AJA Desktop Software Release Notes - v17.1

Rocky Linux v17.1 Drivers and Software for KONA

Introduction

AJA Desktop Software

This unified software, driver and firmware package contains the necessities to use AJA video I/O hardware.

The following AJA applications are installed:

- AJA Control Panel v17.1:
  - For setup and control of your AJA KONA hardware, including firmware updates.
- AJA Control Room v17.1:
  - For high quality capture, monitoring, playback and output.
- AJA System Test v17.1:
  - For testing storage to determine if it will be possible to sustain frame and data rates for a chosen format(s).
- AJA NMOS v17.1:
  - Optional SMPTE ST 2110 application providing discovery, registration and control for AJA IP devices.

Operating System

- Note that, as of AJA Desktop Software release v17.0, Rocky Linux support replaces Red Hat/CentOS support.
- This driver/software version is compatible with Rocky Linux versions up to 8.10 and 9.4.
- Red Hat/CentOS 8 was EOL as of Dec 2021.
  - AJA SDK v16.2 was the final official SDK version supporting Red Hat/CentOS 8.
  - Note that after this release (17.1) applications may cease to work entirely with CentOS.
- Red Hat/CentOS 7 support, while expected to work, may have unknown issues.
- Note that some new features may not work with older distributions.
- Before running this installer, uninstall all previous versions of AJA software:
  - sudo dnf remove ajantv2-dkms ajaretail
- Two packages that must be installed: DKMS driver and AJA Retail Software.
  - The DKMS Driver installer requires the following package:
    - sudo dnf install epel-release
  - The driver installer must run either in a root shell or with root permissions.
    - sudo dnf install ajantv2-dkms-17.1.0-909.rpm
    - Note: Use the exact package name here
- The AJA Retail software must run either in a root shell or with root permissions.
  - sudo dnf install ajaretail-17.1.0-909.rpm

    - Note: Use the exact package name here
- For GPU accelerated desktop display, an OpenCL version 1.2 or greater capable GPU is required.
- Check the Known Issues, Limitations and Additional Details section near the end of this document.
- Note that on later versions of GNOME, the extension management has been moved to its own dedicated app called GNOME Extensions (gnome-extensions-app). Execute the following to perform the installation:
    - Rocky 8:
        - sudo dnf install gnome-shell-extension-appindicator gnome-tweaks
        - open GNOME Tweaks
        - click Extensions on the left list
        - turn on Kstatusnotifieritem/appindicator support
        - launch Control Panel

    - Rocky 9:
        - sudo dnf install gnome-shell-extension-appindicator gnome-extensions-app
        - log out of current user session (needed to do this for the Extensions app to see the newly installed extension)
        - log back in
        - open Extensions app
        - turn on AppIndicator and KStatusNotifierItem Support
        - launch Control Panel

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

- Autodesk - Flame and related products
- AJA KONA hardware also comes with out-of-the-box support for OBS Studio as follows:
    - **OBS Project** - OBS Studio 30, 29.1.3, 28.1.x, 27.2.x (note that there are known issue with 29.13 and 30 for KONA X)

In all cases, AJA recommends checking the system and OS requirements for 3rd party software packages with the software creator/vendor directly, to ensure a supportable configuration.

Relevant Products

The following products benefit from this update:

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

Recommendations in v17.1

- AJA offers a comprehensive SDK for developers who are interested in doing more with KONA, Corvid, and Io products. We have recently moved repositories to Github at https://github.com/aja-video . Our Github site now offers access to both open source and pre-compiled code and tools that make developing applications that support our products much easier.
- Note that AJA Desktop Software v17.x still works with EOL products, including Io XT, Io 4K, KONA IP, Io IP, T-TAP, and DNxIP. However, releases after v16.2 were no longer qualified with end-of-life products. What this means is that issues affecting these EOL products may arise that are not caught during the testing phase for new software releases, and these issues may not be fixed. In some cases, AJA may elect to fix issues that affect EOL products, but that cannot be guaranteed.
- Note that “End-of-Life” products will continue to receive best effort SDK support, but the supported SDK version may be frozen to the version available when the device went “End-of-Sale”.
- Note that Corvid HEVC (CORVID-HEVC-ATX6) is no longer being tested with new software releases.

Fixes and Improvements in v17.1

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.

New Support for Thunderbolt in Rocky Linux

- This release adds official support for AJA Thunderbolt devices (Io 4K Plus, Io X3 and T-TAP Pro) for Rocky Linux.

Other fixes and improvements

- Fixed issue of AJA KONA X not appearing as an available device for capture or output in OBS (Open Broadcast Software) application. Note that AJA has contributed the code to fix this issue – it should be available upon the next public release of OBS for all supported platforms.
- Fixed an issue in which AJA Control Room would fail to display burn-in timecode for certain frame sizes.
- Fixed an issue in which a memory leak was occurring in AJA Control Panel when selections such as HDR Options in the Test Pattern drop-down, etc. were made.
- Added the ability for SDK users to capture HDMI Info Frames, and metadata such as Dolby audio and metadata in autocirculate.
- Fixed an issue affecting the AJA Io 4K Plus in which the RGB-12 SDI VPID passthrough information was incorrectly shown as RGB-10.
- Fixed an issue affecting the AJA Io X3 in which output 4K video would be corrupted via HDMI when the output was set to Multiview.

Known Issues, Limitations and Additional Details

General

- "System Sleep" and "Hibernation" should not be used with KONA cards. All sleep and power efficiency modes should be disabled in the operating system settings.
- AJA Control Room captures can fall behind and may fail to retain the entirety of the recording when used with hard drives and SSDs that cannot maintain sufficient read/write speeds. Enabling deep buffers can improve the situation but may not prevent issues in all cases. Please use AJA System Test (free tool available on AJA web site) to measure disk performance to make sure your storage systems can handle the resolution and bit rates of the recordings you wish to make.
- Note that AJA Control Room cannot play clips in which "Time of Day" timecode was used, if the capture happened from one "Day" to the next "Day" across 12:00AM.
- Note that in some environments, PCIe Gen2 boards (KONA 4, KONA HDMI, KONA 1, Corvid 88, Corvid 44) do not link with 8 lanes after Windows boots. When using these boards on these systems, maximum performance or functionality may not be available. Please contact AJA support if you experience these issues. Affected motherboards and CPU's:
    - Motherboards:
        - ASRock IMB-1314 with "PCIE1" and "PCIE3" slot (x8 supported slots)
        - AAEON MAX-Q670A with "PCIEX16_1" and "PCIEX16_2" slot (x8 supported slots)
            - (Note: The BIOS setting of CPU/PCIe slot for both motherboards do not affect the appearance ratio of the issue.)
    - CPUs when used on the motherboards above:
        - Core i7 13700
        - Core i7 12700
        - Core i9 12900

Known Issues

- AJA Control Room can perform destructive resizing under certain conditions when scaling video without GPU acceleration. When users perform the following steps: Launch Control Room, Go to Preferences – Viewer, Disable GPU Acceleration, add a video and send to the Viewer, Resize the Viewer either independently or by changing application dimensions, Repeat the last step more than once – Each resize is scaled from the previous Viewer image rather than from the original source.
- AJA Control Room does not properly handle “Click and Drag” within Time Fields for certain video files.
- AJA Control Room may hold displayed captions when moving the play head forward or back. The previously displayed captions will remain on both canvas and output indefinitely.
- The AJA KONA LHi is not detecting RP188 timecode.
- When using the AJA Io 4K Plus, AJA Control Room SDI and HDMI output may be corrupted after moving between certain video formats, for example from UHDp23.98 to 720p50.
- AJA Control Room alerts may fail to display during playback mode when No Device is selected.
- AJA Control Room improperly allows device switching during Capture, when at least two devices are available to the system.
- AJA Control Room may fail to update position in viewer when the play head is moved during a frame drop.
- AJA Control Room may crash when switching clips during playback of clips that cause frame drops.
- AJA Control Panel RGB Range dropdown selection is not always accurate to what is being output on Frame Buffer or SDI output.
- AJA Control Room fails to insert a standard color space when writing DNxHR.
- AJA Control Panel outputs BGRA test pattern on the wire with a zero alpha channel resulting in the Alpha channel component being set to zero.
- AJA Control Room does not properly output 708 captions on Linux versions of the application.
- There is an intermittent issue in AJA Control Room in which captions captured from AJA FS1 frame synchronizer can produce bad or empty sidecar files.
- AJA Control Room may display captions from previous captures, and these may remain on the canvas until the application is restarted.

12-bit RGB support (4K/UHD)

- For working with 4K/UHD RGB 4:4:4 12-bit, use KONA 5 with the “KONA 5 (12bit)” firmware for the greatest flexibility via 12G-SDI and HDMI 2.0. 12-bit RGB functionality also exists with T-TAP Pro, Io 4K Plus and Avid DNxIV, but to a lesser extent. 12-bit RGB via HDMI from KONA or Io will deliver 12-bit to the downstream (sink) device provided it is capable, otherwise the bit depth can be down-rated based on the capabilities of the monitor or other sink (communicated to KONA via sink device’s EDID):
    - In AJA Control Panel “Auto Detect” will put out the signal that works with the receiving monitor.
    - In AJA Control Panel “Auto-Set” will use what the Frame Buffer is set to.

AV Sync

- For highest accuracy, always use the Video and Audio coming from your AJA device for monitoring. Using an AJA device for Video monitoring but using the host for Audio monitoring may result in AV sync or drift issues. If these issues arise it is a function of your host system/OS, and AJA recommends monitoring Audio via AJA device.

KONA 5

- Note that recently purchased (2023) KONA 5 cards will need to be used with AJA Desktop software version 16.2.6 or later.
- KONA 5 bitfile
    - There are three KONA 5 bitfiles, each tuned to harness the capabilities of the KONA 5 hardware in different ways'"KONA 5", "KONA 5 (12bit) and "KONA 5 (8K)".
- "KONA 5" bitfile supports:
    - Up to 4K I/O YCbCr & RGB (including Color Space Conversion)
    - AJA Control Panel (including AJA Audio-Mixer)
    - AJA Control Room
    - Video Mixer/Keyer up to HD 60p
- "KONA 5 (12bit)" bitfile supports:
    - Up to 4K I/O RGB (including 12-bit LUT support)
    - AJA Control Panel (including AJA Audio-Mixer)
    - AJA Control Room
    - Video Mixer/Keyer up to HD 60p
- "KONA 5 (8K)" bitfile supports:
    - Up to 8K I/O YCbCr *or* RGB (no Color Space Conversion)
    - Full 2SI path for the 8K raster (in additional to a Square Division presentation of 4x 4K 2SI)
    - 8K to 4K subsample via HDMI 2.0 out
    - AJA Control Panel (not including AJA Audio-Mixer)
    - AJA Control Room
    - Video Mixer/Keyer not supported

KONA HDMI

- Audio channel configurations differ between Ports 1 and 2, vs. Ports 3 and 4.
    - AJA Control Panel has an audio channel swap feature to ensure compatibility.
- Some SD sources do not work correctly when using Ports 1 and 2. Please use Ports 3 and/or 4 for SD ingest.
- Occasionally, HDMI sources do not work correctly. Please contact AJA Support to report this issue if you encounter it.

KONA LHi

- Card does not support EE pass-through of RP188 LTC.

- 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.

AJA Control Panel

- AJA Control Panel/Services may surface incorrect routing after a Dynamic Reconfiguration with KONA 5 followed by a restart.
    - Workaround:
        - Ensure that Fast Boot is disabled via system BIOS.
        - Apply KONA 5 Dynamic Reconfiguration for 4K Bitfile, and this will fix the issue.

AJA Control Room

- H.264 and H.265 capture and playback was introduced in v16.2:
    - Create or playback HD media with Timecode, Closed Captioning and HDR metadata support.
        - YCbCr 4:2:0, 8-bit video.
        - AAC audio encoding for multiple tracks of Stereo and/or Mono.
    - All H.264 and H.265 encoding/decoding is courtesy of hardware acceleration on the host system.
    - For Linux based systems, Control Room will seek hardware resources in the following order:
        - NVIDIA
        - Intel VAAPI
        - intel (QSV)
    - In each case, if the resource being sought is not found, the next resource possibility will be tried. If none of these resources are located on the system, then capture/playback of H.264 and H.265 will not be possible.
    - Notes:
        - You must be using the latest NVIDIA, AMD or Intel drivers. In some situations you may need to disable using a resource in order to update its driver version, and then re-enable.
        - H.264 and H.265 can behave differently as compared with uncompressed media or I-frame codecs, especially during scrubbing and looping operations. This is to be expected with Long-GOP media.
        - Interlaced material will be captured as progressive, this is as designed.
- When the Deep Buffer feature is being used for playback protection, note that changes to settings may take some time to be reflected. For example, muting an audio channel can take many seconds between the mouse click and the desired result. This is normal when using the Deep Buffer feature.
- MXF OP-1A capture in AJA Control Room does not support the following formats: 720p60, 1080i30, 1080p30, 1080p60.

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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