

AJA Desktop Software – Release Notes v16.1

Windows v16.1 drivers and software for KONA, Io, and T-TAP Pro

Introduction

AJA Desktop Software

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

The following AJA applications are installed:

- AJA Control Panel v16.1:
 - For setup and control of your AJA KONA, Io or T-TAP Pro product, including firmware updates.
- AJA Control Room v16.1:
 - For high quality capture, monitoring, playback and output.
- AJA System Test v16.1:
 - For testing storage to determine if it will be possible to sustain frame rates for chosen format(s).
- AJA Multi-Channel Config v16.1:
 - For setting up video I/O for use with Telestream Wirecast.
- AJA NMOS v16.1:
 - Optional SMPTE ST 2110 application providing discovery, registration and control for KONA IP and Io IP.

Operating System

This version of AJA's unified software package is compatible with Windows 10.

If installing AJA Thunderbolt devices on a host system for the first time, check the Known Issues, Limitations and Additional Details section near the end of this document. Additionally, pay particular attention to requirements around Windows settings for Sleep / Hibernation / Fast Boot / Power.

- Before running this installer, uninstall all previous versions of AJA Desktop software.
- AJA recommends running this installer as an Administrator. To do this, right click on the installer and select 'Run As Administrator'. The 'Run As Administrator' option may not be present if Windows User Account Control (UAC) is turned off.
- For host system examples, recommendations and requirements, please see:
 - <http://www.aja.com/en/support/kona-pc-system-configuration/>
 - <https://www.aja.com/products/thunderbolt-laptop>
 - <https://www.aja.com/products/thunderbolt-desktop>

Third Party Software

AJA KONA, Io and T-TAP Pro 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>

<https://www.aja.com/compatibility/io>

AJA hardware also comes with out-of-the-box support for Adobe, Avid and Telestream applications on Windows as follows:

- **Adobe** Premiere Pro, After Effects, Photoshop, Character Animator, Audition 2021, 2020
- **Avid** Media Composer - 2021.x, 2020.x, 2019.x, Pro Tools 2021.x, 2020.x, 2019.x
- **Telestream** Wirecast 14.x, 13.x, 12.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, and are compatible with, this update:

- KONA 5
- KONA IP
- KONA 4
- KONA 1
- KONA HDMI
- KONA LHi
- KONA LHe Plus
- T-TAP Pro
- Io 4K Plus
- Io IP
- Avid Artist DNxIV
- Avid Artist DNxIP

Recommendations in 16.1

- If using an AJA Thunderbolt device:
 - Upon initial installation, it may be necessary to locate and use the “Approve Attached Device” dialog in the Thunderbolt software on your system. For step-by-step guidance, see “Thunderbolt Devices” under “Known Issues, Limitations and Additional Details” below.
 - If presented with Thunderbolt security messages when installing AJA hardware, allow, and continue with installation.
- For Thunderbolt 3 devices, always use a certified, high quality Thunderbolt 3 cable to connect your AJA device to the host computer. The cable should have a Thunderbolt logo and the number 3 on it.
 - Passive cables can be up to 1.6 feet (0.5m) maximum length.
 - Active cables up to 6.5 feet (2m) can also be used.
- It is recommended to set the Genlock setting to Auto for all AJA devices.
 - For Io 4K Plus and Avid DNxIV only, see your manual for additional options and feature details.
- Using older drivers in combination with a newer software version (or vice versa) is not a supported configuration and will likely cause disruptive results.
- Windows 10 with updates is recommended. v15.5 of AJA Desktop Software marked the discontinuation of official support for Windows 7 and Windows 8.1.

New Features and Changes in v16.1

- Optimizations for a tighter response between T-TAP Pro Rotary Encoder (Volume Knob) and AJA Control Panel Audio Mixer.
- Added 12G and 6G input support for Telestream Wirecast when using either KONA 5 (4K and 8K firmware) or Io 4K Plus, via AJA MultiChannel Config.
- Added 12G and 6G output support for Telestream Wirecast when using either T-TAP Pro, KONA 5 (4K and 8K firmware) or Io 4K Plus, via AJA MultiChannel Config.
- Added ST 2110 input support for Telestream Wirecast when using KONA IP, Io IP and Avid DNxIP, via AJA MultiChannel Config.
- Added AES and Analog Audio Input support for Telestream Wirecast with multiple AJA products, via AJA MultiChannel Config.
 - AES input now available in AJA MultiChannel Config for KONA 5, KONA 4, KONA LHi and KONA LHe Plus.
 - Analog (Line Level) input now available in AJA MultiChannel Config for KONA LHi, KONA LHe Plus, Io 4k Plus, Io IP, Avid DNxIV, Avid DNxIP.
 - Analog (Mic Level) input now available in AJA MultiChannel Config for Avid DNxIV and Avid DNxIP
- Additional visual feedback in AJA Control Panel
 - Tooltips on hover over input and output widgets and for quickly seeing status.
 - Nuances that are taken care of automatically are called out explicitly in the Control Panel block diagram.
 - One example is that when outputting 4K, HFR, YCbCr 4:2:2 10-bit from the framebuffer, if the HDMI transmitter is version 1.4b then the video is adjusted to 4:2:0 8-bit (e.g. KONA 4, KONA IP).
- Added 2SI alignment pattern in AJA Control Panel, consisting of 1-pixel diagonal crosshairs plus a 3-pixel rectangle.

- Whenever there is a misalignment, the diagonal crosshairs will be wrong, not a continuous line.
- If it is a top-bottom misalignment, the top and bottom of the square line will be broken, with white between time. This is easily simulated by clicking the "Quad Swap" buttons in the control panel "Video Setup" tab.
- If it is a left-right misalignment, the left and right lines of the square will be fuzzy, or broken.

Fixes and Improvements in v16.1

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.

- Resolved an application crash that occurred when Adobe Premiere capture was set for MXF, but the format was switched to SD (Standard Definition).
- Rectified import/export failures that occurred with Adobe Photoshop that resulted in a bad video output.
- Solved inaccurate reporting of read/write speeds in AJA System Test for 4K and 8K formats.
- Corrected issue in AJA Control Panel whereby the Select drop down menu in the SDI Output tab was blank following initial installation.
- Resolved issue with correctly displaying SMPTE colors space for RGB SDI outputs with T-TAP Pro, whereby RGB was always being output as full range regardless of the AJA Control Panel color range setting.
- Rectified non-display of LTC Input Widget in AJA Control Panel with KONA 4.
- Fixed bad audio when capturing 2K LFR (Low Frame Rate) with AJA KONA HDMI.
- Solved bug causing 12-bit RGB HDMI video input to have no audio with AJA Io 4K Plus and KONA HDMI Inputs 3/4.
- Fixed problem in AJA Control Room which was causing the audio channel numbers to show incorrectly after Thunderbolt plug cycle with AJA T-TAP.
- Rectified interface issue whereby AJA Control Panel SDI Output drop-down menu was blank after initial installation.
- Solved problem in AJA Multi-Channel Config where KONA IP, Io IP and Avid DNxIP running under ST 2022-6 firmware would default audio inputs to "audio off" and with no option for IP, only SDI.
- Optimizations across AJA NMOS and SDPs for AJA KONA IP and AJA Io IP (and Avid DNxIP):
 - Solved memory leak in AJA NMOS
 - Improved SDP and NMOS format for interlaced video
 - Fixed initialization of sender IP address in AJA NMOS
 - Fixed path bugs in AJA NMOS
 - Removed unnecessary lines from SDPs
 - Resolved issue whereby sometimes SDPs would be empty

Features, Fixes, Changes and Improvements in Prior Releases

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.

v16.0.3

- Resolved inability to properly capture DVCPRO / DVCPROHD with Adobe Premiere Pro and AJA Control Room, with all AJA devices including legacy (EOL) products; Io 4K, Io XT and T-TAP.

- Fixed inability to correctly playback DVCPro / DVCProHD with AJA Control Room with all AJA devices including legacy (EOL) products; Io 4K, Io XT, Io Express (PCIe) and T-TAP.

v16.0.2

- v16.0.2 is the final version of AJA Desktop Software supporting AJA T-TAP. Though T-TAP may continue to work well with subsequent releases and OS versions, full future compatibility cannot be guaranteed.
- v16.0.2 is the final version of AJA Desktop Software supporting KONA IP firmware for JPEG 2000 and the optional license required to use that functionality. ST 2022-6 and ST 2110 firmwares are not affected and remain valid.
- Improved HDMI Output bit-depth signaling on playback in AJA Control Panel.
- Fixed problem with 12-bit HDMI capture in AJA Control Panel, where previously 12-bit sources were being captured as 10-bit.
- Solved problem in AJA Control Panel DownStream Keyer functionality, whereby loading a png_alpha file in the Graphic Over Frame Buffer Mode, resulted in a red "DS Keyer" message in the Frame Buffer and a message that states: "Foreground video does not have alpha channel".
- Fixed issue in AJA Control Panel causing High Frame Rate HD-DL (dual BNC) to be captured and output incorrectly.
- Resolved aberration causing host-system audio passing through the AJA Audio Mixer in Control Panel to become high pitch in AJA Control Room.
- Resolved NMOS behaviour where SDPs sometimes required refresh in AJA Control Panel with AJA KONA IP, Io IP and Avid DNxIP (ST 2110 firmware).
- Fixed problem with AJA KONA IP, Io IP and Avid DNxIP where despite being able to display video in Capture mode (manually entering SDP), when changing a route using LAWO VSM software, the video stops and IP 1 in AJA Control Panel displays "Unknown".
- Rectified SDP files generated via AJA Control Panel with AJA KONA IP, Io IP and Avid DNxIP to support increased NMOS compatibility.
- Increased filtering of PTP messaging to solve PTP not locking events in AJA Control Panel with AJA KONA IP, Io IP and Avid DNxIV.

v16.0

- Introduction of AJA T-TAP Pro, a compact Thunderbolt 3 device for 12G-SDI and HDMI 2.0 output/monitoring.
 - Supporting 4K/UltraHD/2K/HD/SD and including dual channel headphone monitoring.
- HDR Over SDI with KONA 5, KONA 4, KONA 1, Io 4K Plus, Io 4K, T-Tap Pro via Adobe Premiere, Adobe After Effects, Apple FCP, Avid Media Composer and AJA Control Room.
 - VPID signaling is now available for SDR/HDR Transfer Characteristics, Colorimetry and Luminance over SDI, bringing flexible output options to your AJA device. HDMI ports that were already HDR compatible will work simultaneously, resulting in HDR output via both SDI and HDMI.
- HDR Metadata Capture with KONA 5, KONA 4, KONA 1, KONA HDMI, Io 4K Plus, Io 4K via AJA Control Panel and Control Room.
 - AJA Control Room software adds support for HDR metadata capture from an incoming SDI or HDMI signal. The captured .mov video file will have embedded HDR metadata, allowing the file to be played back at its intended dynamic range.
- HDR Auto Playback Detection with KONA 5, KONA 4, KONA 1, Io 4K Plus, Io 4K, T-Tap Pro via AJA Control Panel and Adobe Premiere / Adobe Media Encoder or AJA Control Room.
 - Embedded HDR metadata in a recorded .mov file, is read and used to automatically set the HDR format on the monitor(s) connected to the AJA HDMI and/or SDI outputs.

- Support for file-based .mov HDR outputs with metadata from Adobe Premiere Pro / Adobe Media Encoder HDR files is also available.
- HDR support with Avid Media Composer and KONA 5, KONA 4, KONA 1, Io 4K Plus, Io 4K, T-Tap Pro.
- Native 8K support for Apple FCP and Avid Media Composer (including draft mode) with KONA 5.
- KONA 5 now supports fast-bitfile-switching. In under 10 seconds you can flip between a KONA 5 personality tuned for 8K operations, to one dedicated to 4K and below. No waiting for firmware to update, no reboots required.
- 4K Closed Caption Support added to AJA Control Room with KONA 5, KONA 4, Io 4K Plus, Io 4K, T-TAP Pro
- New KONA HDMI feature for enabling incoming audio channels 3/4 to be swapped, on HDMI inputs 1 and 2.
 - This is useful for aligning audio channels coming from different sources in a mixed HDMI 1.4b and 2.0 environment.
- NMOS support updated to 1.3 for KONA IP and Io IP.
- AJA NMOS application new features and functionality, see KONA IP / Io IP Manual for details.
- Added LLDP (Link Layer Discovery Protocol) to provide for better NMOS compatibility and improved debugging abilities for KONA IP and Io IP (reporting via AJA Control Panel)
- v16.0 is the final version of AJA Desktop Software supporting AJA Io 4K. Io 4K may continue to work well with subsequent releases and OS versions, but full future compatibility cannot be guaranteed.
- v16.0 is the final version of AJA Desktop Software supporting AJA Io XT. Io XT may continue to work well with subsequent releases and OS versions, but full future compatibility cannot be guaranteed.
- v16.0 is the final version of AJA Desktop Software supporting AJA Io Express (PCIe). Io Express (PCIe) may continue to work well with subsequent releases and OS versions, but full future compatibility cannot be guaranteed.
- Fixed problem with AJA Io IP where device may come up with bad video & audio output when connected via PCIe thunderbolt adapter card.
- Implemented parsing of source-filter parameter in SDPs for source IP address for AJA Io IP and KONA IP.
- Fixed inability to capture MXF media with Adobe Premiere Pro, which produced a "recorder error: file type".
- Resolved absence of Adobe Premiere Pro HDR video output when monitoring HLG 10-Bit.
- Verified Adobe solution for a crash occurring with Premiere Pro when engaging NDI with AJA devices connected. Note that the solution requires the latest version of NDI tools installed on your host system (currently 4.x onwards).
- Verified Adobe fix for problem recalling Audio device settings after restart of the Premiere Pro.
- Corrected HDR PQ Output from Adobe Premiere Pro with AJA devices.
- Solved for incorrect duration reported with audio captured using Adobe Premiere Pro or AJA Control Room, whereby audio would be missing when used in other 3rd party tools.
- Fixed issue whereby .mov files captured with v210 codec in Adobe Premiere Pro or AJA Control Room using AJA devices, was using a bit-depth descriptor of 20 vs. 24.
- Fixed Apple TN2162 compatibility whereby CLAP ATOMs captured with Adobe Premiere Pro or AJA Control Room were using a descriptor of 2 vs. 0.
- Fixed issue with AJA Control Panel not reflecting HDR setting when Avid Media Composer enables HDR with AJA KONA 5.
- Resolved lack of SDI audio output when using AJA KONA 1 with Telestream Wirecast.
- Continued optimization for 8K playback with AJA Control Room solved for dropped frames on first playback of HFR 8K/4K clips with AJA KONA 5.
- Continued optimization for 8K playback with AJA Control Room fixed frame dropping on playback with 8K HFR (p59.94, p60) with AJA KONA 5.
- Resolved insertion of 608 Closed Captions for both fields when working with interlaced material in AJA Control Room with AJA Io 4K plus.
- Solved for a problem where RGB 12-bit 3G-SDI Level A was not behaving properly with AJA Control Panel and Control Room running with Io 4K Plus.

- Rectified behaviour whereby Time of Day Timecode in Control Room did not match burn in Timecode.
- Fixed Edit to Tape functionality with AJA Control Room and AJA devices, whereby performance would degrade and become non-functional when toggling to/from different application tabs.
- Resolved 2SI alignment issue with LFR 8K with AJA KONA 5 (8K bitfile).
- Fixed issue causing LTC Input from break-out-cable with AJA KONA 5 (4K bitfile) to not report in AJA Control Panel.
- Fixed behaviour where HDMI output of AJA KONA 5 was not following the quad-swap feature when selected in AJA Control Panel.
- Fixed behaviour where with AJA KONA 5 (4K bitfile) and AJA Io 4K Plus, Input Quad Swap was not being respected in AJA Control Panel.
- Solved for incorrect pass-through routing for RGB 12-bit video with AJA Io 4K Plus.
- Rectified audio playback problem in AJA Control Room, where audio channel-pairs could become swapped when KONA HDMI was present in the host system.
- Resolved problem preventing output of audio via 8Ch HDMI with AJA Io 4K.
- Fixed problem where some host systems were unable to Output AES 1-8 with AJA KONA 4 (UFC bitfile).
- Solved problem outputting RGB from AJA Io XT with AJA Control Panel, where SDI Output remained YUV despite RGB settings applied.
- Fixed cosmetic reporting issue in AJA Control Panel, whereby AJA KONA LHi and AJA Io XT: would not show HDMI input, even though signal is present and capturable.
- Rectified Control Room fixed timecode on output where it was 1 frame late vs. currently visible frame after Play>Stop cycle
- Resolved cosmetic reporting issue in AJA Control Panel, whereby LTC / REF did not update per settings with AJA devices.
- Solved intermittent SDI Input and Output problems with AJA devices.
- Resolved intermittent AJA Control Panel crashing upon Thunderbolt unplug (both AJA Thunderbolt devices and AJA PCIe cards in Thunderbolt chassis).
- Rectified problem in AJA Control Panel such that 4K LFR, RGB 12-bit, via Square Division would report 3G-SDI Level B, despite 3G-SDI Level A being selected.
- Fixed potential crashing with KONA LHi during an SD MXF capture.

v15.5.3

- New feature Io 4K Plus and Avid DNxIV:
 - New Genlock features added in AJA Control Panel for Io 4K Plus and Avid DNxIV, provides for smoother and faster transitioning between Capture and Playback. See your manual for additional feature specifics and recommended best practices. Note: For all other AJA cards and devices, best results in most situations can be achieved by setting Genlock to Auto.
- Io 4K Plus, Avid DNxIV, Io IP, Avid DNxIP with Avid Media Composer: Resolved problem whereby Quarter Res sequence setting would cause bad video output.
- KONA 5 (8K Firmware) with Avid Media Composer: Enabled Input of 4K/UHD I/O via 12G-SDI and 6G-SDI.
- KONA IP, Io IP and DNxIP with AJA Control Panel: Removed Genlock/Reference setting when using ST 2110 firmware, since only PTP is relevant. (Note: ST 2022-6 firmware will still display the Genlock/Reference setting, as no PTP is used with those workflows).
- IoXT with Avid Media Composer: Overcame issue where changing focus away from and then back to the Capture tool would block E-E audio.
- Io 4K Plus, Avid DNxIV with Avid Media Composer: Fixed problem which allowed illegal SDI values to be present on output.

- Io 4K Plus & Kona 5: Solved green tint on Fill + Key output with ARGB.
- Io 4K Plus, DNxIV with Avid Media Composer: Fixed problem with HDMI output not always playing back audio after selecting Ref In.
- Io IP and DNxIP with Avid Media Composer: Solved issue which prevented the device from completing initialization following a Thunderbolt plug cycle (unplug/replug).
- Io IP and Avid DNxIP connected to a PC via Thunderbolt PCIe card: Fixed bug where device may boot up with bad video and audio output.
- Avid Media Composer: Fixed audio artifacts (clicks, pops, stale audio) presenting at the very beginning of timeline/clip playback.
- Avid Media Composer: Rectified bug whereby audio pass-through would continue even after closing capture tool.
- Avid Media Composer: Resolved problem where clicking the Audio Punch-In tool during numerous rounds of punch-in operations, would fail to re-engage input audio metering.
- Avid Media Composer: Fixed skipped and repeated frames at beginning of playback following frame stepping.

v15.5.1

- KONA 5: Added HDR support to Adobe Premiere Pro 8K playback (using 8K bitfile for KONA 5)
- Io 4K Plus, Avid DNxIV: Fixed problem when (re)booting host with “Fast Start” enabled, whereby for domain users (vs. local users) analog audio settings would not persist.
- Io 4K Plus, Avid DNxIV: Resolved output instability with some formats over 12G-SDI on SDI #3.
- Io 4K Plus, Avid DNxIV: Fixed input instability with SD formats on SDI #2.
- KONA 5: Resolved item causing bad SDI audio output on RGB clips when using 8K bitfile.
- KONA 5: Fixed interface error whereby AJA Control Panel presented a selectable option for 2-wire square division when using 8K bitfile.
- KONA 5: Removed redundant interface choice whereby AJA Control Panel presented a selectable option for 2-wire 2SI, (which is auto-sensed and thus no manual option is required) when using 8K bitfile.
- KONA 5: Solved audio problem for 1080i I/O when using 8K bitfile.
- KONA IP, Io IP and Avid DNxIP: Added hardware filtering on PTP delay response packets (clock ID) to fix PTP issues seen on networks with large numbers of ST 2110 devices.
- KONA IP, Io IP and Avid DNxIP: Resolved some anomalies in how dual SDPs were being handled.
- Adobe Premiere Pro: Resolved problem whereby despite audio and video being captured correctly to disk, no video was presented in the Capture Window.

v15.5

- KONA 5, KONA 4, Io 4K plus, Avid DNxIV and Io 4K:
 - HDR over SDI via VPID now supported in combined HDR Tab, for both HDMI and SDI, in AJA Control Panel.
- Adobe Premiere Pro HDR with KONA 5, KONA 4, KONA IP, Io 4K plus, Avid DNxIV, Io IP, Avid DNxIP and Io 4K:
 - Added support for 12-bit thus enabling an expanded range of HDR possibilities. Note that 12-bit support includes frame rate support up to 30p only, due to the hardware limitation of HDMI 2.0 whereby there is insufficient bandwidth to output 12-bit HFR.
- Avid Media Composer HDR with KONA 5, KONA 4, Io 4K plus, Avid DNxIV and Io 4K:
 - HDR settings are now driven by Media Composer directly to AJA Control Panel, thus no longer obliging users to manually set HDR parameters when working with Media Composer.
- AJA Control Panel:
 - Variety of HDR test patterns are now available for UHD2/UHD/HD.

- AJA KONA 5 (and Corvid 44 12G):
 - 8K firmware now also supports RGB (up to 30p), rather than YCbCr only.
- AJA KONA 5 (and Corvid 44 12G):
 - 8K firmware now also supports a full 2SI path (rather than Square Division only). Sometimes referred to as "8K SMPTE", this full 2SI path means that each of the four 12G-SDI links (which are themselves 2SI) can now be presented as either 2SI or Square Division to deliver 8K output.
- Adobe Premiere Pro with KONA 5:
 - Added support for 8K/UHD2 monitoring/output via 4x 12G-SDI connections.
- Adobe Premiere Pro with KONA 5:
 - Added support for 8K/UHD2 to 4K/UHD downsample via HDMI 2.0 output.
- Io IP and Avid Artist DNxIP:
 - With SMPTE ST 2110 firmware, display of ANC data via SDI monitor spigot is now supported.
- AJA NMOS:
 - Now supporting multiple devices attached to a single host system.
- AJA Control Room Clip Countdown Duration:
 - Operators can see how much time is left until either the Clip Out Point or Clip End Point, making live playback contributions easier.
- AJA Control Panel: New reporting and control possibility for Fan Speed on Io 4K Plus, Avid DNxIV and Io 4K:
 - Fan Speed is now reported as "Low", "Medium" or "High". This helps users understand better how their unit is reacting to the current environmental conditions.
 - For those who are using their Io 4K Plus, Avid DNxIV or Io 4K in a machine room, a new option allows for overriding the cooling algorithm entirely, and setting the fan speed to maximum."
- KONA 5 bitfile name change:
 - There remain two bitfiles for KONA 5. "KONA 5" supports up to 4K (YCbCr and RGB). "KONA 5 (8K)" supports up to 8K (YCbCr and RGB). See more detail near the end of these Release Notes in the section "Known Issues, Limitations and Additional Details".
- DirectShow support updates:
 - Including addition of KONA IP and KONA 5 to the supported list of AJA cards and devices.
- KONA 5: fixed unstable signal/bad color with 12-bit 4K/UHD HDMI output.
- KONA 5 & Io 4K Plus, Avid DNxIV: solved problem with SDI output integrity across 4K p29.97/30 RGB (Square Division & 2SI)
- KONA 5 & KONA HDMI: Resolved issue with HDMI input not detecting 4K 47.95p & 4K 48p.
- KONA 5: Resolved item where 4K firmware displayed bad video with vMix for 4K/UHD workflows, where 8K firmware worked correctly.
- KONA 4: Solved problem with HDMI output being detected as DVI by some devices.
- KONA 1: Rectified bad audio on embedded SDI channels 9-16 with an SD input.
- KONA IP & Io IP, Avid DNxIP: Resolved problem reading SDP files whereby source IP address was being reported as "/r".
- KONA IP: Rectified transmission of ANC data.
- Io 4K Plus, Avid DNxIV & Io 4K: Solved problem whereby HDMI input was adversely affected when switching SDI input between YCbCr and RGB.
- Io 4K Plus, Avid DNxIV: Overcame issue with 4K/UHD HDMI input not passing-through SDI outputs 1-4 when set for 4K/UHD 2SI
- AJA Control Panel: Solved issue whereby KONA LHi Break-out-Box AES settings were not persistent when toggling between "AES-XLR" and "AES-BNC".
- AJA Control Panel: Fixed lack of expected E-E for LTC inputs.

- AJA Control Panel: Resolved problem when Transport set to Auto and selecting RGB 4:4:4 would cause Level B to be set (instead of Level A)
- AJA Control Panel: Overcame issue with HDMI output not respecting switch to RGB
- AJA Control Panel: Fixed cosmetic issue with firmware updater on Windows, whereby the version number would show as "--" for new users.
- AJA Control Room: Solved problem with frame dropping during playback of HFR media following enablement of Show Closed Captioning.
- Adobe Premiere Pro: Solved for problem where UHD/4K HDR content output was not viewable or had instability (only relevant to AJA devices supporting HDR)
- Adobe Premiere Pro 2020: Updated AJA install location (driver was not installing in correct directory).
- Adobe Premiere Pro: Overcame problem where ANC CC playback was not working with TV Logic monitors.
- Fixed general instability/crashing with Windows 10 running on Mac under Bootcamp.
- KONA 5, KONA 4, KONA HDMI, Io 4K plus, Avid DNxIV and Io 4K: Numerous stability and communication updates for HDMI I/O.

v15.2.3

- KONA IP and Io IP: Improvements to PTP locking functionality.
- KONA 5 and Io 4K Plus: Resolved issue whereby HDMI 2.0 output was 8-bit rather than 10-bit.
- KONA and Io devices: Performance enhancements for when multiple AJA devices are present in/connected to a single host system.

v15.2.2

- Io 4K Plus: New Firmware to fix occasional loss of HDMI output.
- KONA HDMI: New Firmware and software components to improve input compatibility and stability

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 Payout. 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 Io IP now has two firmware choices.
 - The original "s2022" firmware for SMPTE 2022-6 remains as-is with support for up to HD 60p I/O.
 - A new "s2110" firmware for SMPTE 2110 supports up to either (i) 2K 60p I/O with 2022-7 Transmit, or (ii) 4K 60p Input or Output via SMPTE ST 2110-23. Check which firmware you have loaded.
- AJA KONA IP has the following SMPTE ST 2110 feature enhancements (all also now available with AJA Io IP):
 - 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.
- Fixed lack of LTC output when playing back timeline sequence in Adobe Premiere Pro.
- Solved for absence of Closed Caption output from Adobe Premiere Pro, following playback of a non CC clip.
- Rectified problem with AJA Blithook plugin for Adobe After Effects, where the plugin enable/disable menu was not being drawn correctly.
- Rectified ability to playback ProRes 422 HQ media exported from Autodesk Flame in AJA Control Room, which would hang on import.
- Solved problem whereby after frame-stepping in Avid Media Composer, the following attempt to playback resulted in frame skipping and/or repeated frames.
- In conjunction with Avid, and working with their new release of Media Composer (2019.6), addressed some audio metering deficiencies whereby depending on the order of window selection/activity in Avid Media Composer, audio metering for Capture and Audio Punch-In was not available, despite audio being present.
- Fixed benign crash-on-exit with Avid Media Composer.
- 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.
- Fixed problematic Standard Definition I/O for AJA Io IP with SMPTE ST 2022-6.
- Solved intermittently choppy playback via HDMI with NTSC Standard Definition with AJA KONA 5 and Io 4K Plus.
- Fixed broken 12-bit RGB Input support in AJA Control Panel.
- Eliminated false reporting in AJA Control Panel such that Analog Video Input showed no Video, despite video being present.
- 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.
- Eliminated incorrect entry in AJA System Test “System Report” such that Win and macOS versions referred to the application as System Performance Tester x.x.

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.

- When exiting Adobe Premiere Pro after using an AJA device to display HDR material, AJA Control Panel will now automatically turn off HDR settings. Next time Adobe Premiere Pro is launched and an HDR project selected, AJA Control Panel will again enable display of HDR content.
- Implemented 4K/UHD HDMI input support for Wirecast in AJA Multi-Config, with KONA HDMI, Io 4K Plus, Io 4K.
- KONA 5, Io 4K Plus and Avid DNxIV now provide 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, Io 4K Plus and Avid Artist DNxIV now support RGB 444 UHD Level A and Level B.
- KONA 5, KONA 4, Io 4K Plus, Avid Artist DNxIV and Io 4K now support 47.95/48P for 2K and 4K, for both Level A and Level B.
- KONA HDMI can be used for capture within Adobe Premiere Pro Capture Window (vs. AJA Control Room only).
- KONA HDMI can be used for capture within Avid Media Composer Capture Tool (vs. AJA Control Room only).
- KONA IP SMPTE ST 2110 firmware and software combination now supports SDP grouping.
- Solved problem whereby upon activating "Digital Scrub" in Avid Media Composer (Caps Lock or Shift) and then scrubbing, the video output from the AJA hardware appears to freeze.
- Addressed issue with Avid Media Composer and ProTools, where garbage video was being displayed upon initial launch with AJA card or device.
- Avid/AJA have confirmed a fix for an issue which caused Media Composer to quit unexpectedly on exit with AJA hardware.
- Solved ANC data being inadvertently captured from SDI input, when HDMI selected as source for Avid Media Composer with AJA Io 4K Plus and Avid DNxIV.
- Adobe/AJA have confirmed the resolution of a problem whereby when in Adobe Premiere Pro, upon setting the AJA Capture Settings dialog to Control Panel, these changes were unsaved.
- Resolved problem when using Adobe Premiere Pro with KONA 5 which caused 4K/UHD content playback to be compromised when Audio Hardware was set to ASIO.
- Solved inability to add 1080P 59.94 sources presented via 3G-SDI from some AJA devices, clip loaded would just show black
- 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 Io 4K Plus, DNxIV or KONA 5.
- Solved problem causing "Delete Media" commands to sometimes fail in AJA Control Room.
- Frame buffer format VPID was inadvertently being passed to down-converted outputs with Io4k (UFC firmware), IoXT, Kona4 (UFC firmware).
- Overcame issue whereby SDI 5 (Down converted Monitor Output) on Io 4K Plus, DNxIV, or Io 4K, had bad video on either 12G and/or 2SI UHD/4k HFR formats.
- Rectified a line reversal present for HDMI input pass-through with Io 4K.
- Fixed analog audio output phase shift at high frequency across Io 4K, Io 4K Plus and DNxIV.
- Fixed error causing audio drop-outs every 20-30 seconds over HDMI output when set to RGB-10, with AJA Io 4K Plus or Avid DNxIV.
- Solved HDMI audio output timing errors stemming from format change or Thunderbolt 3 plug cycle, with AJA Io 4K Plus or Avid DNxIV.
- Solved issue causing HDMI to be not properly detecting RGB 10-bit inputs, and some associated instability stemming from that detection problem.
- Corrected issue whereby AJA System Test would fail to perform capture test, when T-Tap connected to host.
- Rectified behavior such that upon uninstall, if still running, Control Panel will be shut down to avoid a forced restart.
- Rectified issue where 1080p HFR 3G-SDI inputs were erroneously detected as 1080i LFR signals with KONA LHi.
- Rectified problem in AJA Control Room where Timecode on output is 1 frame late vs. currently visible frame after Play>Stop cycle.
- Resolved problem in AJA Control Panel preventing firmware version check & notification functioning.
- Corrected lack of Analog Video detection in AJA Control Panel, despite input signal being present with KONA LHi.
- Fixed AJA Control Panel behavior so that inputs no longer show blue (indicating a signal present) when no video is yet present (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.
- Solved corrupt frame at beginning of capture with AJA Io IP and DNxIP running SMPTE ST 2022 firmware.
- Fixed slight bounce in 1080 HFR image with KONA IP running SMPTE ST 2022 firmware.

v15.0.1

- Fixed item with Adobe Premiere Pro CC across numerous AJA devices, such that audio mute was not being respected when scrubbing, with some repeated audio being audible.
- Solved crashing with AJA Control Room when successively playing back clips of different frame rates from the bin.

- Fixed bad HDMI output from AJA Control Room with AJA Io 4K when playing back / passing through 4K at p25, p29.97, p30.
- 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.
- Overcame AJA Io XT problem when receiving 10-bit RGB input via HDMI. AJA Control Panel input was erroneously showing as 8-bit and bad color resulted.
- Solved problem with AJA KONA LHi, KONA LHe Plus, whereby audio outputs / monitoring could become distorted. This seemed to be restricted to HP Z4 workstations, but may have surfaced in other systems too.
- Rectified issue with AJA KONA 4 and AJA Io 4K Plus, 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 as 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 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.
- Solved problem with AJA Io 4K Plus, with audio channels being mixed into other audio channels on playback.
- Fixed issue with AJA Io 4K Plus, where SDI pass-through crops top line of image on interlaced HDMI inputs.

- Rectified problem with AJA Io 4K Plus, 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 Control Panel with AJA KONA 4, HDMI Out Selection of 4k Quarter not working.
- 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.
- Improved accuracy of Insert & Assemble Edit to Tape for certain VTRs when using AJA devices with Adobe Premiere Pro CC.
- Solved lack of audio monitoring during playback when using AJA devices with Avid Media Composer.
- Solved lack of timeline audio monitoring during audio punch-in when using AJA devices with Avid Media Composer.
- Solved issue with AJA MultiChannel Config when setting up Telestream Wirecast whereby setting 4K input caused AJA devices to get stuck in "OEM tasks" on Wirecast exit.
- Solved issue with Telestream Wirecast whereby progressive and interlaced signals could not be used simultaneously with AJA devices.

v14.3

- Introduction of SMPTE 2110 support for AJA KONA IP (receive and transmit) up to HD/2K 60p.
- Added 6G-SDI as a valid I/O for using AJA Io 4K Plus with Telestream Wirecast (via AJA MultiChannel Config 4K settings). Note: Wirecast setup is done via AJA Multi-channel Config (not AJA Control Panel).
- Solved problem in AJA Control Panel when using AJA KONA HDMI, where inputs are incorrectly reporting incoming source as YUV 4:4:4 with numerous Canon cameras.
- Solved problem in AJA Control Panel when using AJA KONA HDMI, 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 KONA HDMI, 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, Io 4K Plus or Io 4K, 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, Io 4K, where Info tab reports bitfile as "bad bitfile type".
- Fixed issue with Telestream Wirecast when using KONA LHi and KONA LHe Plus, where AJA MultiChannel Config application wasn't allowing audio selections for output.
- Fixed issue with Telestream Wirecast when using Io 4K Plus, Io 4K, KONA 4, KONA IP, Io IP, Avid DNxIV and Avid Io IP, where incoming audio was always defaulting to input from SDI 1, regardless of setting chosen.

- Fixed issue with Telestream Wirecast where with no shot selected, incoming (pass-through) audio was present and could not be muted on outputs for Analog, Headphones, SDI monitoring and HDMI at application launch, when using AJA KONA or Io products.
- Fixed issue with Telestream Wirecast when using AJA KONA 4, where SDI 4 output is not functional.
- Fixed issue when using Adobe Premiere Pro CC with the capture window open, whereby application may crash when changing timeline format with AJA KONA or Io products.
- Fixed issue when using Adobe Premiere Pro CC, whereby frames are dropped upon playback of HFR material from either captured or imported sources with AJA KONA or Io products.
- Solved issue when using Avid Media Composer, whereby Snap forward then back would occur when starting play follow a scrub, with AJA KONA or Io products and / or Avid DNxIV, Avid DNxIP.
- Solved issue when using Avid Media Composer, whereby application would not launch if SDI inputs are connected to AJA KONA or Io products and / or Avid DNxIV, Avid DNxIP.
- Solved issue when using Avid Media Composer, whereby a corrupt frame was present at the start of capture with AJA Io 4K Plus, Io IP, Avid DNxIV, and Avid DNxIP.
- Improved performance when using either AJA Control Room or Avid Media Composer, whereby capture or playback was slow to start with Reference set to Video In, with AJA KONA or Io products.
- Solved problem when using Io XT, where Analog Audio output had phase shift at high frequencies.
- Solved problem when using Io XT (UFC firmware), where applying a secondary down-converted output was not possible.

v14.2.1

- Introduction of Avid DNxIP support (new Avid Thunderbolt 3 device) supporting SMPTE 2022-6/7.
- Expanded analog audio configuration options for Avid DNxIV and Avid DNxIP.
 - With AJA Control Panel, user can now select from four modes:
 - “8 in”: eight-channel input across A1-8
 - “8 out”: eight-channel output across A1-8
 - “4 in, 4 out”: four-channel input across A1-4, four-channel output across A5-8
 - “4 out, 4 in”: four-channel output across A1-4, four-channel input across A5-8
- Problems with 3G-SDI output are rectified for AJA KONA LHI and AJA KONA LHe Plus.
- Lack of audio when capturing Deep Color with HDMI ports 3 and 4 in AJA Control Room, is now resolved with AJA KONA HDMI.

v14.2

- Introduction of AJA KONA HDMI support (new AJA PCIe card).
- Introduction of AJA KONA 1 support (new AJA PCIe card).
- Introduction of AJA Io IP support (new AJA Thunderbolt 3 device).
- Introduction of support for Avid Artist DNxIP (new Avid Thunderbolt 3 device) supporting SMPTE 2022-6/7.
- New “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”.
- Expanded analog audio configuration options for Io 4K Plus, Avid DNxIV, Io IP, Avid DNxIP.
 - With AJA Control Panel, user can now select from four modes:
 - “8 in”: eight-channel input across A1-8

- “8 out”: eight-channel output across A1-8
- “4 in, 4 out”: four-channel input across A1-4, four-channel output across A5-8
- “4 out, 4 in”: four-channel output across A1-4, four-channel input across A5-8
- “Disable creation of SCC/MCC files from Closed Caption data” option in Adobe Premiere Pro CC 2017 onwards, provides user with ability to prevent automatic generation of SCC/MCC Closed Caption files when capturing a signal with the data present:
 - Adobe Premiere Pro CC > Window > Capture > Settings > Edit > Settings > “Disable creation of SCC/MCC files from Closed Caption data”.

Note that this option is not engaged by default. This is so older projects will remain unaffected.

Note that enabling this feature does not prevent the recorded media from encoding the Closed Caption data. If the data is present in the source signal, then it will be retained in the captured media.

- 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 recommendations around Windows Sleep / Hibernation / Fast Boot.
- Fixed capture problem with Adobe Premiere Pro CC where when selecting RGBA for capture, instead resulted in a black clip being written to disk.
- Solved issue with Adobe Premiere Pro CC where auto-creating a sequence from an AJA clip (in a new project for the first time) could either take over 30 seconds, or else crash the application.
- Resolved bad SD video playback in Adobe Premiere Pro CC canvas and loss of AJA Video output, when choosing to display both fields.
- Fixed issue with Adobe After Effects CC where taking an HD composition and setting it to an SD raster (with Match Sequence selected in the Transmit setting) resulted in AJA devices staying set to HD.
- AJA Control Room now provides a confirmation dialog if the application is quit or exited during capture.
- Amended incorrect interface reporting in AJA Control Panel whereby it appeared that input pass-through is checked, when actually in playback, and vice versa.
- AJA Control Panel Frame Buffer and Output are now correctly set to 525i 29.97 when presented with P2/MXF 480i 29.97 material that is flagged as 23.98.
- Fixed capture problem with AJA Control Room where entering capture mode caused excessive CPU usage.
- When Open GL acceleration is not being utilized, SD material no longer shows black at the bottom of the frame in AJA Control Room viewer during playback.
- Fixed issue whereby AJA T-TAP output image would shift horizontally.
- Amended behavior in Adobe Premiere Pro CC capture tool, such that it is no longer possible to attempt to capture from AJA T-TAP (being a monitoring-only device).
- Solved problem in AJA Control Panel, where clicking on the Timecode tab could cause the application to crash, with T-TAP.
- Corrected various HDMI display and capture problems caused when AJA device is connected to an already powered-up HDMI monitor, and then powered on, with AJA Io 4K Plus, Avid DNxIV.
- Fixed AJA Control Room crash upon physically connecting a signal to SDI 1, with Io 4K Plus, Avid DNxIV.
- Corrected banding on HDMI output when AJA Control Panel Frame buffer is set to YCbCr and HDMI color space is set to 10bit YUV, with Io 4K Plus, Avid DNxIV.
- Rectified problem whereby HDR would turn on, but not turn off completely, with AJA Io 4K Plus, Avid DNxIV.
- Remedied audible “tapping” effect during manipulation of volume knob, with AJA Io 4K Plus, Avid DNxIV.

- Solved problem with AJA Control Panel where when set to Quad (Square Division) SDI input, the HDMI output suffered from a green tint, and the HDMI widget reports incorrectly that it is passing 4K/UHD instead of a down convert to 2K/HD, with Io 4K.
 - Corrected problem whereby Adobe Premiere playback of 2K formats would set the AJA Control Panel frame buffer to UltraHD, with Io 4K.
- Solved loss of HDMI output when using an RGB-10 (or ARGB-8 / RGB-12) framebuffer setting and attempting to set color space to 10-bit YCbCr / 4:2:0, with AJA Io 4k Plus, Avid DNxIV, AJA Io 4K, AJA KONA 4.
- Rectified AJA Control Room problem causing the wrong color space and image aberrations to display when using SDI RGB input, with AJA Io 4k Plus, Avid DNxIV, AJA Io 4K, AJA KONA 4.
- Fixed wrong output from AJA Control Panel. Upon selecting 2K, HD was instead output, and when selecting 4K, UltraHD was instead output, with AJA KONA LHi, AJA Io 4K, AJA Io XT.
- Solved problem where buffer format selections in AJA Control Panel intermittently provided incorrect output raster and corrupted imagery, with AJA Io Express, AJA KONA LHi.
- Solved problem where Adobe Premiere Pro CC captures would fail if Unicode characters were present in the Clip Name field of the capture window, with AJA KONA 4.
- Fixed audio quality problem when using Wirecast while running the UFC firmware available for AJA KONA 4.
- Fixed issue when using SMPTE 2022-6/7 firmware, whereby a receiving AJA 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 AJA KONA IP.
- Solved transmit (playback) and receive (ingest) problems with 2K formats (up to 30p max) when using SMPTE 2022 firmware and JPEG 2000 firmware, with AJA 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 AJA 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 AJA KONA LHi.
- Solved locking to input problem with Downstream Keyer when using FrameBuffer over Video In, with HDMI In selected as the source, with AJA KONA LHi.
- Fixed missing video output when using Wirecast with AJA KONA LHe Plus.

v14.0.2

- Added improved fan speed regulation for AJA Io 4K Plus and Avid DNxIV.
- Removed gain-knob “zipper” sound on Mic Input for Avid DNxIV.

v14.0.1

- Added option for HDMI Audio Ch 3/4 Swap for AJA Io 4K Plus and Avid DNxIV.
- Added option for SDI Input / Output Quad Swap for Io 4K Plus, Io 4K, KONA 4 and Avid DNxIV.
- Fixed general HDMI output timing and stability (of particular benefit for HDMI 1.4 monitors).
- Fixed HDMI output issues with Kona 4 on macOS.
- Fixed UltraHD HDMI output in 2SI.
- Fixed intermittent input detection when HDMI is input source.
- 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).

- Fixed issue whereby Control Panel reports device as both Io 4K Plus and DNxIV.
- Fixed Virus Check issue with AJA Multi Channel Config.
- Reinstated Python models within macOS and Windows installers.
- Fixed issue whereby Control Room would display an AV sync issue during capture (but capture OK).
- Fixed issue whereby Adobe Premiere Pro would display an AV sync issue during capture and resultant capture was out of sync.
- Fixed intermittent snapback at start of playback with Avid Media Composer.

v14.0

- Introduction of AJA Io 4K Plus support (new AJA Thunderbolt 3 device).
- Introduction of Avid Artist DNxIV support (new Avid Thunderbolt 3 device).
- Added Audio Mixer to AJA Control Panel.
- Fixed reverse playback of interlaced material (where fields were incorrectly swapped) within Adobe Premiere Pro CC.
- Fixed issue with cueing clips from the bin following an icon scrub, whereby a frozen frame manifested on playback on 1st attempt within Adobe Premiere Pro CC.
- Fixed jump in playback when video delay is set past zero within Adobe Premiere Pro CC.
- Fixed issue whereby Control Panel crashes if launched with no device connected.
- Added VTR on/offline icon to Batch Capture bin window in Control Room.
- Fixed issue whereby device offline dialog gets stuck in loop for batch captures when clicking "OK" in Control Room.
- Fixed bad timecode with playback of DPX Cineon header sequences in Control Room.
- Fixed 1 second lag for actual capture to begin, with DVCProHD 'on the fly' captures in Control Room.
- Fixed problem deleting a clip if loaded in the playback viewer in Control Room.
- Fixed problem with KONA LHi and KONA LHe Plus Analog inputs not detecting HD formats.
- Renamed the main AJA Desktop uninstaller in Program and Features.
- Fixed intermittent 720p varicam playback issues with T-TAP.
- When using Square Division with KONA 4, Io 4K, Io 4K Plus and Avid DNxIV, 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, Io 4K, Io 4K Plus.

Known Issues, Limitations and Additional Details

General

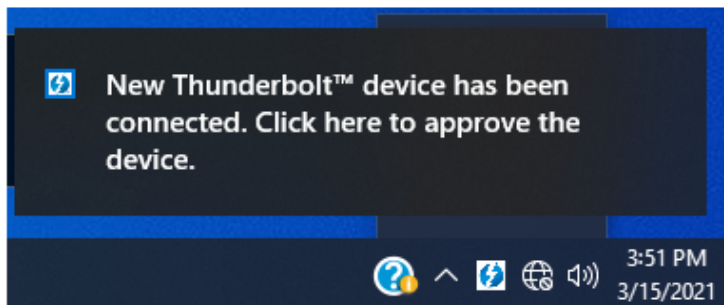
- "System Sleep" or "Hibernation": should not be used with KONA and Io devices. All sleep and power efficiency modes should be disabled in the operating system power management settings (Windows Control Panel).
- "Fast Startup": "Fast Boot" should be OFF in the BIOS, "Fast Startup" should be set to ON in Windows Control Panel.

Troubleshooting

- The following are items that may help troubleshoot performance issues on some HP Z8 or Z4 workstations with AJA cards and devices:
 - Start by carefully checking BIOS settings and then comparing with OS-level settings (Windows Control Panel). As mentioned above, there are occasions where the settings may be the opposite of each other. To set the mode for BIOS:
 - Power Up > F10 > Enter BIOS > Advanced > Power Management Options > Energy/Performance BIOS control
Choose either “OS Controls EPB” or “BIOS Controls EPS”
 - If you have chosen “OS Controls EPB” to enable the operating system power management settings (Windows Control Panel) make sure that “High Performance Mode” is explicitly chosen for use. Setting sleep to 0, may not be as reliable as choosing “High Performance Mode”.
 - This setting can be found in Control Panel > All Control Panel Items > Power Options > Select Power Plan > Choose “High Performance” (vs. “Balanced”)
 - “PCI Express Power Management” is a setting to consider unchecking if you are experiencing bus-related issues with ThunderBolt connected devices:
 - Enabling this option permits the PCI Express links to use Active State Power Management (ASPM) to enter low power states while not in use.

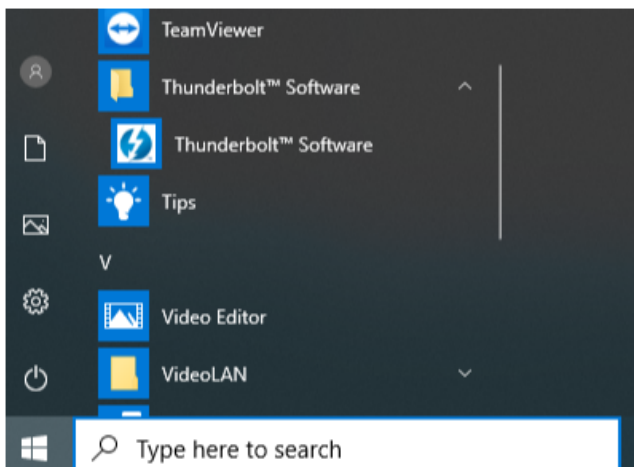
Thunderbolt Devices

In cases where an AJA Thunderbolt device is being installed for the first time on your host system, a Thunderbolt dialog box should present itself, providing the opportunity to “approve the device”. If this is the case, proceed to approve and the installation will succeed accordingly.

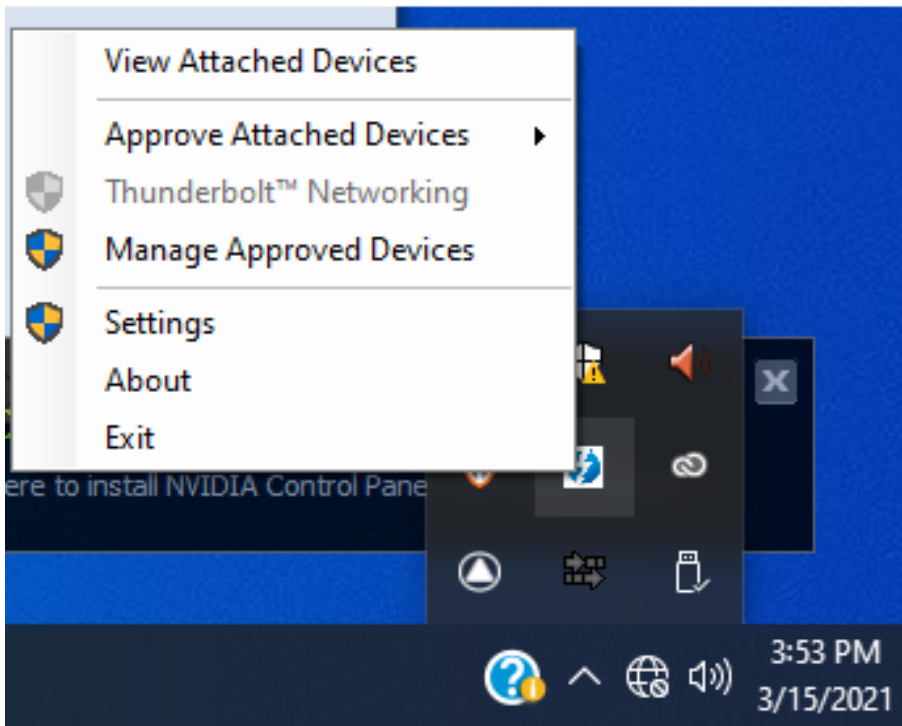


If the dialog is missed, or else it didn't present itself, then although the AJA Thunderbolt device will show up in Device Manager, it will not be recognised by the installed AJA Desktop (or other) software. In this case, follow the instructions below to “approve the device”.

1: Launch Thunderbolt software under Start menu in the Thunderbolt folder

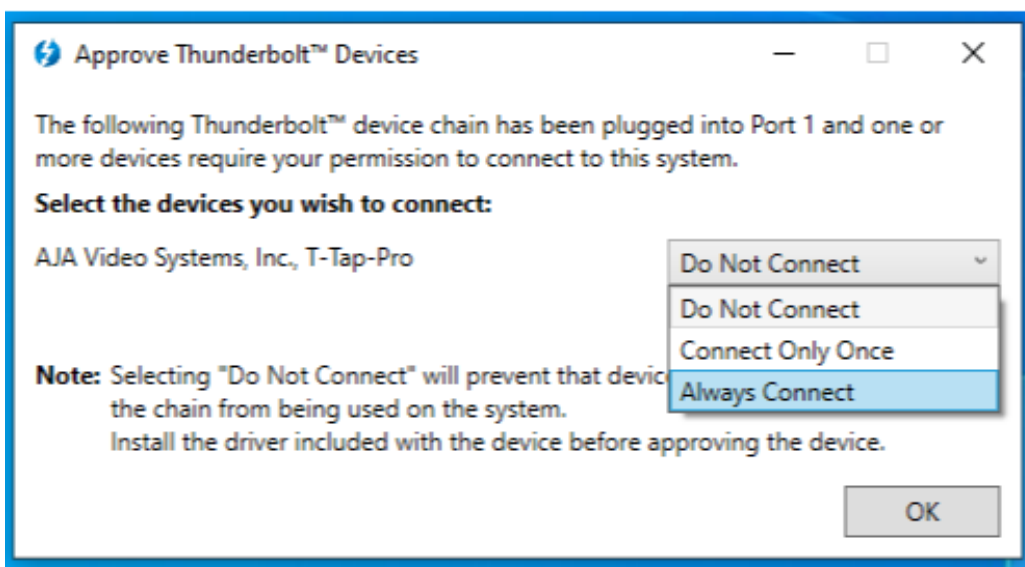


2: This will put the Thunderbolt software icon in the tray (lower left in hidden icons)

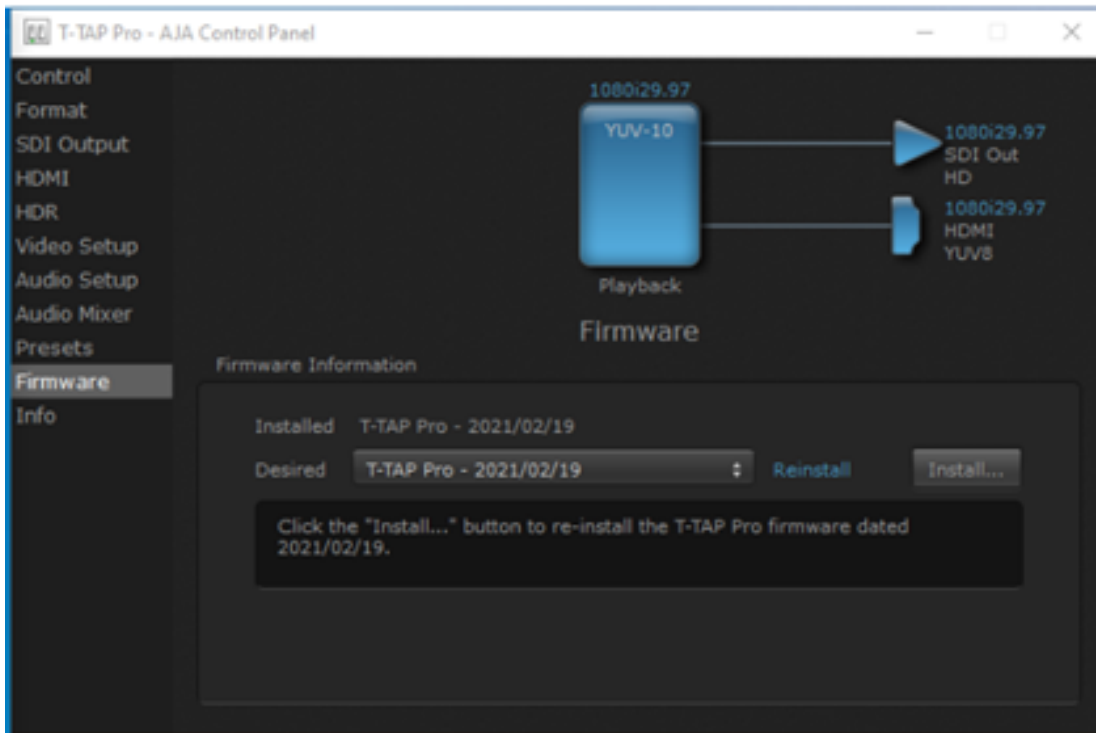


3: Right click the Thunderbolt software icon to view options, click Approve Attached Devices on the Port

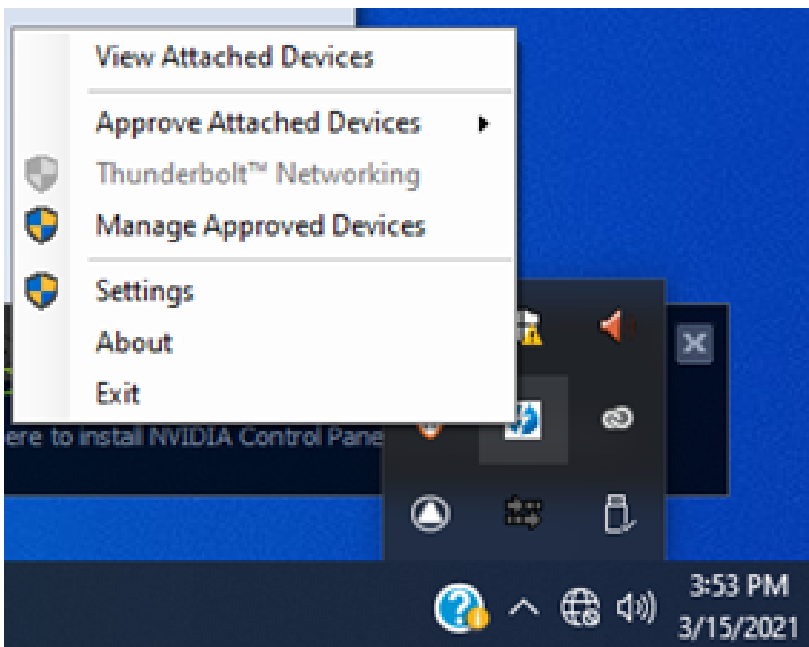
4: Click arrow to select Always Connect



5: AJA control panel now see the Thunderbolt device



6: View Attached Devices in Thunderbolt software to show connection status



12-bit RGB support (4K/UHD)

- Additional 12-bit RGB support has been added for KONA 5, Io 4K plus, Avid DNxIV, Io IP, Avid DNxIP enabling an expanded range of HDR and other 4K/UHD workflow possibilities via both HDMI 2.0 and SDI. Note that 12-bit RGB support includes frame rates up to 30p only.
- 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

- KONA 5 bitfile
 - There are two main KONA 5 bitfiles: "KONA 5" 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
 - Adobe Premiere Pro
 - Apple FCP X
 - Avid Media Composer
 - Telestream WireCast
 - 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 addition 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
 - Adobe Premiere Pro
 - Video Mixer/Keyer not supported
- If loading KONA 5 (8K) bitfile, be aware of the following:
 - For 4K/UHD 12G-SDI and 6G-SDI are supported for I/O.
 - 3G-SDI or 1.5G-SDI for 2K/HD I/O is supported.
 - 3G-SDI or 1.5G-SDI for 4K/UHD is currently supported for Input only.
 - 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.
 - When set to Square Division, I/O configurations must be manually set using the frame buffer in AJA Control Panel (see below).

- To set up for 8K Input with 2SI, under 8K Transport choose “Auto” or “8K-2SI”
- To set up for 8K Input/Output with Square Division, under 8K Transport choose:
 - “4x8K” for either 8K YCbCr HFR or 8K RGB LFR over 4 connections
 - “2x8K” for 8K YCbCr LFR (6G-SDI) over 2 connections
- AJA System Test is not presenting data in a user friendly manner for 8K/UHD2.
- AJA Control Room, Adobe Premiere Pro and Adobe After Effects are supported for 8K/UHD2 Input and Output. There is currently no support for Apple, or Avid applications.
- Level-A only for 8K/4K. Level-B support is only relevant to HD signals.
- 10-bit I/O with YCbCr, 12-bit I/O with RGB only.
- Apple ProRes family supported (encode and decode).
- Audio is present and can be Captured or Output. AJA Control Panel Audio Mixer is not available.

KONA IP, Io IP and Avid DNxIP

- KONA IP, Io IP and Avid DNxIP, can be used with two different firmwares: ST 2110 firmware or ST 2022-6 firmware.
- KONA IP, Io IP and Avid DNxIP, with ST 2110 firmware:
 - Are 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 for 4K/UHD
 - It is currently necessary to enable Closed Captioning in AJA Control Room in order to Capture Time Code.
 - It is recommended to disable channels not in use i.e. disable Ch 3 when Ch 4 is desired.

Io 4K Plus and Avid DNxIV

- New functionality introduced as of v15.5.3 for Io 4K Plus and Avid DNxIV provides for smoother and faster transitioning between Capture and Playback. See below under Media Composer for more notes, and consult the manual for full details.
- Currently, some SD sources do not work correctly when ingesting via HDMI. Please contact AJA Support to report this issue if you run into it.

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. In Adobe Premiere CC, this issue causes the app to become unresponsive when using an RGB10 frame buffer/capture codec. 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

- 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 with ports 1 and 2. Please use channels 3 and/or 4 for SD ingest.
- Occasionally, HDMI sources do not work correctly. Please contact AJA Support to report this issue if you run into it.

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 agent stops running following unplug of TB device. This manifests itself most clearly when running more than one AJA device on the same host at the same time.
 - Workarounds for macOS
 - Re-plug the Thunderbolt device, and the agent will restart.
 - Otherwise, on macOS "Warning Text" will show in AJA Control Panel ("restart Agent") and the agent can be restarted by clicking this menu item.
 - Workarounds for Windows
 - After an unplug, it will be necessary to restart AJA Control Panel and AJA Control Room.
 - For Windows systems, an administrator could also manually stop and restart the service to get the agent working again.

AJA Control Room

- H.264 playback in AJA Control Room is in beta for the v16.1 release. We do not recommend using this feature for production until the functionality is completed in a forthcoming release. We do however welcome any feedback that may result from trying this new functionality out.
- MXF OP-1A capture in AJA Control Room does not support the following formats: 720p60, 1080i30, 1080p30, 1080p60.

Adobe Applications

- The first version of Adobe Premiere Pro to natively support Mac M1 (July 2021) will not support capture. Instead, use AJA Control Panel to capture material which can then be used for editing within Premiere Pro.
- Currently upon changing audio playback device from the AJA device to Adobe Desktop Audio, playback will fail. When hitting play, picture will not advance and the audio meters will move slowly and continue to move even after hitting Stop.
 - Workaround: Toggling Transmit off/on appears to resolve the issue. Also toggling to a different sequence and back will as well. Toggling to source side or focusing on desktop and back does not.
- Versions of AJA Desktop software prior to v15.5 will not show video preview during capture on Premiere 2020. However capture of content will not be affected.
- With rasters above HD/2K, Adobe After Effects may struggle to deliver frames in real time. AJA hardware will buffer as much as possible, but if frame rates get very slow, it will be impossible to sustain smooth real-time playback on the reference monitor.
- Audio output from AJA devices can be compromised when sequence frame rates do not match hardware frame rates.
 - This can occur when working in 720p formats other than 720p-50, 59.94, 60.
 - To work around this limitation, go to Premiere Pro Playback preferences, and set the AJA video device to 'Match Control Panel'. Then set up a cross-conversion to output 1080 format. For example, if using a

720p-23.98 project, set the AJA Control Panel to cross-convert to 1080PsF-23.98, which is a valid SDI output.

- Timecode is not stored in crash captured clips when the timecode source is RS-422. If this is required, use embedded timecode instead of RS-422 timecode.
- Variable frame rates (VFR) with pull down added are not adjusted for timecode.
- 'Crash Capture' and 'Print to Video' will work on Varicam frame rates over HD-SDI, but 'Insert Edit', 'In/Out. Capture', and 'Batch Capture' will not.
- When insert editing on Panasonic decks, destructive edits may occur too early on the tape. In order to avoid this, be sure that menu item 202 "ID SEL" is set to "OTHER".
- Preroll shorter than 4 seconds is not recommended for use with any deck, for capture or layback.
- Premiere Pro defaults to 'Display First Field' in its monitor window menus. If interlacing issues appear on the output of AJA hardware, try changing this setting to 'Display Both Fields'.
- When changing from a DF tape to an NDF tape on the same deck, with the Premiere Pro capture window open, the NDF/DF status may not be picked up correctly. If this happens, the timecode values seen in the Premiere Pro capture window may be incorrect.
 - This Issue will NOT affect users unless they are changing between DF and NDF tapes on the same deck, in the same Premiere Pro Capture session.
 - To Avoid This: Always give the new tape a new name in the 'Tape Name' dialog that appears when changing tapes and be sure to let the new tape spool up all the way before clicking the 'OK' button on the dialog.
 - To Fix This: Close the Premiere Pro capture window and reopen it.
- When capturing from or exporting to a Panasonic D5 deck, the timecode source setting in the AJA Premiere Pro Device Control plug-in must be LTC+VITC.
- MXF OP-1A capture in Adobe Premiere Pro does not support the following formats: 720p60, 1080i30, 1080p30, 1080p60.

Avid Media Composer

- Support for HDR via Media Composer arrived with AJA Desktop software v16.0. One known limitation is when linking to HDR media, the Media Composer Source Setting Adapters may get misgenerated. Deleting them will resolve issues viewing HDR correctly.
- New functionality introduced as of 15.5.3 for Io 4K Plus and Avid DNxIV provides for smoother and faster transitioning between Capture and Playback. Note that there are recommended combinations of settings covering both Capture and Playback, please consult the manual for more detail.
 - Note: If a recommended settings combination is not chosen, then lock-up operations may take several seconds when engaging/disengaging the capture tool. This could occur for example, when External Ref is set for Capture but not for Playback, or vice versa.
- AJA hardware does not control for, legalize or clamp video according to broadcast legal values. Use the tools in Media Composer to achieve legal broadcast levels. Note that AJA does prevent illegal levels according to the SDI specification, but this is not the same as the broadcast legal controls available inside Media Composer.
- For HDR, there may be some inconsistency in the state of AJA Control Panel when changing projects. Recommended best practice is to check your HDR settings in AJA Control Panel after switching Avid projects.
- For HDR with Media Composer 2019.11 and after, with AJA KONA 5, KONA 4, KONA IP, Io 4K Plus, Avid DNxIV, Io IP and Avid DNxIP is able to drive AJA Control Panel directly, so adjusting HDR parameters manually in AJA Control Panel should not be necessary.

- Avid Media Composer may occasionally take up to 15 seconds to quit. This is not an indicator of a problem.
- For the AJA device to be selectable for audio-only capture in the Capture Tool, it must first be selected in the Capture Tool:
 - Open the Capture Tool.
 - Select both the Video Input and Audio Input as AJA KONA or AJA Io.
 - Initiate your audio only capture.
- For the AJA device to be selectable in the Audio Punch-In Tool, it must first be selected in the Capture Tool:
 - Open the Capture Tool.
 - Select the Video Input as AJA KONA or AJA Io.
 - Close the Capture Tool.
 - Open the Audio Punch-In Tool.
 - Select the Input Device as AJA KONA or AJA Io.
- Indefinite looping of the timeline with Open I/O plug-in installed may cause Avid applications to stop playback and give an error message.
- Occasionally analog video input will not be detected correctly in the Media Composer Capture Tool. As a workaround, play the source video when you start up Media Composer.

Telestream Wirecast

- When configuring a multi-channel card such as Io 4K Plus, KONA 5, KONA 4, and/or KONA HDMI, the inputs must be configured first (using AJA Multi-Channel Config application), if you plan to use the live program output feature. This will set the master clock for the card (either NTSC or PAL), otherwise the card will be set to 1080i-29.97 by default and could cause the card to attempt a mix of PAL and NTSC clocks. Be sure to configure all of your inputs and outputs in AJA Multi-Channel Config prior to launching Wirecast.

Legacy QuickTime Components

- QuickTime components were removed from the AJA installers starting with v14.3 onwards. The intention is to make available a stand-alone QuickTime components installer available for those who need it. At this moment in time the standalone legacy QuickTime installer is non-functional and has been temporarily removed from the Archived Software area under product support pages. Until the standalone legacy QuickTime installer is fixed and made available, please revert to AJA desktop software v 14.2.1 or earlier.

QuickTime to DPX Translator

- QuickTime to DPX Translator crashes on launch. This results from QuickTime deprecation. Use a pre v15.0 version of AJA Desktop Software if you need this functionality.

DirectShow

- DirectShow is supported across the following AJA products:
 - KONA 5, KONA IP, KONA 4, KONA HDMI, KONA 1, KONA LHi, KONA LHe Plus
 - More information here: <https://www.aja.com/support/directshow>

Technical Support

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

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