

Hi5-4K-Plus Mini-Converter

SDI to HDMI

Installation and Operation Guide

Version 1.0r1

Published: August 3, 2016



Because it matters.®

AJA
VIDEO SYSTEMS

Table of Contents

Notices	4
Trademarks	4
Copyright	4
Contacting Support	4
Chapter 1: Introduction	5
Overview	5
Default Operation	5
AJA Mini-Config Control	6
Features	6
Block Diagram	7
I/O Connections	7
Installation	8
Chapter 2: Operation	9
USB Control and Setup—Using AJA Mini-Config	9
Acquiring AJA Mini-Config	9
Mini-Converter Documentation	9
Installing AJA Mini-Config	9
PC Installation	9
Mac Installation	10
Running AJA Mini-Config	11
PC Startup	11
Mac Startup	11
Saving Setups	12
Operating AJA Mini-Config	12
Running Multiple Mini-Converters	12
Tabbed Screens	13
Input Screen	14
Output Screen	15
HDR Screen	17
Audio Screen	18
Update Screen	19
Software Update Procedure	19
Info Screen	20
Appendix A: Specifications	21
Video Input	21
Input Formats Supported	21
Video Output	21
Audio Input	22
Audio Output	22
Physical	22
Power	22
Size	22
Environment	22
Appendix B: Safety & Compliance	23
Federal Communications Commission (FCC) Compliance Notices	23
Class A Interference Statement	23
FCC Caution	23

Canadian ICES Statement	23
European Union and European Free Trade Association (EFTA) Regulatory Compliance	24
Declaration of Conformity	24
Recycling Notice	25
Korean KCC Compliance Statement	25
Taiwan Compliance Statement	25
Japanese Compliance Statement	26
Translated Warning and Caution Messages.....	26
Before Operation Please Read These Instructions	26
Warranty Information	33
Limited Warranty	33
Index.....	34

Notices

Trademarks

AJA® and Because it matters.® are registered trademarks of AJA Video Systems, Inc. for use with most AJA products. AJA™ is a trademark of AJA Video Systems, Inc. for use with recorder, router, software and camera products. Because it matters.™ is a trademark of AJA Video Systems, Inc. for use with camera products.

CION®, Corvid Ultra®, Io®, Ki Pro®, KONA®, KUMO®, ROI® and T-Tap® are registered trademarks of AJA Video Systems, Inc.

AJA Control Room™, FiDO™, KiStor™, Science of the Beautiful™, TruScale™, TruZoom™, V2Analog™ and V2Digital™ are trademarks of AJA Video Systems, Inc.

AirPort, Apple, Apple logo, AppleShare, AppleTalk, FireWire, iPod, iPod touch, Mac, Macintosh and ProRes, are registered trademarks of Apple Inc. Final Cut Pro, QuickTime and QuickTime logo are trademarks of Apple Inc.

Avid, Avid DNxHD and Media Composer are registered trademarks of Avid Technology, Inc.

Adobe is a registered trademark of Adobe Systems Incorporated in the United States and/or other countries.

HDMI, the HDMI logo and High-Definition Multimedia Interface are trademarks or registered trademarks of HDMI Licensing, LLC.

DVI is a registered trademark of DDWG.

TASCAM is a registered trademark of TEAC Corporation.

Dolby and the double-D Dolby logo are registered trademarks of Dolby Laboratories Licensing Corporation.

All other trademarks are the property of their respective holders.

Copyright

Copyright © 2016 AJA Video Systems, Inc. All rights reserved. All information in this manual is subject to change without notice. No part of the document may be reproduced or transmitted in any form, or by any means, electronic or mechanical, including photocopying or recording, without the express written permission of AJA Video Systems, Inc.

Contacting Support

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: <http://www.aja.com>

Support Email: support@aja.com

Sales Email: sales@aja.com

Chapter 1: Introduction



Overview

AJA's Hi5-4K-Plus provides high frame rate (HFR) support up to 60p for 4K/UltraHD SDI to HDMI v2.0 conversion.

Hi5-4K-Plus provides a simple monitoring connection from professional 4K devices using Quad 3G-SDI, Quad 1.5G-SDI, or Dual 3G-SDI outputs to new displays with HDMI 2.0 inputs for monitoring 4:2:2/4:4:4 60p professional workflows. The unit also supports single link SD, HD, 3G-SDI.

The Hi5-4K-Plus supports Quadrant and Two Sample Interleave (2SI) input mapping of 4K/UHD signals. It can also generate high dynamic range (HDR) metadata in accordance with HDMI v2.0a/CTA-861.3.

Default Operation

The Hi5-4K-Plus auto configures to the connected inputs (no dipswitch settings required). The auto-configure function identifies the connected inputs, and outputs the default or user configured HDMI output for the given input. AJA's Mini-Config application is available for firmware updates and advanced configuration.

NOTE: *Signal conversion requires the presence of a valid SDI video signal on the SDI IN 1 BNC.*

For single SD or HD inputs, BNC input 1 is the default input. For dual-link 1.5Gb HD inputs, and 4K dual-stream 3Gb SDI inputs, inputs 1 and 2 are default. Where applicable, both level A and B 3Gb inputs are auto-detected and supported.

When connecting the Hi5-4K-Plus with multiple SDI inputs in the auto-configure mode (default), as the user connects the first HD-SDI to input 1, the unit will output that input as a full screen HD. As soon as the second input is connected, the unit will know that

either QuadHD or 4Kx2160 is present and the display will change to show the two connected quadrants in the upper left and upper right of the 4K output. The remaining two quadrants will be displayed as they are connected.

It is possible to use two dual stream 3G inputs to make 3840 or 4K video. In this case SDI1 and SDI2 are assumed to be the inputs: SDI1 linkA makes the top left quadrant, SDI1 linkB makes the top right quadrant, SDI2 linkA makes the lower left quadrant, and SDI2 linkB makes the lower right quadrant. To use this mode change the Video Source Selection to '2 X SDI 4K'.

The Hi5-4K-Plus will output either 4Kx2160 or 3840x2160 if more than one HD input is present and the monitor can support those resolutions. For 4K input the Hi5-4K-Plus may provide a center cut 3840, or pass the 4096 to the output, but there is no scaling between the two.

AJA Mini-Config Control

Advanced control will support channel selection and mapping for eight channels of audio from either of two groups of eight channels on any of the four SDI inputs.

Configuration set via AJA Mini-Config is stored in the Hi5-4K-Plus unit through subsequent power cycles.

NOTE: The Hi5-4K-Plus packs an unprecedented feature set into a mini converter box. As a result, the unit uses approximately 12 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.

For highest reliability, the mini converter relies on convection cooling instead of using a built-in fan. Therefore, when installing the unit, mount in a location where it has access to air for proper cooling. Do not stack the Hi5-4K-Plus with other mini converters.

Features

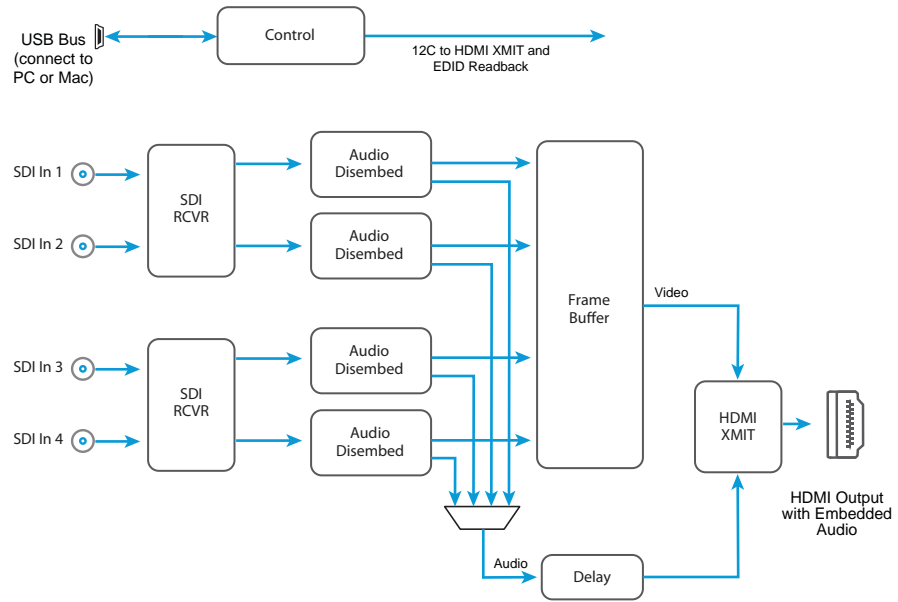
- 4K/HD/SD-SDI to HDMI (see "[Appendix A: Specifications on page 21](#)" for a complete list of supported inputs).
- 425M level A and B
- Quadrant or 2SI input mapping
- HDMI Bit depth:
 - SD/HD:10-bit (follows input)
 - 4K: 8-bit RGB, 10-bit 422
- Full HDMI 2.0 support including:
 - Deep Color 30-bit video per pixel (24-bit also supported)
 - 2 or 8 channels of embedded audio
- Support for HDMI 2.0a
- HDR Static Metadata Descriptors
- Setup via DIP switch or PC/Mac using USB port and supplied USB cable (AJA Mini-Config configuration software application available via download from AJA website)
- Uses universal input +5V power supply AJA model DWP-U-R1 (included)
- 5 year warranty

NOTE: 3D is not supported in this converter.

NOTE: 720p 4:4:4 formats are not supported in this release.

Block Diagram

Figure 1. Hi5-4K-Plus Converter, Simplified Block Diagram



I/O Connections

Figure 2. Hi5-4K-Plus Converter Connections



NOTE: The LED adjacent to the SDI connectors indicates by color the detected signal type. Off is no signal, Green is SD-SDI, red is HD-SDI, and amber is 3G-SDI.

Installation

Typically, Hi5-4K-Plus installation consists of the following steps:

1. Ensure the Hi5-4K-Plus is disconnected from power.
2. Connect video equipment to the converter BNCs and HDMI connector.
3. Apply power to the converter (AJA power supply included).
4. The Hi5-4K-Plus will now run using the default factory settings. If you wish to alter the factory settings, you'll need to:
 - Install the AJA Mini-Config software on your computer
 - Attach the Hi5-4K-Plus via USB
 - Make your changes using AJA Mini-Config setup screens.

This process is detailed in "[USB Control and Setup—Using AJA Mini-Config](#)".

NOTE: *The Hi5-4K-Plus packs an unprecedented feature set into a mini converter box. As a result, the unit uses approximately 12 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.*

For highest reliability, the mini converter relies on convection cooling instead of using a built-in fan. Therefore, when installing the unit, mount in a location where it has access to air for proper cooling. Do not stack the Hi5-4K-Plus with other mini converters.

Chapter 2: Operation

USB Control and Setup—Using AJA Mini-Config

Your AJA Mini-Converter can be used right out of the box for some applications since it is designed to recognize inputs and perform standard actions automatically by default. However, to use its full capability, you must use AJA's Mini-Config software application for PCs and Macs. This same application can be used to update to new Mini-Converter software released by AJA.

Acquiring AJA Mini-Config

AJA's Mini-Config application is available for download from the AJA website.

To download the latest AJA Mini-Config package, which includes the AJA Mini-Config application, Mini-Converter firmware, and documentation, go to:

<https://www.aja.com/en/products/mini-converters/mini-config-software>

Select either the Windows or Mac icon to download the desired version.

Mini-Converter Documentation

Included with the AJA Mini-Config package is a complete set of documentation for all Mini-Converters supported by AJA Mini-Config. A .PDF of the *Installation and Operation Guide* for the currently connected Mini-Converter can be accessed from the AJA Mini-Config UI via the **Help/Manual** drop-down menu.

Documentation for all AJA Mini-Converters that use AJA Mini-Config can also be accessed directly in the AJA Mini-Config download package Documentation folder, and via the Documentation icon available on the Mac installer.

Documentation (and firmware) included with the AJA Mini-Config application are the versions available at the time of distribution. However, Mini-Converter software, firmware and documentation are updated regularly, so newer versions may exist.

To download the latest documentation for an individual Mini-Converter, go to:

<https://www.aja.com/en/category/mini-converters>

and navigate to the Support webpage of that Mini-Converter.

Installing AJA Mini-Config

PC Installation

To install AJA Mini-Config on a Windows PC:

1. Download the application from the AJA website (select the Windows icon on the AJA Mini-Config Support webpage).
2. Open the AJA_MiniConfig.zip file
3. Double-click on the MiniInstaller.msi file.
4. A Setup Wizard will guide you through the installation.

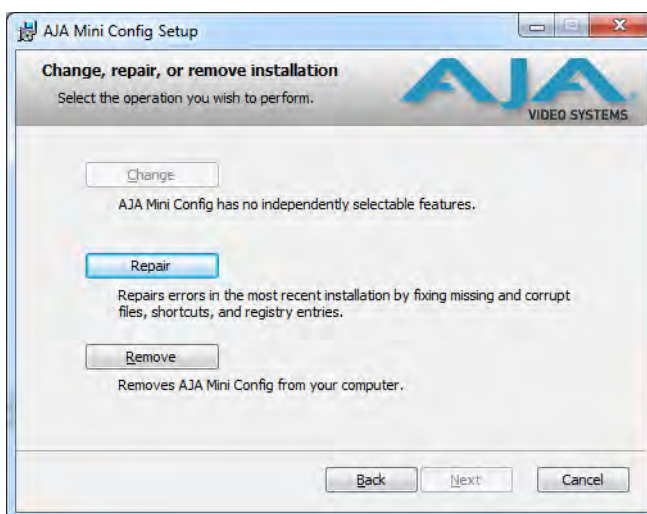
Figure 3. AJA Mini-Config PC Setup Wizard



5. Click **Next** to begin. Answer the questions in the subsequent dialogues. When finished, an AJA Mini-Config shortcut will be installed on the desktop, and you will be able to locate the AJA Mini-Config application in the AJA folder in the Programs listing.

NOTE: If the AJA Mini-Config application already exists on the PC, a different Setup Wizard appears.

Figure 4. AJA Mini-Config Setup Wizard, Reinstallation



With this screen you can **Repair** (reinstall) or **Remove** (uninstall) AJA Mini-Config on the PC.

Mac Installation To install the application on a Mac:

NOTE: Macintosh computers must be Intel-based (G5, G4 and earlier models will not work with AJA Mini-Config).

1. Download the application from the AJA website (select the Apple icon on the AJA Mini-Config Support webpage).
2. Open the AJA_MiniConfig folder.
3. Double-click on the AJAMiniConfig.dmg file.

4. Answer the prompt and a utility program will be launched.

Figure 5. AJA Mini-Config Mac Installer



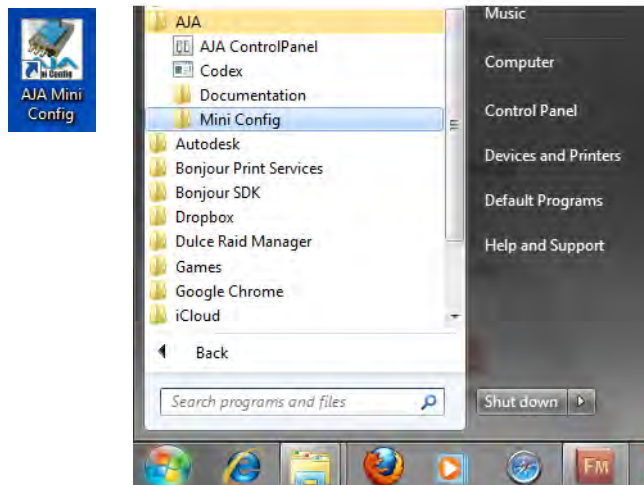
5. To complete the installation drag the “MiniConfig.app” icon to the Applications folder.

Running AJA Mini-Config

Connect the Mini-Converter to the PC or Mac via the supplied USB cable. Connect the external power supply (supplied) to the Mini-Converter.

PC Startup

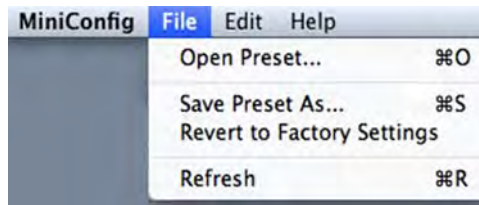
To run AJA Mini-Config on a PC, double-click on the AJA Mini-Config icon on your desktop, or open the AJA folder in the program list and click on the AJA Mini-Config application located inside the AJA Mini-Config folder.



Mac Startup

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

Saving Setups A **File** drop down menu on the AJA Mini-Config application bar allows you to save the current state of the Mini-Converter to a preset file for later recall.



Using this feature you can set up the converter for different applications, storing each configuration (**Save Preset As...**) with a unique name for easy recall (**Open Preset...**).

A **Revert to Factory Settings** menu item similarly allows you to change the settings back to AJA's factory defaults.

Operating AJA Mini-Config

The AJA Mini-Config application provides a graphic interface for viewing settings and updating software. It consists of an information area at the top that shows the available Mini-Converters attached to the computer via USB, with a graphical rendering of the selected Mini-Converter showing all the connectors and their current state.

Colored text next to the connectors indicates the signal type and what the Mini-Converter is doing:

- Blue text indicates the values automatically selected
- Black text indicates values that you have manually selected
- Red text indicates the Mini-Converter is not detecting a signal, or cannot operate with the current user settings.

NOTE: Even if no output device is detected, the SDI connector text still shows the signal it is outputting.

NOTE: Configuration settings in red will change based on the attached output device as well as input signals. For improved accuracy and reliability, you should configure the Mini-Converter only when the target output device is attached and input signals are supplied at the inputs.

Screens are virtually the same on both PC and Mac, with subtle differences that reflect the general look of the platform environment.

Running Multiple Mini-Converters

AJA Mini-Config can manage multiple AJA Mini-Converters connected via USB—even when they are of differing types. However it only connects to one at a time. You can choose which Mini-Converter you wish to control using the pulldown menu in the upper right hand corner. If you want to configure multiple Mini-Converters in parallel, you can do it by running multiple instances of the AJA Mini-Config application and have each control a different Mini-Converter.

NOTE: During a Mini-Converter firmware update, only one Mini-Converter should be connected to the computer via USB.

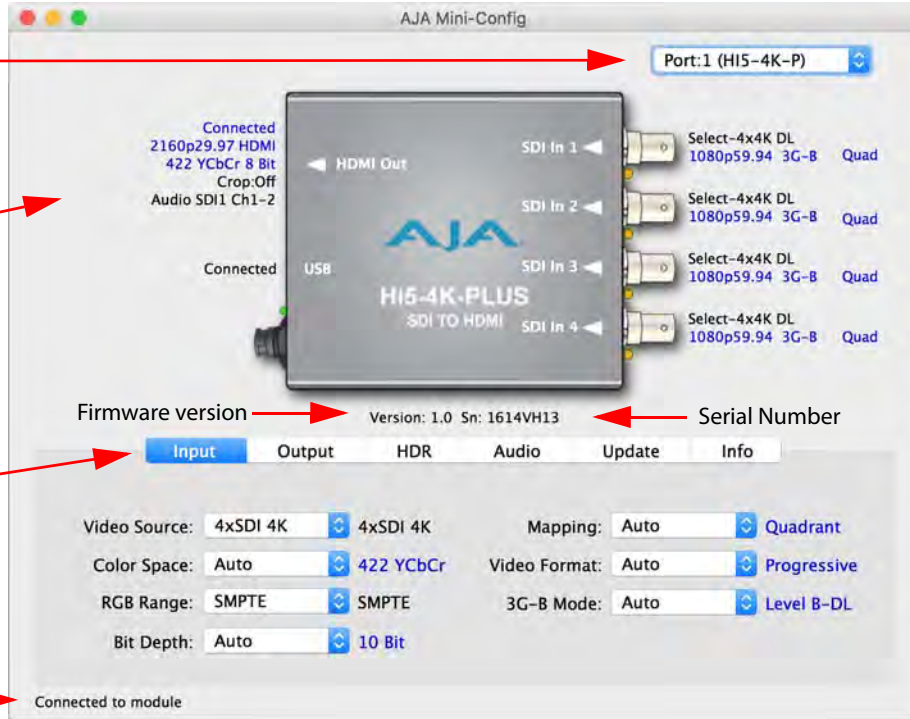
Figure 6. Example AJA Mini-Config Screen

Select a USB port and an attached Mini-Converter (name in parentheses)

Each connector is labeled with the signals currently detected or manually selected.

Tabbed screens

Message Showing Status



NOTE: The LED adjacent to the SDI connectors indicates by color the detected signal type. Off is no signal, Green is SD-SDI, red is HD-SDI, and amber is 3G-SDI.

Selecting a Mini-Converter with the pulldown menu causes this application to connect to the selected converter. The graphic of Mini-Converter and text below it provides:

- Type of converter
- Firmware version
- Serial number of the unit.

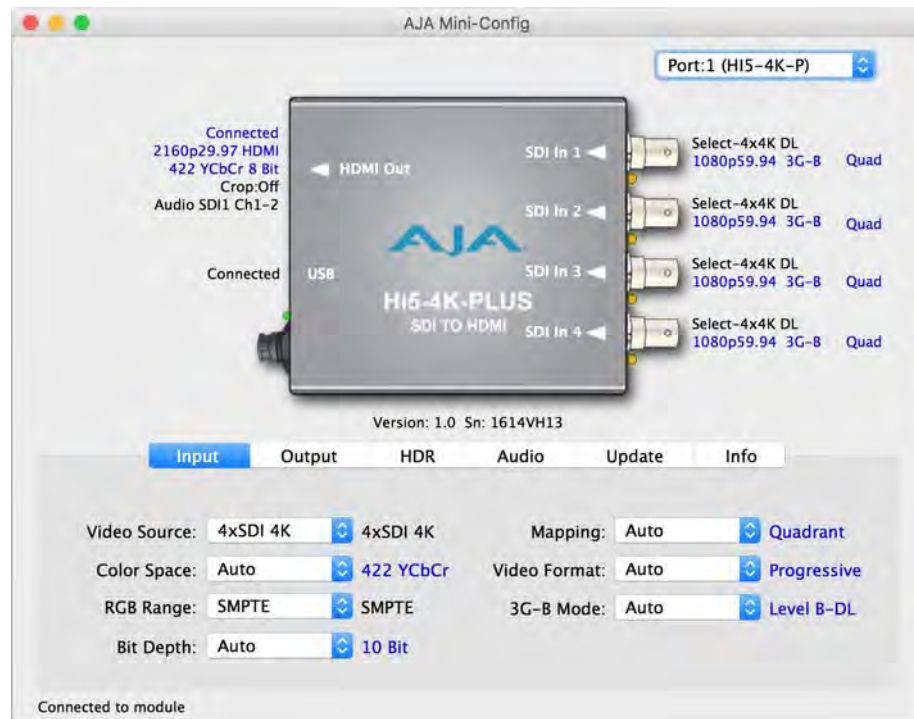
A status field at the bottom of the screen shows if your application is connected and communicating with the Mini-Converter.

When configuring the Mini-Converter, select it from the top pulldown, view the current settings and change any values. Making a change communicates that new value to the Mini-Converter’s non-volatile memory.

Tabbed Screens

The Tabs delineate control screens with groups of controls for each type of task to be performed. The controls for the actual configuration parameters are specific to each Mini-Converter type. When you Click on any of the tab buttons, the pane below the tabs will change to match your tab selection. Any changes you make are immediately applied and will be saved, overwriting previous settings.

Input Screen



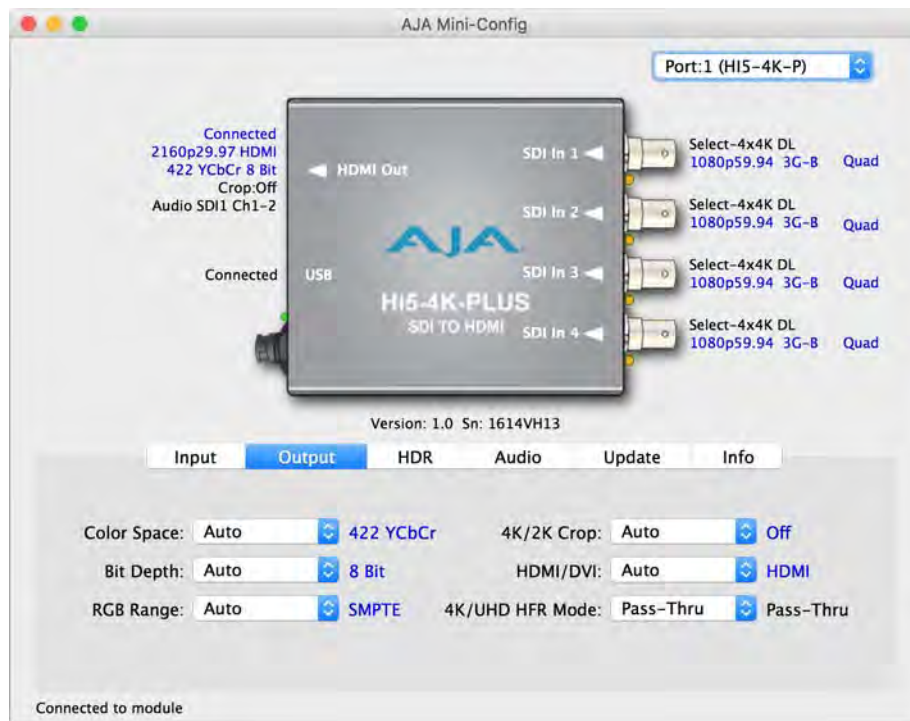
Click on the Input tab to view and make changes to the converter's input settings.

- Video Source** Selects the input video format. Choose from the following:
- Auto - automatically selects the format based on the input video parameters.
 - 4xSDI 4K
 - 2xSDI 4K - (3G-B Dual Stream input required)
 - 2xSDI HD-DL - (2 wire SMPTE 372)
 - SDI 1, SDI 2, SDI 3, or SDI 4
- Color Space** Selects the Input Video Color Space. Choose from the following:
- Auto - automatically select color mode based on the input video parameters and payload ID.
 - 4:2:2 YCbCr (cannot exceed 10-bit depth)
 - 4:4:4 RGB (8-bit depth only if in 4K mode)
 - 4:4:4 YCbCr
- RGB Range** Selects the Input Video Color Range. Choose SMPTE or Full color range.
- Bit Depth** Selects the input video bit depth. Choose Auto, 8-bit or 10-bit. Choosing "Auto" automatically selects the bit depth based on the input video parameters and the payload ID.
- Mapping** Select the 4K/UHD mapping format:
- Auto (default) -automatically selects the mapping based on the input video.
 - 2SI - Two Sample Interleave
 - Quadrant - Square Division

Video Format Selects the Input Video Format. Choose from Auto, Progressive (P), Interlaced, or PsF (progressive segmented frame). Choosing "Auto" automatically selects the format based on the input video parameters and the payload ID.

- 3G-B Mode** Selects the 3G level B Video Mode. Choose from the following:
- Auto - automatically selects the format based on the input video parameters.
 - Dual Link - select this when your 3G signal is carrying 444 information.
 - 2xHD - Dual Stream - each Data Stream is an independent source.
 - 1 x HD DS1 - use only Data Stream 1 as a single video
 - 1 x HD DS2 - use only Data Stream 2 as a single video

Output Screen



Click on the Output tab to view and make changes to the Hi5-4K-Plus Output settings.

- Color Space** Selects the desired output video format. Choose from the following:
- Auto - selects the video format based on the input video and the attached device's capabilities.
 - 4:2:2 YCbCr (cannot exceed 10-bit depth)
 - 4:4:4 RGB (8-bit depth only if in 4K mode)
 - 4:4:4 YCbCr

Bit Depth Choose from Auto, 8-bit, or 10-bit (see limitations above for 4K video outputs). Choosing "Auto" automatically selects the bit depth based on the input video and the attached device's capabilities.

RGB Range Choose Auto, SMPTE or Full. Choosing "Auto" automatically selects the input color range setting.

4K/2K Crop Choose Auto, Off, or On. Provides the option of center cutting 2Kx1080 video signals to make 1920x1080, or center cutting a 4Kx2160 signal to make 3840x2160.

HDMI/DVI Choose Auto, HDMI, or DVI. When DVI is selected, any audio signals present are not passed. Choosing "Auto" automatically selects the output mode based on the attached device's capabilities.

4K/UHD HFR Mode Choose Pass-Thru, Frame Drop, or 4:2:0.

Your selection for this control will depend on whether you are connected to a sink device that supports HDMI 2.0 (maximum bandwidth of 18 Gbps) or HDMI 1.4 (maximum bandwidth of 10.2 Gbps).

Hi5-4K-Plus supports HDMI 2.0 and can pass through 4K/UHD high frame rate (HFR) signals such as 50, 59.94 or 60.

- Pass-Thru (default setting). If connected to an HDMI 2.0 sink device, the 4K UHD HFR source will pass straight through with no loss of data. If connected to an HDMI 1.4 sink device, the unit will reduce its output data rate by either switching to Frame Drop mode or 4:2:0 mode.
- Frame Drop. When the video source is 4K or UHD with a high frame rate (HFR) including 50, 59.94 or 60, Frame Drop makes the Hi5-4K-Plus drop every other frame to output at 25/29.97/30. This setting can be used to support connection to an HDMI 1.4 sink device such as a monitor.
- 4:2:0. When the video source is 4K or UHD with a high frame rate (HFR) including 50, 59.94 or 60, the 4:2:0 setting makes the Hi5-4K-Plus reduce the amount of color data output while still providing a frame rate output of 50/59.94/60. This setting can be used to support connection to an HDMI 1.4 sink device such as a monitor.

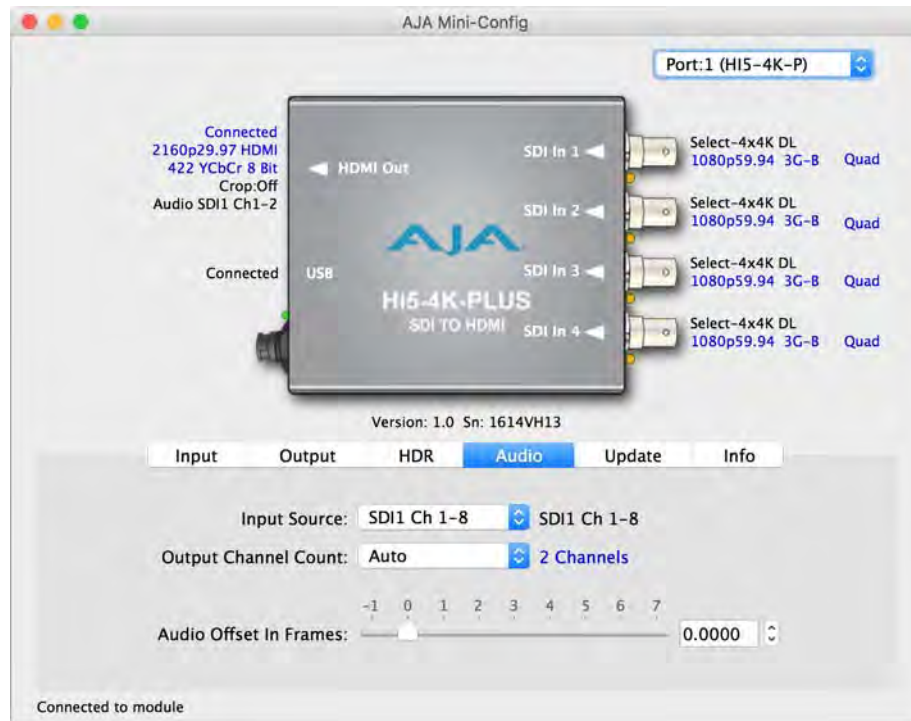
HDR Screen



Click on the HDR tab to view and make changes to the Hi5-4K-Plus High Dynamic Range static metadata extensions settings.

The HDR tab provides a mechanism to inform an HDMI sink device (such as a TV or monitor) that the video content is HDR encoded. This includes generation of the Dynamic Range and Mastering Infoframe and the static metadata descriptors as defined in CTA-861.3 and HDMI v2.0a. This tab includes pre-canned primaries values for BT.2020 and DCI P3 color gamuts. The Apply Setting button will transfer all settings to the HDMI transmitter.

Audio Screen

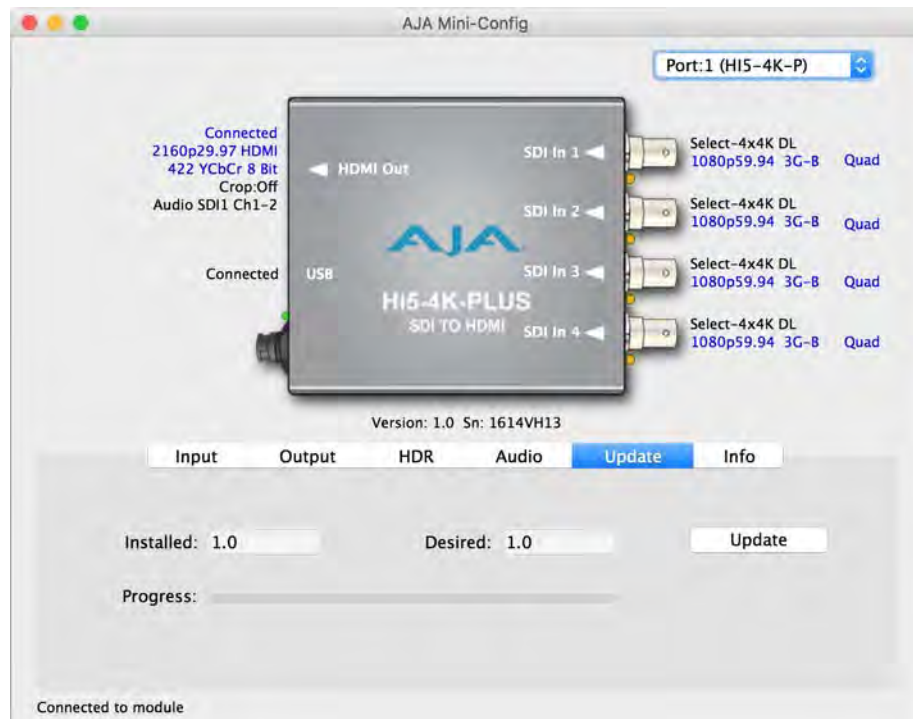


Click on the Audio tab to view and make changes to the Hi5-4K-Plus audio settings.

NOTE: When using the DVI video protocol no audio is output, since that protocol is video only

- Input Source** Choose which embedded audio channels are routed to the HDMI output. Eight channels are routed at a time. You can choose Ch 1-8 or Ch 9-16 from any of the SDI inputs.
- Output Channel Count** Choose Auto, 2-channel or 8-channel embedded audio. Choosing “Auto” automatically selects the audio channels based on the attached device's capabilities.
- Audio Offset In Frames** Permits time shifting the embedded audio in relationship to the video (for example, to correct for lip sync problems), in 1/16 of a frame increments. Range is from -0.8125 video frame to +7.0 video frames. The actual time duration of delay will vary depending on the frame rate of the format being converted.

Update Screen



Use this *Update* screen to view the software version currently installed on the converter or install new software.

NOTE: When discussing Mini-Converters, “Firmware” is software that will be stored in the Mini-Converter’s non-volatile memory and used when it is powered up. This is something different than the AJA Mini-Config application software. The version numbers shown in the Update screen refer only to the firmware.

Installed: This field shows the version of the firmware currently installed inside the Mini-Converter.

Desired: This field shows the version of firmware embedded in the AJA Mini-Config application which you can install into the Mini-Converter by clicking the *Update* button.

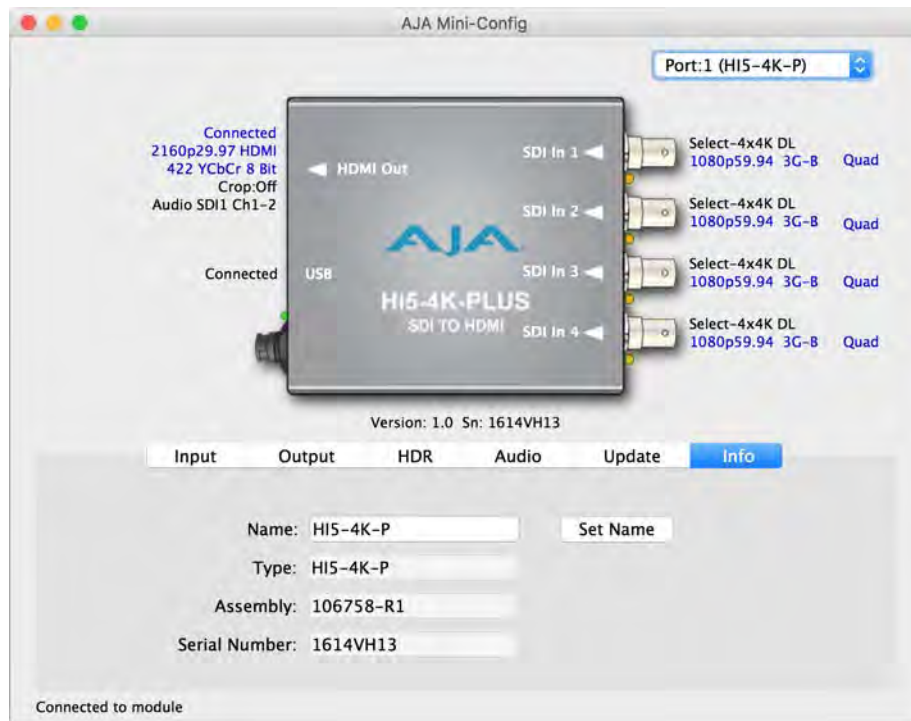
Update This button initiates a software update operation loading the “Desired” version of firmware into the Mini-Converter’s non-volatile memory.

Progress: This indicator bar shows the progress of firmware installation.

Software Update Procedure

1. Check the AJA website for new AJA Mini-Config software for your Mini-Converter. If new software is found, download it and uncompress the file archive (zip). Here is the URL to use when checking:
<http://www.aja.com/en/products/mini-converters/mini-config-software>
2. Connect the Mini-Converter to a Mac or PC via a USB port on the computer and run the new AJA Mini-Config software just downloaded.
3. Click on the Update tab screen.
4. Check the Installed version level against the Desired version level. If the Desired is newer, then click the *Update* button to download the new firmware to the Mini-Converter; progress will be shown via the “Progress” thermometer bar.

Info Screen



This screen provides basic information about the Mini-Converter. This information is useful when calling AJA Support for service or technical support.

Name This field allows you to give your Mini-Converter a name. This can be useful if you have several Mini-Converters attached to a Mac/PC via USB so you can distinguish between them easily (especially if they're the same model).

Type: This is the factory set model name of the Mini-Converter.

Assembly: This is the factory assembly number.

Serial Number: This is the factory set unique serial number of your Mini-Converter. If you ever call AJA Support for service, you may be asked for this number.

Appendix A: Specifications

Video Input

- 3G-SDI (auto-selected), 4 x BNC

Input Formats Supported

- 4 x 3G-SDI (Level A or B-DL)**
 - 4096x2160p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
 - 3840x2160p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
- 4 x 3G-SDI (Level B-DL)**
 - 4096x2160PsF 23.98, 24, 25, 29.97, 30
 - 3840x2160PsF 23.98, 24, 25, 29.97, 30
- 2 x 3G-SDI (Level B-DS)**
 - 4096x2160p 23.98, 24, 25, 29.97, 30
 - 4096x2160PsF 23.98, 24, 25, 29.97, 30
 - 3840x2160p 23.98, 24, 25, 29.97, 30
 - 3840x2160PsF 3.98, 24, 25, 29.97, 30
- 4 x 1.5G-SDI**
 - 4096x2160p 23.98, 24, 25, 29.97, 30
 - 4096x2160PsF 23.98, 24, 25, 29.97, 30
 - 3840x2160p 23.98, 24, 25, 29.97, 30
 - 3840x2160PsF 23.98, 24, 25, 29.97, 30
- 3G-SDI (Level A or B-DL)**
 - 2048x1080p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
 - 2048x1080PsF 23.98, 24, 25, 29.97, 30
 - 1920x1080p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
 - 1920x1080PsF 23.98, 24, 25, 29.97, 30
 - 1920x1080i 25, 29.97, 30 (50, 59.94, 60 fields)
- 3G-SDI (Level A)**
 - 1280x720p 50, 59.94, 60
- 1.5G HD-SDI**
 - 2048x1080p 23.98, 24, 25, 29.97, 30
 - 2048x1080PsF 23.98, 24, 25, 29.97, 30
 - 1920x1080p 23.98, 24, 25, 29.97, 30
 - 1920x1080PsF 23.98, 24, 25, 29.97, 30
 - 1920x1080i 25, 29.97, 30 (50, 59.94, 60 fields)
 - 1280x720p 50, 59.94, 60
- 270Mb SD-SDI**
 - 525i 29.97 (59.94 fields)
 - 625i 25 (50 fields)

Video Output

- HDMI v2.0
- Output video format and frame rate same as input
- YCbCr 4:2:2 10 bit, RGB/YCbCr 4:4:4 8 bit
- YCbCr 4:2:0 8 bit (50, 59.94, 60)

- Supports generation of HDR static metadata descriptors per CTA-861.3 and HDMI v2.0a
- 4096x2160p 4:2:0, 50, 59.94, 60
- 4096x2160p 4:2:2/4:4:4, 50, 59.94, 60

NOTE: If a connected monitor doesn't support HDMI protocol the unit automatically switches to DVI protocol (which does not pass audio).

Audio Input

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

Audio Output

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

Physical

Power

- +5 to 20V DC regulated, 12 watts max
- AJA external power supply model DWP-U-R1 (included):
 - 100-240V, 50/60Hz universal input

Size

- 5.8" x 3.9" x 0.8" (147 mm x 99 mm x 20 mm) including connectors

Environment

Operating Temperature: 0 to 40 degrees C (32 to 104 degrees F)

Operating Relative Humidity: 10-90% non-condensing

Operating Altitude: <3,000 meters (<10,000 feet)

Safe Storage Temperature (Power OFF): -40 to 60 degrees C (-40 to 140 degrees F)

Index

Numerics

2SI 14
3840x2160 output 6
3G-B Mode setting 15
4K dual-stream 3Gb SDI input 5
4K x2160 output 6
4k/2K Crop setting 16
4K/UHD HFR Mode setting 16

A

Audio Offset In Frames setting 18
Audio Screen 18

B

Bit Depth (input) setting 14
Bit Depth (output) setting 15
Block Diagram 7

C

Color Space setting 14, 15

D

Default Operation 5
Documentation
 Downloading 9
 Mini-Converter 9
Dual-link 1.5Gb HD input 5

F

Features 6
Frame Drop setting 16

H

HDMI 2.0 setting 16
HDMI/DVI setting 16
HDR Screen 17

I

I/O Connections 7
Info Screen 20
Input Screen 14
Input Source setting 18
Installation overview 8

M

Mapping setting 14
Mini-Config
 Acquiring 9
 Installation on Mac 10
 Installation on PC 9
 Operation 12
 Running Multiple Converters 12

Screen Description 13
Startup 11
Mini-Config Control 6
Mini-Config Screen
 Audio 18
 HDR 17
 Info 20
 Input 14
 Output 15
 Update 19
Mini-Converter Documentation 9

O

Output Channel Count setting 18
Output Screen 15
Overview 5

P

Pass-Thru setting 16

Q

Quadrant 14

R

RGB Range (input) setting 14
RGB Range (output) setting 15

S

single HD input 5
single SD input 5
Software Update Procedure 19
Square Division 14

T

Two Sample Interleave 14

U

Update Screen 19

V

Valid SDI video required 5
Video Format setting 15
Video Source setting 14