Hi5-12G Mini-Converter

12G SDI to HDMI

Installation and Operation Guide

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AJA VIDEO SYSTEMS

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Contacting AJA 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	https://www.aja.com
Support Email	support@aja.com
Sales Email	sales@aja.com

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Chapter 1 – Introduction

Overview

The Hi5-12G converts 12G-SDI to HDMI 2.0, providing an easy to deploy solution for monitoring professional 4K/UltraHD SDI signals with 4K/UltraHD HDMI 2.0 displays. The Hi5-12G supports a wide range of input video formats and frame rates with extremely low latency signal conversion and pristine image fidelity. It features a 12G-SDI single link input with a reclocked SDI loop out for signal extension to downstream SDI devices.

Two additional Hi5-12G models support fiber connectivity. The Hi5-12G-R includes an optical input, and the Hi5-12G-TR includes an optical input and reclocked optical loop output. These models are perfect for applications where distance is a factor.

The Hi5-12G is a powerful tool for HDR workflows that require local HDR Infoframe generation to correctly configure a HDR monitor. The free Mini-Config application program provides an easy to use GUI interface to configure the Hi5-12G and to display input signal status information.

Default Operation

When you power up the Hi5-12G with its default settings, it will operate with its default settings, which includes many automatic settings.

The Hi5-12G's Auto-Configure feature automatically identifies the incoming SDI signal format and converts the signal based on the HDMI output default configuration parameters.

AJA Mini-Config Control

AJA's Mini-Config application is available for firmware updates and advanced configuration. The Mini-Config application provides configuration controls for Hi5-12G along with real-time input signal status.

With the Mini Config application, you can specify what input signal parameters you want to use, specify the output signal format, configure HDR settings, audio settings, and perform software updates.

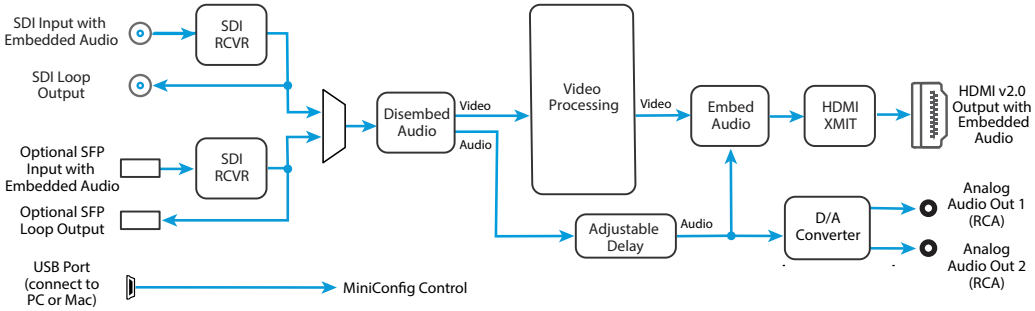
Configuration settings made through AJA Mini-Config are stored in the Hi5-12G unit through subsequent power cycles.

Features

- Convert 12G-SDI to HDMI v2.0b at up to 4K 60p
- Support for 4:4:4/4:2:2/4:2:0 HDMI v2.0b output
- Support for YCbCr and RGB
- HDR support for HDR10 and HLG
- Embedded audio support
- 12G-SDI loop out
- Fiber SFP models available
- Configure via USB port and supplied Mini-Config software
- Uses 5-16 VDC power (DWP-U-R1 universal power supply included)
- Five year warranty

Block Diagram

Figure 1. Hi5-12G Converter, Simplified Block Diagram



I/O Connections

Figure 2. Hi5-12G Converter Connections

NOTE: The LED adjacent to the SDI connector indicates by color the detected SDI input signal. Off is no signal, green is SD-SDI, red is HD-SDI, amber is 3G-SDI, magenta is 6G-SDI, and blue is 12G-SDI.

Installation

NOTE: AJA does not support third-party SFP modules. Use of a non-AJA SFP module will void the warranty.

Hi5-12G-R ships with a 12G-SDI Fiber LC single channel SFP receiver.

Hi5-12G-TR ships with a 12G-SDI Fiber LC channel SFP transceiver.

Installation consists of the following steps:

1. Ensure the Hi5-12G is disconnected from power.
2. Connect video equipment to the converter BNCs.
3. If applicable, connect fiber to the 12G-SDI Fiber LC single channel SFP receiver or transceiver.

CLASS 1 LASER PRODUCT

Warning! Active fiber-optic cables emit radiation invisible to the human eye. Do not look directly at the end of an active fiber-optic cable or the fiber connector on a Hi5-12G-R or Hi5-12G-TR; these models are Class 1 Laser Products.

Figure 3. Hi5-12G to Fiber LC Single Channel SFP Example

NOTE: Fiber optic interconnections can be severely compromised by dirt, oils, or other contaminants. All dust caps should be replaced on cables and equipment whenever Hi5-12G *converters are disconnected from fiber optic cables.*

4. Apply +5VDC power to the converter (AJA power supply included).
5. The Hi5-12G 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 Hi5-12G via USB
   - Make your changes using AJA Mini-Config setup screens.

   This process is detailed in *"USB Control and Setup—Using AJA Mini-Config" on page 8*.

NOTE: 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 Hi5-12G 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.

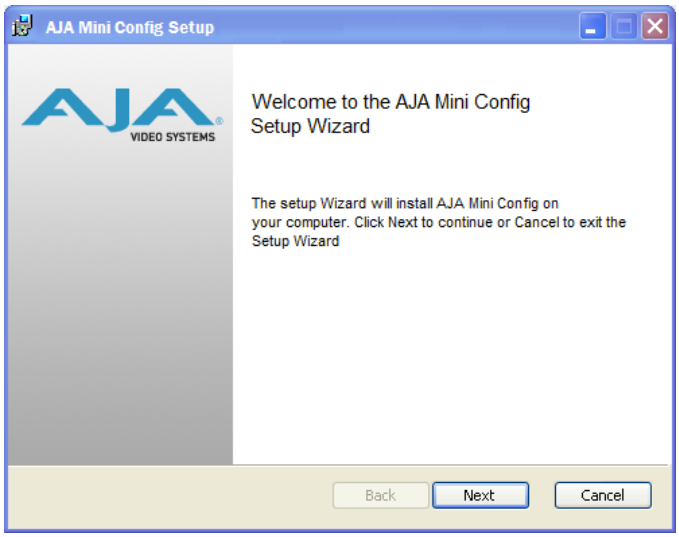
Installing AJA Mini-Config

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.

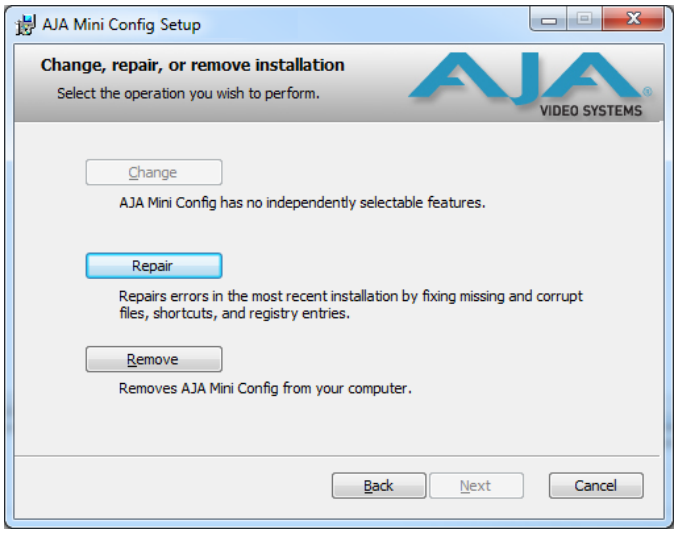
Figure 4. AJA Mini-Config PC Setup Wizard



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 5. AJA Mini-Config Setup Wizard, Reinstallation



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

Mac Installation

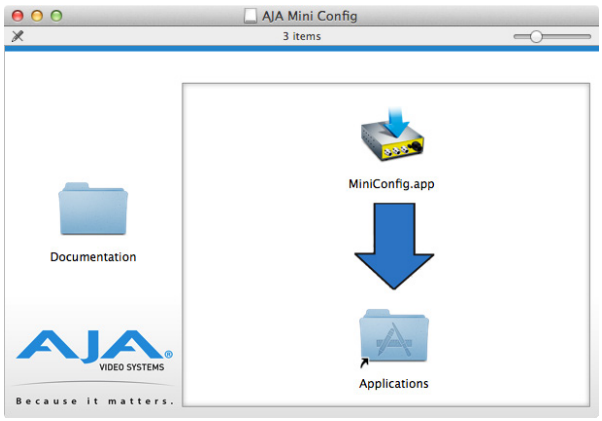
To install the application on a Mac:

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 6. AJA Mini-Config Mac Installer



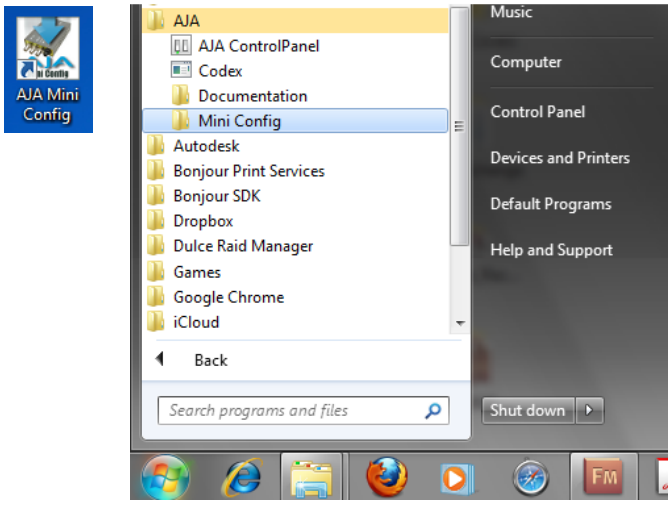
5. To complete the installation drag the "MiniConfig.app" icon to the Applications folder.

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.

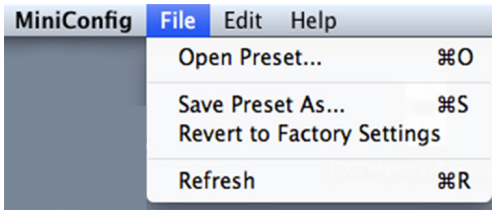


Mac Startup

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:

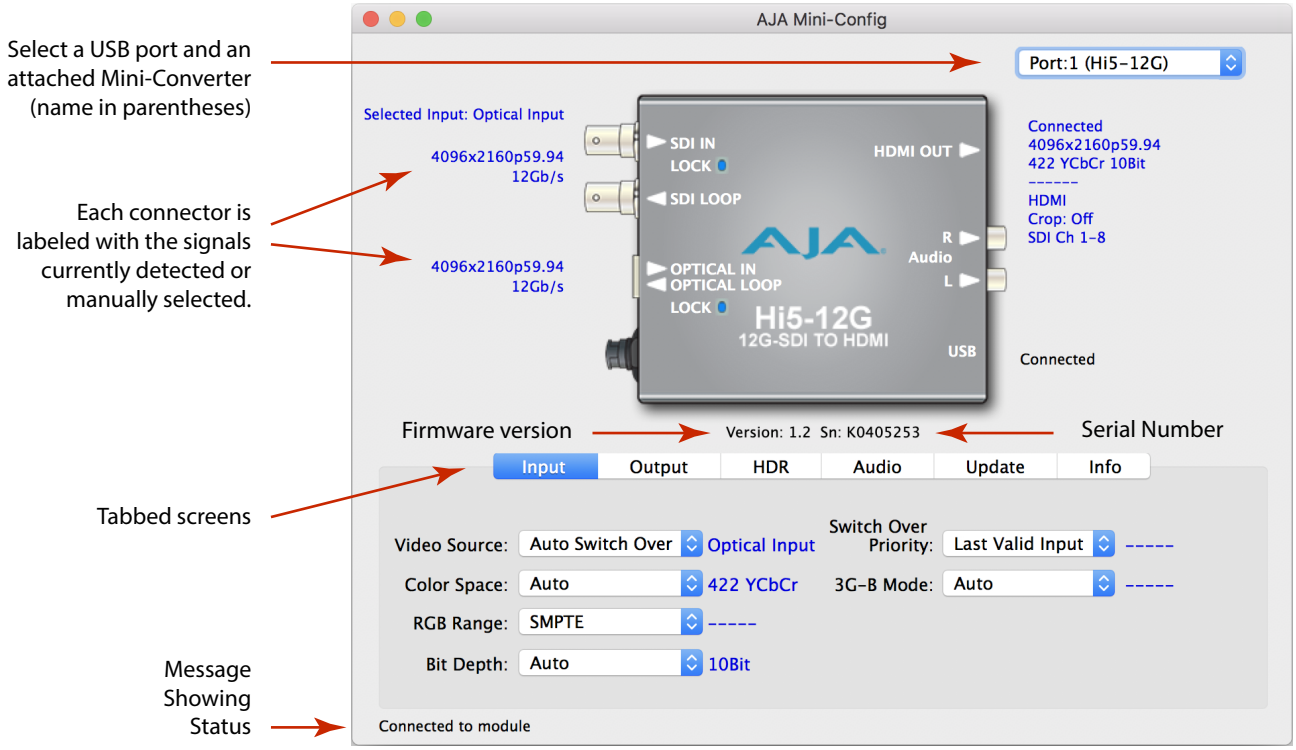
- Blue text indicates the values automatically selected
- Black text indicates values that you have manually selected
- Red text indicates the Mini-Converter is not detecting a signal, or cannot operate with the current user settings.

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.

Figure 7. Example AJA Mini-Config Screen



NOTE: The LEDs adjacent to each SDI or Fiber connector indicate by color the detected SDI input signal. Off is no signal, [Green is SD-SDI], [red is HD-SDI], [amber is 3G-SDI], purple is 6G-SDI, [blue is 12G-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.

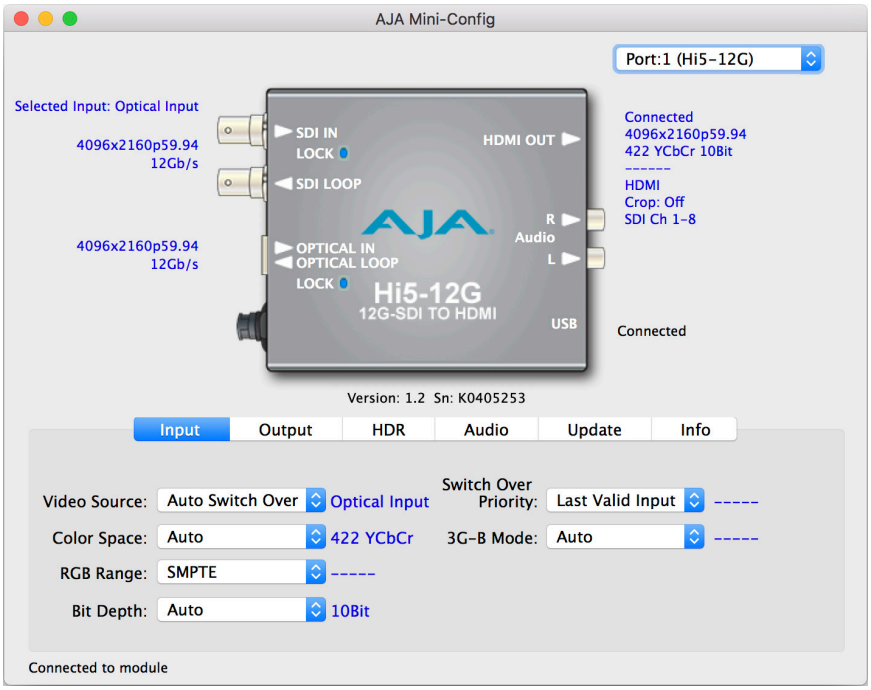
A status field at the bottom of the screen shows if your application is connected and communicating with the Mini-Converter.

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 Tab Screen



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

Video Source

Selects the input video source. Choose from the following:

- Auto Switch Over - automatically selects between the SDI Input and the Optical Input (applicable to the Hi5-12G-R and Hi5-12G-TR models).
- SDI Input - selects the SDI input.
- Optical Input - selects the optical input (applicable to the Hi5-12G-R and Hi5-12G-TR models).

Color Space

Selects the Input Video Color Space. Choose from the following:

- Auto - automatically selects color space based on the input video parameters and payload ID.
- 4:2:2 YCbCr
- 4:4:4 RGB
- 4:4:4 YCbCr

RGB Range

Selects the Input Video Color Range when the input is RGB. Does not apply when the input is YCbCr. 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.

Switch Over Priority

Selects which input (SDI or Optical) is the preferred input. This selection is valid only when an AJA optical SFP is installed. If and when the selected input signal is no longer detected, the auto switchover circuit will fail over to the non-priority input if present.

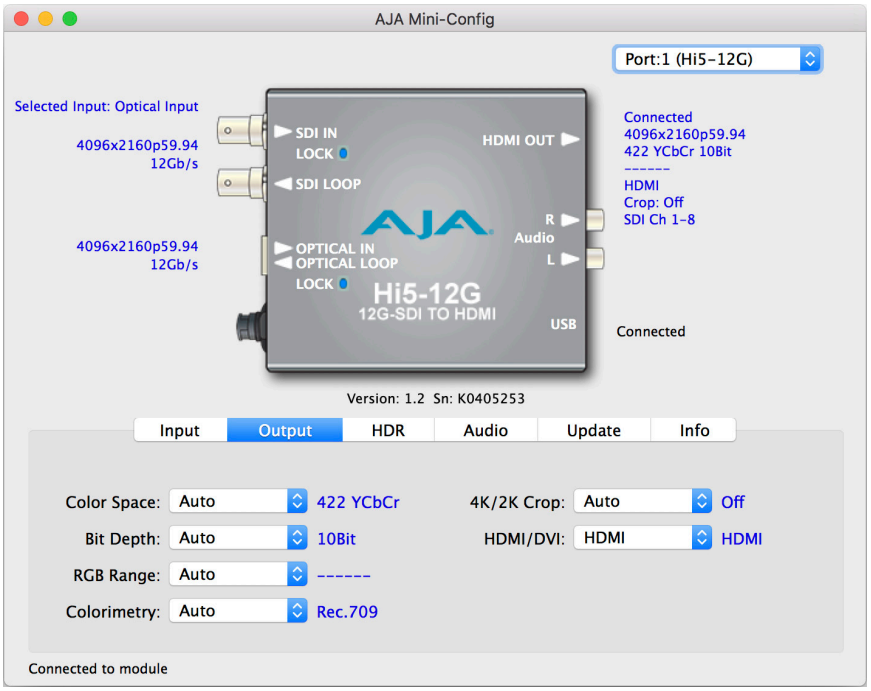
Choose from Last Valid Input, SDI Input, or Optical Input.

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.
- Level B-DL
- B-DS Link 1 - use Link 1
- B-DS Link 2 - use Link 2

Output Tab Screen



Click on the Output tab to view and make changes to the Hi5-12G Output settings.

Color Space

Selects the Output Video Color Space. Note that DVI output is limited to 4:4:4 RGB. Choose from the following:

- Auto - selects the video format based on the input video and the attached device's capabilities.
- 4:2:2 YCbCr
- 4:4:4 RGB
- 4:4:4 YCbCr
- 4:2:0 YCbCr

Bit Depth

Choose from Auto, 8-bit, or 10-bit. Choosing “Auto” automatically selects the bit depth based on the input video and the attached device’s capabilities. High frame rate (HFR) 4K/UltraHD 4:4:4 limited to 8 bits. DVI output is limited to 8 bits.

RGB Range

Selects the Output Video Color Range when the output is RGB. Does not apply when the output is YCbCr. Choose Auto, SMPTE or Full color range. DVI output is limited to RGB.

Colorimetry

The setting selected in the Colorimetry control determines the colorimetry value that is transmitted in the AVI Info frame. This information is sent to the sink regardless of whether the HDR Enable is On or Off.

Choose from the following:

- Auto
- No Data
- Rec.601
- Rec.709
- BT.2020 Non-CL (non-constant luminance)
- BT.2020 CL (constant luminance)

4K/2K Crop

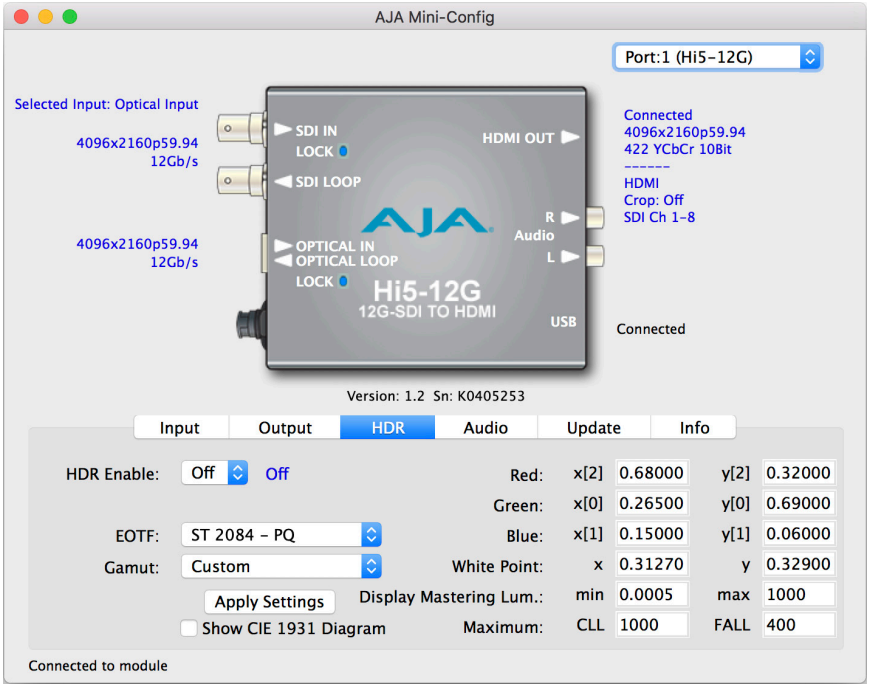
Choose Auto, Off, or On. Provides the option of center cutting 2048x1080 video signals to make 1920x1080, or center cutting 4096x2160 signals to make 3840x2160.

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.

When the incoming signal is 4K or UltraHD and the HDMI/DVI control is set to "DVI," the output will be downsampled to deliver a 2048x1080 or 1920x1080 image. The downsampling is accomplished by passing only one of the 2SI quadrants from the SDI input signal. The output will appear to be a full picture, but is actually only one quarter of the total pixels. This feature is very helpful when connecting to a non-4K/UHD preview monitor.

HDR Tab Screen



Click on the HDR tab to view and make changes to the Hi5-12G 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 v2.0b. 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.

NOTE: The Hi5-12G HDR function does not modify the video data.

NOTE: Hover the cursor over each parameter field to view its corresponding description in a pop-up window.

HDR Enable

Choose Off or On to determine whether HDR metadata is generated.

- Off - HDR metadata is not generated, although colorimetry is still getting signaled downstream.
- On - HDR metadata is generated.

EOTF

Electro-Optical Transfer Function (EOTF) sets the transfer function serving to convert between non-linear data space and linear light space.

Choose from the following:

- Trad Gamma SDR
- Trad Gamma HDR
- ST 2084 – PQ
- Hybrid Log-Gamma
- Reserved [4], not yet defined
- Reserved [5], not yet defined

- Reserved [6], not yet defined
- Reserved [7], not yet defined

Gamut

Gamut defines locations for the three vertices of the color primaries, as well as the white point within the x-y plane of the CIE 1931 color space and SMPTE ST 2086 color volume (in the case of HDR).

Choose from the following:

- DCI-P3 D65 (preset values per DCI-P3 Cinema)
- BT.2020 (preset values per ITU BT.2020)
- BT.709 (preset values per ITU BT.709)
- Custom (allows for defining specific custom coordinates)

Display Mastering Luminance

Represents the minimum and maximum Display Mastering Luminance.

- Minimum: Defines the floor of the SMPTE ST 2086 color volume (in the case of HDR) and is determined by the mastering environment.
  - Range: 0.00000 cd/m^2 to 1.00000 cd/m^2.
  - Step size: 0.00002 cd/m^2.
- Maximum: Defines the ceiling of the SMPTE ST 2086 color volume (in the case of HDR) and is determined by the mastering environment.
  - Range: 1 cd/m^2 to 65535 cd/m^2.
  - Step size: 1 cd/m^2.

Maximum Content Light Level (CLL)

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

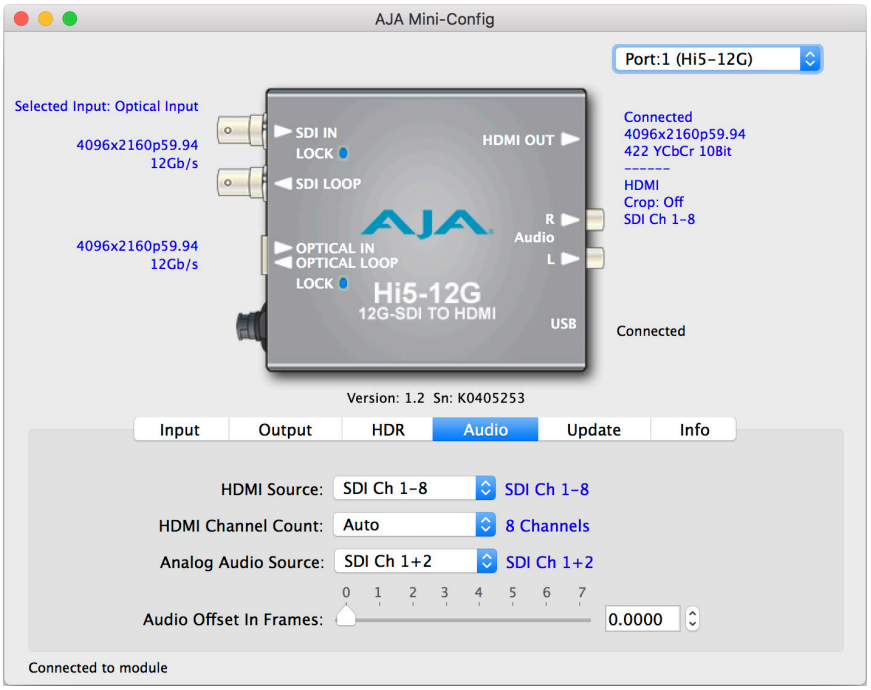
- Range: 1 cd/m^2 to 65535 cd/m^2.
- Step size: 1 cd/m^2.

Maximum Frame Average Light Level (FALL)

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

- Range: 1 cd/m^2 to 65535 cd/m^2.
- Step size: 1 cd/m^2.

Audio Tab Screen



Click on the Audio tab to view and make changes to the Hi5-12G audio settings.

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

HDMI Source

Choose which SDI 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. The source of the audio channels is the currently selected video input.

HDMI Channel Count

Choose Auto, 2 Channels, or 8 Channels for embedded audio. Choosing "Auto" automatically selects the audio channels based on the attached device's capabilities.

Analog Audio Source

Selects the channel pair that will be output to the Analog RCA connectors (L/R) and the HDMI audio output (when Output Channel Count is in 2-channel mode). Choose from the following:

SDI Ch 1+2

SDI Ch 3+4

SDI Ch 5+6

SDI Ch 7+8

SDI Ch 9+10

SDI Ch 11+12

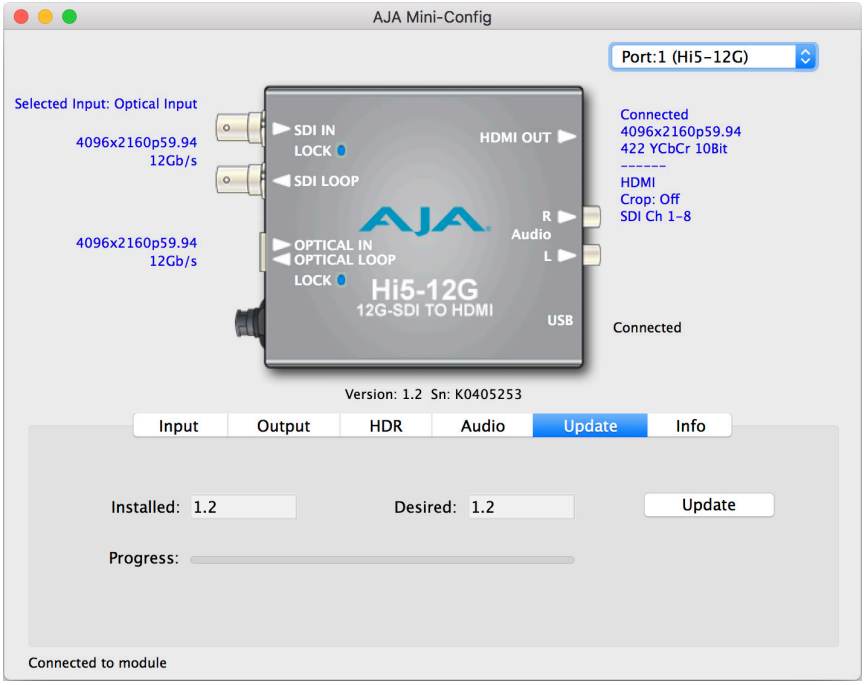
SDI Ch 13+14

SDI Ch 15+16

Audio Offset In Frames

Permits delaying 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 video frames to +7.0 video frames of delay. The actual time duration of delay will vary depending on the frame rate of the format being converted.

Update Tab 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

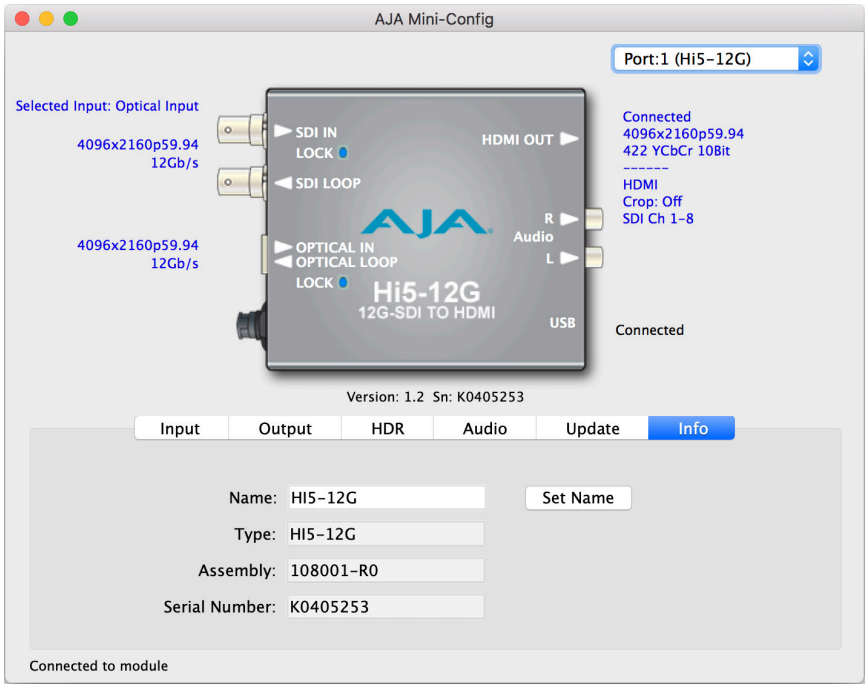
1. Check the AJA website for new AJA Mini-Config software for your Mini-Converter. If new software is found, download it and uncompress the file archive (zip). Here is the URL to use when checking:

   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 Tab 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

Hi5-12G Tech Specs

Video Formats

- (4K) 4096 x 2160p
- (UltraHD) 3840 x 2160p
- (2K) 2048 x 1080p
- (HD) 1920 x 1080p
- (HD) 1920 x 1080i
- (HD) 1280 x 720p
- (SD) 720 x 576i
- (SD) 720 x 480i

Video Input Digital

- 1x 12G-SDI BNC, SMPTE-259/292/424/2081/2082
- YCbCr 4:2:2/4:4:4
- RGB 4:4:4, SMPTE or Full level
- 8 or 10-bit
- Two Sample Interleave (2SI) 4K/UltraHD source mapping
- 1x 12 Gb SDI
  - (4K) 4096 x 2160p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
  - (UltraHD) 3840 x 2160p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
- 1x 6 Gb SDI
  - (4K) 4096 x 2160p 23.98, 24, 25, 29.97, 30,
  - (UltraHD) 3840 x 2160p 23.98, 24, 25, 29.97, 30,
- 1x 3 Gb SDI (Level A or B)
  - (2K) 2048 x 1080p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
  - (2K) 2048 x 1080PsF 23.98, 24, 25, 29.97, 30
  - (HD) 1920 x 1080p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
  - (HD) 1920 x 1080PsF 23.98, 24, 25, 29.97, 30
  - (HD) 1920 x 1080i 50, 59.94, 60
  - (HD) 1280 x 720p** 50, 59.94, 60
- 1x 1.5 Gb SDI
  - (2K) 2048 x 1080p 23.98, 24, 25, 29.97, 30
  - (2K) 2048 x 1080PsF 23.98, 24, 25, 29.97, 30
  - (HD) 1920 x 1080p 23.98, 24, 25, 29.97, 30
  - (HD) 1920 x 1080PsF 23.98, 24, 25, 29.97, 30
  - (HD) 1920 x 1080i 50, 59.94, 60
  - (HD) 1280 x 720p 50, 59.94, 60
- 1x 270 Mb SDI
  - (SD) 625i 50
  - (SD) 525i 59.94

**1280 x 720p is Level A Only

Video Output Digital

- 1x HDMI Type A connector**, HDMI v2.0b
- YCbCr 4:2:2/4:4:4/4:2:0
- RGB 4:4:4, SMPTE or Full level
- 8 or 10-bit (HFR 4K/UltraHD 4:4:4 limited to 8-bit)
- HDR Infoframe generation as defined in CTA-861-G and HDMI v2.0b
- (4K) 4096 x 2160p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
- (UltraHD) 3840 x 2160p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
- (2K) 2048 x 1080p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
- (HD) 1920 x 1080p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
- (HD) 1920 x 1080i 50, 59.94, 60
- (HD) 1280 x 720p 50, 59.94, 60
- (SD) 720 x 576i 50
- (SD) 720 x 480i 59.94

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

Audio Input Digital

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

Audio Output Digital

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

Audio Output Analog

- 2x RCA style connector, 2-Channel -10dBu (nominal)

User Interface

- USB port used with supplied cable and Mini-Config software application to configure and view device status via Mac or Windows.

Size (w x d x h)

- 4.6" x 4.02" x 0.9" (116.84 x 102.11 x 22.86 mm)

Weight

- 0.5 lb (0.3 kg)

Power

- 5-16VDC regulated, 11 watts, power supply required included with purchase
- AC Adapter: 100-240VAC, 50/60 Hz, universal input

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)

*Hi5-12G uses approximately 11 watts of power and convection cooling. It will be very warm to the touch, which is normal. When installing the unit, mount in a location where it has access to air for proper cooling. Do not stack the Hi5-12G with other Mini-Converters.

Hi5-12G-R Tech Specs

Video Formats

- (4K) 4096 x 2160p
- (UltraHD) 3840 x 2160p
- (2K) 2048 x 1080p
- (HD) 1920 x 1080p
- (HD) 1920 x 1080i
- (HD) 1280 x 720p
- (SD) 720 x 576i
- (SD) 720 x 480i

Video Input Digital

- Input Signal Selection
  - 1x 12G-SDI BNC, SMPTE-259/292/424/2081/2082
  - 1x 12G-SDI Fiber LC connector, SMPTE 297/259/292/424/2081/2082
    - Nominal Wavelength: Rx 1260 nm (min @ 12Gbps), 1620 nm (max)
    - Optical Sensitivity: -10 dBm (min 12 Gbps), -14 dBm (min @ 3Gbps)
    - Overload Power: -2 dBm (min)
- YCbCr 4:2:2/4:4:4
- RGB 4:4:4, SMPTE or Full level
- 8 or 10-bit
- Two Sample Interleave (2SI) 4K/UltraHD source mapping
- 1x 12 Gb SDI
  - (4K) 4096 x 2160p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
  - (UltraHD) 3840 x 2160p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
- 1x 6 Gb SDI
  - (4K) 4096 x 2160p 23.98, 24, 25, 29.97, 30,
  - (UltraHD) 3840 x 2160p 23.98, 24, 25, 29.97, 30,
- 1x 3 Gb SDI (Level A or B)
  - (2K) 2048 x 1080p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
  - (2K) 2048 x 1080PsF 23.98, 24, 25, 29.97, 30
  - (HD) 1920 x 1080p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
  - (HD) 1920 x 1080PsF 23.98, 24, 25, 29.97, 30
  - (HD) 1920 x 1080i 50, 59.94, 60
  - (HD) 1280 x 720p** 50, 59.94, 60
- 1x 1.5 Gb SDI
  - (2K) 2048 x 1080p 23.98, 24, 25, 29.97, 30
  - (2K) 2048 x 1080PsF 23.98, 24, 25, 29.97, 30
  - (HD) 1920 x 1080p 23.98, 24, 25, 29.97, 30
  - (HD) 1920 x 1080PsF 23.98, 24, 25, 29.97, 30
  - (HD) 1920 x 1080i 50, 59.94, 60
  - (HD) 1280 x 720p 50, 59.94, 60
- 1x 270 Mb SDI
  - (SD) 625i 50
  - (SD) 525i 59.94

**1280 x 720p is Level A Only

Video Output Digital

- 1x HDMI Type A connector**, HDMI v2.0b
- YCbCr 4:2:2/4:4:4/4:2:0
- RGB 4:4:4, SMPTE or Full level
- 8 or 10-bit (HFR 4K/UltraHD 4:4:4 limited to 8-bit)
- HDR Infoframe generation as defined in CTA-861-G and HDMI v2.0b
- (4K) 4096 x 2160p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
- (UltraHD) 3840 x 2160p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
- (2K) 2048 x 1080p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
- (HD) 1920 x 1080p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
- (HD) 1920 x 1080i 50, 59.94, 60
- (HD) 1280 x 720p 50, 59.94, 60
- (SD) 720 x 576i 50
- (SD) 720 x 480i 59.94

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

Audio Input Digital

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

Audio Output Digital

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

Audio Output Analog

- 2x RCA style connector, 2-Channel -10dBu (nominal)

User Interface

- USB port used with supplied cable and Mini-Config software application to configure and view device status via Mac or Windows

Size (w x d x h)

- 4.6" x 4.02" x 0.9" (116.84 x 102.11 x 22.86 mm)

Weight

- 0.5 lb (0.3 kg)

Power

- 5-16VDC regulated, 11 watts, power supply required included with purchase
- AC Adapter: 100-240VAC, 50/60 Hz, universal input

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)

*Hi5-12G-R uses approximately 11 watts of power and convection cooling. It will be very warm to the touch, which is normal. When installing the unit, mount in a location where it has access to air for proper cooling. Do not stack the Hi5-12G with other Mini-Converters.

Hi5-12G-TR Tech Specs

Video Formats

- (4K) 4096 x 2160p
- (UltraHD) 3840 x 2160p
- (2K) 2048 x 1080p
- (HD) 1920 x 1080p
- (HD) 1920 x 1080i
- (HD) 1280 x 720p
- (SD) 720 x 576i
- (SD) 720 x 480i

Video Input Digital

- Input Signal Selection
  - 1x 12G-SDI BNC, SMPTE-259/292/424/2081/2082
  - 1x 12G-SDI Fiber LC connector, SMPTE 297/259/292/424/2081/2082
    - Nominal Wavelength: Rx 1260 nm (min), 1620 nm (max)
    - Optical Sensitivity: -10 dBm (min @ 12Gbps), -14 dBm (min @ 3Gbps)
    - Overload Power: -2 dBm (min)
- YCbCr 4:2:2/4:4:4
- RGB 4:4:4, SMPTE or Full level
- 8 or 10-bit
- Two Sample Interleave (2SI) 4K/UltraHD source mapping
- 1x 12 Gb SDI
  - (4K) 4096 x 2160p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
  - (UltraHD) 3840 x 2160p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
- 1x 6 Gb SDI
  - (4K) 4096 x 2160p 23.98, 24, 25, 29.97, 30,
  - (UltraHD) 3840 x 2160p 23.98, 24, 25, 29.97, 30,
- 1x 3 Gb SDI (Level A or B)
  - (2K) 2048 x 1080p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
  - (2K) 2048 x 1080PsF 23.98, 24, 25, 29.97, 30
  - (HD) 1920 x 1080p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
  - (HD) 1920 x 1080PsF 23.98, 24, 25, 29.97, 30
  - (HD) 1920 x 1080i 50, 59.94, 60
  - (HD) 1280 x 720p** 50, 59.94, 60
- 1x 1.5 Gb SDI
  - (2K) 2048 x 1080p 23.98, 24, 25, 29.97, 30
  - (2K) 2048 x 1080PsF 23.98, 24, 25, 29.97, 30
  - (HD) 1920 x 1080p 23.98, 24, 25, 29.97, 30
  - (HD) 1920 x 1080PsF 23.98, 24, 25, 29.97, 30
  - (HD) 1920 x 1080i 50, 59.94, 60
  - (HD) 1280 x 720p 50, 59.94, 60
- 1x 270 Mb SDI
  - (SD) 625i 50
  - (SD) 525i 59.94

**1280 x 720p is Level A Only

Video Output Digital

- 1x HDMI Type A connector**, HDMI v2.0b
- YCbCr 4:2:2/4:4:4/4:2:0
- RGB 4:4:4, SMPTE or Full level
- 8 or 10-bit (HFR 4K/UltraHD 4:4:4 limited to 8-bit)
- HDR Infoframe generation as defined in CTA-861-G and HDMI v2.0b
- 1x 12G-SDI Fiber LC connector, SMPTE 297/259/292/424/2081/2082
  - Nominal Wavelength: Tx 1260 nm (min), 1310 nm (typ), 1360 nm (max)
  - Optical Power: -5 dBm (min), 0.5 dBm (max)
  - Extinction Ratio: 5.4 dB (min)
- (4K) 4096 x 2160p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
- (UltraHD) 3840 x 2160p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
- (2K) 2048 x 1080p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
- (HD) 1920 x 1080p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
- (HD) 1920 x 1080i 50, 59.94, 60
- (HD) 1280 x 720p 50, 59.94, 60
- (SD) 720 x 576i 50
- (SD) 720 x 480i 59.94

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

Audio Input Digital

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

Audio Output Digital

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

Audio Output Analog

- 2x RCA style connector, 2-Channel -10dBu (nominal)

User Interface

- USB port used with supplied cable and Mini-Config software application to configure and view device status via Mac or Windows.

Size (w x d x h)

- 4.6" x 4.02" x 0.9" (116.84 x 102.11 x 22.86 mm)

Weight

- 0.5 lb (0.3 kg)

Power

- 5-16VDC regulated, 11 watts, power supply required included with purchase
- AC Adapter: 100-240VAC, 50/60 Hz, universal input

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)

*Hi5-12G-TR uses approximately 11 watts of power and convection cooling. It will be very warm to the touch, which is normal. When installing the unit, mount in a location where it has access to air for proper cooling. Do not stack the Hi5-12G with other Mini-Converters.

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, IRELAND, ITALY, LATVIA, LITHUANIA, LUXEMBOURG, MALTA, NETHERLANDS, POLAND, PORTUGAL, ROMANIA, SLOVAKIA, SLOVENIA, SPAIN, SWEDEN, UNITED KINGDOM, ICELAND, LICHTENSTEIN, NORWAY, SWITZERLAND

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

Laser

EN 60825-1: 2007 and EN 60825-2: 2004 +A2: 2010,

CDRH Compliant Class 1 (TUV Cert No. 50135086)

Also Licensed for Standards: FDA 21 CFR 1040.10 and 1040.11

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

A급 기기 (업무용 방송통신기자재) Class A (Broadcasting Communication Equipment for Office Use)	이 기기는 업무용(A급) 전자파적합기기로서 판매자 또는 사용자는 이 점을 주의하시기 바라며, 가정외의 지역에서 사용하는 것을 목적으로 합니다. 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.

Taiwan Compliance Statement

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.

Japanese Compliance Statement

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

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

Translated Warning and Caution Messages

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

Warning Symbol

Caution Symbol

Before Operation Please Read These Instructions

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

¡Advertencia! Proteja el cable de 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 éclairsou s'il est inutilisé pendant de longues périodes.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Caution! Hi5-12G devices require the use of "single mode 1310nm compatible" fiber optic cable.

Aviso! Dispositivos Hi5-12G exigem a utilização de cabo de fibra ótica "compatível com monomodo 1310nm ".

Attention! Les équipements Hi5-12G doivent être utilisés avec un câble en fibre optique monomode compatible 1310 nm.

Attenzione I dispositivi Hi5-12G richiedono l'uso di un cavo a fibre ottiche "compatibile con 1310 nm monomodo".

¡Precaución! Hi5-12G dispositivos requieren el uso de cable de fibra óptica "mono modo 1310nm compatibles".

Vorsicht! Hi5-12G-Geräte erfordern den Gebrauch von "Einzelmodus 1310nm kompatiblen" Faseroptik-Kabeln.

CLASS 1
LASER
PRODUCT

PRODUTO
LASER DE
CLASSE 1

PRODUITS
LASER DE
CLASSE 1

PRODOTTO
LASER DI
CLASSE 1

CLASE 1
LASER
PRODUCTO

KLASSE 1
LASER-
PRODUKT

Warning! Active fiber-optic cables emit radiation invisible to the human eye. Do not look directly at the end of an active fiber-optic cable; the Hi5-12G is a Class 1 Laser Product.

Advertência! Cabos de fibra ótica ativos emitem radiação invisível ao olho humano. Não olhe diretamente para a extremidade de um cabo de fibra óptica ativo; o Hi5-12G é um produto laser de classe 1.

Avertissement! Lorsqu'ils sont actifs, les câbles en fibre optique émettent des radiations que l'oeil humain ne peut voir. Ne regardez pas directement l'extrémité d'un câble en fibre optique en cours d'utilisation ; les équipements Hi5-12G sont des produits laser de classe 1.

Avvertenza I cavi a fibre ottiche attivi (ossia in cui si propagano segnali) emettono radiazioni invisibili. Non fissare lo sguardo direttamente sull'estremità di un cavo a fibre ottiche attivo; il cavo Hi5-12G è un prodotto laser di Classe 1.

¡Advertencia! Active los cables de fibra óptica de emitir radiación invisible para el ojo humano. No mire directamente en el extremo de un cable de fibra óptica activa; el Hi5-12G es un producto láser de Clase 1.

Achtung! Aktive Faseroptik-Kabel geben eine Strahlung ab, die für das menschliche Auge unsichtbar ist. Das Ende eines aktiven Faseroptik-Kabels niemals direkt ansehen; die Hi5-12G ist ein Laser-Produkt der Klasse 1.

Warranty and Liability Information

AJA VIDEO SYSTEMS, INC.

Limited Warranty on Hardware

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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