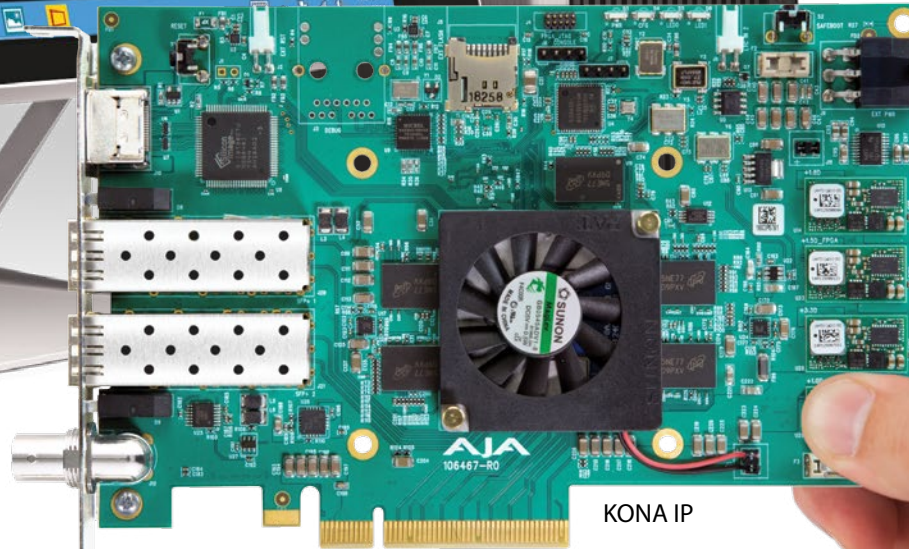


# AJA Developer Program



KONA IP



# AJA Developer Program



AJA technology is at the core of many great products. Superior quality and a straightforward development kit make AJA's Developer products easy to integrate into any Windows, Mac or Linux environment.

## Working Together

**AJA's Developer program allows partner companies to incorporate AJA products into their systems. By utilizing existing, proven video I/O devices, partners leverage AJA's expertise to develop and support these technologies, saving money and getting their integrated products to market more quickly.**

AJA has a long history of building high quality, reliable video devices for the video industry. The AJA Developer Program provides you with access to that pedigree for integration into your own products.

Many of AJA's retail products are available for developer use. Whether you need to incorporate conversion technology into a prebuilt package using one of our full range of Mini-Converters, or integrate a KONA video I/O card into a custom setup, you have access to all the power and quality of AJA.

For more specific applications, the Corvid family of products uses the same technology as the retail cards but provides alternate form factors that allow you to further customize your configuration.

With capabilities starting from single Channel I/O to multiple, simultaneous I/O stream, direct optical fiber integration and high bandwidth applications, there's a Developer product to fit every need and every price range.

AJA's comprehensive SDK and development tools will help you integrate into any environment with support for Windows®, OS X and Linux®. As a developer partner you will have direct access to AJA's technical support team, which is known throughout the industry for fast and effective response.



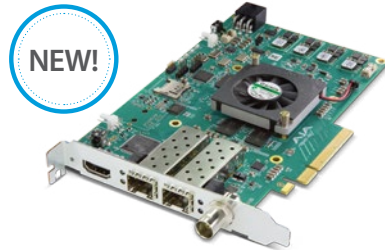


# AJA Developer Program

## Products at a Glance

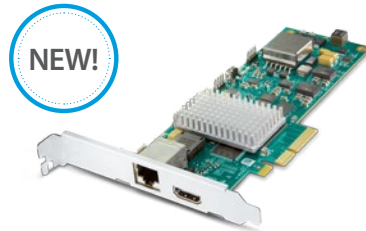
### KONA IP

8-lane PCIe 2.0 I/O pipeline for IP workflows to 10 GigE supporting uncompressed video up to 1080p at 50/60 fps



### Corvid HB-R

HDBaseT integration of video up to 4K/60p, 8-Channel embedded audio, power and RS-232 control plus HDMI output on a 4-lane PCIe 2.0 card



### Corvid HEVC

4K and Multi-Channel, 8-lane PCIe 2.0 HEVC encoding card supporting up to 4K 60p video input as well as file to file encoding



### KONA 4

Powerful High Frame Rate capabilities up to 4K 50/60p and software integration for editorial, graphics and live streaming



### Corvid 88

8-lane PCIe 2.0 card for 8/10-bit YCbCr or 12-bit RGB with simultaneous 4K in and out or 8 independent mixed channel I/O



New Fanless  
Corvid 88

### Corvid 44 & 44 BNC

8-lane PCIe 2.0 for 8/10-bit YCbCr or 12-bit RGB with 4 independent mixed channel I/O or single 4K in/out



New Fanless  
Corvid 44

### Corvid 24

4-lane PCIe 2.0 8/10-bit with a single 4K or 4 independent\* channels I/O digital 3G-SDI I/O



### Corvid 22

4-lane PCIe 2.0 for 8/10-bit uncompressed w/2 independent channels I/O digital 3G-SDI I/O



# AJA Developer Program

## Products at a Glance

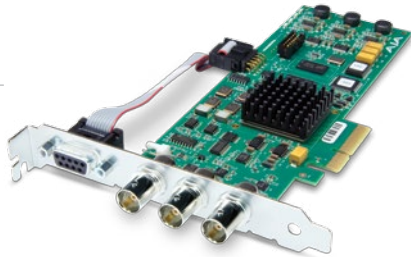
### Corvid 3G Fiber

4-lane PCIe 2.0 for 8/10-bit uncompressed digital 3G-SDI over Fiber I/O



### Corvid 3G

4-lane PCIe 2.0 for 8/10-bit uncompressed digital 3G, HD, SD I/O



### Corvid

4-lane PCIe 2.0 for 8/10-bit uncompressed digital SD, HD I/O



### Corvid Ultra

External 2RU chassis with PCIe 2.0 for 4K, stereoscopic, high frame rate and other high bandwidth applications



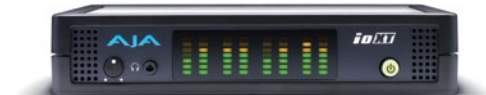
### Io 4K

Harness Thunderbolt™ 2 power in 4K, HD and SD I/O



### Io XT

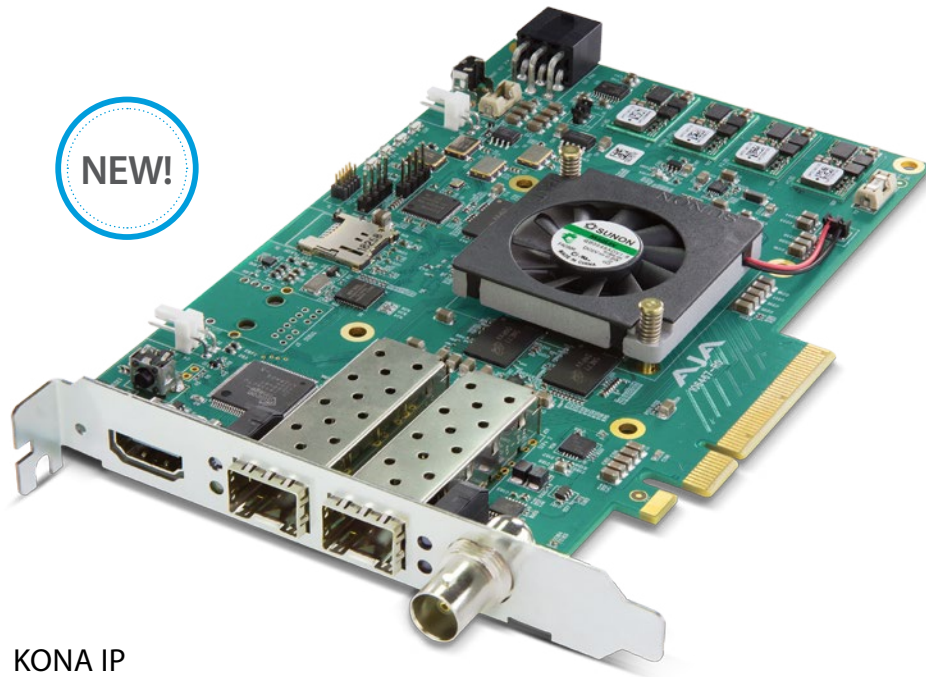
Thunderbolt™ power for professional I/O



# AJA Developer Program

## KONA IP

Simple, Compatible Multi-Channel I/O for IP Pipelines to 10 GigE



### KONA IP

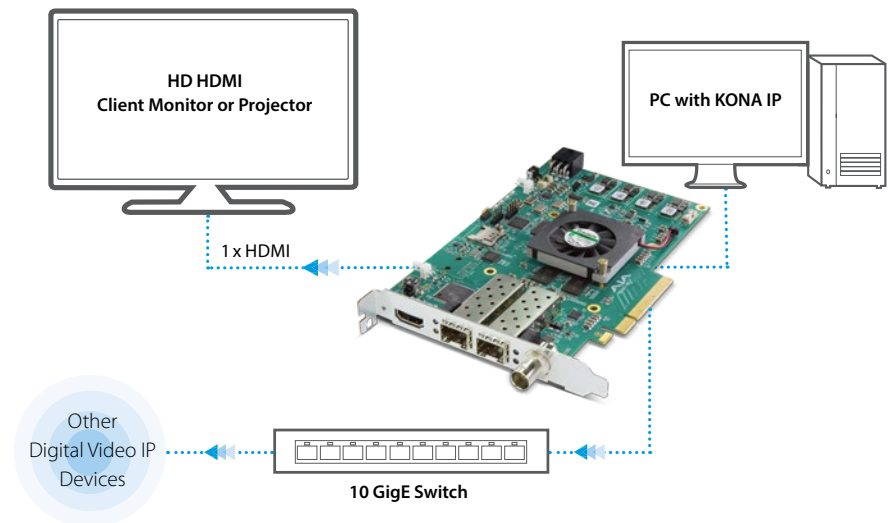
KONA IP offers users a powerful 8-lane PCIe 2.0 I/O card with simple, flexible IP connectivity. Two SFP cages provide multi-channel HD support for easy routing of video and audio over IP networks up to and including 10 GigE. KONA IP is designed as a flexible platform that supports today's SMPTE 2022-6 uncompressed IP video, including uncompressed 3Gbps 1080p up to 50/60 fps. This effectively provides all the video connectivity you are used to with SDI, and via future firmware updates and codec package offerings KONA IP will also support compressed codecs and advanced IP protocols.

HDMI output ensures you can always monitor your projects locally, and KONA IP is transparent to your NLE, compositing and streaming applications, so your transition to IP couldn't be simpler.

Only **\$2,495** US MSRP\*

### Features at a glance

- Supports uncompressed HD ingest and output up to 3Gbps at up to 50/60 fps
- 2 x 10 GigE SFP connections for multi-channel input and/or output
- Supports SMPTE 2022-6 video and audio for transport over IP
- Mac, Windows and Linux support via AJA's Developer SDK
- 16-Channel 48 kHz 24-bit embedded audio
- HDMI 1.4 output for local monitoring with 8-Channel audio
- Downstream keyer for graphics or framebuffer key
- 8-lane PCIe 2.0 desktop I/O card
- Supports 444 and 422 workflows
- Reference / LTC Input



# AJA Developer Program

## KONA IP Tech Specs

### Video Formats

---

- (HD) 1080p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
- (HD) 1080PsF 23.98, 24, 25, 29.97, 30
- (HD) 1080i 25, 29.97
- (HD) 720P 50, 59.94, 60
- (SD) 625i 25
- (SD) 525i 29.97

### Media Transport Interface for 2022-6

---

- 2 x SFP+ Cages - SFPs not included.
- Recommended SFP modules: Finisar's FTLX1471D3BCL and Avago AFBR-709SMZ

### Video Output Digital

---

- HDMI v1.4
- 30/36 bits/pixel, RGB or YUV, 2.25 Gbps
- UltraHD with HFR support up to 60p 4:2:0 8-bit
- 2K/HD/SD

### Audio Input Digital

---

- 16-Channel SDI embedded audio, 24-bit per channel, 48 kHz synchronous

### Audio Output Digital

---

- 16-Channel SDI embedded audio, 24-bit per channel, 48 kHz sample rate, synchronous
- 8-Channel HDMI embedded audio, 48 kHz sample rate, synchronous

### Downstream Keyer

---

- Supports graphics with alpha channel over video, matte or framebuffer, or framebuffer content over incoming video or matte

### Reference and LTC I/O

---

- 1 x BNC assignable to reference video or LTC input

### Reference

---

- Analog color black (1V) or composite sync (2 or 4V)
- Nonterminating

### User Interface

---

- 8-lane PCIe 2.0

### Size (w x d x h)

---

- 0.75" x 8.25" x 5" (19.05mm x 209.55mm x 127mm)

### Weight

---

- 0.7 lb (0.4 kg)

### Power

---

- 25W typical, 27W maximum

### Environment

---

- Safe Operating Temperature Range: 0 to 40C (32F to 104F)
- Operating Altitude: <3,000 meters (<10,000 feet)

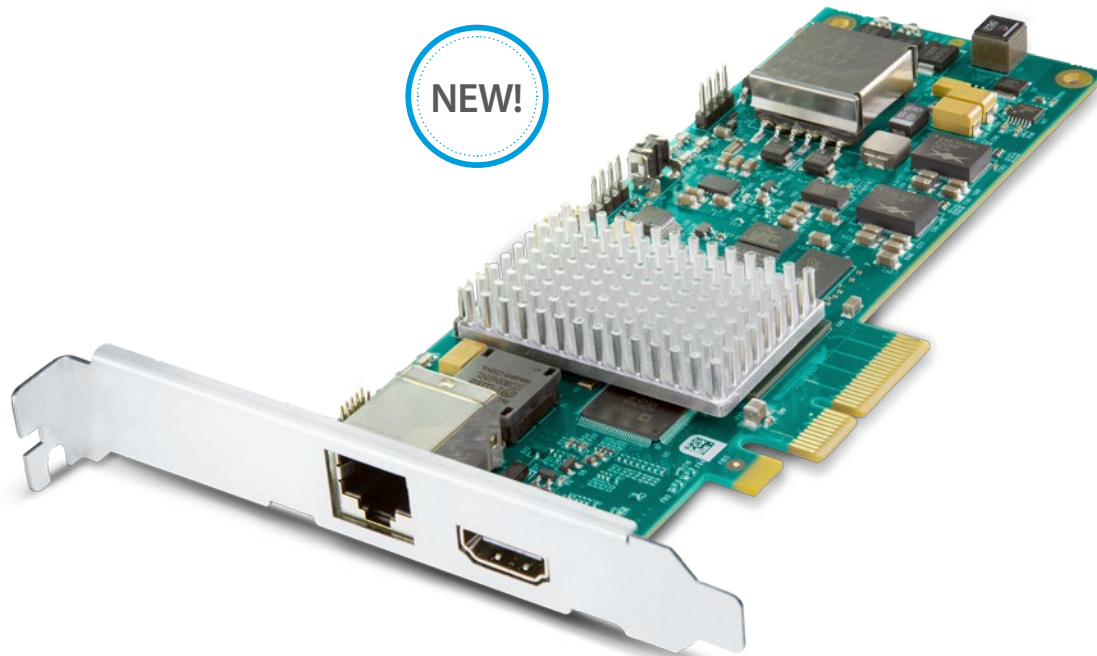
[Click here](#)

For full product specifications visit [www.aja.com/en/products/kona-ip#techspecs](http://www.aja.com/en/products/kona-ip#techspecs)

# AJA Developer Program

## Corvid HB-R

4-lane PCIe 2.0 Card for HDBaseT Integration of UltraHD/HD/SD Video, Audio, Power, and RS-232 Control



### Features at a glance

- HDBaseT receiver
- Video, audio, RS-232, and power over a single Cat 5e/6 cable
- Supports up to 4K/60p 8-bit 4:2:0 video
- 8-Channel HDMI embedded audio I/O
- HDMI 1.4b full-time looped output
- Supports 2-Channel discrete mic audio when used with RovoCam
- Bidirectional VISCA/RS-232 control over HDBaseT
- Up to 10W power over HDBaseT
- 4-lane PCIe 2.0 Low Profile card
- Supports Linux V4L2 drivers
- 3 year warranty

### Corvid HB-R

Expand your application's reach with HDBaseT and the Corvid HB-R. Using a single Cat 5e/6 cable as input, the Corvid HB-R receives up to 4K/60p video (8-bit 4:2:0) and 8-Channel embedded audio.

It also delivers bidirectional VISCA/RS-232 control plus power up to 10W, and Corvid HB-R provides full-time looped HDMI 1.4b output of the signal received via the HDBaseT input.

These features also make the Corvid HB-R the perfect desktop and server companion to AJA's RovoCam, the UltraHD HDBaseT camera.

Only **\$995** US MSRP\*



# AJA Developer Program

## Corvid HB-R Tech Specs

### Video Formats

---

- (4K) 4096 x 2160p 23.98, 24, 25, 29.97, 30
- (4K) 4096 x 2160p 50, 59.94, 60 (8-bit 4:2:0)
- (UltraHD) 3840 x 2160p 23.98, 24, 25, 29.97, 30
- (UltraHD) 3840 x 2160p 50, 59.94, 60 (8-bit 4:2:0)
- (2K) 2048 x 1080p 23.98, 24, 25, 29.97, 30
- (2K) 2048 x 1080p 50, 59.94, 60
- (2K) 2048 x 1080PsF 23.98, 24, 25, 29.97, 30
- (HD) 1080p 23.98, 24, 25, 29.97, 30
- (HD) 1080p 50, 59.94, 60
- (HD) 1080PsF 23.98, 24, 25, 29.97, 30
- (HD) 1080i 50, 59.94, 60
- (HD) 720p 50, 59.94, 60
- (SD) 525i 29.97
- (SD) 625i 25

### Video Input Digital

---

- HDMI v1.4b over HDBaseT
  - Video over HDBaseT
  - 24/30/36 bits/pixel, RGB or YUV
  - 300 MHz pixel clock maximum
  - 3.4 Gb TMDS data rate maximum per lane providing an aggregate 10.2Gbps total bandwidth
  - UltraHD/2K/HD/SD
  - No support for HDCP encrypted video

### Video Output Digital

---

- HDMI 1.4b Output
- Active looped output of HDMI received on HDBaseT input
- No EDID interface
- No support for HDCP encrypted video
- Video out electronic copy of video negotiated at CORVID-HB-R HDMI receiver input

### Audio Input Digital

---

- Audio over HDBaseT
  - 8-Channels embedded audio
  - 2-Channels discrete RovoCam microphone audio

### Audio Output Digital

---

- 8-Channel HDMI embedded 48 kHz 24-bit

### Power Support

---

- Power over HDBaseT
- Support for up to 10W output maximum via IEEE 802.3AF interface

### RS-232

---

- Serial port over HDBaseT
- 115200 Baud interface intended for VISCA camera control

### USB

---

- USB over HDBaseT
- USB Host intended for camera firmware updates

### Interface

---

- 4-lane PCIe 2.0

### Size (w x d x h)

---

- Conforms to PCIe Card Electromechanical Specification Rev 1.0A Low Profile Add-in Card
- Without bracket: 6.7" x 2.7" x 0.7" (170mm x 69mm x 18mm), bracket is standard full height PCIe card size

### Power

---

- 10-20V, 10W typical for card only, 16W typical when powering RovoCam, 18W max

### Environment

---

- Safe Operating Temperature Range: 0 to 35C (32F to 95F)
- Operating Altitude: <3,000 meters (<10,000 feet)

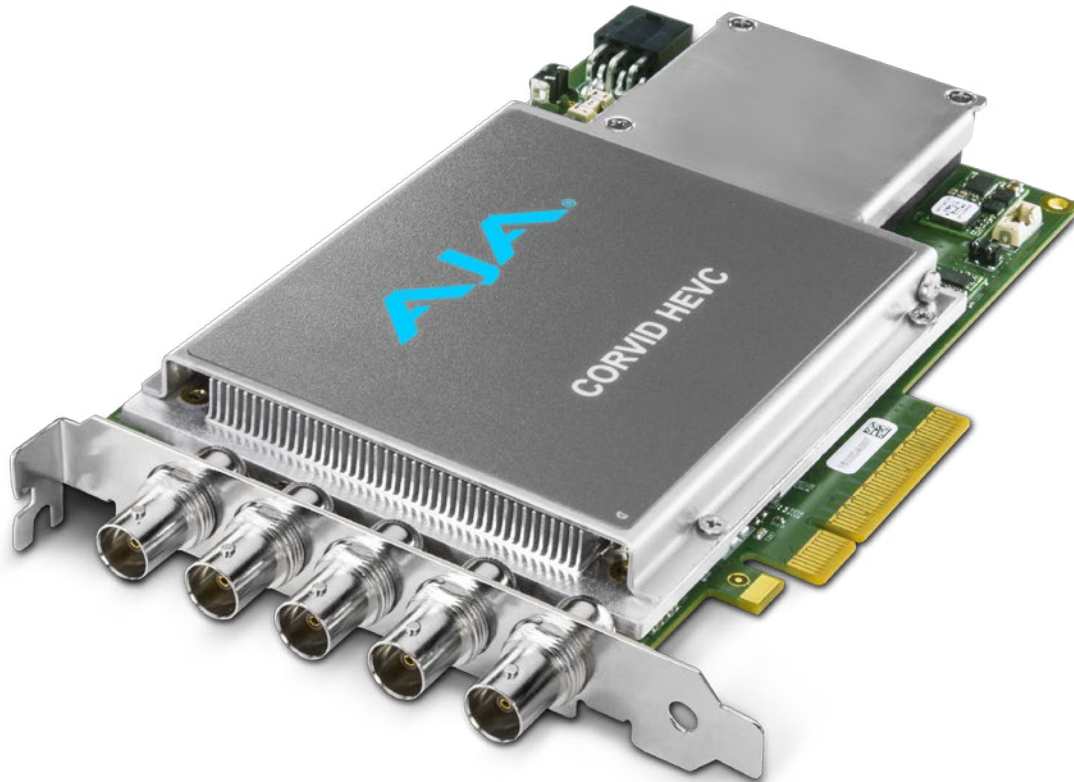
For full product specifications visit [www.aja.com/en/products/developer/corvid-hb-r#techspecs](http://www.aja.com/en/products/developer/corvid-hb-r#techspecs)



# AJA Developer Program

## Corvid HEVC

### 4K and Multi-Channel HEVC Encoding



## Corvid HEVC

Corvid HEVC is an 8-lane PCIe 2.0 video encoder card providing realtime, low latency HEVC encoding at 4K, 1080p HD and lower resolutions. Development partners can use AJA's powerful SDK to integrate Corvid HEVC directly into their Windows and Linux applications using a flexible API for a variety of use cases.

## Workflows

- 4K/UltraHD Encoding
- Multi-Channel Independent Encoding
- File to file Encoding

## Features at a Glance

- Realtime 4K/UltraHD/HD/SD HEVC hardware based encoding
- 8-lane PCIe 2.0 full height card
- Low power consumption
- Supports HEVC Main and Main10 profiles
- Supports 4:2:0 and 4:2:2 at 8- or 10-bits
- Supports bit rates for streaming and contribution quality
- Supported HEVC streams:
  - Single 4K/UltraHD stream up to 60 fps
  - As many as 4 streams at 1080p HD up to 60 fps
- 4 x 3G-SDI inputs
- 1 x LTC input
- 16-Channel embedded audio support per stream
- ANC data support
- Supports file to file encoding
- Built on AJA's powerful cross platform NTV2 SDK for Windows and Linux
- AJA's extensive Developer Program partner support

# AJA Developer Program

## Corvid HEVC Tech Specs

### Video Formats

---

#### 4K (Quadrant or Sample Interleave)

- (4K) 4096 x 2160p 23.98, 24, 25, 29.97, 30, 48 A/B, 50 A/B, 59.94 A/B
- (UltraHD) 3840 x 2160p 23.98, 24, 25, 29.97, 30, 48 A/B, 50 A/B, 59.94 A/B

#### 2K (Cropped to 1920 before encoder)

- (2K) 2048 x 1080p 23.98, 24, 25, 29.97, 30, 48 A/B, 50 A/B, 59.94 A/B, 60 A/B
- (2K) 2048 x 1080PsF 23.98, 24, 25, 29.97, 30

#### HD

- (HD) 1080p 23.98, 24, 25, 29.97, 30, 50 A/B, 59.94 A/B, 60 A/B
- (HD) 1080PsF 23.98, 24, 25, 29.97, 30
- (HD) 1080i 25, 29.97, 30
- (HD) 720p 50, 50.94, 60

#### SD

- (SD) 625i 25
- (SD) 525i 29.97

*NOTE: These formats are recognized by the SDI inputs of Corvid HEVC*

### File Formats

---

In addition to the above video formats, these formats are supported for file based encoding but are not recognized as SDI inputs

- (HD) 720p 24, 25, 29.97
- (SD) 625p 50
- (SD) 525i 30
- (SD) 525p 59.94, 60

### Video Input Digital

---

- 4 x 3G-SDI BNC

### Audio Input Digital

---

- 16-Channel 24-bit SDI embedded, 48 kHz synchronous

### Compression

---

- Type
  - HEVC
- HEVC Profile
  - Main/Main 10
- HEVC Tier
  - Main/High
- HEVC Level
  - 1.0/2.0/2.1/3.0/3.1/4.0/4.1/5.0/5.1
- Bitrate 4K Format
  - 3 Mbps - 128 Mbps
- Bit Depth
  - 8 or 10-bit
- Chroma Sampling
  - 4:2:2/4:2:0

### Bit Rate Control

---

- CBR/VBR

### Size (w x d x h)

---

- 0.875" x 7.5" x 5" (22.23mm x 190.5mm x 127mm)

### Power

---

- Requires either PCIe bus power via graphics slot or ATX 6-pin from computer power supply

### Environment

---

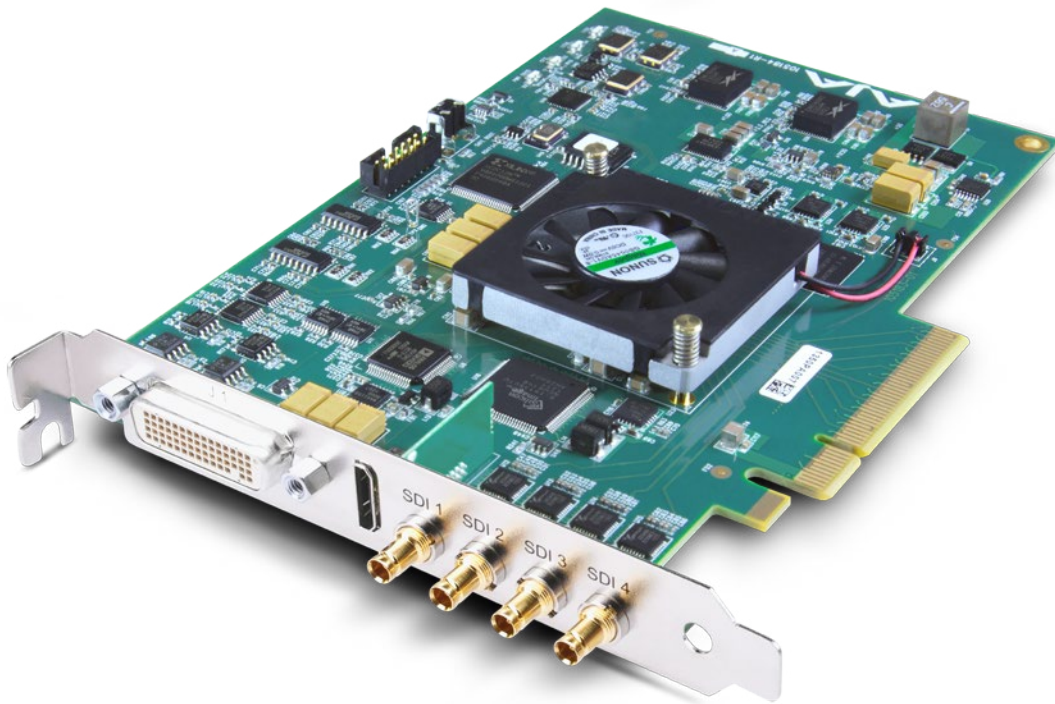
- Operating Temperature: 0 to 40 degrees C (32 to 104 degrees F)
- Operating Relative Humidity: 10-90% noncondensing
- Operating Altitude: <3,000 meters (<10,000 feet)
- Safe Storage Temperature (Power OFF): -40 to 70 degrees C (-40 to 158 degrees F)

For full product specifications visit [www.aja.com/en/products/developer/corvid-hevc#techspecs](http://www.aja.com/en/products/developer/corvid-hevc#techspecs)

# AJA Developer Program

## KONA 4

**Powerful High Frame Rate capabilities up to 4K 50/60p and software integration for editorial, graphics and live streaming**



### Features at a Glance

- Supports 4K and UltraHD ingest and output at frame rates up to 60p
- Supports AJA Raw capture at 4K up to 120fps via AJA Control Room
- Realtime up, down, cross-conversion with pristine 10-bit quality
- Mac, Windows and Linux support via AJA's Developer SDK
- 10-bit 4K/UltraHD and 2K/Dual Link/HD/SD input and output
- HDMI 1.4 output with additional support for UltraHD 50/60p 4:2:0
- 8-Ch AES/EBU, 8-Ch embedded HDMI, and 16-Ch embedded SDI digital audio I/O
- Supports 444 and 422 workflows
- Extend external connectivity with K3G-BOX breakout box option

## KONA 4

KONA 4 offers users a single, powerful 8-lane PCIe 2.0 video and audio desktop I/O card with unparalleled features for handling everything from SD to HD, 2K and 4K with full 10-bit 4:2:2 and 4:4:4 color spaces for fantastic image clarity. The futureproof architecture means you can easily work with HD and 2K now and switch to working at 4K resolution when the need arises, even at frame rates up to 60 fps, without the requirement for new hardware. KONA 4 has the power for the work you do today and into the future.

**Only \$1,995 US MSRP\***

# AJA Developer Program

## KONA 4 Tech Specs

### Video Formats

- (4K) 4096 x 2160p 23.98, 24, 25, 50, 59.94, 60
- (4K) 4096 x 2160PsF 23.98, 24, 25
- (UltraHD) 3840 x 2160p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
- (UltraHD) 3840 x 2160PsF 23.98, 24, 25
- (2K) 2048 x 1556p 15, 14.98
- (2K) 2048 x 1556PsF 15, 23.98, 24
- (2K) 2048 x 1080p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
- (2K) 2048 x 1080PsF 23.98, 24, 25
- (HD) 1080i 25, 29.97, 30
- (HD) 1080PsF 23.98, 24, 25, 29.97, 30
- (HD) 1080p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
- (HD) 720p 23.98\*, 24\*, 25\*, 29.97\*, 30\*, 50, 59.94, 60
- (SD) 625i 25
- (SD) 525i 23.98\*, 29.97

\*These formats are dependent on specific software functionality and are not normal 'over-the-wire' formats.

### Video Input Digital

- 3G-SDI, SMPTE-259/292/296/424/425, 8-bit, 10-bit and 12-bit\*
- Single Link 4:2:2 or 4:4:4 (1 x BNC)
- Dual Link HD 4:4:4 (2 x BNC)
- 2K HSDL (High Speed Data Link) 4:4:4, (2 x BNC)
- 4K/UltraHD 4:2:2 and 4:4:4 up to 50/60 fps
- 1D LUT support

\*Bit depth support is application dependent. Check with your software manufacturer for compatibility.

### Video Output Digital

- 3G-SDI, SMPTE-259/292/296/424, 8-bit, 10-bit and 12-bit\*
- Single Link 4:2:2 or 4:4:4 (1 x BNC)
- Dual Link HD 4:4:4, (2 x BNC)
- 2K HSDL (High Speed Data Link) 4:4:4, (2 x BNC)
- 4K/UltraHD 4:2:2 and 4:4:4 up to 50/60 fps
- HDMI 2.0 (UHD 50/60p 8-bit 4:2:0)

\*Bit depth support is application dependent. Check with your software manufacturer for compatibility.

### Video Output Analog

- Composite/S-Video (Y/C) (1 x BNC/2 x BNC+adapter)
- NTSC, NTSCJ, PAL
- Component (3 x BNC)
- HD: YPbPr, RGB
- SD: YPbPr, RGB (component mode)
- SMPTE/EBU N10, Betacam 525 line, Betacam 525J, RGB
- 12-bit D/A, 8x oversampling
- +/- .2 dB to 5.0 MHz Y frequency response
- +/- .2 dB to 1 MHz C frequency response
- 5% 2T pulse response
- <1% Diff Phase
- <1% Diff Gain
- <1% ns Y/C delay inequity

### Audio Input Digital

- 16-Channel, 24-bit SDI embedded audio, 48 kHz sample rate, synchronous
- 8-Channel, 24-bit AES/EBU audio, 48 kHz sample rate, synchronous or nonsynchronous, internal sample rate conversion (via 4 x BNC on breakout cable)
- 16-Channel, 24-bit AES/EBU audio, 48 kHz sample rate, synchronous (via 8 x BNC on optional K3G-Box)

### Audio Output Digital

- 16-Channel, 24-bit SDI embedded audio, 48 kHz sample rate, synchronous
- 8-Channel, 24-bit HDMI embedded audio, 48 kHz sample rate, synchronous
- 8-Channel, 24-bit AES/EBU audio, 48 kHz sample rate, synchronous or nonsynchronous, internal sample rate conversion (via 4 x BNC on breakout cable)
- 16-Channel, 24-bit AES/EBU audio, 48 kHz sample rate, synchronous (via 8 x BNC on optional K3G-Box)

### Downstream Keyer

- Supports graphics with alpha channel over video, matte or framebuffer, or framebuffer content over incoming video or matte

### 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

### Timecode

- LTC timecode input and output (via 1 x BNC each)

### Machine Control

- RS-422, Sony 9-pin protocol (via breakout cable or optional K3G-Box)
- 9-pin D-connector pinout is as follows:

1	GND
2	RX-
3	TX+
4	GND
5	No Connection
6	GND

7	RX+
8	TX-
9	GND
Shell	GND

### Reference Input

- Analog color black (1V) or composite sync (2 or 4V)
- Looping
- 75 ohm on optional K3G-Box, terminated on supplied breakout cable

[Click here](#)

For full product specifications visit [www.aja.com/en/products/kona-4#techspecs](http://www.aja.com/en/products/kona-4#techspecs)





# AJA Developer Program

## KONA 4 Tech Specs

### Size

---

• 0.75" x 8.25" x 5" (19.05mm x 209.55mm x 127mm)

### Weight

---

• 0.7 lbs.

### Environment

---

• Operating Altitude: <3,000 meters (<10,000 feet)

[Click here](#)

For full product specifications visit [www.aja.com/en/products/kona-4#techspecs](http://www.aja.com/en/products/kona-4#techspecs)



# AJA Developer Program

## Corvid 88

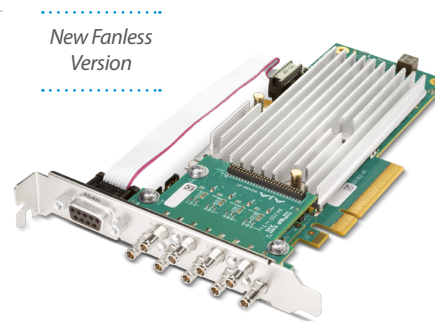
### High Density Multistream, Multi-Format PCIe 2.0 I/O Card



## Corvid 88

Corvid 88 is designed for Development Partner applications that require multiple simultaneous input and output streams. Corvid 44 provides four independent BNC connections while Corvid 88 expands that to a total of eight BNC connections on a single card. Each BNC connection can be set programmatically as either an input or output and each can support a different video format, provided all formats use the same clock timing. This allows for maximum flexibility in applications where high density I/O is required, such as playout or ingest servers. Connections can also be linked together to support Dual Link or 4K/UltraHD formats.

Only **\$2,795** US MSRP\*



## Features at a Glance

- Up to eight independent\* channels 3G, HD, 3G-SDI I/O
- All 4K/2K/HD/SD video formats
- 3G-SDI input/output for High Frame Rate (HFR) support
- 8 or 10-bit YCbCr and 12-bit RGB frame buffer formats
- 4 independent Mixer/Keyer widgets.
- 4 independent 16-Ch 48 kHz SDI embedded audio I/O engines
- 8-Lane PCIe 2.0
- Analog Color Black or HD Tri-Level Sync
- 3 year warranty

\* Channels must use the same master clock. Eg, 29.97 and 59.94.

## Processing

- 8 – Frame stores (In or Out)
- 8 – Color space converters
- 4 – Mixer/Keyer widgets
- 8 – 1D LUTs
- 8 – Dual Link in
- 8 – Dual Link out
- 8 – 16-Channel embedded audio engines

# AJA Developer Program

## Corvid 88 Tech Specs

### Video Formats

---

- (4K) 4096 x 2160p 23.98, 24, 25, 29.97, 30, 48 A/B, 50 A/B, 59.94 A/B, 60 A/B
- (UltraHD) 3840 x 2160p 23.98, 24, 25, 29.97, 30, 48 A/B, 50 A/B, 59.94 A/B, 60 A/B
- (2K) 2048 x 1080p 23.98, 24, 25, 29.97, 30, 48 A/B, 50 A/B, 59.94 A/B, 60 A/B
- (2K) 2048 x 1080PsF 23.98, 24, 25, 29.97, 30, 48 A/B, 50 A/B, 59.94 A/B, 60 A/B
- (HD) 1080i 25, 29.97, 30
- (HD) 1080PsF 23.98, 24, 25, 29.97, 30
- (HD) 1080p 23.98, 24, 25, 29.97, 30, 50 A/B, 59.94 A/B, 60 A/B
- (HD) 720p 50, 50.94, 60
- (SD) 625i 25
- (SD) 525i 29.97

### Video Input and or Output Digital

---

- 8 x 3G-SDI BNC

### Audio Input Digital

---

- 16-Channel 24-bit SDI embedded, 48 kHz synchronous

### Audio Output Digital

---

- 16-Channel 24-bit SDI embedded, 48 kHz synchronous

### Size (w x d x h)

---

- 0.875" x 7.25" x 4.875" (22.23mm x 184.15mm x 123.83mm)

### Weight

---

- 0.4 lb (0.2 kg)

### Power

---

- 17 watts typical, 19 watts max

### Environment

---

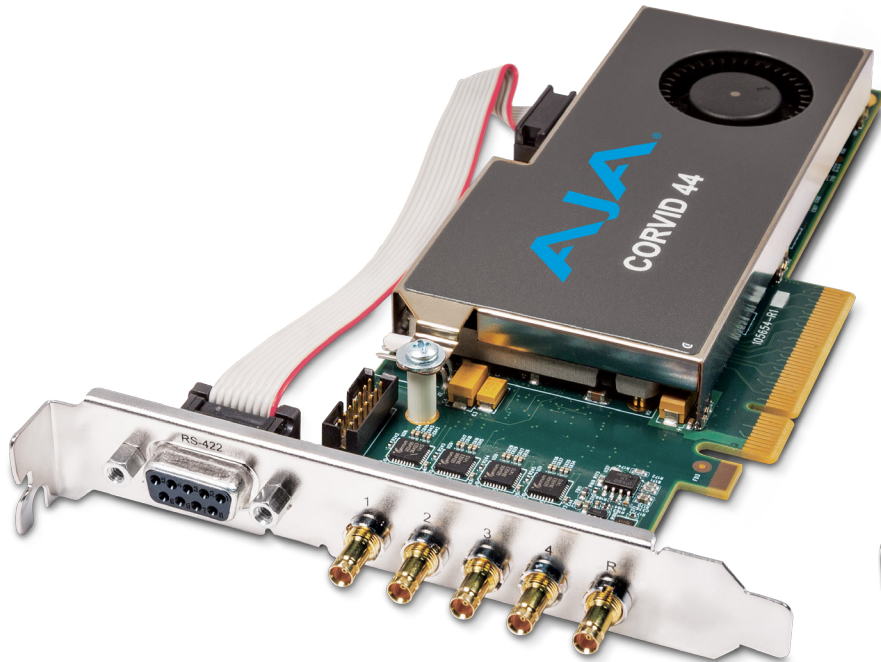
- Airflow across the board for fanless models
  - 100LFM @25deg C or lower, computer chassis must have vented opening to exterior, immediately adjacent to PCIe shield (heatsink side), to permit 100LFM across heatsink
- Operating Altitude: <3,000 meters (<10,000 feet)

For full product specifications visit [www.aja.com/en/products/developer/corvid-88#techspecs](http://www.aja.com/en/products/developer/corvid-88#techspecs)

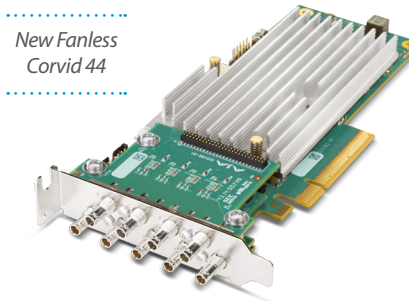
# AJA Developer Program

## Corvid 44

### Flexible Multi-Format I/O



Corvid 44 Low Profile



New Fanless  
Corvid 44

### Corvid 44

Increase your video and audio I/O capacity with Corvid 44. Configure each SDI connection individually as input or output and mix formats for up to 4 HD or SD channels on a single card. As demand rises for higher resolutions, combine SDI connections into a single 4K/UltraHD channel, allowing incredible flexibility and futureproofing.

Starting at **\$1,795** US MSRP\*

### Features at a Glance

- Up to four independent\* bidirectional channels
- 3G-SDI input/output for High Frame Rate (HFR) support
- All 4K/2K/HD/SD video formats
- 8 or 10-bit YCbCr and 12-bit RGB frame buffer formats
- 2 independent Mixer/Keyer widgets.
- 4 independent 16-Ch 48 kHz SDI embedded audio I/O engines
- Switchable LTC/Reference input connection
- Analog Color Black or HD Tri Level Sync
- 8-lane PCI 2.0 interface
- Full height and half height models
- RS-422 on internal header or bracket (on Full height model)
- LTC input on internal header
- 3 year warranty

\* Channels must use the same master clock. Eg, 29.97 and 59.94

### Processing

- 4 – Frame stores (In or Out)
- 4 – Color space converters
- 2 – Mixer/Keyer widgets
- 4 – 1D LUTs
- 4 – Dual Link in
- 4 – Dual Link out
- 4 – 16-Channel embedded audio engines



# AJA Developer Program

## Corvid 44 Tech Specs

### Video Formats

---

- (4K) 4096 x 2160p 23.98, 24, 25, 29.97, 30, 48 A/B, 50 A/B, 59.94 A/B, 60 A/B
- (UltraHD) 3840 x 2160p 23.98, 24, 25, 29.97, 30, 48 A/B, 50 A/B, 59.94 A/B, 60 A/B
- (2K) 2048 x 1080p 23.98, 24, 25, 29.97, 30, 48 A/B, 50 A/B, 59.94 A/B, 60 A/B
- (2K) 2048 x 1080PsF 23.98, 24, 25, 29.97, 30, 48 A/B, 50 A/B, 59.94 A/B, 60 A/B
- (HD) 1080i 25, 29.97, 30
- (HD) 1080PsF 23.98, 24, 25, 29.97, 30
- (HD) 1080p 23.98, 24, 25, 29.97, 30, 50 A/B, 59.94 A/B, 60 A/B
- (HD) 720p 50, 50.94, 60
- (SD) 625i 25
- (SD) 525i 29.97

### Video Input and or Output Digital

---

- 4 x 3G-SDI high density BNC

### Audio Input Digital

---

- 16-Channel 24-bit SDI embedded, 48 kHz synchronous

### Audio Output Digital

---

- 16-Channel 24-bit SDI embedded, 48 kHz synchronous

### Size (w x d x h)

---

- 0.875" x 7.25" x 4.875" (22.23mm x 184.15mm x 123.83mm)

### Weight

---

- 0.4 lb (0.2 kg)

### Power

---

- 17 watts typical, 19 watts max

### Environment

---

- Airflow across the board for fanless models
  - 100LFM @25deg C or lower, computer chassis must have vented opening to exterior, immediately adjacent to PCIe shield (heatsink side), to permit 100LFM across heatsink
- Operating Altitude: <3,000 meters (<10,000 feet)

For full product specifications [www.aja.com/en/products/developer/corvid-44#techspecs](http://www.aja.com/en/products/developer/corvid-44#techspecs)

# AJA Developer Program

## Corvid 44 BNC

Flexible Multi-Format I/O



### Corvid 44 BNC

Increase your video and audio I/O capacity with Corvid 44 BNC, now available with full size BNC connections. Configure each SDI connection individually as input or output and mix formats for up to 4 HD or SD channels on a single card. As demand rises for higher resolutions, combine SDI connections into a single 4K/UltraHD channel, allowing incredible flexibility and futureproofing.

Only **\$1,895** US MSRP\*

### Features at a Glance

- 4 x 3G-SDI full size BNC connectors
- Up to four independent\* bidirectional channels
- 3G-SDI input/output for High Frame Rate (HFR) support
- All 4K/2K/HD/SD video formats
- 8 or 10-bit YCbCr and 12-bit RGB frame buffer formats
- 2 independent Mixer/Keyer widgets.
- 4 independent 16-Ch 48 kHz SDI embedded audio I/O engines
- Switchable LTC/Reference input connection
- Analog Color Black or HD Tri level Sync
- 8-lane PCI 2.0 interface
- RS-422 on internal header or bracket (on full height model)
- LTC input on internal header
- 3 year warranty

*\* Channels must use the same master clock. Eg, 29.97 and 59.94*

### Processing

- 4 – Frame stores (In or Out)
- 4 – Color space converters
- 2 – Mixer/Keyer widgets
- 4 – 1D LUTs
- 4 – Dual Link-in
- 4 – Dual Link-out
- 4 – 16-Channel embedded audio engines

# AJA Developer Program

## Corvid 44 BNC Tech Specs

### Video Formats

---

- (4K) 4096 x 2160P 23.98, 24, 25, 29.97, 30, 48 A/B, 50 A/B, 59.94 A/B, 60 A/B
- (UltraHD) 3840 x 2160P 23.98, 24, 25, 29.97, 30, 48 A/B, 50 A/B, 59.94 A/B, 60 A/B
- (2K) 2048 x 1080P 23.98, 24, 25, 29.97, 30, 48 A/B, 50 A/B, 59.94 A/B, 60 A/B
- (2K) 2048 x 1080PsF 23.98, 24, 25, 29.97, 30, 48 A/B, 50 A/B, 59.94 A/B, 60 A/B
- (HD) 1080p 23.98, 24, 25, 29.97, 30, 50 A/B, 59.94 A/B, 60 A/B
- (HD) 1080PsF 23.98, 24, 25, 29.97, 30
- (HD) 1080i 25, 29.97, 30
- (HD) 720p 50, 59.94, 60
- (SD) 625i 25
- (SD) 525i 29.97

### Video Input and or Output Digital

---

- 4 x 3G-SDI full size BNC

### Audio Input Digital

---

- 16-Channel 24-bit SDI embedded, 48 kHz synchronous

### Audio Output Digital

---

- 16-Channel 24-bit SDI embedded, 48 kHz synchronous

### Size (w x d x h)

---

- 0.727" × 6.6" × 2.713" (18.47mm × 167.65mm × 68.90mm)

### Weight

---

- 0.4 lb (0.2 kg)

### Power

---

- 17 watts typical, 19 watts max

### Environment

---

- Airflow across the board for fanless models
  - 100LFM @25deg C or lower, computer chassis must have vented opening to exterior, immediately adjacent to PCIe shield (heatsink side), to permit 100LFM across heatsink
- Operating Altitude: <3,000 meters (<10,000 feet)

For full product specifications [www.aja.com/en/products/developer/corvid-44-bnc#techspecs](http://www.aja.com/en/products/developer/corvid-44-bnc#techspecs)

# AJA Developer Program

## Corvid 24

**4-lane PCIe 2.0 Card for 8 or 10-bit with a single 4K or 4 independent\* channels I/O Digital 3G-SDI I/O**



## Corvid 24

Take the next step in multi-channel video and audio I/O with Corvid 24. Corvid 24 is the intermediate solution for high density I/O, supporting up to 4 independent\* channels of capture or output, with separate LTC, embedded 24-bit audio, and metadata for each channel. Or all four connections can be used to support full 4K; the choice is yours. And with multiple operating system support, Corvid 24 will work in almost any environment.

*\*Channels must all have the same frame rate, video standard and frame geometry.*

**Only \$1,895 US MSRP\***

## Features at a Glance

- 4-lane PCIe 2.0 card
- 4 independent\* channels 3G-SDI I/O
- All 4K/2K/HD/SD video formats
- 3G-SDI Input/Output for 1080p50/60 and Video/Key (Dual Link not supported)
- 8 or 10-bit YCbCr and RGB frame buffer formats
- Failover bypass relays with watchdog timers (2in/2out mode only)
- 2 Mixer/Keyer widgets. This allows output of two simultaneous video/key pairs over 3G-SDI. It also allows for up to two simultaneous downstream keyers.
- 4 independent 16-Ch 48 kHz SDI embedded audio I/O engines
- Analog Color Black or HD Tri-level Sync
- 3 year warranty



# AJA Developer Program

## Corvid 24 Tech Specs

### Video Formats

---

- (4K) 4096 x 2160p 23.98, 24, 25
- (UltraHD) 3840 x 2160p 23.98, 24, 25
- (UltraHD) 3820 x 2160PsF 23.98, 24, 25
- (2K) 2048 x 1080p 23.98, 24, 25
- (2K) 2048 x 1080PsF 23.98, 24, 25
- (HD) 1080i 25, 29.97, 30
- (HD) 1080PsF 23.98, 24, 25, 29.97, 30
- (HD) 1080p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
- (HD) 720p 50, 59.94, 60
- (SD) 525i 29.97
- (SD) 625i 25

### Video Input Digital

---

- 3G-SDI
- SMPTE-259/292/296/424

### Video Output Digital

---

- 3G-SDI
- SMPTE-259/292/296/424

### Audio Input Digital

---

- 16-Channel 24-bit SDI embedded, 48 kHz synchronous

### Audio Output Digital

---

- 16 Channel 24-bit SDI embedded, 48 kHz synchronous

### Reference

---

- Analog Color Black or HD Tri-level sync

### Size (w x d x h)

---

- 0.708" x 6.57" x 3.86" (18mm x 167mm x 98mm)

### Weight

---

- 1.8cm x 16.7cm x 9.8cm

### Power

---

- 12w typical, 15w maximum

### Environment

---

- Operating Altitude: <3,000 meters (<10,000 feet)

### Breakout Cable

---

- LTC 1 In
- LTC 2 In
- LTC 1 Out
- LTC 2 Out
- RS-422 Channel 1
- RS-422 Channel 2

For full product specifications visit [www.aja.com/en/products/developer/corvid24#techspecs](http://www.aja.com/en/products/developer/corvid24#techspecs)

# AJA Developer Program

## Corvid 22

4-lane PCIe 2.0 Card for 8 or 10-bit Uncompressed w/2 Independent Channels I/O Digital 3G-SDI I/O



### Features at a Glance

- 4-lane PCIe 2.0 Card
- 2-Channels 3G-SDI Input, 2-Channels 3G-SDI Output
- All 2K/HD/SD Video Formats
- 3G-SDI Input/Output for 1080p50/60 and Video/Key (Dual Link not supported)
- 8 or 10-bit YCbCr and RGB frame buffer formats
- 2 Mixer/Keyer widgets. This allows output of two simultaneous video/key pairs over 3G-SDI. It also allows for up to two simultaneous downstream keyers.
- 2 Independent 16-Ch 48 kHz SDI embedded audio I/O engines
- Analog Color Black or HD Tri-level Sync
- 3 year warranty

## Corvid 22

Get multiple I/O Channels without taking up a lot of space. Corvid 22 provides high performance, dual channel video and embedded 24-bit audio I/O in a single PCIe card. Two completely independent channels handle resolutions up to 2K and high frame rate 1080p as well. With separate LTC and RS-422 machine control per channel and support for multiple operating systems, Corvid 22 gives you all the performance and capabilities you need.

Only **\$1,395** US MSRP\*

# AJA Developer Program

## Corvid 22 Tech Specs

### Video Formats

---

- (2K) 2048 x 1080p 23.98, 24, 25
- (2K) 2048 x 1080PsF 23.98, 24, 25
- (HD) 1080i 25, 29.97, 30
- (HD) 1080psF 23.98, 24, 25, 29.97, 30
- (HD) 1080p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
- (HD) 720p 50, 59.94, 60
- (SD) 625i 25
- (SD) 525i 29.97

### Video Input Digital

---

- 3G-SDI, SMPTE-259/292/296/424

### Video Output Digital

---

- 3G-SDI, SMPTE-259/292/296/424

### Audio Input Digital

---

- 16-Channel 24-bit SDI embedded, 48 kHz synchronous

### Audio Output Digital

---

- 16-Channel 24-bit SDI embedded, 48 kHz synchronous

### Reference

---

- Analog Color Black or HD Tri-level sync

### Output Sitter (timing / alignment)

---

- (3G) .45 UI/.17UI
- (HD) .21 UI/.08 UI
- (SD) .2 UI/.2 UI

### Timecode

---

- Independent LTC In/Out

### Machine Code

---

- Independent RS-422

### Size (w x d x h)

---

- 0.708" x 6.57" x 3.86" (18mm x 167mm x 98mm)

### Power

---

- 12w typical, 15w maximum

### Environment

---

- Operating Altitude: <3,000 meters (<10,000 feet)

### Breakout Cable

---

- LTC 1 In
- LTC 2 In
- LTC 1 Out
- LTC 2 Out

- RS422 Channel 1
- RS422 Channel 2

#### Other Information

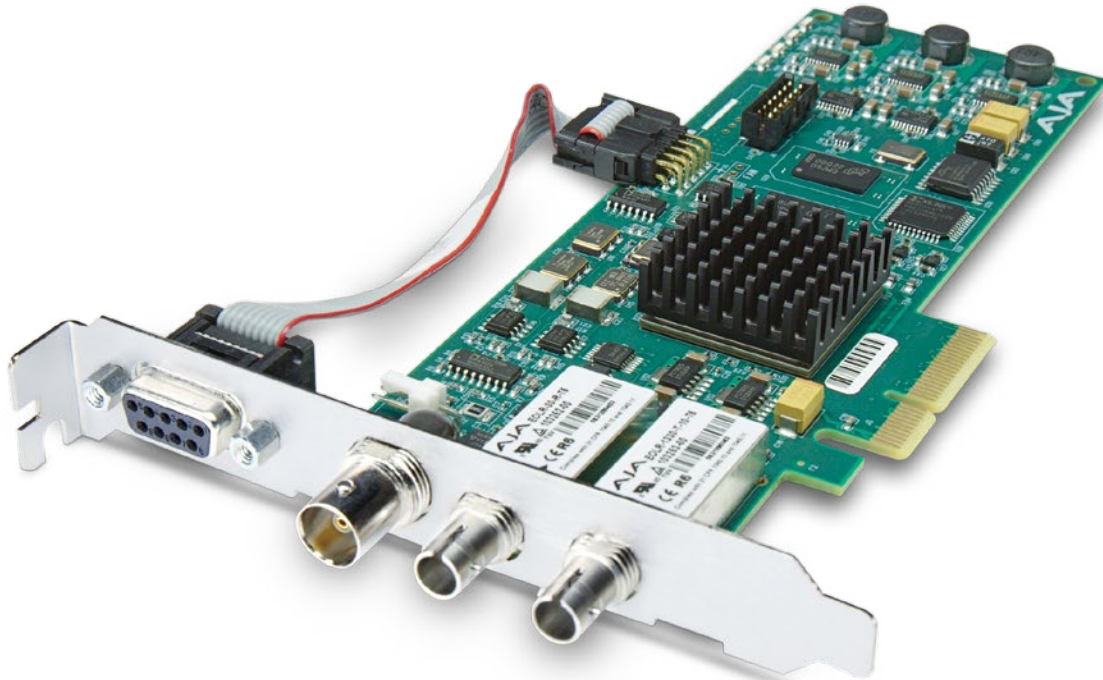
- 2 Independent LTC In/Out
- 2 Independent RS-422

For full product specifications visit [www.aja.com/en/products/developer/corvid22#techspecs](http://www.aja.com/en/products/developer/corvid22#techspecs)

# AJA Developer Program

## Corvid 3G Fiber

4-lane PCIe 2.0 Card for 8 or 10-bit Uncompressed Digital 3G-SDI over Fiber I/O.



### Features at a Glance

- 4-lane PCIe 2.0 Card
- 1-Channel 3G-SDI input and output over Fiber ST connectors
- 8 or 10-bit YCbCr and RGB framebuffer formats
- 1 Mixer/Keyer
- Available in standard PCIe (Corvid 3G Fiber) or PCIe Low Profile (Corvid 3G Fiber LP)
- 16-Ch SDI embedded audio I/O, 24-bit 48 kHz
- HD/SD Genlock, Reference Video or LTC Input (selectable)
- 3 year warranty

### Corvid 3G Fiber

For installations where long cable runs are needed, fiber optic is the ideal solution and AJA's Corvid 3G Fiber allows direct input and output connections to your fiber infrastructure without the need to convert between SDI. Available in a standard sized PCIe card or "Low Profile" for when space is of the essence and support for multiple operating systems, Corvid 3G Fiber is the solution for the long haul.



Corvid 3G Fiber Low Profile

Only **\$1,195** US MSRP\*

# AJA Developer Program

## Corvid 3G Fiber Tech Specs

### Video Formats

---

- (2K) 2048 x 1080p 23.97, 24, 25
- (2K) 2048 x 1080PsF 23.97, 24, 26
- (HD) 1080i 25, 29.97, 30
- (HD) 1080PsF 23.98, 24, 26, 29.97, 30
- (HD) 1080p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
- (HD) 720p 50, 59.94, 60
- (SD) 525i 29.97
- (SD) 625i 25

### Video Input Digital

---

- 3G/HD/3G-SDI, SMPTE-259/292/296/424 over ST Fiber connector

### Video Output Digital

---

- 3G/HD/3G-SDI, SMPTE-259/292/296/424 over ST Fiber connector

### Audio Input Digital

---

- 16-Channel 24-bit SDI embedded, 48 kHz synchronous

### Audio Output Digital

---

- 16-Channel 24-bit SDI embedded, 48 kHz synchronous

### Reference

---

- Analog Color Black or HD Tri-level sync

### Size (w d x h)

---

- 0.55" x 6.61" x 2.16" (14mm x 168mm x 55mm)

### Environment

---

- Operating Altitude: <3,000 meters (<10,000 feet)

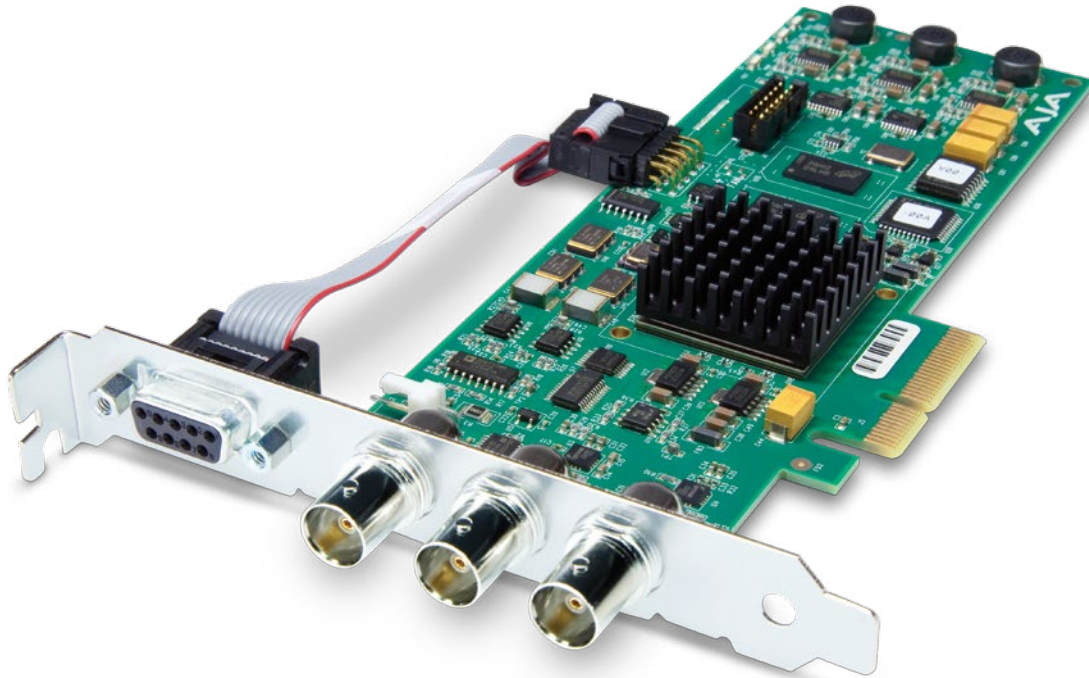
For full product specifications visit [www.aja.com/en/products/developer/corvid-3g-fiber#techspecs](http://www.aja.com/en/products/developer/corvid-3g-fiber#techspecs)



# AJA Developer Program

## Corvid 3G

4-lane PCIe 2.0 Card for 8 or 10-bit Uncompressed Digital 3G-SDI I/O



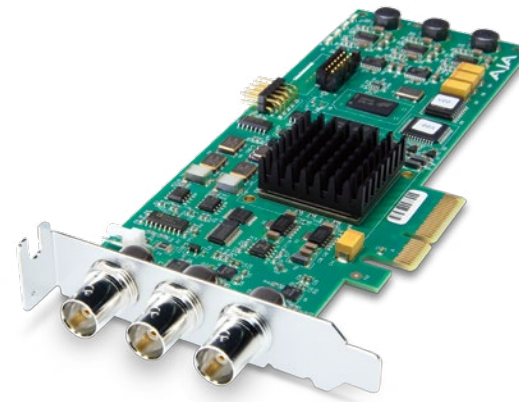
### Corvid 3G

Corvid 3G expands on the capabilities of the original Corvid with support for 3G-SDI signals, opening up the possibility for handling higher quality signals while still providing all the benefits of the Corvid card. Available in a standard sized PCIe card or “Low Profile” for when space is of the essence, Corvid 3G has the extra horsepower for more demanding applications.

Only **\$795** US MSRP\*

### Features at a Glance

- 4-lane PCIe 2.0 Card
- 1-Channel 3G-SDI input, 1-Channel 3G-SDI output
- 8 or 10-bit YCbCr and RGB framebuffer formats
- 1 Mixer/Keyer
- Available in standard PCIe (Corvid 3G) or PCIe Low Profile (Corvid 3G LP)
- 16-Ch SDI embedded audio I/O, 24-bit 48 kHz
- HD/SD Genlock, Reference Video or LTC Input (selectable)
- 3 year warranty



Corvid 3G Low Profile

# AJA Developer Program

## Corvid 3G Tech Specs

### Video Formats

---

- (2K) 2048 x 1080p 23.98, 24, 25
- (2K) 2048 x 1080PsF 23.98, 24, 25
- (HD) 1080i 25, 29.97, 30
- (HD) 1080PsF 23.98, 24, 25, 29.97, 30
- (HD) 1080p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
- (HD) 720p 50, 59.94, 60
- (SD) 625i 25
- (SD) 525i 29.97

### Video Input Digital

---

- 3G/HD/3G-SDI, SMPTE-259/292/296/424

### Video Output Digital

---

- 3G/HD/3G-SDI, SMPTE-259/292/296/424

### Audio Input Digital

---

- 16-Channel 24-bit SDI embedded, 48 kHz synchronous

### Audio Output Digital

---

- 16-Channel 24-bit SDI embedded, 48 kHz synchronous

### Reference

---

- Analog Color Black or HD Tri-level sync

### Size (w x d h)

---

- 0.55" x 6.61" x 2.16" (14mm x 168mm x 55mm)

### Environment

---

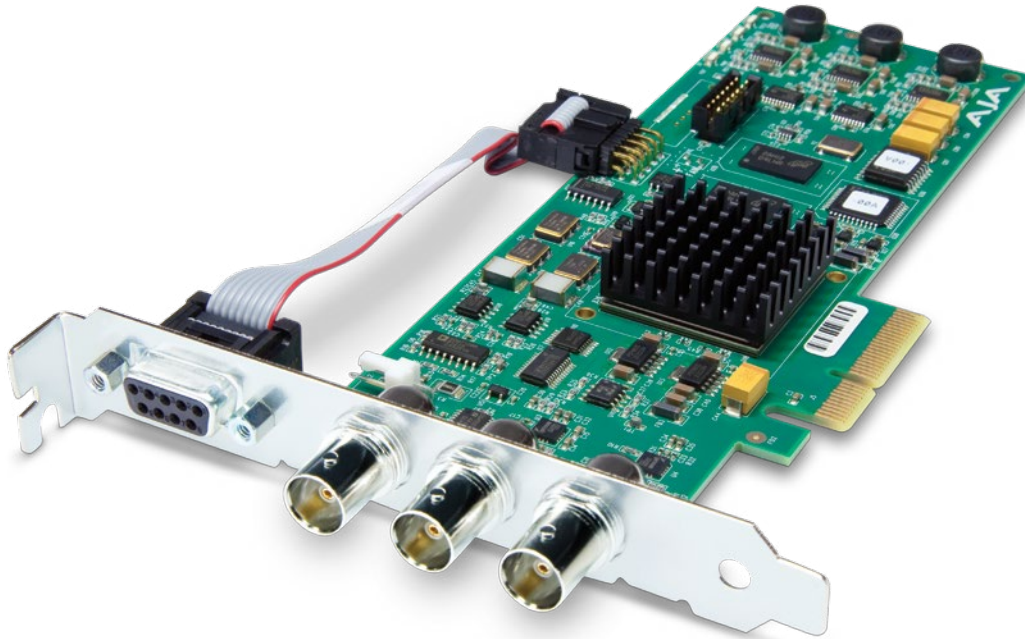
- Operating Altitude: <3,000 meters (<10,000 feet)

For full product specifications visit [www.aja.com/en/products/developer/corvid3g#techspecs](http://www.aja.com/en/products/developer/corvid3g#techspecs)

# AJA Developer Program

## Corvid

### 4-lane PCIe 2.0 Card for 8 or 10-bit Uncompressed Digital SD, HD I/O



### Features at a Glance

- 4-lane PCIe 2.0 Card
- 1-Channel 3G-SDI Input, 1-Channel 3G-SDI Output
- 8 or 10-bit YCbCr and RGB framebuffer formats
- 1 Mixer/Keyer
- Available in standard PCIe (Corvid) or PCIe Low Profile (Corvid LP)
- 16-Ch SDI Embedded Audio I/O, 24-bit 48 kHz
- HD/SD Genlock, Reference Video or LTC Input (selectable)
- 3 year warranty

## Corvid

Ensure you are getting the highest quality signal in and out of your application with AJA's Corvid card. Corvid is the proven platform for digital uncompressed video and audio I/O, with support for SD and HD as well as 16-Channels of embedded 24-bit audio. Available in a standard sized PCIe card or "Low Profile" for when space is of the essence, Corvid uses AJA's common API which is supported across multiple operating systems.

Only **\$595** US MSRP\*



*Corvid Low Profile*

# AJA Developer Program

## Corvid Tech Specs

### Video Formats

---

- (HD) 1080i 25, 29.97, 30
- (HD) 1080p 23.98, 24, 25, 29.97, 30
- (HD) 1080PsF 23.98, 24, 25, 29.97
- (HD) 720p 50, 59.94, 60
- (SD) 525i 29.97
- (SD) 625i 25

### Video Input Digital

---

- HD-SDI/SDI, SMPTE-259/292/296

### Video Output Digital

---

- HD-SDI/SDI, SMPTE-259/292/296

### Audio Input Digital

---

- 16-Channel 24-bit SDI embedded, 48 kHz synchronous

### Audio Output Digital

---

- 16-Channel 24-bit SDI embedded, 48 kHz synchronous

### Timecode

---

- Independent LTC In/Out

### Machine Code

---

- Independent RS-422

### Reference

---

- Analog Color Black or HD Tri-Level sync

### Size (w x d x h)

---

- 0.55" x 6.61" x 2.16" (14mm x 168mm x 55mm)

### Environment

---

- Operating Altitude: <3,000 meters (<10,000 feet)

For full product specifications visit [www.aja.com/en/products/developer/corvid#techspecs](http://www.aja.com/en/products/developer/corvid#techspecs)

# AJA Developer Program

## Corvid Ultra

External 2RU chassis w/PCIe 2.0 for 4K, stereoscopic, high frame rate and other high bandwidth applications



Corvid Ultra - front panel  
Shown with PCIe HBA

### Features at a Glance

- Extensive I/O: 3G-SDI, 4K HDMI output, embedded and AES audio (2-Channel analog audio monitoring)
- Supports video formats from SD through to 4K at up to 60 frames per second
- Color depth up to 16-bit half float RGBA with full color space conversion
- Powerful, onboard debayering for Raw workflows
- High quality AJA TruScale™ means perfect quality at any resolution
- Two 4K capable expansion slots for additional I/O or processing
- Fast 8-lane PCIe 2.0 host connection provides 2500+ MB/s in each direction
- Supports peer to peer transfers via DMA
- 2RU form factor



Corvid Ultra - rear panel  
Shown with optional TruScale™ card installed

### Corvid Ultra

Corvid Ultra gives AJA's partners access to a world of groundbreaking functionality. Whether working with high frame rate material at 48p or 60p, full resolution 4K or stereoscopic files, the AJA TruScale™ arbitrary scaler, onboard debayering support and two expandable card bays allow developers to tailor Corvid Ultra to provide maximum performance and the highest quality for their most demanding applications.

Starting at:  
**\$7,995 US MSRP\***

### TruScale™ (optional)

**TruScale™**  
**\$3,495 US MSRP\***

AJA's TruScale technology enables high quality, arbitrary image scaling. Typical scaling technology is focused on adapting from one specific resolution to another. Advanced AJA technology allows TruScale to take any size raster, from the smallest web video to 5K resolution images, and scale it to any other resolution while still maintaining the highest possible quality.

TruScale is available as an option card that can be factory installed into Corvid Ultra, allowing two independent channels of high quality scaling to be used in conjunction with Corvid Ultra's other capabilities.



# AJA Developer Program

## Corvid Ultra Tech Specs

### Video Formats

- (4K) 4096 x 2160p 23.98, 24, 25, 29.97, 30, 48, 50, 59.94, 60
- (UltraHD) 3840 x 2160p 23.98, 24, 25, 29.97, 30, 48, 50, 59.94, 60
- (2K) 2048 x 1080p 23.98, 24, 25, 29.97, 30, 50, 60
- (2K) 2048 x 1080PsF 23.98, 24
- (HD) 1080i 25, 29.97, 30
- (HD) 1080PsF 23.98, 24, 25, 29.97, 30
- (HD) 1080p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
- (HD) 720p 50, 50.94, 60
- (SD) 625i 25
- (SD) 525i 29.97

### Pixel Formats

#### 8-bit:

- YCbCr 4:2:2
- RGB
- RGBA

#### 10-bit:

- YCbCr 4:2:2
- RGB
- RGBA

#### 12-bit:

- YCbCr 4:2:2
- RGB
- RGBA
- XYZ
- XYZA

#### 16-bit:

- RGB

### Video Inputs Digital

- 3G-SDI, SMPTE-259/292/296/424, 8- or 10-bits
- 4K/UltraHD 4:4:4 (4 x BNC)
- Dual Link HD 4:4:4 (2 x BNC)
- Single Link 4:2:2 or 4:4:4 (1 x BNC)
- Canon C500 Raw data

### Video Outputs Digital

- 3G-SDI, SMPTE-259/292/296/424, 8- or 10-bits
- 4K/UltraHD 4:4:4 (4 x BNC)
- Dual Link HD 4:4:4 (2 x BNC)
- Single Link 4:2:2 or 4:4:4 (1 x BNC)
- HDMI v2.0b, 30/36 bits/pixel, RGB or YUV, 2.25Gbps, SD, HD, 1080p-50/60, 4K, 2K stereoscopic (full-size HDMI)

### Audio Inputs Digital

- 16-Channel 24-bit SDI embedded, 48 kHz synchronous
- 16-Channel 24-bit AES/EBU, 48 kHz synchronous (8 x BNC)

### Audio Inputs Analog

- 16-Channel 24-bit SDI embedded, 48 kHz synchronous
- 16-Channel 24-bit AES/EBU, 48 kHz synchronous (8 x BNC)

### Audio Outputs Digital

- 16-Channel 24-bit SDI embedded, 48 kHz synchronous
- 16-Channel 24-bit AES/EBU, 48 kHz synchronous (8 x BNC)

### Audio Outputs Analog

- 2-Channel unbalanced output (2 x RCA)

### Reference

- Analog Reference Input (BNC)
- Analog Reference Output, loop through (BNC)

### Timecode

- LTC timecode input and output (via 1 x BNC each)

### Machine Control

- RS-422, Sony 9-pin protocol
- 9-pin D-connector pinout is as follows:

1	GND
2	RX-
3	TX+
4	GND
5	No Collection
6	GND
7	RX+
8	TX-
9	GND
Shell	GND

### Host Connection

- 8-lane PCIe 2.0
- 3 meter interconnect cable
- 2500+ MB/sec (bidirectional)

### Expansion Slots

- Accepts AJA TruScale™ option card

### Processing

- 4 Capture Frame stores
- 4 Playback Frame stores
- 8 Color space converters (high precision)
- 4 1D LUTs (12-bit)
- 4 Debayering Widgets

### Optional Arbitrary Scaling

- High quality scaling from one resolution and aspect ratio to any other
- Not limited to standard formats
- TruScale™ hardware option card for realtime performance
- Keyframeable control for animated pan and scan

### Size (w x d x h)

- 17.25" x 11.625" x 3.375" 2RU (438mm x 295mm x 85.7mm)

*Note: compatible with standard 19" racks*

### Environment

- Operating Altitude: <3,000 meters (<10,000 feet)

For full product specifications visit [www.aja.com/en/products/developer/corvid-ultra#techspecs](http://www.aja.com/en/products/developer/corvid-ultra#techspecs)

# AJA Developer Program

## Io<sup>®</sup> 4K

Harness Thunderbolt™ 2 power in 4K, HD and SD



### Io 4K

Io 4K is the next evolution of capture and output hardware offering a full set of professional video and audio connectivity with support for the latest 4K and UltraHD devices. The power of Thunderbolt 2 enables Io 4K to handle a wide range of formats from multi-Channel SD and HD to UltraHD and full 4K over both SDI and HDMI with High Frame Rate (HFR) support up to 60 fps.

The dual Thunderbolt 2 ports on Io 4K allow daisy chaining additional peripherals such as high-resolution displays and high capacity storage with plenty of flexibility.

Io 4K's elegant, aluminum construction is strong enough to survive the rigors of life in the field, while looking beautiful on the desktop. Integrate Io 4K easily into your application for high quality multi-channel or 4K I/O with the power and functionality you need.

Only **\$1,995** US MSRP\*

### Features at a Glance

- 4 x bidirectional 3G-SDI
- 4K/UltraHD HDMI I/O
- Simultaneous SDI and HDMI outputs
- Realtime 4K to HD down-conversion for HD-SDI and HDMI monitoring
- 10-bit high quality 4:2:2, 4:4:4 and High Frame Rate workflow support
- Two Thunderbolt 2 ports with loop through
- Use with any Thunderbolt 2 system for up to 4K at 10-bit quality and up to 50/60 fps
- Backwards compatible with existing Thunderbolt hosts
- 16-Channel embedded audio on SDI
- 8-Channel embedded audio on HDMI
- DB-25 analog audio output connector
- XLR 12V power for battery or AC use
- RS-422 VTR control, Reference, LTC Input
- Headphone jack and level control for mobile environments

# AJA Developer Program

## Io<sup>®</sup> 4K Tech Specs

### Video Formats

- (4K) 4096 x 2160P 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
- (4K) 4096 x 2160PsF 23.98, 24, 25
- (UltraHD) 3840 x 2160P 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
- (UltraHD) 3840 x 2160PsF 23.98, 24, 25
- (2K) 2048 x 1080p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
- (2K) 2048 x 1080PsF 23.98, 24, 25, 29.97, 30
- (HD) 1080i 50, 59.94, 60
- (HD) 1080PsF 23.98, 24, 25, 29.97, 30
- (HD) 1080p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
- (HD) 720p 50, 59.94, 60
- (SD) 625i 25
- (SD) 525i 29.97

*Note: High Frame Rate support is dependent on Thunderbolt speed. Not all systems will support all frame rates.*

### Video Inputs

- 3G-SDI, SMPTE-259/292/296/424/425, 8-bit, 10-bit and 12-bit\*
- 4K/UltraHD 4:4:4 (4 x BNC)
- 2K HSDL (High Speed Data Link) 4:4:4 (2 x BNC)
- Dual Link HD 4:4:4 (2 x BNC)
- Single Link HD 4:2:2 or 4:4:4 (1 x BNC)
- HDMI v1.4
  - 30/36 bits/pixel, RGB or YUV, 2.25 Gbps.
  - UltraHD, 2K, HD and SD

*\*Bit depth support is application dependent. Check with your software manufacturer for compatibility.*

### Video Outputs

- 3G-SDI, SMPTE-259/292/296/424/425, 8-bit, 10-bit and 12-bit
- 4K/UltraHD 4:4:4 (4 x BNC)
- 2K HSDL (High Speed Data Link) 4:4:4 (2 x BNC)
- Dual Link HD 4:4:4 (2 x BNC)
- Single Link HD 4:2:2 or 4:4:4 (1 x BNC)
- HDMI v1.4
  - 30/36 bits/pixel, RGB or YUV, 2.25 Gbps
  - 2K, HD, and SD, UltraHD with HFR support up to 60p 4:2:0

*\*Bit depth support is application dependent. Check with your software manufacturer for compatibility.*

### Audio Input Digital

- 16-channel, 24-bit SDI embedded audio, 48 kHz sample rate, Synchronous
- 8-channel, 24-bit HDMI embedded audio, 48 kHz sample rate, Synchronous

### Audio Output Digital

- 16-Channel, 24-bit SDI embedded audio, 48 kHz sample rate, synchronous
- 8-Channel, 24-bit HDMI embedded audio, 48 kHz sample rate, synchronous

### Audio Output Analog

- 8-Channel, 24-bit D/A analog audio, 48 kHz sample rate, balanced (via 8 x XLR on DB-25 breakout cable)
- +24dbu Full Scale Digital (0dbFS)
- +/- 0.2db 20 to 20 kHz Frequency Response

### Downstream Keyer

- Supports graphics with alpha channel over video, matte or framebuffer, or framebuffer content over incoming video or matte

### Down-Conversion 4K/UltraHD

- Realtime, dedicated 4K down-conversion output (1 x BNC)
- 4K to 2K down-conversion
- UltraHD to HD down-conversion

### Reference and LTC I/O

- 1 x BNC LTC output
- 1 x BNC assignable to Reference video or LTC input

### Reference

- Analog color black (1V) or composite sync (2 or 4V)
- Nonterminating

### User Interface

- Interface: Thunderbolt 2 (2 x)

### Size (w x d h)

- 8.74" x 7.09" x 1.65" (222mm x 180mm x 42mm)

### Power

- Power: 10-20V, 23W typical, 28W max

### Environment

- Safe Operating Temperature Range: 0 to 35C (32F to 95F)
- Operating Altitude: <3,000 meters (<10,000 feet)

### Machine Control

- RS-422, Sony 9-pin protocol
- 9-pin D-connector pinout is as follows:

1	GND
2	RX-
3	TX+
4	GND
5	No Collection
6	GND
7	RX+
8	TX-
9	GND
Shell	GND

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For the most recent product specifications visit [www.aja.com/en/products/io-4k#techspecs](http://www.aja.com/en/products/io-4k#techspecs)



# AJA Developer Program

Io<sup>®</sup> XT

Thunderbolt™ power for professional I/O



## Features at a Glance

- 2 x 3G-SDI inputs
- 2 x 3G-SDI outputs
- Simultaneous SDI and HDMI outputs
- Component analog video output
- 10-bit high quality 4:2:2, 4:4:4 workflow support
- Two Thunderbolt ports with loop-through
- 16-Channel embedded audio on SDI
- 8-Channel embedded audio on HDMI
- DB-25 analog audio output connector
- XLR 12V power for battery or AC use
- RS-422 VTR control, Reference, LTC Input
- Headphone jack and level control for mobile environments

## Io XT

Io XT is the ideal portable companion for lightning fast video capture and playback for professional post production and on set applications.

Compact, portable and powerful, Io XT is loaded with high-end features including 3G-SDI, Component Analog, and HDMI connectivity, to bring true desktop level power to any Thunderbolt enabled system with full uncompressed HD and SD 4:2:2 and 4:4:4 capable video and audio connectivity.

Io XT connects with a single Thunderbolt cable and provides a second Thunderbolt connector for daisy chaining other Thunderbolt devices, such as storage, making it ideal for use on-set or in the edit suite.

Designed for today's workflows, Io XT provides a seamless link for your application to the newest codecs, video formats, stereoscopic 3D workflows, and more.

Only **\$1,495 US MSRP\***

# AJA Developer Program

## Io<sup>®</sup> XT Tech Specs

### Video Formats

- (2K) 1080p 23.98, 24, 25
- (2K) 1080PsF 23.98, 24, 25
- (HD) 1080i 25, 29.97, 30
- (HD) 1080PsF 23.98, 24, 25, 29.97, 30
- (HD) 1080p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
- (HD) 720p 23.98\*, 24\*, 25\*, 29.97\*, 30\*, 50, 59.94, 60
- (SD) 625i 25
- (SD) 525i 23.98\*, 29.97

\* These formats are dependent on specific software functionality and are not normal 'over-the-wire' formats.

### Software dependent Formats

These formats are dependent on specific software functionality and are not normal 'over-the-wire' formats.

- 720p 23.98, 24, 25, 29.97, 30

### Video Input Digital

- 3G-SDI, SMPTE-259/292/296/424, 10-bits
- Dual Link HD 4:4:4, (2 x BNC)
- Single Link 4:2:2 or 4:4:4 (1 x 3G BNC)
- HDMI v1.3
- 1D LUT Support (Mac and PC)

### Video Output Digital

- 3G-SDI, SMPTE-259/292/296/424
- Dual Link HD 4:4:4, (2 x BNC)
- Single Link 4:2:2 or 4:4:4 (1 x BNC)
- HDMI v1.4, 30/36 bits/pixel, RGB or YUV, 2.25Gbps

### Video Output Analog

- Composite/S-Video (Y/C) (1 x BNC/2x BNC+adapter)
- NTSC, NTSCJ, PAL
- Component (3 x BNC)
- HD: YPbPr, RGB
- SD: YPbPr, RGB (component mode)
- SMPTE/EBU N10, Betacam 525 line, Betacam 525J, RGB
- 12-bit D/A, 8x oversampling
- +/- .2 dB to 5.0 MHz Y Frequency Response
- +/- .2 dB to 1 MHz C Frequency Response
- .5% 2T pulse response
- <1% Diff Phase
- <1% Diff Gain
- <1 ns Y/C delay inequity

### Audio Input Digital

- 16-Channel, 24-bit SDI embedded audio, 48 kHz sample rate, synchronous
- 8-Channel, 24-bit HDMI embedded audio, 48 kHz sample rate, synchronous

### Audio Output Digital

- 16-Channel, 24-bit SDI embedded audio, 48 kHz sample rate, synchronous
- 8-Channel, 24-bit HDMI embedded audio, 48 kHz sample rate, synchronous

### Audio Output Analog

- 8-Channel, 24-bit D/A analog audio, 48 kHz, balanced (via 8 x XLR on DB-25 breakout cable)
- +18 dBu Full Scale Digital (0 dBFS)
- +/- 0.2 dB 20 Hz to 20 kHz Frequency Response

### Downstream Keyer

- Supports graphics with alpha Channel over video, matte or framebuffer, or framebuffer content over incoming video or matte

### Up-Conversion

- Hardware 10-bit
- **Anamorphic:** fullscreen
- **Pillarbox 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 fullscreen
- **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:** fullscreen
- **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

### Power

- 10-20V, 18W typical, 22W max

### Environment

- Safe Operating Temperature Range: 0 to 40C (32F to 104F)
- Operating Altitude: <3,000 meters (<10,000 feet)

### 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

### Reference Input or LTC Input

- 1 x BNC assignable to Reference video or LTC input

### Reference

- Analog Color Black (1V) or Composite Sync (2 or 4V)
- Non-terminating

### Machine Control

- RS-422, Sony 9-pin protocol (via breakout cable or optional K3G-Box)
- 9-pin D-connector pinout is as follows:

1	GND
2	RX-
3	TX+
4	GND
5	No Connection
6	GND
7	RX+
8	TX-
9	GND
Shell	GND

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For the most recent product specifications visit [www.aja.com/en/products/io-xt#techspecs](http://www.aja.com/en/products/io-xt#techspecs)



### 3 Year Warranty

AJA Video warrants that Developer 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 video interface and conversion solutions, bringing high quality, cost effective digital video products to the professional, broadcast and postproduction markets. AJA products are designed and manufactured at our facilities in Grass Valley, California, and sold through an extensive sales channel of resellers and systems integrators around the world. For further information, please see our website at [www.aja.com](http://www.aja.com)