

## AJA Adobe Plugins for Mac & PC

Published: 1/16/12

# Installation and Operation Guide

Because it matters.

**AJA**<sup>®</sup>  
VIDEO SYSTEMS

## Trademarks

---

AJA®, KONA®, Ki Pro®, KUMO®, and XENA® and are registered trademarks of AJA Video, Inc, lo Express™, lo HD™, lo™, and Because It Matters™ are trademarks of AJA Video, Inc. Apple, the Apple logo, AppleShare, AppleTalk, FireWire and Macintosh are registered trademarks of Apple Computer, Inc. Final Cut Pro, QuickTime and the QuickTime Logo are trademarks of Apple Computer, Inc. TASCAM is a registered trademark of TEAC Corporation.

All other trademarks are the property of their respective holders.

## Notice

---

Copyright © 2012 AJA Video, Inc. All rights reserved. All information in this manual is subject to change without notice. No part of the document may be reproduced or transmitted in any form, or by any means, electronic or mechanical, including photocopying or recording, without the express written permission of AJA Inc.

## FCC Emission Information

---

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. 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. Changes or modifications not expressly approved by AJA Video can effect emission compliance and could void the user's authority to operate this equipment.

## 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 530.271.3190

Fax: 530.274.9442

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

Support Email: [support@aja.com](mailto:support@aja.com)

Sales Email: [sales@aja.com](mailto:sales@aja.com)

When calling for support, first read the Chapter on *Troubleshooting* at the back of this manual. You can often save time and effort by looking there first for simple remedies and information on how to get support from AJA.

## Limited Warranty

---

AJA Video warrants that this product will be free from defects in materials and workmanship for a period of three 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.

THIS WARRANTY IS GIVEN BY AJA VIDEO IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED. AJA VIDEO AND ITS VENDORS DISCLAIM ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. AJA VIDEO'S RESPONSIBILITY TO REPAIR OR REPLACE DEFECTIVE PRODUCTS IS THE WHOLE AND EXCLUSIVE REMEDY PROVIDED TO THE CUSTOMER FOR ANY INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES IRRESPECTIVE OF WHETHER AJA VIDEO OR THE VENDOR HAS ADVANCE NOTICE OF THE POSSIBILITY OF SUCH DAMAGES.



## Contents

Trademarks .....	ii
Notice .....	ii
FCC Emission Information .....	ii
Contacting Support .....	ii
Limited Warranty .....	iii

### Chapter 1: Adobe Plugins Installation

Installation Overview .....	1
Installing Adobe Plugins Software .....	2
Windows Software Installation Procedure .....	2
Mac Software Installation Procedure .....	7
Re-Installation & Repair .....	11

### Chapter 2: Using Adobe CS5.5 Applications

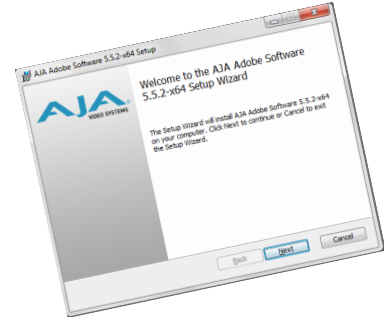
Overview .....	13
Adobe Premiere Pro Realtime Performance .....	14
Beginning a Project with AJA Presets .....	15
Options Set in Premiere Pro Preferences .....	17
Premiere Pro Capture Options Panel .....	19
Selection of Primary & Secondary Formats .....	20
Desktop Display Options .....	22
File Format Options .....	22
Premiere Pro Playback Options .....	24
Closed Caption Output .....	25
Using Photoshop CS5.5 .....	26
Configuration Option Panels .....	28
Using the AJA Capture Plugin .....	29
Image Options Menu .....	30
General Options Menu .....	31
Status Display .....	31
Play/Record Controls .....	32
Using the AJA Preview Plugin .....	33
Using After Effects .....	35
After Effects CS5.5 Plugin Overview .....	35
Using the After Effects Preview Plugin .....	36

### Appendix A: Specifications

KONA 3G Specifications .....	37
KONA LHi Specifications .....	38
KONA LHe Plus Specifications .....	39
Io Express Specifications .....	39
Io XT Specifications .....	40
<b>Index</b> .....	<b>41</b>



# Chapter 1: Adobe Plugins Installation



## Installation Overview

The installation of Adobe Plugins for Mac or PC is very simple. All of the steps of installation and are described in this chapter and are presented as follows:

1. Installation procedure for Windows
2. Installation procedure for Mac

**Note:** In this manual, the term KONA Software is used generically and includes support for Io XT and Io Express.

**Important:** This procedure assumes you have successfully installed the AJA Retail Software version 10.1 (or later) driver package that is a prerequisite for Adobe Plugins installation. Also, always go to your AJA Utilities to uninstall existing KONA software before installing a new version. This will prevent hardware/software conflicts.

**Note:** Before proceeding, ensure that your capture, editing, or compositing Application Software (Adobe CS 5.5) is installed as detailed in its user documentation. These applications should be installed and run at least once prior to installing AJA KONA software. The Adobe Plugins package adds required files to your Adobe application directories. See KONA downloads at:

Download the latest KONA software from the AJA website or, if that is not possible, use the CD-ROM supplied with your AJA system to install necessary software drivers and AJA's Mac Control Panel or Machina Capture/Playback application (if desired). Software updates occasionally become available to AJA KONA owners on our website at:

<http://www.aja.com/support/index.php>

We recommend checking for both software updates and additional product information before installation and periodically thereafter.

## Installing Adobe Plugins Software





The installation procedures for Windows and Mac are described below. You cannot use KONA with third-party applications until the AJA plugins software has been installed on the host workstation.

If you add KONA supported applications at a later date and have not previously installed the appropriate plugins, you must run the install program again selecting the appropriate application support software to be installed.

### Windows Software Installation Procedure

Locate the AJA Adobe Plugins Software for Windows download (or CD ROM packaged with your system) and follow the procedure below to install the required software on the host system. This AJA software for PC is intended for Windows 7, 64-bit workstations.

The KONA/lo Express Windows 5.5.2 Software is divided into the packages shown below. The AJA Retail Software package must be installed first. We recommend you install the AJA Machina Control application next, followed by your desired Application Software (Fusion and Adobe CS5.5 are shown here).

Name	Date modified	Type	S
 AJA_Retail_Software-5.5.2-x64	10/13/2011 2:18 PM	Windows Installer ...	
 AJA_Machina_Software-5.5.2-x64	10/17/2011 9:25 AM	Windows Installer ...	
 AJA_Fusion_Software-5.5.2-x64	10/13/2011 2:16 PM	Windows Installer ...	
 AJA_Adobe_Software-5.5.2-x64	10/13/2011 2:15 PM	Windows Installer ...	

#### **AJA Installer Packages for PC**

**Note:** Before installing KONA software, turn off any virus protection and security software that you have installed on your computer.

This section describes the AJA Adobe Software package installation.

Access the software packages (download or CD ROM) and double click on the AJA Adobe package.

#### **Install Wizard**

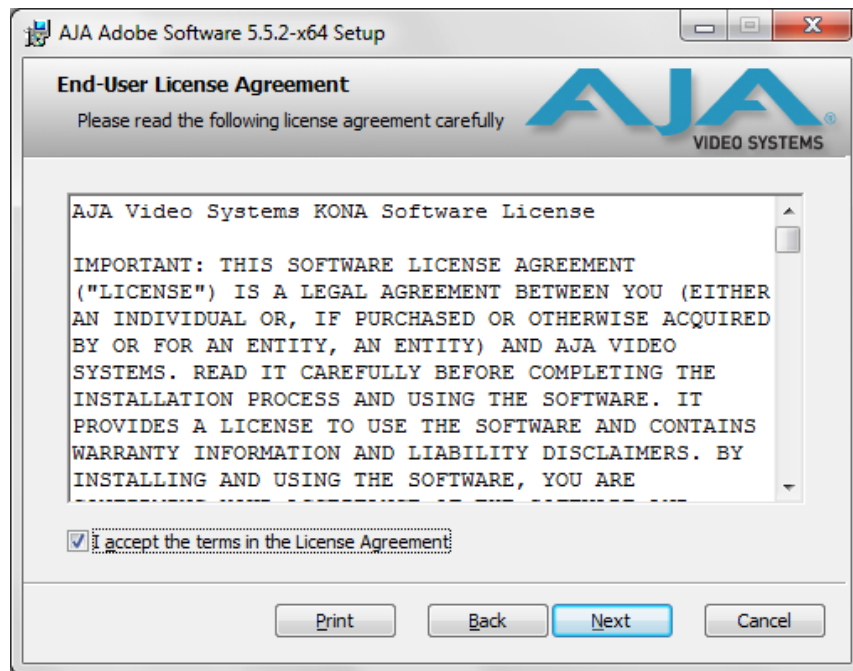
The installation program will launch and extract the necessary Adobe plugins for installation on the desired hard drive.





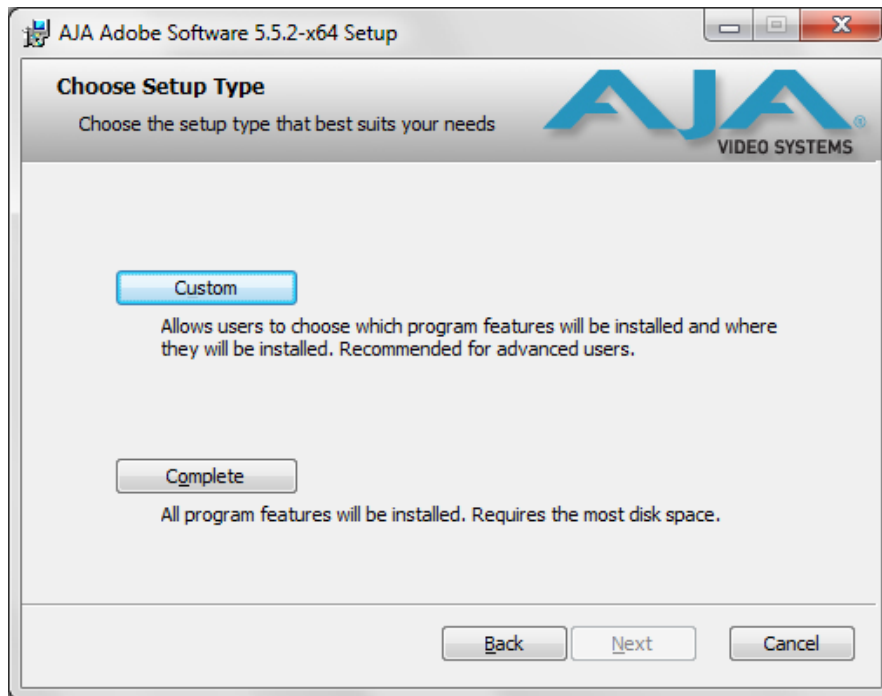
**Install Wizard Welcome**

When you see the Welcome page, click “Next” to view the AJA license agreement.



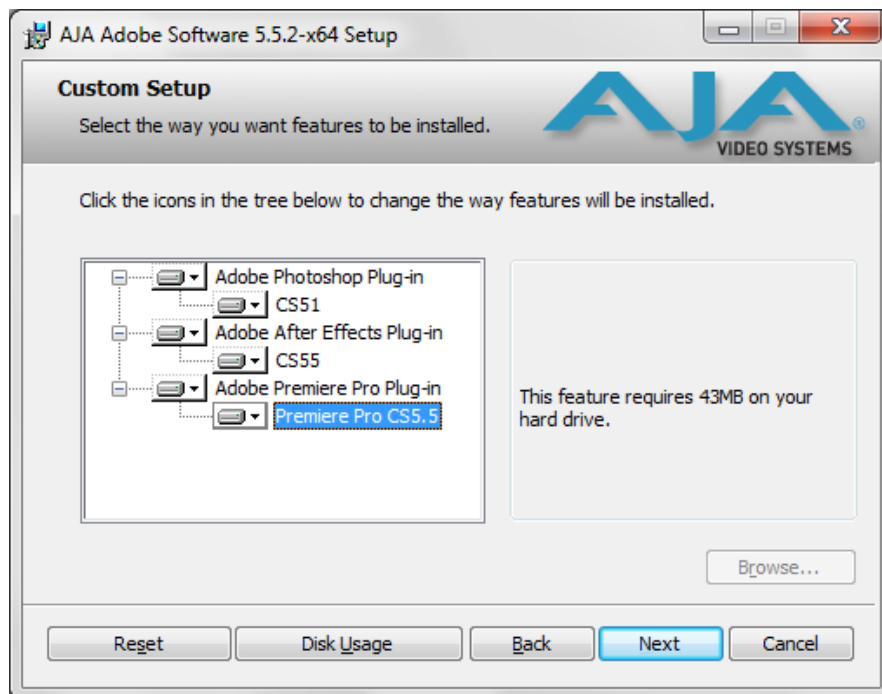
**License Agreement**

Read the KONA license agreement and check the Agreement box to accept. You will be asked to choose the type of installation you would like to perform.



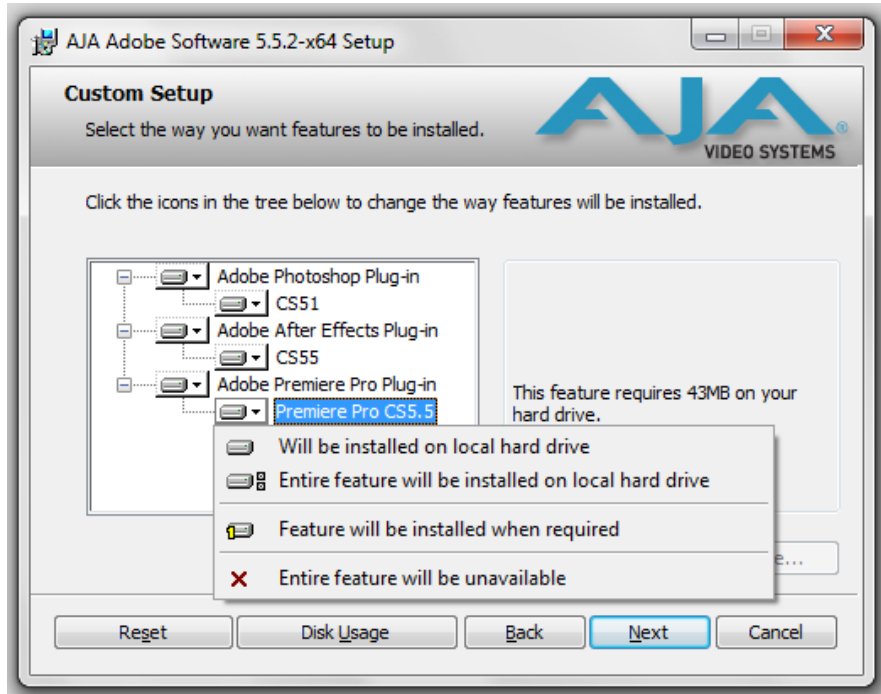
### Installation Type

If you don't have all the KONA supported products installed on your workstation, you may choose to perform a Custom installation (default) and select only the software necessary for your applications. Otherwise, use the "Typical" installation. The following screens depict the more elaborate Custom installation.



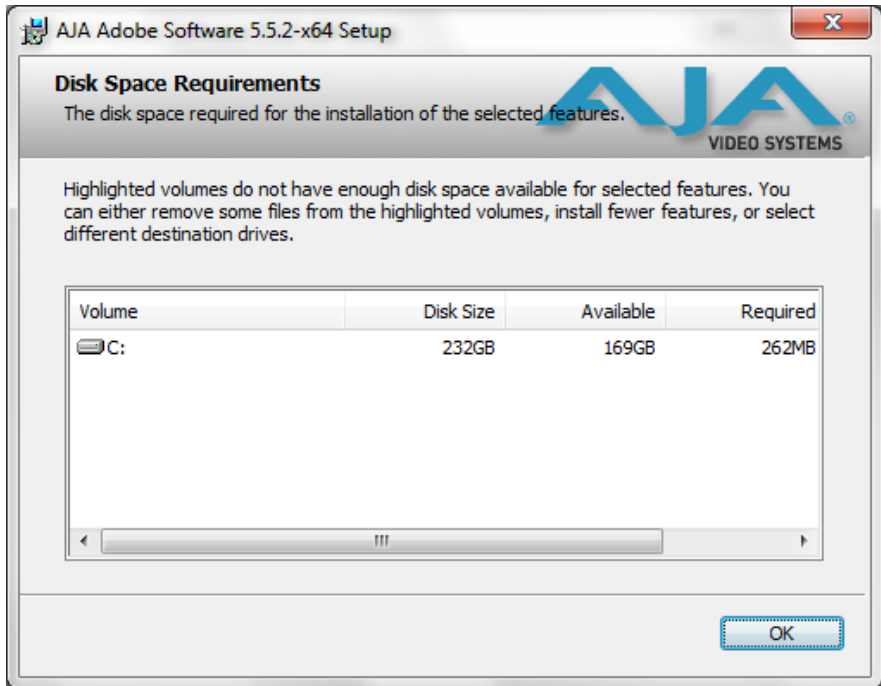
### Custom Installation Menu

You may deselect an Item for installation by using the pulldown to make it unavailable.



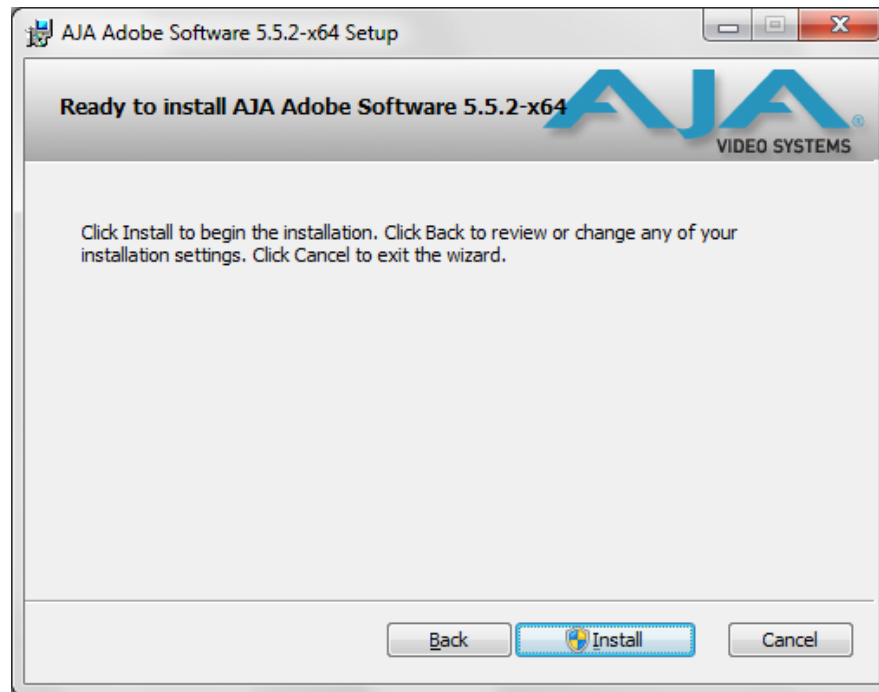
**Custom Selections Pulldown Menu**

Use the second level options choose the specific drivers and plugins you would like installed. Disabled selections are marked with a red X. Before clicking Next to install, you can verify your disk space availability by clicking the Disk Usage button.



**Workstation Disk Usage Display**

To return to the installation click OK. Click Next to begin the installation. screen.



### ***Begin Plugin Installation***

When the installer has completed copying the Adobe Plugin software to disk, a final screen will be displayed announcing that "Setup has finished installing AJA KONA on your computer." Click on the Finish button after the installation is complete.

## Mac Software Installation Procedure

Locate the AJA Adobe Plugins Software download or the AJA CD ROM packaged with your system and follow the procedure below to install the required software on the host system. The Adobe Plugins package for Mac requires Snow Leopard or Lion OS for operation.

The Installation Software is divided into the packages shown below. The specific AJA product software package (KONA or Io Express) must be installed first. (Included in this installation package is the AJA Control Panel.) Next, you will install the Adobe CS5.5 plugins.



### **AJA Installer Packages for Mac (KONA 3G and Adobe Plugins shown)**

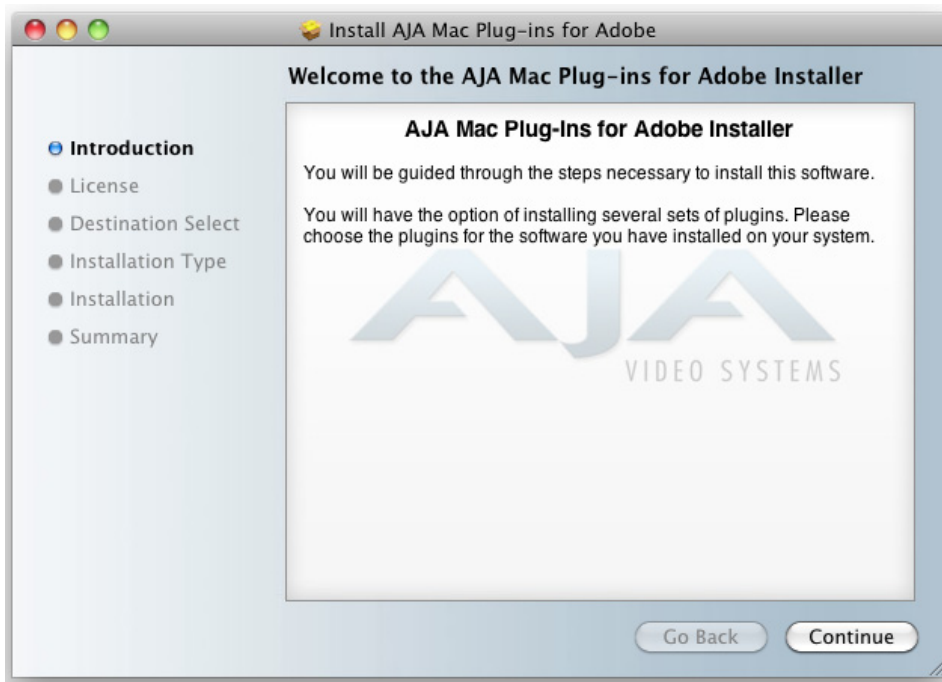
**Note:** Before installing AJA software, turn off any virus protection and security software that you have installed on your computer.

This section describes the AJA Adobe Plugins Software package installation.

Access the software packages (download or CD ROM) and double click on the AJA Adobe package.

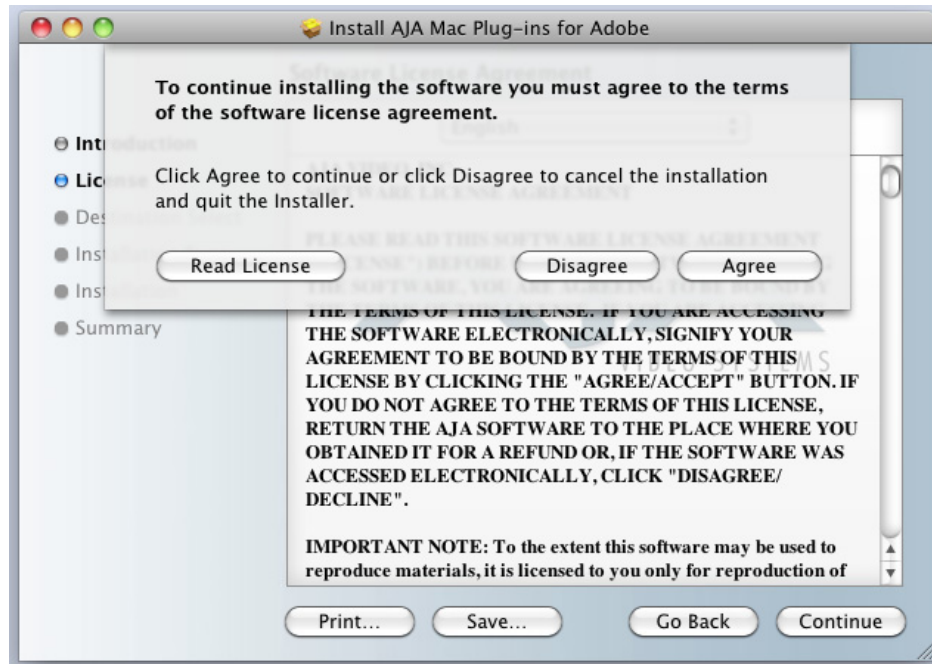
## Install Wizard

The KONA installation program will launch and extract the necessary KONA drivers for installation on the desired hard drive.



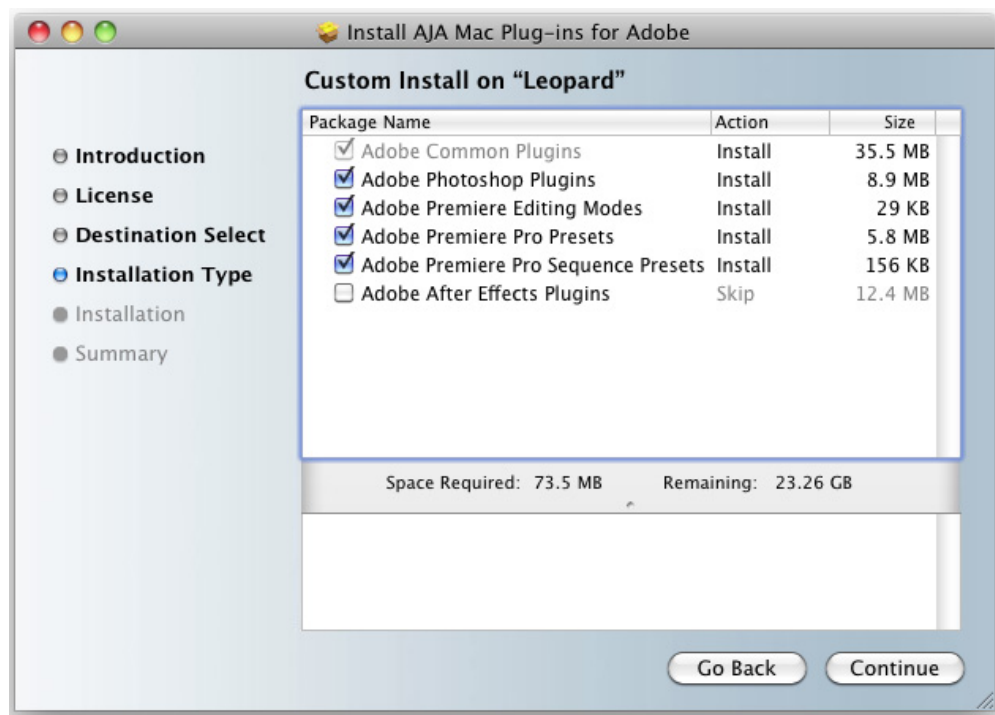
### **Install Welcome**

When you see the Welcome page, click "Next" to view the KONA license agreement.



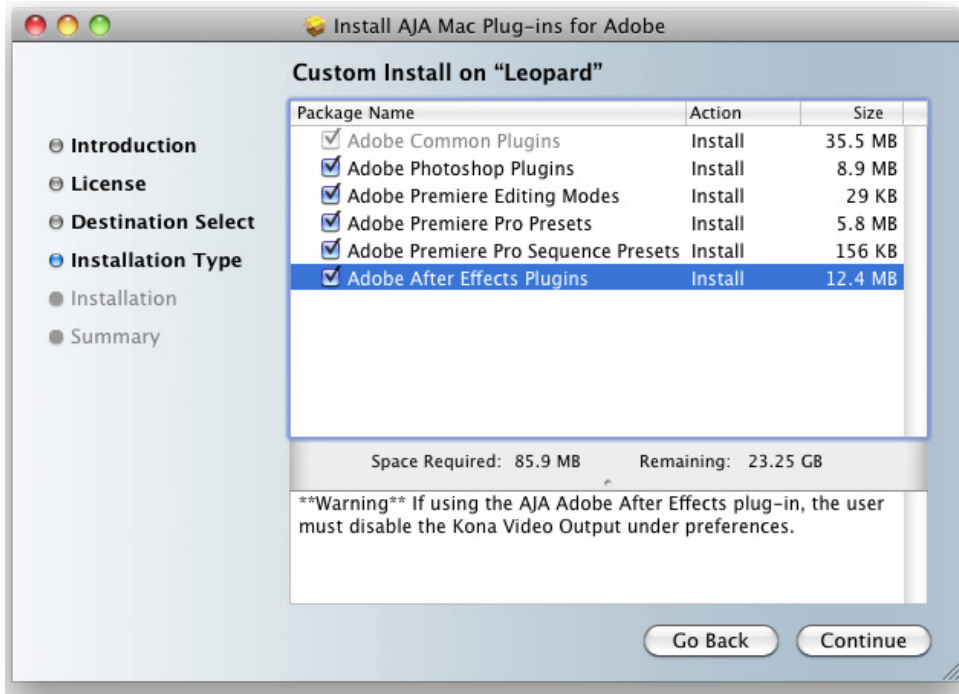
### **License Agreement**

Read the KONA license agreement and check the Agreement box to accept. You will be asked to choose the type of installation you would like to perform.



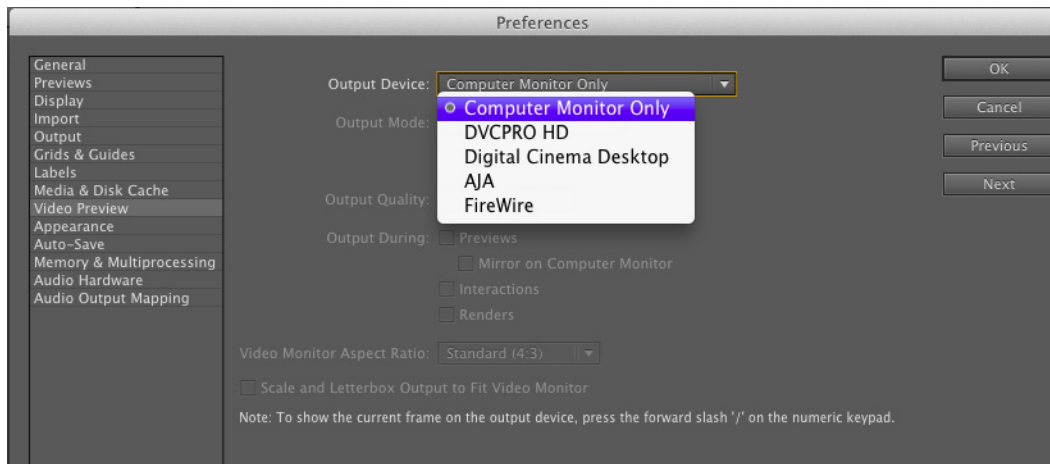
### **Installation Type**

If you don't have all the AJA Adobe supported products installed on your workstation, you may choose to perform a Custom installation and select only the software necessary for your applications.



**Custom Installation After Effects Warning**

**Note:** Because of the Mac architecture of QuickTime components, AJA does not install Adobe After Effects plugins by default. We recommend that you install the After Effects plugins only for use with lo Express and then you must go to the After Effects Preferences, and under Video Preview, select “Computer Monitor Only” rather than “AJA” for the Output Device.



**After Effects Preferences, Video Preview Settings**

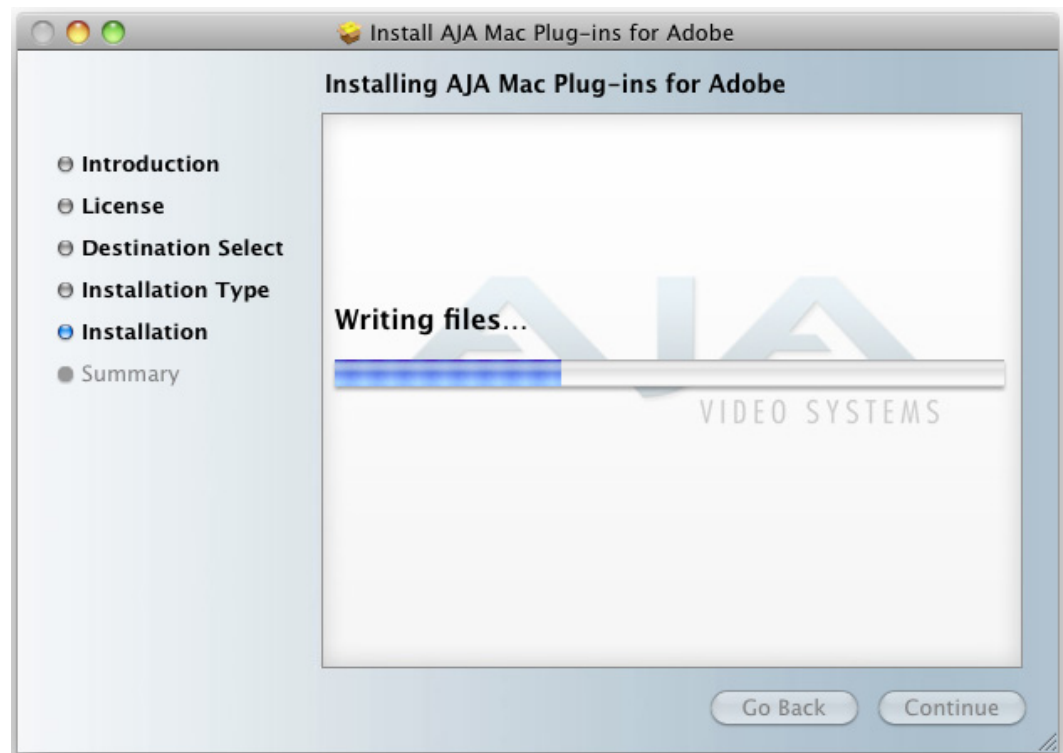
Because lo Express does not support colorspace conversion, it relies on the AJA Adobe After Effects Plugins to provide software-based conversion necessary for output. All currently supported KONA cards and loXT, on the other hand, employ hardware colorspace conversion and do not rely on the slower software-based method. Therefore, the KONA cards and lo XT do not need the After Effects plugins installed.

**Note:** When using the AJA After Effects plugin with lo Express, software conversion requirements do not allow realtime RAM Preview.



### ***Installation Location Option***

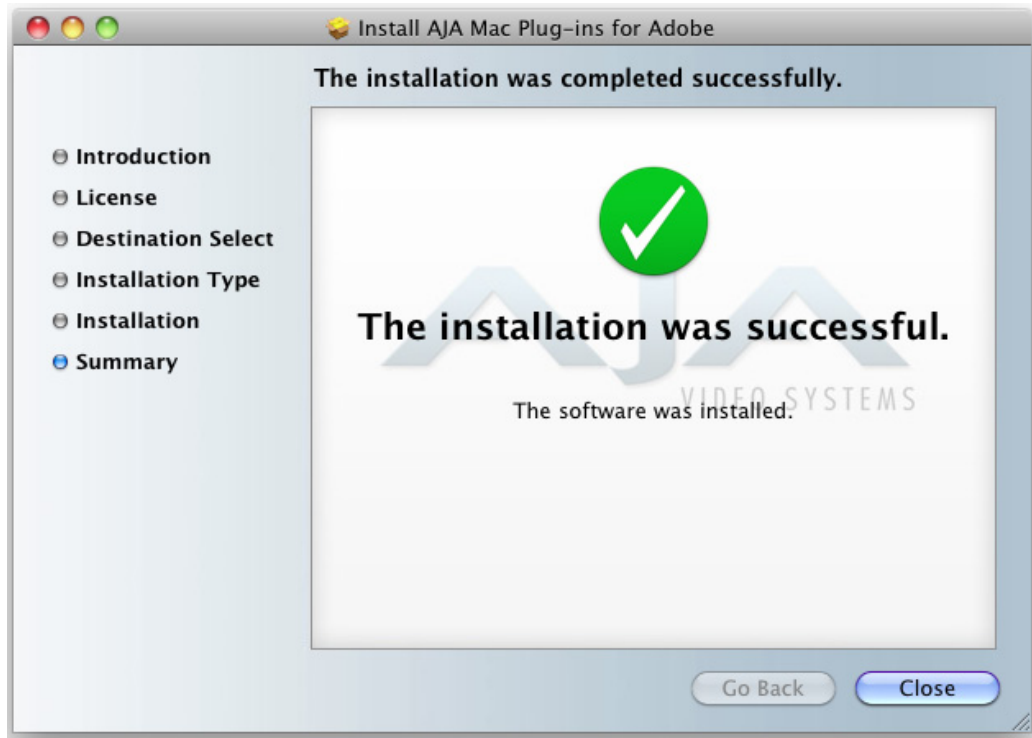
After setting up your installation content you can click "Change Install Location" if you prefer to override your system defaults. Click Install to begin installation.



### ***Begin Plugin Installation***



When the installation is completed, a final screen will be displayed announcing that “The installation was successful.” Click on the Close and begin using your Adobe applications.



### ***Restart Screen***

If you did not install all available plugins and you later add Adobe applications, you may repeat this installation procedure to install the required plugins. Remember to install and run the applications once before installing AJA software.

### **Re-Installation & Repair**

If you have problems running your newly installed pluggins or need to re-install for added applications, you can relaunch and run the install package.

**Note:** Note: Always uninstall old KONA/lo Express software before installing a new version.



# Chapter 2: Using Adobe CS5.5 Applications

## Overview

---

There are AJA plugins for both Mac and Windows versions of the Adobe Applications and functions are mostly the same. This chapter will describe the Windows menus and note exceptions for the Mac.

**Note:** Reference to “KONA software” also applies to Io Express and Io XT (functional exceptions will be noted by specific AJA device). AJA Adobe Software for Mac & PC operates on currently supported AJA KONA cards, Io Express, and Io XT at different functional levels. Some setup screens may use KONA, Io XT, or Io Express interchangeably when referring to your AJA hardware.

AJA Software for KONA is tightly integrated with Adobe CS5.5 Premiere Pro, Photoshop, and After Effects applications (not included with KONA). KONA allows a user to bring in supported Premiere Pro CS5.5 compressed formats and provides plug-ins and drivers that add functionality to the Premiere Pro application.

After you install the KONA software on your workstation, all you need to do to begin using it is to become familiar with the AJA plugins and how Adobe CS5.5 applications access KONA options.

The manual you are reading does not provide operational information for Adobe CS5.5 except as related to KONA operations. Please read the Adobe CS5.5 user documentation for Premiere Pro, Photoshop, and After Effects configuration and operation.

The chapter you are reading addresses configuration and setups supported by KONA. Topics covered include:

- Adobe Premiere Pro
  - Realtime Performance
  - Beginning a Project with KONA Presets
  - KONA Capture Options
  - KONA Playback Options
- Using Adobe Photoshop CS5.1
- Using After Effects CS5.5

## Adobe Premiere Pro Realtime Performance

---

With KONA, Adobe Premiere Pro CS5.5 can perform the following functions in Realtime:

- KONA LHe Plus can capture uncompressed analog or digital SD and HD, component or composite, or S-Video to the supported file formats.
- KONA LHi can capture uncompressed analog or digital SD and HD, HDMI, component or composite, or S-Video to the supported file formats.
- KONA 3G can capture uncompressed digital SD or HD via SDI or Dual Link and uncompressed digital 2K via HSDL at 15 fps to the supported file formats.
- Playback of DPX, Cineon, Tiff, Targa, BMP, Quicktime, AVI, YUV, and HDV MPEG.

With Io Express or Io XT, Adobe Premiere Pro can perform the following functions in Realtime:

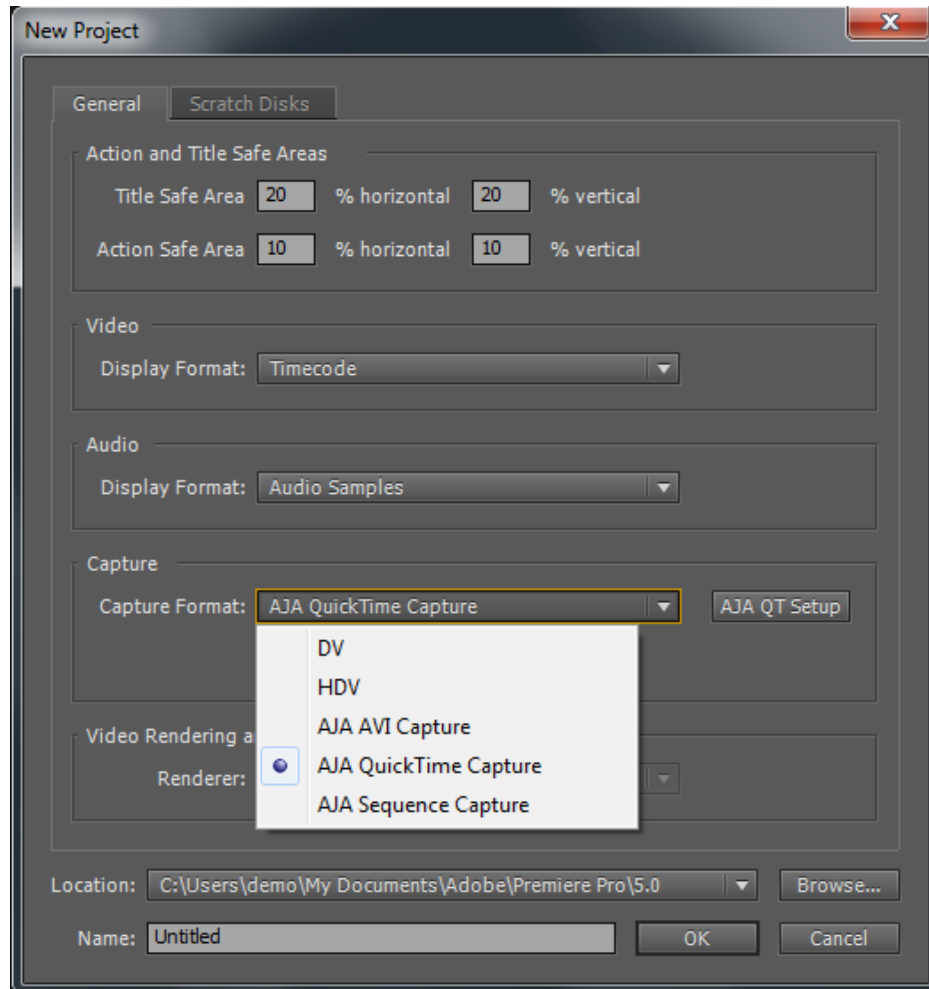
- Io Express can capture uncompressed analog or digital SD/HD-SDI or HDMI 1.3a to the supported file formats that are YUV.
- Playback of Quicktime, AVI, YUV, HDV MPEG, XDCamHD, XDCamEX, DVCProHD, and AVCHD.

**Note:** This happens automatically. Files of these types that match the resolution and frame rates of the projects will play in realtime as long as they are uncompressed and in one of the supported colorspace. The exception is HDV, which of course is compressed. For HDV to playback RT it must be in a 1080 project and the frame rate or the file must match that of the project.

- Crop – happens automatically when an imported file is too large for the project size. Using Premiere Pro's Motion Effects positioning, this realtime crop is keyframable (Timeline Option "Render RT files of different resolution" box must be unchecked). This also occurs when you use the Adobe Crop effects which can be found in the effects folders under Transform.
- Up/Down/Cross Convert the playback from the timeline. (KONA 3G, and LHi, and Io XT support up-, down- and cross-convert. LHe Plus and Io Express support HD to SD downconversion only.)

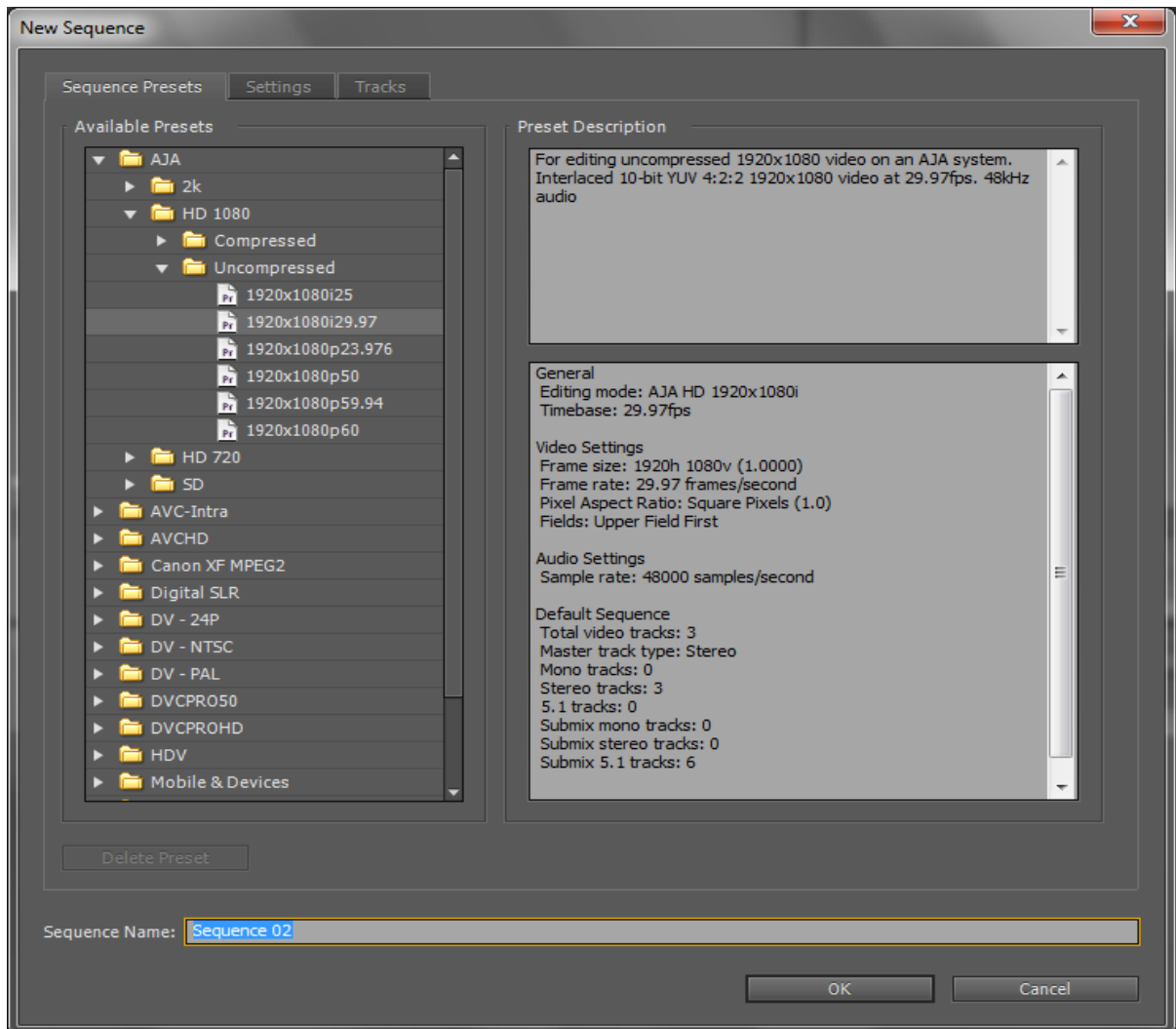
## Beginning a Project with AJA Presets

Opening Adobe Premiere Pro CS5.5, you will select New Project from the Quick Start Screen and choose an AJA Capture Format from the pulldown menu, name the project, and click OK to access the New Sequence setup panel with presets or click the AJA Setup button to customize your workflow in the Capture Options panel “[Premiere Pro Capture Options Panel](#)” on page 19.



**KONA Adobe Premiere Pro CS5.5 New Project panel**

**Note:** Using AJA Presets changes the monitoring of Closed Captions in Premiere Pro (See “[Closed Caption Output](#)” on page 25.).



### ***New Sequence Setup Panel***

Using the New Sequence Setup panel, you can select from AJA Presets. The KONA Presets offer typical project settings.

The Description field summarizes the parameters for each preset including:

- Frame raster size
- Frame rate
- Field order
- Capture file format
- Sequence settings
- Timebase
- Pixel Aspect Ratio
- Audio sample rate
- Video Rendering format

You can adjust the preset Capture setting by going to Project>Project Settings>General to access the AJA Setup menu. See [“Premiere Pro Capture Options Panel” on page 19.](#)

## Options Set in Premiere Pro Preferences

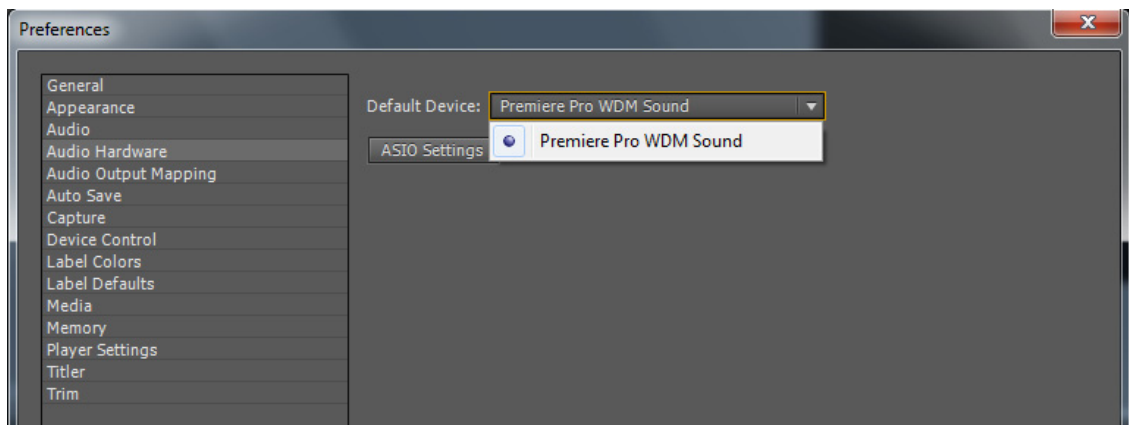
Some settings that determine both capture and playback characteristics for KONA are accessed through Premiere Pro Preferences.

In Adobe Premiere Pro CS5.5 Preferences (under Edit>Preferences) you can set up global (default) settings for:

- Audio Hardware
- Audio Output mapping
- Device Control

### Audio Hardware

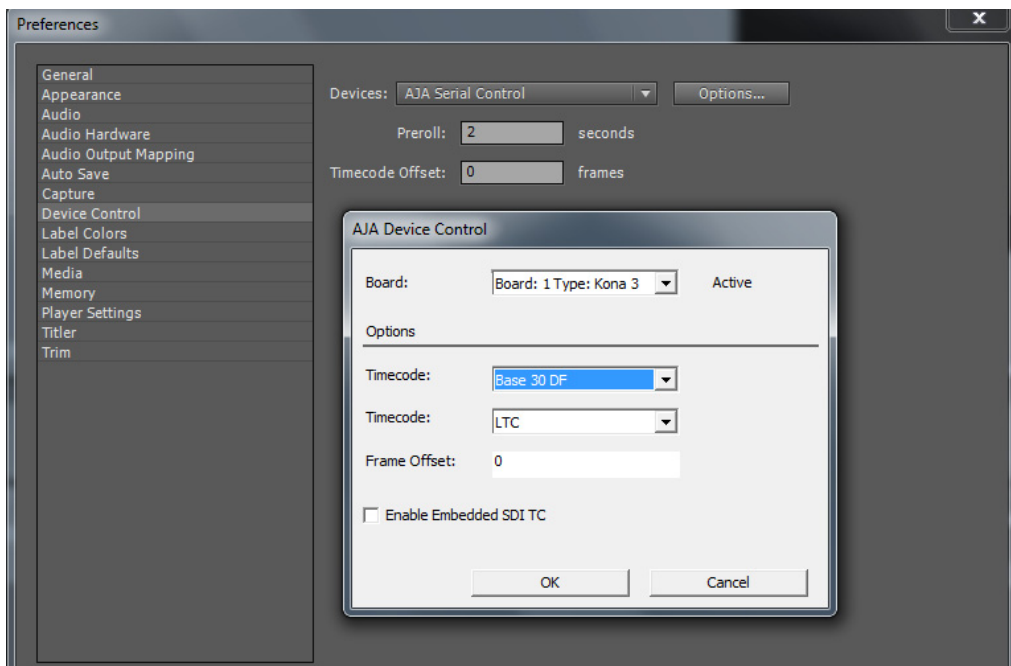
Select “Premiere Pro WDM Sound” from the pull-down menu for your audio hardware. If you see “KONA ASIO” **do not** select it for use with KONA.



### Audio Hardware Preferences

### Device Control

Device Control Options are settings for the RS-422 machine control interface on KONA. Always use the AJA Serial Control and the KONA RS-422 port for KONA capture



### Preferences>Device Control>Options

Enter the desired value for:

Preroll – 0 to 15; the number of frames required to start the source machine before capture.

Timecode Offset – -30 to +30; timecode adjustment (in frames) forward or back to compensate for discrepancies between the source's burned-in timecode and that of the captured sequence.

Click on the Options button to pull up the AJA Device Control window.

**Timecode Format** – Use this pull-down to select the timecode base supported by your VTR.

- Base 24
- Base 25
- Base 25 NDF (50 frames per second)
- Base 30 DF (30 frames per second)
- Base 30 NDF (30 frames per second)
- Base 30 DF (60 frames per second)
- Base 30 NDF (60 frames per second)

The timecode format is used for both monitoring the RP-188 timecode embedded in the digital data stream and for selecting a timecode offset (if required) for the attached VTR (connected to KONA's RS-422 port).

### **Timecode Source**

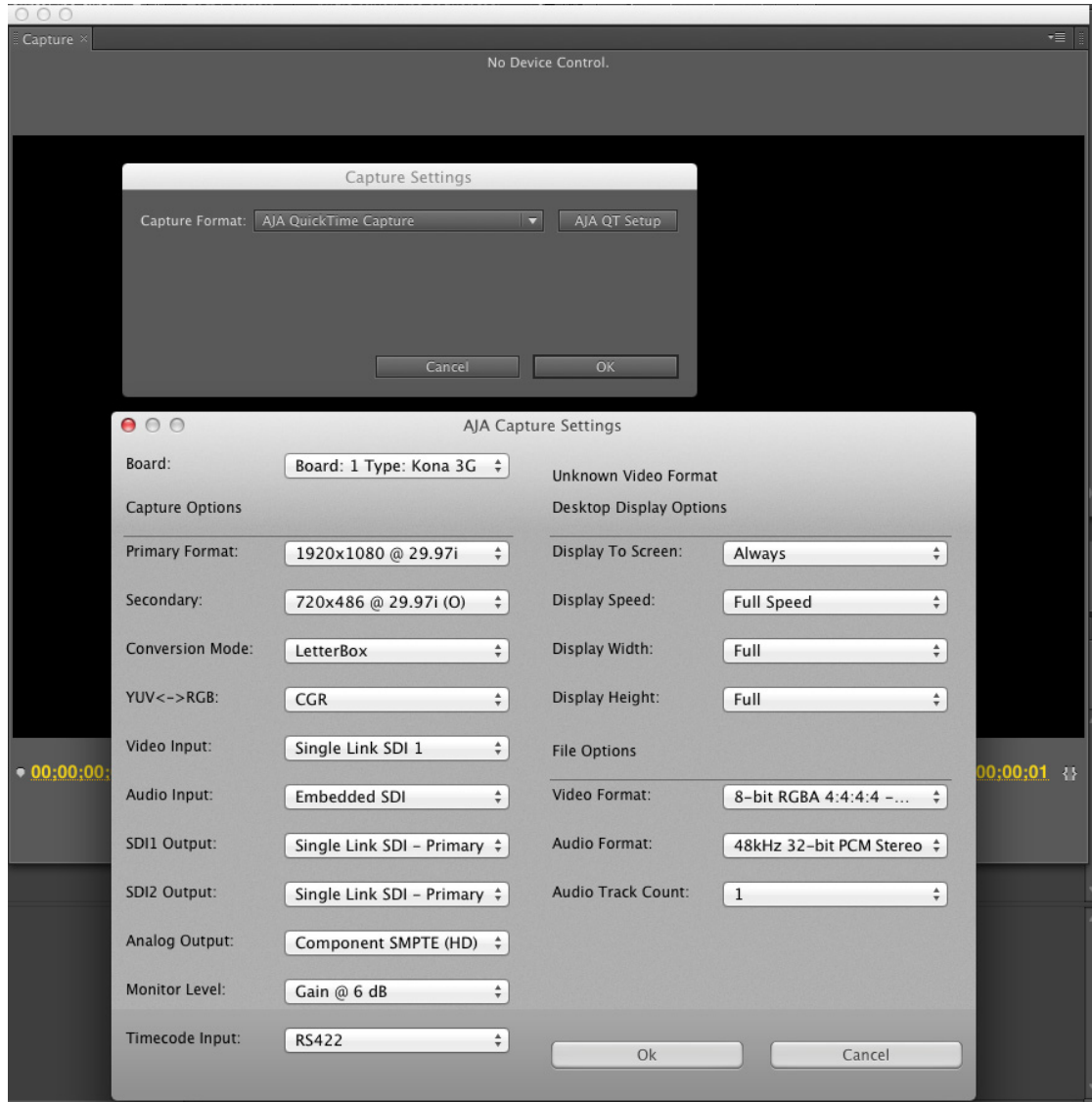
Choose between a separate-channel Longitudinal Timecode (LTC) or Vertical Interval Timecode (VITC) transported in the video signal's vertical interval or include both (LTC + VITC).



## Premiere Pro Capture Options Panel

Using the Capture Options panel, go to *Window>Capture>Settings tab for Windows* or use the *Flydown menu for Mac>Capture Settings*. To change settings for the selected Preset, click the Setup button. The following settings can be accessed:

- Capture Options – change Capture Format for the Adobe Premiere Pro CS5.5 project and access settings for KONA Capture.
- Desktop display options
- File video/audio formatting options



**AJA Capture Options panel (Mac version shown)**

## Selection of Primary & Secondary Formats

In KONA's operation, the Primary Format is that which is written to disk. The Secondary Format is set to match the format of the input device (if the Primary Format is a conversion) or to match the format that is set for an output monitor if you're monitoring a conversion and the Primary Format is the format on the input device.

**Note:** The KONA Secondary Format nomenclature places (O) or (I) at the end of the signal format: (O) indicates the selected secondary format is for output only. (I) indicates the format selection is that of an input only.

The Secondary Format isn't used if there are no conversions. In all of the applications supported by KONA, you can set these formats. In the Adobe applications (Premiere Pro, After Effects, and Photoshop), the KONA plug-ins provide similar ways of making these choices. In each application, though their interfaces may differ, these choices are virtually the same.

The Primary Format menu allows you to select the video format to be used in the current project. Analog output is always available and performs a conversion, if necessary, based on the Primary or Secondary Format.

**Note:** No frame rate interpolation is applied for conversions from one frame rate to another.

### Primary and Secondary Format Options Supported by KONA cards

Primary to Secondary conversion allows you to set down-, up-, and cross-conversion depending on the KONA model and formats supported.

For Formats supported by your AJA device, [See "Appendix A: Performance Specifications" on page 37.](#)

### YUV<->RGB Range

This control mode should almost never be changed from its CGR default. This setting is only for highly-knowledgeable users that must define how color values will be mapped when doing the color space conversion—far less than 1% of all users should ever need to use it. Use this feature only for capturing YUV source into an RGB file, or to play an RGB file out to YUV. The CGR setting maps the typical YUV values to typical RGB values. For example, 8bit YUV 16 is mapped to 8 bit RGB 0, and YUV 235 to RGB 255. The 'SMPTE' setting for this control maps YUV into RGB using the exact YUV values. Therefore, 8 bit YUV 16 will map to RGB 16, and so forth. Only change this setting from its default if you are absolutely sure you know the benefits/consequences. This feature is not the same as a broadcast safe limiter.

### Video Input

Use the Video Input pull-down menu to select the appropriate signal type of your input. (The current selection is reported in the display of the pull-down menu.)

Video Input always shows all the available input options based on your Primary and Secondary format configuration. KONA software looks at 1) what model you have, 2) Primary Format, and 3) Secondary Format (in that order) to determine what input options are appropriate. Video Input Options Supported by KONA cards include:

- Single Link SDI•
- Composite NTSC•
- S-Video NTSC•
- Component Betacam NTSC•
- Component SMPTE NTSC•
- Composite NTSC-J•
- S-Video NTSC-J•
- Dual Link HD (KONA 3G only)•
- Component Betacam NTSC-J
- Component SMPTE NTSC-J
- Composite PAL
- S-Video PAL
- Component Betacam PAL
- Component SMPTE PAL
- Component XVGA (HD only)
- HSDL (KONA 3G only)

## Audio Input

Use the Audio Input pull-down menu to select the appropriate signal type for your input. (The current selection is reported in the Status Display.)

Audio Input Options Supported by KONA include:

- Embedded SDI
- Digital AES/EBU – XLR (using either breakout cable or breakout box, except on KONA 3G)
- Digital AES/EBU – BNC (only applies if you are using a breakout box with BNC connectors for AES/EBU)
- Analog (KONA 3G requires K3G-Box)

## SDI Output 1

When using KONA LHi cards, the SDI outputs will be Single Link only, if there is no Secondary Video Output Format selected. If you have a Secondary format selected, you can choose between Single Link SDI – Primary and Single Link SDI – Secondary as your output. KONA 3G also offers Dual Link output which uses both output connectors for a single A/B channeled output (SDI Output 2 automatically becomes Dual Link).

On KONA LHi, there is only one SDI output, but there is an HDMI output. You can independently configure the SDI output to HD or SD, and the HDMI input to SD or HD. The LHi has a hardware-based downconverter, so you can output SD if desired, when playing back HD (or in E-to-E).

## Analog Output

Analog format choices in the Analog Output pull-down menu vary depending upon file format.

- Composite + S-Video NTSC
- Composite + S-Video NTSC-J
- Component Betacam NTSC
- Component Betacam NTSC-J
- Component SMPTE
- Component X VGA (HD only)
- Composite PAL
- S-Video PAL
- Component Betacam PAL
- Component SMPTE PAL
- Component RGB

**Note:** When SD and HD formats are available as Primary and Secondary formats, you can choose between SD and HD raster for the Analog Output.

## Audio Level

Choose between +6 dB (US) monitor level and +0 dB (EBU).

## Timecode Input

Select the type of timecode used by the source video machine—RS-422, Embedded SDI (RP188) or choose to input an External LTC timecode source input via the KONA RS-422 port.

**Note:** SMPTE RP 188 defines a standard for the transmission of timecode and control code in the ancillary data space of a digital television data stream. Timecode information is transmitted in the ancillary data space as defined in ANSI/SMPTE 291M. Multiple codes can be transmitted within a single digital video data stream. Other time information, such as real time clock, DTTR tape timer information, and other user-defined information, may also be carried in the ancillary timecode packet instead of timecode. The actual information transmitted through the interface is identified by the coding of a distributed binary bit. Equipment manufacturers can use the meta data for different purposes.

## Desktop Display Options

### Display To Desktop

Select one of four modes of desktop display:

- Off
- Display while idle only (this mode is suggested)
- Display during capture only
- Display Always

Display to Desktop uses system resources and could affect performance. Choose Capture Speed, Width, and Height as appropriate for your system's capabilities.

### Display Capture Speed

- Full Speed – Every frame is displayed to desktop during playback
- Half Speed – Every other frame is displayed to desktop during playback
- Quarter Speed – One out of every four frames is displayed to the desktop

Half Speed and Quarter Speed will reduce the system load that the Display-To-Desktop is using to draw video to your computer.

### Desktop Capture Width and Height

These selections allow you to reduce the resolution of the desktop capture display. The captured file will be full-resolution. Only the displayed image is reduced to save processing resources during capture. The choices available are:

- Full Resolution
- Half Resolution
- Quarter Resolution
- Eighth Resolution
- Sixteenth Resolution

## File Format Options

The Premiere Pro Project Setting>Capture menu allows you to select one of the following AJA file formats from the Capture Format pulldown menu:

- AJA AVI Capture (Windows only)
- AJA QuickTime Capture
- AJA Sequence Capture

Within the AVI and QuickTime formats, you can select one of the following subtypes by clicking on the Setup button to the right to bring up the AJA Capture Options menu.

**Note:** Capture file format options vary by KONA card model. The tables provided reflect a comprehensive list of supported formats (for KONA 3G).

Under the File Options panel, select a video format subtype:

AVI files in the following Subtypes	QuickTime files in the following Subtypes
8-Bit YUV 4:2:2 – '2vuy'	8-Bit YUV 4:2:2 – '2vuy'
8-Bit YUV 4:2:2 – '2Vuy'	8-Bit YUV 4:2:2 – '2Vuy'
8-Bit YUV 4:2:2 – 'uyvy'	10-Bit YUV 4:2:2 – 'v210'
10-Bit YUV 4:2:2 – 'v210'	10-Bit YUV 4:2:2 – 'V210'
8-Bit RGB 4:4:4 – 'bgr'	8-Bit RGB 4:4:4 – 'rgb'
8-Bit RGB 4:4:4 – 'bgra'	8-Bit RGB 4:4:4 – 'bgr'
8-Bit RGB 4:4:4 – 'bgr' T2B	8-Bit RGBA 4:4:4:4 – 'argb'
8-Bit RGB 4:4:4:4 – 'bgra' T2B	8-Bit RGBA 4:4:4:4 – 'rgba'
10-Bit Log RGB 4:4:4 – 'R10g'	8-Bit RGBA 4:4:4:4 – 'bgra'
10-Bit RGB 4:4:4 – 'R10k'	10-Bit Log RGB 4:4:4 – 'R10g'
10-Bit RGB 4:4:4 – 'r10k'	10-Bit RGB 4:4:4 – 'R10k'
	10-Bit RGB 4:4:4 – 'r10k'
	16-Bit RGB 4:4:4 – 'b48r'

When you select AJA Sequence Capture, the File Options panel allows you to choose a Sequence Type:

- TGA Sequence
- DPX Sequence (LHi and KONA 3G only)
- Cineon (LHi and KONA 3G only)
- BMP Sequence
- TIF Sequence
- YUV

Within these sequence types, KONA (model dependent) supports the following video formats:

<b>DPX Sequences in the following Subtypes</b>	<b>Cineon Sequences in the following Subtypes</b>
10-Bit Log RGB 4:4:4 (BE) T2B 10-Bit RGB 4:4:4 (BE) T2B 10-Bit Log RGB 4:4:4 (BE) B2T 10-Bit RGB 4:4:4 (BE) B2T 10-Bit Log RGB 4:4:4 (LE) T2B 10-Bit RGB 4:4:4 (LE) T2B 10-Bit Log RGB 4:4:4 (LE) B2T 10-Bit RGB 4:4:4 (LE) B2T	10-Bit Log RGB 4:4:4 (BE)
<b>TGA Sequences in the following Subtypes</b>	<b>BMP Sequences in the following Subtypes</b>
10-Bit Log RGB 4:4:4 (BE) T2B 10-Bit RGB 4:4:4 (BE) T2B 10-Bit Log RGB 4:4:4 (BE) B2T 10-Bit RGB 4:4:4 (BE) B2T 10-Bit Log RGB 4:4:4 (LE) T2B 10-Bit RGB 4:4:4 (LE) T2B 10-Bit Log RGB 4:4:4 (LE) B2T 10-Bit RGB 4:4:4 (LE) B2T	8-Bit RGB 4:4:4 B2T 8-Bit RGBA 4:4:4:4 B2T 8-Bit RGB 4:4:4 T2B 8-Bit RGBA 4:4:4:4 T2B
<b>TIF Sequences in the following Subtypes</b>	<b>YUV Sequences in the following Subtypes</b>
8-Bit RGB 4:4:4(LE) B2T 8-Bit RGBA 4:4:4:4(LE) B2T 8-Bit RGB 4:4:4(LE) T2B 8-Bit RGBA 4:4:4:4(LE) T2B 8-Bit RGB 4:4:4(BE) B2T 8-Bit RGBA 4:4:4:4(BE) B2T 8-Bit RGB 4:4:4(BE) T2B 8-Bit RGBA 4:4:4:4(BE) T2B 16-Bit RGB 4:4:4(LE) B2T 16-Bit RGB 4:4:4(LE) T2B	8-Bit YUV 4:2:2

### Audio Formats

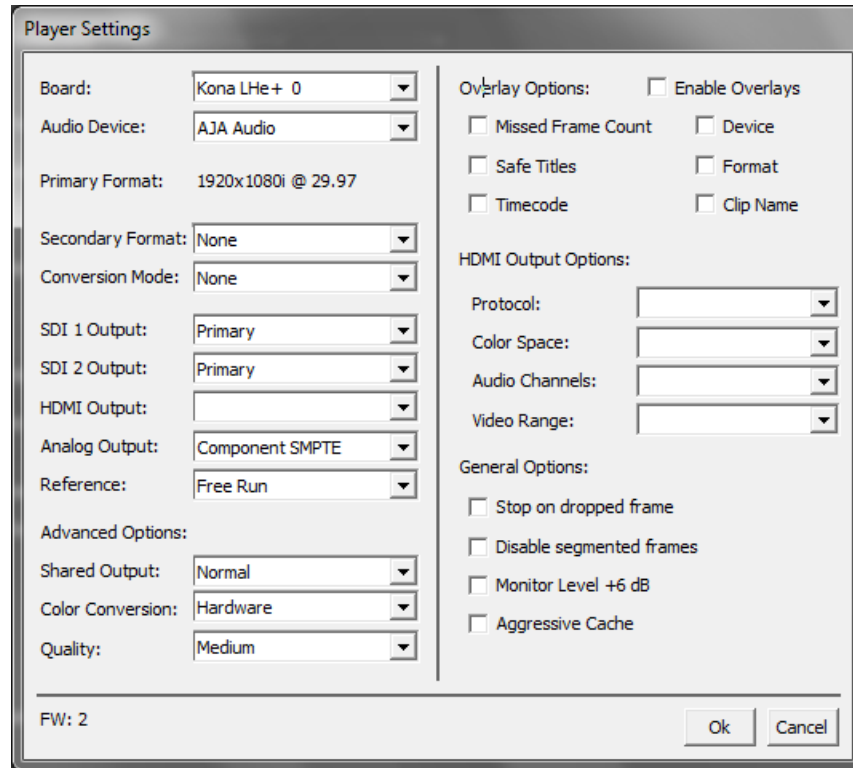
- 48 kHz 16-bit PCM Mono
- 48 kHz 24-bit PCM Mono
- 48 kHz 32-bit PCM Mono
- 48 kHz 16-bit PCM Stereo
- 48 kHz 24-bit PCM Stereo
- 48 kHz 32-bit PCM Stereo

### Audio Track Count

Select the number of audio tracks for this project, KONA supports up to eight (four stereo pairs) for KONA LHi or 16 for KONA 3G. Adobe Premiere Pro CS5.5 supports six channels.

## Premiere Pro Playback Options

To access AJA Playback settings, in Premiere Pro, highlight (select) the Sequence Panel. Then either use the fly-down menu in the top right corner of the Premiere Pro project window, or go to Sequence>Sequence Settings, and click on the Playback Settings button.



### Player Settings Panel

**Note: Primary Format, SDI and HDMI Outputs** have the same functionality as described in the Sequence Capture Options panel. See [“Premiere Pro Capture Options Panel” on page 19.](#)

### Audio Device

Select “AJA Audio” to output your project audio through the KONA. To complete audio setup refer to [“Options Set in Premiere Pro Preferences” on page 17.](#)

### Analog Output

Analog Output Options Supported by KONA include:

- Composite + Y/C
- Component (SMPTE/EBU N10)
- Component (Beta)

### Reference:

Select a source for the video reference signal:

- Free Run (none)
- SDI Input
- Reference Input (LTC/Ref connector)
- HDMI Input

## Overlay Options

Enable and select overlay information to be included in the playback by checking the appropriate boxes. These overlay controls allow you to insert a graphic file supporting alpha channel transparency to apply an effect or insert a bug (logo) over the video content.

## HDMI Output Options

HDMI video output offers these options:

- Protocol – choose Auto Detect, HDMI, or DVI
- Color Space – select Auto Detect or YCbCr 10bit (KONA does not support RGB)
- Audio Channels – choose 8 or 2 to be embedded
- Video Range – select SMPTE or Full Range

## Advanced Options

**Shared Output** – the pulldown offers these options:

- Normal – choose for normal output connector routing
- Stereoscopic – select for use with Cineform First Light to control the 3D output. When selected and used with KONA 3G, the stereoscopic playback will be output on separate SDI outputs, left and right. (For playback output on a single SDI output, you can configure Cineform First Light to superimpose the left/right; see Cineform First Light documentation for details).
- Video + Key – choose this selection to output a video signal to one SDI output and a related Key signal to a second SDI output (useful for outputting to a video switcher for example).

**Color Conversion** – this menu lets you choose between AJA Hardware or Software conversion.

**Quality** – This setting can be used to adjust the visual quality and editing/playback performance of an AJA sequence in Premiere Pro. The quality setting is actually a setting that tells Premiere Pro which algorithms to use when rendering frames. This will apply to both scrubbing and playback. Lower quality settings tell Premiere to use faster algorithms for functions like deinterlacing, color conversion, transforms, and other effects with a slight penalty on visual quality. Higher quality settings use more complex algorithms, which may result in visually better results but at the cost of playback and scrubbing speed and performance.

## Aggressive Cache

Under General options you can choose to enable Aggressive Cache. When this Option is enabled, AJA's plugins will read further ahead in the timeline during playback operations. The feature should be used to mitigate minor frame dropping issues. Particularly, this feature was created because some DSLR clips can take a very long time to open, and subsequently cause frames to drop when they are played back. Using this feature will consume more RAM, and may make scrubbing and stop/start commands slightly less responsive. The ideal way to use the feature is to leave it off at all times, and then to only turn it on for mastering/layout to tape.

## Closed Caption Output

When using Closed Captioning in Premiere Pro with an AJA Preset selected for your project (refer to your Adobe Premiere Pro help for Closed Caption settings), you will not see the captioning in your desktop Program Monitor display. The captioning will be included in the KONA playback output only.

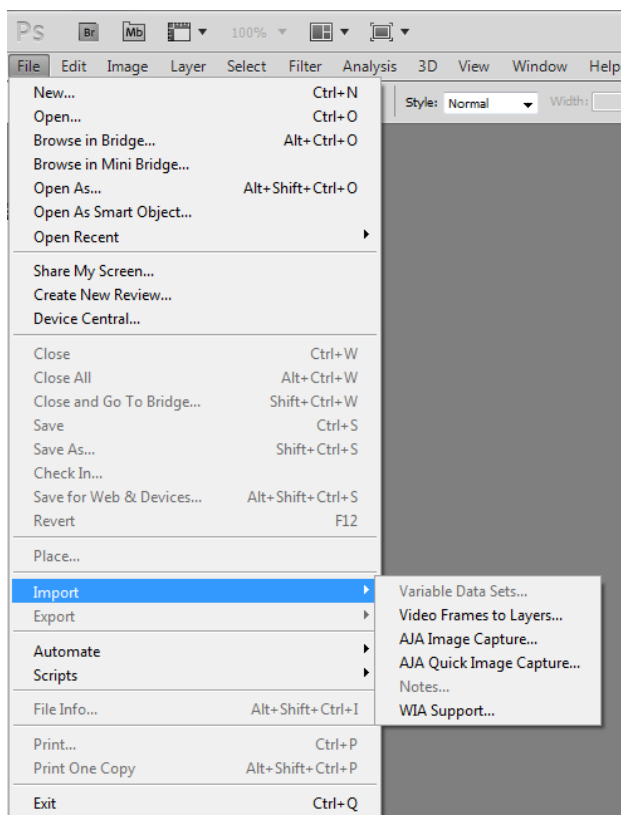
## Using Photoshop CS5.5

Adobe Photoshop CS5.5 (not included with KONA) accepts KONA plugins and drivers to closely integrate KONA functions into the application. After you install the KONA software on your workstation, all you need to do to begin using it is to become familiar with the Plugins and how Photoshop works with KONA.

**Important:** Mac plugins support only the AJA Preview Plugin (“[Using the AJA Preview Plugin](#)” on page 33).

With Photoshop open, you’ll go to the File pull-down menu and select Import>AJA Capture to set up your workflow, source device control, and other KONA options. Then access Export>AJA Preview Setup to configure the preview output to your monitor. Quick capture and simple send-to-preview functions are also available in these menus.

The manual you are reading does not provide operational information for Adobe Photoshop CS5.5. Please read the Photoshop user documentation provided with the application for information on configuration and operation. The chapter you are reading addresses configuration and setup unique to use of KONA with Adobe Photoshop CS5.5.



### ***AJA Image Capture in Photoshop File>Import Menus (Windows only)***

The KONA Photoshop plugin is a software application that is integrated into the Photoshop CS5.5 application and is accessed under the File menu. The Capture plugin provides you with standard tapedeck style play/record functions, status display, and configuration options. The Preview plugin allows you to adjust output formats and view your current project frame on a monitor connected to a KONA output before rendering to file.

In this section, you will read about the various pull-down options, hot-text entry fields, and play/record controls and how they interact.



**Note:** The specific options available to you are determined by the AJA capture device that is installed in your workstation and you are currently controlling. This section will describe all options for the Photoshop plugin when used with KONA.

There are three functional areas in the Capture screen as indicated in the following illustration—Status Display, Play/Record Controls, and Configuration Options.



### **KONA Photoshop Capture Plugin Layout**

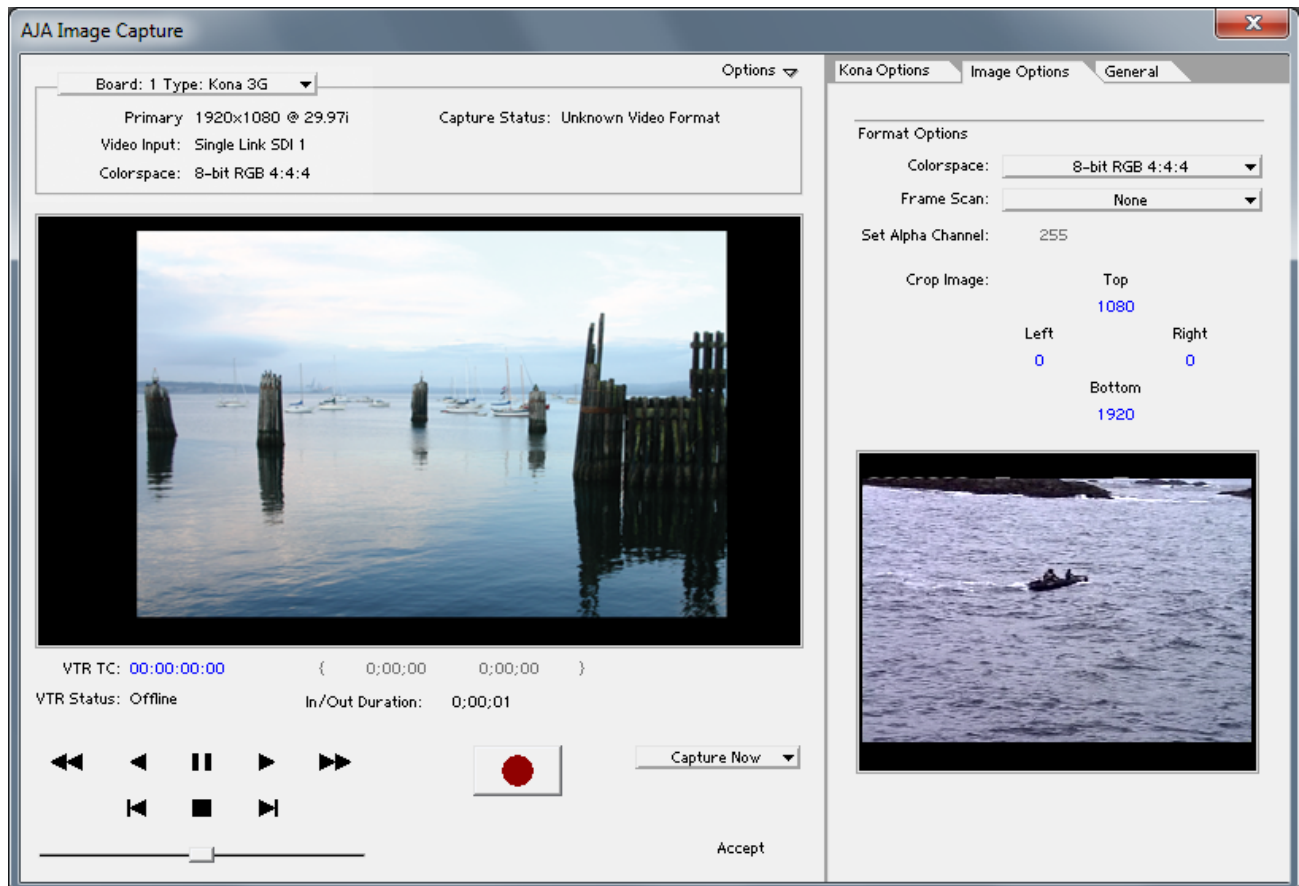
The **Status Display** area is read-only information about configuration, current status, and performance.

The **Play/Record Controls** offer standard tape deck controls and more. The hot-text fields beneath the video display are for writing and reading timing data. Capture mode will determine which fields are operational.

**Note:** Capture Play controls are RS422 machine controls for running a VTR tape deck with timecode data.

- The Configuration Options section contains tabbed menu selections that provide:
- KONA Options – KONA workflow configuration options
- Image Options – Image formatting colorspace, frame, and crop information

If you don't see the Configuration Options section, click on the Options triangle switch above the Status Display. In normal operation, you may decide to hide this section when it is not needed.



### ***File>Import>AJA Image Capture***

## **Configuration Option Panels**

The first Configuration Options tab selects the KONA Options panel for setting Board Activation mode and Capture format options.

### **Activation Mode**

A KONA plugin can be set for Automatic or Manual activation using the Activation Mode pull-down menu. Automatic is the default setting and is recommended for normal operation. In this mode, you merely click between the open plugins to make one active.

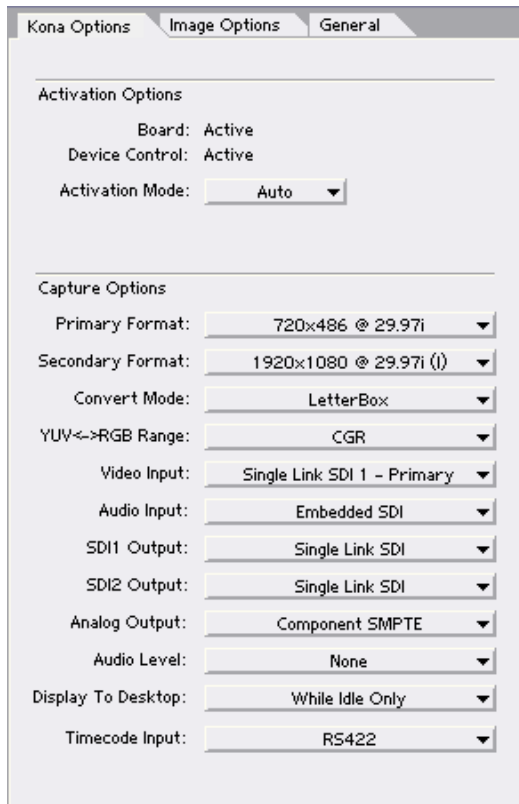
**Note:** Only one plugin window can have control of the AJA capture device at a time. If the window you click on does not access the KONA (reporting Board: Active), either another window is still processing operations or it is set in Manual activation mode and must be disabled (check-box empty).

In Manual mode, you must check the Enable KONA box to activate the board control and uncheck it to release control. Upon startup of either Photoshop CS5.5 application, if the launched plugin window is in Manual mode, the window will NOT activate until the enable box is clicked again.

The Preview plugin does not need activation since it grabs only one frame (the current working frame) at a time for output to the monitor. It grabs the data on a priority basis when it can. The rest of the time it is off.

## Using the AJA Capture Plugin

First, activate the KONA from the Capture window and set up your workflow by defining Input and Output formats and timing options. To do this, click on the KONA Options tab. (KONA stores the workflow settings you make until they are next changed.) Next, access the Image Options tab to set colorspace and framing options and make Alpha Channel (for RGBA scanned-in images) and image crop settings if required. Finally, use the General Options menu to set timecode and other machine control options.



### ***KONA Options Menu***

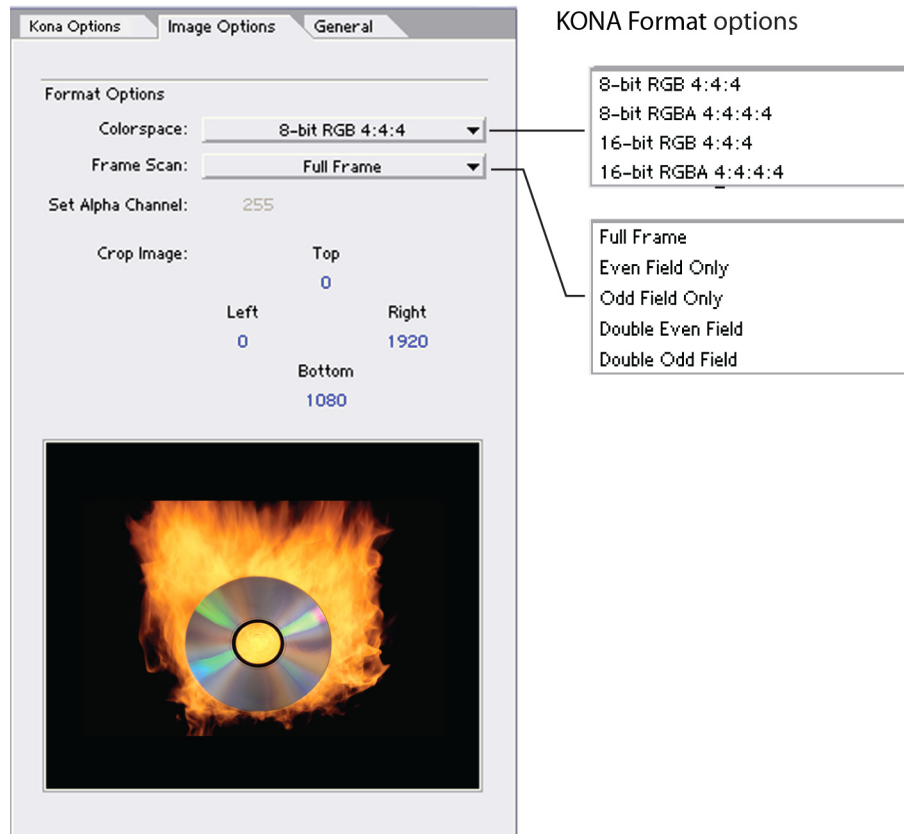
### **Capture Options**

These options are the same as those for Premiere Pro except for Display to Desktop(See ["Premiere Pro Capture Options Panel" on page 19.](#)).

**Display to Desktop** allows you turn off the desktop capture display or "Display while idle only." The latter is the suggested mode.

## Image Options Menu

After configuring KONA Options, select the Image Options tab. In the Image Options menu there are four configuration settings—Colorspace, Frame Scan, Set Alpha Channel, and Crop Image.



**Photoshop Plugin Image Options Tab**

**Note:** You can enlarge the thumbnail capture image to full-screen by double-clicking on the image. To return, double-click again.

**Colorspace** – Choose between 8- and 16-bit color in either RGB 4:4:4, or RGBA 4:4:4:4 mode.

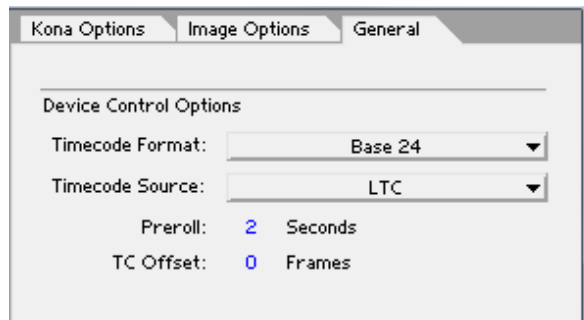
**Frame Scan** – Work with a Full Frame or capture Even or Odd fields only in single or double modes.

**Set Alpha Channel** – The Alpha channel image applies only to RGBA scanned-in images and then you can set it to 255 (default) which is zero transparency or 0 which is 100 percent transparency when the image is imported into Photoshop.

**Crop Image** – Use the hot text fields to enter value for pixels cropped from Top, Left, Right, and Bottom of the captured image. When you import (Accept) the image into Photoshop, it will be cropped to these specifications.

## General Options Menu

Under the General tab, you will find Device Control Options. These functions are for the RS-422 machine control interface on KONA. They support Print-to-Tape machine control.



### General Options Tab

Under the General tab, you will find Device Control Options. These functions are for the RS-422 machine control interface on the KONA card. They support Print-to-Tape machine control.

**Timecode Format** – Use this pull-down to select the timecode base supported by your VTR.

- Base 24
- Base 25
- Base 25 (50 frames per second)
- Base 30 DF (drop-frame, 30 frames per second)
- Base 30 NDF (non-drop-frame, 30 frames per second)
- Base 30 DF (drop-frame, 60 frames per second)
- Base 30 NDF (non-drop-frame, 60 frames per second)

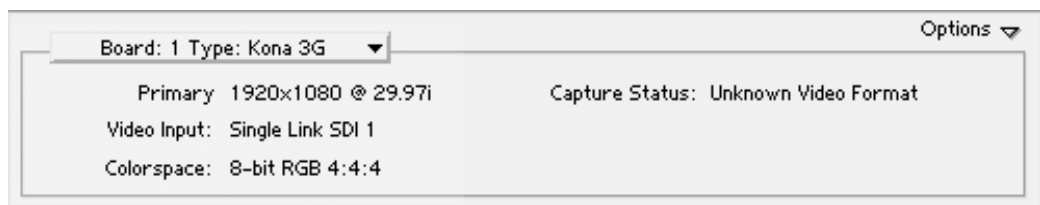
**Timecode Source** – Choose between a separate-channel Longitudinal Timecode (LTC) or Vertical Interval Timecode (VITC) transported in the video signal's vertical interval or include both (LTC + VITC).

Click on the Hot Text items to enter a value for:

- Preroll – 0 to 15; the number of frames required to start the source machine before capture
- Timecode Offset – -30 to +30; timecode adjustment (in frames) forward or back to compensate for discrepancies between the source's burned-in timecode and that of the captured sequence.

## Status Display

If you have more than one AJA capture device installed in your workstation, you can select another device to work with by using the Board pull-down menu at the top. If they are set for Auto Activation and are idle (not processing), you will immediately take control of the new Board (see Basic Plugin Operations and Configuration).



### Photoshop Capture Window Status Display

The Status Display section of the Photoshop Capture plugin, in the left column, reports the settings that you have selected for the KONA to use when you have control of it:

- Primary Format
- Video Input type
- Selected Colorspace

In the right column Capture Status reports the detected signal status of the KONA input:

Off Line – the capture plugin does not control the KONA

Idle – Ready, the plugin has control and the proper input signal is present

Video Input Not Detected – no input present

## Play/Record Controls

Standard tape deck icons provide hot buttons for the Play/Record RS-422 machine control of a source VTR. They are:

- |                |                      |
|----------------|----------------------|
| ◀◀ Rewind (8x) | ▶▶ Fast Forward (8x) |
| ◀ Reverse Play | ◀ Reverse 1 frame    |
| ⏸ Still        | ■ Stop               |
| ▶ Play (1x)    | ▶ Forward 1 frame    |

The slider on the bottom is a variable speed forward/reverse control. Positions from left to right are: (Reverse) 16x, 8x, 4x, 2x, 1/2, 1/4, Still, (Forward) 1/4, 1/2, 2x, 4x, 8x, and 16x. The red Record button is used to initiate a capture.



### **Photoshop Capture Window Play/Record Controls**

The pull-down menu on the right enables one of two capture modes:

- Capture Now – manual record/stop (“crash”) capture
- Capture In/Out – initiate a capture using timecode-based in or out settings

The selected mode will activate the appropriate hot text for that mode. Clicking the hot text brings up an entry field (hours:minutes:seconds:frames). The upper left display indicates the current timecode from the VTR.

**Capture In/Out** – Enter a timecode Capture point by clicking on either the left field or right field of eight digits in the bracketed fields above the In/Out Duration field. Since Photoshop capture is a single-frame function, the In and Out settings will always be the same and the frame duration will always be one frame.

**Note:** The in-point/out-point field values are inclusive. When both are set to the same value, the capture duration will be 1 frame.

To load the current VTR timecode setting in either field (in-point or out-point) click on the bracket ( { or } ) next to the field.

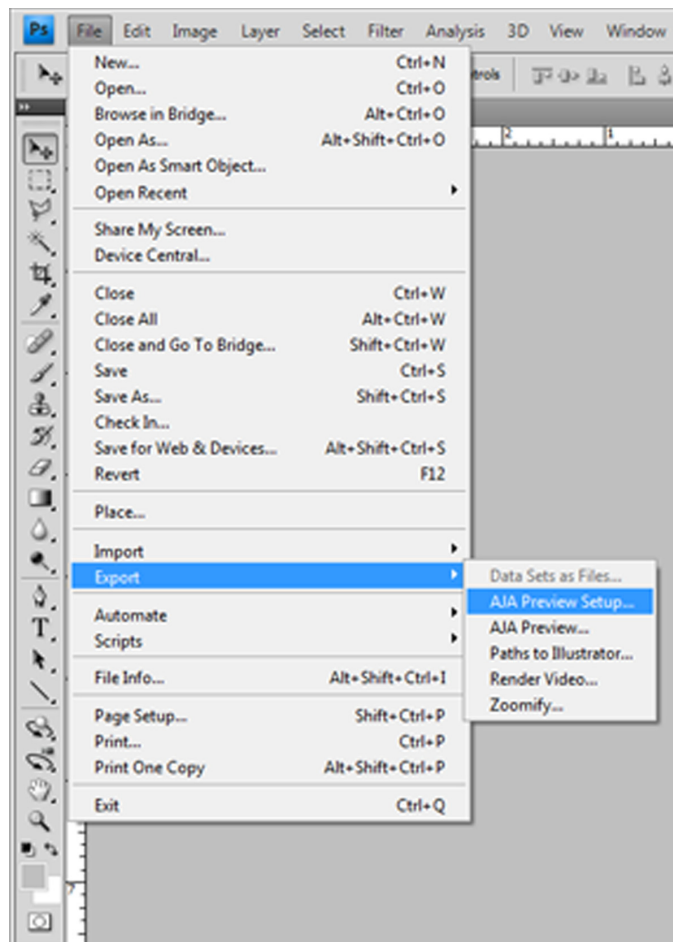
**VTR TC** – The VTR timecode field displays the current machine timecode and you can click on it to roll the VTR to another frame setting. The VTR must be online and in remote rather than local control mode (as reported in the **VTR Status** field.)

**Accept** – When you have successfully captured the frame you wish to use in Photoshop, Click on Accept in the bottom right corner of the Play/Record pane. The KONA capture plugin will close and your frame will be opened in Photoshop for editing.

## Using the AJA Preview Plugin

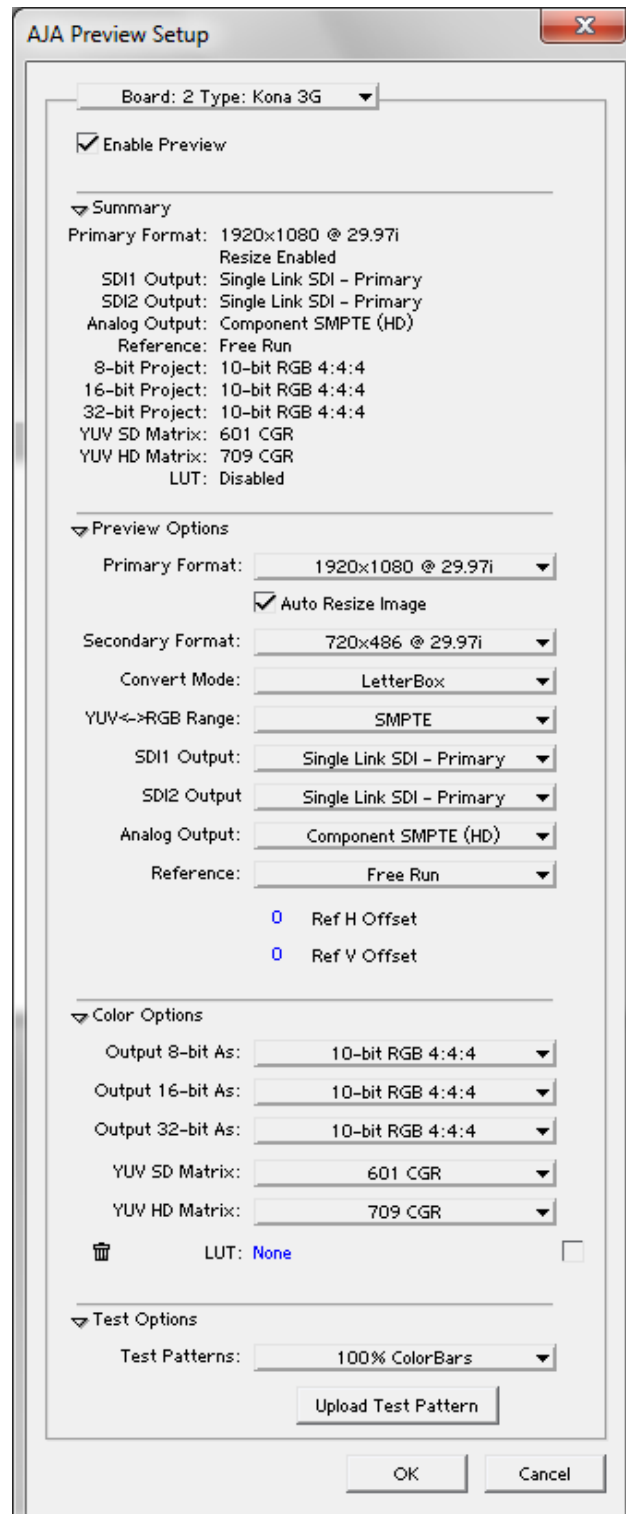
The Preview Plugin allows you to view on a monitor the current frame you are working on in Photoshop CS5.5. Go to File>Export>AJA Preview Setup to configure previews. When you have Preview Setup the way you want it, subsequent Previews are output by selecting AJA Preview (below AJA Preview Setup).

**Important:** Mac users will see AJA Preview only, not Preview Setup. Preview Setup for Mac is done using the AJA Control Panel.



**AJA Export Plugins for Photoshop (Windows version shown)**

The “Board” pull-down menu at the top allows you to select any AJA capture device you have installed in your workstation (subject to Activation rules). A check box is provided to enable/disable the Preview function.



**AJA Preview Setup Menu for Photoshop**



The **Summary** section reports current configuration settings.

In **Preview Options**, you can vary the Primary and Secondary signal formats, Convert mode, YUV to RGB range for CGR or SMPTE levels (“YUV<->RGB Range” on page 20), SDI and Analog output type (as applicable), and select timing Reference mode—Free Run, External (genlock), or from the video Input signal.

In **Color Options**:

Choose one of the following output modes for 8-, 16-, and 32-bit color projects:

- 8-bit YUV 4:2:2
- 10-bit YUV 4:2:2
- 8-bit RGBA 4:4:4:4
- 10-bit RGB 4:4:4

YUV Matrix Colorspace—choose from:

- 601 SMPTE or 601 CGR (default selection for Standard Definition)
- 709 SMPTE or 709 CGR (default selection for HD)

Finally, for picture quality adjustment, you can output a Test Pattern selection using the pull-down menu under **Test Options**. Click OK to output your Preview.

## Using After Effects

### After Effects CS5.5 Plugin Overview

A KONA After Effects CS5.5 Preview plugin adds KONA functions to the After Effects CS5.5 application. The KONA plugin screen is accessed under the **Window** pulldown menu. The Preview plugin allows you to view the current frame of your working timeline in various formats on a monitor connected to a KONA output. The **Status Display** area is read-only information about configuration, current status, and performance.

This section discusses settings common across plugin windows and how they interact.

#### Activation Mode

A KONA plugin can be set for Automatic or Manual activation using the Activation Mode pull-down menu. Automatic is the default setting and is recommended for normal operation. In this mode, you merely click between the open plugins to make one active.

**Note:** Only one plugin window can have control of the KONA at a time. If the window you click on does not access the card (reporting Board: Active), either another window is still processing operations or it is set in Manual activation mode and must be disabled (check box blanked).

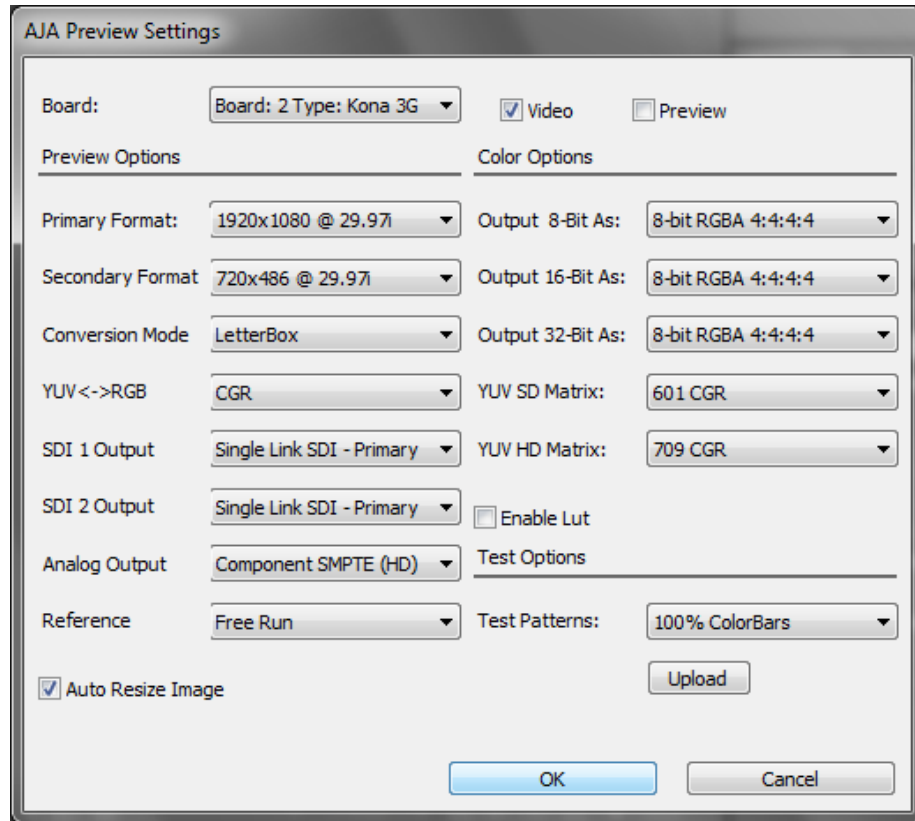
In Manual mode, you must check the Enable KONA box to activate KONA control and un-check it to release control. Upon startup of the After Effects CS5.5 application, if the launched plugin window is in Manual mode, the window will NOT activate until the enable box is clicked again.

#### After Effects CS5.5 and Preview Note

Double clicking on a captured Project File in the project bin will sometimes open the file in an After Effects CS5.5 player which can be previewed. Some formats will result in the file opening in a third-party viewer (QuickTime for example)—but the file cannot be previewed in that viewer.

## Using the After Effects Preview Plugin

The Preview Plugin allows you to view on a monitor the current frame you are working on in the timeline as it will appear at the KONA output. A summary area at the top of the Preview Window shows how the KONA is currently configured. If you wish to change it, you can use the *Preview Options* below.



### **AJA Preview Plugin**

In **Preview Options**, you can vary the Primary and Secondary signal formats, Convert mode, YUV to RGB range (“[YUV<->RGB Range](#)” on page 20), SDI and Analog output type (as applicable), and select timing Reference mode—Free Run, External (genlock), or from the video Input signal.

#### In **Color Options**:

Choose one of the following output modes for 8-, 16-, and 32-bit color projects:

- 8-bit YUV 4:2:2
- 10-bit YUV 4:2:2
- 8-bit RGBA 4:4:4:4
- 10-bit RGB 4:4:4

YUV Matrix Colorspace—choose from:

- 601 SMPTE or 601 CGR (default selection for Standard Definition)
- 709 SMPTE or 709 CGR (default selection for HD)

You can output a Test Pattern selection using the pull-down menu under **Test Options**.

# Appendix A: Performance Specifications

## KONA 3G Specifications

### Video Formats

Standard Def	HD 720	HD 1080	2K
525i 29.97	720p 23.976	1080i 25	2048 x 1080p 23.976
525i 29.97 (WIDE)	720p 24	1080i 29.97	2048 x 1080psf 23.976
625i 25	720p 25	1080i 30	2048 x 1080p 24
625i 25 (WIDE)	720p 29.97	1080p 23.976	2048 x 1080psf 24
480i 29.97	720p 30	1080psf 23.976	2048 x 1556p 14.98
480i 29.97 (WIDE)	720p 50	1080p 24	2048 x 1556p 15
	720p 59.94	1080psf 24	
	720p 60	1080p 25	
		1080psf 25	
		1080p 29.97	
		1080psf 29.97	
		1080p 30	
		1080psf 30	
		1080p 50	
		1080p 59.94	
		1080p 60	

### Up-Conversion

Hardware 10-bit

Aspect conversion modes:

Anamorphic – full-screen

Pillar box 4:3 – results in a 4:3 image in center of screen with black sidebars

Zoom 14:9 – results in a 4:3 image zoomed slightly to fill a 14:9 image with black sidebars

Zoom Letterbox – zooms a 16:9 Letterbox source to full-screen

Zoom Wide – results in a combination of zoom and horizontal stretch to fill a 16:9 screen; this setting can introduce a small aspect ratio change

### Down-Conversion

Hardware 10-bit

Anamorphic – full-screen

Letterbox – 16:9 image with black top and bottom

Crop – image is cropped for full-screen image

### Cross-Conversion

Hardware 10-bit

1080i to 720p

720p to 1080i

### SD to SD Aspect Ratio Conversion

16:9 to 4:3 Letterbox

16:9 to 4:3 Horizontal Crop

4:3 to 16:9 Pillarbox

4:3 to 16:9 Vertical Crop

# A

## KONA LHi Specifications

### Video Formats

Standard Def	HD 720	HD 1080
525i 29.97	720p 23.976	1080i 25
625i 25	720p 24	1080i 29.97
	720p 25	1080i 30
	720p 29.97	1080p 23.976
	720p 30	1080psf 23.976
	720p 50	1080p 24
	720p 59.94	1080psf 24
	720p 60	1080p 25
		1080psf 25
		1080p 29.97
		1080psf 29.97
		1080p50, 59.94, 60
		1080p 30
		1080psf 30

### Up-Conversion

Hardware 10-bit

Aspect conversion modes:

Anamorphic – full-screen

Pillar box 4:3 – results in a 4:3 image in center of screen with black sidebars

Zoom 14:9 – results in a 4:3 image zoomed slightly to fill a 14:9 image with black sidebars

Zoom Letterbox – zooms a 16:9 Letterbox source to full-screen

Zoom Wide – results in a combination of zoom and horizontal stretch to fill a 16:9 screen; this setting can introduce a small aspect ratio change

### Down-Conversion

Hardware 10-bit output, 16/24/32-bit internal processing

Anamorphic – full-screen

Letterbox – image is reduced with black top and bottom added to image area with the aspect ratio preserved

Crop – image is cropped horizontally

### Cross-Conversion

Hardware 10-bit

1080i to 720p, 720p to 1080i

### SD to SD Aspect Ratio Conversion

16:9 to 4:3 Letterbox

16:9 to 4:3 Horizontal Crop

4:3 to 16:9 Pillarbox

4:3 to 16:9 Vertical Crop

## KONA LHe Plus Specifications

### Formats

Standard Def	HD 720	HD 1080
525i 59.94	720p 50	1080i 50
625i 25	720p 59.94	1080i 59.94
	720p 60	1080i 60
		1080PsF 23.98
		1080PsF 24
		1080PsF 25
		1080PsF 29.97
		1080PsF 30
		1080P 23.98
		1080P 24
		1080P 25
		1080P 29.97
		1080P 30

### Down-Conversion

Hardware: 10-bit output, 24-bit internal processing

Anamorphic: full-screen

Letterbox: image is reduced with black top and bottom added to image area with the aspect ratio preserved

Crop: image is cropped horizontally

## Io Express Specifications

### Formats

Standard Def	HD 720	HD 1080
525i 29.97	720p 50	1080i 25
625i 25	720p 59.94	1080i 29.97
	720p 60	1080i 30
		1080PsF 23.98
		1080PsF 24
		1080P 23.98
		1080P 24
		1080P 25
		1080P 29.97
		1080P 30

### Down-Conversion

Hardware, 10-Bit output

Anamorphic: full-screen

Letterbox: image reduced with black top & bottom added to image area with the aspect ratio preserved

Crop: image is cropped to fit new screen size

## Io XT Specifications

### Formats

Standard Def	HD 720	HD 1080
525i 29.97	720P 23.98	1080i 25
625i 25	720p 25	1080i 29.97
	720P 50	1080i 30
	720P 59.94	1080PsF 23.98
	720P 60	1080PsF 24
		1080PsF 25
		1080PsF 29.97
		1080PsF 30
		1080p 23.98
		1080P 24
		1080P 25
		1080P 29.97
		1080P 30
		1080P 50
		1080P 59.94
		1080P 60

### Up-Conversion

Hardware 10-bit

Anamorphic: full-screen

Pillar box 4:3: results in a 4:3 image in center of screen with black sidebars

Zoom 14:9: results in a 4:3 image zoomed slightly to fill a 14:9 image with black side bars

Zoom Letterbox: results in image zoomed to fill full screen

Zoom Wide: results in a combination of zoom and horizontal stretch to fill a 16:9 screen; this setting can introduce a small aspect ratio change

### Down-Conversion

Hardware 10-bit

Anamorphic: full-screen

Letterbox: image is reduced with black top and bottom added to image area with the aspect ratio preserved

Crop: image is cropped to fit new screen size

### Cross-Conversion

Hardware 10-bit

1080i to 720P

720P to 1080i

720P to 1080PsF

### SD to SD Aspect Ratio Conversion

Letterbox: This transforms SD anamorphic material to a letterboxed image.

H Crop: Will produce a horizontally stretched effect on the image; transforms anamorphic SD to full frame

SD Pillarbox: Will produce an image in the center of the screen with black borders on the left and right sides and an anamorphized image in the center

V Crop: Will transform SD letterbox material to an anamorphic image.

## Index

### A

- accept Photoshop image 33
- activation mode
  - After Effects 35
  - Photoshop 28
- After Effects plugins 9
- Aggressive Cache 25
- alpha channel 30
- Alpha Channel - Photoshop 30
- analog output
  - Premiere Pro 21
- audio level
  - Premiere Pro 21

### C

- capture in/out
  - Photoshop 32
- capture window
  - Photoshop 29, 31
- Closed Caption output 25
- color space
  - Photoshop 30
- color standards 35, 36
- Colorspace - Photoshop 30
- crop image
  - Photoshop 30

### E

- editing/playback performance 25

### F

- frame scan 30
- Frame Scan - Photoshop 30

### H

- HDMI Output 25

### I

- image options
  - Photoshop 30
- Installation Overview 1

### K

- KONA options menu
  - Photoshop 29

### O

- overlay 25

### P

- play/record controls

- After Effects 35
- Photoshop 32
- plugin installation defaults 9
- plugins
  - After Effects 35
- preview options
  - After Effects 36
- preview settings
  - After Effects 35
- preview setup
  - Photoshop 33
- primary/secondary formats 20

### S

- SDI outputs 1 & 2
  - Photoshop 30
- set alpha channel 30
- Shared Output 25

- status display

- After Effects 35
  - Photoshop 31

### T

- test pattern 35, 36
- timecode source
  - Machina 18, 31

### V

- Video Input 37
- video input options
  - Premiere Pro 20
- VTR TC (timecode)
  - Photoshop 33

