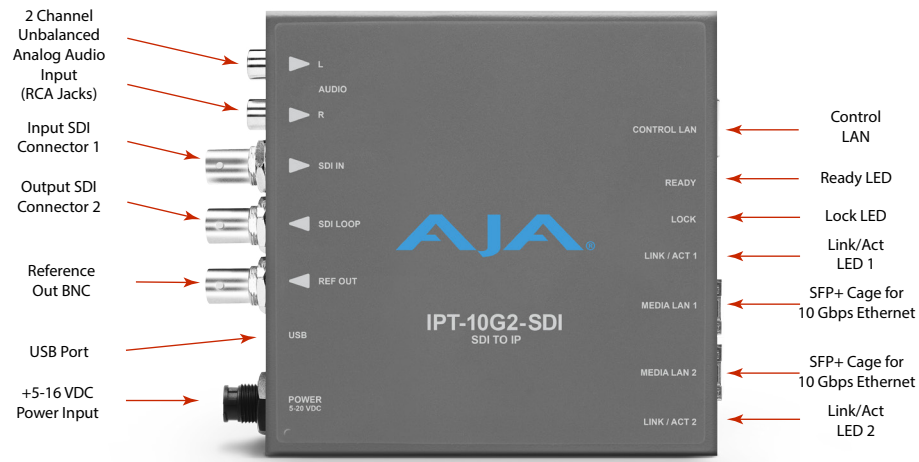


Figure 5. IPT-10G2-HDMI Connections

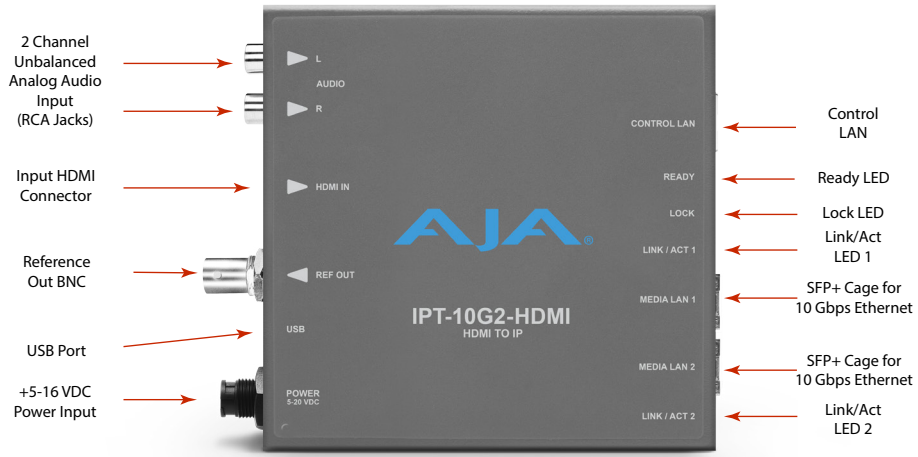


Figure 6. IPR-10G2-SDI Connections



Figure 7. IPR-10G2-HDMI Connections

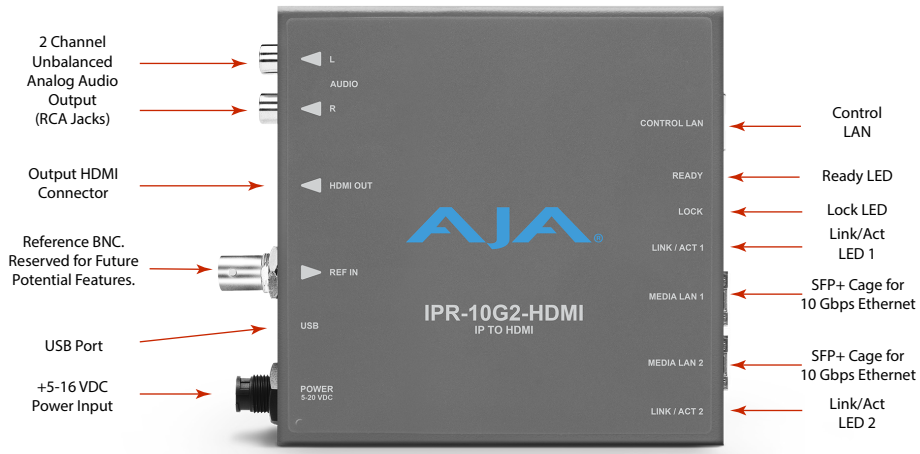


Figure 8. IPR-10G-HDMI Connections



## Control LAN, Ready, Link/Act, and Lock LED Behavior

The Control LAN LED illuminates to indicate a link. Blinking indicates activity.

The Ready LED illuminates green when the unit has finished powering up and is ready to use.

The Link/Act LED 1 and Link/Act LED 2 behavior is as follows:

- Off - No SFP+ module present
- Red - SFP+ module present, no link
- Green - Link is up
- Green flash - Link is up and there is Tx or Rx activity

The Lock LED behavior is as follows:

- Off - No Precision Time Protocol (PTP) is detected
- Red - A PTP error is detected
- Yellow and flashing - Locking Phase 1
- Yellow - Locking Phase 2
- Green and flashing - Locking Phase 3
- Green - Signal is locked

**NOTE:** Achieving locked status may take 5 or more minutes depending on network jitter behavior. The output of the unit will still function during the locking period.

## Installation Overview

Detailed instructions are provided in ["Chapter 2 – eMini-Setup" on page 14](#) and ["Chapter 3 – 10 GigE IP Mini-Converters Web Interface" on page 23](#).

As an overview, however, there are two methods available for initial setup for 10 GigE IP Mini-Converters:

1. Using a web browser on the host computer connected to the same network as the 10 GigE IP Mini-Converter, or
2. Using the AJA eMini-Setup application running on the host computer that is directly connected to the 10 GigE IP Mini-Converter via USB.

## Initial Setup By Web Browser

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*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.*

10 GigE IP Mini-Converters require a network connection for initial configuration, control and firmware updates. 10 GigE IP 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

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1. Connect the 10 GigE IP Mini-Converter Control Port to the intended network with an Ethernet cable.
2. The intended network's DHCP Server will assign an IP address and the 10 GigE IP Mini-Converter will join that network.
3. Locate and connect to the AJA 10 GigE IP Mini-Converter.

#### Windows PC Host

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- A. Open Windows Explorer.
- B. Navigate to the Network.
- C. Click on the Network to enumerate network devices.
- D. Search for either "IPT-10G2," "IPR-10G2," or the device's Serial Number.
- E. Double-click on the intended 10 GigE IP Mini-Converter. The host machine web browser will launch and display the web UI for the device.

#### macOS Host

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- 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 either "IPT-10G2," "IPR-10G2," or the device's Serial Number.
- F. Double-click on the intended 10 GigE IP Mini-Converter. The host machine web browser will launch and display the web UI 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

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1. Acquire AJA eMini-Setup (version 2.1) 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 web UI for your AJA device will display.
7. Use the web UI to fully configure and control your AJA Device.

## Settings Retained

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The current 10 GigE IP Mini-Converter's configuration settings are retained even when powered off, so subsequent installations for an identical decoding or encoding session can be done with the following simple steps:

1. Apply power to the 10 GigE IP Mini-Converter.
2. Connect the unit to your network using the Control LAN, Media LAN 1 and Media LAN 2 and connect the unit's inputs and outputs.

*NOTE: Three LAN connections to the unit are not necessarily required on an ongoing basis. If it is desirable for your installation, after the 10 GigE IP Mini-Converter is set up, you can access all control parameters through one of the Media LANs with the appropriate network configuration. See "[Networking Option – Using Only the Media LAN Port for Control and Media Settings](#)" on page 23 for more information.*

*NOTE: The 10 GigE IP 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.*

*NOTE: For highest reliability, the mini converters rely on convection cooling instead of using a built-in fan. Therefore, when installing the units, mount in a location where they have access to air for proper cooling. Do not stack the 10 GigE IP Mini-Converters with other mini converters or other powered equipment.*

## REST API Documentation

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AJA's REST automation API provides a platform from which you can issue commands to an AJA device's internal web server, 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.

This documentation is available at the following link:

[https://gitlab.aja.com/pub/rest\\_api](https://gitlab.aja.com/pub/rest_api)

# Chapter 2 – eMini-Setup

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## Overview

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This chapter describes using the eMini-Setup application to initially communicate with and configure a 10 GigE IP Mini-Converter over a direct USB connection. Once configured, the IP Mini-Converter can be accessed via an Ethernet network using a web browser. Subsequently, that device can then be reconfigured over that network, using its IP address and built-in web server.

*NOTE: The eMini-Setup application is only used to setup selected Ethernet capable AJA devices, and cannot be used to connect to or setup other AJA Mini-Converters.*

The general procedure is:

1. Acquire eMini-Setup from the AJA website and install the eMini-Setup application onto a computer.
2. Connect the IP Mini-Converter to that computer's USB port.
3. Launch the eMini-Setup application.
4. Go to the Control Network tab and Media Network tabs, where the IP address settings are displayed. You can use the existing DHCP assigned IP address, or it can be changed manually.
5. You can also use eMini-Setup to load firmware to the device, although this can also be done quickly and easily using the web browser interface.

## Acquiring eMini-Setup

---

AJA's eMini-Setup application is available for download from the AJA website.

To download the latest eMini-Setup package, which includes the eMini-Setup application and documentation:

1. Go to:  
<https://www.aja.com/family/software#eminisetup>
2. Click the link corresponding to the version you want to download for Mac or Windows.

*NOTE: IPT-10G2-SDI and IPT-10G2-HDMI require eMini-Setup version 2.1 or later.  
IPR-10G2-SDI and IPR-10G2-HDMI require eMini-Setup version 2.0 or later.  
IPR-10G-HDMI requires eMini-Setup version 1.3 or later.*

## eMini-Setup Documentation

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Included with the eMini-Setup download is the AJA device's *Installation and Operation Guide*, which can be accessed from the eMini-Setup UI via the Help/Manual drop-down menu. This manual includes eMini-Setup information.

Documentation can also be accessed directly from the Mac eMini-Setup installer in the Documentation folder.

Documentation included with the eMini-Setup application is the version available at the time of distribution. However, AJA's documentation can be updated regularly, so newer versions may exist.

To download just the latest documentation, go to:

<https://www.aja.com/products/mini-converters/ip-converters>

Click the support button and open the Manuals link.

## Installing eMini-Setup

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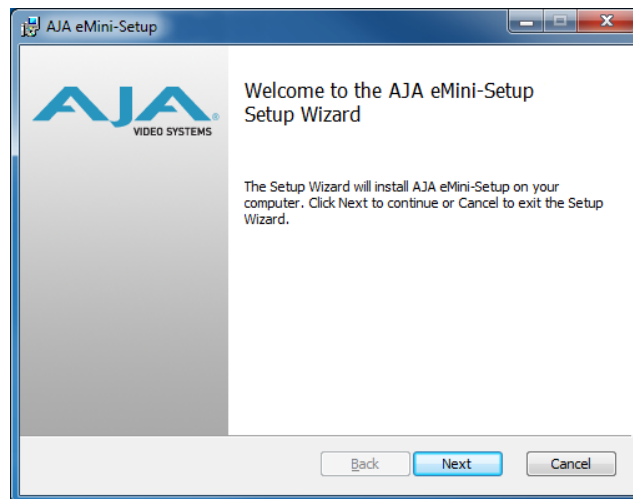
### PC Installation

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To install eMini-Setup on a Windows PC:

1. Download the application from the AJA website. See "[Acquiring eMini-Setup](#)" on page 14.
2. Open the AJA\_eMini-Setup\_win.zip file.
3. Double-click on the AJA\_eMini-Setup.msi file.
4. The Setup Wizard will guide you through the installation.

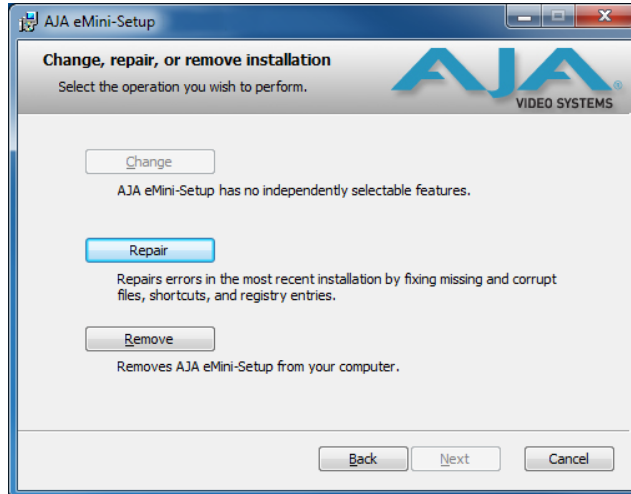
*Figure 9. eMini-Setup PC Wizard*



5. Click Next to begin. Answer the questions in the subsequent dialogues, including device software installation if displayed. When finished, an AJA eMini-Setup shortcut will be installed on the desktop, and you will be able to locate the eMini-Setup application in the AJA folder in the Programs listing.

**NOTE:** *If the eMini-Setup application already exists on the PC, a different Setup Wizard appears.*

Figure 10. eMini-Setup Wizard, Re-installation



With this screen you can **Repair** (reinstall) or **Remove** (uninstall) eMini-Setup on the PC.

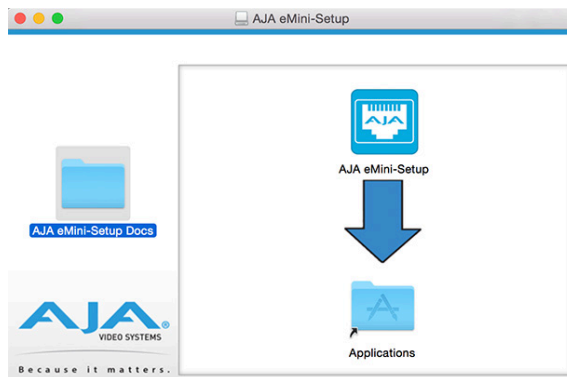
## Mac Installation

To install the application on a Mac:

*NOTE: Mac computers must be Intel-based (G5, G4 and earlier models will not work with eMini-Setup).*

1. Download the application from the AJA website. See "[Acquiring eMini-Setup](#)" on page 14.
2. Unzip the file.
3. Double-click on the AJA eMini-Setup.dmg file.
4. Answer the prompt and a utility program will be launched.

Figure 11. eMini-Setup Mac Installer



5. To complete the installation drag the "AJA eMini-Setup" icon to the Applications folder.

## Running eMini-Setup

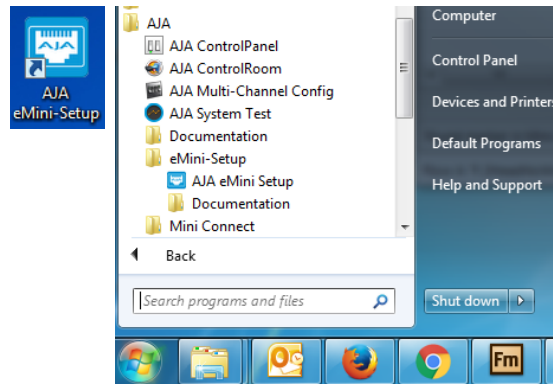
Connect your Ethernet capable AJA device to the PC or Mac via the supplied USB cable, and then connect the external power supply (supplied) to that AJA device.



## PC Startup

To run eMini-Setup on a PC, double-click on the AJA eMini-Setup icon on your desktop, or open the AJA folder in the program list and click on the AJA eMini-Setup application located inside the eMini-Setup folder.

Figure 12. Launching eMini-Setup on a PC



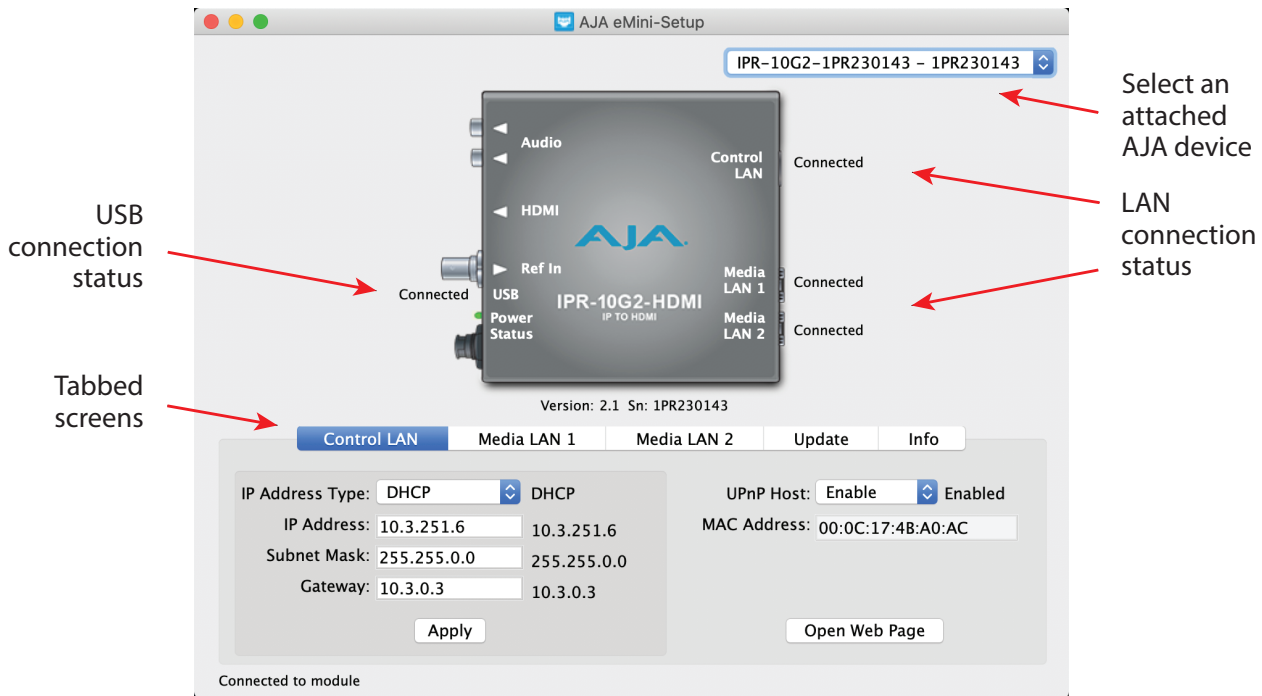
## Mac Startup

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 13. Example eMini-Setup Screen



Selecting an AJA device from the pull down menu on the upper right causes eMini-Setup to connect to the selected AJA device.

**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.

A status field at the bottom of the screen shows if the eMini-Setup application is connected and communicating with an AJA device.

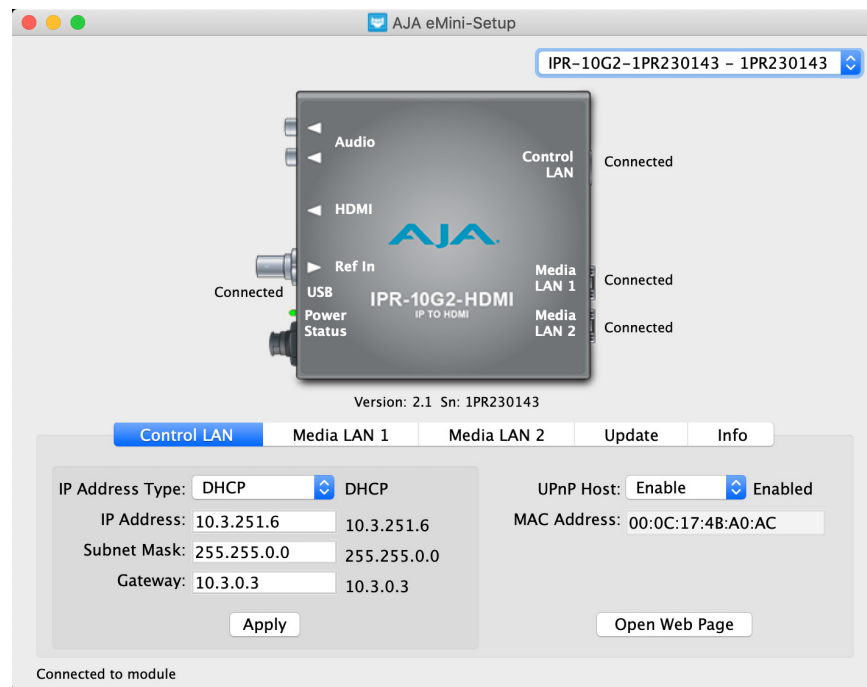
**File Menu** - The File drop-down menu on the eMini-Setup application bar has a Revert to Factory Settings menu item that allows you to change the settings back to the AJA device's factory defaults.

**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.

## Control LAN Tab Screen

Figure 14. eMini-Setup Control LAN Tab Screen



Use this Control LAN tab to change the network setup on the connected AJA device. You must click the Apply button to initiate any network configuration changes.

**IP Address Type** - Choose from DHCP (default) or Static IP Address.

**NOTE:** A basic setup would be to run an Ethernet cable directly between the device and your laptop and set both the computer and IPR to sequential static IP addresses. This provides a rapid way to set up to access the web user interface.

**IP Address** - The current IP Address is displayed. A different IP address can be entered.

**Subnet Mask** - The current Subnet Mask is displayed. A different subnet mask can be entered.

**Gateway** - The current Gateway address is displayed. A different gateway address can be entered.

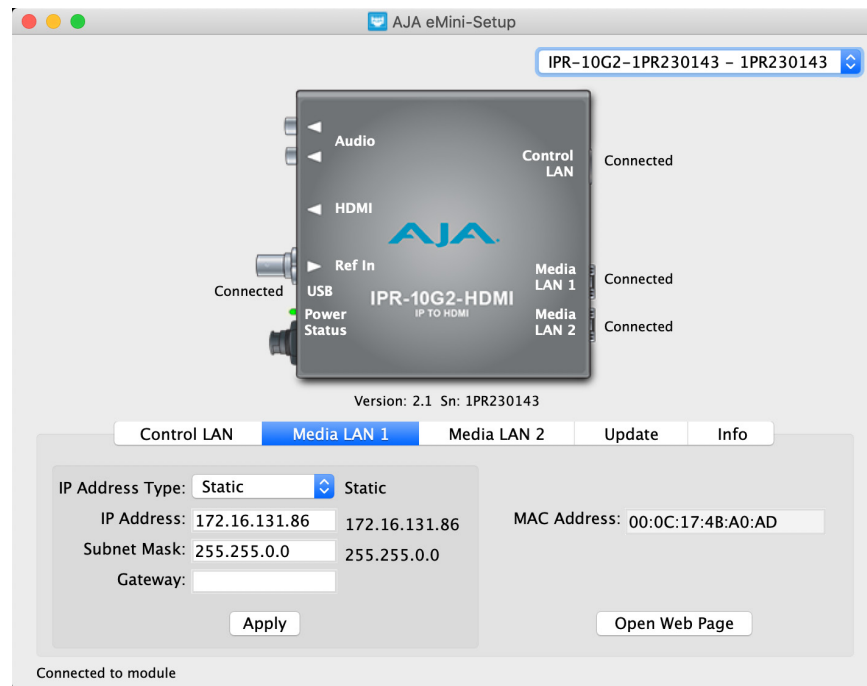
**UPnP Host** - Choose from Enable or Disable to control whether the AJA device makes itself visible for Windows network browsing.

**MAC Address** - This is the permanent MAC address of the Control LAN Ethernet port of the AJA device.

**Open Web Page** - Opens the IP Mini-Converter's web interface in a web browser.

## Media Network 1 Tab Screen

Figure 15. eMini-Setup Media LAN 1 Tab Screen



Use this Media LAN 1 tab to change the corresponding media network setup on the connected AJA device. You must click the Apply button to initiate any network configuration changes.

**IP Address Type** - Choose from DHCP or Static IP Address.

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

**IP Address** - The current IP Address is displayed. A different IP address can be entered.

**Subnet Mask** - The current Subnet Mask is displayed. A different subnet mask can be entered.

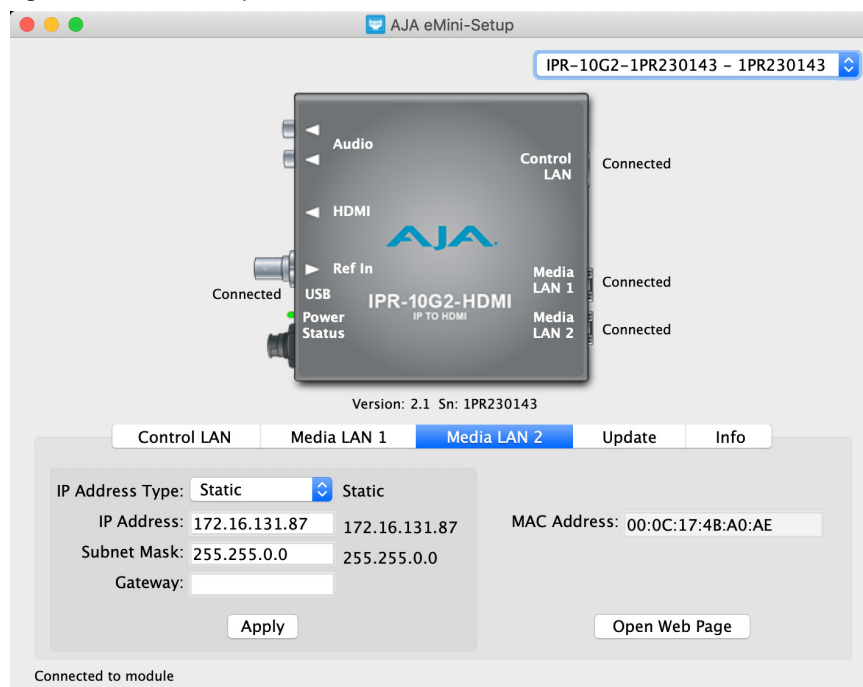
**Gateway** - The current Gateway address is displayed. A different gateway address can be entered. On the Media LAN, the gateway may be left blank. (A gateway is required on the Control LAN).

**MAC Address** - This is the permanent MAC address of the Media LAN Ethernet port of the AJA device.

**Open Web Page** - Opens the IP Mini-Converter's web interface in a web browser.

# Media Network 2 Tab Screen

Figure 16. eMini-Setup Media LAN 2 Tab Screen



Use this Media LAN 2 tab to change the corresponding media network setup on the connected AJA device. You must click the Apply button to initiate any network configuration changes.

**IP Address Type** - Choose from DHCP or Static IP Address.

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

**IP Address** - The current IP Address is displayed. A different IP address can be entered.

**Subnet Mask** - The current Subnet Mask is displayed. A different subnet mask can be entered.

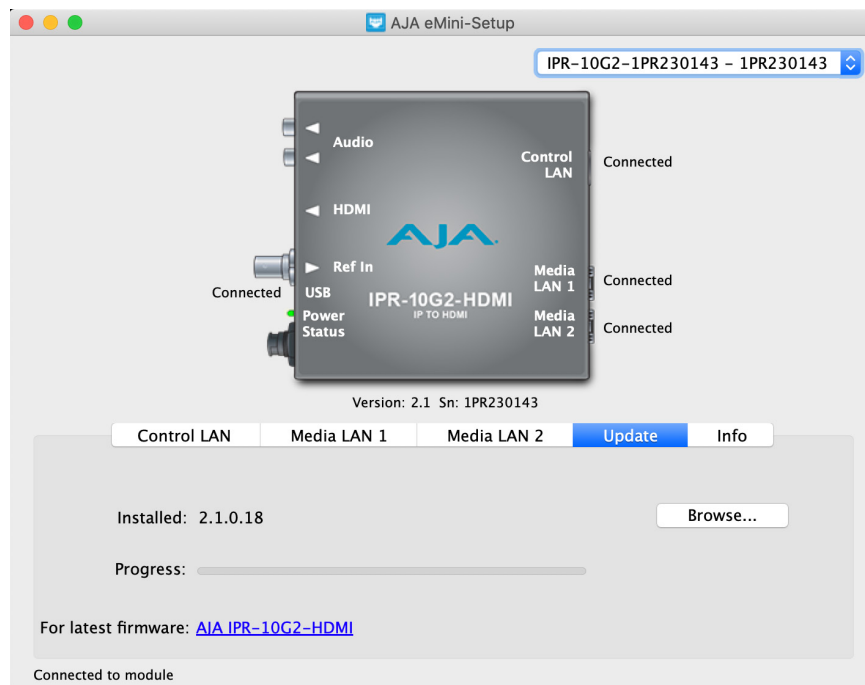
**Gateway** - The current Gateway address is displayed. A different gateway address can be entered. On the Media LAN, the gateway may be left blank. (A gateway is required on the Control LAN).

**MAC Address** - This is the permanent MAC address of the Media LAN Ethernet port of the AJA device.

**Open Web Page** - Opens the IP Mini-Converter's web interface in a web browser.

# Update Tab Screen

Figure 17. eMini-Setup Update Tab Screen



Use this Update tab to install new firmware.

**Installed** - This field shows the version of the firmware currently installed.

**Browse** - This button opens a navigation window, allowing you to select the firmware and load that version of firmware into the AJA device's non-volatile memory.

**Progress** - This indicator bar shows the progress of firmware installation.

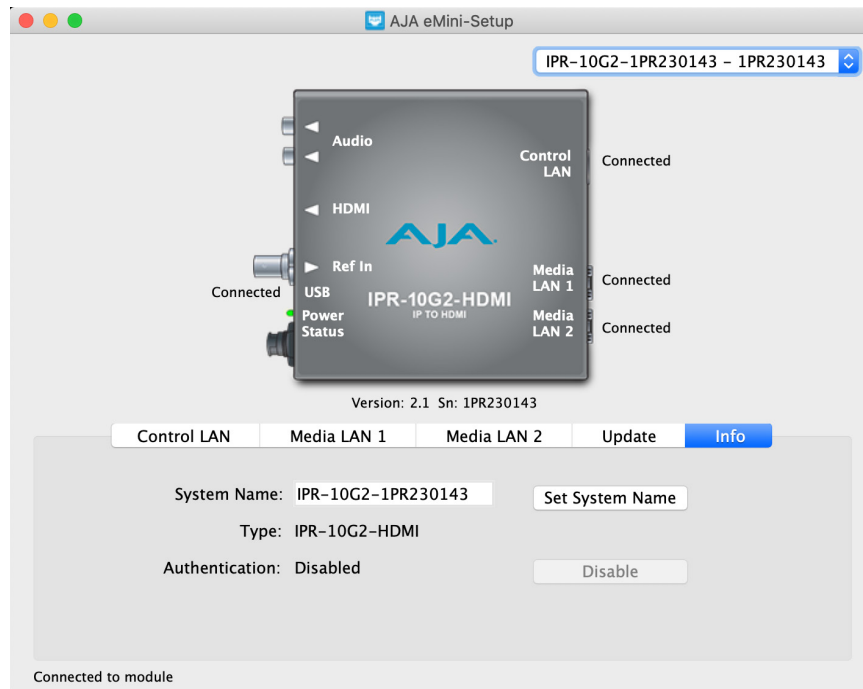
## Firmware Update Procedure

1. Check the AJA website for new firmware.
2. If new software is found, download it and uncompress the file archive (.zip).
3. Connect the device to a Mac or PC via a USB port on the computer.
4. Click the Update tab. Click the Browse button. Navigate to the firmware (.ajas extension), open it, and confirm the update. Progress will be shown via the "Progress" bar.
5. After the update, the AJA device must be rebooted by clicking on the Reboot button in the prompt window.

See also: "[Firmware Screen](#)" on page 44 regarding the process of working with firmware with the IP Mini-Converter's Web UI.

# Info Tab Screen

Figure 18. eMini-Setup Info Tab Screen



This 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.

**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 – 10 GigE IP Mini-Converters Web Interface

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## Overview

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Once you have established network connectivity with the 10 GigE IP Mini-Converter, you can further configure and more fully control the unit through its web interface. 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 web UI.*

## Remote Control Overview

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An optimized web server in the 10 GigE IP 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 10 GigE IP Mini-Converter and a computer, or even exposed through a firewall to a WAN.

Each 10 GigE IP Mini-Converter uses a standard RJ-45 connector for the Control LAN connection, two SFP+ cages for the 10 Gbps Ethernet Media LAN connections for the 10G2 products, and one SFP+ cage for the 10 Gbps Ethernet Media LAN connection for the IPR-10G-HDMI.

*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.*

To connect to the 10 GigE IP Mini-Converter, attach the unit 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 and Media Settings

---

To reduce facility cabling to the 10 GigE IP 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. This should be a static IP address.
2. Connect the controlling computer's Ethernet port that is being used to control the unit into an Ethernet switch. This requires disconnecting the Ethernet cable from the Control LAN port of the unit.
3. Connect the Media LAN port of the unit into the Ethernet switch.
4. Connect the source of the Media IP stream into the Ethernet switch.

5. Set the controlling computer's Ethernet port that is being used to control the 10 GigE IP Mini-Converter to DHCP.
6. From the controlling computer, point a web browser to the IP address noted in step 1. The 10 GigE IP Mini-Converter's web user interface displays in the browser.

## Web Browser via Ethernet

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### General Screen Information

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All IP Mini-Converter web screens have certain areas and controls in common. Vertical and horizontal scroll bars appear when information extends past the border of a panel.

The round blue Up/Down arrow button on each panel and many status parameters opens and closes that pane or set of parameters.

### Menu Panel

---

On the left of each screen is a Menu panel listing all the available screens. Click any of these links to jump to that screen.

### Alarms Panel

---

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) may provide additional detail about the condition.

### Connections Panel

---

On the right side of every screen is a Connection panel listing information for the connected IP Mini-Converter.

### Network Panel

---

Also on the right is a Network pane that lists other IP Mini-Converters on the network. The gear icon opens the Network Screen, the same as selecting Network from the Menu Panel. Right-clicking on the name of an IP Mini-Converter in this list allows you to turn on the Identify feature, which will blink all four of the Ethernet LEDs of that device at a 1 second rate.

### Parameters and Information

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The rest of the screen displays all the parameter selections and information available for the selected IP Mini-Converter screen.



Figure 19. Overview of Web Browser User Interface



## 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.

# Status Screen

## IPT-10G2-SDI

Figure 20. IPT-10G2-SDI Status Screen 1 of 2

The screenshot displays the IPT-10G2-SDI status screen. The main content area is titled 'JG-IPT-10G2-SDI' and is divided into several sections:

- Stream Status:** This section is expanded and shows two video streams (Video 1 and Video 2) and two audio streams (Audio 1 and Audio 2).

Stream	Parameter	Value
Video 1	Dest Address	239.1.188.1:10000
	Source Port	5004
Video 2	Dest Address	239.2.188.1:10000
	Source Port	5004
Audio 1	Dest Address	239.1.188.2:10000
	Source Port	10001
Audio 2	Dest Address	239.2.188.2:10000
	Source Port	10003

Additional parameters for Video 1: Video Format: 720x486i 29.97, 3G SDI: N/A, Input Lock Status: Asynchronous, Ref Output Format: NTSC 525i, Transmitter 2: Enabled. Video Tx Bitrate: 209.758 Mbits/s, Audio Tx Bitrate: 9.218 Mbits/s, Audio Source: SDI, Audio Channels: 8, Audio Packet Interval: 125 us. Video SDP: http://10.3.188.123/bxvideo1.sdp, Audio SDP: http://10.3.188.123/bxaudio1.sdp.
- PTP Clock Status:** PTP Grandmaster ID: 08-00-11-FF-FE-22-04-D6, PTP Source Port ID: 44-4C-A8-FF-CC-7D-ED, PTP Domain: 0, Status: Locked.
- Network Status:** Media 1: IP Address Type: DHCP, IP Address: 172.16.250.9, Netmask: 255.255.0.0. Media 2: IP Address Type: Static Addr, IP Address: 192.168.254.3, Netmask: 255.255.255.0.

The left sidebar contains a 'Menu' section with 'Status' selected, and an 'Alarms' section showing 'None'. The right sidebar contains 'Connection' (Serial Number: ENG003, Software Version: 2.2.0.0d, Connection Status: Connected) and 'Network' (listing various IP addresses and device names).

The IPT-10G2-SDI Status screen reports the current status and settings for:

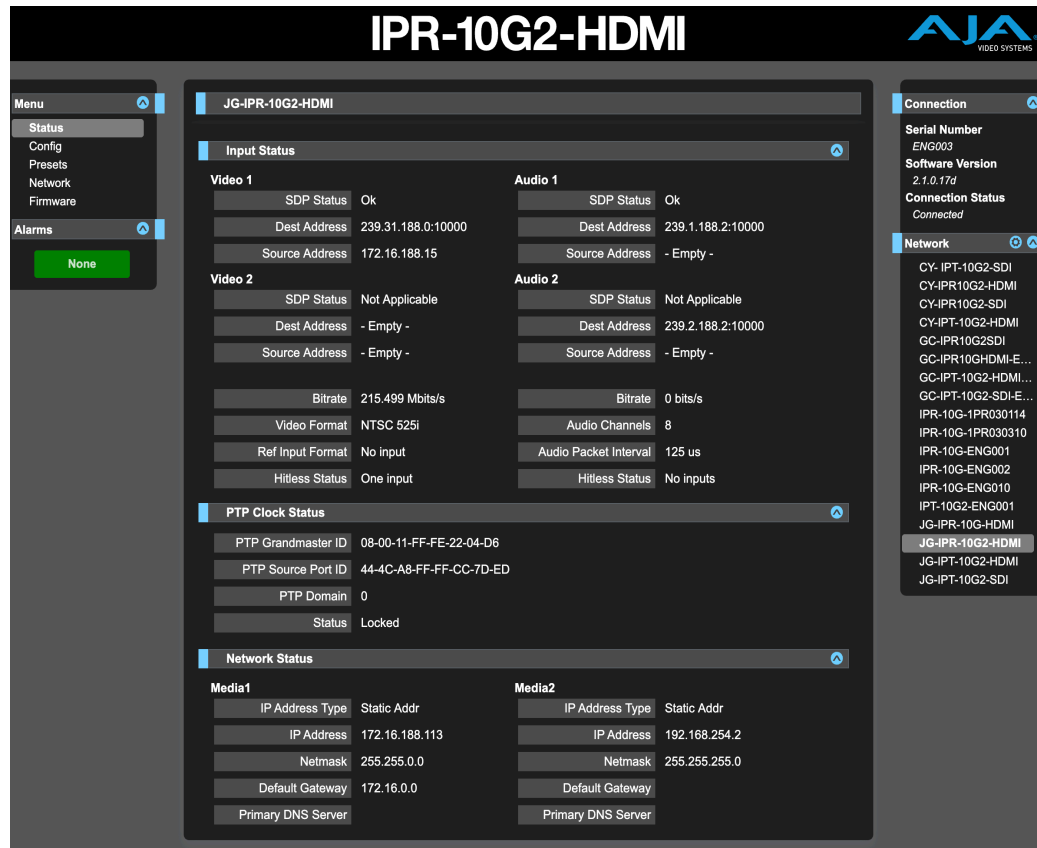
- Stream Status
- PTP Clock Status
- Network Status
- NMOS Status
- Firmware Status

Each group of parameters can be expanded or collapsed.

Figure 21. IPT-10G2-SDI Status Screen 2 of 2

The screenshot displays the IPT-10G2-SDI status screen, which is divided into several sections. At the top, the title 'IPT-10G2-SDI' is prominently displayed, along with the AJA VIDEO SYSTEMS logo. On the left side, there is a 'Menu' section with options for Status, Config, Presets, Network, and Firmware, and an 'Alarms' section showing 'None'. The main content area is titled 'JG-IPT-10G2-SDI' and is split into two columns representing different ports. The left column shows settings for IP Address (172.16.250.9), Netmask (255.255.0.0), Default Gateway (0.0.0.0), Primary DNS Server, Secondary DNS Server, DNS Search Path, MAC Address (00:0C:17:88:20:0D), Link State (10000Mbit Full-Duplex), and Transmit Bitrate (238.274 Mbits/s). The right column shows settings for IP Address (192.168.254.3), Netmask (255.255.255.0), Default Gateway, Primary DNS Server, Secondary DNS Server, DNS Search Path, MAC Address (00:0C:17:88:20:0E), Link State (10000Mbit Full-Duplex), and Transmit Bitrate (238.120 Mbits/s). Below these columns, there is a 'Control' section with settings for IP Address Type (Static Addr), IP Address (10.3.188.123), Netmask (255.255.0.0), Default Gateway (10.3.0.3), Primary DNS Server, Secondary DNS Server, DNS Search Path, MAC Address (00:0C:17:88:20:0C), and Link State (1000Mbit Full-Duplex). Further down, the 'NMOS Status' section shows Registry Status (Registered), Registry IP Address (10.3.188.7), Registry Port (80), Registry Source (MDNS), and Registry Priority (120). The 'Firmware Status' section shows the installed version as 2.2.0.0d. On the right side, there is a 'Connection' section showing Serial Number (ENG003), Software Version (2.2.0.0d), and Connection Status (Connected). Below that, a 'Network' section lists various network-related items, including CY-IPT-10G2-SDI, CY-IPR10G2-HDMI, CY-IPR10G2-SDI, CY-IPT-10G2-HDMI, GC-IPR10G2SDI, GC-IPR10GHDMI-E..., GC-IPT-10G2-HDMI..., GC-IPT-10G2-SDI-E..., IPR-10G-1PR030114, IPR-10G-ENG001, IPR-10G-ENG002, IPR-10G-ENG010, IPT-10G2-ENG001, JG-IPR-10G-HDMI, JG-IPR-10G2-HDMI, JG-IPT-10G2-HDMI, and JG-IPT-10G2-SDI.

Figure 22. IPR-10G2-HDMI Status Screen 1 of 2

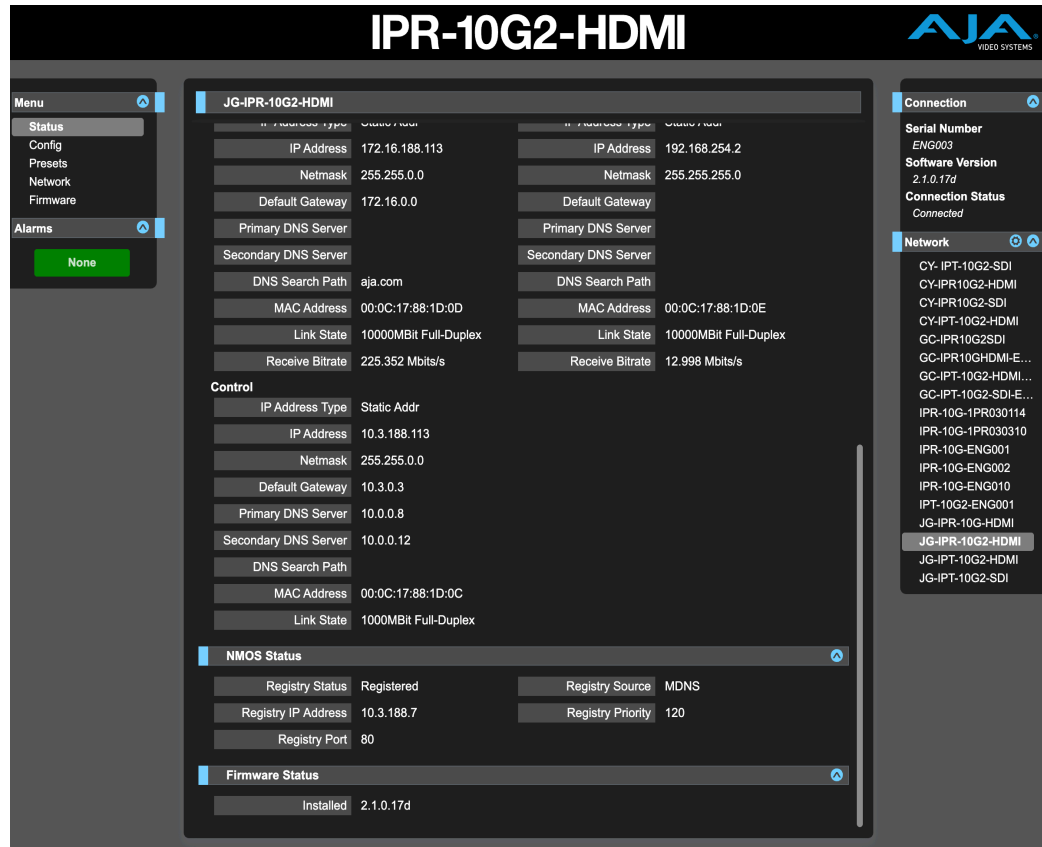


The IPR-10G2-HDMI Status screen reports the current status and settings for:

- Input Status
- PTP Clock Status
- Network Status
- NMOS Status
- Firmware Status

Each group of parameters can be expanded or collapsed.

Figure 23. IPR-10G2-HDMI Status Screen 2 of 2



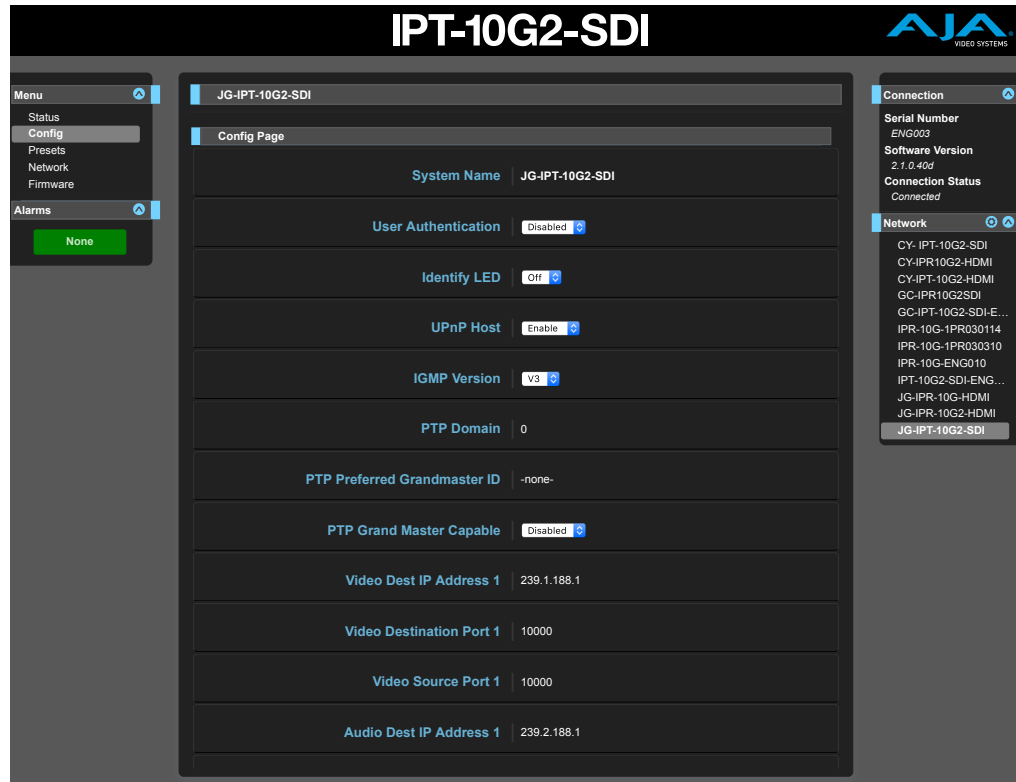
## Config Screen

This section describes the Config Screen for the IPT-10G2-SDI followed by the Config Screen for the IPR-10G2-HDMI.

### IPT-10G2-SDI

The IPT-10G2-SDI Config Screen, shown in three parts, has the parameters required for the general operation of the IPT-10G2 units.

Figure 24. IPT-10G2-SDI Config Screen 1 of 3



### System Name

Defines a name for the system and gives it a unique identifier. This name is used when displaying systems through the web interface.

### User Authentication

Enable or disable user password authentication for the web interface.

### Identify LED

Enables flashing of the Ethernet LEDs on the unit.

### UPnP Host

Enable or disable network discovery using Universal Plug and Play.

### IGMP Version

Select the Internet Group Management Protocol Version. AJA supports IGMP v2 and v3.

**NOTE:** It is important to know which version of IGMP is in use on your network. Selecting the wrong IGMP version may cause long delays in processing multicast subscriptions. See your network engineer for more information.

### PTP Domain

**NOTE:** Applicable only if PTP is selected for Video Output Clock Selection.

The PTP Domain field is for the ID of the PTP Source Port. While it is possible that there could be multiple PTP domains, most implementations will use "0". If unsure, consult with your network administrator. Possible values range from 0 to 127.

## PTP Preferred Grandmaster ID

---

*NOTE: Applicable only if PTP is selected for Video Output Clock Selection.*

There can be multiple Grandmaster IDs. However, most of the time, it will be automatically determined. Typically, it is the same as the Ethernet address for the port of the Grandmaster.

Example of a PTP Grandmaster ID:

- 08-00-11-FF-FE-22-04-D6

## PTP Grand Master Capable

---

*NOTE: Applicable only if PTP is selected for Video Output Clock Selection.*

For local demonstration purposes only, the IPT-10G2-SDI and IPT-10G2-HDMI can act as a grandmaster in network environments where there is not one already present, such as during basic testing, or setting up a PoC or demonstration.

**WARNING:** *Do not enable this control unless you have first checked with your network administrator.*

**Disable** - Disables the PTP Grand Master capability.

**Enable** - Enables the PTP Grand Master capability.

## Video Dest IP Address 1

---

Enter the destination IP address of the video packets.

## Video Destination Port 1

---

Enter the UDP destination port of the video packets.

## Video Source Port 1

---

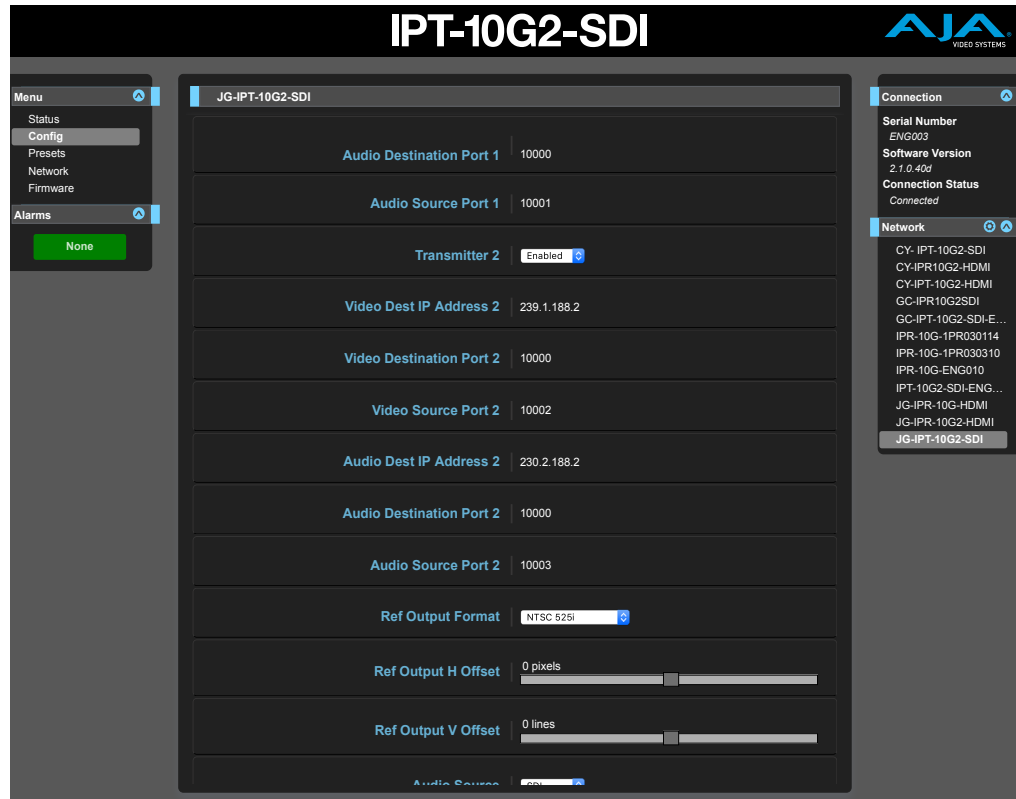
Enter the UDP source port of the video packets.

## Audio Dest IP Address 1

---

Enter the destination IP address of the audio packets.

Figure 25. IPT-10G2-SDI Config Screen 2 of 3



Audio Destination Port 1

Enter the UDP destination port of the audio packets.

Audio Source Port 1

Enter the UDP source port of the audio packets.

Transmitter 2

Enable or disable transmitter 2.

Video Dest IP Address 2

Enter the destination IP address of the video packets.

Video Destination Port 2

Enter the UDP destination port of video packets.

Video Source Port 2

Enter the UDP source port of the video packets.

Audio Dest IP Address 2

Enter the destination IP address of the audio packets.

Audio Destination Port 2

Enter the UDP destination port of the audio packets.



## Audio Source Port 2

---

Enter the UDP source port of the audio packets.

## Ref Output Format

---

The IPT-10G2-SDI and IPT-10G2-HDMI generate an analog/tri-level reference output synchronized to the PTP clock in your facility. When converting baseband video to ST2110, connect your traditional video source to this reference output to lock it to the facility PTP timing prior to bringing it into the IPT-10G2-SDI or IPT-10G2-HDMI for conversion. This provides the unit with the ability to lock cameras, tape decks, Ki-Pro, Kona, or other sources to PTP timing.

Additionally, the IPT-10G2-SDI and IPT-10G2-HDMI can fulfill the function of a PTP to analog black/tri-level reference converter device, which some applications will require.

Select one of the following video reference output formats:

- NTSC 525i
- PAL 625i
- 1280x720p 50
- 1280x720p 59.94
- 1280x720p 60
- 1920x1080i 48
- 1920x1080i 50
- 1920x1080i 59.94
- 1920x1080i 60
- 1920x1080p 23.98
- 1920x1080p 24
- 1920x1080p 25
- 1920x1080p 29.97
- 1920x1080p 30

## Ref Output H Offset

---

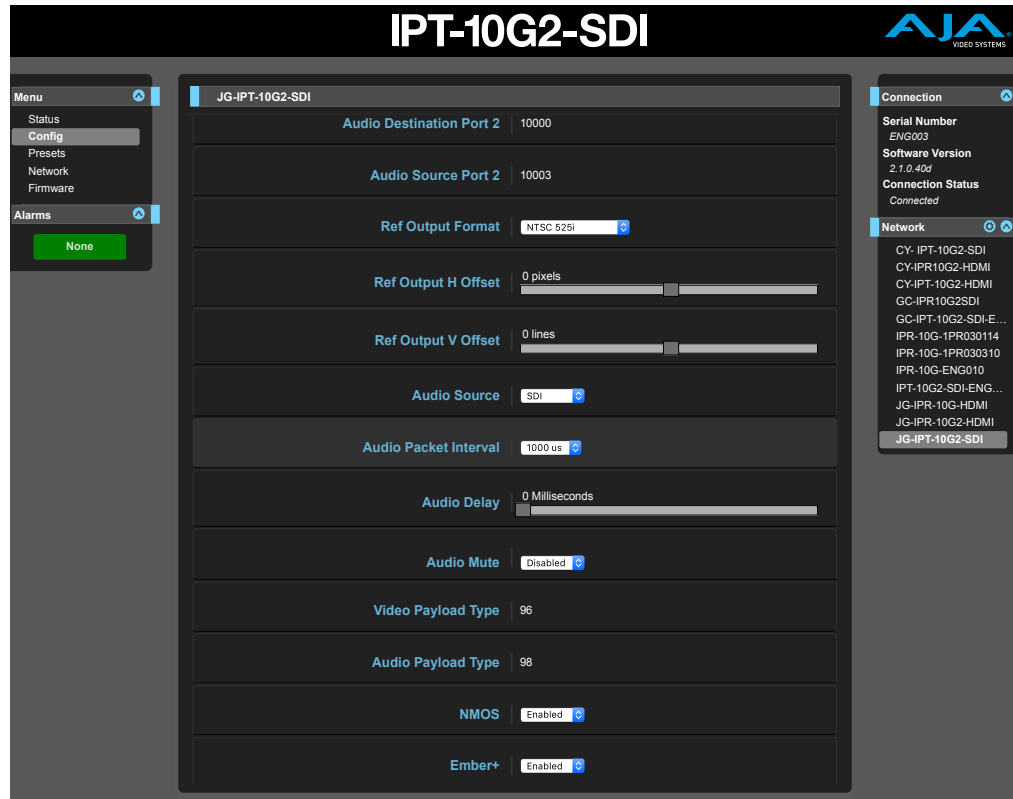
Select the horizontal reference offset in pixels (range -2750 pixels to +2750 pixels). You can use either the slider control on the web UI or the left/down and right/up arrow keys on your keyboard.

## Ref Output V Offset

---

Select the vertical reference offset in pixels (range -1125 lines to +1125 lines). You can use either the slider control on the web UI or the left/down and right/up arrow keys on your keyboard.

Figure 26. IPT-10G2-SDI Config Screen 3 of 3



### Audio Source

Select one of the following audio sources:

- SDI
- Analog
- Disabled

### Audio Delay

Use the Audio Delay control as needed to synchronize audio and video signals. Select a fixed number of milliseconds to delay audio output by relative to the video.

**0 to 85 Milliseconds** - Use the slider control with a mouse or the right and left arrow keys on your keyboard to adjust the audio delay setting.

### Audio Mute

Enable or disable audio mute.

### Video Payload Type

Enter a value to specify the video payload type.

### Audio Payload Type

Enter a value to specify the audio payload type.

### NMOS

Enable or disable NMOS network discovery for the device. NMOS is on by default.

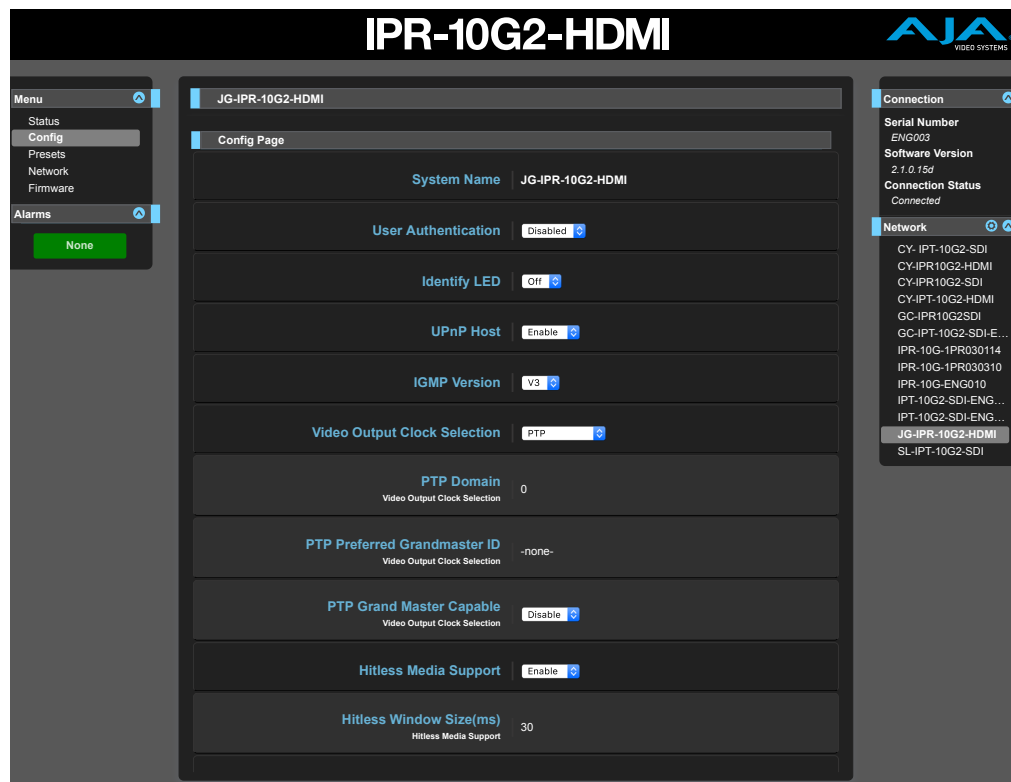
Ember+

Enable or disable Ember+ network discovery for the device.

## IPR-10G2-HDMI

The IPR-10G2-HDMI Config Screen, shown in three parts, has the parameters required for the general operation of the IPR-10G2 units.

Figure 27. IPR-10G2-HDMI Config Screen 1 of 3



### System Name

Defines a name for the system and gives it a unique identifier. This name is used when displaying systems through the web interface.

### User Authentication

Enable or disable user password authentication for the web interface.

### Identify LED

Enables flashing of the Ethernet LEDs on the unit.

### UPnP Host

Enable or disable network discovery using Universal Plug and Play.

### IGMP Version

Select the Internet Group Management Protocol Version. AJA supports IGMP v2 and v3.

**NOTE:** It is important to know which version of IGMP is in use on your network. Selecting the wrong IGMP version may cause long delays in processing multicast subscriptions. See your network engineer for more information.

## Video Output Clock Selection

---

Select which clock source you want to use for the video output.

**PTP** - Use the current Precision Time Protocol (PTP) master on the network.

**Lock to Input** - Use the input signal as the clock source.

## PTP Domain

---

**NOTE:** *Applicable only if PTP is selected for Video Output Clock Selection.*

While it is possible that there could be multiple PTP domains, most implementations will use "0". If unsure, consult with your network administrator. Possible values range from 0 to 127.

## PTP Preferred Grandmaster ID

---

**NOTE:** *Applicable only if PTP is selected for Video Output Clock Selection.*

There can be multiple Grandmaster IDs. However, most of the time, it will be automatically determined. Typically, it is the same as the Ethernet address for the port of the Grandmaster.

Example of a PTP Grandmaster ID:

- 08-00-11-FF-FE-22-04-D6

## PTP Grand Master Capable

---

**NOTE:** *Applicable only if PTP is selected for Video Output Clock Selection.*

For local demonstration purposes only, the IPR-10G2-HDMI and IPR-10G2-SDI can act as a grandmaster in network environments where there is not one already present, such as during basic testing, setting up a PoC or demonstration.

**WARNING:** *Do not enable this control unless you have first checked with your network administrator.*

**Disable** - Disables the PTP Grand Master capability.

**Enable** - Enables the PTP Grand Master capability.

## Hitless Media Support

---

When enabled, the unit will accept signals from both Media LAN 1 and Media LAN 2, allowing for hitless media switching if one of the signals is interrupted. When disabled, the unit will take a signal only from Media LAN 1.

**Disable** - Disables hitless media support.

**Enable** - Enables hitless media support.

## Hitless Window Size (ms)

---

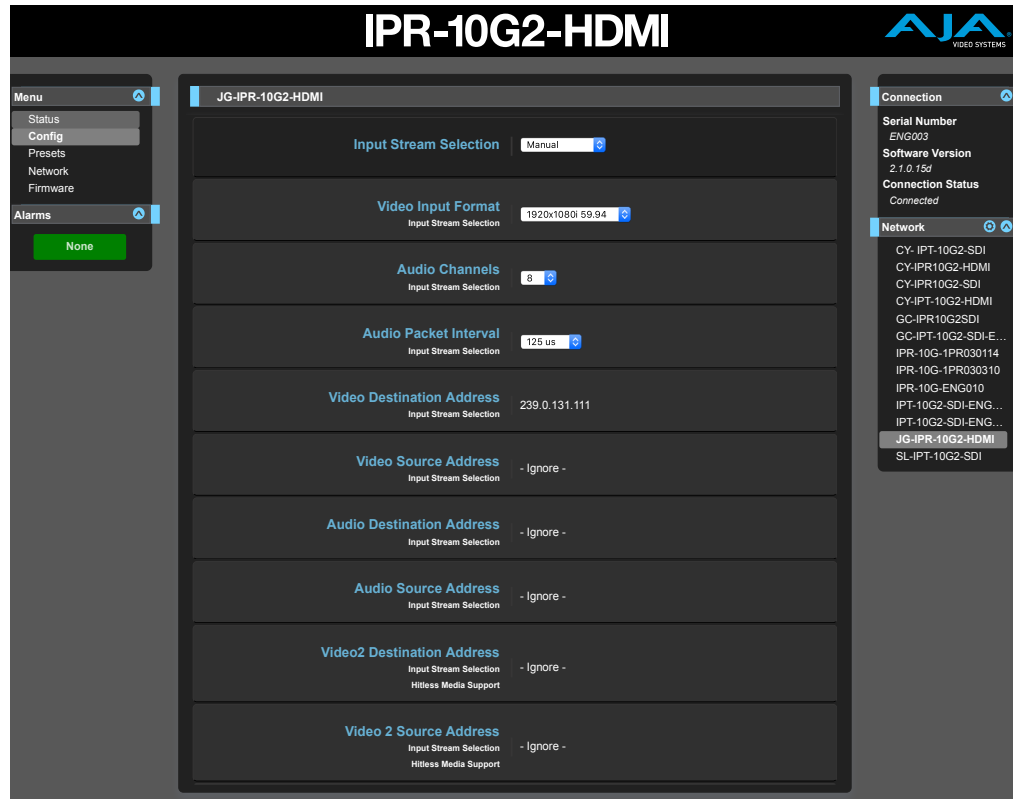
**NOTE:** *Applicable only if Hitless Media Support is enabled.*

Set the amount of time in milliseconds that the unit will look for redundant packets to decide to accept or reject them for hitless media switching.

To determine the hitless window size, consider any delay between the signals, expected jitter, along with any other sources of potential delay between signals.

Possible values range from 1 to 50. The actual range is determined by the signal's frame rate, raster size and other factors.

Figure 28. IPR-10G2-HDMI Config Screen 2 of 3



## Input Stream Selection

Select SDP, Manual or NMOS/Ember.

**SDP** - The SDP method greatly simplifies the configuration process for the Input Stream Selection fields. Selecting SDP causes the following four fields to display:

- **SDP URL Video** - Enter the SDP URL Video string. For example:  
*http://172.16.0.109/txch2v.sdp*
- **SDP URL Audio** - Enter the SDP URL Audio string. For example:  
*http://172.16.0.109/txch2a1.sdp*
- **SDP URL Video 2** - Enter the SDP URL Video string. For example:  
*http://172.16.0.109/txch2v.sdp*
- **SDP URL Audio 2** - Enter the SDP URL Audio string. For example:  
*http://172.16.0.109/txch2a1.sdp*

The strings entered into the **SDP URL Video** and **SDP URL Audio** fields point to SDP files that are created by the source that is transmitting the video signal.

The SDP files contain all required configuration parameters for the following **Input Stream Selection** fields:

- Video Input Format
- Audio Channels
- Audio Packet Interval
- Video Destination Address
- Video Source Address
- Audio Destination Address
- Audio Source Address.
- Video 2 Destination Address
- Video 2 Source Address

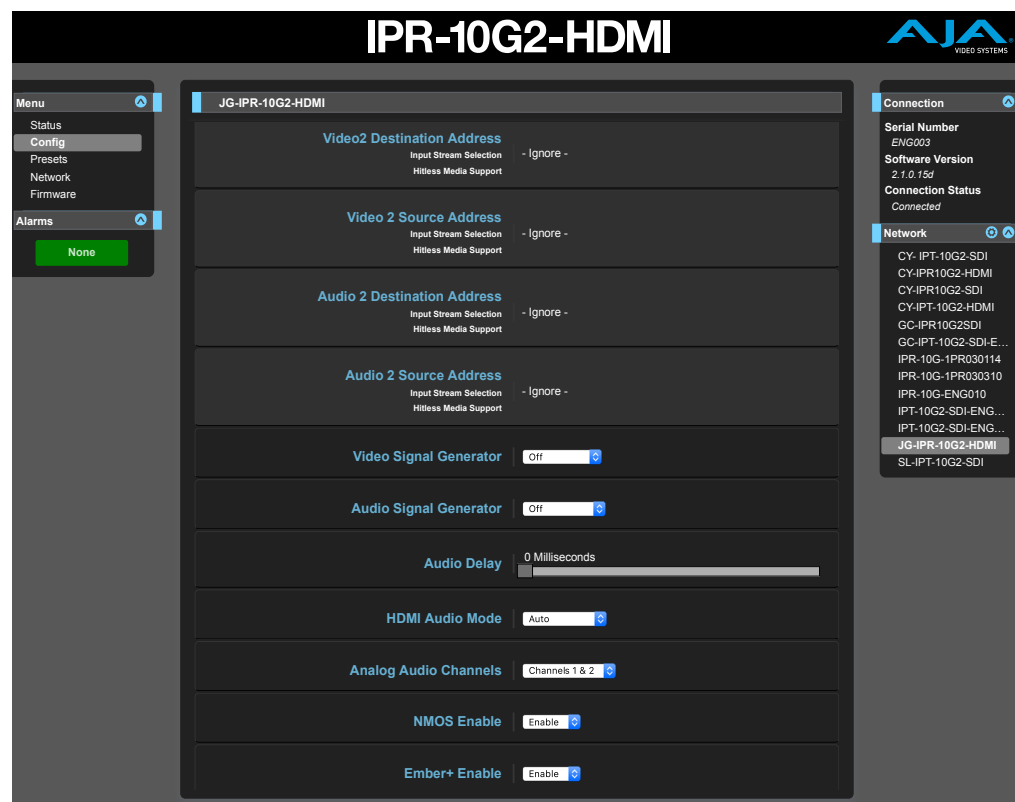
- Audio 2 Destination Address
- Audio 2 Source Address

**Manual** - When Manual is selected, you must enter configuration parameters manually into the following **Input Stream Selection** fields:

- Video Input Format
- Audio Channels
- Audio Packet Interval
- Video Destination Address
- Video Source Address
- Audio Destination Address
- Audio Source Address
- Video 2 Destination Address
- Video 2 Source Address
- Audio 2 Destination Address
- Audio 2 Source Address

**NMOS/Ember** - When NMOS/Ember is selected, the unit announces its presence to the network and the controller registers that it is there and what its capabilities are. Input stream selection occurs through network discovery and communication with facility automation.

Figure 29. IPR-10G2-HDMI Config Screen 3 of 3



### Video Signal Generator

You can output a test video signal to validate video signal connections. Select Off or Test Pattern.

**Off** - No video signal is generated.

**Test Pattern** - Color bars with a moving gray line are generated in the currently selected video format and sent to the Video Output.

*NOTE: The Test Pattern is supported only in 1080p and 1080i formats.*

### Audio Signal Generator

---

You can output a test audio signal to validate audio signal connections. Select Off or 400 Hz Tone.

**Off** - No audio signal is generated.

**400 Hz Tone** - A 400 Hz tone is generated on both channels of a pair and sent to the analog RCA audio outputs. Each channel pair is at a different volume. Channel pair 1/2 is the loudest. Channel pair 7/8 is the softest.

### Audio Delay

---

Use the Audio Delay control as needed to synchronize audio and video signals.

**0 to 100 Milliseconds** - Use the slider control with a mouse or the right and left arrow keys on your keyboard to adjust the audio delay setting.

### HDMI Audio Mode

---

Determine how you want the HDMI audio to function. It can auto-detect which channels are carrying the audio (either Channels 1-2 or Channels 1-8), or you can manually select which channels will carry audio. Select one of the following:

- Auto
- Channels 1-2
- Channels 1-8

### Analog Audio Channels

---

Select which pair of analog audio channels you want to go out through the analog RCA audio outputs. Choose one of the following:

- Channels 1 & 2
- Channels 3 & 4
- Channels 5 & 6
- Channels 7 & 8

### NMOS Enable

---

Enable or disable network discovery for the device.

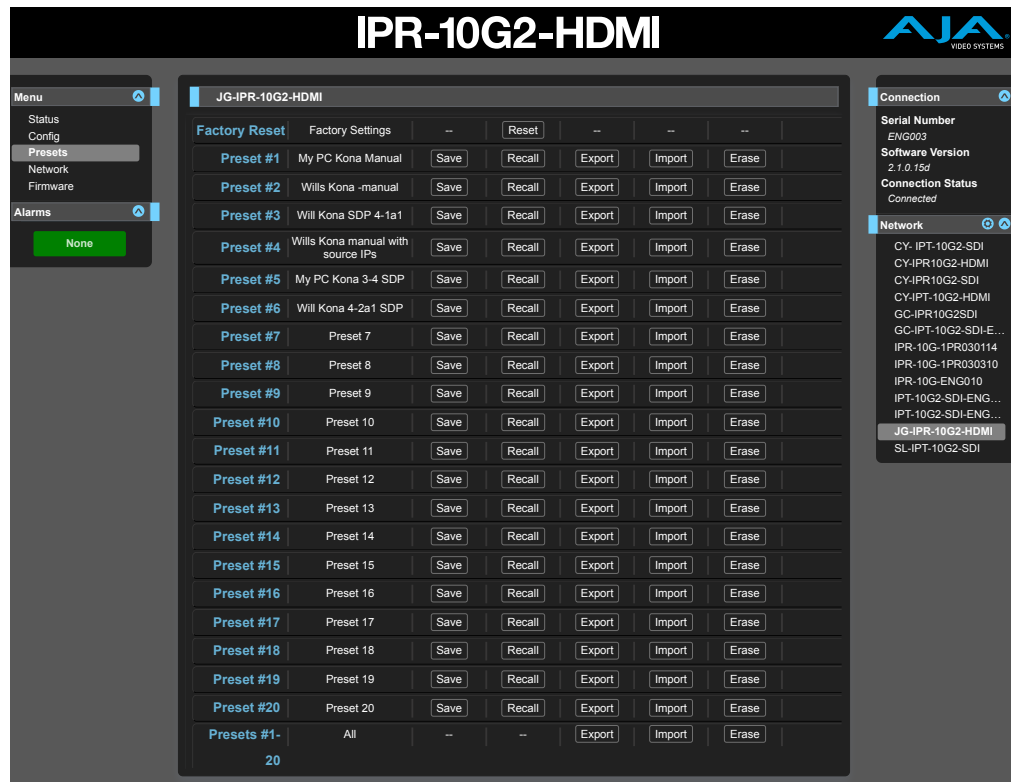
### Ember+ Enable

---

Enable or disable network discovery for the device.

# Presets Screen

Figure 30. IPR-10G2-HDMI Presets Screen



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

The Presets screen 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 Screen Controls

**Factory Reset** - Factory Reset recalls all editable parameters to their factory default settings. Individual presets and Network settings, such as the IP Addresses, are not affected.

**Recall** - The Recall buttons recall 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 buttons let 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:** *IP 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 *.presets*. If you export multiple files for the same preset, a number gets appended to ensure a unique file name. The file size is small, usually less than 100 kilobytes.

**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. A dialog box warns you that the operation will overwrite the current preset contents with the file contents. You can only import presets from an IP Mini-Converter.

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

**Export Presets 1–20 (All)** - Export All lets you save the contents of all presets to a file on your computer.

The file gets exported to the default download location specified in your browser options with the name *all.presets*. If you export multiple files, a number gets appended to ensure a unique file name.

**Import Presets 1–20 (All)** - Import All lets you browse for and import a previously exported *all.presets* file from your computer. A dialog box warns you that the operation will overwrite all 20 current preset contents with the contents stored in the file.

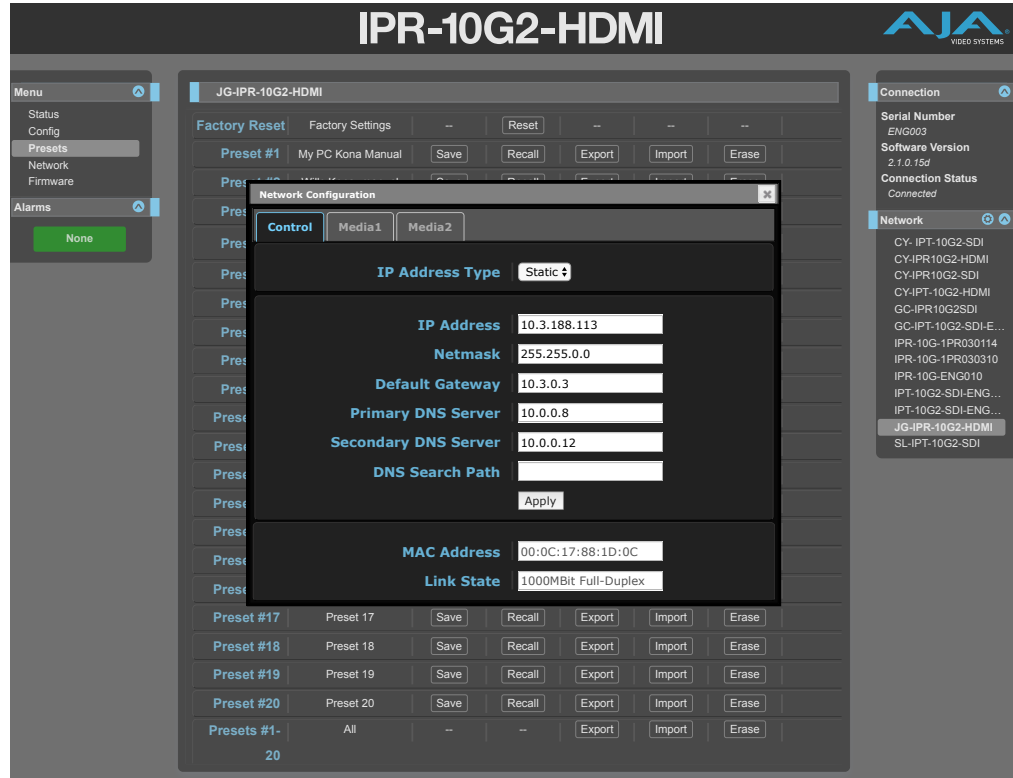
**Erase Presets 1–20 (All)** - Erase All erases all data from all the presets. A dialog box warns you that the operation will erase all 20 current presets.

## Network Screen

---

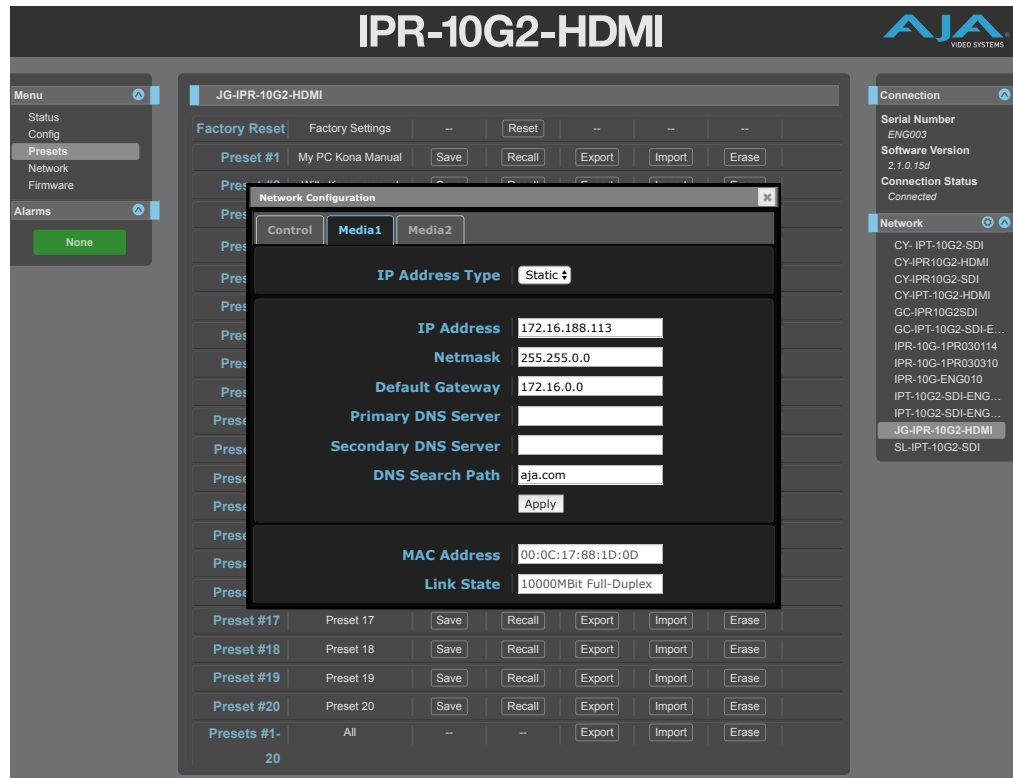
Use the Network Configuration Control Tab to configure or modify settings for the Control LAN Ethernet port.

Figure 31. IPR-10G2-HDMI Network Configuration Control Tab



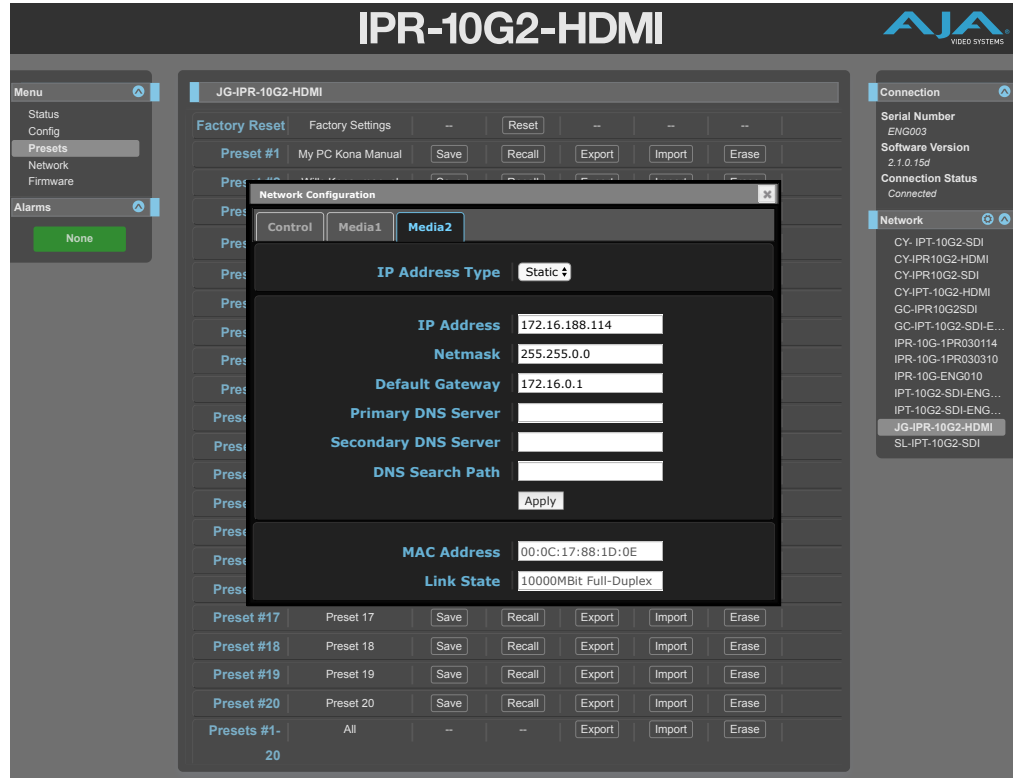
Use the Network Configuration Media 1 Tab to configure or modify settings for the Media 1 SFP+ cage for 10 Gbps Ethernet port.

Figure 32. IPR-10G2-HDMI Network Configuration Media 1 Tab



Use the Network Configuration Media 2 Tab to configure or modify settings for the Media 2 SFP+ cage for 10 Gbps Ethernet port.

Figure 33. IPR-10G2-HDMI Network Configuration Media 2 Tab



The Network screen allows you to view and change your IP Mini-Converter's network settings. Click Apply to activate any changes.

**IP Address Type** - IP Address Type 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.

**NOTE:** If the IP Address Type is DHCP, the IP Address, Netmask, and Default Gateway are gray, indicating they are set automatically and cannot be changed unless IP Address Type is first set to Static. Changes are saved and activated upon confirmation using the Apply button.

- **DHCP** (default) - Selects automatic IP address assignment from the LAN DHCP server. If a DHCP server cannot be found, it fails over to the static IP address.
- **Static** - Assigns a static IP address manually. The factory default static IP address: 192.168.0.1.

**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 and cannot be entered here.
- If IP Address Type is set to Static, enter an IP address compatible with your LAN here. Also enter a netmask and default gateway address in the following two parameters. Click Apply when you are ready to apply all three entries.
- If IP Address Type is set to DHCP and there is a DHCP failure, the IP address is set to the static IP address.

**Netmask** - Netmask determines the subnet mask to be used for TCP/IP networking.

- Enter 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.

**Default Gateway** - Default 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 IP Mini-Converter will be unable to see other IP Mini-Converters on the network, although you may still be able to control this IP Mini-Converter 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.

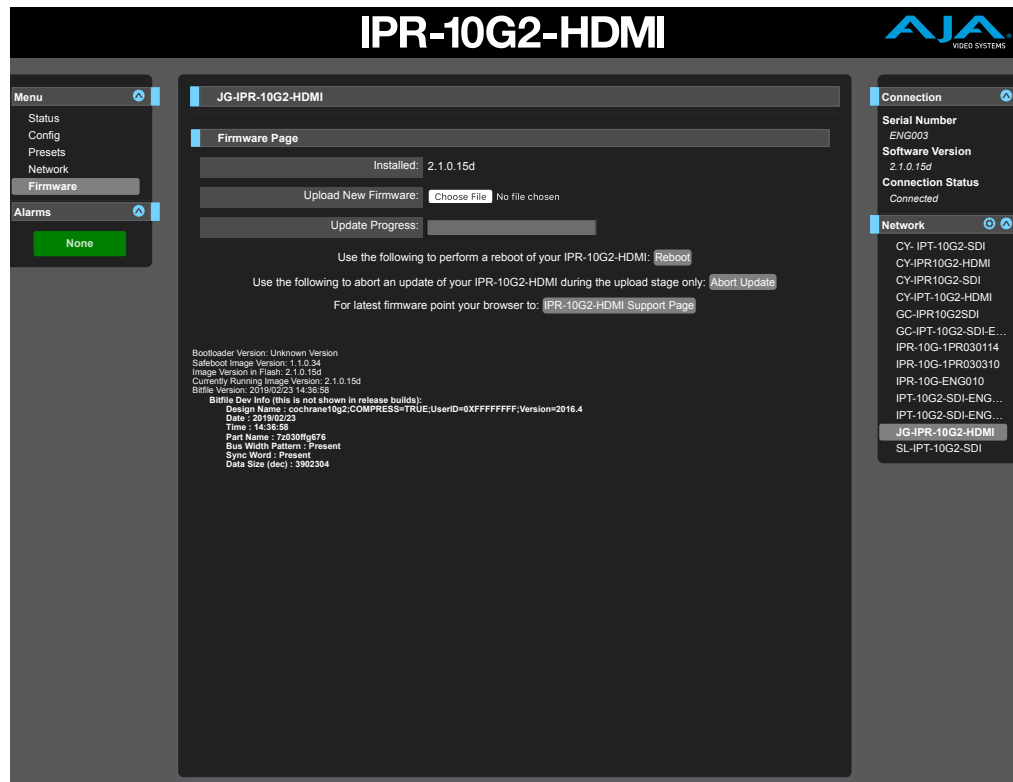
- Enter a default gateway or router address. This is only needed for Static IP configurations. The factory Default Gateway is 192.168.0.1.
- If IP Address Type is set to DHCP, the Default Gateway is set by the DHCP server and cannot be changed by the user.

**MAC Address** - Reports the connected IP Mini-Converter's Media Access Control Address.

**Link State** - Reports the current status of the Ethernet connection.

## Firmware Screen

Figure 34. IPR-10G2-HDMI Firmware Screen



## Downloading and Installing Updated Firmware

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

## To Download and Install Updated Firmware

---

1. Visit the AJA website ([aja.com](http://aja.com)) to locate and download the updated software. The following page provides support information and will include links to locations where you can download updates:

<https://www.aja.com/products/mini-converters/ip-converters#support>

2. After downloading the software update to your local drive, use the Browse or Choose File button to locate the local software copy.
3. Follow the prompts to load the new firmware into your unit.
4. After the firmware has finished installing, reboot the unit by disconnecting power for a few seconds, then reconnecting power.

*NOTE: You can also update the firmware using eMini-Setup. See "Firmware Update Procedure" on page 21 for details.*

## Booting the 10 GigE IP Mini-Converters from the Safeboot Firmware

---

The 10 GigE IP Mini-Converters contain primary firmware and safeboot (secondary) firmware. To boot from the primary firmware, just cycle the unit's power.

In the event that the primary firmware becomes corrupted, you can boot the unit using the safeboot firmware.

## To Boot from the Safeboot Firmware

---

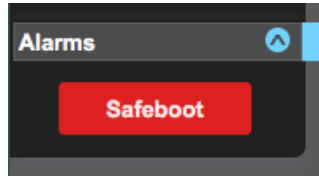
1. Remove power from the device.
2. Using a very narrow tool, such as the end of a paper clip, press down and hold the recessed safeboot button, making sure you feel the button depress. The recessed safeboot button is located next to the Control LAN port.

*Figure 35. Location of recessed safeboot button*



3. While keeping the safeboot button depressed, apply power, then continue holding down the safeboot button for three seconds.
4. Remove the paper clip from the safeboot button. The unit will boot from the safeboot firmware. After rebooting, the message "Safeboot" displays under the Alarms heading.

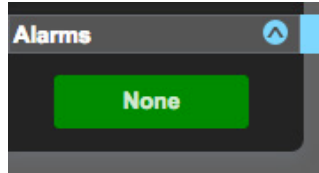
Figure 36. The Safeboot alarm message



5. Finally, update the firmware as described above under ["Downloading and Installing Updated Firmware" on page 44](#).

Following a successful firmware update and reboot, the message "None" displays under the Alarms heading.

Figure 37. The alarm message after a successful firmware update



# Appendix A – Specifications

---

## IPT-10G2-SDI Tech Specs

---

### Video Formats

---

- (HD) 1920x1080p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
- (HD) 1920x1080i 50, 59.94
- (HD) 1280x720p 50, 59.94, 60
- (SD) 625i 50
- (SD) 525i 59.94

### Video Quality

---

- 10-bit, 4:2:2, uncompressed

### Media Transport Interfaces

---

- SMPTE ST 2110 (-10, -20, -21, -30)
  - 2x SFP+ Cages - SFPs not included
- Recommended 10 GigE SFP+ modules:
  - Arista Networks SFP-10G-SR Compatible 10GBASE-SR
  - Fiberstore SFP-10GSR-85 10G SFP+ 850nm
  - Finisar FTLX1471D3BCL (for single mode 1310nm)
  - Mellanox MFM1T02A-SR 850nm 10G

*NOTE: Maximum supported SFP+ power is 500 mW per SFP+ cage*

### Video Input Digital

---

- 1x 3G SDI BNC (single source, with loop through)
- Up to 1080 60p, 4:2:2, 10-bits/pixel, YCbCr

### Audio Input Digital

---

- Up to 8-Channel, SDI embedded audio, 24-bit per channel, 48 kHz synchronous

### Audio Input Analog

---

- 2x RCA analog audio
  - Levels at -10 dBu (nominal)

### Video Output IP

---

- SMPTE ST 2110
  - Single video channel output
  - SMPTE ST 2022-7 dual stream output for hitless switching
  - Tx support for Narrow, Gapped Mode

### Audio Output IP

---

- SMPTE ST 2110
  - Up to 8 channels audio, 24-bit per channel, 48 kHz synchronous
  - 1 ms or 125  $\mu$ s packet interval
  - SMPTE ST 2022-7 dual stream input for hitless switching

## Reference

---

- 1x BNC
- Reference Out connector generates an analog/tri-level reference output synchronized to the PTP clock
- This can be used to ensure the baseband video arriving at the IP Transmitter is properly timed

## Discovery, Registration and Control

---

- NMOS Tx discovery and control according to standards IS-04 v1.2 and IS-05 v1.0
- Ember+ control (no discovery, control only)
- AJA REST API control (discovery via SSDP or MDNS)
- Supported over dedicated management Ethernet port and in-band over media ports

## IP Clock

---

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

## User Controls

---

- 1x RJ-45 for 10/100/1000 Base-T Ethernet
- Web and REST clients supported for remote network setup and configuration
- 1x USB 2.0 Mini-B connector
- AJA eMini-Setup supported for network setup and configuration via local desktop computer
- Web and REST configuration is also supported in-band over media ports

## Size (w x d x h)

---

- 5.07" x 0.94" x 5.06" (128.8 x 23.9 x 128.4 mm)

## Weight

---

- 0.6 lb (0.3 kg)

## Power

---

- 5-20VDC Regulated, 13 Watts, Power supply required (DWP-U-R1 included with purchase)

## 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% non-condensing
- Operating Altitude: <3,000 meters (<10,000 feet)



# IPT-10G2-HDMI Tech Specs

---

## Video Formats

---

- (HD) 1920x1080p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
- (HD) 1920x1080i 50, 59.94
- (HD) 1280x720p 50, 59.94, 60
- (SD) 625i 50
- (SD) 525i 59.94

## Video Quality

---

- 10-bit, 4:2:2, uncompressed

## Media Transport Interfaces

---

- SMPTE ST 2110 (-10, -20, -21, -30)
  - 2x SFP+ Cages - SFPs not included
- Recommended 10 GigE SFP+ modules:
  - Arista Networks SFP-10G-SR Compatible 10GBASE-SR
  - Fiberstore SFP-10GSR-85 10G SFP+ 850nm
  - Finisar FTLX1471D3BCL (for single mode 1310nm)
  - Mellanox MFM1T02A-SR 850nm 10G

*NOTE: Maximum supported SFP+ power is 500 mW per SFP+ cage*

## Video Input Digital

---

- 1x HDMI Standard Type A connector
  - HDMI v1.4b 24/30-bits per pixel
  - Up to 1080 60p, 4:2:2, 10-bit, YCbCr/RGB

## Audio Input Digital

---

- Up to 8-Channel, HDMI embedded audio, 24-bit per channel, 48 kHz synchronous

## Audio Input Analog

---

- 2x RCA analog audio
  - Levels at -10 dBu (nominal)

## Video Output IP

---

- SMPTE ST 2110
  - Single video channel output
  - SMPTE ST 2022-7 dual stream output for hitless switching
  - Tx support for Narrow, Gapped Mode

## Audio Output IP

---

- SMPTE ST 2110
  - Up to 8 channels audio, 24-bit per channel, 48 kHz synchronous
  - 1 ms or 125  $\mu$ s packet interval
  - SMPTE ST 2022-7 dual stream input for hitless switching

## Reference

---

- 1x BNC
  - Reference Out connector generates an analog/tri-level reference output synchronized to the PTP clock

- This can be used to ensure the baseband video arriving at the IP transmitter is properly timed

#### Discovery, Registration and Control

---

- NMOS Tx discovery and control according to standards IS-04 v1.2 and IS-05 v1.0
- Ember+ control (no discovery, control only)
- AJA REST API control (discovery via SSDP or MDNS)
- Supported over dedicated management Ethernet port and in-band over media ports

#### IP Clock

---

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

#### User Controls

---

- 1x RJ-45 for 10/100/1000 Base-T Ethernet
  - Web and REST clients supported for remote network setup and configuration
- 1x USB 2.0 Mini-B connector
  - AJA eMini-Setup supported for network setup and configuration via local desktop computer
- Web and REST configuration is also supported in-band over media ports

#### Size (w x d x h)

---

- 5.07" x 0.94" x 5.06" (128.8 x 23.9 x 128.4 mm)

#### Weight

---

- 0.6 lb (0.3 kg)

#### Power

---

- 5-20VDC Regulated, 13 Watts, Power supply required (DWP-U-R1 included with purchase)

#### 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% non-condensing
- Operating Altitude: <3,000 meters (<10,000 feet)

## IPR-10G2-HDMI Tech Specs

---

#### Video Formats

---

- (HD) 1920x1080p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
- (HD) 1920x1080i 50, 59.94
- (HD) 1280x720p 50, 59.94, 60
- (SD) 625i 50
- (SD) 525i 59.94

#### Video Quality

---

- 10-bit, 4:2:2, uncompressed

## Media Transport Interfaces

---

- SMPTE ST 2110 (-10, -20, -21, -30)
  - 2x SFP+ Cages - SFPs not included
- Recommended 10 GigE SFP+ modules:
  - Arista Networks SFP-10G-SR Compatible 10GBASE-SR
  - Fiberstore SFP-10GSR-85 10G SFP+ 850nm
  - Finisar FTLX1471D3BCL (for single mode 1310nm)
  - Mellanox MFM1T02A-SR 850nm 10G

*NOTE: Maximum supported SFP+ power is 500 mW per SFP+ cage*

## Video Input IP

---

- SMPTE ST 2110
  - Single channel video input
  - SMPTE ST 2022-7 dual stream input for hitless switching
  - Rx support for Narrow/Wide, Gapped/Linear Modes

## Audio Input IP

---

- SMPTE ST 2110
    - Up to 16-channels\* audio, 24-bit per channel, 48 kHz synchronous
    - 1 ms or 125  $\mu$ s packet interval
    - SMPTE ST 2022-7 dual stream input for hitless switching
- \* Streams with up to 16-channels are received but only the first 8 are output

## Video Output Digital

---

- 1x HDMI Standard Type A connector
  - HDMI v1.4b 24/30-bits per pixel
  - Up to 1080 60p, 4:2:2, 10-bit, YCbCr/RGB

## Audio Output Digital

---

- Up to 8-Channel, HDMI embedded audio, 24-bit per channel, 48 kHz synchronous

## Audio Output Analog

---

- 2x RCA analog audio
  - Levels at -10 dBu (nominal)

## Reference

---

- 1x BNC
  - Reserved for Potential Future Features

## Discovery, Registration and Control

---

- NMOS Rx discovery and control according to standards IS-04 v1.2 and IS-05 v1.0
- Ember+ control (no discovery, control only)
- AJA REST API control (discovery via SSDP or MDNS)
- Supported over dedicated management Ethernet port and in-band over media ports

## IP Clock

---

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

## User Controls

---

- 1x RJ-45 for 10/100/1000 Base-T Ethernet
- Web and REST clients supported for remote network setup and configuration
- 1x USB 2.0 Mini-B connector
- AJA eMini-Setup supported for network setup and configuration via local desktop computer
- Web and REST configuration is also supported in-band over media ports

## Size (w x d x h)

---

- 5.07" x 0.94" x 5.06" (128.8 x 23.9 x 128.4 mm)

## Weight

---

- 0.6 lb (0.3 kg)

## Power

---

- 5-20VDC Regulated, 13 Watts, Power supply required (DWP-U-R1 included with purchase)

## 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% non-condensing
- Operating Altitude: <3,000 meters (<10,000 feet)

# IPR-10G2-SDI Tech Specs

---

## Video Formats

---

- (HD) 1920x1080p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
- (HD) 1920x1080i 50, 59.94
- (HD) 1280x720p 50, 59.94, 60
- (SD) 625i 50
- (SD) 525i 59.94

## Video Quality

---

- 10-bit, 4:2:2, uncompressed

## Media Transport Interfaces

---

- SMPTE ST 2110 (-10, -20, -21, -30)
  - 2x SFP+ Cages - SFPs not included
- Recommended 10 GigE SFP+ modules:
  - Arista Networks SFP-10G-SR Compatible 10GBASE-SR
  - Fiberstore SFP-10GSR-85 10G SFP+ 850nm
  - Finisar FTLX1471D3BCL (for single mode 1310nm)
  - Mellanox MFM1T02A-SR 850nm 10G

*NOTE: Maximum supported SFP+ power is 500 mW per SFP+ cage*

## Video Input IP

---

- SMPTE ST 2110
  - Single channel video input

- SMPTE ST 2022-7 dual stream input for hitless switching
- Rx support for Narrow/Wide, Gapped/Linear Modes

#### Audio Input IP

---

- SMPTE ST 2110
  - Up to 16 channels audio, 24-bit per channel, 48 kHz synchronous
  - 1 ms or 125  $\mu$ s packet interval
  - SMPTE ST 2022-7 dual stream input for hitless switching

\*Streams with up to 16-channels are received but only the first 8 are output

#### Video Output Digital

---

- 2x 3G SDI BNC (single source, mirrored output)
- Up to 1080 60p, 4:2:2, 10-bits/pixel, YCbCr

#### Audio Output Digital

---

- Up to 8-Channel, SDI embedded audio, 24-bit per channel, 48 kHz synchronous

#### Audio Output Analog

---

- 2x RCA analog audio
- Levels at -10 dBu (nominal)

#### Reference

---

- 1x BNC
  - Reserved for Potential Future Features

#### Discovery, Registration and Control

---

- NMOS Rx discovery and control according to standards IS-04 v1.2 and IS-05 v1.0
- Ember+ control (no discovery, control only)
- AJA REST API control (discovery via SSDP or MDNS)
- Supported over dedicated management Ethernet port and in-band over media ports

#### IP Clock

---

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

#### User Controls

---

- 1x RJ-45 for 10/100/1000 Base-T Ethernet
  - Web and REST clients supported for remote network setup and configuration
- 1x USB 2.0 Mini-B connector
  - AJA eMini-Setup supported for network setup and configuration via local desktop computer
- Web and REST configuration is also supported in-band over media ports

#### Size (w x d x h)

---

- 5.07" x 0.94" x 5.06" (128.8 x 23.9 x 128.4 mm)

#### Weight

---

- 0.6 lb (0.3 kg)

## Power

---

- 5-20VDC Regulated, 13 Watts, Power supply required (DWP-U-R1 included with purchase)

## 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% non-condensing
- Operating Altitude: <3,000 meters (<10,000 feet)

# IPR-10G-HDMI Tech Specs

---

## Video Formats

---

- (UltraHD) 3840 x 2160p 23.98, 24, 25, 29.97, 30
- (HD) 1920x1080p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
- (HD) 1920x1080i 50, 59.94
- (HD) 1280x720p 50, 59.94, 60
- (SD) 625i 50
- (SD) 525i 59.94

## Video Quality

---

- 10-bit, 4:2:2, uncompressed

## Discovery, Registration and Control

---

- NMOS
- Ember Plus (no discovery, control only)

## Media Transport Interfaces

---

- SMPTE 2110
  - 1 x SFP+ Cages - SFPs not included
- Recommended 10 GigE SFP+ modules:
  - Arista Networks SFP-10G-SR Compatible 10GBASE-SR
  - Fiberstore SFP-10GSR-85 10G SFP+ 850nm
  - Finisar FTLX1471D3BCL (for single mode 1310nm)
  - Mellanox MFM1T02A-SR 850nm 10G

*NOTE: Maximum supported SFP+ power is 500 mWatts*

## Video Input IP

---

- SMPTE 2110
  - Single channel input

## Video Output Digital

---

- 1x HDMI Standard Type A connector
  - HDMI v1.4b 24/30-bits per pixel, RGB/YUV

## Audio Output Digital

---

- Up to 8-Channel embedded audio, 24-bit per channel, 48 kHz synchronous

## Audio Output Analog

---

- 2x RCA analog audio
- Levels at -10 dBu (nominal)

## User Controls

---

- 1 x RJ-45 for 10/100/1000 Base-T Ethernet
- Web and REST clients supported
- 1 x USB 2.0 Mini-B connector
- AJA eMini-Setup of network parameters via local desktop computer

## Size (w x d x h)

---

- 5.53" x 0.954" x 4.48" (140.46 x 113.79 x 24.23 mm)

## Weight

---

- 0.6 lb (0.3 kg)

## Power

---

- 5-20VDC Regulated, 13 Watts, Power supply required (DWP-U-R1 included with purchase)

## 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 and European Free Trade Association (EFTA) 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 this symbol 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

EN 60065: 2014 (T-Mark License),

IEC 60065: 2014 (CB Scheme Report/Certificate)

Additional licenses issued for specific countries available on request.

### Emissions

EN 55032: 2012 + AC: 2013, CISPR 32: 2015, EN 61000-3-2: 2014, EN 61000-3-3: 2013

### Immunity

EN 55103-2: 2009, EN 61000-4-2:2009, EN 61000-4-3:2006+A1:2008+A2:2010,

EN 61000-4-4:2004+A1:2010, EN 61000-4-5:2006, EN 61000-4-6:2009,

EN 61000-4-11:2004

Environments: E2, E3 and E4

The product is also licensed for additional country specific standards as required for the International Marketplace.



**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

<p>A급 기기 (업무용 방송통신기자재)</p> <p>Class A (Broadcasting Communication Equipment for Office Use)</p>	<p>이 기기는 업무용(A급) 전자파적합기기로서 판매자 또는 사용자는 이 점을 주의하시기 바라며, 가정외의 지역에서 사용하는 것을 목적으로 합니다.</p> <p>As an electromagnetic wave equipment for office use (Class A), this equipment is intended to use in other than home area. Sellers or users need to take note of this.</p>
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## Taiwan Compliance Statement

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**警告使用者：**

這是甲類的資訊產品，在居住的環境中使用時，可能會造成射頻干擾，在這種情況下，使用者會被要求採取某些適當的對策。

This is a Class A product based on the standard of the Bureau of Standards, Metrology and Inspection (BSMI) CNS 13438, 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

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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

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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

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**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 espiga 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 rimanere 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 energía 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 éclairs ou 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.

# Warranty and Liability Information

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AJA VIDEO SYSTEMS, INC.

## Limited Warranty on Hardware

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AJA Video Systems, Inc. (AJA Video) warrants that the hardware product, not including storage modules or software components, will be free from defects in materials and workmanship for a period of five (5) years from the date of purchase. AJA Video warrants that the storage modules provided as part of the hardware product will be free from defects in materials and workmanship for a period of one year from the date of purchase. AJA Video provides a separate software warranty as part of the license agreement applicable to software components.

If a hardware product or storage module (hereafter, a “product”) proves to be defective during the applicable warranty period, AJA Video, at its option, will either repair the defective product without charge for parts and labor, or will provide a replacement in exchange for the defective product.

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 <http://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.

This warranty shall not apply to any defect, failure or damage caused by negligent, inadequate or improper use, handling or maintenance. Without limiting the foregoing, AJA Video shall not be obligated to furnish service under this warranty or repair any damage or malfunction a) resulting from attempts by personnel other than AJA Video representatives to install, repair or service the product, b) resulting from improper use or connection to incompatible equipment, c) caused by the use of non-AJA Video parts or supplies, d) if the product has been modified or integrated with other products when the effect of such a modification or integration increases the time or difficulty of servicing the product, or e) resulting from being dropped or otherwise subjected to undue force, exposure to moisture or other corrosive or conductive substances, exposure to strong magnetic fields, use with improperly regulated power supplies, exposure to electric shock, use in temperatures outside the specified operating range, or otherwise failing to treat the product in accordance with the standard of care appropriate to sensitive and delicate electronic equipment.

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THE PRODUCT IS NOT INTENDED, STATED, OR WARRANTED TO OPERATE UNINTERRUPTED OR ERROR-FREE. YOU UNDERSTAND AND ACKNOWLEDGE THAT THE PRODUCT IS NOT INTENDED TO BE USED AS THE SOLE OR PRIMARY DATA SOURCE OR TARGET FOR CRITICAL DATA, AND THAT IT IS YOUR RESPONSIBILITY TO IMPLEMENT REDUNDANT CAPTURE AND BACKUP SYSTEMS AS APPROPRIATE.



## Limitation of Liability

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Under no circumstances shall AJA video BE LIABLE IN ANY WAY FOR ANY LOST, CORRUPTED OR DESTROYED DATA, FOOTAGE OR WORK, OR FOR ANY OTHER INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES OR LOST PROFITS, OR FOR ANY THIRD PARTY CLAIM, IN CONNECTION WITH THE PRODUCT, WHETHER RESULTING FROM DEFECTS IN THE PRODUCT, SOFTWARE OR HARDWARE FAILURE, OR ANY OTHER CAUSE WHATSOEVER, EVEN IF AJA VIDEO HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. AJA VIDEO'S LIABILITY IN CONNECTION WITH THE PRODUCT SHALL UNDER NO CIRCUMSTANCES EXCEED THE PURCHASE PRICE PAID FOR THE PRODUCT. The foregoing limitations apply even if any remedy set forth in this LIMITED WARRANTY fails of its essential purpose. SOME JURISDICTIONS DO NOT ALLOW THE LIMITATION OF LIABILITY FOR PERSONAL INJURY, OR OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO SOME OR ALL OF THE TERMS OF THIS PARAGRAPH MAY NOT APPLY TO YOU.

## Governing Law and Language; Your Rights.

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This limited warranty is the only warranty provided by AJA Video on the hardware product. It supersedes all prior or contemporaneous understandings regarding such subject matter. No amendment to or modification of this warranty will be binding unless in writing and signed by AJA Video. The laws of the State of California, USA will govern this warranty and any dispute arising from it. Any translation of this Agreement is intended for convenience and to meet local requirements and in the event of a dispute between the English and any non-English versions, the English version of this warranty will govern. This limited warranty gives you specific legal rights and you may have other rights that vary from jurisdiction to jurisdiction, some of which are noted above.

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