



## KONA X

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Designed from the ground up to support next-generation AI and AR workflows, KONA X is a 4-lane, PCIe 3.0 video I/O card with two full-size, bidirectional 12G-SDI BNC connections and two full-size HDMI 2.0 connections, one for input and one for output. KONA X lets users achieve as low as sub-frame latencies with Streaming DMA (Direct Memory Access), which enables powerful real time workflows with no perceptible delay on I/O and processing crucial for implementations such as live sports and virtual production\*.

Supporting 4K/UltraHD, 2K/HD, SD, 10-bit 4:2:2, 4:4:4, and 12-bit color spaces for pristine image quality, KONA X offers the flexibility to ingest and output with 12G-SDI and full-size HDMI 2.0 ports. The bidirectional 12G-SDI ports provide immense flexibility for capture and simultaneous pass-through, and with the appropriate software, multi-channel capture and streaming.

KONA X is driven by AJA's Control Room and Control Panel software, with support for leading content creation applications, such as Adobe® Premiere® Pro, Apple® Final Cut Pro, Avid Media Composer®, FilmLight, OBS Studio, vMix, and much more. KONA X is also compatible with AJA's multi-platform SDK for Developers.

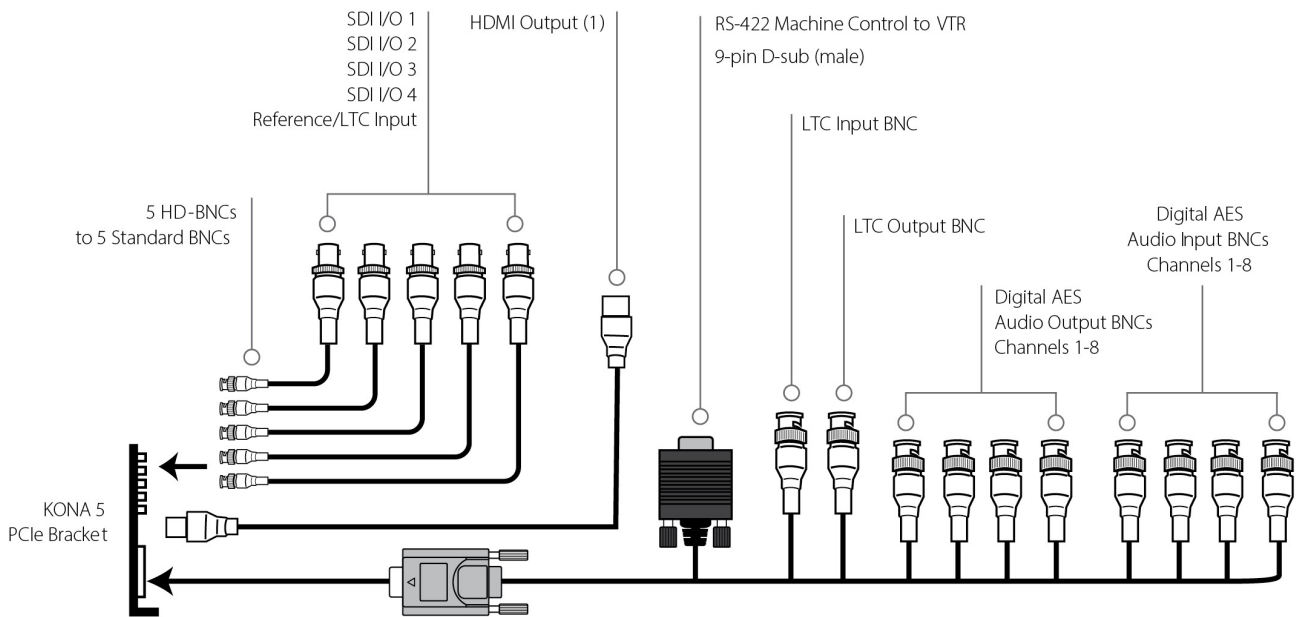
For HDR\* workflows, KONA X supports HDR10+, HLG, PQ, and Dolby Vision for rich color delivery over SDI and/or HDMI.

KONA X has the horsepower for your work today and into the future.

\*Application dependent

<https://www.aja.com/products/kona-x>

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## SDI Video Formats

- (4K) 4096x2160p 23.98, 24, 25, 29.97, 30, 47.95, 48, 50, 59.94, 60
- (UltraHD) 3840x2160p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
- (2K) 2048x1080p 23.98, 24, 25, 29.97, 30, 47.95, 48, 50, 59.94, 60
- (2K) 2048x1080PsF 23.98, 24, 25, 29.97, 30
- (HD) 1920x1080p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
- (HD) 1920x1080PsF 23.98, 24, 25, 29.97, 30
- (HD) 1920x1080i 50, 59.94, 60
- (HD) 1280x720p 50, 59.94, 60
- (SD) 625i 50
- (SD) 525i 59.94

- (UltraHD) 3840x2160p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
- (2K CEA) 2048x1080p 23.98, 24, 25, 29.97, 30, 47.95, 48, 50, 59.94, 60
- (HD) 1920x1080p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
- (HD) 1920x1080i 50, 59.94, 60
- (VESA DMT) 1600x1200p 60
- (VESA DMT) 1280x1024p 60
- (HD) 1280x720p 50, 59.94, 60
- (VESA DMT) 1024x768p 60
- (VESA DMT) 800x600p 60
- (SD) 625i 50
- (SD) 525i 59.94
- (VESA DMT) 640 x 480p 60

## HDMI Video Formats

- (4K CEA) 4096x2160p 23.98, 24, 25, 29.97, 30, 47.95, 48, 50, 59.94, 60

**Note:** Additional VESA (DMT) formats supported for certain applications

## Video Inputs Digital

- 12G-SDI, SMPTE-2082, 12-bit, 10-bit
  - YCbCr 4:2:2 10-bit up to 60p, RGB 4:4:4 12-bit up to 30p
- 6G-SDI, SMPTE-2081, 10-bit
- 3G-SDI, SMPTE 425
  - RGB 4:4:4 12-bit, YCbCr 4:2:2 10-bit
- 1.5G-SDI, SMPTE 292M
  - Single Link HD-SDI 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
  - YCbCr 4:2:2 10-bit up to 60p, RGB 4:4:4 12-bit up to 30p
  - Connectors are full size BNC / full size HDMI
  - HDMI Inputs and Outputs support VESA (DMT) rasters at limited rates

## Video Outputs Digital

- 12G-SDI, SMPTE-2082\*, 12-bit, 10-bit
  - YCbCr 4:2:2 10-bit up to 60p, RGB 4:4:4 12-bit up to 30p
- 6G-SDI, SMPTE-2081\*, 10-bit
- 3G-SDI, SMPTE 425
  - RGB 4:4:4 12-bit, YCbCr 4:2:2 10-bit
- 1.5G-SDI, SMPTE 292M
  - Single Link HD-SDI 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
  - YCbCr 4:2:2 10-bit up to 60p, RGB 4:4:4 12-bit up to 30p
  - Connectors are full-size BNC / full-size HDMI
  - HDMI Input and Output support VESA rasters

\*Compliant with subsets of specification for supported formats

## HDR

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

## SDI I/O (via PCIe Bracket)

- 2x full-size 12G-SDI connections
- SDI connections are bidirectional
  - Single channel SDI capture (plus simultaneous SDI pass-through monitoring)
  - Single channel SDI output

## HDMI I/O (via PCIe Bracket)

- 2x full-size (Type A) HDMI 2.0 connections
- HDMI connections are unidirectional (1x Input, 1x Output)
  - Single channel HDMI input
  - Single channel HDMI output

## HDMI Monitoring for SDI Inputs

- HDMI output connector supports
  - Single channel SDI source monitoring

## Video I/O Performance

- Capable of two channel 4K p60 capture or playback

## Audio Inputs 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
- 8-channel, 16 and 24-bit AES/EBU audio, 48 kHz sample rate, synchronous or nonsynchronous, internal sample rate conversion (via 4x BNC on breakout cable)

**Note:** Audio I/O is available via optional KONA Xpand card, or via customer supplied breakout connection to internal card connector

## Audio Input Analog

- 2-channel, 24 and 16-bit D/A analog audio, 48 kHz sample rate, balanced, using industry standard 2x 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

**Note:** Requires the optional KONA Xpand card

## 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
- 8-channel, 16 and 24-bit AES/EBU audio, 48 kHz sample rate, synchronous or nonsynchronous, internal sample rate conversion (via 4x BNC on breakout cable)

**Note:** AES audio requires the optional KONA Xpand card. SDI and HDMI audio do not require the Xpand card.

## Audio Output Analog

- 2-channel, 24-bit D/A analog audio, 48 kHz sample rate, balanced, using 2x XLR
- +24 dBu full scale digital (0 dBFS)
- +/- 0.2 dB 20 to 20 kHz frequency response

**Note:** Requires the optional KONA Xpand card

## Downstream Keyer

- Supports graphics up to 4K/UltraHD with alpha channel over video, matte or framebuffer, or framebuffer content over incoming video or matte

## 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

**Note:** Available via optional KONA Xpand card, or via customer supplied breakout connection to internal card

## Timecode

- LTC timecode input

- LTC timecode output

**Note:** Available via optional KONA Xpand card, or via customer supplied breakout connection to internal card

## Electrical Interface

- PCIe Gen 3x4

## 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

**Note:** Available via optional KONA Xpand card, or via customer supplied breakout connection to internal card

## Noise

- <50dBA (A-weighted at 1m in free air) <40-45dBA preferred (Phase 01 )>
- Fan is rated at 33.1dBA

## Regulatory Compliance (PRELIMINARY)

- UL94 V-0 flammability requirements
- RoHS 3, WEEE, and REACH compliant
- 62368-1 safety standards
- NRTL and/or T-mark license for AJA SDK Developers

## Size (w x d x h)

- Passive Configuration (no fan): 190.5 x 15.9 x 98.6 mm (7.5" x 0.63" x 3.88") Bracket Height: 127 mm (5.0")
- Active Configuration (with fan): 247.7 x 15.9 x 98.6 mm (9.75" x 0.63" x 3.88") Bracket Height: 127 mm (5.0")
- Xpand Card: 108.0 x 15.9 x 98.6 mm (4.25" x 0.63" x 3.88") Bracket Height: 127 mm (5.0")

## Weight

- PCIe Card: Active (with fan): 290.3g (10.2oz), Passive (no fan): 217.7g (7.7oz)
- Xpand Card: 90.7g (3.2oz)

## Power

- 20W typical with 16W on +12V and 4W on +3.3V
- PC Internal or PCI Aux Power Connector: Molex part number 45558-0003

**Note:** Card can utilize PCIe power from a 6 pin PCI 2x3 Aux Power connector or the PCIe slot

## Environment

- Safe Operating Temperature: 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) IEEE 1588-2008