
# TruZoom™

## High Frame Rate 4K/UltraHD Region of Interest Selection, Live Scaling and Recording

AJA VIDEO SYSTEMS

Because it matters.®

# TruZoom™

**$21,485**

*Includes TruZoom Software, Corvid Ultra and TruScale Card*

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## TruZoom™ Software Application

**4K/UHD Region of Interest selection, Live Scaling and Recording.**

AJA's new TruZoom application and Corvid Ultra hardware come together in a revolutionary system for unparalleled real-time 4K recording, scaling, playback, and high-quality Region of Interest selection with AJA TruScale image processing and complete timeline-based keyframe control.

### High Frame Rate

When used in conjunction with AJA's CION camera, Corvid Ultra can take 4K AJA Raw data over SDI at high frame rates for use with TruZoom. This gives sports broadcasters and live event professionals more flexibility when playing back in slow motion with less image degradation.

Additionally, TruZoom is the only system that supports the Vision Research Phantom camera's live ST 425-3 output, allowing this high-speed camera to be easily integrated into on-air applications for the first time.

### Record

Select and isolate any Region of Interest from the incoming signal using joystick or mouse control and AJA's TruScale™ arbitrary scaling hardware transforms that region to HD resolution at the highest possible quality level for spectacular looking images. Create virtual camera presets for quick recall of common regions for fast interaction in live environments.

### Playback

TruZoom's interactive timeline lets you create keyframe-based timeline effects for Region of Interest and programmable variable speed playback and hold. Output the results via the professional SDI connections at 4K/UHD, 1080p, 720p or 1080i as well as HDMI output up to 4K resolution and 30fps.

### Touchscreen-ready

For the ultimate in interactivity, TruZoom works natively with touchscreen monitors. Select functions simply by tapping on them in the interface, drag out regions of interest and adjust scaling using a simple pinch gesture.

# TruZoom™


## AJA TruZoom™ Enables MLB Network to Telecast Dynamic Region-of-Interest (ROI) Extractions from 4K Cameras

*"The best feature about the 4K imaging with TruZoom is that we can see close plays in a much better light than we've ever been able to before and offer our viewers an unprecedented look at the game of baseball."*

**MLB Network's Postseason Game Coverage to Feature Scaling to HD from 4K Frames, Providing Multiple Looks at a Play From the Same Camera POV**

AJA Video Systems has been working closely with MLB Network, Major League Baseball's 24/7 cable TV network, to bring the soon-to-be-released AJA TruZoom software to market for highly detailed region-of-interest (ROI) extraction from 4K video. The TruZoom application controls AJA's Corvid Ultra with TruScale™ hardware, which supports 4K/2K/UHD/HD/Dual-link and SD workflows to produce scaled output video at 1080p, 720p or 1080i. AJA's TruZoom software allows customers to rapidly keyframe scaled elements onto a timeline from 4K sources to deliver incredible image quality and will be demonstrated during the IBC Conference at the RAI Convention Center in Amsterdam from September 13-17 at the AJA stand, 7.F11.

"In sports production, replay clarity is paramount," said Brad Cheney, director of engineering, MLB Network. "Fans want a replay that is clearly definitive. With TruZoom, we can capture the entire image, then enlarge plays in the same frame, so viewers can verify for themselves how close the game of baseball can be when a runner steals a base or a ball flies over the fence. The 4K source imaging provides us an extraordinary look at the game of baseball, and the quality that AJA has been able to reproduce is far and away better than any other scaling solution we've seen."

First tested in March 2013, TruZoom was deployed by MLB Network during a handful of regular season games in June, with plans to use the technology in the fall for two Division Series game telecasts. MLB Network's workflow involves capture with either a Canon C500 or a Sony F55 camera, shooting first base and second base on a preset. The camera signal is delivered over fiber to an OB truck where it's converted back to electrical video and plugged into the AJA Corvid Ultra with TruScale™ card, which is housed in a custom configured HP Z820 Dual Xeon 3.10 GHz workstation with an NVIDIA Quadro K4000 GPU, with record and playback facilitated via an internal SSD RAID array made up of eight Samsung 840 Pro 512 GB SSD drives connected to an Areca RAID controller.

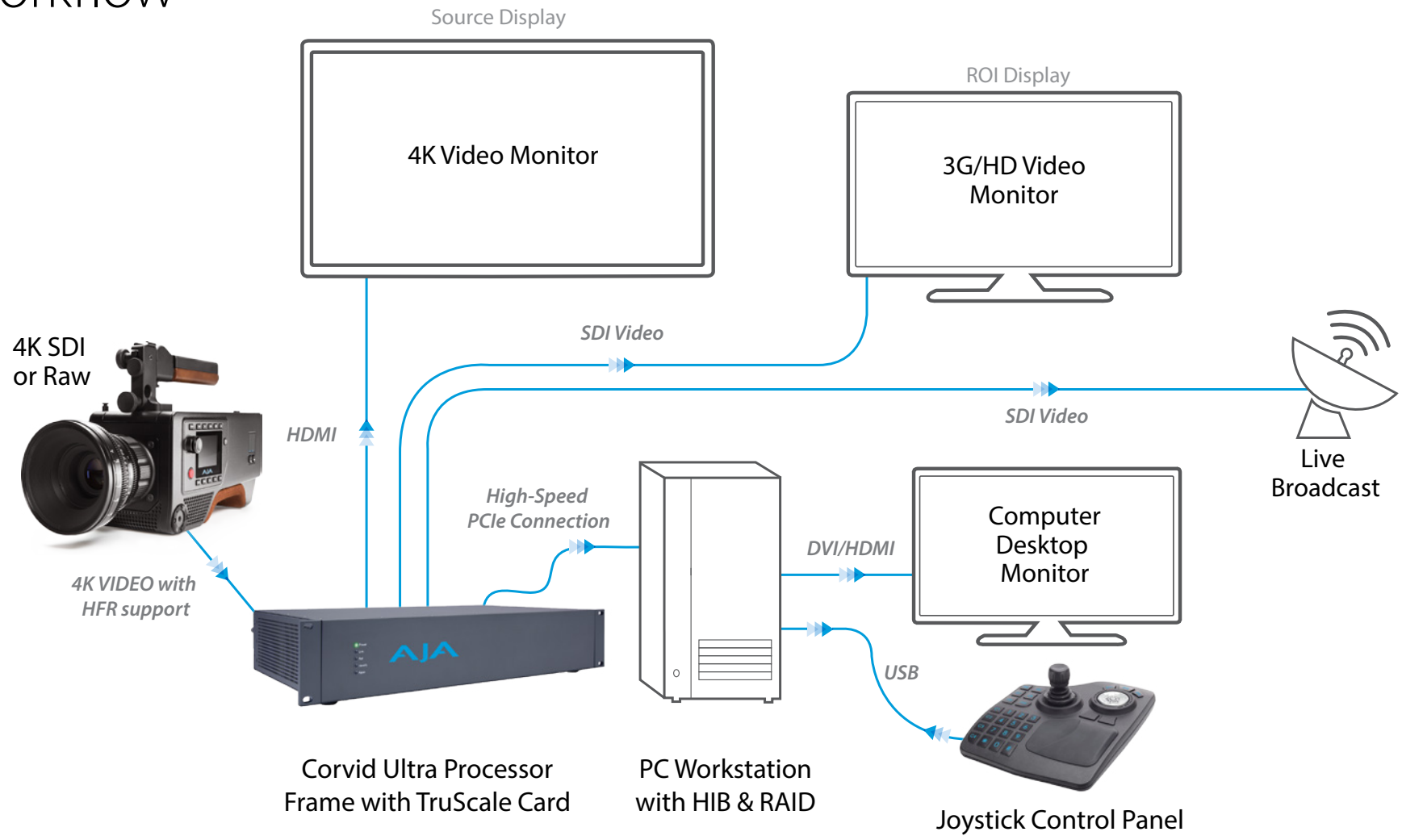
"The best feature about the 4K imaging with TruZoom is that we can see close plays in a much better light than we've ever been able to before and offer our viewers an unprecedented look at the game of baseball," said Cheney.

Without TruZoom, producing this level of replay required a multi-step process using a server and a DVE, which doesn't yield anywhere near the 4k quality level.

"Working with AJA has been exceptional," added Cheney. "The challenges we've encountered have been slim to none and the handful of times we needed something fixed or replaced, the response was immediate."

AJA President Nick Rashby noted, "MLB Network expressed interest when we first announced Corvid Ultra, and their feedback has helped shape TruZoom into a viable application that is incredibly user friendly for camera operators and editors alike. We're thrilled to see the applications of TruZoom in live sports broadcast, and anticipate additional inventive uses across customers in live event production, professional AV, broadcast and film."

# Workflow


Source Display
4K Video Monitor
ROI Display
3G/HD Video Monitor
4K SDI or Raw
SDI Video
SDI Video
HDMI
Live Broadcast
High-Speed PCIe Connection
DVI/HDMI
Computer Desktop Monitor
4K VIDEO with HFR support
USB
Corvid Ultra Processor Frame with TruScale Card
PC Workstation with HIB & RAID
Joystick Control Panel

# TruZoom™


AJA's Corvid Ultra brings together a vast array of processing power for high data rate workflows such as 4K, high frame rate (HFR) and stereoscopic 3D.

## Maximum Performance

**The ultimate high performance I/O and processing engine.**

4K workflows require lots of bandwidth and processing power. Corvid Ultra is the hardware engine for TruZoom, enabling high frame rate material at 48, 50 and 60 fps, full resolution 4K or 2K stereoscopic files and onboard Debayering support for Raw workflows.

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

### TruScale™

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 Region of Interest, from the smallest web video to 4K resolution images, and scale it to any other resolution while still maintaining the highest possible quality. The TruScale hardware is factory-installed in Corvid Ultra and integrates with TruZoom to deliver outstanding images at any resolution.

### Key Features

- 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 fps
- Powerful, onboard Debayering for RAW workflows
- High-quality AJA TruScale™ means incredible quality at any resolution
- Two 4K capable expansion slots for additional I/O or processing
- Fast 8x PCIe 2.0 host connection
- 2RU form factor



** Pricing is for US only. International pricing will vary. Please contact a local AJA Reseller for pricing details.*

# Hardware I/O

## Connections

**16-channel AES/EBU audio In/Out**
Capture and output a full 16 channels of AES digital audio for easy integration into your facility.

**Dual expansion bays**
Extend the performance capabilities of Corvid Ultra to suit your needs. Accepts optional TruScale cards for hardware-based arbitrary scaling


**Analog Audio Monitors**
Quickly monitor audio channels without the need for additional digital audio equipment.

**RS-422**
RS-422 remote control via 9-pin DB9 connector.

**Reference and LTC In/Out loops**
Lock Corvid Ultra to a standard reference signal and feed LTC timecode in and out for synchronizing with external timecode signals.

**HDMI output**
HDMI 2.0b output capable of HD and 4K display.

**3G/HD/SDI Inputs and Outputs**
Input and output HD, 2K and 4K video.

**High-speed PCIe Gen. II host computer connection**
Move data between Corvid Ultra and the host computer at maximum speed for ultimate performance.


*High-speed PCIe Gen II host computer connection*

Click here

For full product specifications visit
www.aja.com/en/products/developer/corvid-ultra/#techspecs

# Hardware I/O

# Tech Specs

## Video Formats

- 4K:
  - 3840x2160P 23.98, 24, 25, 29.97, 30, 48, 50, 59.94, 60
  - 4096x2160P 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
  - 2048 x 1080PsF 23.98, 24
- HD:
  - 720P 50, 59.94, 60
  - 1080i 25, 29.97, 30
  - 1080PsF 23.98, 24, 25, 29.97, 30
  - 1080p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
- SD:
  - 525i 29.97
  - 625i 25

## Pixel Formats

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

## Video Inputs

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

## Video Outputs

- 3G-SDI, SMPTE-259/292/296/424, 8- or 10-bits
- Single Link 4:2:2 or 4:4:4 (1 x BNC)
- Dual Link HD 4:4:4 (2 x BNC)
- 4K/UltraHD 4:4:4 (4 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, 48kHz synchronous
  - 16-channel 24-bit AES/EBU, 48kHz synchronous (8 x BNC)

## 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 (bi-directional)

## 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

## Arbitrary Scaling

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

## Physical Dimensions

- Width: 17.25" (43.8cm), compatible with standard 19" racks
- Height: 3.375" (8.57cm), 2 rack units (2 RU)
- Depth: 11.625" (29.5cm), including connectors

Click here For full product specifications visit www.aja.com/en/products/developer/corvid-ultra/#techspecs

## 3 Year Warranty

AJA Video warrants that Developer products will be free from defects in materials and workmanship for a period of five 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 post production 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**

**AJA Video Systems, Inc.**
Grass Valley, California
www.aja.com • sales@aja.com • support@aja.com

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