AJA Desktop Software Release Notes - v16.2

macOS v16.2 drivers and software for KONA, Io and T-TAP Pro

Introduction

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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 v16.2:
>   - For setup and control of your AJA KONA, Io or T-TAP Pro product, including firmware updates.
> - AJA Control Room v16.2:
>   - For high quality capture, monitoring, playback and output.
> - AJA System Test v16.2:
>   - For testing storage to determine if it will be possible to sustain frame rates for chosen format(s).
> - AJA Multi-Channel Config v16.2:
>   - For setting up video I/O for use with Telestream Wirecast.
> - AJA NMOS v16.2:
>   - Optional SMPTE ST 2110 application providing discovery, registration and control for KONA IP and Io IP.

Operating System

This version of AJA Desktop Software supports Macs with both Intel processors and Apple Silicon (specifically the Apple M1 chip) running macOS 12.x (Monterey) or later. It also supports older versions of macOS with Intel processors, from macOS 10.14 (Mojave).
- Before running this installer, best practice is to uninstall all previous versions of AJA Desktop software.

If presented with macOS / Thunderbolt security messages when installing AJA hardware, see "Known Issues, Limitations and Additional Details" near the end of this document for instructions and notes specific to macOS 10.13 (High Sierra), macOS 10.14 (Mojave), macOS 10.15 (Catalina), macOS 11.x (Big Sur) and macOS 12.x (Monterey)
- For host system examples, recommendations and requirements, please see:
  - https://www.aja.com/support/kona-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

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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 popular software from Adobe, Avid, OBS Project and Telestream on Windows as follows:

- **Adobe** Premiere Pro, After Effects, Photoshop, Character Animator, Audition 2022, 2021, 2020
- **Apple** Final Cut Pro – 10.6, 10.5.x, 10.4.x
- **Avid** Media Composer - 2021.x, 2020.x, 2019.x, Pro Tools 2021.x, 2020.x, 2019.x
- **OBS Project** - OBS Studio 27.2
- **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 this update:

- KONA 5
- KONA IP
- KONA 4
- KONA 1
- KONA HDMI
- KONA LHi
- KONA LHe Plus
- T-TAP Pro
- Io 4K Plus
- Io X3
- Io IP
- Avid Artist DNxIV
- Avid Artist DNxIP

Recommendations in v16.2

- 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.

- 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.

New Features and Changes in v16.2
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- Product Introduction for AJA Io X3. A versatile, portable new Thunderbolt 3 connected video I/O device for SDR/HDR 2K/HD/SD I/O with four 3G-SDI connectors, HDMI In, HDMI Out, Reference, LTC In, LTC Out, RS 422.
- Feature Introduction specifically with AJA Io X3. For MultiChannel Streaming/Switching/Capture, a new AJA MultiView feature provides confidence monitoring of up to all 4 incoming SDI signals simultaneously via HDMI Out.
  - Initially supported for OBS Studio, and Telestream WireCast (plus AJA Control Room). Additional application support planned for a future release.
- Application Support for OBS Studio with AJA KONA, Io and T-TAP Pro products. When installing AJA Desktop Software, alongside OBS Studio, the following AJA Devices can be used for Input/Output at 2K/HD 60p or 4K/UltraHD at 30p using OBS:
  - Io X3, Io 4K Plus, T-TAP Pro, KONA 5, KONA 4, KONA HDMI.
- A new high quality bitfile personality for KONA 5 is now available. "KONA 5 (12-bit)" enables working with a 4K/UHD RGB 4:4:4 12-bit path from capture, to color correction to output. Designed for 4K/UHD high quality color grading, finishing and playback.
- A new ST 2110 bitfile personality for KONA IP, Io IP and Avid DNxIP is now available. "KONA IP s2110 RGB12", "Io IP s2110 RGB12" and "DNxIP s2110 RGB12" all enable working with a 2K/HD RGB 4:4:4 12-bit path from capture, to color correction to output. Specifically designed for Post Production workflows for feature film and Episodic TV using film rates with file based material for RGB 444 12-bit editorial and playback.
- LUT functionality enhancements for AJA Control Panel. All current KONA, Io and T-TAP products which support LUTs now have the ability to import and export LUTs as .cube files for greater interoperability with other systems and software which also use the .cube format. The legacy method of supporting LUTs via CSV is still supported for import in Control Room, but no longer for export.
  - The following AJA Product / Firmware combinations support 12-bit LUTS, for other combinations and other products, LUT support is 10-bit:
    - KONA 5 with KONA 5 (12-bit) firmware
    - KONA IP with KONA IP s2110 RGB12 firmware
    - Io IP with Io IP s2110 RGB12 firmware
    - DNxIP with DNxIP s2110 RGB12 firmware
- AJA Control Room Playback Buffering. Functionality designed to protect critical playback from dropped frames. In some situations the host system may be challenged by interruptions to media file storage connectivity. This new feature enables the allocation of RAM towards ensuring consistent playback even during storage connectivity interruptions. This is a complementary feature to the existing Capture Buffering also available in AJA Control Room.

- AJA Control Room now supports H.265 and H.264 progressive Capture and Playback up to HD 1920x1080, including Timecode, Closed Captions and HDR metadata.
    - Multiple data rates (6) can be selected; Low, Med-Low, Med, Med-High, High, Max
    - The application will seek out the best method for encode/decode based on the attributions of the host environment where it is installed. See the Control Room section under "Known Issues, Limitations and Additional Details" in the Release Notes below. Additional information available in the Control Room Manual.
    - Note: Interlaced material will be captured as progressive, this is as designed.
- AJA Control Room now supports playback of 16-bit RGB 'b64a' media (12-bit on the wire).
- AJA Control Panel Info Screen will now flag (red text) to warn when newer firmware is installed but not yet running (i.e. the host system needs to be power-cycled).

Fixes and Improvements in v16.2

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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.

- Fixed inability to capture ProRes 4444 XQ with Adobe Premiere Pro with AJA KONA and Io devices (Apple Intel systems, and Apple Silicon System under Rosetta).
- Solved inability to access boot volume with AJA System Test, when mounted shares were present.
- Resolved Control Room crashing caused by having v16.1 beta (b60) installed prior to installing v16.1 release or later.
- Corrected cosmetic error whereby AJA Control Panel was incorrectly showing SDI (5) monitor as UHD/4K, vs. 1080 (with 4K quarter enabled), when using Io 4K Plus and Io IP (and DNxIP) for UHD/4K I/O.
- Solved cosmetic non-display of VU levels in AJA Control Panel (Audio Mixer tab > Capture Monitor) despite audio being present, when using Io 4K Plus and Io IP (and DNxIP).
- Solved cosmetic non-display of VU levels in AJA Control Panel
- Rectified problem causing Control Room to drop frames over extended playback of looped 1080p HFR video with Io 4K Plus and KONA 4.
- Fixed incorrect 3G-SDI Level-A VPID information on pass-through, with Io 4K Plus, whereby incoming RGB 12-bit was mischaracterized as RGB 10-bit causing problems with downstream devices.
- Rectified incorrect routing with a Dynamic Reconfig (bitfile swap) followed by a restart, manifesting as bogus 8K routing shown in Control Panel with 4K firmware active.
- Resolved Control Room bug with Io 4K Plus, whereby upon engaging Dual Link RGB Capture, there appeared to be no video present.
- Solved problem which prevented IP Audio being available to select in AJA MultiChannel Config for KONA IP and Io Ip when using ST 2022-6 firmware ("s2022") with Telestream Wirecast.

Features, Fixes, Changes and Improvements in Prior Releases

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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.

v16.1

- Added native support for Apple Silicon, specifically the Apple M1 chip, including:
    - Compatibility for AJA KONA and Io products, plus T-TAP Pro.
    - AJA Desktop Software package, including Control Panel (and codec support), Control Room, System Test, Multi-Channel Config, NMOS, plus integrations with Adobe, Apple, Avid and Telstream applications.
- 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.
- AJA Control Panel Restart Services is new functionality that allows for restarting the AJA services if necessary. This can help if various applications begin contesting for access to the Video I/O device. In this case using the "Restart Service" command will bring AJA Control Panel back to its startup state, and an application can freshly acquire control of the AJA Video I/O device.
- 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.
- Fixed inability to access boot volume with AJA System Test when a share was mounted.

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- Solved for problem with Color Space setting set to Auto in AJA Control Panel, where when receiving 12-bit RGB, the SDI output was bad due to being set to YCbCr instead of RGB.
- Fixed problem in AJA Control Panel regarding non-display of KONA 5 serial number following Dynamic Reconfiguration to switch between 4K and 8K firmware.
- Fixed problem with KONA 5 where AJA Control Panel/Services surfaces incorrect routing after a Dynamic Reconfiguration followed by a restart.
- 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.
- Fixed problem with KONA LHi whereby SDI passthrough VPID (Video Payload ID) was reversed.
- 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.
- Resolved problem with AJA NMOS whereby upon unplugging (Thunderbolt 3) AJA Io IP would cause repeated register / de-register.
- 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

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, but 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.
- Fixed inability to play or capture DVCPRO/HD with AJA Control Room, and associated inability to capture DVCPRO/HD with Adobe Premiere Pro.
- 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.

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- 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 NMOS behaviour where SDPs sometimes required refresh in AJA Control Panel with AJA KONA IP , Io IP and Avid DNxIP.
- 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.
- Solved inability to use numerous AJA devices for capture / playback under macOS Big Sur.
- 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 play 4K/UHD video using Apple FCP with AJA KONA 5 (8K firmware).
- Resolved lack of output from an additional AJA device when using Apple FCP with two or more AJA devices.
- Fixed problem whereby Apple FCP application audio output from AJA Io 4K Plus & Io 4K was being represented as host audio vs. FCP (Main App) output.
- Solved issue whereby Apple FCP may intermittently stop outputting video properly when swapping between different AJA devices.
- Fixed bad 8K/UHD2 video output from Apple FCP with AJA Kona 5 (8K firmware).
- Fixed HDR output from Apple FCP whereby video was not displayed correctly and appeared overexposed.
- 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.
- Solved inability to play Avid Media Composer DV clips in AJA Control Room (macOS Mojave only)
- 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).
- Protected against crash/kernel panic when disconnecting AJA T-TAP / Thunderbolt device from Mac systems while playing clip in AJA Control Room.
- 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).
- Solved problem where AJA System Test Lite could crash on startup when running on macOS Catalina 10.15
- Fixed potential crashing with KONA LHi during an SD MXF capture.
- Solved for issue when exporting an FCP Event with MOV files from AJA Control Room would result in a partial clip.

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.

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- 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 4K Plus, Io 4K, Avid DNxIV with Apple Final Cut Pro X: Solved problem causing AJA hardware front panel to not show LED metering.
- 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: 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.
- Avid Media Composer: Fixed problem with AJA serial driver causing inability to connect to VTRs.

v15.5

- AJA Desktop Software, Driver and Firmware: macOS 10.15 (Catalina) ready and supporting AJA Control Panel/Room, AJA System Test, AJA NMOS, AJA MultiChannel Config, plus AJA Plugins for supported applications from Adobe, Apple, Avid and Telestream.
- AJA Control Room:
    - New functionality supporting Apple Metal for Desktop rendering (monitoring) on macOS.
- KONA 5, KONA 4, Io 4K plus, Avid DNxIV and Io 4K:
    - HDR over SDI via VPID now supported in a new 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 user 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:
  - ○ Meaning that 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".
- ● 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 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
- ● Io XT & T-TAP: rectified output with Avid Media Composer where green lines were present at the very top of frame during output/monitoring.

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- 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 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 cosmetic item where Avid Media Composer crashed on exit with AJA plugin installed, but no AJA device attached. Note that no data was harmed during this "crash on exit".
- 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 Playout. Check which firmware you have loaded.
- 8K/UHD2 logic added to AJA Control Panel for KONA 5.
- 8K/UHD2 Capture or Playback with AJA Control Room and KONA 5.
- AJA Io IP now has two firmware choices.
    - The original "s2022" firmware for SMPTE ST 2022-6/7 remains as-is with support for up to HD 60p I/O.

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- ○ A new "s2110" firmware for SMPTE ST 2110 supports up to either (i) 2K 60p I/O with 2022-7 Trasnmit, 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.
- ● Fixed performance deficits with Apple FCPX, including frame dropping experienced during multi-layer timeline playback.
- ● Remedied hang-on-boot with Apple Pro 6,1 and macOS when both Thunderbolt Storage and AJA Thunderbolt devices (or AJA KONA cards in Thunderbolt chassis) are connected simultaneously.
- ● Fixed bad video output from AJA Control Panel when set HDMI output to color space 4:2:0.
- ● 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..
- ● 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

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- 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 Artist 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 Artist 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.
- Achieved Resolution on an audio problem when using FCPX with various AJA devices, where audio Ch. 2 would "hop" to audio Ch. 4 on down-converted SDI output, from an HD project.
- 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 'Psf' 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).

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- 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.
- 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.
- Solved problem under High Sierra, causing AJA Control Room to crash upon playing clips of different frame rates from the bin.
- Rectified problem in AJA Control Room where Timecode on GUI is 1 frame late vs. video output.
- 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. Note also a current known issue is that this board is not delivering RP188 LTC playback on macOS.
- Resolved 4K capture problem with AJA KONA 4, such that picture was scrambled in AJA Control Room due to problems with respecting "quad swap" feature.
- Achieved resolution to AJA Control Panel problem whereby saving a preset with Follow Input turned off then resulted in Follow Input being on when recalling the preset, and vice versa.
- Resolved issue with AJA Control Panel whereby LTC displayed on input widget doesn't increment/display hours and minutes. Note that the display in the Timecode tab did display correctly.
- Rectified issue with AJA KONA 4 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 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.
- Fixed problem with AJA Io 4K Plus, AJA Io 4K whereby output image is clipped when 4K Input / Output is Down converted to HDMI.
- 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 were not reading correctly.
- Fixed problem when using AJA KONA IP with ST 2022 firmware, such that intermittently an IP address can become stale and stop working until switching to a new IP address.
- 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 ST 2110 support for AJA KONA IP (receive and transmit) up to 2K/HD 60p.
- Added 6G-SDI as a valid I/O for using AJA Io 4K Plus with Telestream Wirecast* (via MultiChannel Config 4K settings). Note: Wirecast setup is done via AJA Multi-channel Config (not AJA Control Panel).
- QuickTime components are now legacy and have been removed from the AJA unified desktop software package and thus, are no longer installed by default. If you still wish to obtain and install the QuickTime components, you can find the package under the support section for your AJA product, inside "Software Archive".
    - For AJA Control Room, there are no dependencies on the legacy QuickTime components, since AJA has internal QuickTime libraries which remain available to the application.
    - For up to date 3rd party NLEs and other software applications using AJA hardware, there should be no dependencies on the legacy QuickTime components. If you need more information, please contact your software vendor.
- VANC checkbox for "tall frame" support is now legacy and has been removed from AJA Control Panel on Mac. This was a feature that specifically supported FCP 7 and AJA VTR Xchange.
- 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 Io 4K Plus, Io 4K, KONA 4, KONA IP, Io IP, Avid DNxIV and Avid DNxIP, 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.
- Resolved problem when using Apple FCPX whereby frame drops would occur at the beginning of playback, when using AJA KONA or Io products.
- Resolved problem when using Apple FCPX whereby audio might be intermittently repeated at playback stop, when using AJA Io 4K Plus, Io 4K, Io XT, KONA 4 and KONA LHi.
- Fixed issue when using Adobe Premiere Pro CC with the capture window open, whereby application or entire host system may crash when changing incoming video 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, 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

- Expanded analog audio configuration options for AJA Io 4K Plus, AJA Io IP, Avid DNxIV, 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 KONA LHI and KONA LHe Plus.
- Lack of audio when capturing Deep Color with HDMI ports 3 and 4 in AJA Control Room, is now resolved with KONA HDMI.

v14.2

- Introduction of AJA KONA 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).

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- 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.
- Important updates have been added to the Known Issues and Limitations section near the end of this document. See items relating to hardware recognition on first install under macOS High Sierra and later.
- Amended display problem with Adobe Premiere Pro CC where during capture of ProRes 422, ProRes HQ or DNxHR HQX, the canvas appears to show dropped frames (even though the captured file contains all frames).
- Fixed capture problem with Adobe Premiere Pro CC where setting up for ProRes 4444 captures, resulted instead in uncompressed BGRA clip being written to disk.
- 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.
- 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.
- 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 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 T-TAP (being a monitoring-only device).
- Fixed issue whereby upon quitting / exiting Telestream Wirecast, T-TAP was left in a non-standard configuration. AJA Control Panel reported "In use by OEM application".
- 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 Io 4K, Avid DNxIV.

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- Solved intermittent issue where switching modes or moving the playhead could then cause loss of (incoming) EE audio monitoring when using audio punch-in within Avid Media Composer. Only monitoring was affected, as the audio captured did contain the voice over content recorded, with Io 4K, Avid DNxIV.
- Fixed problem whereby unplugging Thunderbolt 3 cable when AJA Control Panel is set to 4K Quad Input (Square Division), could in some instances create a kernel panic, with Io 4K, Avid DNxIV.
- Amended AJA Control Panel feedback where SDI 5 was being erroneously labelled as Video and Key, when SDI 3 and 4 were set to Video and Key, with Io 4K, 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, Avid DNxIV.
- Rectified problem whereby HDR would turn on, but not turn off completely, with Io 4K, Avid DNxIV.
- Remedied audible "tapping" effect during manipulation of volume knob, with Io 4K, 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 UHD, with Io 4K.
- Fixed display of garbage video instead of color bars upon launching AJA Control Panel, with Io 4K, Io XT.
- Solved loss of HDMI output when using an RGB-10 (or ARGB-8 / RGB-12) framebuffer setting and attempting to set color space to either 10-bit YCbCr / 4:2:0, with Io 4K plus, Avid DNxIV, Io 4K, KONA 4.
- Rectified AJA Control Room problem causing the wrong color space and image aberrations to display when using SDI RGB input, with Io 4K plus, Avid DNxIV, Io 4K, KONA 4.
- Fixed wrong output from AJA Control Panel. Upon selecting 2K, HD was instead output, and when selecting 4K, UHD was instead output, with Io 4K, Io XT, KONA LHi.
- Solved problem where buffer format selections in AJA Control Panel intermittently provided incorrect output raster and corrupted imagery, with KONA LHi and Io Express.
- Fixed audio quality problem when using Wirecast while running the UFC firmware available for KONA 4.
- Fixed issue when using SMPTE 2022-6/7 firmware, whereby a receiving KONA IP would not reestablish video streams following a manual disable and then re-enable of Video Output (in AJA Control Panel) on the transmitting KONA IP
- Solved transmit (playback) and receive (ingest) problems with 2K formats (up to p30 max) when using SMPTE 2022 firmware and JPEG 2000 firmware, with KONA IP.
- Solved problem in AJA Control Panel where switching from 2K to SD formats could interrupt transmit (playback) when using SMPTE 2022-6/7 firmware on KONA IP.
- Fixed intermittent black frames showing across HDMI and SDI output with Downstream Keyer when using FrameBuffer over Video In, with either HDMI or SDI In selected as the source (and setting Match Frame Buffer format to Source), with KONA LHi.
- Solved locking to input problem with Downstream Keyer when using FrameBuffer over Video In, with HDMI In selected as the source, with KONA LHi.
- Fixed missing video output when using Wirecast with 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.
- Fixed Toggle P/PSF reactivity with Avid Media Composer (now instant).

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 issue whereby wake from sleep required FCPX restart.
- Fixed reliability of Timecode out with FCPX.
- Fixed issue whereby an application restart was required to recognize changes in HDR settings changed in AJA Control Panel when running FCPX.
- Fixed Kernel Panic after Sleep > Wake > Launch FCPX cycle.
- Fixed issue whereby "Ioclasscount for AudioStream" did not reset to zero upon Thunderbolt plug cycle with Apple FCPX.
- 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 RP188 output from source viewer in Adobe Premiere Pro CC.
- Fixed playback issue for 2Kp60 projects in Avid Media Composer.
- Fixed severe frame dropping & A/V sync loss when playing AMA linked P2 AVC-I within Avid Media Composer.
- Fixed issue whereby T-TAP leaves device in OEM mode on Wirecast exit.
- Fixed issue whereby Control Panel crashes if launched with no device connected.
- Fixed inoperable contextual menus on Mac within Control Panel.
- 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 issues whereby Timecode for current position stops updating, when video option set to "no video" within 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.
- Now possible to choose category dividers in compressor dropdown menu as compressors within Control Room.
- Fixed failure to connect to AJA device after 2nd sleep with downstream Thunderbolt device attached.
- Fixed issue whereby AJA thunderbolt device fails to be seen after sleep/wake cycle.
- Fixed issue whereby ProRes 4k 4444 clips w/ alpha don't setup AJA device correctly.
- 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

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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 settings.

Important macOS Monterey installation information

- Starting with macOS 12.0 (Monterey), new installations of AJA's Desktop Software must be v16.2 or later.
- In some cases, you may be asked to allow driver in security settings - and this may happen more than once.
- AJA shortcuts are automatically deleted from Dock upon uninstall starting in macOS 11.2.
- Follow the images below to navigate the security and installation dialogs in the successful order.
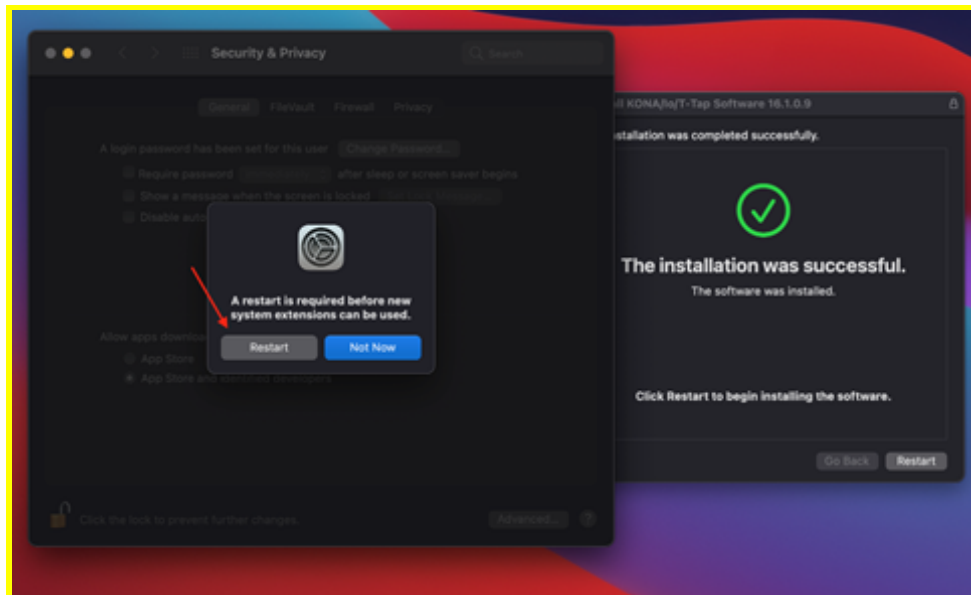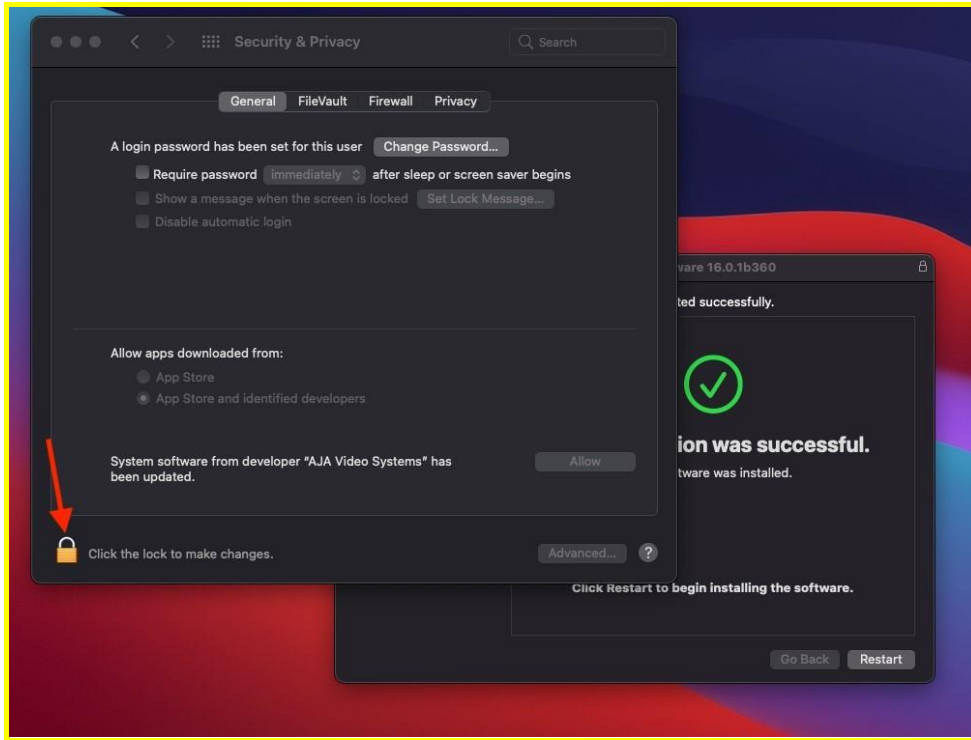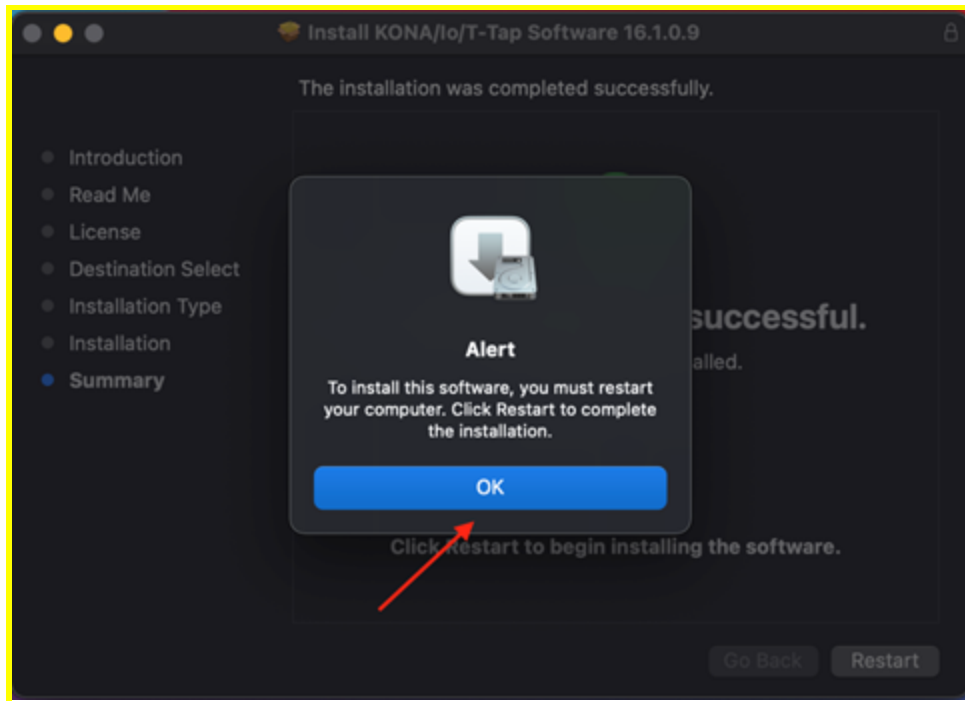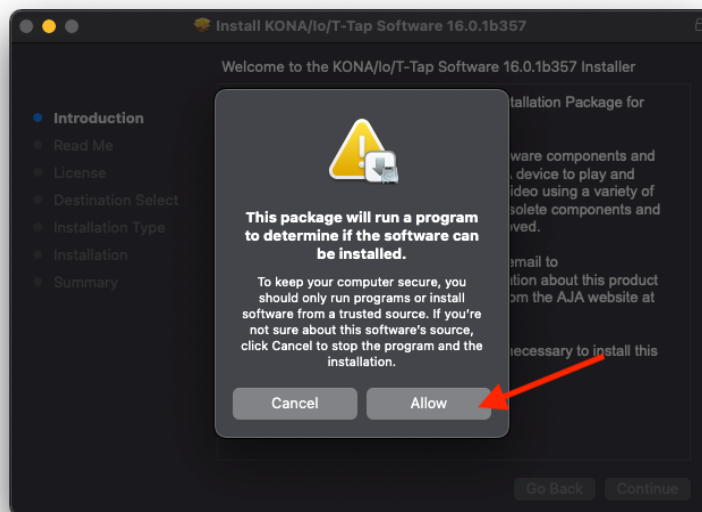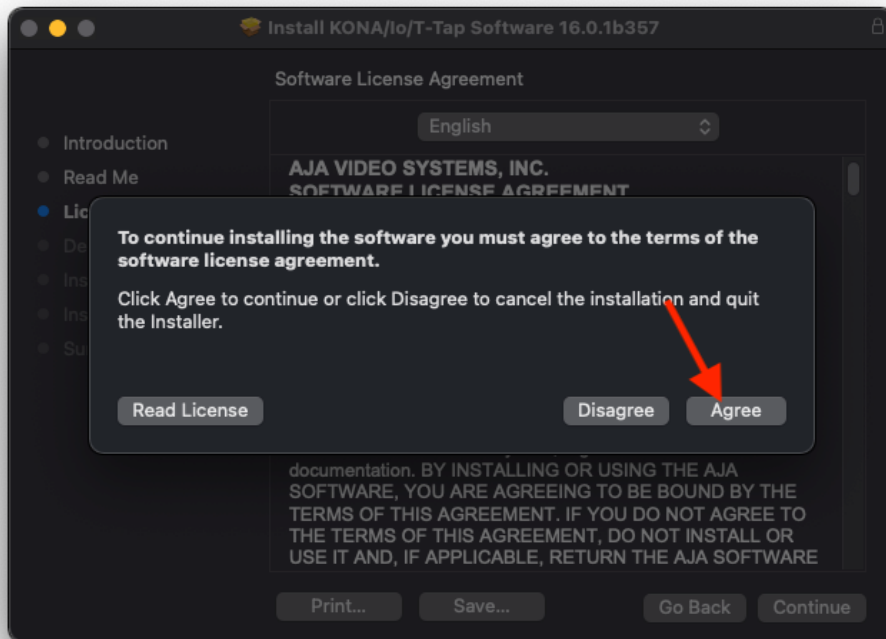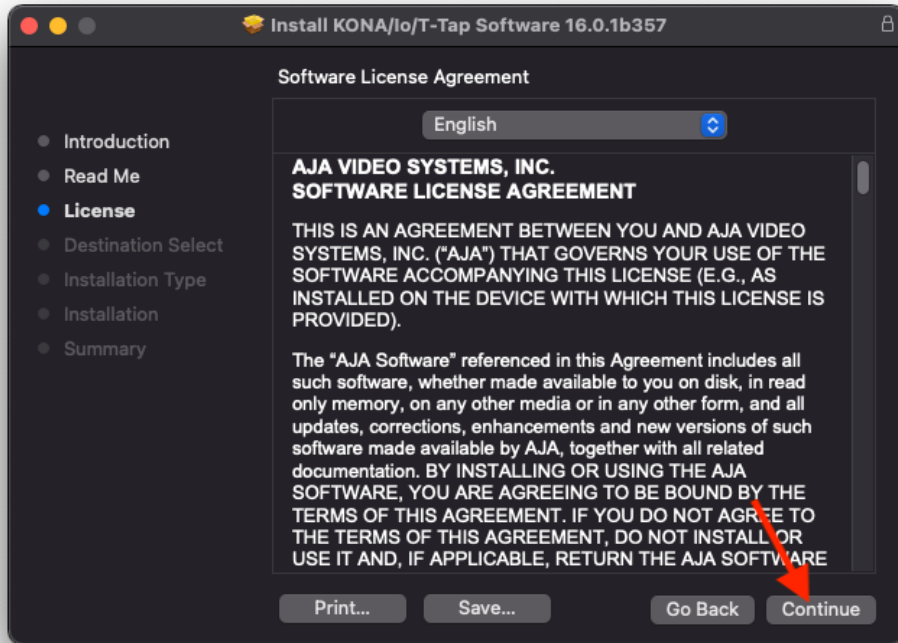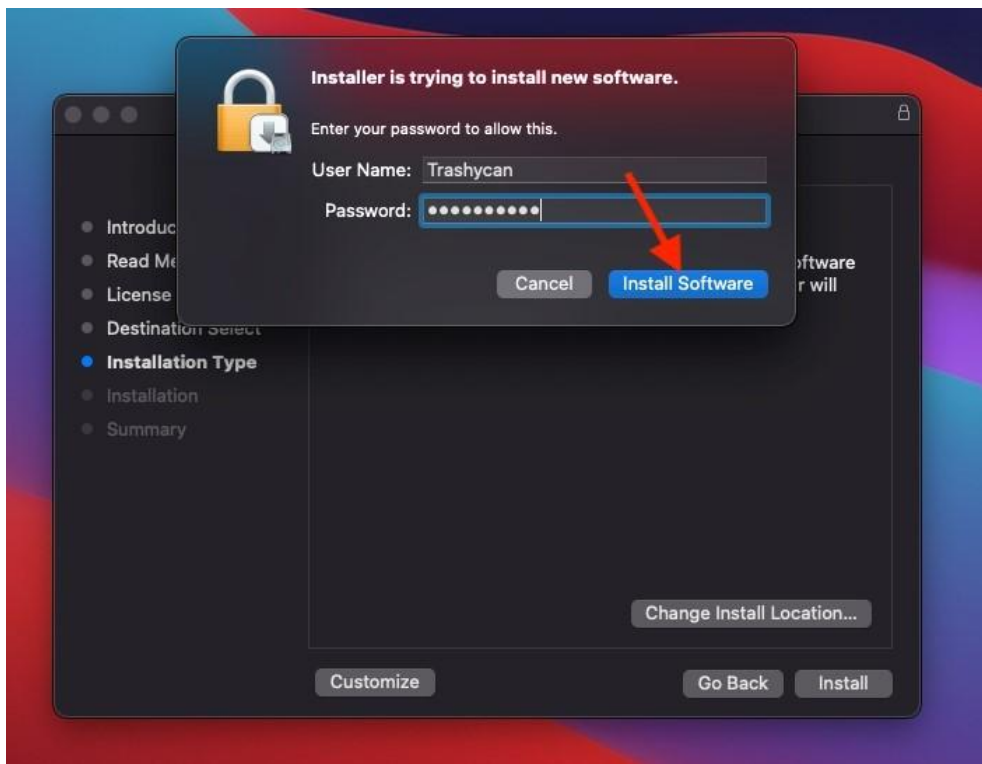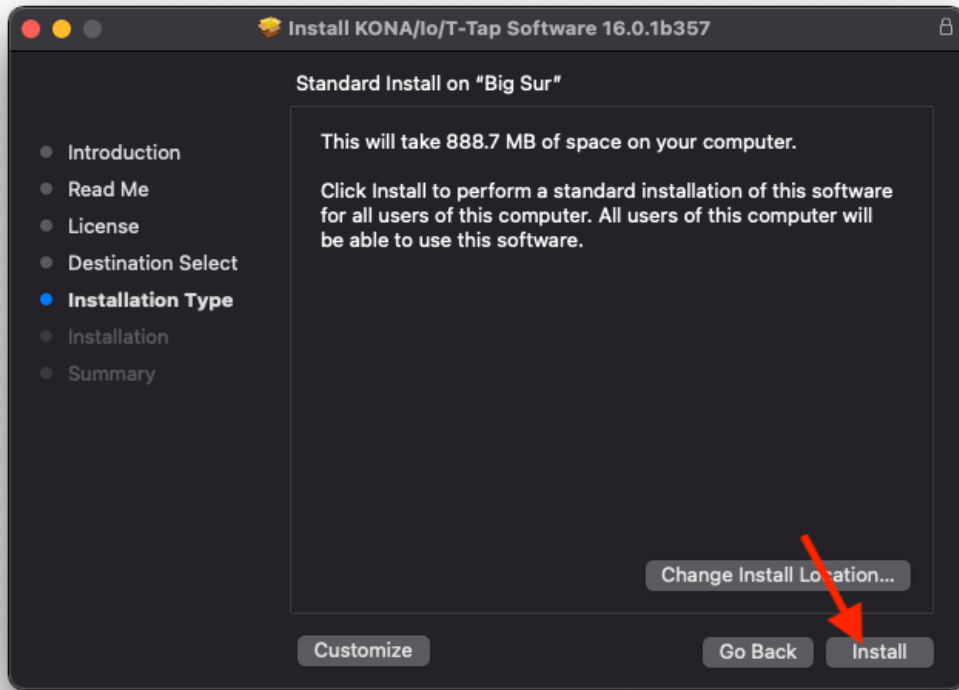
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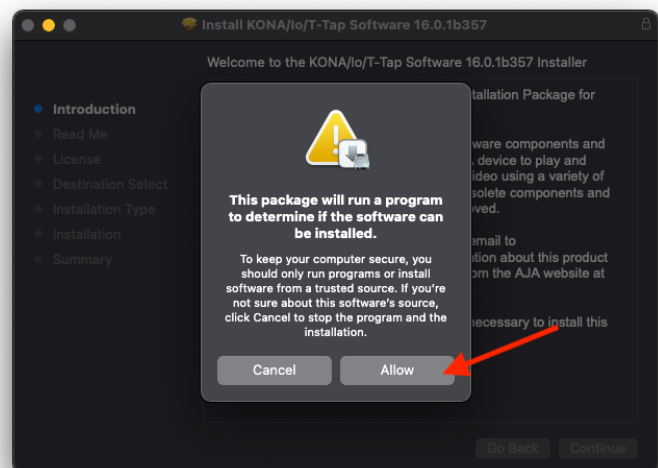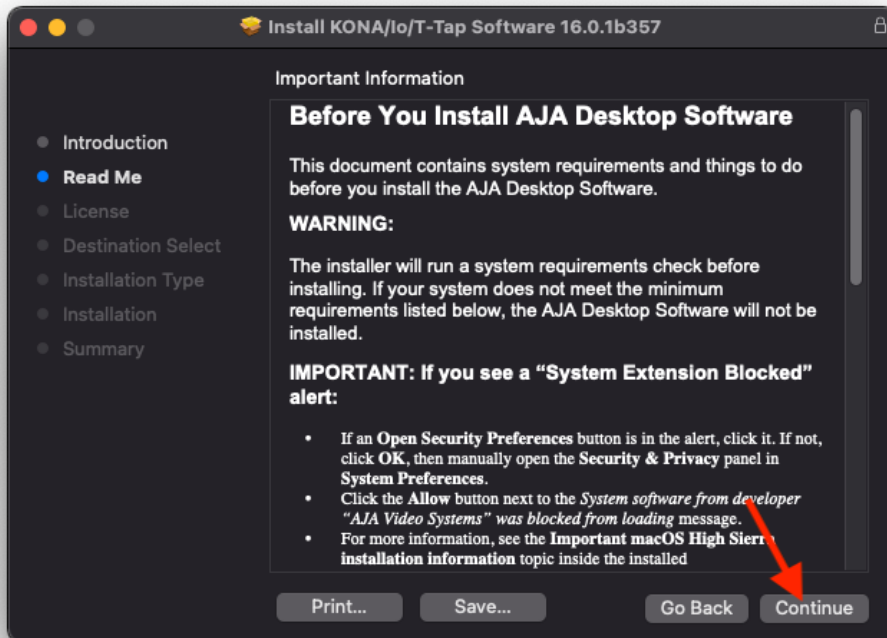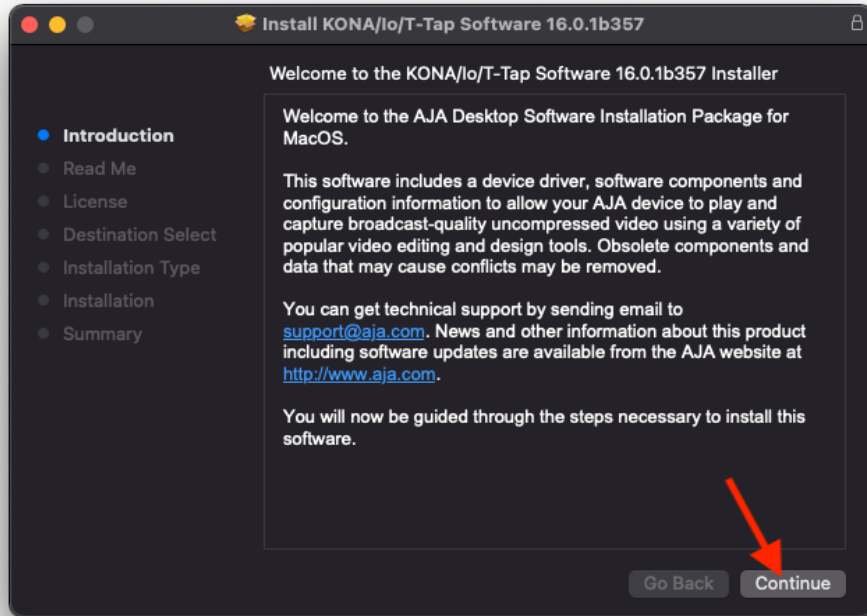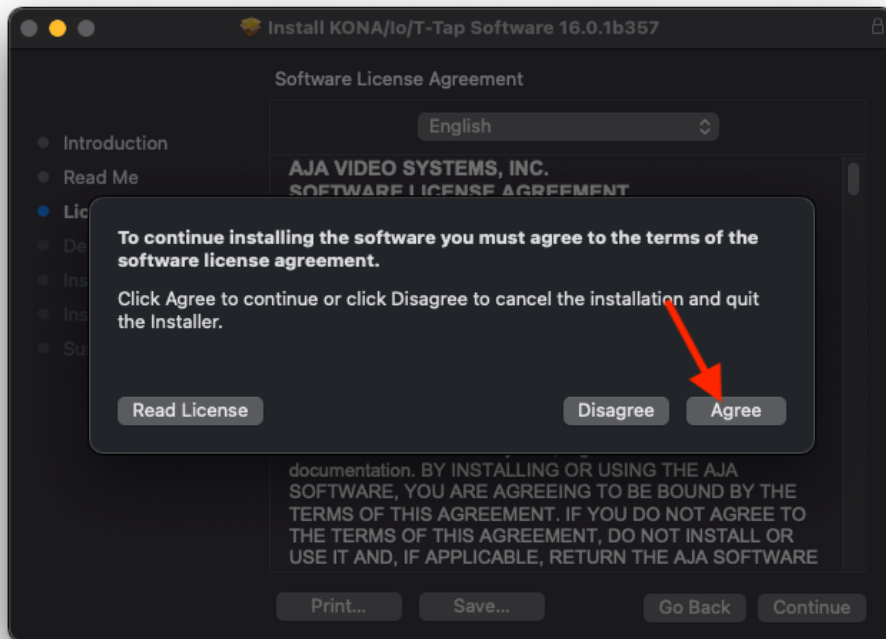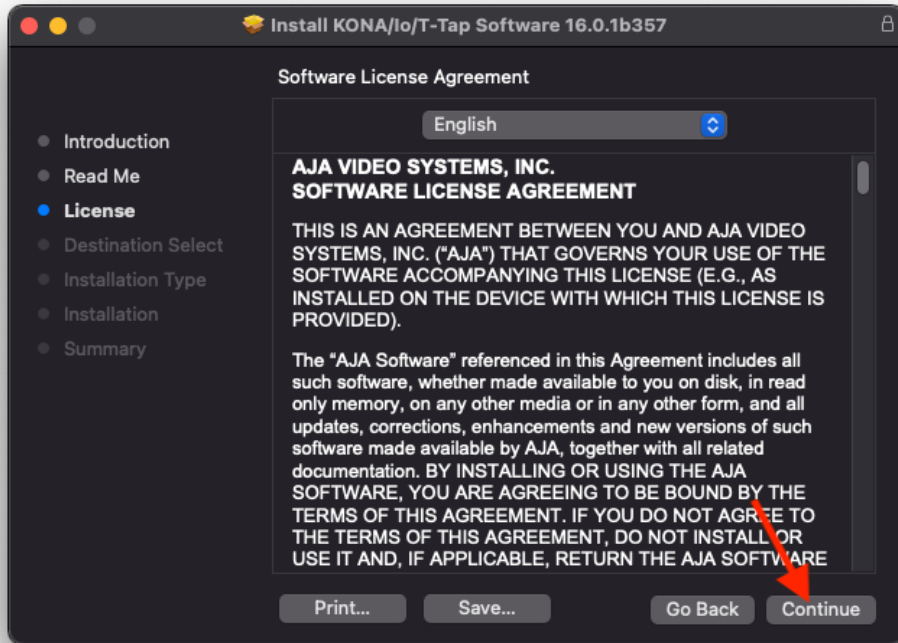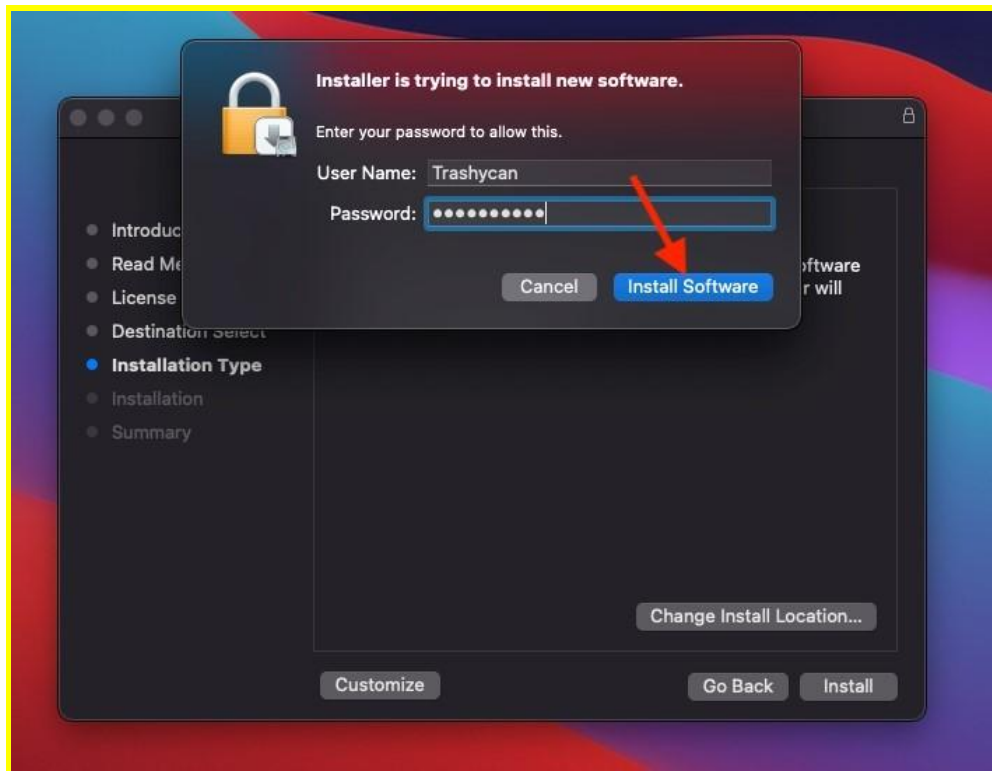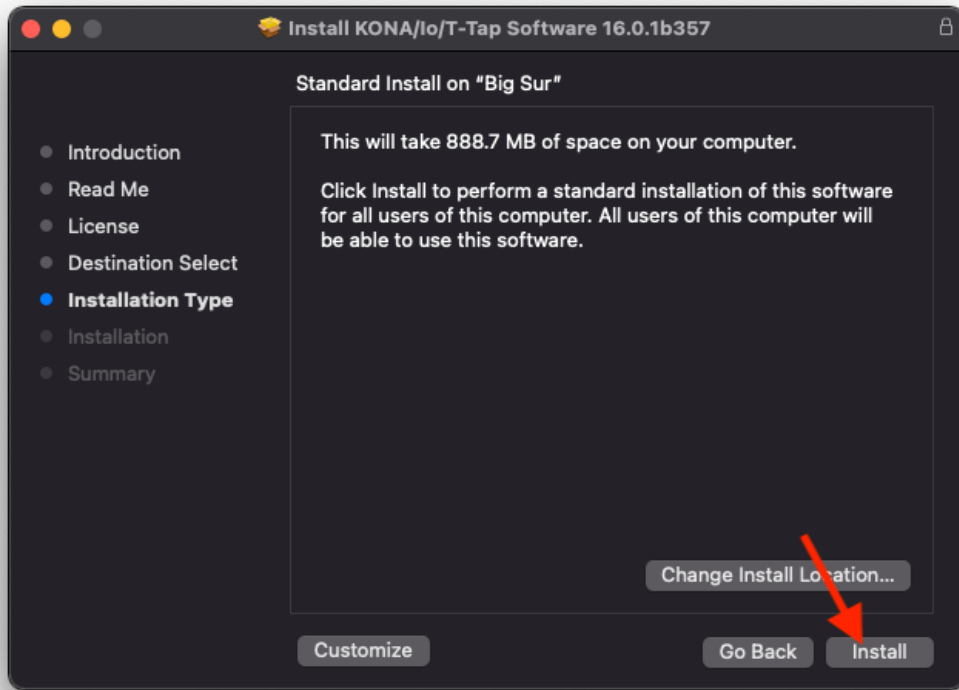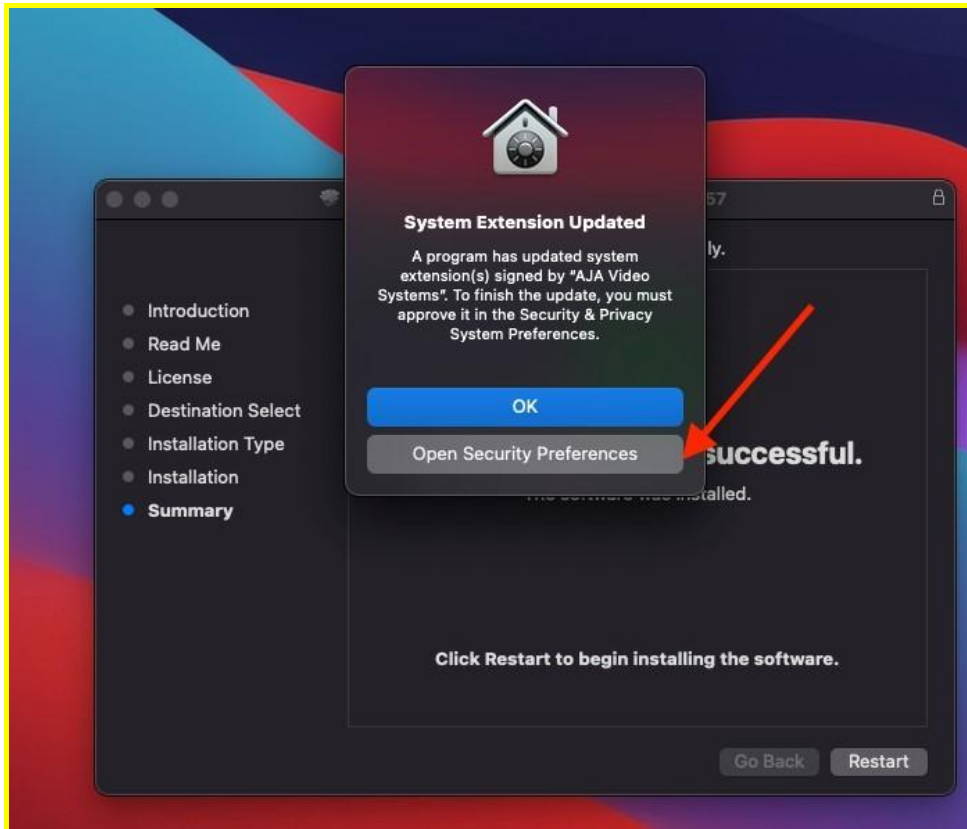
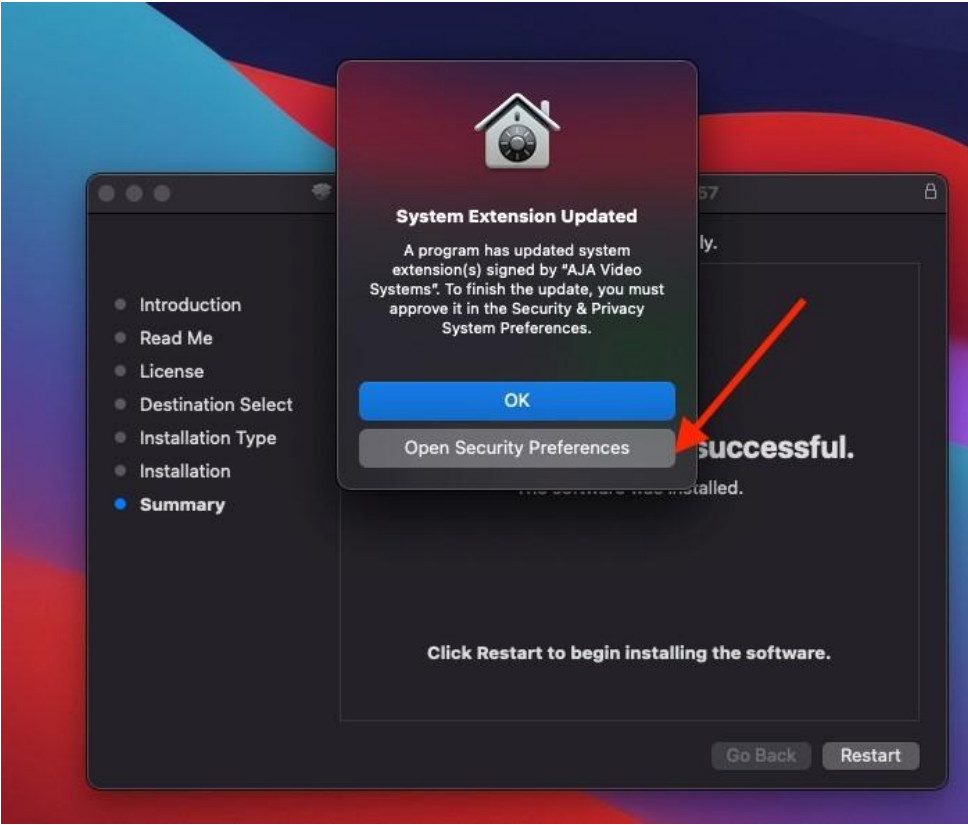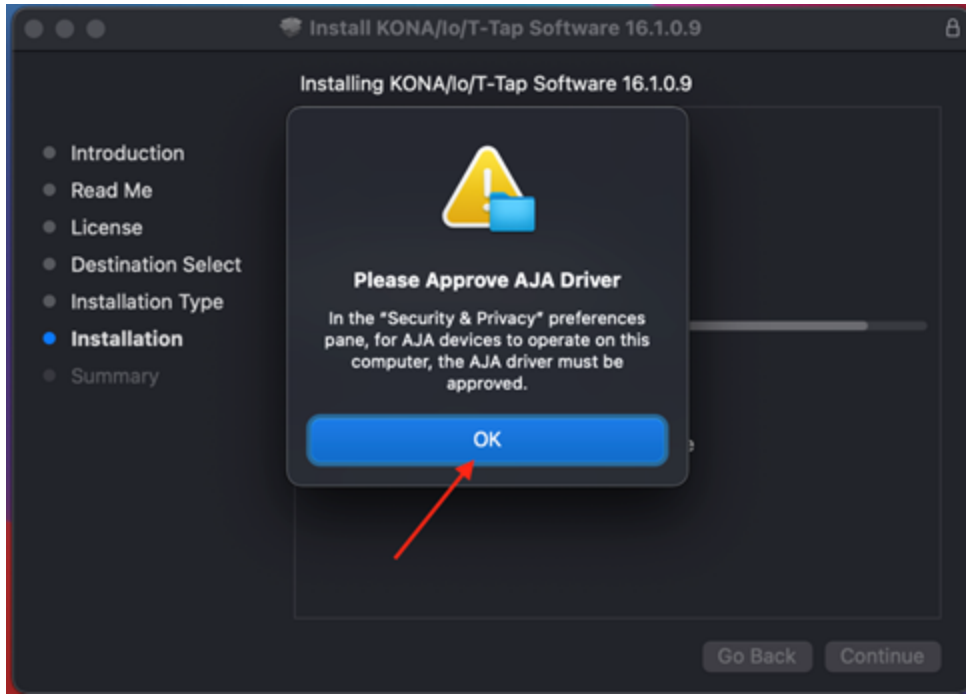**Important macOS Big Sur installation information**

- Starting with macOS 11.2 (Big Sur), new installations of AJA's Desktop Software must be v16.0 or later.
- In some cases, you may be asked to allow driver in security settings - and this may happen more than once.
- AJA shortcuts are automatically deleted from Dock upon uninstall starting in macOS 11.2.
- Follow the images below to navigate the security and installation dialogs in the successful order.
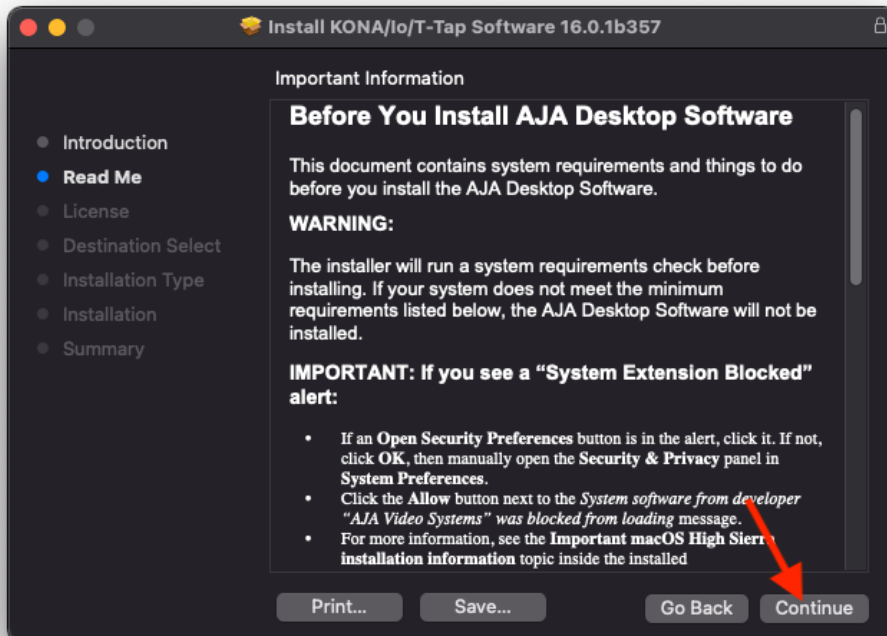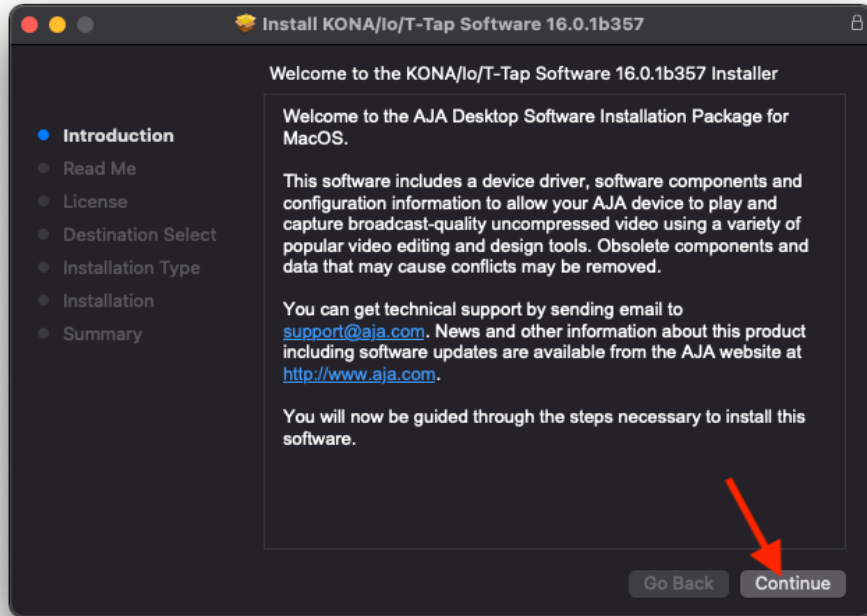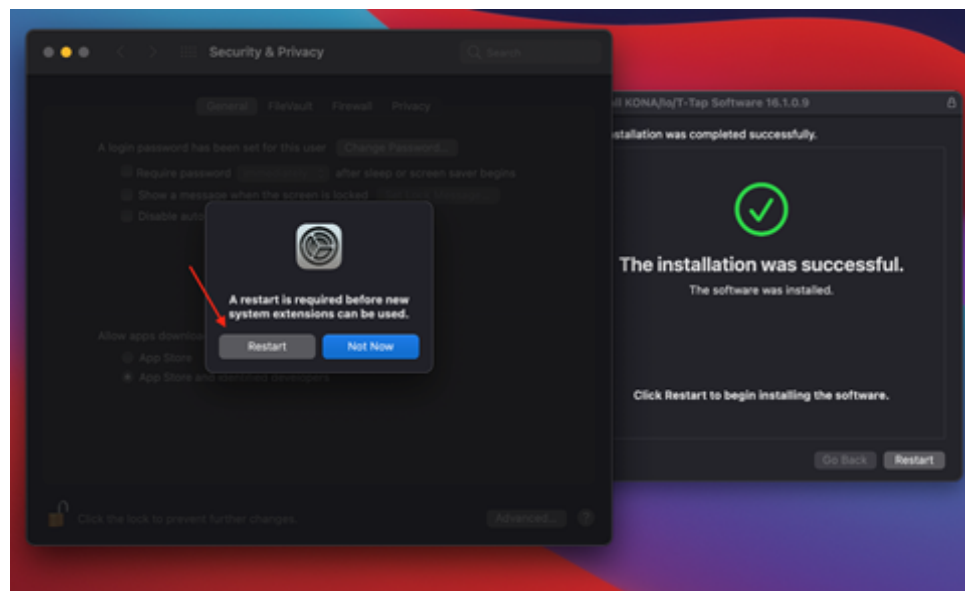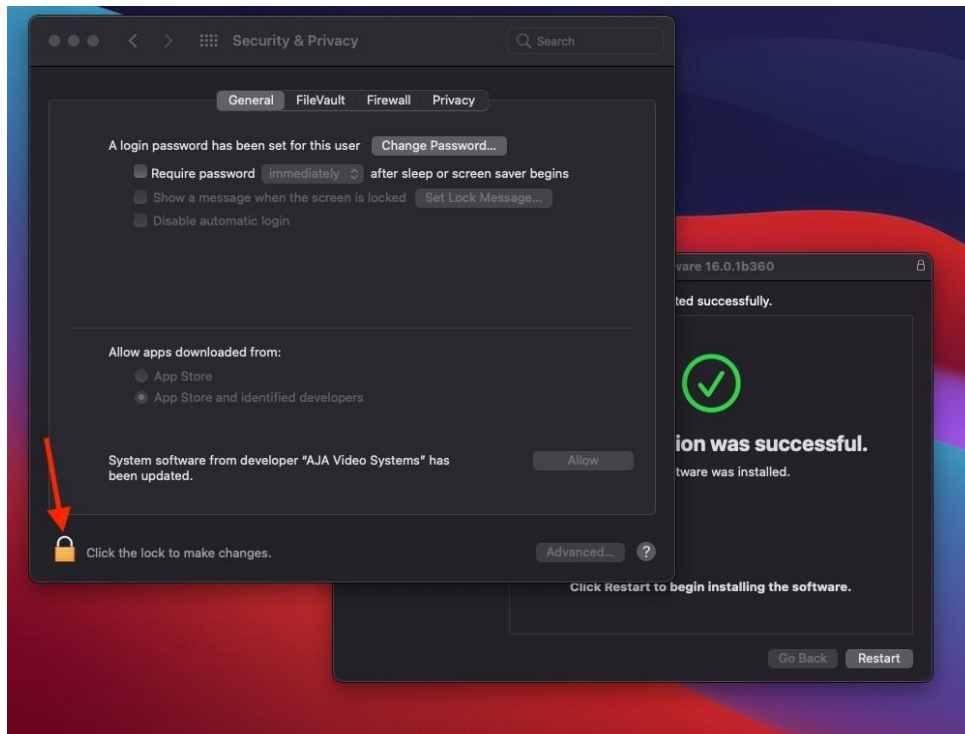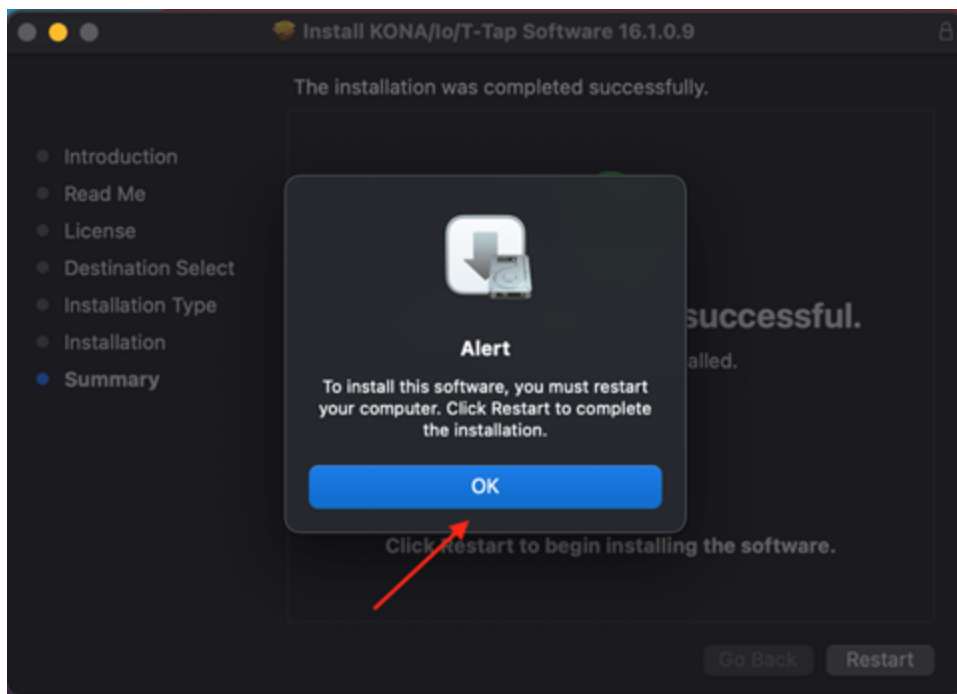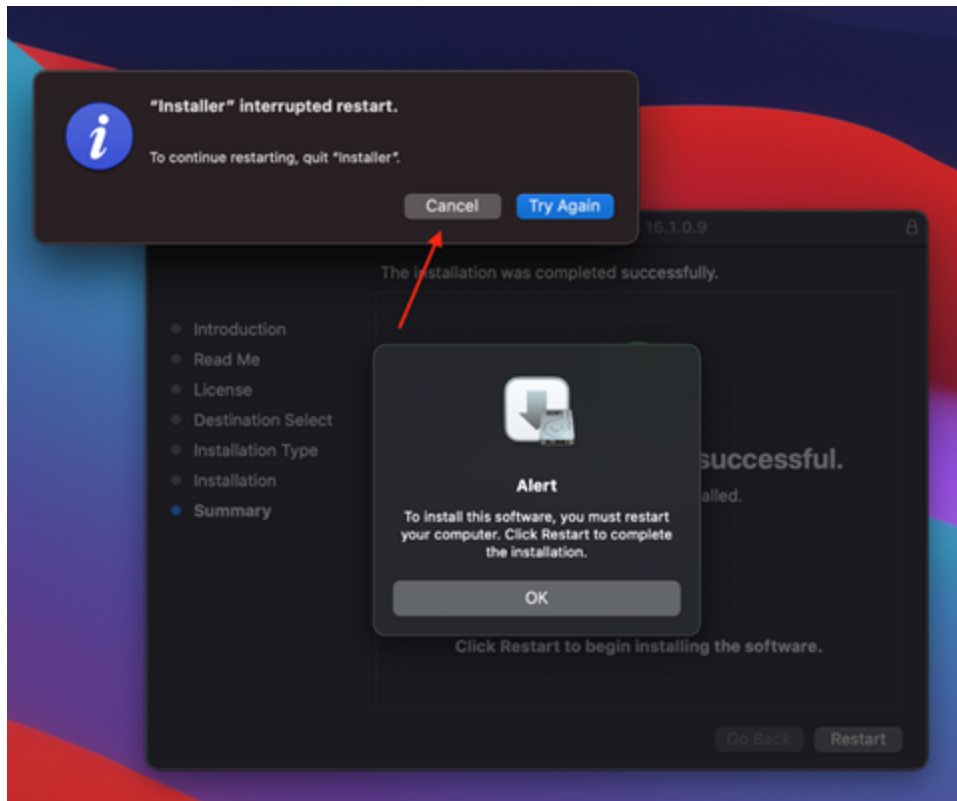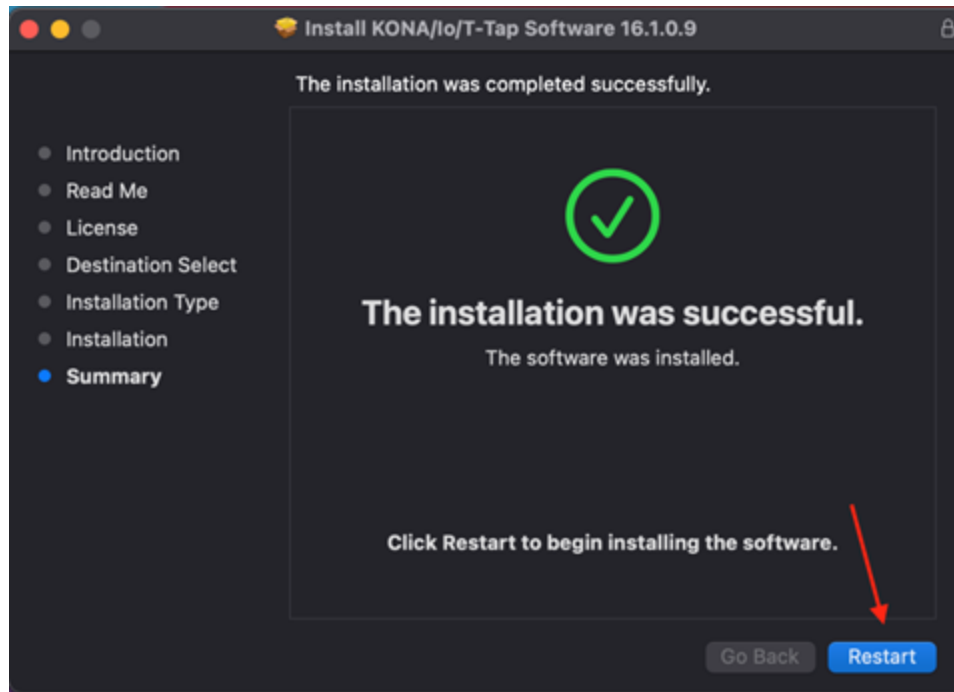
- After restarting, if the system fails to load the AJA driver:
    - Open the **Terminal** application.
    - Type in "sudo touch /Library/Extensions" into the **Terminal** window ... then press **Enter** or **Return**.
    - When prompted, enter the password for the administrator account.

Important macOS Catalina installation information

- Starting with macOS 10.15 (Catalina), new installations of AJA's Desktop Software must be v15.5 or later.

Important macOS Mojave installation information

- Use AJA Desktop Software v15.2 or later.
- Starting with macOS 10.14.5 (Mojave), new installations of AJA's unified software package must be v15.2, or later. Apple notarization requirements for macOS 10.14.5 onwards mean that previous versions of the AJA Desktop Software package will not install / work correctly with macOS 10.14.5 onwards (unless "grandfathered" in via being installed previous to the macOS upgrade to 10.14.5).
- With the introduction of macOS Mojave (v10.14), Apple now requests that third party kernel extensions be "notarized" by Apple. AJA's device driver kernel extension has been notarized starting with AJA Software version 15.2. Apple has indicated that for security purposes, future macOS versions may prevent the loading of unnotarized device drivers, in which case, AJA software prior to v15.2 will result in AJA devices failing to operate (Unsupported AJA Device).

Important macOS High Sierra installation information

- Use AJA Desktop Software v15.2 or later.
- With the introduction of macOS High Sierra (v10.13), Apple now requires that third party application developers be identified during kernel extension installations. Failure to do so will make AJA devices fail to operate (Unsupported AJA Device).
- Depending on your macOS version and AJA Desktop Software installation history, the following installation outcomes are possible:
  - macOS Sierra and Earlier Supported Versions
    - No problems exist for AJA software installation or updates with these earlier versions of macOS.
  - Earlier macOS to High Sierra Update
    - No problems should occur if the AJA Desktop Software package is already installed on macOS Sierra (or earlier) and then update your Mac to High Sierra. The identification of AJA as a trusted developer is "grandfathered in" to High Sierra.
  - macOS High Sierra First AJA Desktop Software Install
    - No problems should occur if your Mac is running High Sierra macOS, you install AJA Desktop Software for the first time, and you follow the instructions shown during installation (Figure 1).
    - Do NOT click OK (Figure 1).
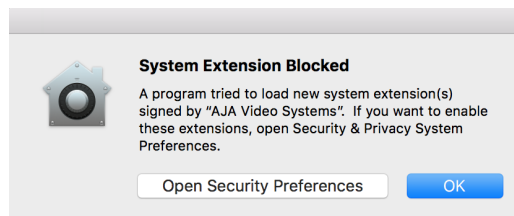
Figure 1 — First-time installation on macOS High Sierra

Instead click Open Security Preferences (or go to System Preferences>Security and Privacy) and then click Allow for AJA Video Systems (Figure 2).
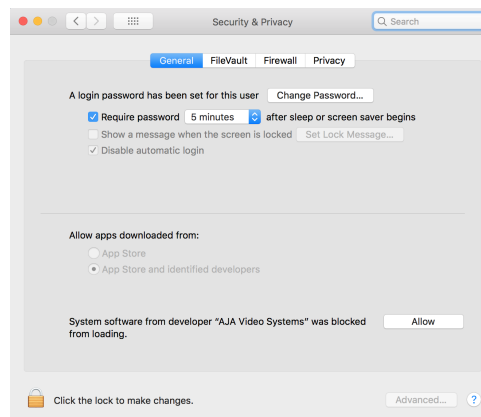
Figure 2 — click Allow for AJA Video Systems

NOTE: If after successful installation, you remove AJA applications from your computer using the AJA Uninstaller developer identification is retained by macOS High Sierra. Re-installation should proceed without any problems.

- Recovery from Installation Approval Failure:
  - If you clicked OK during installation and skipped the developer approval step, the AJA Desktop Software installation will complete, but macOS' GateKeeper security will prevent AJA's device driver from loading, and AJA devices will not not operate (Unsupported AJA Device).
  - Apple has allowed a time window, within which you can belatedly approve a developer after installation. If you go to System Preferences>Security and Privacy, within 30 minutes of installation, the developer message and Allow button will be available for use. After 30 minutes, however, the message and button are removed from the window. Recovery from this involves uninstalling all AJA files (some manually), reinstalling the AJA Desktop Software package, and clicking on Allow for AJA Video Systems developer.

- Recovery from Installation Approval Failure (2nd Level if necessary)
  1. Run the AJA Uninstaller, located in the AJA Utilities folder in the Mac Applications folder.
  2. Access the Users Library, which is hidden. To access the library:
  3. Go to the Finder.
     - In the Finder Menu Bar and click on Go.
     - Hold down the Option key. The Library folder appears as long as the Option key is held down.
     - Go to Library>Preferences and delete all com.aja.*.* files. There may be one file or several files.
  4. Remove AJA Control Panel from the Dock, if applicable.
 5. Restart the Mac.
  6. Install the AJA Desktop Software package.
  7. During installation click on Open Security Preferences (or go to System Preferences,>Security and Privacy).
  8. Under the General tab click on the Allow button for AJA Video Systems. The button is only available for 30 minutes.

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

- 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)".

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- "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
  - OBS Studio
  - Telestream WireCast
  - 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
  - Adobe Premiere Pro
  - Apple FCP X
  - Avid Media Composer
  - OBS Studio
  - 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 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
  - Adobe Premiere Pro
  - Apple FCP
  - Avid Media Composer
  - Video Mixer/Keyer not supported

KONA IP, Io IP and Avid DNxIP

- AJA Desktop Software v16.2 will be the final official release for KONA IP, Io IP and Avid DNxIP.
- KONA IP, Io IP and Avid DNxIP, can be used with three different firmwares:
  - s2110 (ST 2110 YCbCr firmware)
    - 4K/UHD/2K/HD
    - Supports ST 2022-7 for Transmit (set SFP 2 to "true").
    - Does not support ST 2022-7 for Receive.
    - 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
  - s2110 RGB12 (ST 2110 RGB firmware)
    - 2K/HD
    - Supports ST 2022-7 for Transmit (set SFP 2 to "true").
    - Does not support ST 2022-7 for Receive.
  - S2022-6 (ST 2022-6 YCbCr firmware)

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■ 2K/HD
● Supports ST 2022-7 for Transmit and Receive.
  ○ Notes
    ■ 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.
    ■ The s2110 RGB12 (ST 2110 RGB firmware) is designed for post-production workflows and thus supports playback only for 2K/HD at 23, 24, 25.
    ■ A restart of AJA NMOS is always required following a firmware change.

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

● RP188 LTC playback on macOS is not currently functional. RP188 LTC capture is functional. RP188 LTC pass through is not a feature of the card.
● 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 LHe Plus

● KONA LHe Plus is not compatible with 2019 Mac Pro via PCIe slots.
● KONA LHe Plus is compatible with 2019 Mac Pro via Thunderbolt (i.e. PCIe card in Thunderbolt Chassis)

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 channels 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 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 and H.265 capture and playback introduced as of 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 Windows based systems, Control Room will seek hardware resources in the following order:
    - NVIDIA
    - AMD (AMF)
    - INTEL (QSV)
  - For macOS based systems, Control Room will seek VideoToolbox resources.
    - For Apple Silicon systems
      - built-in Apple Metal GPU
    - For Apple Intel-based systems:
      - NVIDIA
  - For Linux (UBUNTU) 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 iframe 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.

Adobe Applications

- MAC ONLY: Adobe Premiere Pro running natively on Apple Silicon does not currently support capture. Instead, use AJA Control Panel to capture material which can then be used for editing within Premiere Pro.
    - Capture remains fully supported when using Adobe Premiere Pro under Rosetta.
- 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.
- 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 wing 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.

Apple FCP

- Currently in FCP, scrubbing an audio only clip when in the "organize" workspace results in FCP and the AJA device temporarily losing contact with each other. Switching back to a timeline should reinstate (acquire) the hardware smoothly, however, this should not occur when the A/V Output is turned on in the Window menu.

Avid Media Composer

- AJA Desktop software currently does not support Media Composer running on Apple Silicon. Until this limitation is resolved, the only option is to use AJA Desktop software with Media Composer running on an Intel-based mac system.
- 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 v15.5.3 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.

Avid ProTools with T-TAP Pro

For Avid ProTools users, the following is helpful to bear in mind regarding AV Sync when using AJA T-TAP Pro for video monitoring:

● T-Tap Pro provides silent, high quality, stable and smooth playback. Since there is no reference, the A/V sync can be off by half a frame from the start of playback (expected behavior). This smooth and tight playback is courtesy of ProTools "slewing behavior" (since Pro Tools 11). When Pro Tools detects that the connected audio OR video interface are not both locked to some kind of incoming external clock, ProTools engages it's slewing algorithm. As long as the offset doesn't exceed 0.5 frames, all will play normally. Once the AV offset is above 0.5 frames ProTools will accommodate by dropping or duplicating a frame to keep in time. This is not intended as a frequent occurrence, for example it may take up to 20 minutes for clocks to drift far enough to drop a single frame.

● Note: Slewing does not account for start position offsets. Without a Pro Tools Sync HD/X to align the ProTools audio engine start position to a frame boundary, and instead with a video interface with a valid video reference, play starts will vary by up to a frame in either direction, and it will be different between each playback pass. This is fixed and known behavior. Slewing may drop its first frame immediately as a result, but then it will be a while before it would be needed again.

Avid ProTools with KONA / Io

For Avid ProTools users, the following is helpful to bear in mind regarding AV Sync when using AJA KONA and Io products, for video monitoring:

● KONA and Io devices with a reference input (including Avid Artist DNxIV) will achieve synchronous, stable and smooth playback when:
  ○ (a) ProTools Audio Hardware has reference connected
  ○ (b) ProTools Session "Video Ref" has been set to external reference
  ○ (c) AJA KONA or Io device has reference connected
  ○ (d) AJA Control panel is set to use external reference

● Note: The ProTools Session Setup always defaults to "Internal/VSO" when creating a new session. The ProTools user must take the extra step of setting the Sync HD's Clock Reference to "Video Ref" manually each time a new Session is created. Failure to do so can result in skipped frames during playback.

OBS Studio

● Support beginning with Desktop Software v16.2 and OBS v.27.2.
  ○ Io X3, Io 4K Plus, T-TAP Pro, KONA 5, KONA 4, KONA HDMI.
  ○ 2K/HD up to 60p.
  ○ 4K/UHD up to 30p.

● Avoid manipulating the output settings when engaged in critical streaming applications (e.g. live show), as this can cause OBS to crash. Make sure to set up outputs ahead of time.

● Unplugging the Thunderbolt cable connecting Io X3, Io 4K Plus or Io IP to the host system while capturing with said device, will cause OBS to crash.

● Analog Audio Output option is currently unavailable with KONA 4.

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.

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:

Email: support@aja.com
Phone: +1-530-271-3190
Fax: +1-530-274-9442
Web: https://www.aja.com/support/contact
Shipping: 180 Litton Dr. Grass Valley, CA 95945 USA