



 THUNDERBOLT.

# ***io4K***

## **4K and HD I/O for Thunderbolt™ 2**

Portable 4K, UHD, 2K and HD I/O via SDI and HDMI

 **AJA**<sup>®</sup>  
VIDEO SYSTEMS

Because it matters.™



Extend your portable power with high quality 4K, UHD, 2K and HD I/O powered by Thunderbolt 2 technology.

## Maximum 4K Performance.

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 SD to HD, UltraHD and full 4K over both SDI and HDMI.

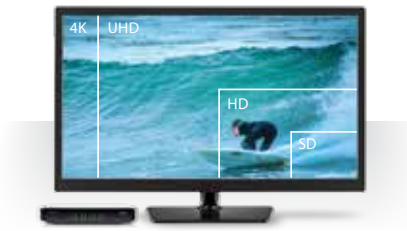
The dual Thunderbolt 2 ports on Io 4K allow you to daisy chain additional peripherals such as high-resolution displays and high-capacity storage with plenty of flexibility.

Io 4K's elegant, aluminum construction is strong enough to survive the rigors of life in the field, while looking beautiful in your edit suite. Io 4K seamlessly integrates with leading post-production and delivery tools from Apple, Adobe, Avid, Autodesk, Telestream and many more.

## Professional connectivity

The latest Thunderbolt 2 technology allows even greater bandwidth between host computer systems and properly engineered Thunderbolt devices. AJA's io 4K takes full advantage of this improved throughput to allow capture and output of video signals from SD to 4K and everything in between.

Io 4K supports 4K, UltraHD, 3G-SDI, Dual Link, HD-SDI and SD-SDI as well as UHD and HD over HDMI 1.4a for both capture and output. A dedicated, real time, always-on HD-SDI output allows io 4K to simultaneously output to HD monitors when working at 4K or UHD resolutions, providing cost-effective monitoring options in addition to full resolution outputs.



### Futureproof

With more affordable high-resolution cameras available, many productions are opting to shoot at a higher resolution even if final delivery is still in SD or HD. This offers the flexibility to re-master at higher resolutions in the future.

Io 4K supports your current SD and HD workflows and provides a path to move to higher resolution productions whenever the need arises. The real time down-converter also means you can work at higher resolutions and easily create lower resolution deliverables without the need to recapture or re-edit – all at a size that's easy to take on-set or in the field.



### Powerful

Thunderbolt 2 technology increases the available bandwidth that can be carried on a single Thunderbolt cable. Io 4K capitalizes on this increased capacity to allow up to 4K signals to be captured and output.

With dual Thunderbolt 2 ports, Io 4K can daisy chain additional devices together such as high-resolution displays and high-capacity storage for a complete, portable solution that's powerful enough to meet the demands of professional production.

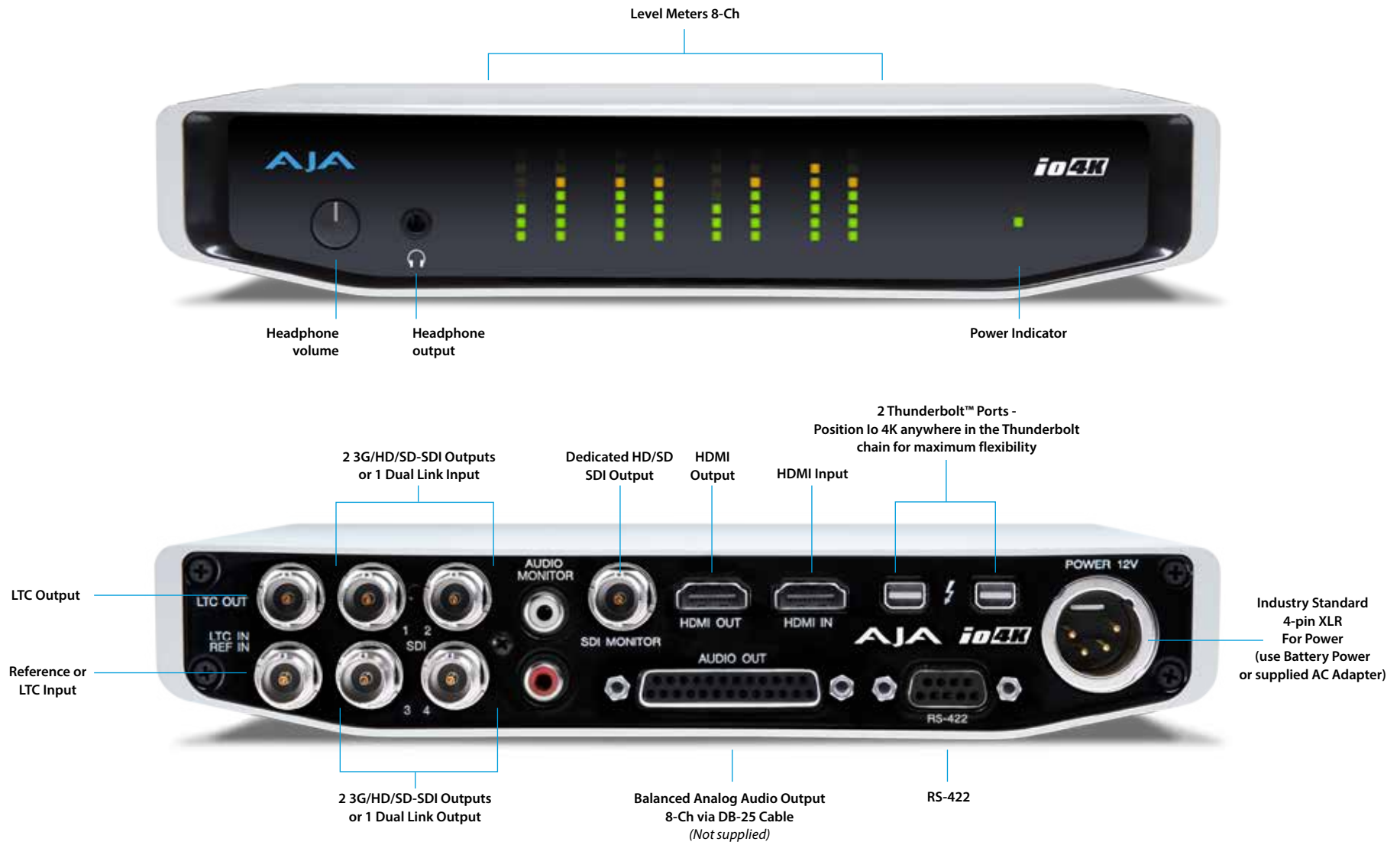


### Compatible

AJA's industry-proven drivers and application plug-ins provide tight integration with leading post-production and delivery tools such as Apple Final Cut Pro X, Adobe Creative Cloud, AJA Control Room, Telestream Wirecast 5 and more.

Io 4K gives you the flexibility to use the software tools that are appropriate for your workflow while maintaining consistent, high-quality hardware capture and output that's ideal for your workflows now and into the future.

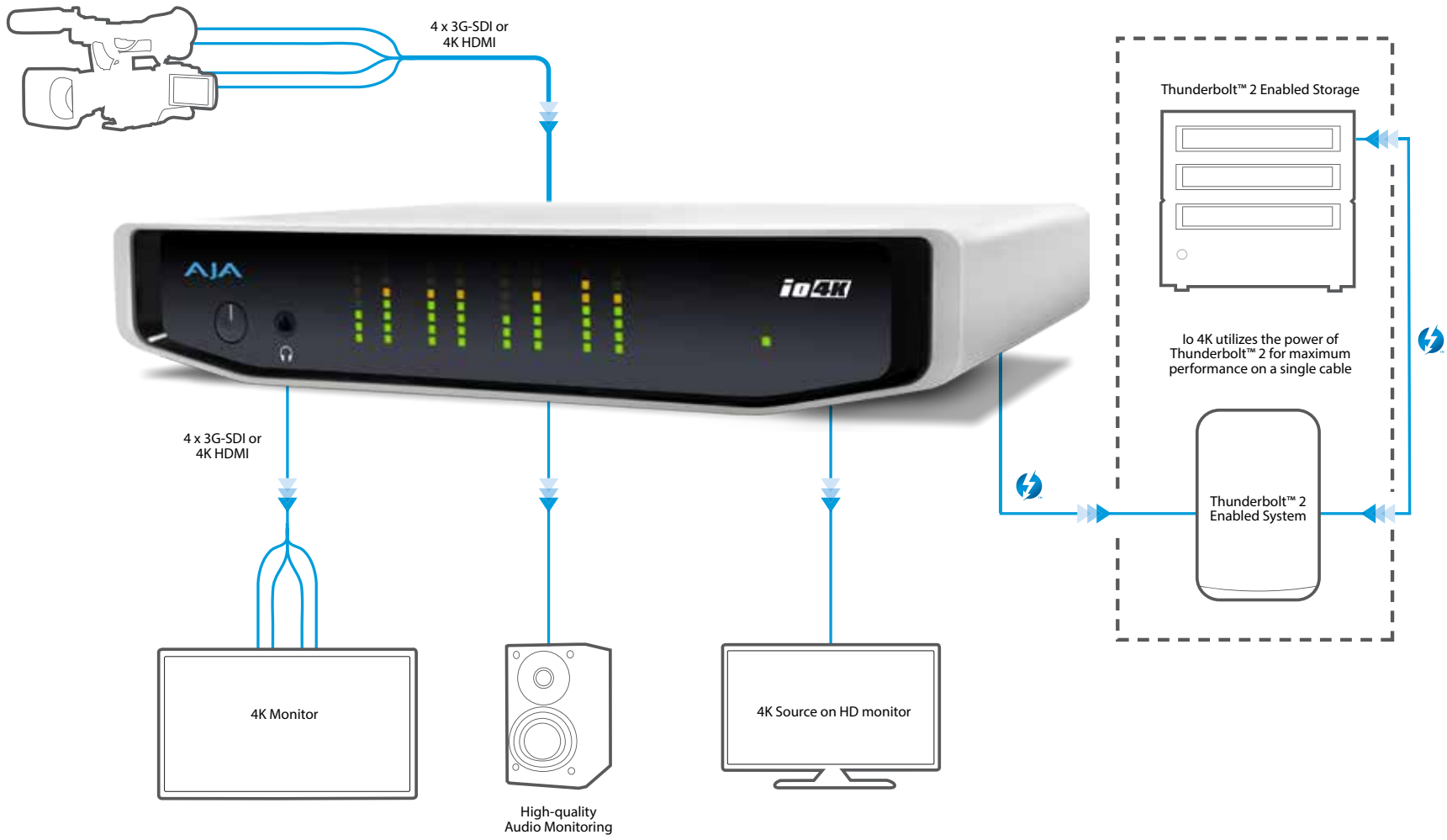
## Connections



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

## Workflow

Thunderbolt™-enabled workflow



# Tech Specs

## Video Formats

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

## Video Inputs

- 3G/SD/HD 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)
- 2K HSDL (High Speed Data Link) 4:4:4, (2 x BNC)
- 4K/QuadHD 4:4:4 (4 x BNC)
- HDMI v1.4
  - 30/36 bits/pixel, RGB or YUV, 2.25Gbps.
  - SD, HD, 1080p-50/60, 4K, 2K and stereoscopic HD support

## Video Outputs

- 3G/SD/HD 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)
- 2K HSDL (High Speed Data Link) 4:4:4, (2 x BNC)
- 4K/QuadHD 4:4:4 (4 x BNC)
- HDMI v1.4
  - 30/36 bits/pixel, RGB or YUV, 2.25Gbps.
  - SD, HD, 1080p-50/60, 4K, 2K and stereoscopic HD support

## Audio Input Digital

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

## Audio Output Digital

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

## Audio Output Analog

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

## Downstream Keyer

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

## 4K/UHD Down-Conversion

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

## Reference and LTC I/O

- 1x BNC LTC Output
  - 1 x BNC assignable to Reference video or LTC input
- Reference:
- Analog Color Black (1V) or Composite Sync (2 or 4V)
  - Non-terminating

## Physical

- Interface: Thunderbolt 2 (2 x)
- Power: 10-20V, 30-60W\*

*\* Note: Nominal power is 30W. However, multiple connected Thunderbolt devices may place additional power demands on Io 4K, which could increase the power draw to 60W.*

## 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

Click here



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

### Incredible 3-year warranty

AJA Video warrants that its 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 post-production markets.

AJA offers the Io and KONA desktop video products, Ki Pro family of recorders, miniature standalone converters, and a complete line of rack mount interface and conversion cards and frames. With a headquarters and design center located in Grass Valley, California, AJA Video offers its products through an extensive sales channel of dealers and systems integrators around the world. For further information, please see our website at [www.aja.com](http://www.aja.com)

**B e c a u s e   i t   m a t t e r s .<sup>™</sup>**

AJA Video Systems Inc.  
Grass Valley, California  
[www.aja.com](http://www.aja.com) • [sales@aja.com](mailto:sales@aja.com) • [support@aja.com](mailto:support@aja.com)

