AJA and Telestream Applications
Quick Start Guide

Introduction

This Quick Start Guide provides a basic overview of the AJA Wirecast Plug-in and its AJA Multi-Channel Configuration panel for use with Telestream's Wirecast Pro streaming production application.

Live streaming has increased in popularity and complexity. Live streams now routinely must deal with switching between multiple input sources as well as being more mobile.

AJA hardware solutions allow streaming software like Wirecast to take in multiple inputs using a single, compact hardware device without compromising quality, speed or portability and allowing users to adapt to the needs of any project.

Telestream Wirecast is supported through the AJA Desktop Software (Multi-Channel Configuration) for the following AJA devices:

- KONA 5, KONA 4, KONA HDMI, KONA IP (ST2110 or ST 2022-6), KONA 1, KONA LHi, KONA LHe Plus
- Io X3, Io 4K Plus, Io IP (ST2110)
- T-TAP Pro

Telestream Wirecast is also supported through AJA's Multi-Channel Configuration) for the following Avid devices:

- Avid Artist | DNxIV
- Avid Artist | DNxIP (ST2110)

Telestream Wirecast is also supported through UVA / UVC OS drivers for the following AJA devices:

- U-TAP SDI
- U-TAP HDM

NOTE: To learn more about using U-TAP with Wirecast and other Streaming applications, please see the latest U-TAP manual here: https://www.aja.com/support/item/8092I

Getting Started

NOTE: Do not open Wirecast until you have finished configuring your devices following this installation procedure.
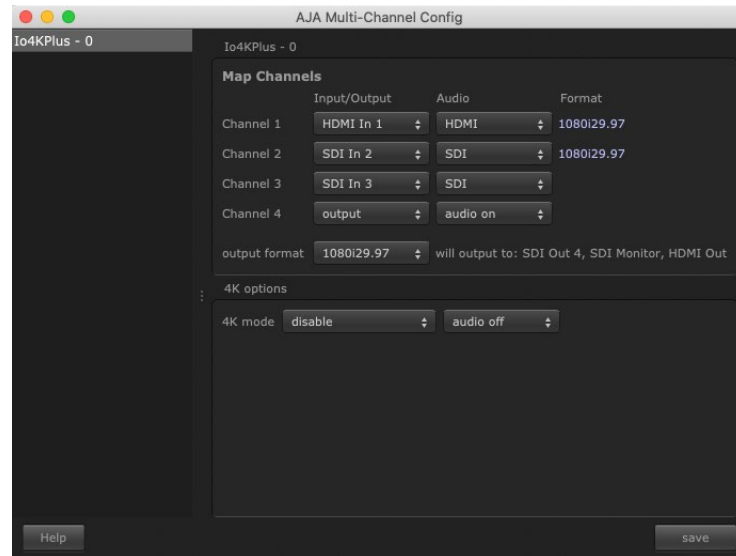
1. Install Wirecast.
2. Install the AJA Driver Package. This will install both the AJA plug-in and, in the AJA Utilities folder, the AJA Multi-Channel Config panel. You will use this panel to configure your AJA devices for Wirecast.
3. Launch the AJA Multi-Channel Config panel.
4. Configure your AJA device, mapping the inputs and outputs. This may involve selecting HDMI or SDI and setting audio input preferences, depending on the product you use.

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5. Save your settings by clicking on the Save button in the lower right-hand corner of the Config panel. This saves a configuration file that Wirecast references upon startup.

6. Run Wirecast.

If you have multiple AJA devices available in your system, they are displayed and can be selected from the list in the left-side pane of the Config panel.

AJA Multi-Channel Config

Figure 1. AJA Multi-Channel Config Screen

AJA devices used with Wirecast are configured using the AJA Multi-Channel Config panel rather than the AJA Control Panel used with other retail applications.
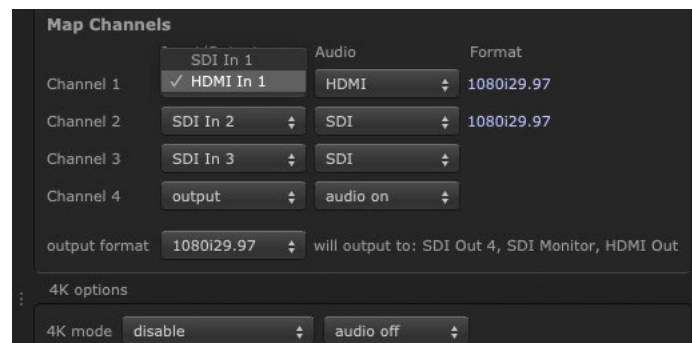
NOTE: *Firmware update and mode selection for the AJA device is performed using AJA Control Panel.*

Configuring Inputs

Input/Output

Input/Output pulldown menus allows you to select from the specific options available on the AJA hardware you are using with Wirecast. Number and type of I/O channels vary across AJA devices and firmware mode selected.
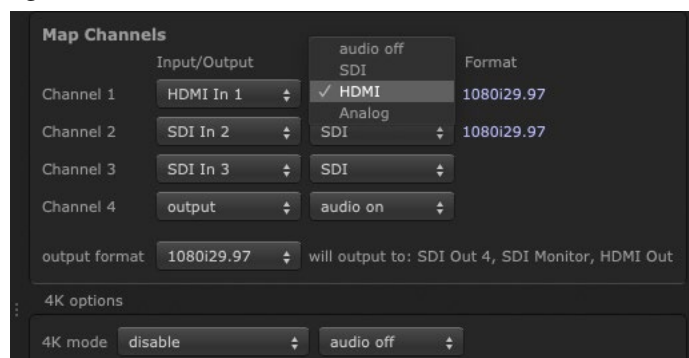
Figure 2. Input/Output Selection Menus

Audio

Individual audio selections are available for each channel. Users can select between SDI, HDMI, Analog, AES, or Mic In audio depending on the capabilities of the AJA device, or audio can be turned off for that channel.

Figure 3. Audio Selection Menus
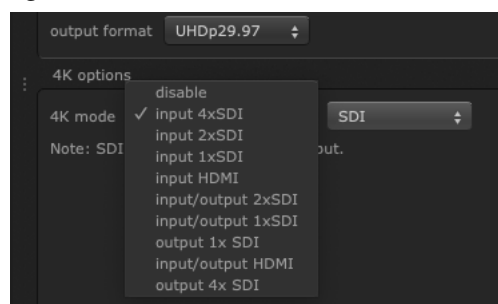

Configuring Outputs

Channel 4 (or last Channel of your AJA device) can be designated as Program Out. Select output from the Channel 4 pulldown menu and choose the desired format from the output format pulldown.

NOTE: *When not using Ch 4 as an output, it can be used as a fourth simultaneous input. However, this is not available when using KONA HDMI since it is a multi-channel capture only card (dedicated four inputs). It also is not available with KONA IP, IoIP, or DNxIP, all of which can only capture through Channel 1 & 2 and output through Channel 4, with Channel 3 being unavailable as an Input or Output Channel with Wirecast.*

4K Mode Options

This drop-down menu is used with UltraHD/4K formats. Available options will depend on your AJA device's capabilities.

Figure 4. UltraHD/4K Format Selection

NOTE: *When 4K Mode has been enabled, you will still need to set your desired output format above, even thought the rest of the fields in the "Map Channels" area have been grayed out.*

AJA Device Capabilities

KONA 5

4K firmware supports up to 4K HFR over one wire in 1x12G mode or over four wires in Quad Mode. 4K LFR can be supported the same way or over 2-wires in 2SI mode.

8K firmware supports up to 4 separate 1x12G 4K HFR signals. This can be configured as either 4 inputs, or 3 inputs and channel 4 being designated as an output. In this mode, there are no separate 4K options to configure. All options can be selected in the Map Channels area of the app.

NOTE: The KONA 5 8K firmware can only be used with 4K/UltraHD 12G/6G connections. Additionally, it doesn't support the input or output of 8K/UltraHD2 video with Wirecast.

KONA 4

4K firmware can support up to four channels of HD (1080) p60 or one channel of 4K p60. When using the default MultiChannel HD configuration each channel can be a different raster size and framerate, as long as they are in the same clock family.

With the UFC firmware loaded, only two input channels are available.

If choosing to enable "4K options", then the choices are:
- Input 4xSDI (SDI 1-4 will be used for 4K input)
- Input 2x SDI (SDI 1-2 will be used for 4K input 1 and SDI 3-4 will be used for 4K input 2)
- Input/Output 2xSDI (SDI 1-2 will be used for 4K input and SDI 3-4 will be used for 4K output)
- Output 4xSDI (SDI 1-4 will be used for 4K output)

KONA 1

Supports one input and one output simultaneously up to 1080 p60.

KONA HDMI

KONA HDMI supports Multichannel 4K or Multichannel HD, as well as 4K/HD multichannel combinations.

Supports up to four channels of HD (1080) p60 or two channels of 4K p60 plus 4K/HD combinations.

When using the default MultiChannel HD configuration each channel can be a different raster size and framerate, as long as they are in the same clock family.

If choosing to enable "4K Options", then the choices are:
- Input HDMI (HDMI 1 can be used for a 4K input, HDMI 2 will be disabled, HDMI 3 & 4 can be used for HD inputs)
- Input HDMI 2xHDMI (HDMI 1 and HDMI 2 can be used for 4K input simultaneously, HDMI 3 and 4 are disabled in this mode)
- disable

Io 4K Plus

Supports up to four channels of HD (1080) p60 or one channel of 4K p60 for capture, with simultaneous 4K p60 output also available.

When using the default MultiChannel HD configuration SDI and HDMI inputs can be combined. Each channel can be a different raster size and framerate, as long as they are in the same clock family.

When "4K Options" is selected, the choices are:
- Input 4xSDI (SDI 1-4 will be used for 4K input)
- Input 2x SDI (SDI 1-2 will be used for 4K input 1 and SDI 3-4 will be used for 4K input 2)
- Input 1xSDI (SDI 1 will be used for 4K input)
- Input HDMI (HDMI In will be used for 4K input). HDMI can only be selected for Channel 1
- Input/output 2x SDI (SDI 1-2 will be used for 4K input and SDI 3-4 will be used for 4K output)
- Input/output 1xSDI (SDI 1 will be used for 4K input and SDI 3 will be used for 4K output)
- Output 1xSDI (SDI 3 will be used for 4K output)
- Input/output HDMI (HDMI In will be used for 4K input, and HDMI Out will be used for 4K output)
- Output 4xSDI (SDI 1-4 will be used for 4K output)

Io IP

- Supports 2x HD/2K inputs and 1x HD/2K output, an HDMI Output, and an SDI Output (SDI up to HD/2K only)

NOTE: *When attempting to capture and output 4K/UltraHD simultaneously, the Io 4K Plus can only support a Low Frame Rate signal. This applies to using any of the input/output modes.*

Io X3

Supports up to four channels of HD (1080) p60. A MultiView feature is also available for confidence monitoring of up to 4 incoming SDI sources on a single 4K capable HDMI monitor.

Inputs

SDI and HDMI inputs can be combined for MultiChannel HD capture. Each channel can be a different raster size and framerate, as long as they are in the same clock family.

Up to four HD sources can be used as an inputs across 4x HD/2K SDI inputs and 1x HD/2K HDMI input. Inputs can be all SDI (SDI 1-4) or else 3x SDI plus 1x HDMI Input.

MultiView Feature

For source confidence monitoring, the MultiView feature allows the HDMI Output to be used to display each SDI input in a separate quadrant of the device's HDMI output. Select the "MultiView" box to engage this feature. You can also select which SDI audio channels you would like to monitor on the HDMI output with the drop down menu below.

NOTE: *The HDMI monitor used for the MultiView feature must be capable of UltraHD.*

Program Output
- HDMI (HD)
- SDI 4 (HD) when set to "Output" in the AJA Multi-Channel Config App

Selected Feature Support Comparison

Table 1. Selected Wirecast Features Supported by Product

Product	12G/6G Input	12G/6G Output	HDMI Input	HDMI Output	AES Audio Input	Analog Audio Input	Analog Mic Input	AES Audio Output	Analog Audio Output	SDI Audio Input	SDI Audio Output
KONA 5*	Yes	Yes		Yes	Yes			Yes		Yes	Yes
KONA 4*				Yes	Yes			Yes	Yes	Yes	Yes
KONA 1										Yes	Yes
KONA HDMI*			Yes (4)								
KONA IP				Yes							
KONA LHI			Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes
KONA LHE Plus					Yes	Yes		Yes	Yes	Yes	Yes
Io 4K Plus*	Yes	Yes	Yes	Yes		Yes			Yes	Yes	Yes
Avid DNxIV*	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	Yes
Io IP				Yes		Yes			Yes		Yes
Avid DNxIP				Yes		Yes	Yes		Yes		Yes
Io X3			Yes	Yes		Yes			Yes	Yes	Yes
T-TAP Pro*		Yes		Yes					Yes		Yes
*AJA products supporting 4K input and / or output for Wirecast.											