HDP2
HD-SDI/SDI to DVI-D and Audio Converter

User Manual

AJA VIDEO SYSTEMS

November 4, 2009 P/N 101657-01

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Contacting Support

To contact AJA Video for sales or support, use any of the following methods:

180 Litton Drive, Grass Valley, CA. 95945 USA

Telephone: 800.251.4224 or 530.274.2048
Fax: 530.274.9442

Web: http://www.aja.com
Support Email: support@aja.com
Sales Email: sales@aja.com

When calling for support, have all information on the product (serial number etc.) at hand prior to calling.

Limited Warranty

AJA Video warrants that this product will be free from defects in materials and workmanship for a period of five years from the date of purchase. If a product proves to be defective during this 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.

In order to obtain service under this warranty, you the Customer, must notify AJA Video of the defect before the expiration of the warranty period and make suitable arrangements for the performance of service. The Customer shall be responsible for packaging and shipping the defective product to a designated service center nominated by AJA Video, with shipping charges prepaid. AJA Video shall pay for the return of the product to the Customer if the shipment is to a location within the country in which the AJA Video service center is located. Customer shall be responsible for paying all shipping charges, insurance, duties, taxes, and any other charges for products returned to any other locations.

This warranty shall not apply to any defect, failure or damage caused by improper use or improper or inadequate maintenance and care. AJA Video shall not be obligated to furnish service under this warranty a) to repair damage resulting from attempts by personnel other than AJA Video representatives to install, repair or service the product, b) to repair damage resulting from improper use or connection to incompatible equipment, c) to repair any damage or malfunction caused by the use of non-AJA Video parts or supplies, or d) to service a product that 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.

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Introduction

The HDP2 is a miniature HD-SDI/SDI to DVI-D converter for digital display devices (graphics and video), such as LED, LCD, DLP and Plasma monitors (and projectors). Using a very high quality scaling engine, the HDP2 will automatically size 4:3 or 16:9 inputs to many DVI-D monitors. For appropriate monitor configurations, scaling is automatically 1 to 1—for example, displaying 1920x1080 video on a WUXGA (1920x1200) monitor. Where appropriate, the HDP2 can automatically adapt the input frame rate for monitor compatibility. In addition, the HDP2 provides 8 channel embedded audio over HDMI, 2 channel analog audio monitoring, and a looping output of the SDI input.

The HDP2 is designed for general monitoring, perfect for use in applications such as: General post-production reference monitoring, Client monitoring, Presentation, Projection, Corporate displays, Kiosk applications ...and much more!

Deep color is supported in RGB and YCbCr. USB connectivity allows for easy PC/Mac setup and field upgrades.

Features

- HD-SDI/SDI to DVI-D
- HDMI 1.3a support (via DVI-D connector), including:
  - Deep Color 30-bit video (24-bit also supported)
  - 2 or 8 channels of embedded audio
- Automatically adapts to popular LED/LCD/DLP/Plasma monitors (and projectors) up to 1920x1200 and 1080p
- High quality scaling engine for proper display of 4:3 or 16:9 content—even better quality than original HDP
- 1 to 1 scaling for appropriate monitor configurations
- 2 channel RCA analog audio output (user-assignable channel pairs)
- HD-SDI/SDI looping output
- Setup via PC/Mac using USB port and supplied USB cable (USB configuration software application supplied on CD)
- 5 year warranty

About Monitor Compatibility

The HDP2 is designed to work with most DVI-D monitors. HDMI monitors are also supported with a standard, inexpensive DVI-to-HDMI cable (user supplied). The HDP2 uses the industry standard EDID communication protocol (within the DVI or HDMI link) to communicate with the monitor, and then adjust the HDP2's internal scaling engine to scale the input video to the native resolution of the monitor. However, due to the hundreds of variations of DVI formats currently in use, proper operation with all monitors cannot be guaranteed.

To ensure the greatest compatibility with today's available digital display devices, the HDP2 will, by default, provide VESA or CEA standard timing.

Frame Locking

Auto: Use this mode to ensure greatest compatibility with other monitors. The HDP2 will use standardized output timing for most monitors. If the attached monitor (such as an HP DreamColor) is recognized as having enhanced capabilities, then special, frame-locked timing will be used.

Manual: Selecting an output frame rate that matches the input frame rate will provide a vertically locked signal to the monitor, and may yield the best results. Note that not all monitors will be able to accept these signals.

Recommended Monitors

The monitors listed below have been verified to work with one or more of the manual frame rate selections.

- HP 24" LP2480zx DreamColor
- Apple 23" HD Cinema, model M9178LL/A (aluminum bezel)
- Sony 23", model SDM-P234
- Viewsonic VP231wb
- Dell 2405FPW
- Barco LC-42
- Barco LC-47
- Westinghouse LVM-37wl
- Sony Bravia Series
- Sharp Aquos Series

Optimal Performance with HP LP2480zx DreamColor

When using the HDP2 with an HP LP2480zx, the best results are obtained by using the default HDP2 “Auto” selections (no action required—unless you’ve changed the factory defaults using the Mini Config software supplied).

Automatic 720p or 1080p Support

Monitors that report 1280x720 or 1920x1080 in their “Preferred Timing Mode” section of EDID readback will receive a 1280x720 or 1920x1080p signal, respectively, from the HDP2.

Manual 720p or 1080p Support

The HDP2 can be configured manually for 720p or 1080p. This is discussed under “USB Control and Setup” later in this manual.

Note: For best results when using video display devices, it is recommended that a monitor capable of displaying the "Full 1080p" image be used.

VESA and CEA Timing

By default, the HDP2 will automatically output standardized VESA rate graphics where appropriate when a computer resolution is detected, and standardized CEA rate video when a video device, such as an HDTV is detected. Not all VESA rates are synchronous to SMPTE standard video input rates. However, the HDP2 can be configured manually by selecting an output frame rate that matches the incoming frame rate. By doing so, enhanced timing signals will be generated that will be locked to the incoming video.

Note: Some monitors may not be able to handle some of these enhanced timing modes. For best results, refer to the list of recommended monitors that have been tested to lock at one or more of the user-selectable frame rates.

Motion Adaptive De-interlacing

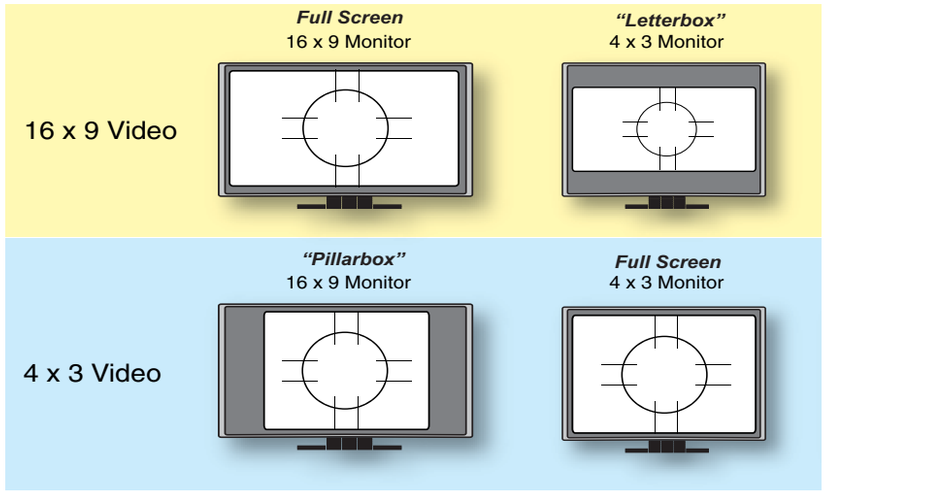
Video displayed on DVI progressive display devices requires de-interlacing technology to properly display the video from its native interlace format. HDP2 uses advanced motion adaptive de-interlacing to predict motion in the video stream and output a quality picture using spatial and temporal comparisons on individual pixels.

10-bit and Deep Color Support

HDP2 supports the HDMI 1.3a specification for Deep Color bit depths. In operation, HDP2 can support Deep Color bit depths up to 30 bits/pixel (1.073 billion colors).

Video Scaling

As shown in the graphic below, the HDP2 will scale the input video to the best fit for a given monitor and video input. In cases where the input video and the monitor are already the same or similar, the HDP2 automatically turns off scaling. For example, a 1920 x1080 video and a 1920 x1200 monitor will not be scaled.



Note: The HDP2 also properly supports 16:10 and 5:4 monitors.

If the HDP2 scaling is set to 1:1 via the control panel, the input raster will be displayed unscaled. This means that input rasters smaller than the monitor appear as a "floating" image surrounded by black. For example, a 1280 x 720 image on a 1920 x 1200 monitor only fills about 40% of the screen. Standard definition inputs unscaled on a 1920 x 1200 monitor only fill about 20% of the screen. This mode will only work when the input raster is smaller than the monitor resolution.

If the HDP2 scaling is set to "Auto", the HDP2 will scale the image to best fit the screen while preserving the aspect ratio. In some cases, a letterboxed or pillarboxed image can be expected.

Vertical Locking

Depending on the input frame rate and the capabilities of the monitor in use, the HDP2 will provide a vertically locked signal to the monitor. Because most DVI monitors have their own internal scaling, the internal scaler of the monitor may or may not lock vertically to the HDP2 output. The recommended monitor list shown earlier lists only monitors which have been tested for proper vertical lock. The HDP2 works with many LED/LCD/DLP/Plasma monitors not shown on the recommended monitor list—however, these monitors may have one of two types of issues associated with not being vertically locked:

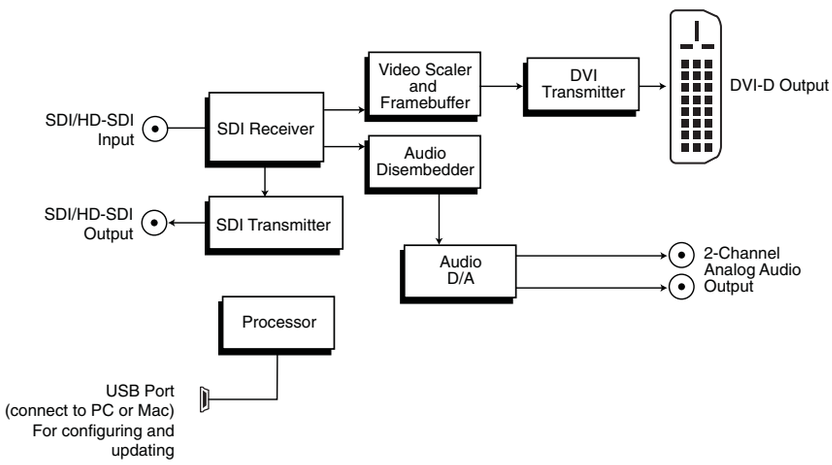
Frame add/drop: The monitor occasionally adds or drops a frame of video which appears as discontinuous motion. For example, a moving object may appear to briefly pause or jump ahead.

Motion tearing: The monitor displays video from 2 different fields or frames on screen. This appears as a horizontal discontinuity in the video during motion. For example, a moving object may appear to be split horizontally with the upper part ahead or behind the lower part.

Frame Rates

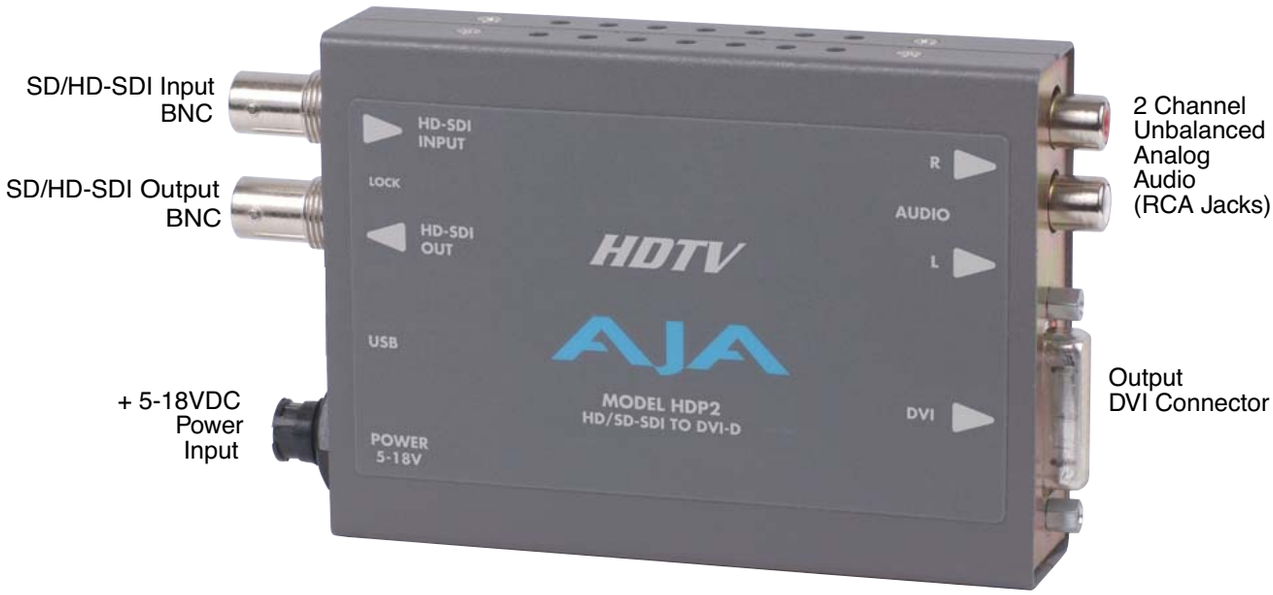
When the HDP2 is manually configured for a particular output frame rate, the output will run in lock-step with the video input. For best results, (without any added or dropped frames), select an output frame rate that matches the incoming video frame rate.

Block Diagram



HDP2 Converter, Simplified Block Diagram

I/O Connections



HDP2 Converter

USB Control and Setup—Using AJA *Mini Config*

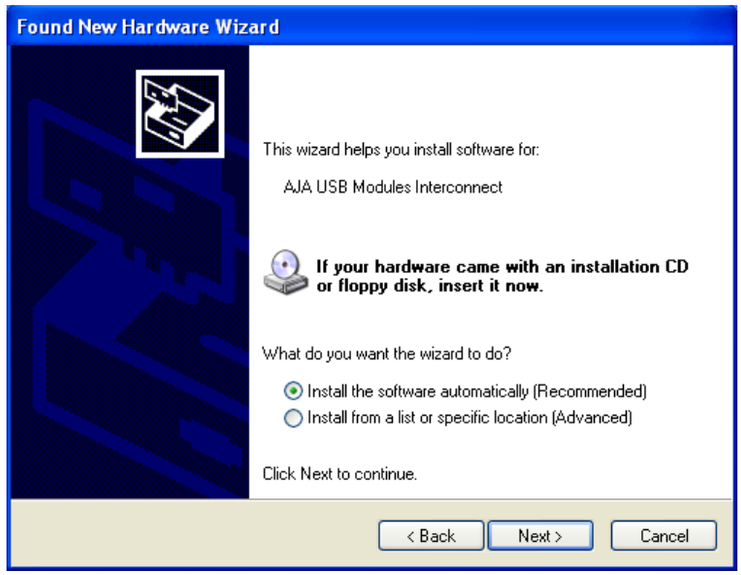
The HDP2 can usually be used right out of the box for most applications since it is designed to recognize inputs and perform standard actions automatically by default. However you can also manually configure the HDP2 using a supplied software application for PCs and Macs, named "Mini Config." This same application can be used to update software on the HDP2 in the event newer software is released by AJA.

Installing Mini Config—Windows

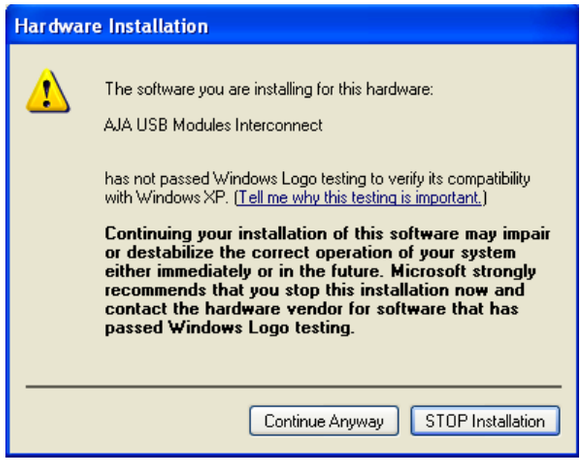
To install the application on Windows computers, simply insert the CD supplied with the MiniConverter into a PC and run the installer application (normally this will happen automatically as it is an auto-run CD). The installer will guide you with a wizard. First you'll click Next, then accept an End-User license agreement, and choose an installation location before beginning the install. After installation begins, you'll be shown the progress until it finishes and you see a "Completed the AJA Mini Config" screen.

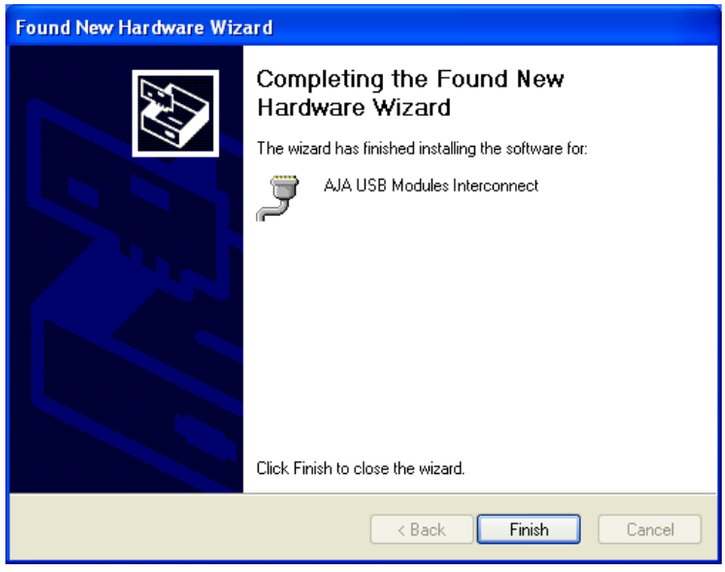
Once the application is on the PC, attach the HDP2 you wish to communicate with via a USB cable (supplied). When you do, the Windows OS will display a "Found New Hardware Wizard" dialog.

Select "No" and then click the "Next" button.



Click “Next” again. Windows will display a certification warning: click “Continue Anyway” to procede.





Lastly, the Found New Hardware Wizard will tell you when it’s finished updating the USB driver. Click Finish and the HDP2 is ready to be used with the software.

Installing Mini Config—Mac OSX

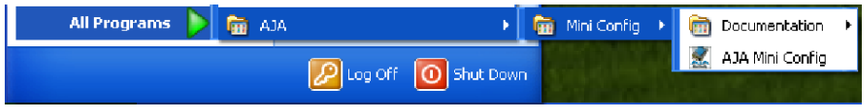
To install the application, simply insert the CD supplied with the MiniConverter into a Mac.

1. Double-click the CD icon on your desktop. Locate the "AJA Mini Config" application.
2. Drag the AJA Mini Config application icon into your Applications folder (alias is provided in the AJA Mini Config CD folder).

Running Mini Config

Connect an HDP2 mini converter to the PC or Mac via the supplied USB cable. Connect power to the mini converter (DWP or DWP-U recommended).

To run Mini Config on a PC, find the AJA directory in the program list and locate the AJA Mini Config application.



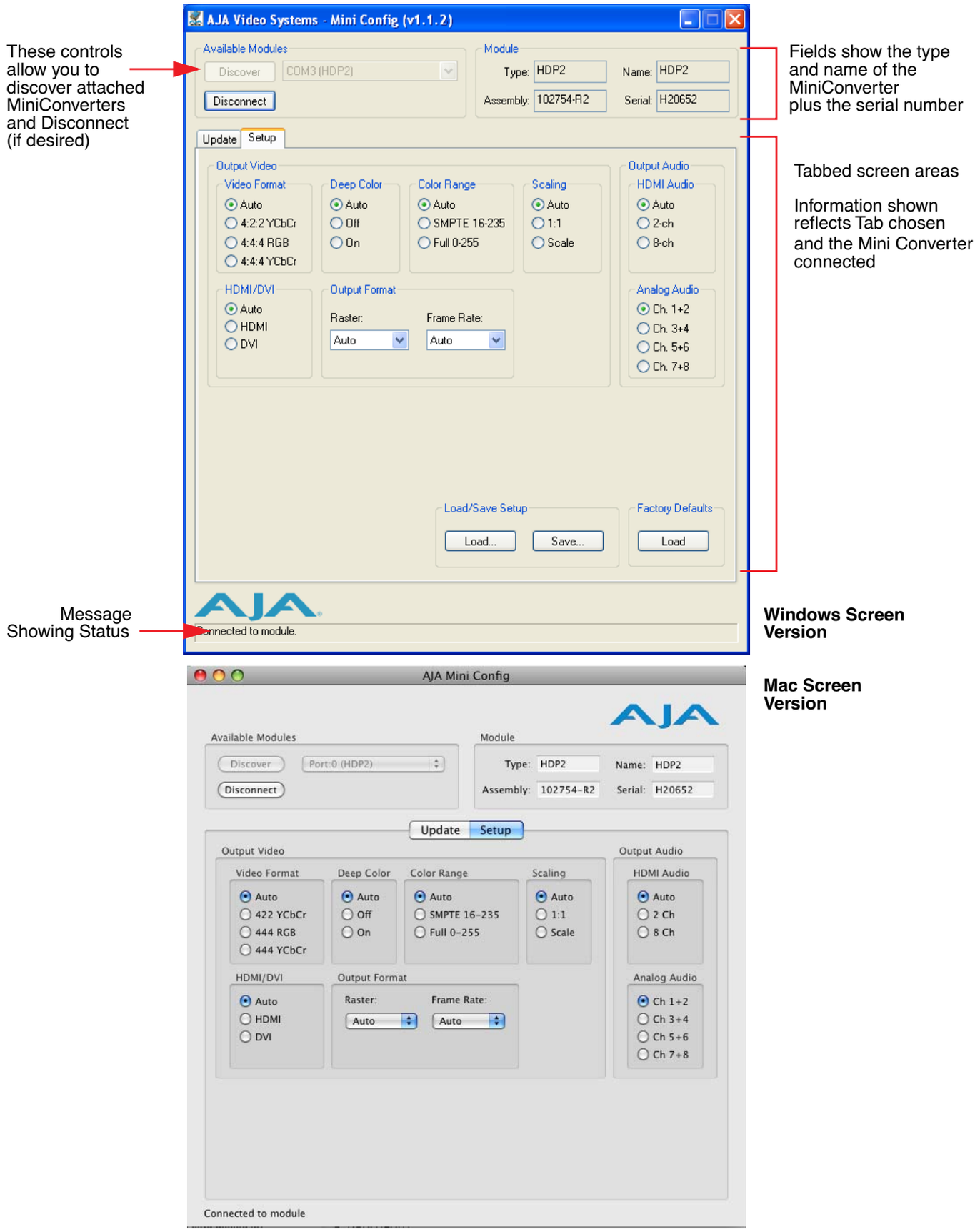
To run Mini Config on a Mac, double-click the Applications folder and locate the AJA Mini Config application. Double-click the AJA Mini Config application to launch it.

Once AJA Mini Config is running (PC or Mac), it looks pretty much the same, regardless of the platform.

1. At the top of the AJA Mini Config application screen, locate and click the *Discover* button.
2. Also locate and click the *Connect* button. You will see the HDP2 *Setup* screen with "Connected to Module" displayed at the bottom of the screen.
3. Mini Config is now installed and working.

Operating Mini Config

When the application is running, you'll see a simple graphical interface for viewing settings and updating software. This user interface consists of an information area at tht top that shows the available MiniConverters attached to the computer via USB (in this case your HDP2), with tabbed screens for the tasks of configuring and updating software. The screens are virtually the same on both PC and Mac, with subtle differences that reflect the general loof of the environment. The recommended configuration is Mini Config connecting to a single module at a time. If for some reason you need to connect and control more than one module on a system—and you have multiple USB ports, you can open multiple Mini Config applications, one for each of the modules. If you try this and problems are experienced, please revert to controlling only one MiniConverter on your system.



Mini Config, Setup Screen—Windows and Mac versions

Clicking the Discover button finds all MiniConverters connected to the computer (PC or Mac). The name of each MiniConverter found can be seen in the menu pulldown next to the Discover button. This allows you to select a desired MiniConverter when there are more than one. The Connect button causes this application to connect to the selected converter. The type of MiniConverter, name, assembly number, and serial number will be shown in the “Module” area of the screen (right side). The Module Type, Assembly, and Serial are set during factory programming, but you can set the Module Name from the Update tab to whatever you’d like.

When you connect a HDP2 (or any other AJA MiniConverter with USB support), you must click the Discover button in Mini Config, to ensure it will be seen by the application. Since MiniConverters can be added and removed from the computer while this application is running, you can rerun the discover process at any time by clicking the Discover button again.

After connecting to a specific MiniConverter, a different one cannot be selected without performing a disconnect. After connection, the Connect button's label changes to Disconnect, and you must press Disconnect to disconnect Mini Config application from the module, before selecting a different MiniConverter. You should always press Disconnect before disconnecting or powering down the HDP2.

When configuring the HDP2 MiniConverter, click the Setup tab, view the current settings and change any values. Making a change communicates that new value to the MiniConverter’s non-volatile memory.

Clicking on the AJA logo opens the AJA website home page in your web browser.

Tabbed Controls

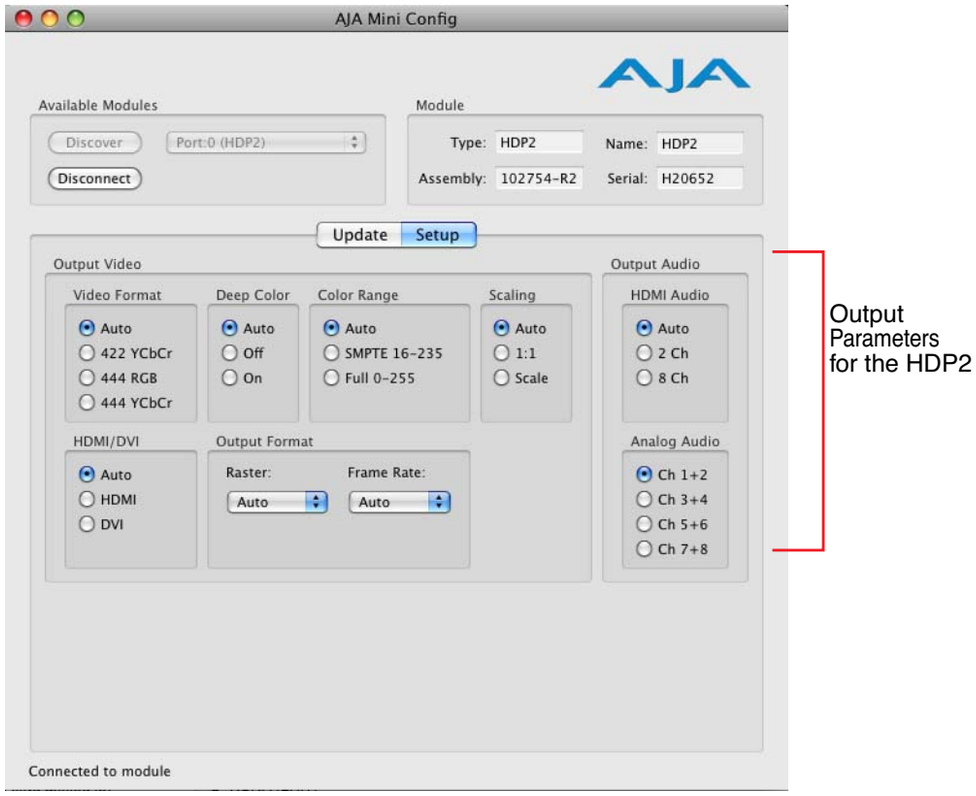
The Tabs delineate groups of controls for each type of task to be performed. The Update screen is for updating software on a Mini Converter, and the Setup tab is for editing or viewing settings.

Mini Config, Tabbed Screens (Windows version shown)

Setup Tab Screen

The controls for the actual configuration parameters are specific to a MiniConverter type. With an HDP2 connected and selected, you’ll click on the Connect button, then click the Setup tab and view the controls presented. The values displayed are fetched from the MiniConverter’s non-volatile memory when the Mini Config application first connects to it.

Any changes you make will be saved, overwriting previous settings.



Mini Config, Setup Tab Screen (Mac Version shown)

Output Video Selections

These selections configure the output audio and video. In all cases, selecting "Auto" allows the HDP2 to conform the output to best serve the attached monitor. This is handled automatically when the HDP2 reads the capabilities indicated by the attached monitor.

Video Format—Selects the Video Format. Choose from Auto, 4:2:2 YCbCr, 4:4:4 RGB or 4:4:4 YCbCr. Choosing “Auto” lets the HDP2 automatically select the format based on the capabilities indicated by the attached monitor.

Deep Color—Selects how Deep Color is supported. Chose from Auto, On or Off. Choosing “Auto” lets the HDP2 decide based on input. Choosing On turns on support for Deep Color 30-bit video (24-bit also supported).

Color Range—Selects the Input Video Color Range. Choose Auto to let the HDP2 decide, or choose SMPTE or Full color range.

Scaling—Choose Auto to let the HDP2 choose based on the attached output device’s capabilities, or choose 1:1 (no scaling). Displaying 1:1 only works properly when it is possible to display the entire unscaled raster. For example, it is not possible to display a 1920 x 1080 input on a 1600 x 1200 monitor. For optimal performance with 1:1 scaling, use a 1920 x 1200 (WUXGA) monitor.

HDMI/DVI—Choose Auto, HDMI, or DVI. Choosing “Auto” lets the HDP2 automatically select the output mode based on the input video and the attached device's capabilities.

Output Format—Two pulldown menus allow you to select a Raster setting and Frame Rate. Raster choices are: Auto (let the HDP2 decide based on input), Native, WUXGA, 1080p, 1080i, 720p, 576p, or 480p. Frame rate choices are: Auto (let HDP2 decide), VESA, 24/23.98, 25, 30/29.97, 48/47.95, 50, or 60/59.94.

Output Audio Selections

HDMI Audio—Choose Auto, 2-channel or 8-channel embedded audio. Choosing "Auto" lets the HDP2 automatically select the audio channels based on the attached device's capabilities. **Note:** When in 2-channel mode, the audio pair selected will be the same as described by the "Analog Audio" selection, below.

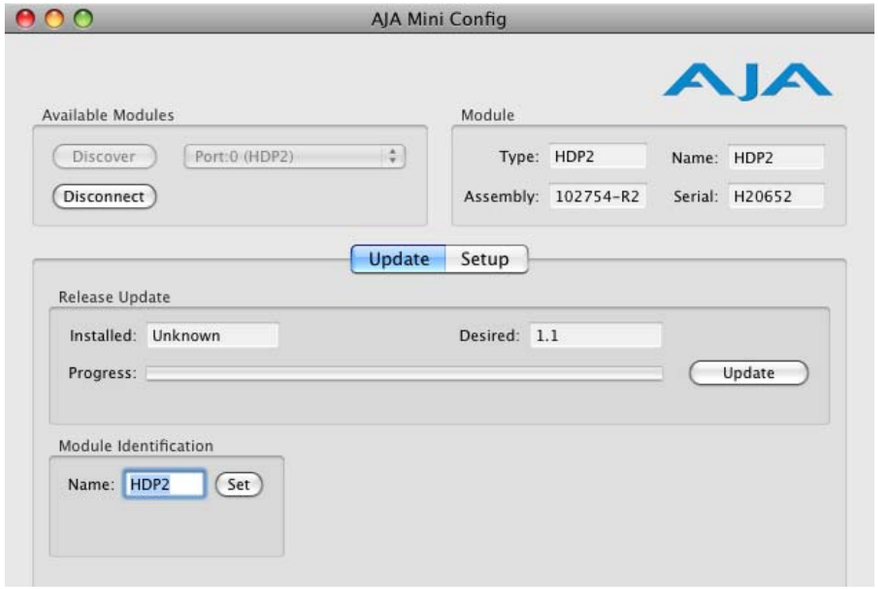
Analog Audio—Choose which 2 embedded audio channels are routed to the RCA output pair: Ch 1+2, Ch 3+4, Ch 5+6, or Ch 7+8.

Update Tab Screen

If a new software release is issued by AJA, you may wish to update your MiniConverter with the newer release. The Update tab screen is how new software is found and loaded into the MiniConverter.

In the middle of the Update screen, the currently installed Release version is shown. Next to the installed release is a "Desired" release version that you can update the HDP2 with; clicking the *Update* button begins the update process. When an update is underway, the software will update each component as necessary in the appropriate sequence until all components are at the required version for the Desired Release. If necessary, the MiniConverter will be rebooted when needed. If for some reason an update is not allowed, a pop-up message will inform you that the update cannot be performed and the Update button will be disabled.

The Update screen also allows you to name your MiniConverter (see the "Module" group of fields at the top of the Update screen). The current name is shown in the "Name" field. To change the name, enter a new name in the Name field at the bottom of the screen (under "Module Identification") and then click the Set button to the right.



Update Tab Screen (Mac version shown)

Specifications

Item	Specification
Inputs	HD, and SD-SDI (auto-selected), SMPTE-259/274/292/296, BNC connector
Input Formats	525i, 625i, 720p 50/59.94/60, 1080i 50/59.94/60, 1080p 23.98/24/25/29.9/30, 1080psF 23.98/24/25, YCbCr 10-bit
Video Outputs	DVI v1.0 / HDMI v1.3a, 4:2:2 YCbCr, 4:4:4 YCbCr/RGB 24/30-bit, DVI-D standard male connector
Audio Outputs	2 channel RCA-style analog outputs (-10dBV nominal) as user-assignable channel pairs, 2 or 8 channel 24-bit embedded audio (HDMI mode only)
Maximum DVI resolution	1920 x 1200 @ 60Hz
User Controls	USB 2.0 port used with supplied cable and software application to configure device via PC/Mac
Size	5.8” x 3.1” x 1 (147mm x 79mm x 25mm)
Power (AJA power supply model DWP or DWP-U)	+5 to +18v DC regulated, 5 watts

www.aja.com

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Published: 12/20/10

Installation and Operation Guide

Because it matters.

AJA® VIDEO SYSTEMS

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This warranty shall not apply to any defect, failure or damage caused by improper use or improper or inadequate maintenance and care. AJA Video shall not be obligated to furnish service under this warranty a) to repair damage resulting from attempts by personnel other than AJA Video representatives to install, repair or service the product, b) to repair damage resulting from improper use or connection to incompatible equipment, c) to repair any damage or malfunction caused by the use of non-AJA Video parts or supplies, or d) to service a product that 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.

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Frame Locking

Auto: Use this mode to ensure greatest compatibility with other monitors. The HDP2 will use standardized output timing for most monitors. If the attached monitor (such as an HP DreamColor) is recognized as having enhanced capabilities, then special, frame-locked timing will be used.

Manual: Selecting an output frame rate that matches the input frame rate will provide a vertically locked signal to the monitor, and may yield the best results. Note that not all monitors will be able to accept these signals.

Recommended Monitors

The monitors listed below have been verified to work with one or more of the manual frame rate selections.

- HP 24" LP2480zx DreamColor
- Apple 23" HD Cinema, model M9178LL/A (aluminum bezel)
- Sony 23", model SDM-P234
- Viewsonic VP231wb
- Dell 2405FPW
- Barco LC-42
- Barco LC-47
- Westinghouse LVM-37wl
- Sony Bravia Series
- Sharp Aquos Series

Optimal Performance with HP LP2480zx DreamColor

When using the HDP2 with an HP LP2480zx, the best results are obtained by using the default HDP2 "Auto" selections (no action required—unless you've changed the factory defaults using the Mini Config software supplied).

Automatic 720p or 1080p Support

Monitors that report 1280x720 or 1920x1080 in their "Preferred Timing Mode" section of EDID readback will receive a 1280x720 or 1920x1080p signal, respectively, from the HDP2.

Manual 720p or 1080p Support

The HDP2 can be configured manually for 720p or 1080p. This is discussed under "USB Control and Setup" later in this manual.

Note: For best results when using video display devices, it is recommended that a monitor capable of displaying the "Full 1080p" image be used.

VESA and CEA Timing

By default, the HDP2 will automatically output standardized VESA rate graphics where appropriate when a computer resolution is detected, and standardized CEA rate video when a video device, such as an HDTV is detected. Not all VESA rates are synchronous to SMPTE standard video input rates. However, the HDP2 can be configured manually by selecting an output frame rate that matches the incoming frame rate. By doing so, enhanced timing signals will be generated that will be locked to the incoming video.

Note: Some monitors may not be able to handle some of these enhanced timing modes. For best results, refer to the list of recommended monitors that have been tested to lock at one or more of the user-selectable frame rates.

Motion Adaptive De-interlacing

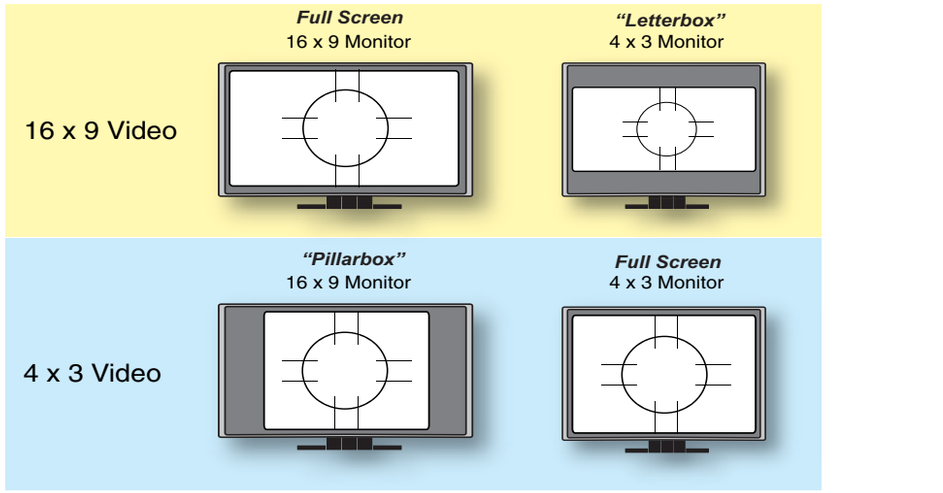
Video displayed on DVI progressive display devices requires de-interlacing technology to properly display the video from its native interlace format. HDP2 uses advanced motion adaptive de-interlacing to predict motion in the video stream and output a quality picture using spatial and temporal comparisons on individual pixels.

10-bit and Deep Color Support

HDP2 supports the HDMI 1.3a specification for Deep Color bit depths. In operation, HDP2 can support Deep Color bit depths up to 30 bits/pixel (1.073 billion colors).

Video Scaling

As shown in the graphic below, the HDP2 will scale the input video to the best fit for a given monitor and video input. In cases where the input video and the monitor are already the same or similar, the HDP2 automatically turns off scaling. For example, a 1920 x1080 video and a 1920 x1200 monitor will not be scaled.



Note: The HDP2 also properly supports 16:10 and 5:4 monitors.

If the HDP2 scaling is set to 1:1 via the control panel, the input raster will be displayed unscaled. This means that input rasters smaller than the monitor appear as a "floating" image surrounded by black. For example, a 1280 x 720 image on a 1920 x 1200 monitor only fills about 40% of the screen. Standard definition inputs unscaled on a 1920 x 1200 monitor only fill about 20% of the screen. This mode will only work when the input raster is smaller than the monitor resolution.

If the HDP2 scaling is set to "Auto", the HDP2 will scale the image to best fit the screen while preserving the aspect ratio. In some cases, a letterboxed or pillarboxed image can be expected.

Vertical Locking

Depending on the input frame rate and the capabilities of the monitor in use, the HDP2 will provide a vertically locked signal to the monitor. Because most DVI monitors have their own internal scaling, the internal scaler of the monitor may or may not lock vertically to the HDP2 output. The recommended monitor list shown earlier lists only monitors which have been tested for proper vertical lock. The HDP2 works with many LED/LCD/DLP/Plasma monitors not shown on the recommended monitor list—however, these monitors may have one of two types of issues associated with not being vertically locked:

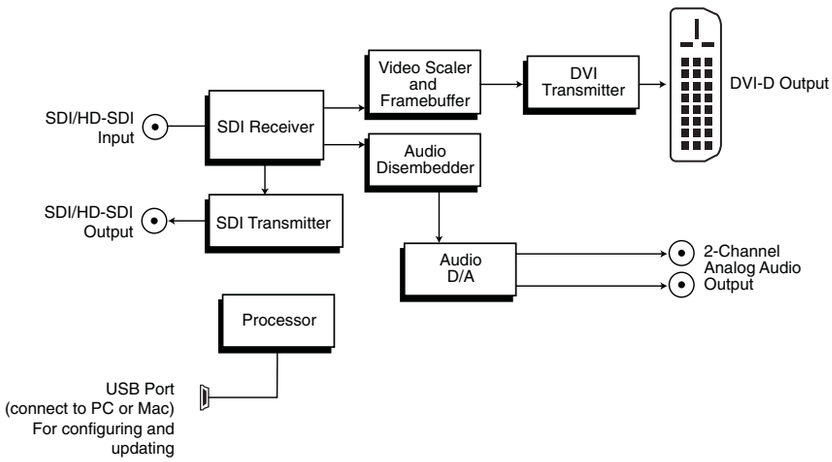
Frame add/drop: The monitor occasionally adds or drops a frame of video which appears as discontinuous motion. For example, a moving object may appear to briefly pause or jump ahead.

Motion tearing: The monitor displays video from 2 different fields or frames on screen. This appears as a horizontal discontinuity in the video during motion. For example, a moving object may appear to be split horizontally with the upper part ahead or behind the lower part.

Frame Rates

When the HDP2 is manually configured for a particular output frame rate, the output will run in lock-step with the video input. For best results, (without any added or dropped frames), select an output frame rate that matches the incoming video frame rate.

Block Diagram



HDP2 Converter, Simplified Block Diagram

I/O Connections

HDP2 Converter

USB Control and Setup—Using AJA *Mini Config*

The HDP2 can usually be used right out of the box for most applications since it is designed to recognize inputs and perform standard actions automatically by default. However you can also manually configure the HDP2 using a supplied software application for PCs and Macs, named "Mini Config." This same application can be used to update firmware on the HDP2 in the event newer software is released by AJA.

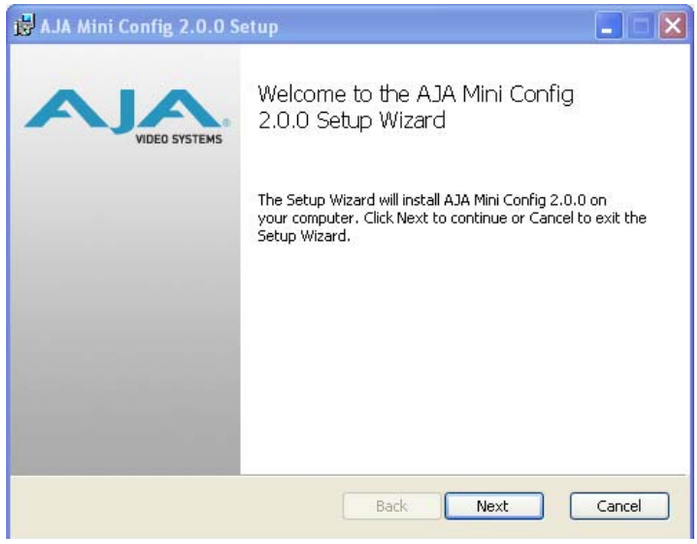
Installing Mini Config on a Mac

To install the application on a Mac, simply insert the CD supplied with the Mini-Converter into the computer, drag the "AJA Mini Config" application for your platform (Mac or PC) to your desktop or an applications folder.

AJA MiniConfig

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

Installing Mini Config on a PC



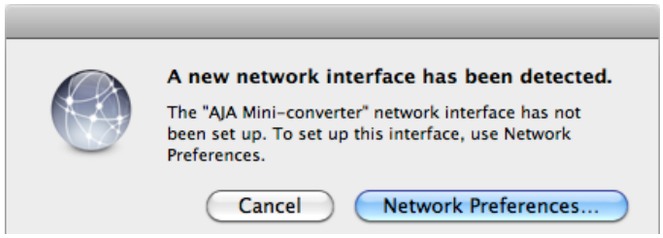
To install the application on a Windows PC, simply insert the CD supplied with the Mini-Converter into the computer, locate the "MiniInstaller" application, and then double-click it.

A Setup Wizard will guide you through the installation. Just click Next to begin.

Answer all questions in the subsequent dialogues; when you're done, you will be able to locate the Mini Config application in the AJA folder in the Programs listing.

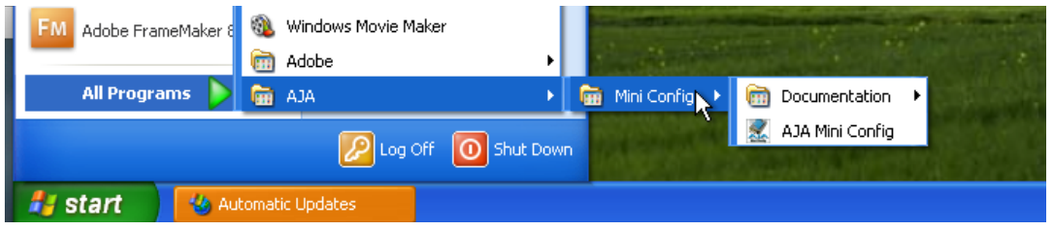
Running Mini Config

Connect a HDP2 Mini-Converter to the PC or Mac via the supplied USB cable. Connect power to the Mini-Converter (DWP or DWP-U recommended).



Note: On a Mac, when the Mini-Converter is connected to the USB port, you may see an alert like that shown following. If you do, press Cancel—this alert can be ignored.

To run Mini Config on a PC, find the AJA Mini Config in the program list and locate the AJA Mini Config application.



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

Once AJA Mini Config is running (PC or Mac), it looks pretty much the same, regardless of the platform.

A *File* menu at the top of the Mini Config application menu bar allows you to *Save* the current state of the Mini-Converter—with all the settings you've made—to a file for later recall. This allows you to set up the converter for different applications, storing each (with Save) to a unique name for easy recall later—using the *Open* menu item. A *Revert to Factory Settings* menu item similarly allows you to change the settings back to AJA's factory defaults. An Edit menu allows you to cut and paste values to/from fields, just as in other applications.

Operating Mini Config

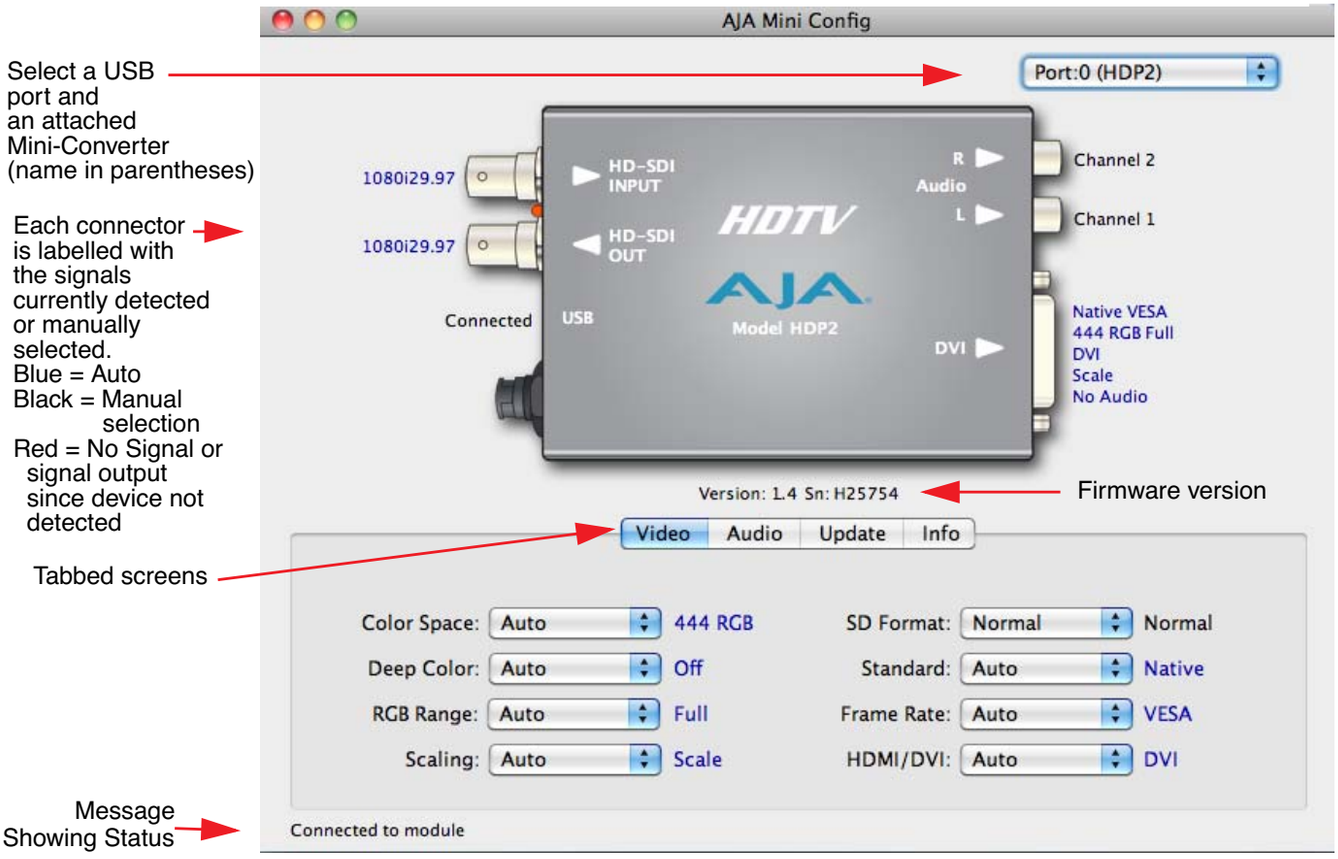
When the application is running, you'll see a simple graphical interface for viewing settings and updating software. This user interface consists of an information area at the top that shows the available Mini-Converters attached to the computer via USB (in this case your HDP2), with a graphical rendering of the selected Mini-Converter showing all the BNCs and connectors and their current state.

Colored text by connectors provides and indication of signal type and what the HDP2 is doing. Text in blue shows the values automatically selected, while text in black shows values that you have manually selected. Text in red shows that HDP2 is not detecting a signal or cannot negotiate with the attached device (even if can't detect an output device, it 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.

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 and update multiple Mini-Converters in parallel, you can do it by running multiple instances of the Mini Config application and have each control a different Mini-Converter.



Mini Config, Video Screen

The name of each Mini-Converter found can be seen in the menu pulldown at the top right hand side of the screen (in the example above, it shows: Port: 0 (HDP2)".

This allows you to select a desired Mini-Converter when there are more than one. Selecting a Mini-Converter with this dropdown menu causes this application to connect to the selected converter. The type of Mini-Converter and serial number will be shown in the graphic and text below it.

A status field at the bottom of the screen shows whether you are connected and communicating with the Mini-Converter shown using Mini-Config.

When configuring the HDP2 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

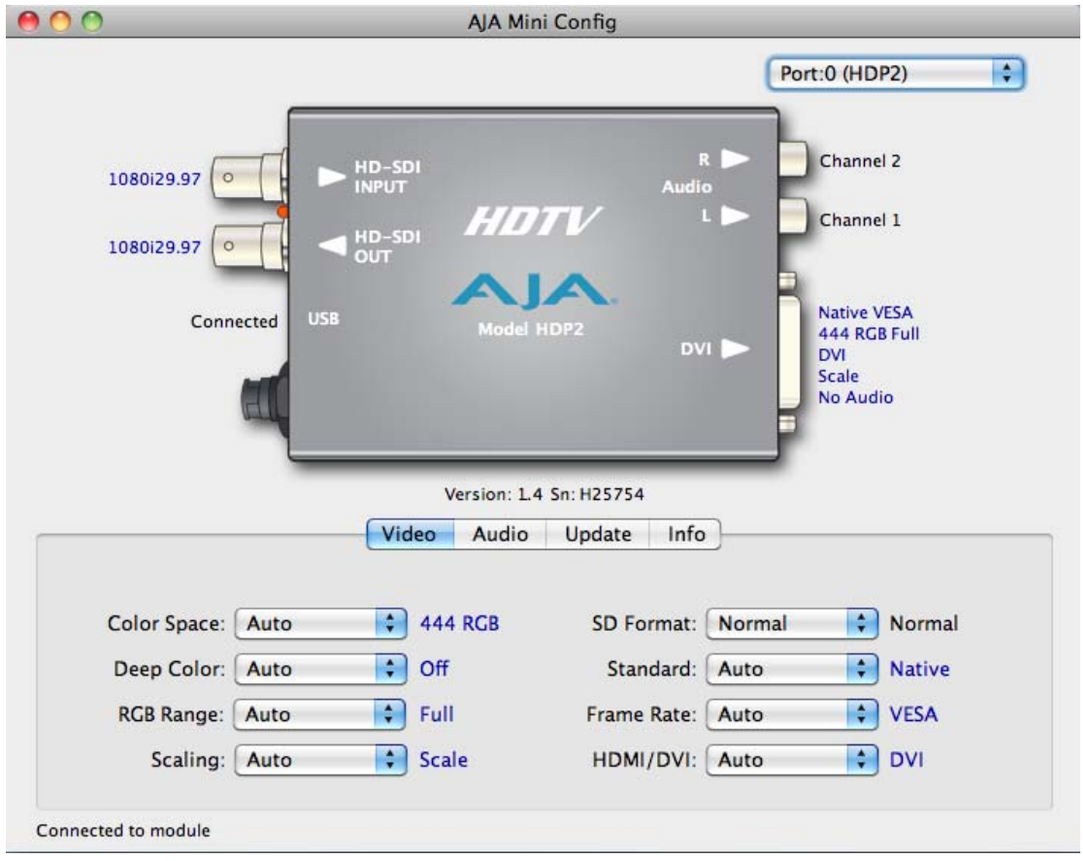
The Tabs delineate groups of controls for each type of task to be performed.

Mini Config, Tabbed Screens

The controls for the actual configuration parameters are specific to each Mini-Converter type. Click on any of the tabbed buttons (Video/Audio/Update/Info) and the screen below will change to match. Each of these screens are described on the following pages.

Video Tab Screen

The selections on this screen configure the output video. In all cases, selecting "Auto" allows the HDP2 to conform the output to best serve the attached monitor. This is handled automatically when the HDP2 reads the capabilities indicated by the attached monitor.



Mini Config, Video Tab Screen

Color Space—Selects the Video Format. Choose from Auto, 4:2:2 YCbCr, 4:4:4 RGB or 4:4:4 YCbCr. Choosing "Auto" lets the HDP2 automatically select the format based on the capabilities indicated by the attached monitor.

Deep Color—Selects how Deep Color is supported. Choose from Auto, On or Off. Choosing "Auto" lets the HDP2 decide based on input. Choosing On turns on support for Deep Color 30-bit video (24-bit also supported).

RGB Range—Selects the Input Video Color Range. Choose Auto to let the HDP2 decide, or choose SMPTE or Full color range.

Scaling—Choose Auto to let the HDP2 choose based on the attached output device's capabilities, 1:1 for no scaling, or Scale, to let the HDP2 scale for the attached monitor. Displaying 1:1 only works properly when it is possible to display the entire unscaled raster. For example, it is not possible to display a 1920 x 1080 input on a 1600 x 1200 monitor. For optimal performance with 1:1 scaling, use a 1920 x 1200 (WUXGA) monitor.

SD Format—Choose Normal (standard picture aspect ratio) or Anamorphic; these control how an SD picture appears on an HD monitor.

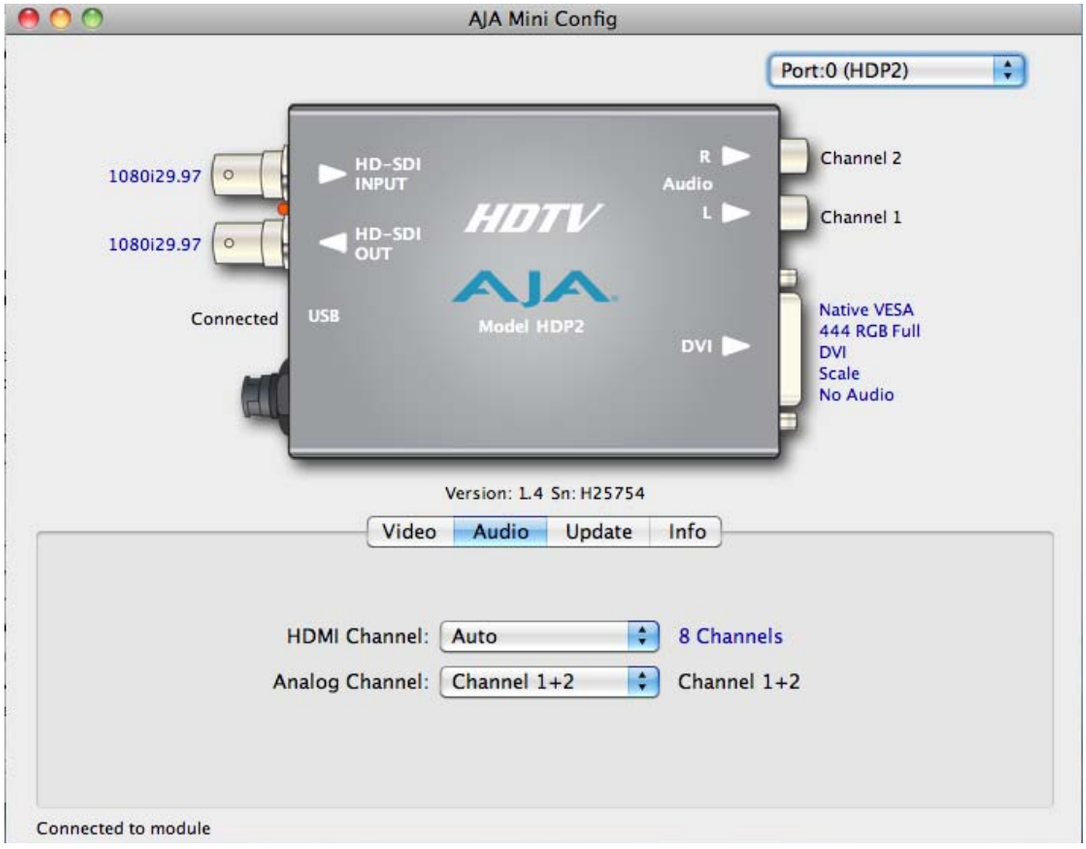
Standard—Raster choices available are: Auto (let the HDP2 decide based on input), Native, WUXGA, 1080p, 1080i, 720p, 576p, or 480p.

Frame Rate—Choices are: Auto (let HDP2 decide), VESA, 24/23.98, 25, 30/29.97, 48/47.95, 50, or 60/59.94.

HDMI/DVI—Choose Auto, HDMI, or DVI. Choosing "Auto" lets the HDP2 automatically select the output mode based on the input video and the attached device's capabilities.

Audio Tab Screen

The selections on this screen configure the output audio.



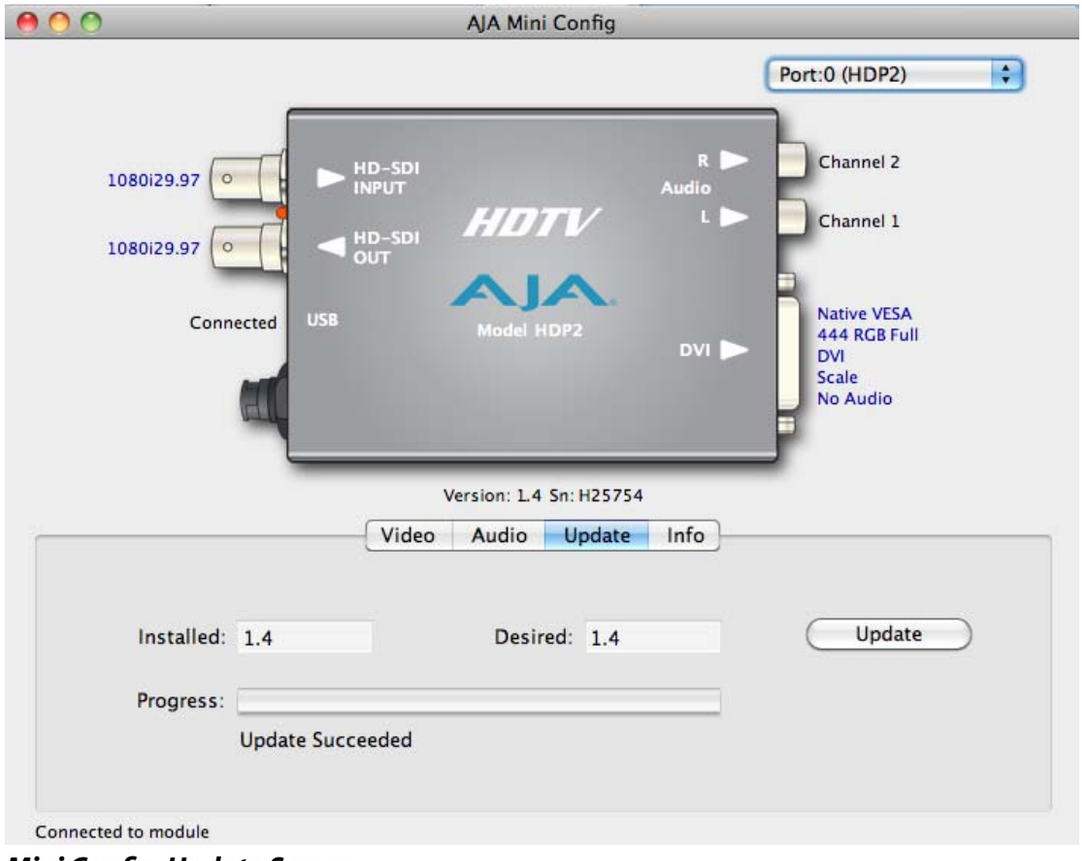
Mini Config, Audio Tab Screen

HDMI Channel—Choose Auto, 2-channel or 8-channel embedded audio. Choosing "Auto" lets the HDP2 automatically select the audio channels based on the attached device's capabilities. **Note:** When in 2-channel mode, the audio pair selected will be the same as described by the "Analog Audio" selection, below.

Analog Channel—Choose which 2 embedded audio channels are routed to the RCA output pair: Ch 1+2, Ch 3+4, Ch 5+6, or Ch 7+8.

Update Tab Screen

Use this Update screen to view the software version currently installed on the HDP2 or install new software.



Mini Config, Update Screen

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 Mini Config application software. The version numbers shown in the Update screen refer only to the firmware.

The following fields and control are present in this screen:

Installed—this field shows the version of the firmware currently installed inside the Mini-Converter.

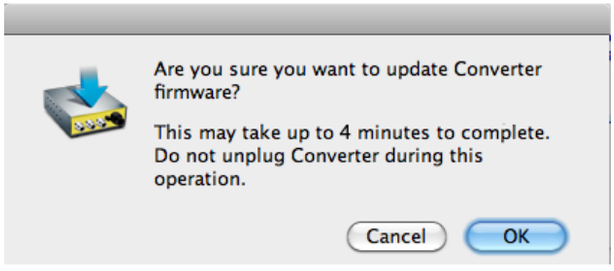
Desired—this field shows the version of firmware embedded in the Mini-Config application which you can install into the Mini-Converter by clicking the *Update* button.

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 software being installed.

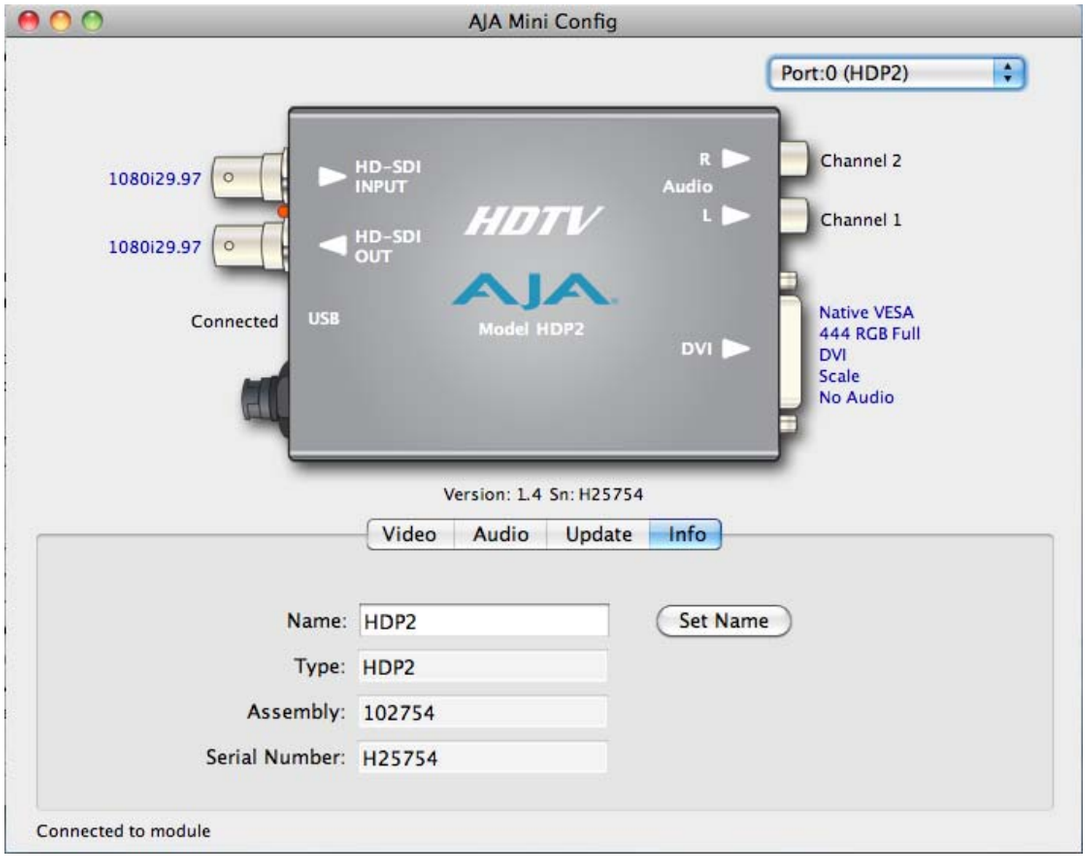
Software Update Procedure

1. Check the AJA website for new 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/support/converters/converters-mini-rackmount.php
2. Connect the Mini-Converter to a Mac or PC via a USB port on the computer and run the new 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. When you click Update, Mini Config will provide a dialog asking you to confirm that you really want to update the firmware (see below).



Info Tab Screen

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



Mini Config, Info Screen

Name—this field allows you to give your Mini-Converter a name. This may be useful if you have several Mini-Converters attached to a Mac/PC via USB so you can distinguish one of them easily (especially if they're the same model). In the example show previously, the Hi5-3G has been named "HDP2."

Type—this is the factory set model name of the Mini-Converter (HDP2).

Assembly —this is the factory assembly number.

Serial Number—this is the factory set unique serial number of your HDP2. If you ever call AJA Support for service, you may be asked for this number.

Specifications

Item	Specification
Inputs	HD, and SD-SDI (auto-selected), SMPTE-259/274/292/296, BNC connector
Input Formats	525i, 625i, 720p 50/59.94/60, 1080i 50/59.94/60, 1080p 23.98/24/25/29.9/30, 1080psF 23.98/24/25, YCbCr 10-bit
Video Outputs	DVI v1.0 / HDMI v1.3a, 4:2:2 YCbCr, 4:4:4 YCbCr/RGB 24/30-bit, DVI-D standard male connector
Audio Outputs	2 channel RCA-style analog outputs (-10dBV nominal) as user-assignable channel pairs, 2 or 8 channel 24-bit embedded audio (HDMI mode only)
Maximum DVI resolution	1920 x 1200 @ 60Hz
User Controls	USB 2.0 port used with supplied cable and software application to configure device via PC/Mac
Size	5.8" x 3.1" x 1 (147mm x 79mm x 25mm)
Power (AJA power supply model DWP or DWP-U)	+5 to +18v DC regulated, 5 watts

Appendix A: Safety & 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 commercial 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. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense. 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 2004/108/EC.

CE

This equipment meets the following conformance standards:

Safety:

CB- IEC 60065:2001 + A1:2005

NRTL - UL 60065:2003 R11.06, CSA C22.2 NO. 60065:2003 + A1:06

GS - EN 60065:2002 + A1

Additional licenses issued for specific countries available on request.

Emissions:

EN 55103-1: 1996

EN61000-3-2:2006, EN61000-3-3:1995 +A1:2001 +A2:2005

Immunity:

EN 55103-2: 1996

EN61000-4-2:1995 + A1:1999 + A2:2001, EN61000-4-3:2006, EN61000-4-4:2004,

EN 61000-4-5: 2005, EN 610004-6:2007, EN61000-4-11:2004

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.

Korea KCC Compliance Statement

1) Class A ITE

A급 기기 (업무용 방송통신기기)	이 기기는 업무용 (A 급) 으로 전자파적합등록을 한 기기이오니 판매자 또는 사용자는 이 점을 주의하시기 바라며, 가정외의 지역에서 사용하는 것을 목적으로 합니다.

1) Class A device

Class A (Broadcasting and Communication Equipment for Business Use)	Please note that this equipment has obtained EMC registration for business use (Class A), and it is intended to use in other than home area.

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.

Japanese Compliance Statement

1. Class A ITE

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 V-3/2008.04). 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 caution statements, warning conventions and warning messages

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

 Warning Symbol

 Caution Symbol

Before operating your unit, please read the instructions in this document

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!

Refer all servicing to qualified service personnel. Servicing is required when the device has been damaged in any wav, 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.

Caution!

This device is a Class A product. Operation of this equipment in a residential area is likely to cause harmful interference, in which case users will be required to take whatever measures may be necessary to correct the interference at their own expense.

Attention! Le périphérique est un produit de Classe A. Le fonctionnement de cet équipement dans une zone résidentielle risque de causer des interférences nuisibles, auquel cas l'utilisateur devra y remédier à ses propres frais.

Achtung! Dies ist ein Gerät der Klasse A. Bei Einsatz des Geräts in Wohngebieten kann es Störungen des Radio- und Fernsehempfangs verursachen. In diesem Fall muss der Benutzer alle notwendigen Maßnahmen ergreifen, die möglicherweise nötig sind, um die Störungen auf eigene Rechnung zu beheben.

¡Precaución! Este es un producto clase A. El uso de este equipo en áreas residenciales puede causar interferencias nocivas, en cuyo caso, se requerirá que los usuarios tomen cualquier medida necesaria para corregir la interferencia por cuenta propia.

Cuidado! Este dispositivo é um produto Classe A. Operar este equipamento em uma área residencial provavelmente causará interferência prejudicial; neste caso, espera-se que os usuários tomem as medidas necessárias para corrigir a interferência por sua própria conta.

Attenzione! Questo dispositivo è un prodotto di Classe A. Il funzionamento di questo apparecchio in aree residenziali potrebbe causare interferenze dannose, nel cui caso agli utenti verrà richiesto di adottare tutte le misure necessarie per porre rimedio alle interferenze a proprie spese.