

# Io<sup>®</sup> 4K Plus



## The Ultimate 4K Performance, with Thunderbolt™ 3

Io 4K Plus will revolutionize and simplify your portable or desktop I/O capabilities with the speed and bandwidth of Thunderbolt 3.

Io 4K Plus offers HDR, 4K/UltraHD HFR and deep color support with 12G-SDI, and true HDMI 2.0 connectivity.

Io 4K Plus delivers tremendous performance and flexibility for your video and multi-channel audio I/O requirements. Ingest, monitor and output across 12G-SDI (which also supports 6G, 3G, and 1.5G-SDI) and HDMI 2.0 with embedded or analog audio. Power any creative project using a rich professional feature set with support for High Frame Rate, Deep Color, and HDR workflows.

The power and performance of Thunderbolt 3 enables Io 4K Plus to transfer your video and audio whether SD, HD, 2K, UltraHD or full 4K over both SDI and HDMI and supports 4K frame rates up to 50p/60p to and from your Thunderbolt 3 equipped Mac or PC. Io 4K Plus has dual Thunderbolt 3 ports enabling daisy chaining for configuration flexibility.

Io 4K Plus hides immense power under its elegant exterior. Aluminum construction provides a solid shield from the rigors of life in the field while looking beautiful in your edit suite. Io 4K Plus seamlessly integrates with leading production, post, mastering and streaming tools from Apple®, Adobe®, Avid®, Autodesk®, Telestream® and many more.



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## Professional Connectivity

Thunderbolt 3 technology allows even greater bandwidth between host computer systems and properly engineered Thunderbolt devices. AJA's Io 4K Plus takes full advantage of this improved throughput to enable capture, monitoring and output of video signals from 4K over a single 12G or HDMI 2.0 cable to 1.5G SD-SDI and everything in between.

Io 4K Plus supports 4K, UltraHD, 12G-SDI, 6G-SDI, 3G-SDI, Dual Link, HD-SDI and SD-SDI as well as UltraHD and HD over HDMI 2.0 for both capture and output. The HDMI output accurately displays HDR10 and HLG for support of emerging HDR workflows. A dedicated, real time, always on HD-SDI output allows Io 4K Plus to simultaneously output to HD monitors when working at 4K or UltraHD resolutions, providing cost effective monitoring options in addition to full resolution outputs.



HDR

## Futureproof

Io 4K Plus has the connectivity required for today's broad bandwidth workflows. 12G-SDI in and out (connections also support 6G, 3G, and 1.5G SDI) as well as HDMI in and out, simplifying your cable runs between cameras, routers, switchers, recorders and VTRs.

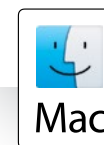
Io 4K Plus elegantly handles 4K HFR and the increased color space and luminance ranges demanded by emerging HDR workflows. Bring your imagery to life with HDR10 or HLG capture or output to a compatible HDMI HDR monitor.



## Small, Yet Powerful

Io 4K Plus makes full use of Thunderbolt 3 speed, power and bandwidth, to enable outstanding capabilities and performance for all your 4K/UltraHD/2K/HD or SD production, post, streaming or live event needs.

All at a size that's small and rugged enough to easily take on-set or in the field. Connect to a Thunderbolt 3 laptop or desktop workstation anywhere and power your performance while dual Thunderbolt 3 ports enable daisy chaining for configuration flexibility, making life easier for you whether in the field or studio.



## Proven

Io 4K Plus utilizes AJA's proven driver and plug-in technology for compatibility with a wide range of production, editing, graphics, streaming and broadcast software packages. Capture and monitor directly within your application of choice for a seamless workflow solution wherever your creativity takes you, from set to studio and everywhere in-between.

Io 4K Plus provides the flexibility to use the software tools that are appropriate for your workflow while maintaining consistent, high quality hardware capture, monitoring and output.

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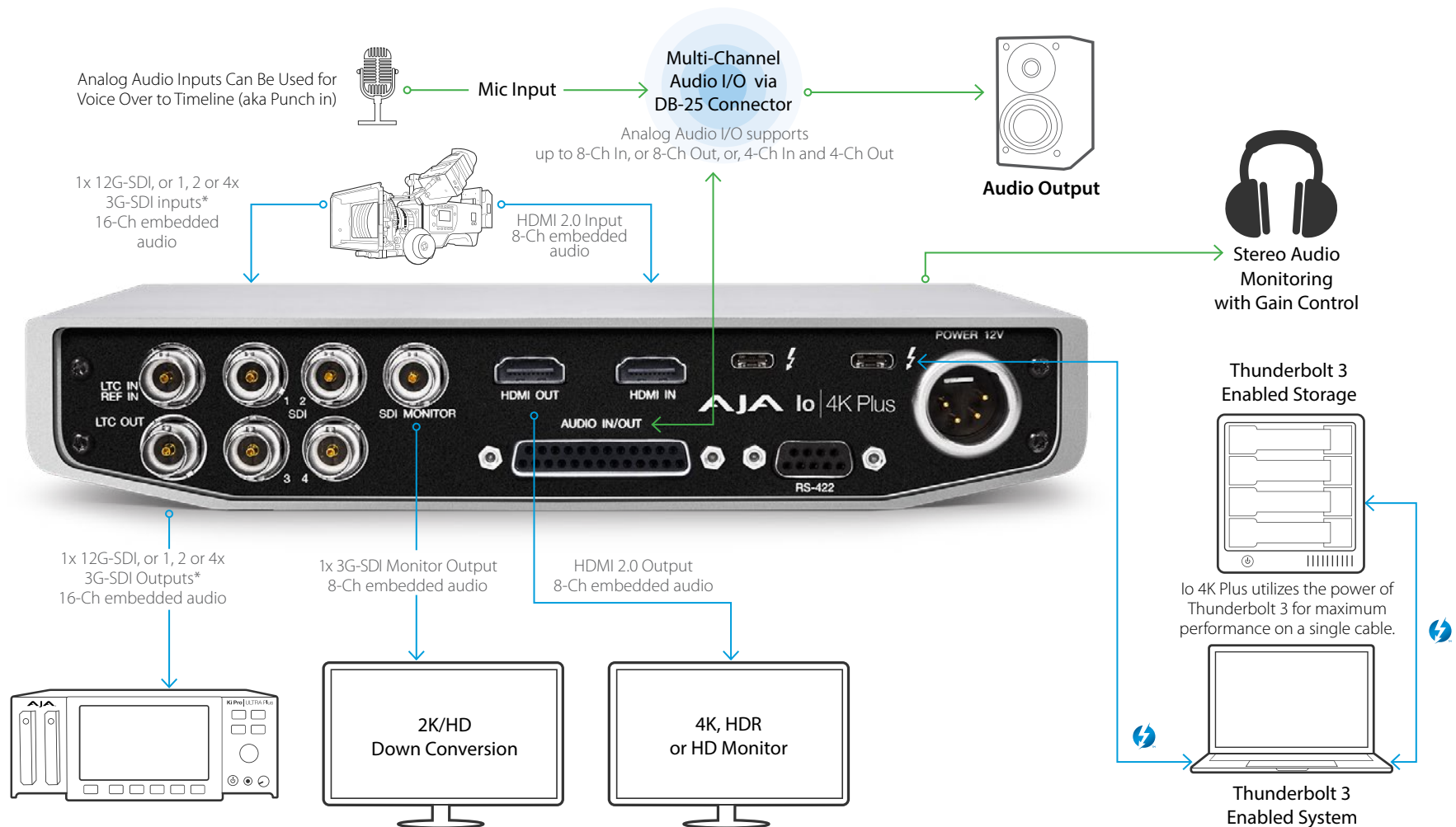
## Connections



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

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## Workflow



*\*SDI connections are bidirectional. For 2K/HD, capture and monitoring can be simultaneous. For 4K/UltraHD with 12G-SDI, capture and monitoring can also be simultaneous. For 4K/UltraHD with 3G-SDI, all four connections must be used for either Input or Output*



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## Tech Specs

### Video Formats

- (4K) 4096 x 2160p 23.98, 24, 25, 29.97, 30, 47.95, 48, 50, 59.94, 60
- (UltraHD) 3840 x 2160p 23.98, 24, 25, 29.97, 30, 47.95, 48, 50, 59.94, 60
- (2K) 2048 x 1080p 23.98, 24, 25, 29.97, 30, 47.95, 48, 50, 59.94, 60
- (2K) 2048 x 1080PsF 23.98, 24, 25, 29.97, 30
- (HD) 1080p 23.98, 24, 25, 29.97, 30, 47.95, 48, 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) 625i 50
- (SD) 525i 59.94

*Note: High Frame Rate capabilities are dependent on host system attributes. Not all systems and configurations will support all frame rates.*

### Video Inputs

- 12G-SDI\*, SMPTE-2082, 12-bit\*\*, 10-bit and 8-bit
- 6G-SDI\*, SMPTE-2081, 10-bit and 8-bit
- 3G-SDI, SMPTE-259/292/296/424/425, 12-bit\*, 10-bit and 8-bit
- 4K/UltraHD 4:4:4 (4x BNC)
- 1.5G-SDI, SMPTE 372M, Dual Link HD 4:4:4 (2x BNC), 12-bit\*\*, 10-bit and 8-bit
- 1.5G-SDI, SMPTE 292M, Single Link 4:2:2 (1x BNC), 10-bit and 8-bit
- HDMI v2.0
- 30/36-bits/pixel, RGB or YUV, 6 Gbps per color component
- 4K, UltraHD, 2K, HD and SD with HFR support up to 60p (4:2:2), 10-bit and 8-bit

*\*SDI connections are bidirectional. For 2K/HD, capture and monitoring can be simultaneous. For 4K/UltraHD with 12G-SDI, capture and monitoring can also be simultaneous. For 4K/UltraHD with 3G-SDI, all four connections must be used for either Input or Output. Additionally, 12G-SDI, 6G-SDI configured inputs support UltraHD / 4K only.*

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

### Video Outputs

- 12G-SDI\*, SMPTE-2082, 12-bit\*\*, 10-bit and 8-bit
- 6G-SDI\*, SMPTE-2081, 10-bit and 8-bit
- 3G-SDI, SMPTE-259/292/296/424, 12-bit\*, 10-bit and 8-bit
- 4K/UltraHD 4:4:4 (4x BNC)
- 1.5G-SDI, SMPTE 372M, Dual Link HD 4:4:4 (2x BNC), 12-bit\*\*, 10-bit and 8-bit
- 1.5G-SDI, SMPTE 292M, Single Link 4:2:2 (1x BNC), 10-bit and 8-bit
- HDMI v2.0
- 30/36 bits/pixel, RGB or YUV, 6 Gbps per color component
- 4K, UltraHD, 2K, HD and SD with HFR support up to 60p (4:2:2), 10-bit and 8-bit
- HDR10 Support - HDR Infoframe metadata, compatible with HDMI 2.0a/CTA-861.3
- HLG Support - compatible with HDMI 2.0b/CTA-861-G\*\*\*

*\*SDI connections are bidirectional. For 2K/HD, capture and monitoring can be simultaneous. For 4K/UltraHD with 12G-SDI, capture and monitoring can also be simultaneous. For 4K/UltraHD with 3G-SDI, all four connections must be used for either Input or Output. Additionally, 12G-SDI, 6G-SDI configured outputs support UltraHD / 4K only.*

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

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

### Audio Inputs Digital

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

### Audio Inputs Analog

- 8-Channel, 24 and 16-bit D/A analog audio, 48 kHz sample rate, balanced, using industry standard 8x XLR on DB-25 breakout cable (cable not included)
  - +24 dBu full scale digital (0 dBFS)
  - +/- 0.2 dB 20 to 20 kHz frequency response

Input supported across Ch 1-8, Ch 1-4, or Ch 5-8 depending on configuration chosen

### Audio Outputs 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 Outputs Analog

- 8-Channel, 24-bit D/A analog audio, 48 kHz sample rate, balanced, using industry standard 8x XLR on DB-25 breakout cable (cable not included)
- +24 dBu full scale digital (0dBFS)
- +/- 0.2 dB 20 to 20 kHz frequency response
- Output supported across Ch 1-8, Ch 1-4, or Ch 5-8 depending on configuration chosen

### Downstream Keyer

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

### Down-Conversion 4K/UltraHD

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

### Reference and LTC I/O

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

### Reference

- Analog Color Black (1V) or Composite Sync (2 or 4V) or HD Tri-Level Sync (1V)
- Reference input is terminated into 75 ohms when Genlock is set to Ref In

### Electrical Interface

- Thunderbolt 3 (2x)

### 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 Connection
6	GND
7	RX+
8	TX-
9	GND
Shell	GND

### Size (w x d x h)

- 8.74" x 8.11" x 1.65" (222.0 x 206.0 x 41.9 mm)

### Weight

- 3.4 lbs (1.6 kg)

### Power (device only)

- 10-20V, 30W typical, 36W max, 70W max with USB-C power delivery to external devices

### Environment

- Safe Operating Temperature Range: 0 to 40 C (32 to 104 F)
- Safe Storage Temperature (Power OFF): -40 to 60 C (-40 to 140 F)
- Operating Relative Humidity: 10-90% noncondensing
- Operating Altitude: <3,000 meters (<10,000 feet)