AJA Desktop Software – Release Notes v15.2

Linux RedHat / CentOS (7) v15.2 drivers and software for KONA

Introduction

AJA Desktop Software

This unified software, driver and firmware package contains the necessities in order to start using your AJA video I/O hardware.

The following AJA applications are installed:

- AJA Control Panel v15.2:
  - For setup and control of your AJA KONA, Io or T-TAP product, including firmware updates.
  - For high quality capture, playback and output.
- AJA System Test v15.2:
  - For testing storage to determine if it will be possible to sustain frame rates for chosen format(s).
- AJA NMOS v15.2:
  - An optional component providing discovery, registration and control for KONA IP running in SMPTE ST 2110 environments.

Operating System

- This driver/software version is compatible with Redhat/CentOS 7.
- Before running this installer, uninstall all previous versions of AJA software:
  - sudo yum remove ajantv2-dkms (also removes ajaretail since it depends on the ajantv2-dkms package)
- Two packages that must be installed: DKMS driver and AJA Retail Software.
  - The DKMS Driver installer requires the following package:
    - sudo yum install epel-release
  - The driver installer must run either in a root shell or with root permissions.
    - sudo yum install ajantv2-dkms-15.2-00.noarch.rpm
- The AJA Retail software must run either in a root shell or with root permissions.
  - sudo yum install ajaretail-15.2-00.x86_64.rpm
- For GPU accelerated desktop display, an Open CL version 1.2 or greater capable GPU is required.
- For additional hardware recommendations and requirements, please see the links below:
  - http://www.aja.com/en/support/kona-pc-system-configuration/

Third Party Software

AJA KONA hardware is used by many software and systems manufacturers, who provide their own software for user installation. The links below provide a guide to software support AJA is aware of, with additional software support being added frequently. Please contact the appropriate software vendor for information on whether AJA software or drivers are required when using their application. AJA recommends the latest released versions of 3rd party software for best performance:

https://www.aja.com/compatibility/kona

Relevant Products

The following products benefit from this update:

- KONA 5
- KONA IP
- KONA 4
- KONA 1
- KONA HDMI
- KONA LHi
- KONA LHe Plus

New Features in v15.2

- Cross-Platform Apple ProRes family available for Capture and Playback with AJA Control Room using macOS, Windows, or Linux.
- AJA KONA 5 now has two firmware choices.
    - The original “KONA 5” (4K bitfile) remains as-is with support for up to 4K 60p I/O via either single-channel Capture, Pass-Through and Output over 12G-SDI, or four-channel (2SI) Capture or Output over 3G-SDI.
    - A new “KONA 5 - 4x 12G” (8K bitfile) supports up to four simultaneous channels of 12G-SDI Capture or Output for 8K/UHD2 60p, or multi-channel Ingest or Playout. Check which firmware you have loaded.
- 8K/UHD2 logic added to AJA Control Panel for KONA 5.
- 8K/UHD2 Capture or Playback with AJA Control Room and KONA 5.
- AJA KONA IP has the following SMPTE ST 2110 feature enhancements:
    - SMPTE ST 2110-40 for ANC data; for transmittal and reception of timecode, closed captioning and more.
    - SMPTE ST 2110-23 for combining multiple ST 2110-20 Streams into a single video essence for 4K/UltraHD support. Essentially, 4K 2SI over ST 2110 using both 10 GigE links.
    - Redundancy support for ST 2110 Transmit as defined in ST 2022-7 up to 2K/HD.
- NMOS support and the new AJA NMOS application. During installation of the AJA Desktop Software package, you can choose to install an optional component. This application (which can be set to autorun on boot/restart) will

announce and attempt to register the host with an NMOS control system. See KONA IP or Io IP manual for more detail.

Recommendations in 15.2

- For best results when capturing AJA Control Room, set Ref In to Video In with AJA KONA products. Here as a reminder, this recommendation began with v14.3.

Fixes, Changes and Improvements in v15.2

Note: Items below are identified against the main AJA products affected.
These same issues may have also affected other AJA products that are not specifically called out.

- Rectified ability to playback ProRes 422 HQ media exported from Autodesk Flame in AJA Control Room, which would hang on import.
- Removed references to Analog Audio I/O when controlling AJA KONA 5 with AJA Control Panel.
- Fixed ability to properly read/write drop-frame vs. non-drop-frame timecode with AJA KONA IP with SMPTE ST 2110.
- Rectified a problem when, following capture or playback of a 2K 25p clip in AJA Control Room, audio mapping upon playback would now be incorrect (channels swapped).
- Eliminated problem when capturing from VTRs with no RP188 embedded TC (i.e. send TC via RS422), such that AJA Control Room would Capture DF (Drop Frame) clips as NDF (Non-Drop-Frame). Applies to analog VTRs, or older digital VTRs (e.g. DVW-A500 or DVCAM decks with machine control).
- Fixed item whereby following capture or playback of a 2K 25p clip in AJA Control Room, audio mapping upon playback would now be incorrect (channels swapped).
- Fixed problem where audio output from AJA Control Room was missing, until either reboot or device disconnected and reconnected.

Features, Fixes, Changes and Improvements in Prior Releases

v15.1

- AJA Control Room has numerous user interface enhancements including, but not limited to:
    - Full screen monitoring of video Playback or Capture including new keyboard shortcuts for fast toggling.
    - The ability to add/remove AJA Control Room windows to create custom interface layouts.

    - Please see manual for more details including a full list of all new functionality, icons and keyboard shortcuts.
- AJA Control Panel now includes the ability to use TOD (Time-of-Day) Timecode during Capture. Time is based on the host system clock which the AJA KONA or Io is connected to/installed within.
- KONA 5 now provides a simultaneous down-convert of 4K/UHD to 2K/HD via SDI #4, when outputting 4K/UHD over 12G-SDI (from SDI #3). When using 2SI (two sample interleave) the image will be subsampled, when using square division the image is down-converted.
- KONA 5 now supports RGB 444 UHD Level A and Level B.
- KONA 5 and KONA 4 now support 47.95/48P for 2K, and 4K, for both Level A and Level B.
- KONA IP SMPTE ST 2110 firmware and software combination now supports SDP grouping.
- Fixed failure to save "Follow Input" within a preset in AJA Control Panel.
- Solved problem in AJA Control Panel, where inputs would be detected as 'sf' instead of 'i', when the frame buffer progressive/interlace setting didn't match the incoming signal.
- Overcame problem in AJA Control Panel causing a Firmware update progress-bar malfunction along with a delay in update completion.
- Resolved problem following a Preferences Reset in AJA Control Room, whereby if a capture path was not set, initiating a capture could cause a disabled state.
- Rectified issue with 2K HDMI inputs on various AJA devices such that when in input-passthrough, the result was PSF on SDI outputs.
- Solved item where Closed Captioning output ceased upon switching between clips of differing frame rates/rasters in AJA Control Panel.
- Fix applied to the Analog Video Setup contextual menu in AJA Control Panel, removing incorrect options (for relevant AJA hardware).
- Fixed behavior in AJA Control Room with various AJA devices such that closed-captions were playing back formatted for 708 instead of 608 ANC.
- Overcame issue where RGB Output over 3G-SDI Level A, produced bad color from several AJA 3G-SDI capable cards and devices. Important Note: AJA desktop cards and devices do not at this time support RGB 3G-SDI Level A Input.
- Overcame problem with numerous products getting into a state where Closed Captions incoming to AJA Control Panel would not display correctly.
- Rectified HD HFR inputs not routing correctly for RGB capture in AJA Control Panel across several desktop products
- Solved issue with AJA Control Panel where Reference input would switch to LTC, when right-clicking to select a different SDI input, across some devices.
- Solved incorrect field-order for HDMI interlaced captures with Io 4K Plus, DNxIV, Io4k, and KONA HDMI.
- Fixed visual artifacts on right side of picture with KONA 4 and Io 4K when outputting HFR Level B.
- Solved problem where SD analog video output was not being setup correctly with KONA 4.
- Fixed AJA Control Panel crash triggered via selection of DSK, while a 12G-SDI 4K signal is presented for input when using KONA 5.
- Rectified problem in AJA Control Room where Timecode on output is 1 frame late vs. currently visible frame after Play>Stop cycle.
- Fixed AJA Control Panel behavior so that inputs no longer show blue (indicating a signal present) when no video is yet preset yet (False Positive) with KONA IP running SMPTE ST 2110 firmware.
- Solved problem whereby transmission (output) will sometimes stop packetizing on certain IP Addresses with KONA IP running SMPTE ST 2110 firmware.

- PTP optimizations for KONA IP running SMPTE ST 2110 firmware.
- Fixed duplicate output from Channel #4 when outputting on Channel #3 with 2K/HD with KONA IP running SMPTE ST 2110 firmware.
- Fixed slight bounce in 1080 HFR image with KONA IP running SMPTE ST 2022 firmware.

v15.0.1

- Solved crashing with AJA Control Room when successively playing back clips of different frame rates from the bin.
- Overcame issue with AJA KONA LHi, where RP 188 timecode was not capturable using AJA Control Room or 3rd party applications. Note however, this board does not support EE pass-through of RP188 LTC.
- Resolved 4K capture problem with AJA KONA 4, such that picture was scrambled in AJA Control Room due to problems with respecting “quad swap” feature.
- Achieved resolution to AJA Control Panel problem whereby saving a preset with Follow Input turned off then resulted in Follow Input being on when recalling the preset, and vice versa.
- Resolved issue with AJA Control Panel whereby LTC displayed on input widget doesn't increment/display hours and minutes. Note that the display in the Timecode tab did display correctly.
- Rectified issue with AJA KONA 4, where HFR level B output had visual artifacts on right side of frame
- Rectified long wait times when updating AJA device firmware with AJA Control Panel. The updates would finish fine, but it could appear to a user as if the updating process had frozen.
- Solved problem where changing frame buffer was not setting up the inputs for 4K capture with AJA KONA IP running SMPTE 2110 firmware. Note this functionality is not on general release and is not currently supported outside of direct engagement with AJA Product Management.

V15.0

- Introduction of support for AJA KONA 5 (12G-SDI, 8-lane PCIe Gen 3 video I/O card with HDMI 2.0 monitoring)
    - *Note that AJA KONA 5 requires ATX power from the motherboard. Unlike other KONA cards, AJA KONA 5 does NOT use PCIe bus power.*
- AJA KONA HDMI is now able to simultaneously ingest dual 4K 60p streams (vs. one 4K 60p plus one 4K 30p as in previous releases).
- For playback, AJA Control Room can now be used a fully independent media player, meaning video and audio assets can be played back without AJA hardware attached.
- Video will be played back on the host monitor within AJA Control Room, and audio can be monitored using the host system audio. Note however, AV sync cannot be guaranteed when using host system audio monitoring. To set the audio to host system:
- AJA Control Room: Preferences > General > Host Audio monitor > “Built-in Output”.
    - *Note: You will also need to change your OS settings to use system audio (speakers / headphones) rather than AJA device*
- For capture, AJA Control Room can now be set to enable audio monitoring via host system, audio. This is especially useful when ingesting material using a capture-only device such as KONA HDMI.
    - *Note: You will also need to change your OS settings to use system audio (speakers / headphones) rather than AJA device*
    - To set the audio host system
    - AJA Control Room: Preferences > General > Host Audio monitor > “Built-in Output”.

    - *Note: You will also need to change your OS settings to use system audio (speakers / headphones) rather than AJA device.*
- Rectified problem with AJA KONA 4, where HDMI output of 4444 video (UHDp30 4444) shows blotchy areas.
- Rectified issue when using AJA Control Panel with AJA KONA 4, whereby 2K HFR Format Options not reading correctly.
- Fixed problem when using AJA KONA IP with ST 2022 firmware, such that intermittently an IP address can become stale and stop working until switching to a new IP address.

v14.3

- Introduction of SMPTE 2110 support for AJA KONA IP (receive and transmit) up to HD/2K 60p.
- Solved problem in AJA Control Panel when using AJA Control Panel, where swapping sources to different inputs can take up to 20 seconds for the signal to be detected from some Panasonic cameras.
- Solved problem in AJA Control Panel when using AJA Control Panel where inputs 1 & 2 are incorrectly reporting incoming source as DVI (RGB 8 bit) from some Panasonic cameras.
- Solved problem in AJA Control Panel when using AJA KONA HDMI, where inputs 3 & 4 are incorrectly reporting incoming source as DVI (RGB 8 bit) from KONA 4 HDMI output.
- Solved problem in AJA Control Panel when using AJA KONA HDMI, where right clicking on the inputs within Control Panel brings up the window for the input options, but fails to switch to the desired input change.
- Solved problem in AJA Control Panel when using AJA KONA HDMI, where 4K/UHD playback will crash the application.
- Resolved issue in AJA Control Panel when using AJA KONA HDMI, where HDMI sources from MacBook Pro were not locking successfully as inputs.
- Resolved issue in AJA Control Panel when using AJA KONA 1, where Follow Input is not functioning correctly when source format changes.
- Resolved issue in AJA Control Panel when using KONA IP, KONA 4, where Info tab reports bitfile as "bad bitfile type”.

v14.2.1

- Lack of audio when capturing Deep Color with HDMI ports 3 and 4 in AJA Control Room, is now resolved with KONA HDMI.

v14.2

- Introduction of AJA KONA 1 support (new AJA PCIe card).
- Introduction of AJA KONA HDMI support (new AJA PCIe card).
- Support for V4L2:
    - Compile the AJA V4L2 driver components per desired platform (Ubuntu / CentOS).
        - Downloads and instructions here: https://github.com/aja-video/ntv2-v4l2.
- “Deep Buffer” setting in AJA Control Panel, improves handling of storage interruptions during ingest with AJA Control Room.
    - User can now allocate RAM for caching to protect media being written during ingest:
        - AJA Control Room: Preferences > Capture > “Reserve buffer size for deep capture queues”

- AJA Desktop Software firmware and software versions are tightly integrated. If back-revving to an earlier version for example, then you may be prompted to update your firmware to match; i.e. update to an earlier version of the firmware than you currently have installed. AJA Control Panel firmware update notification language has now changed to reflect this more accurately.
- Important updates have been added to the Known Issues and Limitations section near the end of this document. See items relating to Sleep / Hibernation / Fast Boot.
- AJA Control Room now provides a confirmation dialog if the application is quit or exited during capture.
- Solved problem in AJA Control Room causing 720p TGA and BMP sequences to either not play back or else play back incorrectly (i.e. flipped or flopped).
- Fixed issue when using SMPTE 2022-6/7 firmware, whereby a receiving KONA IP would not reestablish video streams following a manual disable and then re-enable of Video Output (in AJA Control Panel) on the transmitting KONA IP.
- Solved transmit (playback) and receive (ingest) problems with 2K formats (up to p30 max) when using SMPTE 2022 firmware and JPEG 2000 firmware, with KONA IP.
- Solved problem in AJA Control Panel where switching from 2K to SD formats could interrupt transmit (playback) when using SMPTE 2022-6/7 firmware, with KONA IP.
- Fixed intermittent black frames showing across HDMI and SDI output with Downstream Keyer when using FrameBuffer over Video In, with either HDMI or SDI In selected as the source (and setting Match Frame Buffer format to Source), with KONA LHi.
- Solved locking to input problem with Downstream Keyer when using FrameBuffer over Video In, with HDMI In selected as the source, with KONA LHi.
- Solved problem where buffer format selections in AJA Control Panel intermittently provided incorrect output raster and corrupted imagery, with KONA LHi.

v14.0.1

- General Linux Installation Optimization
- Added SDI Input Quad Swap feature to AJA Control Panel for KONA 4.
    - When checked (default setting), changes the input Quad to SDI quadrant mapping from 1 to 1 to: Quad1 SDI3 Quad2 SDI4 Quad3 SDI1 Quad4 SDI2.
- Added SDI Output Quad Swap to AJA Control Panel for KONA 4
    - When checked (default setting), changes the output Quad to SDI quadrant mapping from 1 to 1 to: Quad1 SDI3 Quad2 SDI4 Quad3 SDI1 Quad4 SDI2.
- Fixed UltraHD HDMI output in 2SI.
- Fixed lack of Quarter Res output on SDI 3.
- Fixed Closed Captioning for SD output.
- Fixed input pass-through widget in Control Panel to show correct activity (HDMI down convert).
- Reinstated Python models.
- Fixed issue whereby Control Room would display an AV sync issue during capture (but capture OK).

v14.0

- Added Audio Mixer to AJA Control Panel.
- Added VTR on/offline icon to Batch Capture bin window in AJA Control Room.

- Fixed issue whereby device offline dialog gets stuck in loop for batch captures when clicking "OK" in AJA Control Room.
- Fixed bad timecode with playback of DPX Cineon header sequences in AJA Control Room.
- Fixed problem deleting a clip if loaded in the playback viewer in AJA Control Room.
- Fixed problem with KONA LHi and KONA LHe Plus Analog inputs not detecting HD formats.
- When using Square Division with KONA 4, Quad link SDI sources are no longer viewable in UltraHD via HDMI, instead these sources will be down-converted for HD monitoring via HDMI.
- NOTE: This limitation does not apply to 2SI sources.
- When using 2SI, Quad link SDI sources can be monitored in UltraHD via HDMI.
- It is no longer possible to decimate HFR material in order to facilitate HDMI playback on a monitor not capable of HFR when using KONA 4.

v13.0

- Initial full-release supporting Linux Ubuntu for KONA firmware, drivers and software including AJA Control Panel, AJA Control Room, AJA System Test and more.
- Added KONA IP SMPTE 2022-6/7 firmware.
- Added KONA IP Optional firmware for TR-01 complaint JPEG 2000 workflows.
- Capture, monitoring and output for DNxHD and DNxHR (mov) up to 4K 60p using AJA Control Room.
- Application presets can be saved and recalled in AJA Control Room.
- In cases where AJA Control Room won't launch, holding SHIFT during startup allows users to reset preferences or use software only mode.
- Upon enabling scripting, the preference to "hold onto device in background" is automatically engaged in AJA Control Room.
- 16- and 24-bit audio capture support in AJA Control Room.
- Timecode burn-in for video playback and application player in AJA Control Room.
- Closed caption burn in for video playback and application player in AJA Control Room.
- VTR control in AJA Control Room.
- Audio track re-routing now available for QuickTime file playback in AJA Control Room.
- 4K / UltraHD down-convert to HD now available via SDI 3 output contextual menu – including new drop-down menus and ability to save presets in AJA Control Panel.

Known Issues and Limitations

General

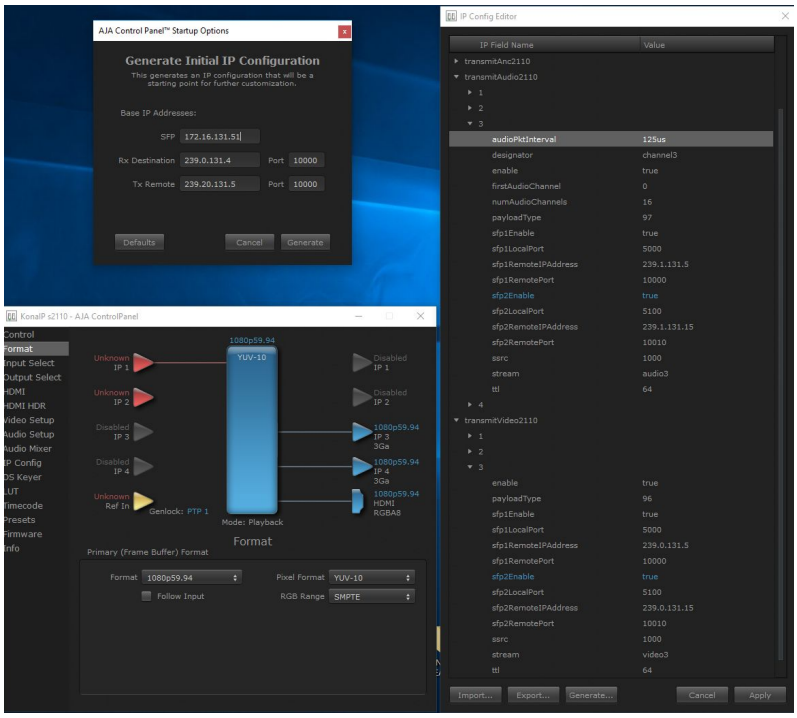
- 'System Sleep' or 'Hibernation' should not be used with KONA cards. All sleep and power efficiency modes should be disabled in the operating system settings.
- MXF OP-1A capture in both AJA Control Room does not support the following formats: 720p60, 1080i30, 1080p30, 1080p60.

KONA 5

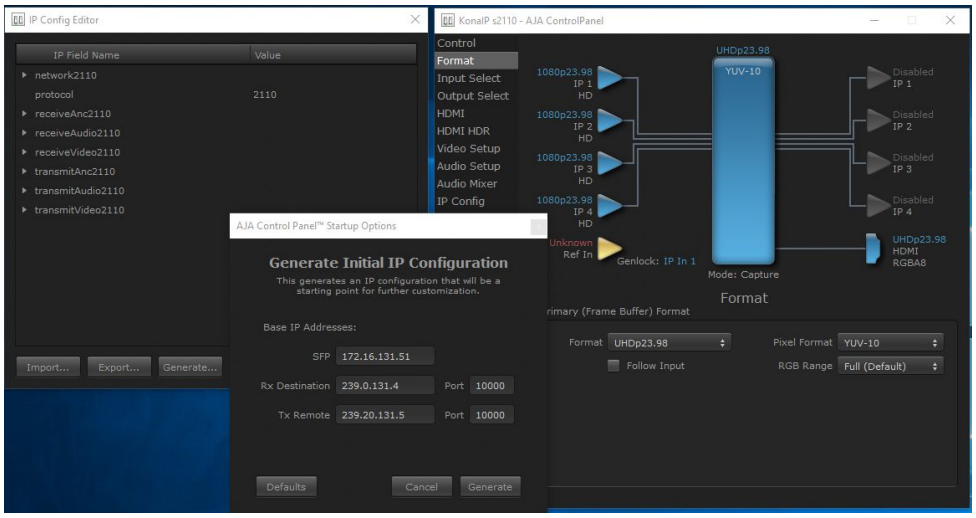
- If loading 8K firmware (“KONA 5 - 4x12G”), be aware of the following:
    - To set up for 8K Input, select “4x8k” on SDI 1-4.
    - Host system performance is going to be the gating factor in what frame rate is achievable for 8K Capture or Playback. Test Playback first, since it’s unlikely a system which cannot play 8K will be able to capture 8K.
    - AJA System Test is not accurate for 8K/UHD2.
    - Only AJA Control Room is supported for 8K/UHD2 Input and Output. No support at this time for Apple, Adobe, Avid or Telestream applications.
    - For 4K/UHD 12G-SDI and 6G-SDI are supported for I/O. No 3G-SDI or 1.5G-SDI support for 4K/UHD.
    - YCbCr supported. No RGB format support at this time.
    - Level-A only. No Level-B support.
    - Inputs must be manually set using the frame buffer in AJA Control Panel. No Follow Input support.
    - 10-bit capture. 12-bit not available.
    - HDMI output is 2SI 4K quadrant of choice. Downsample not available.
    - 4444 captures in any format will not work (option is there on HD and 4K, just not 8K)
    - Apple ProRes family supported with the exception of ProRes 4444 & 4444 XQ.
    - Audio is present and can be Captured or Output. AJA Control Panel Audio Mixer is not present

KONA IP

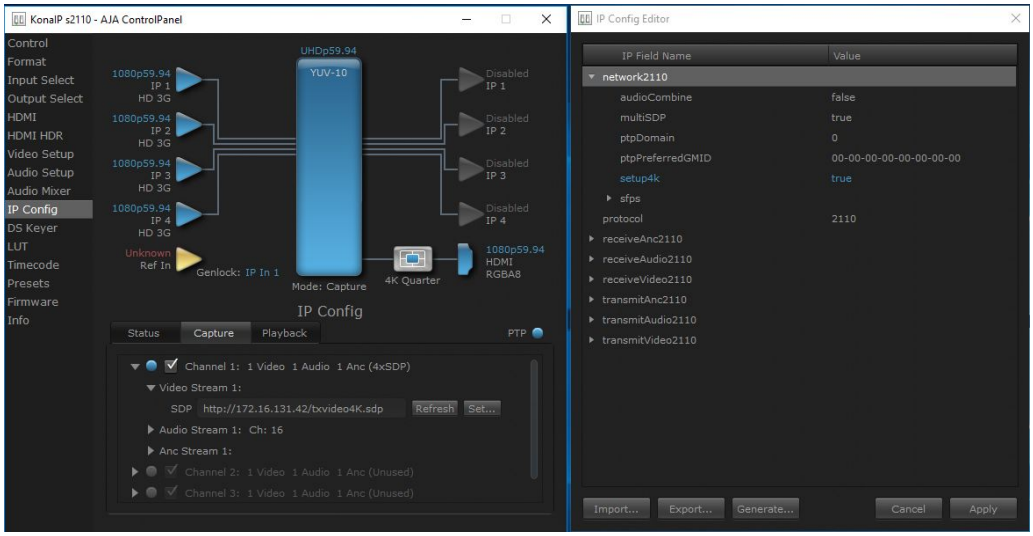
- KONA IP, with ST 2110 firmware:
    - Is capable of supporting ST 2022-7 for Transmit- set SFP 2 to “true”.
    - The maximum resolution and frame rate supported via ST 2022-7 is 2K/HD 60p.
    - There is no ST 2022-7 support when using ST 2110-23.
    - It is currently necessary to enable Closed Captioning in AJA Control Room in order to Capture Time Code.
- Guidance notes for redundancy with SMPTE ST 2110 via ST 2022-7 (Transmit only).
    - For JSON configuration:
        - Go into Advanced Ip Config / Generate for JSON
        - Set Tx Remote to the IP address to which you are sending
        - And, Manually set the frame rate in the frame buffer within AJA Control Panel.



- Guidance notes for SMPTE ST 2110-23 (information not yet available in KONA IP / Io IP manual).
    - For JSON configuration:
        - Go into Advanced Ip Config / Generate for JSON
        - When doing this behaviour is to now automatically set up for 2K/HD on SFP 1, or 4K/UHD across both SFPS
        - Set Tx Remote to the IP address to which you are sending
        - On receiving device use this same IP address (i.e. Rx IP address should match your Tx IP address)
        - Also, un-check follow input on the receiving Kona IP
        - And, Manually set the frame rate in the frame buffer within AJA Control Panel.



    - For SDP's:
        - Change the 4K/UHD network settings in the JSON 4K setup from false to true
        - Un-check follow input
        - Then just one SDP is entered in capture input 1 and sets automatically for all 4 streams
        - Manually change frame buffer on any format change



KONA LHi

- When using level A 1080p50/59.94/60 YUV input to an RGB frame buffer for capture, the image is scrambled or non-working for various NLEs. Note that Level B works correctly with all supported NLEs.
- KONA LHi has only one audio system and is limited to capturing or outputting one channel at a time with audio. In applications where multiple video inputs and outputs can be used at the same time, the SDI input will have audio and the HDMI input will not. Additionally, if both input and output are used simultaneously and independently (as opposed to output passed through from input) only one channel will have audio.

KONA HDMI

- Currently, some SD sources do not work correctly when using channels 1 and 2. Please use channels 3 and / or 4 for SD ingest.
- Currently, certain HDMI camera sources do not work correctly. Please contact support so AJA can investigate.

Technical Support

AJA Technical Support is free and available to help you answer questions or resolve issues with any of your AJA products.

To contact AJA Technical Support:

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