AJA and vMix
Quick Start Guide

Introduction

AJA I/O devices support a broad range of creative software, including vMix, a complete UltraHD or 4K live video production application. This document gives you some general procedures for setting up AJA I/O devices with vMix, including selecting live video inputs, adding audio sources, and sending your produced video out from vMix.

Supported AJA I/O Devices and their Capabilities

vMix supports a variety of AJA I/O devices, which can bring different capabilities to your vMix application.

Multiple AJA I/O devices to be connected and operated simultaneously, making all the devices' connections available to your vMix system. For example, you can configure a KONA HDMI and a KONA 4 with one vMix system to provide four HD HDMI inputs and four HD SDI inputs simultaneously. Refer to the link below to learn more about the capabilities of each AJA I/O device:

https://www.vmix.com/software/supported-hardware.aspx#capturehardware

Below are recommended AJA devices for different requirements:

4K Workflow

- AJA KONA 5 - 1x 12G-SDI 4K In or Out
- AJA KONA HDMI - up to 2x 4K HDMI Input

High Channel Density HD SDI Workflow

- AJA Corvid 88 - up to 8x SDI in, or 6x SDI In and 2x SDI out

Multi-Channel HD SDI Workflow

- AJA KONA 5 - up to 4x SDI In, or 2x SDI In and 2x SDI Out, and SDI 1 Out can be exchanged for HDMI Out
- AJA KONA 4 - up to 4x SDI In, or 2x SDI In and 2x SDI Out, and SDI 1 Out can be exchanged for HDMI Out

Multi-Channel HD HDMI Workflow

- AJA KONA HDMI - up to 4x HD HDMI In

Mobile Multi-Channel SDI Workflow

- AJA IO 4K Plus (via a Thunderbolt 3 connection) - up to 4x SDI In, or 2x SDI In and 2x SDI Out. SDI 1 Out can be exchanged for HDMI Out, and SDI 1 In can be exchanged for HDMI In.

IMPORTANT: Some AJA devices (e.g. KONA) support multiple firmware versions offering different capabilities. For example, one version might support multiple simultaneous HD/SD workflows, and another version may support UltraHD/4K workflows. You will need to first install the appropriate firmware version on your AJA device. Refer to your AJA device's Installation and Operation Guide for detailed information. The Io-4K Plus I/O device used for these examples supports a single firmware version, and so does not require installing different versions for different vMix functionality.

Setting up an AJA I/O device

1. If not previously installed on your computer, ensure that the third party application software (vMix) is installed as detailed in the vMix user documentation.
   - To verify which vMix version is appropriate, the following URL can be used to contact vMix via email: https://www.vmix.com/contact-us.aspx
   - To learn more from the vMix Knowledge Base link, see: https://www.vmix.com/knowledgebase

NOTE: It is best practice to have installed and run the software at least once on your computer before proceeding.

2. Download and install the latest software for your AJA device from: https://www.aja.com/en/support/downloads

3. Connect your AJA device(s) to your computer, either with an appropriate Thunderbolt 1, 2, or 3 connection cable if it is an AJA desktop device, or install your KONA or Corvid card(s) into one of your workstation's PCIe slots.
   - Follow this link to see AJA's recommendations for which PCIe slots to install the AJA card: https://www.aja.com/support/kona-pc-system-configuration

4. Connect the AJA I/O device's video and audio inputs and outputs.

5. Power up the unit (AC supply or battery). The AJA device will startup automatically.

6. AJA recommends that you now run AJA Control Panel, as this allows you to verify that the installation has completed successfully.

If you encounter problems with your AJA I/O device, contact AJA for email assistance via support@aja.com, or by telephone at +1.530.271.3190.

Adding a Source for a Multi-Channel HD Workflow

This guide was written based on using an AJA Io 4K Plus as the I/O device.

1. Run the vMix software until you see the "vMix Configuration" window. Select a video format to be used as the starting configuration. This setting can be customized later. Then click **OK**.

Figure 1. vMix Configuration Window
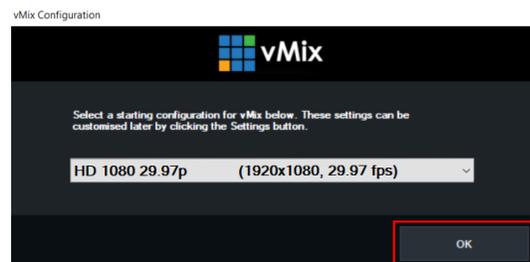
2. vMix will then display the main interface of the software. To configure a video input, select **Add Input** at the bottom left as indicated with the red rectangle in the following figure.

Figure 2. vMix Main Interface
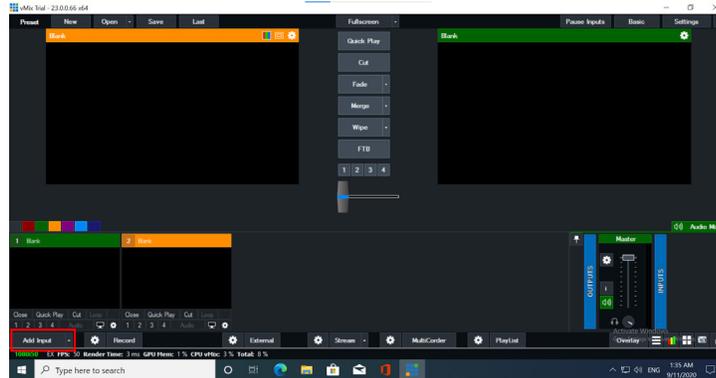
3. You will be prompted with an "Input Select" window, then select the **Camera** tab.

Figure 3. vMix Input Select Menu
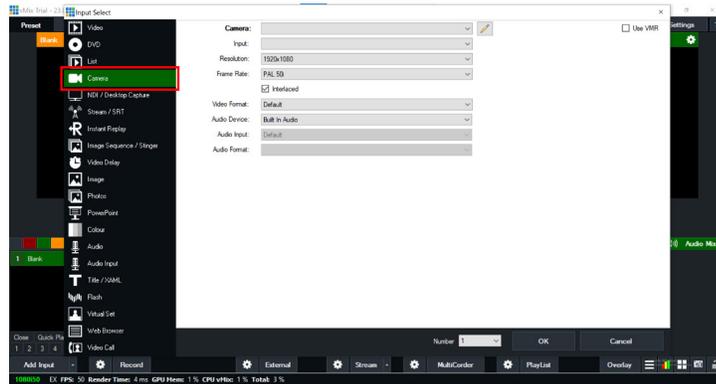
4. Once vMix has successfully detected your I/O devices, you will be able to see all the connected units listed in the "Camera" drop-down menu. You can then select the I/O device's input port you would like vMix to use for capture. Because in this example we are using an Io 4K Plus, four SDI ports are available as input, as shown below. Select one of these ports for configuration.

Figure 4. vMix Input Select Menu, Camera Setting
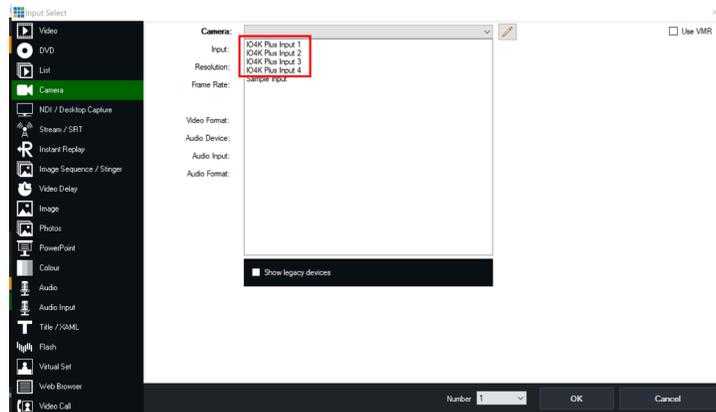
5. Configure the rest of the video and audio input settings with the "Resolution:", "Frame Rate:", "Video Format:", Audio Device:", and "Audio Input:" drop down menus, and then select **OK**.

Figure 5. vMix Input Select Menu, Configured Settings
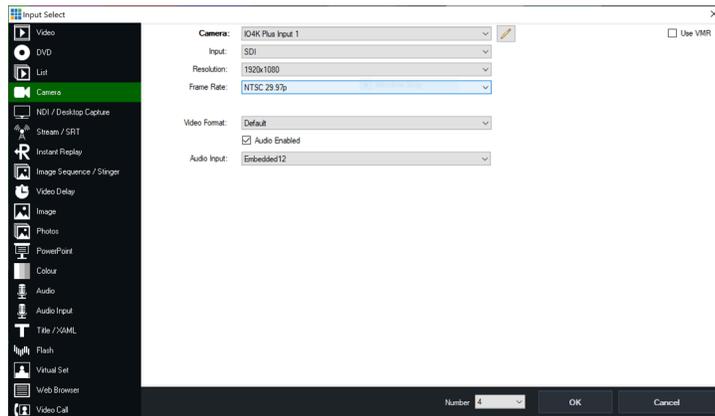
6. After completing the steps above, you will see that vMix has successfully received a video source from your AJA I/O device. To capture the selected audio source, make sure you select **Audio** for each video input.

Figure 6. vMix Main Interface, Audio Selection

NOTE: To add more input sources, repeat the steps described above for each source.

Adding a Video Input for a Single Channel UltraHD/4K Workflow

From the *Adding a Source for a Multi-Channel HD Workflow* procedure above, repeat to , but select as the "Resolution" either an UltraHD or DCI 4K format.

Figure 7. vMix Input Select Menu, UltraHD Setting
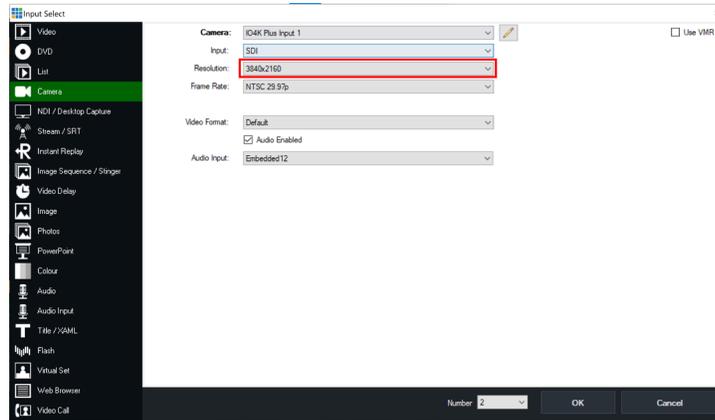
Routing vMix Output to an I/O Device's SDI or HDMI Output

You can configure an AJA I/O devices' SDI or HDMI output port for your vMix output. Many AJA I/O devices' SDI ports are bi-directional. The Io 4K Plus can receive up to four SDI inputs. With the Io 4K Plus, SDI 1 Out can be exchanged for HDMI Out, or SDI 1 In can be exchanged for Channel One HDMI In while still utilizing SDI 2, 3, and 4 for three additional inputs. Alternatively, the Io 4K Plus can receive two SDI inputs and send one SDI output, or it can receive two inputs and send two outputs simultaneously.

1. Select **External Output Settings** from the vMix main page.

Figure 8. vMix Main Interface, External Output Selection
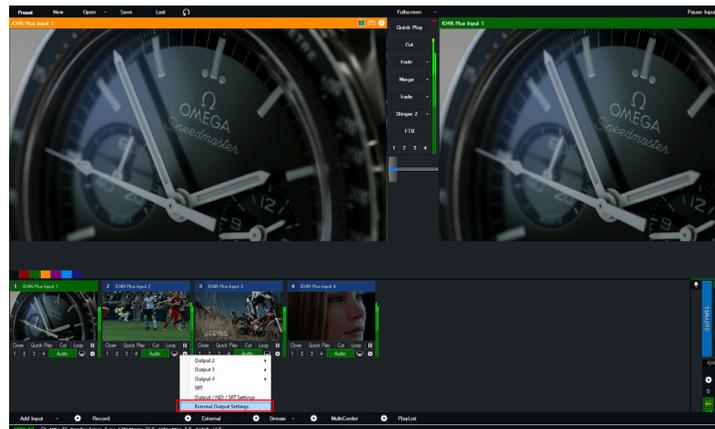
2. Select the "Device" and "Port" you would like to configure as the output. Then configure the output video resolution and frame rate.

Figure 9. vMix Main Interface, External Output Settings
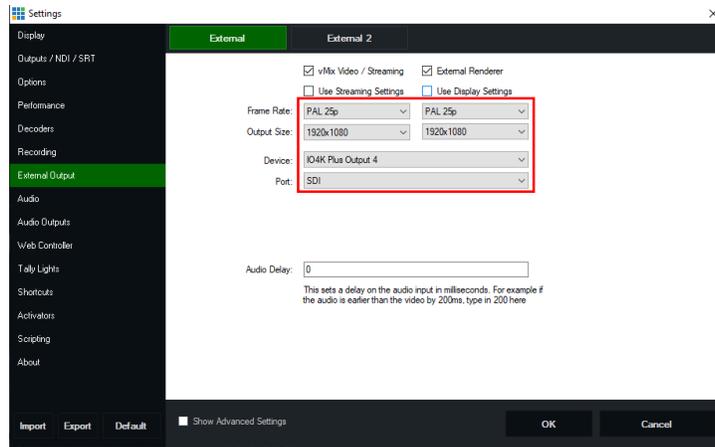
NOTE: You can only select a connection that is not currently being used to receive an input signal. Attempting to do so will display an error message as below.

Figure 10. vMix Channel In Use Error Message
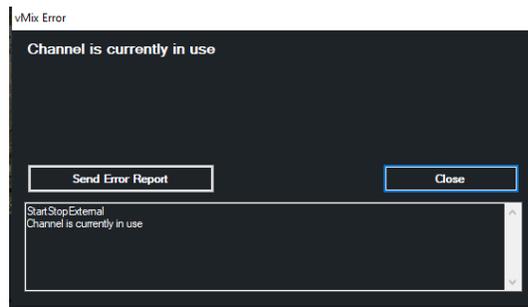
3. When done, click on the **OK** button.

Figure 11. vMix External Output Screen Settings
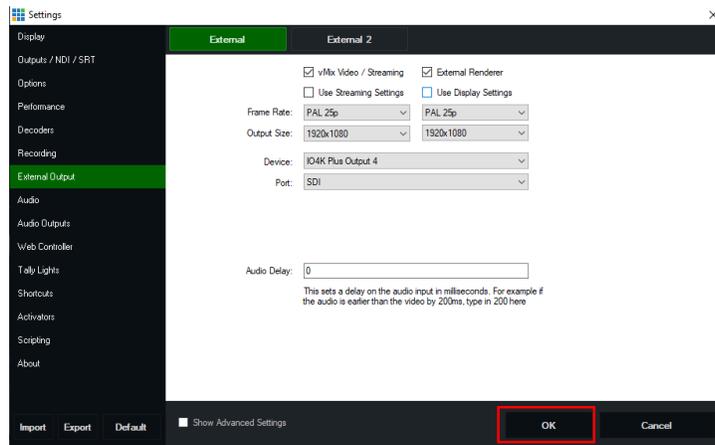
4. Now click the **External** button on the main interface screen to activate the output. Once enabled, that "External" button turns red, and you will be able to view the output via a connected external SDI or HDMI monitor.

Figure 12. vMix Main Interface, External Output Active
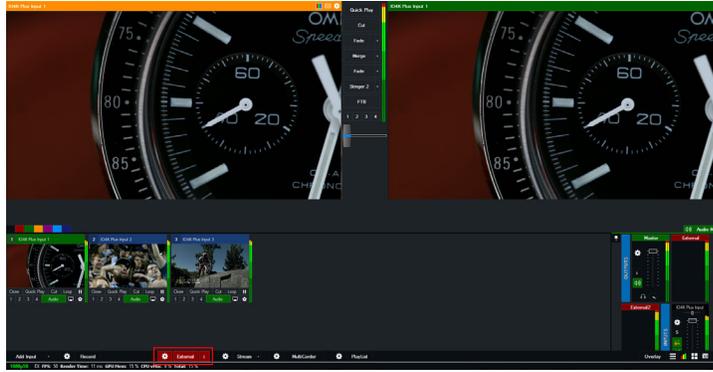
Routing a Second vMix Output

vMix supports routing two configurable signals to two AJA I/O device output connectors simultaneously.

1. Select **Output / NDI / SRT** from the main menu and to choose your Program Output, Preview, MultiView, or Vmix Input.
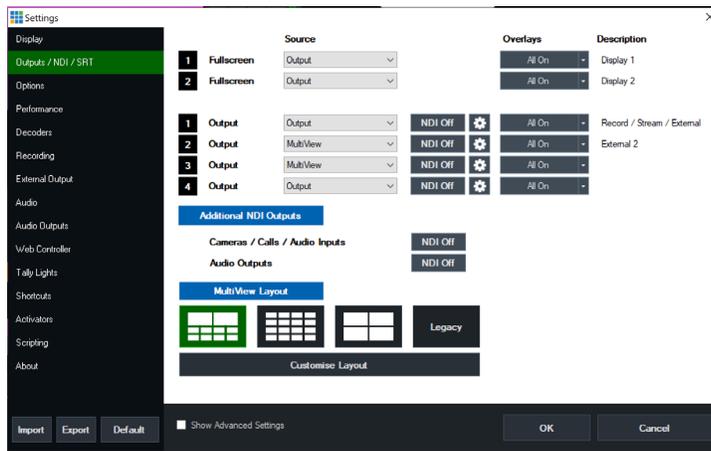
2. Repeat *Step 2 on page 5* above, but select **External 2**, enter the appropriate settings, and then click **OK**.

Figure 13. vMix External Output 2 Screen Settings OK Button