Quite possibly the Porsche of Macintosh video capture cards, AJA’s new Kona 3 Version 2 promises and delivers a level of quality, flexibility, connectivity, and features to satisfy even the most rigorous broadcast and digital cinema applications at an accessible price. The Kona 3 is at the top of a line of superb video I/O cards from AJA Video for both Windows and Macintosh, one of which will undoubtedly meet the needs of any situation and any I/O configuration.

FEATURES

The Kona 3 is a PCI-E card, designed for the Mac G5 and Mac Pro towers. In terms of input and output, it features SD and HD SDI, and dual link HD SDI digital video and eight channels of 96 KHz 24-bit AES and 16-channel embedded digital audio, RS-422 machine control and analog component video output for monitoring purposes. I/O is handled by an attached snake, or through an optional breakout box, which adds analog line level audio output for monitoring. HD component and SD component/composite analog outputs are 12-bit for extremely high quality conversion.

The most significant features of the Kona 3 Version 2 don’t have to do with I/O. The board is a hardware-based processing powerhouse, taking care of up/down/cross format conversion and scaling (real-time and hardware based), live HD/SD keying, and hardware acceleration for DVCProHD, HDV and Final Cut Pro’s Dynamic RT (real time) Extreme effects. In addition, this newest revision of the Kona 3 adds support for 2K digital cinema resolution files. While only a small percentage of users may need to take advantage of this feature set, its inclusion opens the way for much more affordable digital intermediate and digital cinema playout.

Basically, this feature set allows 2K telecine files to be played out of the Kona at 2K resolution, with full control over output gamma and even the ability to define and choose a custom look-up table; furthermore, on ingest, 2K DPX and 2K QuickTime reference files are generated, facilitating both an easy interface with other 2K products as well as a simple DI pipeline and easy playout of multi-format edited material. The latest version of the software, Version 3.1, is a Universal Binary (requiring QuickTime 7.1, OS X 10.4, and Final Cut Pro 5.1) and adds a limiter functionality to the setup control panel, limiting video levels to broadcast-legal chrominance and luminance values.

While the Kona’s main attractions are hardware, it takes solid control software to make the board such a supremely functional
package. The Kona control application is an easy one-stop shop for settings, conversion, scaling, keying, setup and other functionalities. The control panel provides a graphical representation of signal flow through the card, showing currently selected values, with single screen, tabbed panels to adjust all parameters.

A look at the range of some of the controls will give an idea of the Kona’s extreme flexibility. For example, the Format tab controls the contents, frame size and frame rate of the buffer at the center of the Kona’s processing engine. Supported formats include everything from 525i/29.97 and 625i/25 to 1080p/59.94 and 2K1556/24.

The Kona provides for a primary format, AKA native, and a secondary or converted format, which can be of a same or different resolution. The Kona automatically places the needed up, down, or cross converter in the signal path, and since all conversions are done in hardware, and in real time, the process is transparent, immediate and render-free.

**IN USE**

Because of its design, integrating and using the Kona in a studio is pretty close to transparent as well. Installation in my G5 took only moments—hooking up the well-marked I/O cables took only a few more moments.

AJA was kind enough to provide me with a tiny HD analog component to HD SDI converter (HD-10A) for purposes of this review and for input to the SDI only board. I connected the RS-422 cable to my deck, hooked up a Flying Cow AD/DA converter to handle audio I/O with the Kona’s AES-EBU ports, and set up the analog component output for monitoring on my broadcast quality monitor. After that, all controls resided in the Kona Control and the operation of the Kona board was transparent.

Changes to format, resolution, output, scaling, cropping were only a click away, with the new parameters taking effect instantly. I spent quite a while trying a variety of up and down conversions, and couldn’t spot any image or motion issues.

I tried a number of actions in FCP that would normally require time-consuming rendering, including playing back HDV and DVCPROHD material, and found that, as advertised, the Kona’s hardware scaler takes on the task, making more layers possible without rendering and freeing up the G5’s processor for more real-time effects.

Real-time keying, also made possible by the Kona’s hardware, is nothing short of miraculous. A bug or ID, for example, can be keyed live over the contents of Kona’s frame buffer, or over live video coming into the system, or over a matte, or vice versa, all with no rendering. Along the same lines, I found that the same hardware engine enables timecode burn-in without rendering new media.

One major workflow issue for many people is the ability to preview work being done (other than the editing program) to a broadcast quality monitor. The Kona Control panel has a clever way to deal with this issue: it tells you what process or application is in charge, and has control over the Kona’s output.

The highest priority is Final Cut Pro, followed by other QuickTime applications (After Effects, Motion, combustion, etc.). The second priority is the Mac desktop, with the Kona board creating a second (or third or even fourth) graphic desktop, to which windows can be dragged for preview.

The Control panel allows users to establish how the Kona board behaves when no specific application has control. It can display the last frame from the last application that had control of the board, or pass through a signal that might be present at the boards input, or any of a variety of test signals (bars, multiburst, line sweep and the like), or even a selected graphic file or video black.

In addition, Kona TV, an included utility for playing QuickTime movies directly to the Kona video output, was a quick way to put clips “on-air” without having to launch Final Cut Pro, create a sequence, etc.

**SUMMARY**

It was a pleasure to work the Kona 3 into my studio and workflow. The board’s output was beautiful, flawless and faithful to input, with even scaling and/or conversion. All of this reminded me that AJA’s roots (since 1992) are in making very high quality hardware video converters—AD, DA, scalers—a fact that has had a very positive influence on design philosophy for the Kona card series.

The fact that so much is done in hardware makes the Kona 3 board an incredibly effective addition and advantage for any editing or effects room. The cards become a great supplement to the considerable processing power of today’s 64-bit desktop computers, freeing up CPUs to concentrate on more vital tasks. The control software made using the Kona a breeze, no matter the task.

It’s worth noting that recently Media100 (for their HD systems), Autodesk (for their high-end Fire, Smoke, Flame, Inferno and other systems) and Avid (for their high-end HD system) all chose AJA boards as OEM components. Windows users will find a parallel line of boards developed for their platform. The bottom line is that anyone seeking to revamp, expand, or just build an editing or effects workstation should give the Kona 3 board a significant evaluation. It provides high performance, and it’s cost effective, flexible, easy to use and integrates into any environment.

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