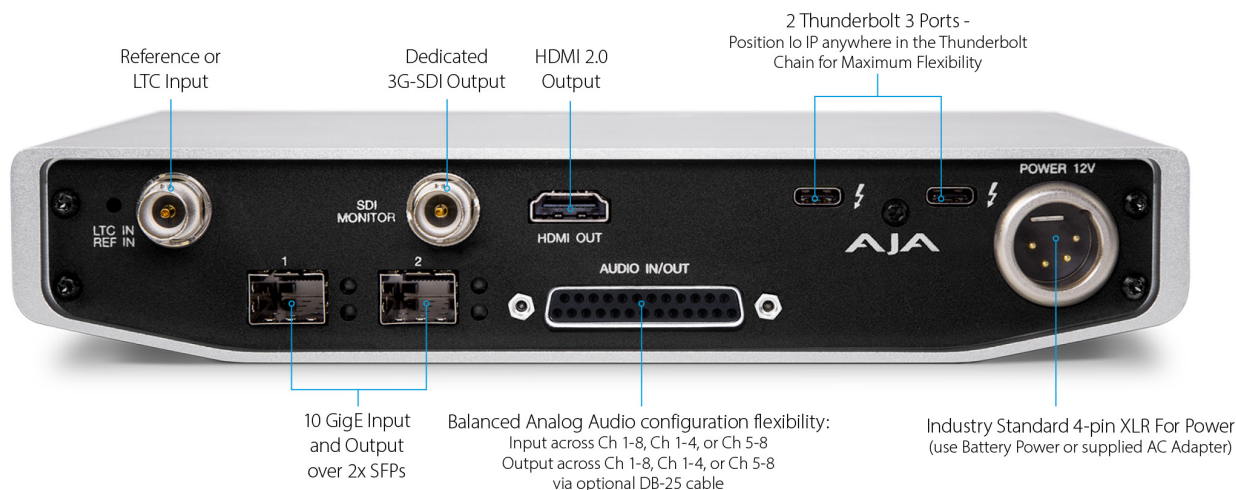# Io IP

Io IP is a portable Thunderbolt 3 ingest and playback device for professional video and audio over IP, bridging 10 GigE to the most popular creative software applications.

$ US MSRP

Io IP offers a tremendously flexible video and audio I/O platform with support for up to 4K/UltraHD with SMPTE ST 2110, support for up to 2K/HD with 2022-6 and the ability to take advantage of 2022-7 redundancy upon transmission for high availability architectures. Io IP ensures you have all the tools you need to succeed as the prevalence of video over IP increases.

Io IP has all the portable benefits of the Io family line with two Thunderbolt 3 ports for flexibility. It works with AJA's Control Room, Control Panel software and SDK tools, providing support for leading content creation applications, such as Adobe® Premiere® Pro, Apple® FCP X, Avid Media Composer®, FilmLight products and more.

https://www.aja.com/products/io-ip

Reference or LTC Input

Dedicated 3G-SDI Output

HDMI 2.0 Output

2 Thunderbolt 3 Ports - Position Io IP anywhere in the Thunderbolt Chain for Maximum Flexibility

10 GigE Input and Output over 2x SFPs

Balanced Analog Audio configuration flexibility:
Input across Ch 1-8, Ch 1-4, or Ch 5-8
Output across Ch 1-8, Ch 1-4, or Ch 5-8
via optional DB-25 cable

Industry Standard 4-pin XLR For Power
(use Battery Power or supplied AC Adapter)

Video Formats

- (4K)** 4096 x 2160p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
- (UltraHD)** 3840 x 2160p 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*
- (2K) 2048 x 1080PsF 23.98, 24, 25
- (HD) 1080p 23.98, 24, 25, 29.97, 30, 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

*SMPTE ST 2110 only
**2SI over IP via ST 2110-23 only

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

Media Transport Interfaces

- SMPTE ST 2110 (-10, -20, -21, -23, -30, -40), 2022-6, 2022-7
  - 2x SFP+ Cages - SFPs not included
- Recommended 10 GigE SFP+ modules:
  - Arista Networks SFP-10G-SR Compatible 10GBASE-SR
  - Fiberstore SFP-10GSR-85 10G SFP+ 850nm
  - Finisar FTLX1471D3BCL (for single mode 1310nm)
  - Mellanox MFM1T02A-SR 850nm 10G

Video Input IP

- SMPTE ST 2110, 2022-6, 2022-7
  - Single channel* input available when using ST 2110 or ST 2022-6 to receive 2K/HD
  - 4-Channels input available when using ST 2110-23 to receive 4K/HD
  - ANC support
  - Rx support for Narrow Senders**

*Capture and simultaneous monitoring is supported up to 2K/HD
**SMPTE ST 2110 only

Video Output IP

- SMPTE ST 2110, 2022-6, 2022-7
  - Single channel* output available when using ST 2110 or ST 2022-6 to transmit 2K/HD
  - 4-Channels output available when using ST 2110-23 to transmit 4K/HD
  - ANC support
  - Tx support for Narrow Receivers**

*Capture and simultaneous monitoring is supported up to 2K/HD
**SMPTE ST 2110 only

Video Output Digital

- 3G-SDI, SMPTE 425
  - RGB 4:4:4 12-bit*, YCbCr 4:2:2 10-bit
  - 2K/HD downsample available when working with 4K/UltraHD via ST 2110-23
- 1.5G-SDI, SMPTE 292M
  - Single Link HD-SDI YCbCr 4:2:2 10-bit
  - Dual Link RGB 4:4:4 12-bit*, Dual Link YCbCr 4:2:2 10-bit
- 270 Mbps SDI, SMPTE 259M-C
  - YCbCr 4:2:2 10-bit, 8-bit
- HDMI v2.0

- 30/36-bits/pixel, RGB or YUV, 6 Gbps per color component
- 4K/UltraHD, 2K/HD and SD
- 2K/HD downsample available when working with 4K/UltraHD via ST 2110-23

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

HDR

- SDI: VPID signaling for SDR/HDR Transfer Characteristics, Colorimetry and Luminance
- HDMI: HDR10 Support - HDR Infoframe metadata, compatible with HDMI 2.0a/CTA-861.3
- HDMI: HLG Support - compatible with HDMI 2.0b/CTA-861-G

Note: HDR support is application dependent. Check with your software manufacturer for compatibility.

Audio Input IP

- Up to 16-channel embedded audio, 24-bit per channel, 48 kHz synchronous

Audio Inputs Analog

- 8-channel, 24 and 16-bit A/D 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 the chosen configuration

Audio Output IP

- Up to 16-channel embedded audio, 24-bit per channel, 48 kHz synchronous

Audio Output Digital

- 16-channel, 24-bit SDI embedded audio, 48 kHz sample rate, synchronous
- 8-channel 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 (0 dBFS)
- +/- 0.2 dB 20 to 20 kHz frequency response
- Output supported across Ch 1-8, Ch 1-4, or Ch 5-8 depending on the chosen configuration

Downstream Keyer

- Supports graphics up to 2K/HD with alpha channel over video, matte or framebuffer, or framebuffer content over incoming video or matte

Reference and LTC I/O

- 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
- Applicable in SMPTE ST 2022-6/7 environments

Discovery, Registration and Control

- NMOS Tx/Rx support for SMPTE ST 2110 according to standards IS-04 v1.3 and IS-05 v1.1
  - Applicable in SMPTE ST 2110 environments
- LLDP

IP Clock

- PTP support compliant with PTP PTPv2 / IEEE 1588-2008
- Applicable in SMPTE ST 2110 environments

Electrical Interface

- Thunderbolt 3 (2x)

Size (w x d x h)

- 8.74" x 8.11" x 1.65" (222.0 x 206.0 x 41.91 mm)

Weight

- 3.3 lbs (1.5 kg)

Power (Device Only)

- 10-20V, 33W typical, 38W max, 72W max with USB-C power delivery to external devices

Environment

- Safe Operating Temperature Range: 0 to 40 C (32 F 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)