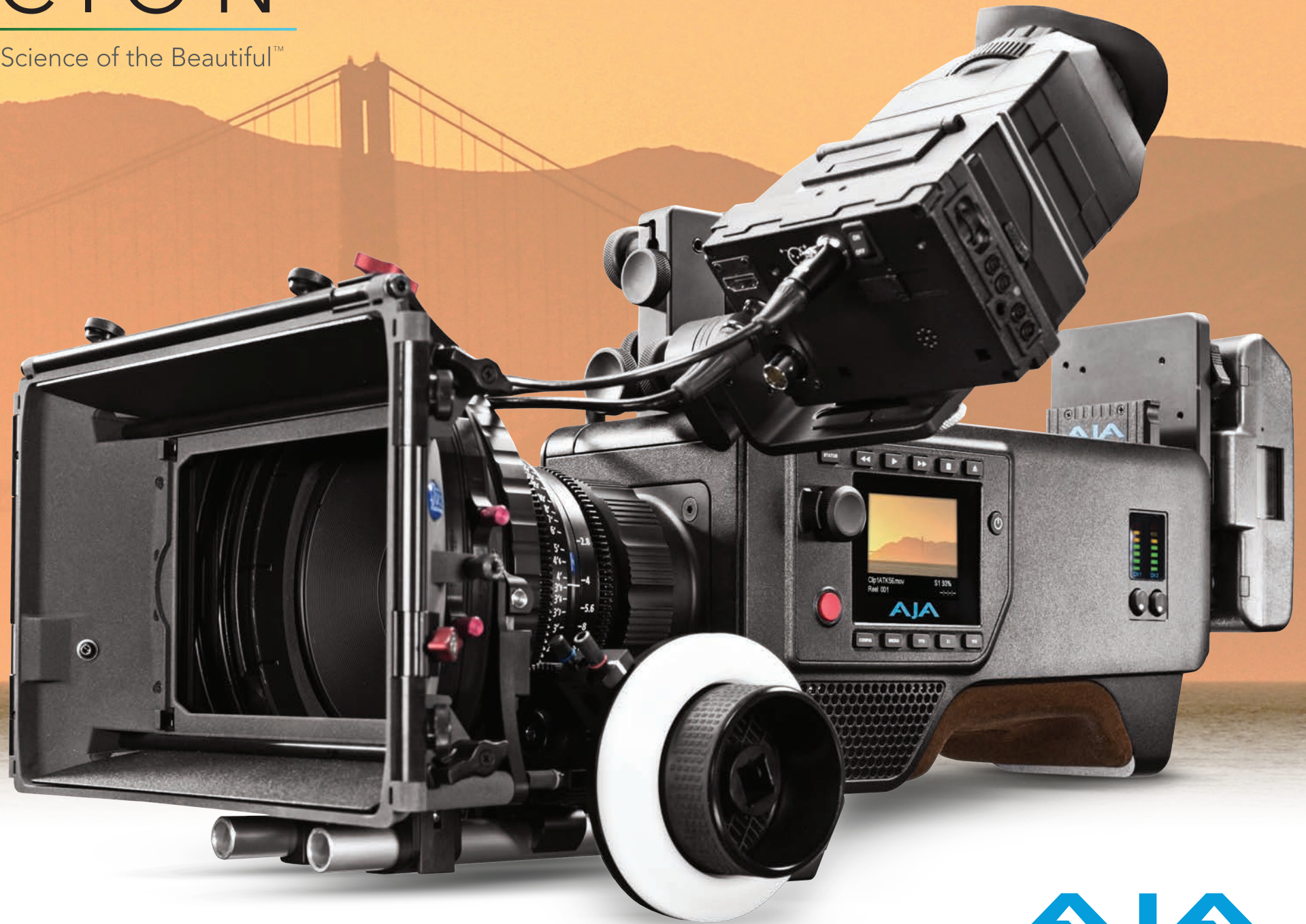


# CION™

Science of the Beautiful™



Because it matters.®

**AJA**  
VIDEO SYSTEMS

4K SIZED SENSOR

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12 STOPS OF  
DYNAMIC RANGE

---

PRORES 4444  
RECORDING

---

ERGONOMIC AND  
LIGHTWEIGHT

---

VIVID DETAIL  
VIBRANT COLORS





# SCIENCE OF THE BEAUTIFUL™

*CION; definition - a descendant or offspring, esp. of an illustrious family*

*Aesthetic; definition -  
Science of the beautiful*

CION is the new lightweight and ergonomic 4K/UltraHD and 2K/HD production camera from AJA. CION captures vivid detail and vibrant color at any resolution. Creatives choices abound with easy to implement in-camera color settings

Maximize production and minimize post by shooting Apple ProRes 4444 at up to 4K 30fps, ProRes 422 at up to 4K 60p or output AJA Raw at up to 4K 120fps. Record 59.94p directly as 23.98fps for cinematic slow motion effects in camera with on set replay.

The image recorded by CION can be defined as cinematic; technically modern yet classic in look. On-camera control is intuitive and fast and LAN remote control functionality brings every feature as well as live video feedback to any web browser.

CION is a union of great design and functionality, an engineered aesthetic that we are proud to describe as the Science of the Beautiful.

# FEATURES OVERVIEW



## SENSOR

CION features a 4K APS-C sized CMOS sensor with an electronic global shutter and 12 stops of dynamic range. Lenses designed for Super 35mm cover the sensor imaging area and the global shutter eliminates the undesirable qualities associated with rolling shutter-based sensors.



## RECORDING FORMATS

CION can record at 4K (4096x2160), UltraHD (3840x2160), 2K (2048x1080) and HD (1920x1080), 2K and HD are hardware scaled from the full 4K sensor, resulting in beautiful over-sampled images, which also retain the focal length of your lens at any resolution. at any desired resolution. Frame rates up to 50 and 60fps are supported - even at full 4K resolution.



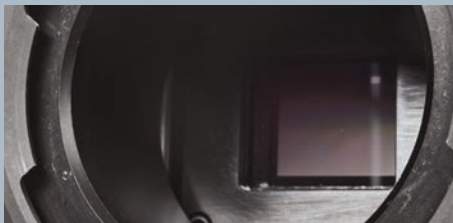
## PAK MEDIA

Pak Media uses AJA's proven SSD-based Pak storage which neatly mount directly in-camera. Pak256 or Pak512 allow recording of ProRes 4444, ProRes 422 (HQ), ProRes 422, ProRes 422 (LT) and ProRes (Proxy). Utilize the AJA Pak Dock (sold separately) and you can transfer your footage over high-speed Thunderbolt™ or USB3.



## PL LENS MOUNT

PL mount lenses are the industry standard for cinema and professional production cameras and are widely available the world-over. In addition, CION's lens mount is removable; third parties presently offer CanonEF/FD, Nikon F/G-Mount, Leica M, ARRI Bayonet, Panavision and B4 ENG , allowing even more creative choices and flexibility.



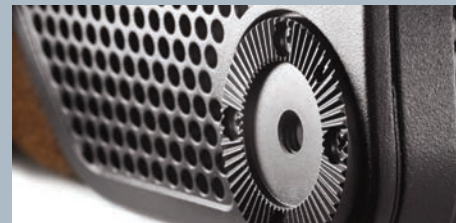
## OPTICAL LOW PASS FILTER AND IR CUT FILTER

An integrated OLPF (Optical Low-Pass Filter) reduces unwanted moiré effects while still retaining vital image detail. The Infrared cut filter produces high quality colors within the image by blocking unwanted light wavelengths.



## BACK FOCUS ADJUSTMENT

The inclusion of a mechanical back focus adjustment allows the proper calibration of the distance between lens and sensor. By making finely tuned adjustments, the sharpest image quality is assured.



## CHASSIS

CION's sleek chassis is formed of gravity molded magnesium which is lightweight but extremely strong. Integrated steel rosettes allow you to mount industry standard accessories including hand grips and handle extensions directly to the camera body.



## MOUNTING

Aluminum cheese plates are fitted to both the top and the bottom of the chassis to provide easy mounting of accessories from both AJA and third parties, with standard thread sizes to offer the widest range of compatibility.

# ERGONOMICS

## COMFORTABLE AND CONVENIENT

CIION was designed to be comfortable, convenient and totally flexible for any shooting environment. A contoured shoulder pad fits comfortably to your shoulder for hand held use. An included top handle made of high grade aluminum and wood features an integrated LANC start/stop button. The handle base itself uses a standard 15mm rod and through hole to allow the additional mounting of third party accessories.



# INTERFACE CONTROLS

## UI CONTROL

All interface controls are found on the side of the camera facing the operator to provide easy single user functionality. The menu structure itself is elegant and free of cumbersome sub-menu navigation. Confidently dial settings with a robust selection knob that gives clear mechanical feedback as you adjust.

Dedicated menu buttons offer direct access to vital camera settings including device status (STATUS), configuration (CONFIG), media management (MEDIA), format and frames per second (P), exposure index (EI) and white balance (WB). Key transport controls are easy to access, including play,

fast-forward, rewind and stop. CIION also offers powerful network-based control. Via the LAN connection, a web-browser UI allows for remote configuration of the camera. Your CIION is completely controllable whether it's on a crane, jib or car mount from virtually any web browser.

LED VU meters are placed for easy and accurate audio monitoring. Control knobs for each audio channel allow adjustment of the input level. A headphone monitoring output and a headphone volume control knob are also provided.

# OPEN CONNECTIVITY

DESIGNED AS AN OPEN CAMERA, WITHOUT ANY PROPRIETARY CONNECTORS.

Mini TRS headphone jack  
and volume control knob

2-pin power output connector

HDMI Output

2-pin input  
power connector

4-pin XLR  
power connector

Thunderbolt™  
connector

LAN connector



## CONVENIENTLY CONNECTED

CION uses industry standard audio and video connections which are conveniently located and unobtrusive to the operator.

3G-SDI and HDMI monitor outputs make monitor and viewfinder additions to CION easy to implement. A two-pin power output connector is positioned upfront for ease of operation. Utilizing CION's high-quality scaling capabilities, these dedicated monitoring outputs are always active when working with 4K or UltraHD. CION features more simultaneously live monitoring outputs than any other camera.



# WEB BROWSER REMOTE CONTROL

SIMPLE TO SETUP AND EASY TO CONFIGURE



## CONNECT AND CONFIGURE



The LAN port at the rear of the CION camera brings a wealth of control to the field or studio; every feature is controllable remotely via a web browser with no proprietary software required. Using an easily set up IP address for the camera and utilising a simple Ethernet cable, you can connect to any laptop on any platform and

use a web browser to communicate directly with your CION camera. A video feed has also been included to assist with remote or multi-camera scenarios. Multi-camera wireless control can be easily achieved with a standard WiFi access point, such as an Apple AirPort.

## TOTAL CAMERA CONTROL

You're able to adjust every camera parameter to suit your needs by either clicking on the section appropriate in the side bar of the browser or you can use the buttons in the window that reflect those found on the camera. You have the freedom to work either way. You can see clearly the options available to each section; navigation is intuitive at every step.

## CENTRALIZED PRESET DEPLOYMENT

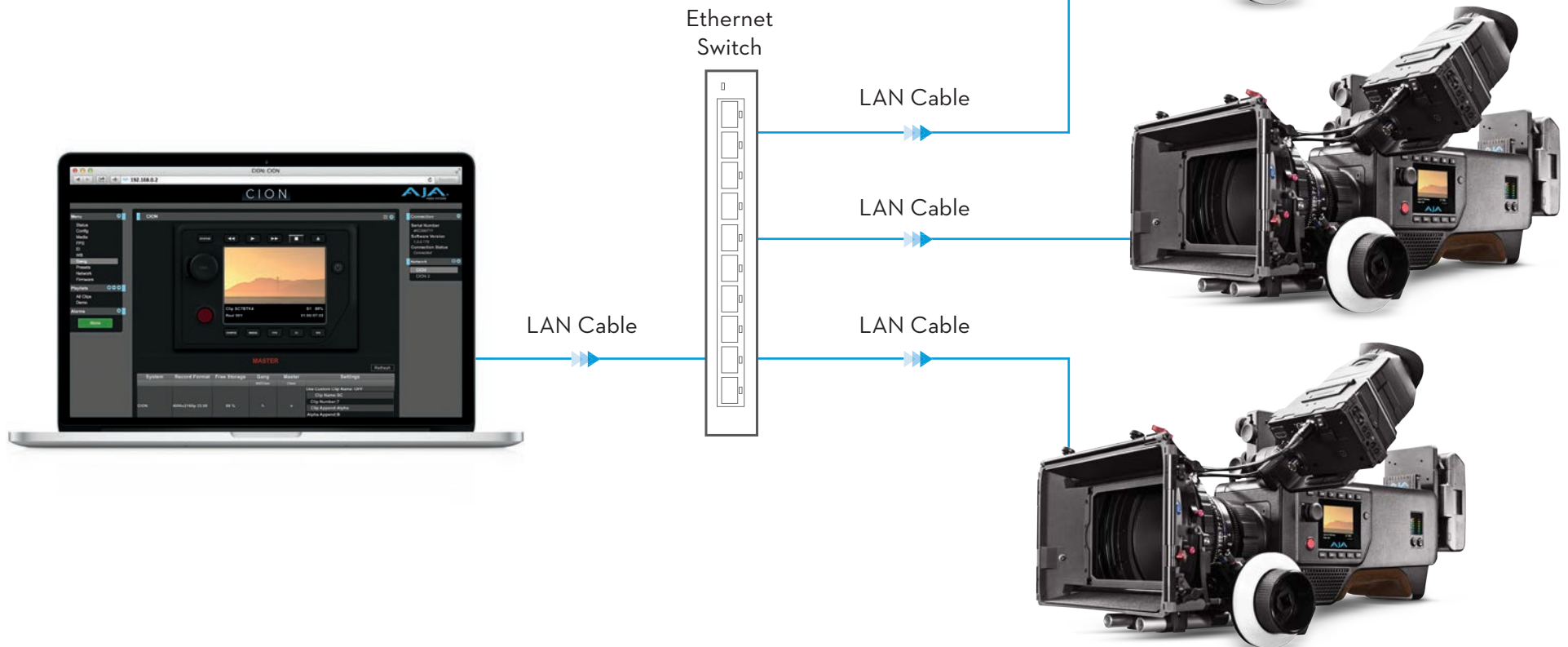
Having made adjustments you are able to save these as a preset for use later; quickly and easily recall the preset you need. You can even save a preset and deploy it to other CION cameras that you have linked via a simple Ethernet switch. Up to twenty banks of presets can be saved bringing huge flexibility and time saving whilst shooting.



## MULTICAM GANG CONTROL

CION multicam shoots are straightforward to implement and manage by using a laptop with a simple ethernet switch and LAN cables. The web UI allows complete and independent set up of multiple CION cameras; you may name each camera and consolidate control of the cameras from within a web browser using the unique gang recording feature. The web UI will also allow realtime monitoring of the capacity of the Pak Media used in each CION.

File naming options are easily accessed in CION's menu structure. There is even an option to create custom names for clips as well.

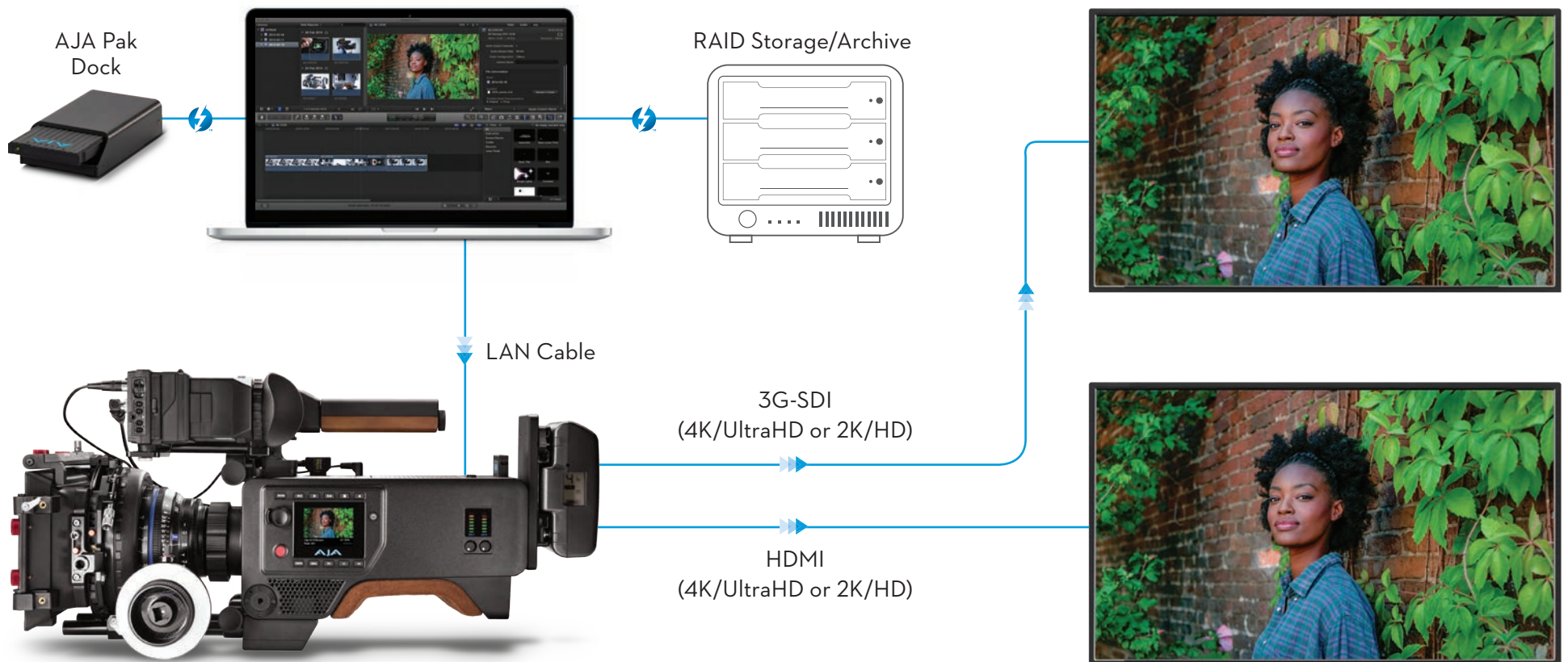




# THE HEART OF PRODUCTION

CION's considered design brings ease of operation to both field and studio based productions. For single users, set up and operation is intuitive and straightforward. For more complex productions camera operators, camera assistants and digital imaging technicians may all interact with CION without conflict. In such a scenario, the camera-operator can use one monitor output for framing, the camera-assistant another monitor output for judging focus and the digital-imaging-technician can use yet another monitor output as well as the web UI to configure the unit.

# WORKFLOWS



## ON-SET BACKUP AND MONITORING WORKFLOW

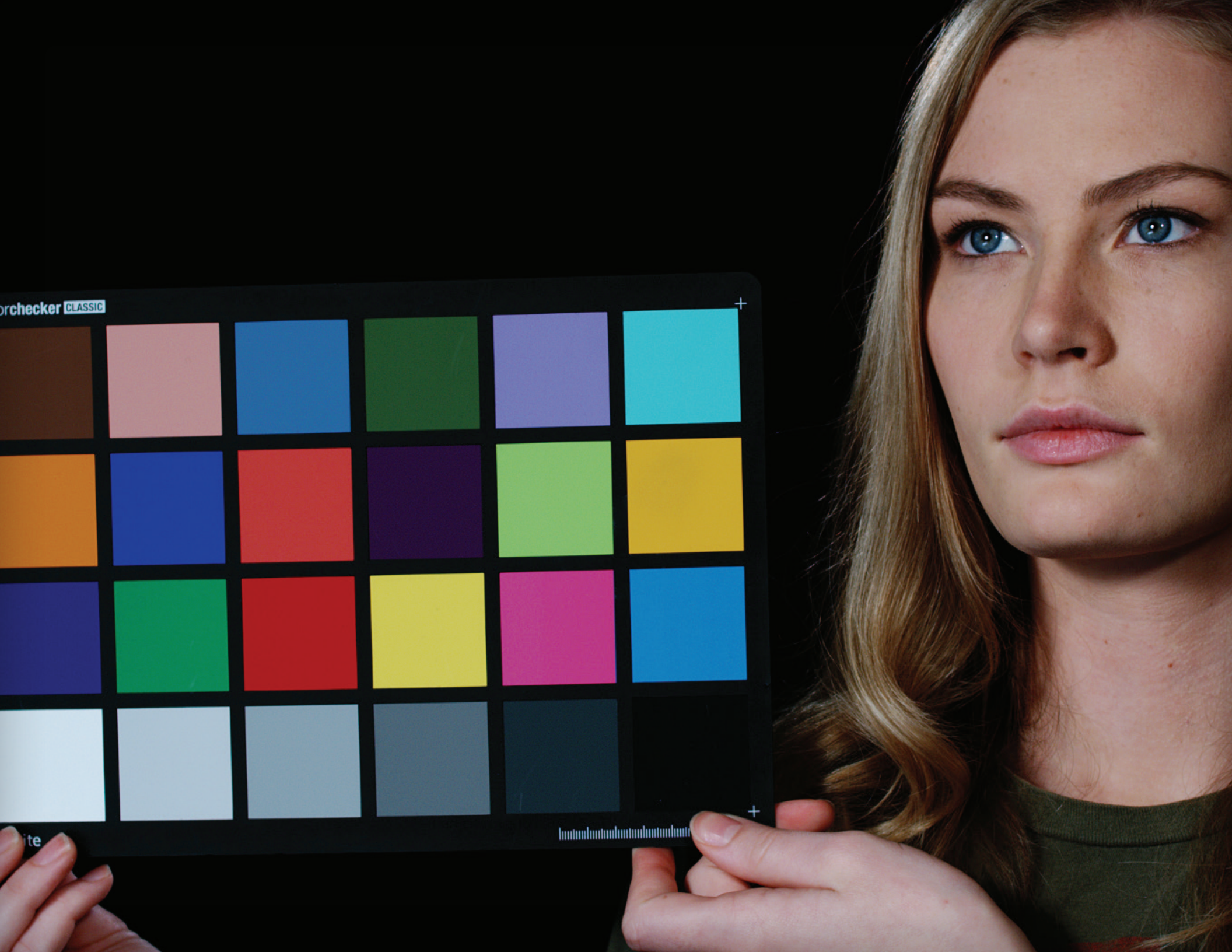
CIION provides unrivaled on set monitoring options for 4K/UltraHD and 2K/HD including a hardware dedicated down convert for 4K/UltraHD to 2K/HD. CIION's outputs are simultaneously live allowing great flexibility in any scenario independent of resolution. When working in 4K or UltraHD, five outputs are always available with one each for 4K and UltraHD via 4 x 3G SDI and HDMI as well as three dedicated down conversions via 2 x 3G SDI and 1 x HDMI. If you are working in HD or 2K then every single output is live at that resolution giving you up to eight outputs to share on set. The built in confidence monitor also allows yet another way to see the image being captured.

The AJA Pak Dock and Pak Media are designed for field use, featuring a rugged and reliable form factor; unlike a bare SSD drive, AJA Pak Media features a multi-insertion rated connector. Connecting to CIION via the LAN connector provides real time information regarding the Pak currently in use and by utilizing a Thunderbolt enabled RAID storage drive you can quickly back up your Pak Media as you shoot. Pak Media offers higher capacity at a lower cost per GB than CFast or XQD media.

# SCIENCE OF THE BEAUTIFUL

AJA's approach to the development of CION was not only towards the external aesthetic and its deliberate ergonomic styling; the image processing itself was considered throughout with the result being outstanding color accuracy in virtually any environment. CION is capable of capturing images at up to 4K 12-bit 444 allowing the broadest dynamic range possible and providing excellent latitude for post-production finishing. To minimize the amount of post processing required CION also allows for great flexibility in controlling the image captured by using our intuitive menu system and its straightforward operation on set. A variety of gamma curves (Disabled, Normal, Normal Expanded, Video, Expanded 1) are found within the Exposure Index menu to suit the highlights and shadows within a given scene. In addition you can choose from a range of color temperatures within the White Balance menu providing standard values to suit your scene. You are also able to Auto White Balance any scene by simply holding down the 'WB' button on the operational side of CION for three seconds. For those situations where more precise color control is beneficial on set you can control both the Saturation and also Color Correction via their corresponding menu options. This additional control can save valuable time in post, especially on time limited projects which require speedy delivery for broadcast, allowing you to adapt to changing light in even the most demanding environments.





Color checker CLASSIC

White



# ACCESSORIES AND ADD-ONS FOR CION



## PAK MEDIA

AJA Pak Media is high-capacity, solid state drives encased in a protective housing with rugged connection engineered to handle the rigors of repeated use in the field.



## PAK DOCK

External Pak Dock with Thunderbolt and USB 3.0 connections for fast transfer of media to a host computer.



## FRONT BASEPLATE

This accessory attaches to the bottom front cheese plate of CION. It features LWS spaced 15mm rod clamps. It is ideal for attaching follow focus units, lens supports and matteboxes.



## REAR BASEPLATE

This piece is attached to the AJA-supplied Battery Adapter Plate and the heel of CION. The Rear Baseplate features LWS spaced 15mm rod clamps allowing you to attach accessories to the rear of CION.



## UPPER ROD CLAMPS

In some situations, you may want to attach accessories to LWS spaced 15mm rods above the lens instead of below it. The Upper Rod Clamps accessory makes this possible.



## ENG PLATE ADAPTORS

CION is easily fitted to ENG quick release tripod plates by using the Wedge and either additional Heel plate, depending on the base plates used. Move between a tripod set up and go directly to shoulder mount with ease. Each sold separately.



## ROD TO ROSETTE ADAPTER MOUNT

This adaptor allows you to connect handles or other rosette attached accessories to 15mm rods.



## LANC COLLAR

A simple start/stop trigger that may be connected to either of CION's two LANC ports. The LANC Collar attaches to AJA handles or any 15mm rod; one LANC Collar included with CION.



## ROSETTE EXTENSION ARM

Available in 9" and 6" lengths, the Rosette Extension Arm fits directly to Hirth tooth rosettes mounted directly to CION's chassis to allow you to configure CION to fit your needs.



## 7" 15mm ROD

CION utilises standard 15mm rods, use these to connect matteboxes to the Front Baseplate or batteries to the Rear baseplate if you are balancing a longer zoom lens.



## VIEWFINDER MOUNT

You may configure this accessory to support electronic viewfinders or even lightweight on-board monitors. Nearly infinite adjustments are possible via sliding 15mm rods and the L-shaped bracket.



## COILED LANC CABLE

If you are using extension arms in combination with the LANC collar and Handle Grip then the LANC cable is required to allow start/stop when recording in the field.



## HANDLE GRIP

Included with CION; additional Handle Grips are available to purchase.



## HANDLE GRIP MOUNT

If you wish to use the Handle Grip in conjunction with the top cheese plate on CION's chassis then the Handle Grip Mount is required. This mount also allows the addition of the Viewfinder Mount; included with CION.



## BATTERY ADAPTOR PLATE

Mount point with tap-holes for popular third party battery systems; included with CION.

# OPEN UP YOUR WORLD

DESIGNED TO CREATE AN OPEN APPROACH TO ACCESSORIZING THE CAMERA

This open system gives you immense flexibility no matter the shooting environment, both indoors and outdoors. From shoulder to tripod and from dolly to crane, CION keeps all of your options open. The top accessory manufacturers in the world have also made accessories specifically for CION.

## LENSES

PL mount lenses are widely offered in standard focal lengths as well as zoom options. Manufacturers continue to release new and improved lenses designed for the demands of 4K resolution. Because the PL mount system is firmly established in the highest quality production, you can choose the right lens to suit your creative needs. CION's lens mount was also designed to be easy removed to allow an even wider choice of lens system to suit your needs.

Third parties now offer alternative mounts to allow you to use Canon EF/FD, Nikon F/G-Mount, Leica M, ARRI Bayonet, Panavision and B4 ENG lenses with ease. CION offers wider lens compatibility than any other 4K/UltraHD camera system

## ELECTRONIC VIEWFINDERS

The open system approach allows you to choose from a wide range of electronic viewfinders and connect them directly via CION's HDMI or 3G-SDI. Dedicated monitoring outputs are even conveniently placed at the front of the camera. A convenient power connector near the front can also provide power for many electronic viewfinders.

## MONITORS

Unrivaled monitoring options put CION at the heart of production. In addition to the front 3G-SDI and HDMI monitor outputs, additional rear 3G-SDI and HDMI outputs may also be used for monitoring. 4K and UltraHD monitoring is possible via the 4x 3G-SDI main outputs and the rear HDMI output (when appropriately configured). You can configure CION so that everyone can see what's happening.

## MICROPHONES

Two balanced analog audio XLR inputs are built into CION allowing compatibility with a huge range of professional audio gear. You can choose to mount a shotgun microphone to the cold shoe found on the top handle or run longer cable from external mixers to CION. Independent switches for mic or line level as well as phantom power are provided meaning you're ready for any audio situation.

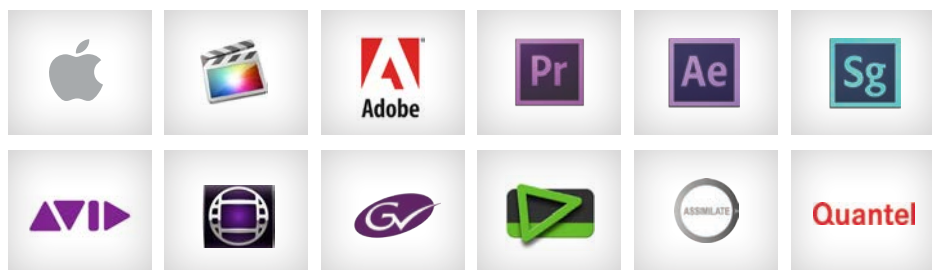
## RODS AND ON-CAMERA RIGGING

Removable cheese plates on the top and bottom of the camera make attaching accessories easy. The bottom cheese plate features 1/4-20 and 3/8-16 threaded holes. The AJA-provided top handle attaches to the top cheese plate via 1/4-20 screws for example. CION's top handle is based on standard 15mm rods, allowing compatibility with third-party accessories and endless possible configurations. Standard-sized rosettes on either side of the camera allow easy and dependable mounting points for handles and grips. By design, it's incredibly easy to add a wealth of accessories to CION to enhance your shooting experience.









# POST PRODUCTION

CION offers the easiest and fastest route to 4K/UltraHD post yet. Native codec handling enhances your editorial experience, resulting in fast and responsive playback with no compromise in quality. Apple ProRes offers pristine image quality at extremely manageable file sizes. Using the latest generation of Apple Mac Pro and the AJA Io 4K along with Apple ProRes files from CION makes even 4K and UltraHD editing a smooth experience. CION can provide 59.94fps material ready conformed to 23.98fps for cinematic slow motion in your timeline with no post processing required.

## ProRes

# TECH SPECS

## USER INTERFACE

6x Dedicated Menu Buttons  
(STATUS, CONFIG, MEDIA, FPS, EI and WB)  
4x Transport Buttons  
(Play, Fast Forward, Reverse Playback, Stop)  
1x Media Unmount Button  
1x Record Button  
1x User Interface Control Knob  
1x User Interface Screen, 320x240 LCD

## SENSOR TYPE

CMOS, Electronic global shutter, 12 stops of dynamic range

## SENSOR SIZE

4K APS-C sized, 22.5mm x 11.9mm

## EXPOSURE INDEX

250/320/500/800

## GAMMA

Disabled, Normal, Normal Expanded, Video, Expanded 1

## LENS MOUNT

Removable PL (positive lock) Third party CanonEF/FD, Nikon F/G-Mount, Leica M, ARRI Bayonet, Panavision and B4 ENG mounts are available.

## FILTRATION

Optical Low Pass Filter (OLPF) and IR Cut Filter (combined)

## REMOVABLE STORAGE

AJA Pak Media

## VIDEO OUTPUTS

4x 3G-SDI Main Outputs  
(4x BNC connectors, 3G/1.485Gbps)  
2x 3G-SDI Monitor Outputs  
(1x front mounted BNC connector,  
1x rear mounted BNC connector, 3G/1.485Gbps)  
2x HDMI Outputs  
(1x front mounted HDMI v1.3 Type A connector,  
1x rear mounted HDMI v1.4 Type A connector)

## AUDIO INPUTS

2x Balanced Analog Audio Inputs  
(2x 3-pin XLR connectors with dedicated line/mic/48v  
selection switch per input)

## AUDIO OUTPUT

1x Headphone Jack  
(3.5mm stereo mini TRS)

## REFERENCE INPUT

1x Reference Input  
(BNC connector, analog color black)

## TIMECODE

1x LTC  
(BNC connector, 0.5 to 4.5Vpp)

## START/STOP TRIGGER

2x LANC  
(1x 2.5mm top connector and 1x 2.5mm side connector)

## NETWORK INTERFACE

1x LAN connector (RJ45 connector, 10/100/1000)

## DATA OUTPUT

AJA Raw via 3G-SDI up to 120p or Thunderbolt™ up to  
30fps in 4K, UltraHD, 2K and HD rasters

## WEIGHT

6.38 lbs / 2.89 kg (without top handle attached)  
7.40 lbs / 3.35 kg (with top handle attached)

## POWER

AC Range: 100-240 VAC 50/60Hz (AC adapter)  
DC Range: 12-18Vdc, 5A maximum  
(4-pin XLR connector or 2-pin input connector)  
Consumption: 38-42W typical, 45-47W maximum  
(Note: does not include power draw from 2-pin output connector)  
Output: 2-pin power output connector, 10W recommended maximum

## TEMPERATURE RANGE

Safe Operating Temperature Range: 5C to 40C  
Safe Storage Temperature Range (power OFF): -20C to 60C

## FORMAT/FRAME RATE/ ENCODING/OUTPUT

### 4K

4K (4096x2160) progressive 23.98/24/25/29.97/30/50/59.94/60/119.88/120  
Apple ProRes 4444 or Apple ProRes 422 (all versions) up to/including 30fps  
Apple ProRes 422 (or a lower data rate ProRes version) for 50/59.94/60fps  
SDI output support for 23.98/24/25/29.97/30fps  
(SDI 1-4 YCbCr, SDI 1-4 RGB or SDI 1 Raw)  
SDI output support for 50/59.94/60fps (SDI 1-4 YCbCr or SDI 1-2 Raw)  
SDI output support for 119.88/120fps (SDI 1-4 Raw)

### UltraHD

UltraHD (3840x2160) progressive  
23.98/24/25/29.97/30/50/59.94/60/119.88/120  
Apple ProRes 4444 or Apple ProRes 422 (all versions) up to/including 30fps  
Apple ProRes 422 (or a lower data rate ProRes version) for 50/59.94/60fps  
SDI output support for 23.98/24/25/29.97/30fps  
(SDI 1-4 YCbCr, SDI 1-4 RGB or SDI 1 Raw)  
SDI output support for 50/59.94/60fps (SDI 1-4 YCbCr or SDI 1-2 RAW)  
SDI output support for 119.88/120fps (SDI 1-4 Raw)

### 2K

2K (2048x1080) progressive 23.98/24/25/29.97/30/50/59.94/60  
Apple ProRes 4444 or Apple ProRes 422 (all versions) up to/including 30fps  
Apple ProRes 422 (all versions) for 50/59.94/60fps  
SDI output support for 23.98/24/25/29.97/30fps  
(SDI 1 YCbCr, SDI 1-2 RGB, or SDI 1 RGB)  
SDI output support for 50/59.94/60fps (SDI 1-2 YCbCr or SDI 1 YCbCr)

### 1080 Progressive

1080 HD (1920x1080) progressive 23.98/24/25/29.97/30/50/59.94/60  
Apple ProRes 4444 or Apple ProRes 422 (all versions) up to/including 30fps  
Apple ProRes 422 (all versions) for 50/59.94/60fps  
SDI output support for 23.98/24/25/29.97/30fps  
(SDI 1 YCbCr, SDI 1-2 RGB, or SDI 1 RGB)  
SDI output support for 50/59.94/60fps (SDI 1-2 YCbCr or SDI 1 YCbCr)

### 1080 Interlaced

1080 HD (1920x1080) interlaced 25/29.97/30  
Apple ProRes 422 (all versions) up to/including 30fps  
SDI output support up to/including 30fps (SDI 1 YCbCr)

## 2-year warranty

AJA Video warrants that CION will be free from defects in materials and workmanship for a period of two 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](http://www.aja.com)

AJA Video Systems, Inc.  
Grass Valley, California  
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Because it matters.®

