



KONA XM

Medical video systems demand the lowest latency possible and deterministic performance for real-time visualization, analysis, and intervention. KONA XM meets this need with a DMA architecture that supports GPUDirect RDMA, allowing direct transfers between host memory and hardware accelerators without relying on local FPGA buffers. This ultra-low latency design enables real-time workflows with no perceptible delay between video input, processing, and output.

\$4715 US MSRP

<https://static.aja.com/products/kona-xm>

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

- 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 and at limited rates

HDMI Video Formats

- (4K CEA) 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 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

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

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 Infoframe metadata, 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 one for input and one for output
 - 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 uni-directional (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 Support

- KONA XM card is equipped with on-board hardware to support embedded audio, and the optional KONA Xpand board contains the hardware to support AES/EBU digital audio and discreet analog audio (and other functions). However, audio functionality is controlled by firmware programming. If you require audio functionality with KONA XM, please consult AJA SDK Support for more information.

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

- RoHS 3
- IEC 62368-1: 2014 2nd Edition safety standard
- Performed testing to the IEC/EN 60601-1-2: 2015 + A1: 2021 EMC standard
- EMC testing against other EMC standards, including EN 55032 and EN 55035

Size

- 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 from 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)