MEET KONA 3, THE HEAVYWEIGHT CHAMPION CAPTURE CARD FOR UNCOMPRESSED SD, HD, 2K AND DUAL LINK HD ON OS X.

Visualize uncompressed video, 8-channel AES and embedded 16-channel audio, up/cross/down HD/SD format conversion, hardware downstream keyer, and HD/SD component analog output—all yours on a state-of-the-art 4-lane PCI Express card. Intrigued? Like other members of the KONA family, KONA 3 is designed for no-holds-barred design and editing—with support for

Apple Final Cut Studio—plus, hardware acceleration for the DVCPROHD and HDV codecs, and Dynamic RT Extreme effects in Final Cut Pro 5. It's a knockout— KONA 3—the new standard bearer for quality, flexibility and future-safe architecture in a QuickTime I/O card.

KONA 3
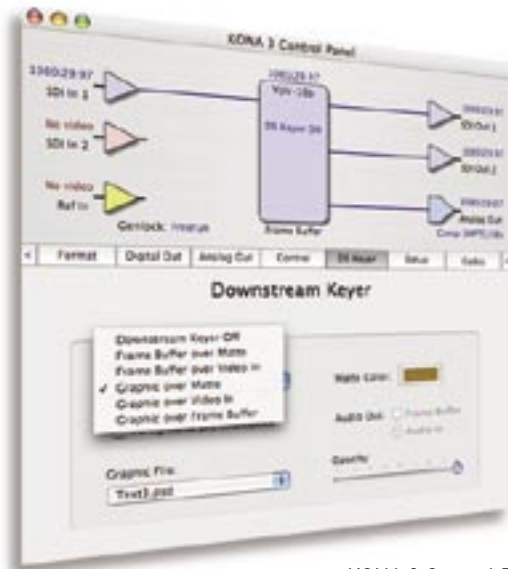
KONA 3 Control Panel

KONA 3 FEATURES:
- SDI, HD-SDI, Dual Link HD-SDI 4:4:4, and 4:4:4:4, 2K
- 4-lane PCI-Express Bus interface
- DVCPROHD hardware acceleration
- HDV hardware acceleration
- Dynamic RT Extreme hardware acceleration
- Broadcast Quality hardware 10-bit up/cross/down-conversion
- 12-bit HD component and SD component/ composite analog output
- 10-bit HD/SD video/key output
- Internal HD/SD live hardware keyer
- 8-channel 24-bit AES and 16-channel embedded audio
- AJA QuickTime™ drivers
- Apple Final Cut Studio™ support
- Adobe After Effects, PhotoShop support... and much more!
- RS-422 machine control
- Cables standard—K3-Box breakout optional
- 3-year warranty

KONA 3 is the ultimate uncompressed capture card for seamless operation with PCI Express (PCIe) Apple G5 Power Macs and Apple Final Cut Pro. Supporting any uncompressed SD or HD format, including Dual Link and 2K, KONA 3 captures and plays back uncompressed 10-bit and 8-bit digital video and 24-bit digital audio, providing unparalleled power and workflow efficiency. KONA 3 also includes a variety of 10-bit broadcast-quality features, such as hardware-based up-, down-, and cross-conversion to and from HD, and adds a live hardware HD/SD keyer for compositing bugs, live clips and other elements over video.

DUAL LINK
KONA 3 supports Dual Link 4:4:4 HD-SDI, a new technology on the Macintosh platform. Commonly known as Sony HDCAM SR or Thompson Viper Format, KONA 3 Dual Link supports full bandwidth 4:4:4 RGB at 10-bits (12-bit capable) for 1080i, 1080p and 720p formats. KONA 3 can also convert between 4:4:4 and 4:2:2 formats for single link HD-SDI output.

2K WORKFLOW
The KONA 3 2K path offers significant cost and labor savings over a tape-based approach to 2K. In a unique development for customers on the Macintosh platform, you can go straight from telecine to disk with 2K media and eliminate the steps of using tape stock and then digitizing those tapes for the nonlinear editor. The added 2K support in KONA 3 v2 will benefit large, full-service facilities as well as boutique facilities entering the 2K "film as digital" landscape.

2K telecine to KONA 3 saves time and steps in the process by directly and simultaneously creating 2K DPX files and 2K QuickTime™ reference movies. Material can be played out at 2K via High Speed Data Link (HSDL), offering further synergy with other 2K products available and already in use.

Additionally, KONA 3 v2 allows 2K files to be viewed on HD 1080 24P-supported video monitors, lowering the price barrier for recording to tape and viewing 2K material. This 1080 HD playout can also be down-converted to SD in realtime, giving the 2K

DI pipeline a powerful solution for multi-format video playout of 2K material.

By generating 2K DPX files during the digitize phase, different parts of the process (delivery of full-resolution media for shots intended for visual effects, for example) can be done much earlier. Offline editing can be done in Final Cut Pro and, because of the flexibility of Final Cut Pro and QuickTime, even a 2K online is possible.

BROADCAST-QUALITY CONVERSION
KONA 3 features full 10-bit, broadcast-quality, motion-adaptive SD to HD up-conversion, HD to HD cross-conversion, HD to SD down-conversion, and automatic HD/SD 2-bit component analog output. That's the equivalent of rolling AJA's stand-alone HD D/A converter, HD to SD down-converter, and our SD to HD up-converter into one convenient, cost-efficient KONA 3 board — at half the price. The quality is identical to AJA's award-winning stand-alone products, and all functionality is hardware-based, making it available full time, all the time, on digitize or playback. KONA 3 will address

your needs with support for hardware-based 1080-to-720 or 720-to-1080 cross-conversion. This desirable feature further streamlines dailies and deliverables creation at true broadcast picture quality in realtime.
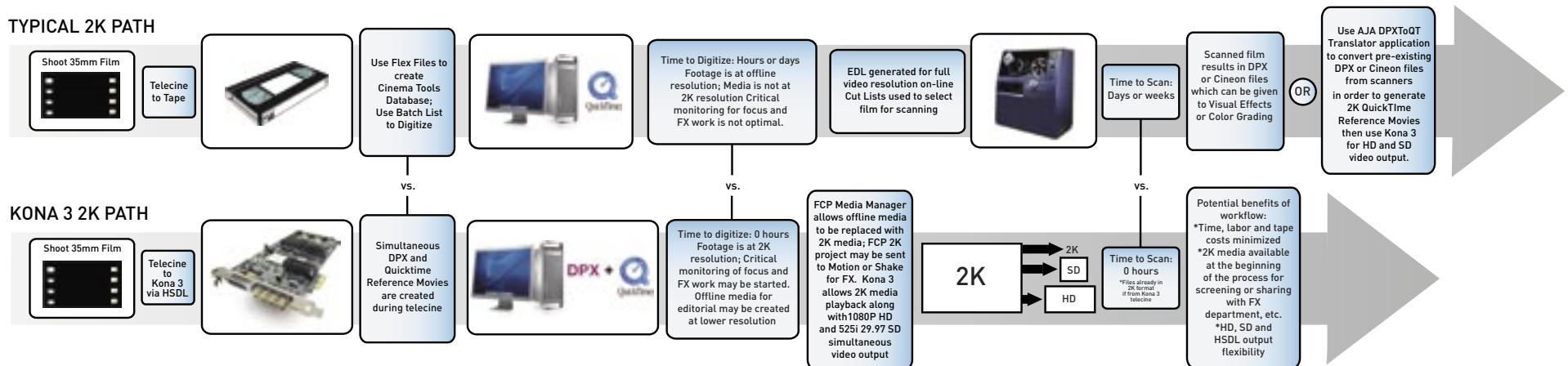
INTERNAL HD/SD LIVE HARDWARE KEYER
Available for the first time on any QuickTime capture card is a powerful hardware keyer that can place graphic files with an alpha channel over video input, a selectable matte or the contents of the card's framebuffer (KONA TV/Final Cut Pro). Even more than that, you can also key video that has an alpha channel over video input or a matte. For example, you could load a QuickTime clip that has an alpha-channel—a flying logo perhaps—into KONA TV and then place it over live video coming into the card.

AUDIO
KONA 3's extensive audio support makes installation a breeze, working with 8-channel 24-bit 96kHz AES audio via XLR (balanced) connections, and 16-channel embedded 24-bit 48kHz embedded SDI/HD-SDI audio. KONA 3 also features high-quality input

TYPICAL 2K PATH

Shoot 35mm Film → Telecine to Tape → [tape] → Use Flex Files to create Cinema Tools Database; Use Batch List to Digitize → [computer] → Time to Digitize: Hours or days Footage is at offline resolution; Media is not at 2K resolution Critical monitoring for focus and FX work is not optimal. → EDL generated for full video resolution on-line Cut Lists used to select film for scanning → [scanner] → Time to Scan: Days or weeks → Scanned film results in DPX or Cineon files which can be given to Visual Effects or Color Grading → OR → Use AJA DPXToQT Translator application to convert pre-existing DPX or Cineon files from scanners in order to generate 2K QuickTIme Reference Movies then use Kona 3 for HD and SD video output.

vs.   vs.   vs.

KONA 3 2K PATH

Shoot 35mm Film → Telecine to Kona 3 via HSDL → [card] → Simultaneous DPX and Quicktime Reference Movies are created during telecine → [computer] DPX + Q → Time to digitize: 0 hours Footage is at 2K resolution; Critical monitoring of focus and FX work may be started. Offline media for editorial may be created at lower resolution → FCP Media Manager allows offline media to be replaced with 2K media; FCP 2K project may be sent to Motion or Shake for FX. Kona 3 allows 2K media playback along with1080P HD and 525i 29.97 SD simultaneous video output → 2K → 2K / SD / HD → Time to Scan: 0 hours *Files already in 2K format if from Kona 3 telecine → Potential benefits of workflow: *Time, labor and tape costs minimized *2K media available at the beginning of the process for screening or sharing with FX department, etc. *HD, SD and HSDL output flexibility

sample-rate conversion on AES inputs, which eliminates the need for audio source synchronization.

CONNECTIVITY

Looking for unsurpassed cable connectivity? Well look no further, because when you plug in KONA 3's breakout cables, they automatically configure. For SDI video, the card features two HD/SD inputs and two outputs for Single or Dual Link, one connection for Genlock input, and three for HD/SD analog video out. Also included is a 9-pin D connector for RS-422 machine control. The SDI inputs and outputs use a separate cable with special mini-BNC connectors on one end and full-sized BNCs on the other for ease of connection and superior reliability.

The K3-Box for KONA 3 simplifies interfacing by offering a 19-inch, 1RU rack-mountable breakout box that attaches to the KONA 3 with just two cables. This option offers all the same inputs and outputs as the standard breakout cable, and can be easily rack-mounted or placed on top of a broadcast monitor or editing desk. Additional functionality includes simultaneous XLR and BNC AES output, 2-channel RCA analog audio monitoring, and looping BNC Genlock reference connectors. If you're using a digital Betacam deck, HDCAM, DVCPROHD, D5, D9, or even an HDCAM SR, you'll have the proper connections.

KONA DESKTOP

Most users run multiple applications to create their video projects. So in addition to Final Cut Pro support, the KONA Desktop feature allows broadcast design elements to be viewed with the proper aspect ratio and color depth on a broadcast monitor via the KONA card. KONA Desktop supports Adobe After Effects, Adobe Photoshop, Apple Motion, Apple Shake, Discreet Combustion and more.

KONA 3 HARDWARE ACCELERATION

Final Cut Pro users will love our DVCPROHD, HDV and Apple Dynamic RT Extreme hardware acceleration, developed in close cooperation with Apple and available exclusively on high-end KONA cards. KONA 3 hardware takes a portion of the codec processing load off the CPU, allowing more RealTime effects in Final Cut Pro when outputting. KONA 3 also has hardware support when capturing. This brings amazing RealTime HD production power to the desktop. With KONA 3, any source can be captured using the DVCPROHD codec—giving you online HD quality at remarkably low data rates, allowing the internal PowerMac SATA storage to be used for HD capture, playback, and RT effects. Of course, you'll obtain still better performance and more RT when using a fast SCSI or Fibre array, but this feature allows HD to be used where only SD would have been considered due to budget or time constraints. KONA 3 even supports the DVCPROHD and HDV codecs with up or down-conversion—allowing projects to be down-converted to SD, or even up-converted for DVCPROHD capture.

HOW DOES KONA ACCELERATE DVCPROHD, HDV, AND APPLE'S DYNAMIC RT?

Because KONA's precision hardware does part of the work, the G5 has more time available to process RT effects. This means more RT-effects power, and more RT streams. Most broadcast codecs, including DVCPROHD and HDV, use a two-step process. First the video is scaled to a lower horizontal pixel count, and then the video is compressed. This is done because the slightly scaled video results in a favorable trade-off between resolution and codec efficiency. KONA 3's hardware not only dramatically speeds up the scaling part of the job, but it's also done with full 10-bit broadcast quality.
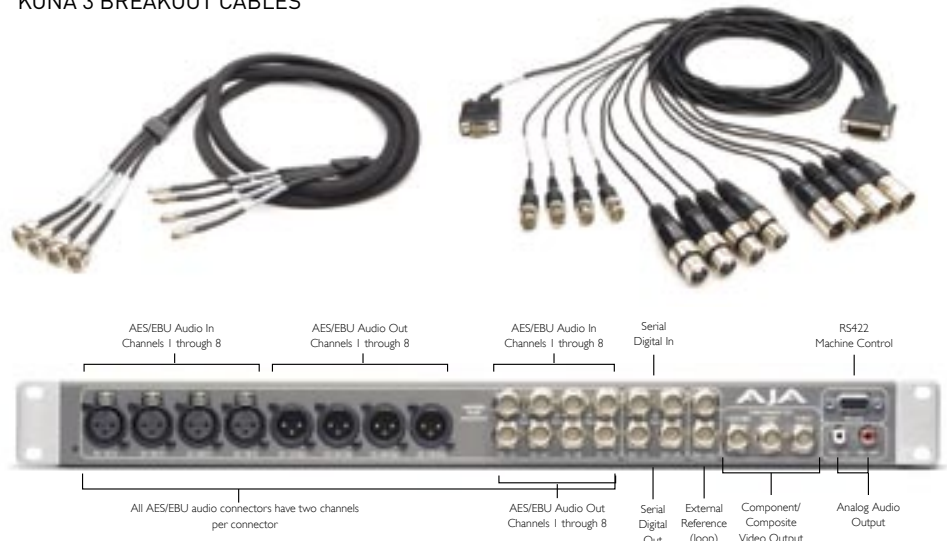
When using the Final Cut Pro HDV codec, the KONA 3 hardware acceleration allows instantaneous realtime playback for both monitoring and recording. Even KONA's downconverter works in realtime with HDV, allowing SD monitoring, dubs, or mastering. This KONA 3 functionality makes HDV a fully professional solution.

The Panasonic DVCPROHD format takes advantage of KONA hardware as well. KONA's precision hardware allows capture and playback of HD-SDI video to/from the DVCPROHD codec at a quality level virtually indistinguishable from native FireWire, while freeing up valuable RT processing power.

For Final Cut Pro 5's Dynamic RT feature, KONA's hardware is used to offload the video scaling as the "Playback Video Quality" dynamically adjusts. This allows more playback power—and because KONA handles it seamlessly, the Dynamic RT you see on the Mac monitor is the same as that shown on your professional broadcast monitor.
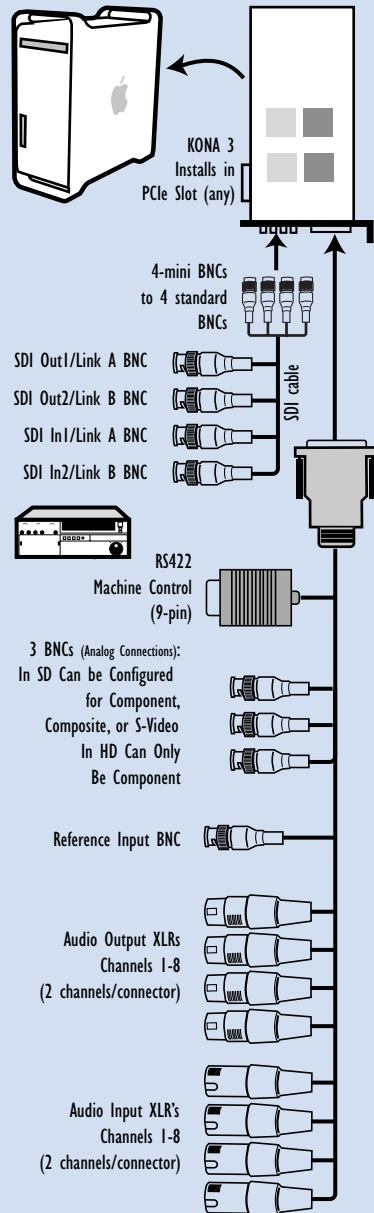
All of this adds up to the most reliable, feature rich, and highest-performance card available for OS X and Final Cut Pro. KONA 3 represents the next generation of technology.

KONA 3 BREAKOUT CABLES

K3-BOX FOR KONA 3

KONA 3 Standard XLR Breakout Cable

KONA³

KONA 3 Installs in PCIe Slot (any)

4-mini BNCs to 4 standard BNCs

SDI Out1/Link A BNC
SDI Out2/Link B BNC
SDI In1/Link A BNC
SDI In2/Link B BNC

SDI cable

RS422 Machine Control (9-pin)

3 BNCs (Analog Connections):
In SD Can be Configured for Component, Composite, or S-Video
In HD Can Only Be Component

Reference Input BNC

Audio Output XLRs Channels 1-8 (2 channels/connector)

Audio Input XLR's Channels 1-8 (2 channels/connector)

KONA 3 SPECIFICATIONS

Video Input
HD-SDI/SDI, SMPTE-259/292/296
Dual-link HD 4:4:4, 4:4:4:4
2K HSDL
Dual-rate
Video Formats
525i 29.97
625i 25
720p 50
720p 59.94
720p 60
1080i 25
1080i 29.97
1080i 50
1080psf 23.98
1080psf 24
1080p 50
1080p 59.94
1080p 60

Video Output
Digital:
    SD-SDI, SMPTE, 259M, 10-bits, BNC
    HD-SDI SMPTE, 292/296, 10-bits, BNC
    Dual-link HD 4:4:4 2K HSDL
Analog:
    SD and HD Output, 12-bits, BNC
    HD: YPbPr, RGB
    SD: YPbPr, RGB (component mode)
    Composite/YC (composite mode)

2K Formats Supported
2048 x 1080p 23.976
2048 x 1080psf 23.976
2048 x 1080p 24
2048 x 1080psf 24
2048 x 1556psf 14.98
2048 x 1556psf 15
2048 x 1556psf 23.98

Downstream Keyer:
Will output graphics with alpha channel over video, matte or framebuffer, or framebuffer content over video or matte

Audio
24-bit embedded HD audio, 16-CH
20-bit SD embedded audio
24-bit AES audio, 8-CH

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 blackside 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

Reference Input
Analog Color Black (1V) or Composite Sync (2 or 4V) Non terminating, Looping, 75 ohm

Machine Control
RS-422, Sony 9-pin protocol

Incredible 3 Year Warranty
AJA Video warrants that KONA products will be free from defects in materials and workmanship for a period of three years from the date of purchase.

About AJA Video Systems, Inc.
Since 1993, AJA Video has been a leading manufacturer of high-quality and cost-effective digital video interface, conversion and Desktop solutions supporting the professional broadcast and post-production markets.

With headquarters in Grass Valley, California, AJA maintains an extensive sales channel of dealers and systems integrators around the world. For further information, please see our website www.aja.com.

AS PASSIONATE AS YOU ARE

AJA
VIDEO SYSTEMS