AVer PTZ310/330/N and TR3xx/TR3xxV2 Camera

Integration using vMix

(February 2022)

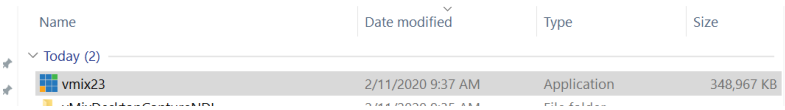
Steps to integrate the Aver PTZ and TR Cameras into the vMix Software

AVer has high quality image Cameras (PTZ310/330/N and TR3xx/TR3xxV2) that will integrate with production/broadcast workflows for peak performance and ease of use. We will show the configuration process for these cameras and the vMix Production Software.

vMix offers different options for mixing video sources, live streaming, Video Delivery Solution, or Webcasting and Live Events.

There are some pre-requisites for this to happen, see below.

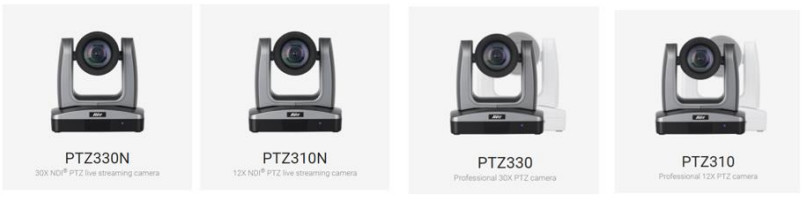
- Chrome Browser, version 79.0.3945.xxx and later.
- vMix 23 Software for Windows, currently version (23.0.0.39), approx. 350MB in size.



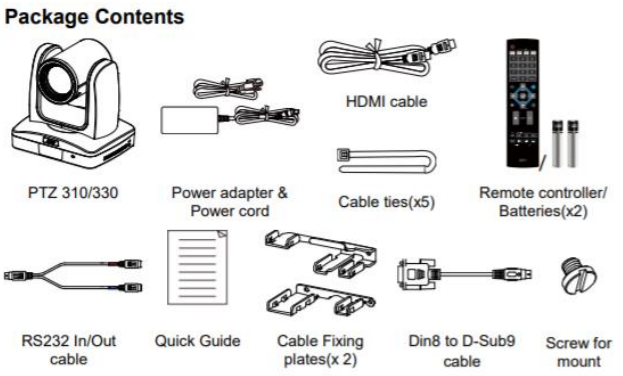
- .Net Framework 3.5 installed for VMix Software.
- Windows 10 Pro OS used in this setup.

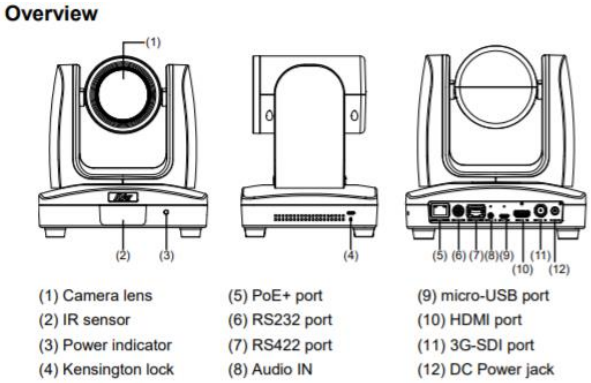
PTZ310/330 Camera

- AVer PTZ330 Camera and accessories.



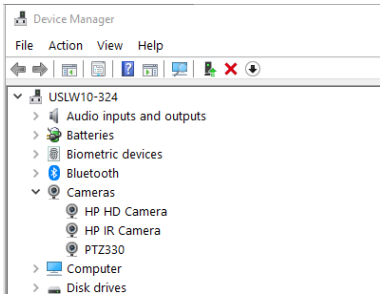
PTZ310/330 Camera (continued)





1. If vMix software is not installed, install, and follow the prompts.
2. There are 3 main ways to integrate the AVer PTZ camera with vMix, they are:
    - USB Connection
    - NDI (PTZ330N and PTZ310N only)
    - (Streaming) Input and Output

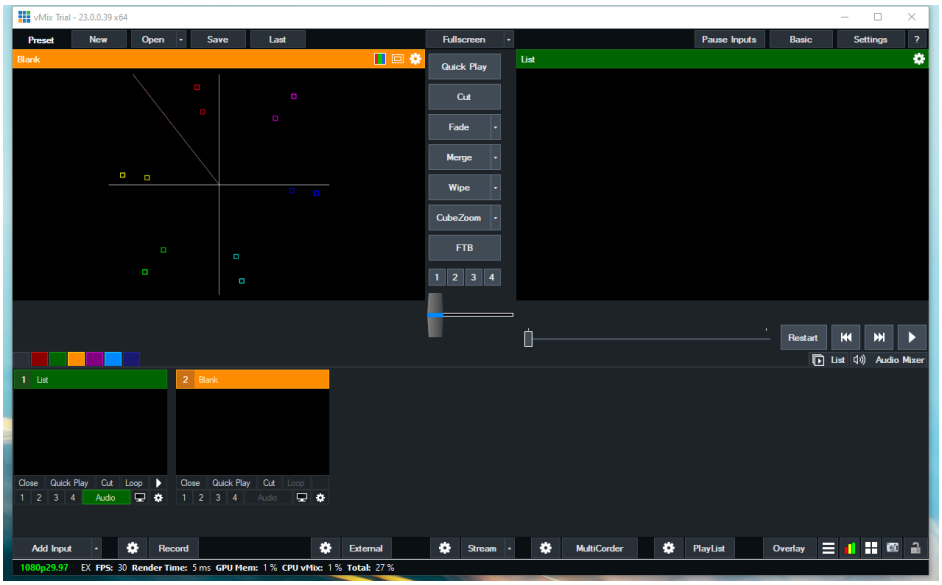
3. **USB Connection**: Connect the AVer PTZ330/N Camera to a USB port on the PC using a USB to Micro-USB cable and verify that Windows does see the device in the "Device Manager" window.



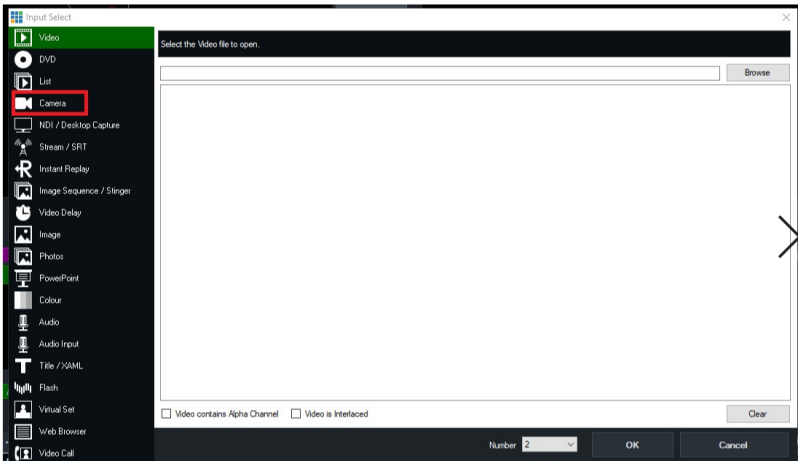
Here is a link to an AVer Support Article for the USB compatibility list:
https://averusa.force.com/support/s/article/USB-Extender-Compatibility-List-ProAV

4. Next, open the vMix software and select "*Add Input*" located on the lower left of display.

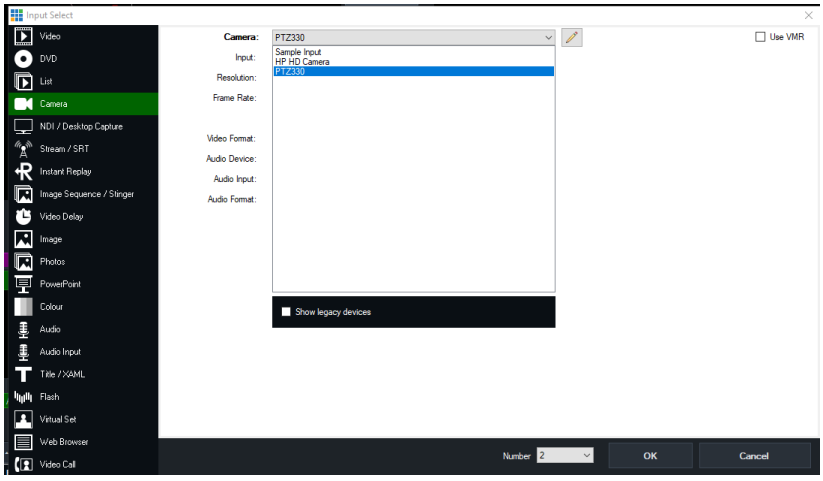
PTZ310/PTZ330 Camera with vMix – USB Connection



5. You should now see the following dialog box.

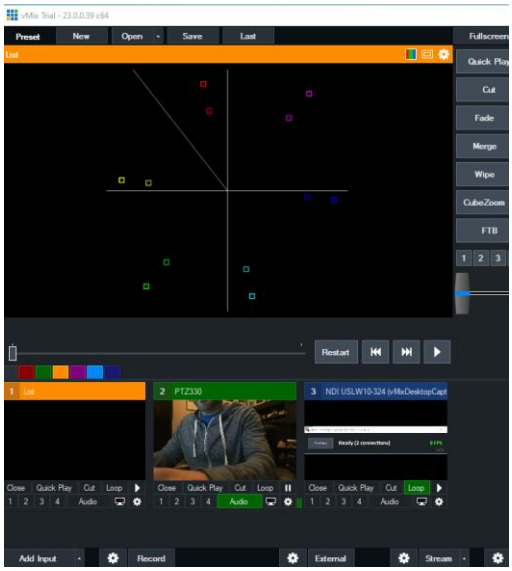


6. Next, select Camera, there will be a drop-down menu for Camera selection, select the AVer PTZ330 camera.

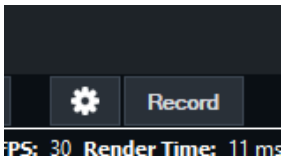


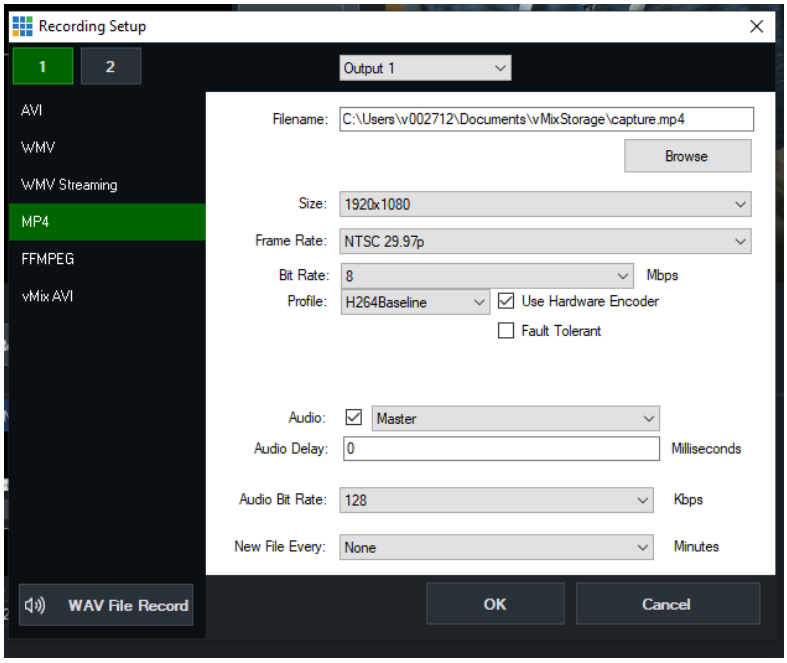
PTZ310/PTZ330 Camera with vMix – USB Connection (continued)

7. Select the Resolution and Frame rate as well as Video Format and Audio, then select “OK” once configured.
8. You will be brought back to the vMix Main page, you should now see video in the Input display.



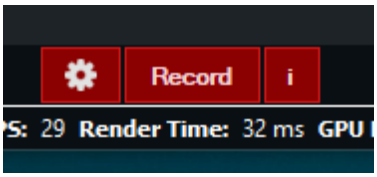
9. Next, select the “Settings/Gear” icon next to Record; this will open the selections for the Recording Setup for both Audio and Video.

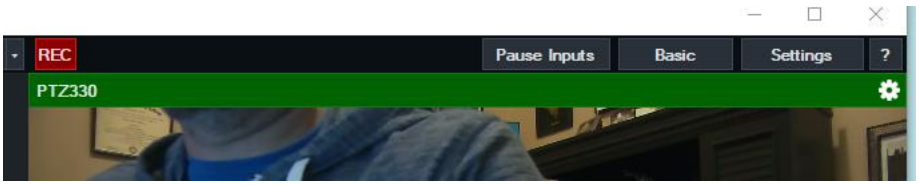




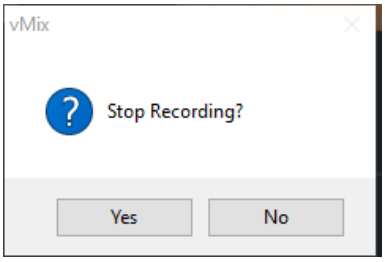
PTZ310/PTZ330 Camera with vMix – USB Connection (continued)

10. Once the selections have been made, select “OK” to confirm.
11. When you are ready to Record, select the “Record” button and you should see the “Settings/Record/I” selection turn red, as well as a red REC icon in the Preview Out.





12. Once you are ready to “Stop” recording, select the RECORD button, a pop-up will appear asking if you are ready to “Stop Recording”.



13. The recorded media can be found where you had selected the Filename earlier in the “Recording Setup”, typically located in “*C:\Users\Rich\Documents\vMixStorage\capture.xxx*”.

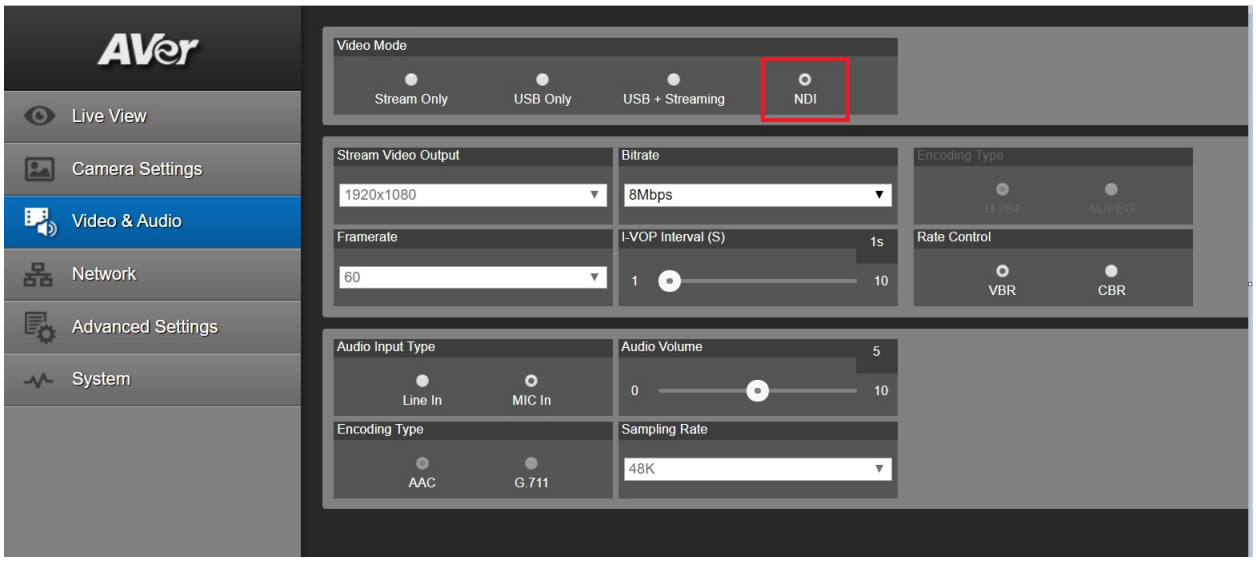
Network Device Interface (NDI) / Desktop Connection

NDI is a high-performance standard that allows anyone to use real time, ultra-low latency video on existing IP video networks.

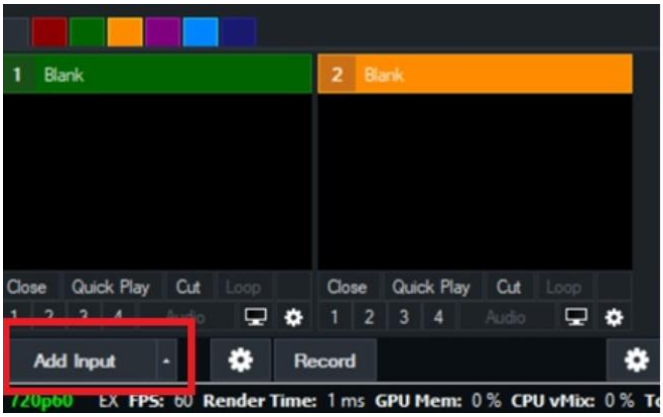
For this configuration the AVer camera will be designated as a PTZ330N or PTZ310N, the “N” designates that the camera can integrate with the NewTek NDI protocol. You can go to https://www.ndi.tv/ to learn more about NDI or download the NDI Virtual Input application if needed.

1. First step is to verify that your PTZ310N/PTZ330N camera is setup for NDI, use the Web Login and go to the “Video & Audio” settings, verify that the “NDI” radio button has been selected for Video Mode.

   *Note: The camera will need to re-boot when changing to/from NDI video mode.

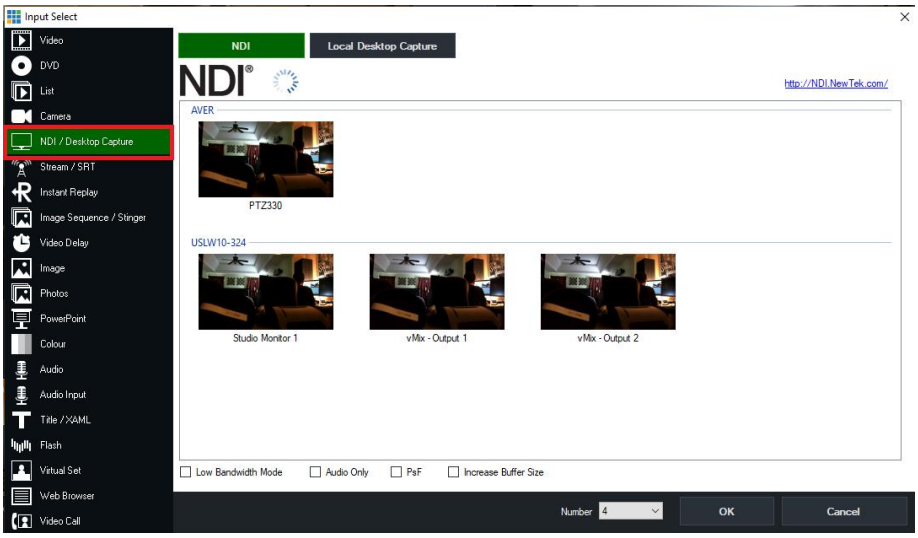


2. Next, go to vMix and select “Add Input”, located in the lower left of the display, it will open the “Input Select” window.



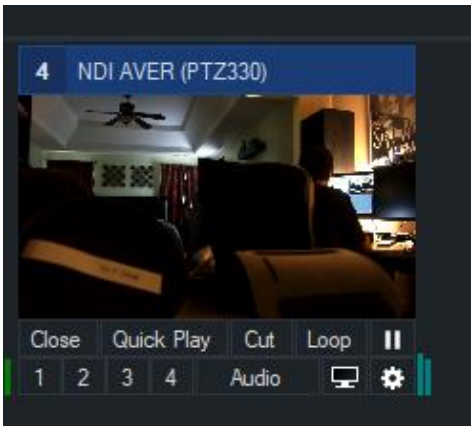
3. Next, select “NDI / Desktop Capture” setting, you should see a selection for AVER-PTZ330N and the live video camera capture.

Network Device Interface (NDI) / Desktop Connection (continued)



4. Next, select the AVER-PTZ330 NDI device and “OK” at the bottom of the screen.
   ***Note:** The Number field should be assigned/incremented automatically when this happens.

5. You should now have a new NDI AVER video Input assigned to vMix as a source.



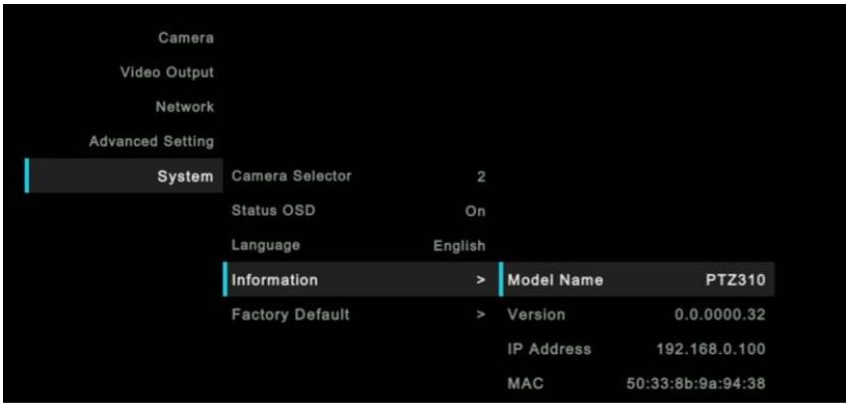
***Note:** When the PTZ camera is in NDI mode, the USB video output will be disabled.

PTZ310/PTZ330 Camera RTSP STREAMING to the vMix system

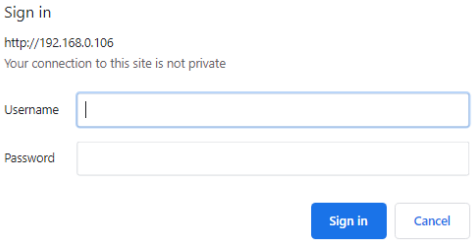
1. Connect the PTZ310/330 camera via Network RJ45 Cat5E connection; verify IP address of Camera to connect via Web browser. Locate the remote, select the “Menu” icon on the remote and navigate to the “**Network->DHCP->**” setting, verify it is set to DHCP “On” to grab an available IP address. If you are reserving IP addresses, verify it is set to “OFF” and that the correct IP address has been set.

   Go to **Camera > DHCP > DHCP >On**.

   After turning DHCP on, go to ***Information*** to view the IP address.



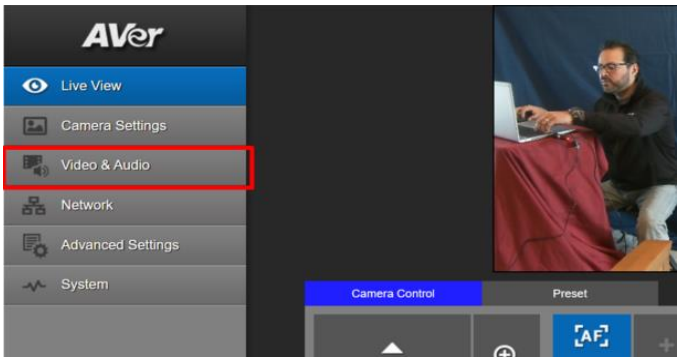
2. Once you have the IP address setup, type the IP address in your Chrome browser (Setup on same subnet) and you should now see the login to the PTZ330 camera shown below.



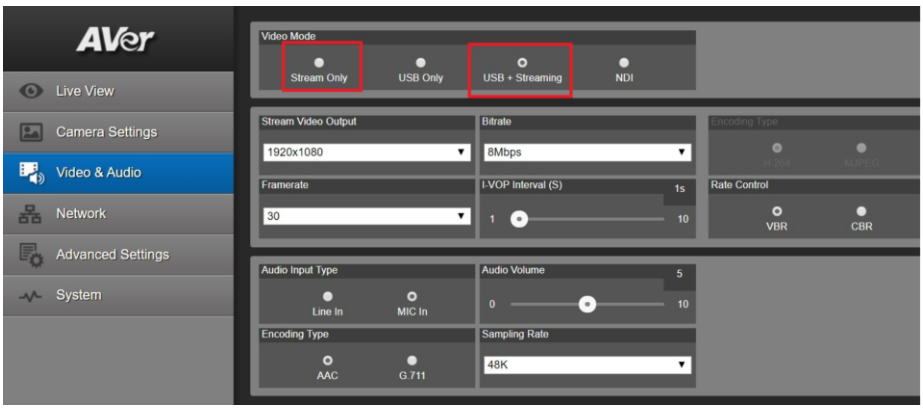
3. The default Username/Password is “admin / admin”.

   ***Note:** If this is the first time accessing the PTZ330 camera via the Web login, it will ask you to change the Username/Password. Please write down the NEW credentials.

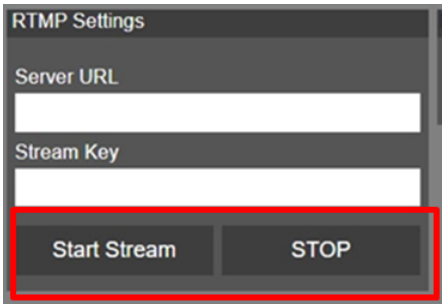
4. Next, you should now see the main login screen with a “Live View” of the PTZ Camera.



5. Next, after selecting the *Video & Audio* setting, verify that you have either “Stream Only” selected or “USB + Streaming” selected. Select your Stream Video Output, Bitrate, Framerate, Encoding, etc. ***Note:** Some servers require a minimum bitrate of 2.5Mbps for their environment.

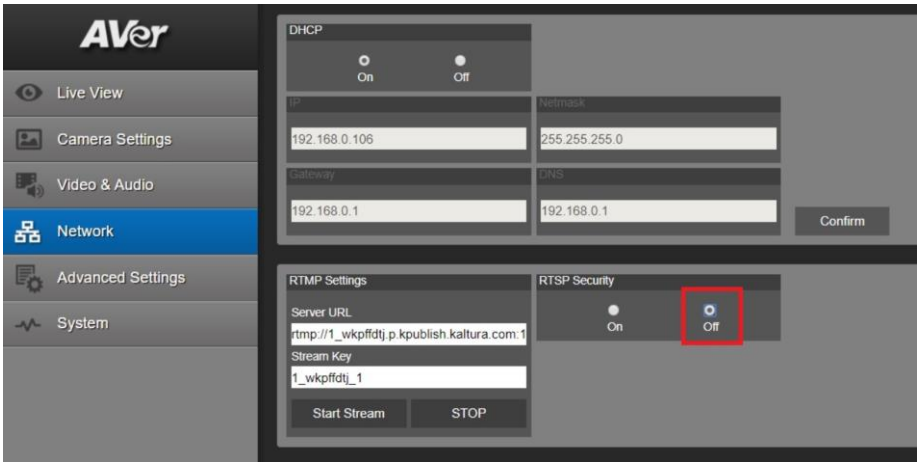


***Note:** Once streaming has started do not change the Stream Video Output on the fly, you will need to “STOP” streaming, change the Stream Video Output, then “Start” the stream again.

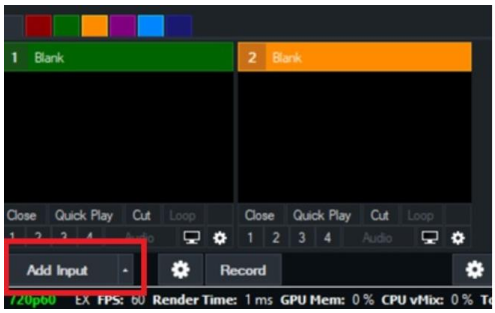


Video Standard->	Stream Only (Various)	USB Only (Various)	USB + Streaming (Various)	NDI (1080p/60)
SDI Output	✓	✓	✓	✓
HDMI Output	✓	✓	✓	✓
USB Output	x	✓	✓	x
RTSP Output	✓	x	✓	✓

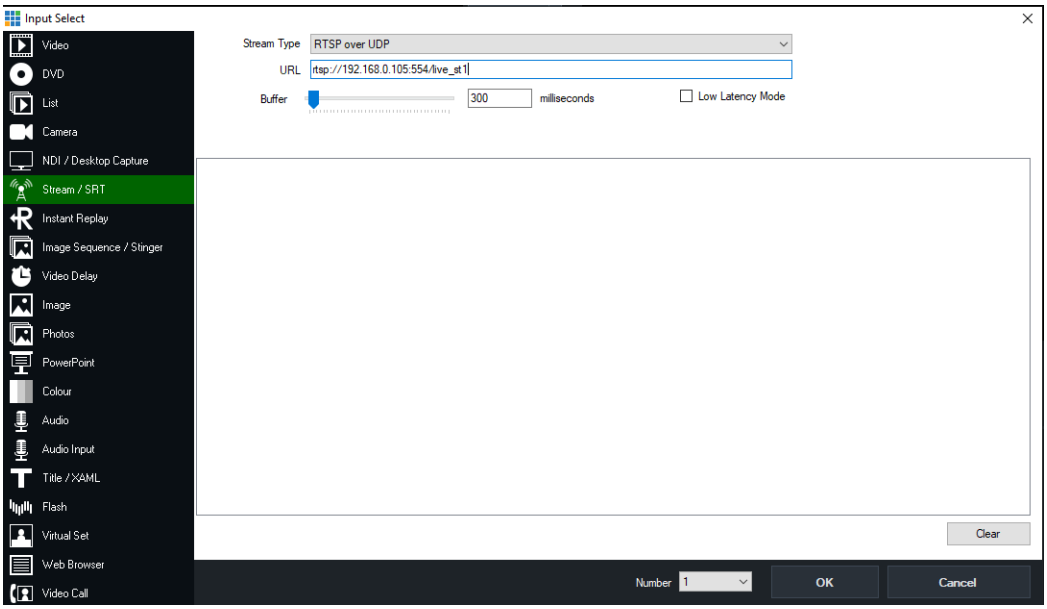
6. Next, select the "*Network*" setting, set the "RTSP Security" to "Off". Once you are finished with Streaming, you can put the RTSP Security back to "On", ensuring there is nothing being broadcast.



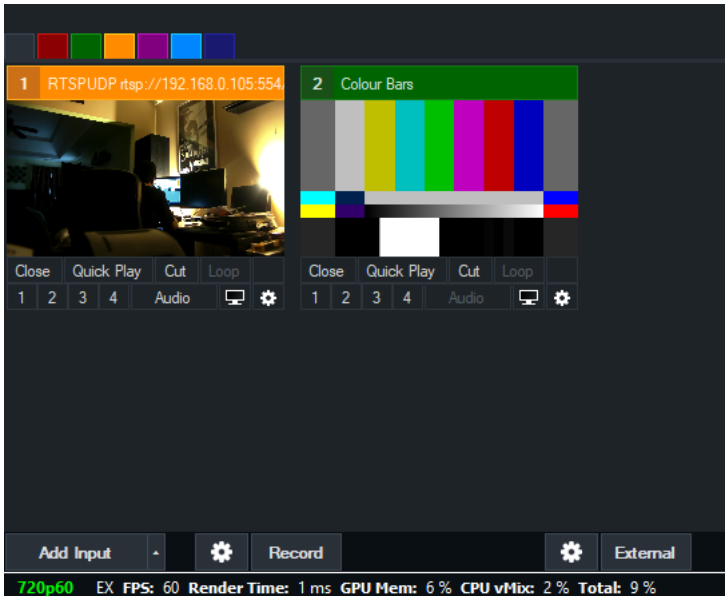
7. Next, go to vMix and select "*Add Input*", located in the lower left of the display, it will open the "Input Select" window.



8. Next, select the "*Stream / SRT*" setting, where the URL setting is type in the following syntax for the PTZ330 RTSP feed,
   "rtsp://Camera IP:554/live_st1", where Camera IP is the actual IP address of the camera.

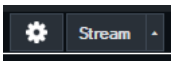


9. Next, select "OK", you should now be seeing camera video on your vMix display streaming from the PTZ330 camera.

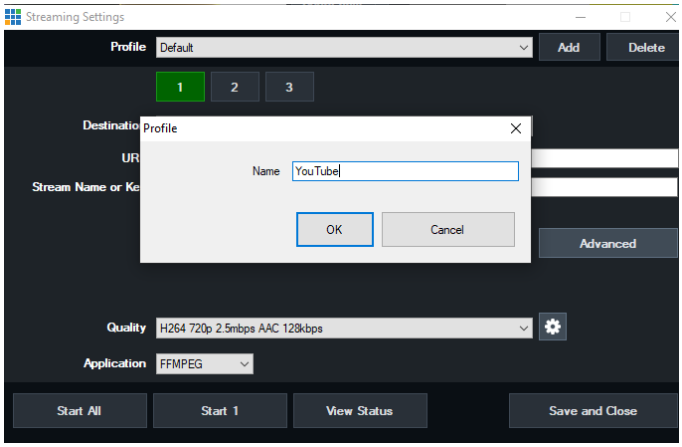


PTZ310/PTZ330 Camera RTMP Output STREAMING from vMix

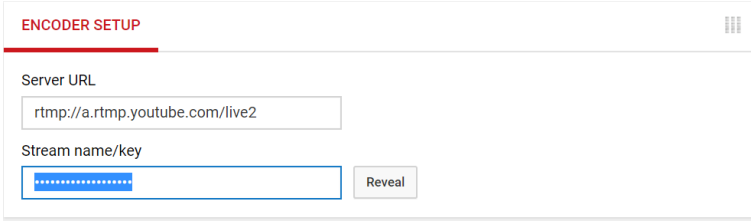
To connect to a streaming service like YouTube, Vimeo, Twitch, Facebook, etc., from vMix, do the following steps.

1. In vMix select the gear icon located next to "*Stream*" 

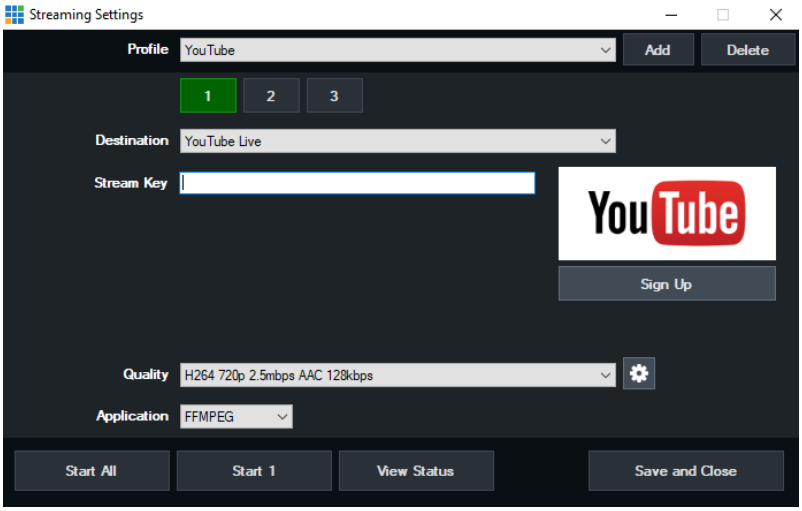
. Select "*Add*" at the top of the window, give it a name, then select "OK".



2. Next, select the "*Destination*" you want to stream to, in this example we are using YouTube Live.
3. Next, you will need your YouTube "Stream Key" to complete the process, go to your account and find the "Encoder Setup" information, copy the "Stream name/key" information. You may have to switch to "Classic view" to find it quicker.

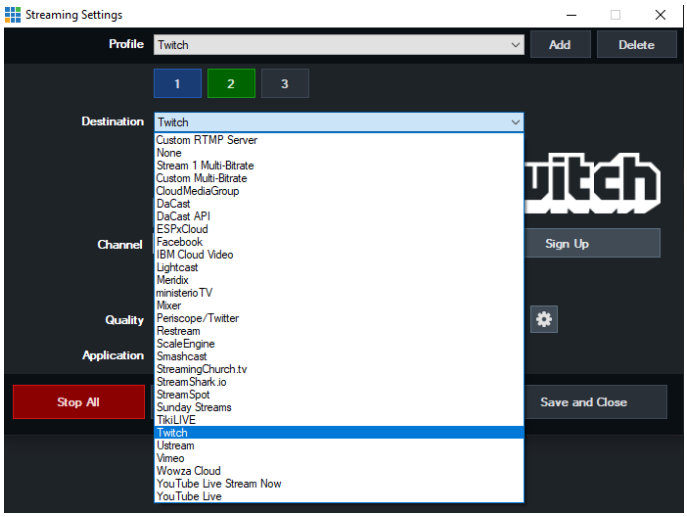


4. Next, go to the vMix Stream Key selection and paste that information into the space provided.

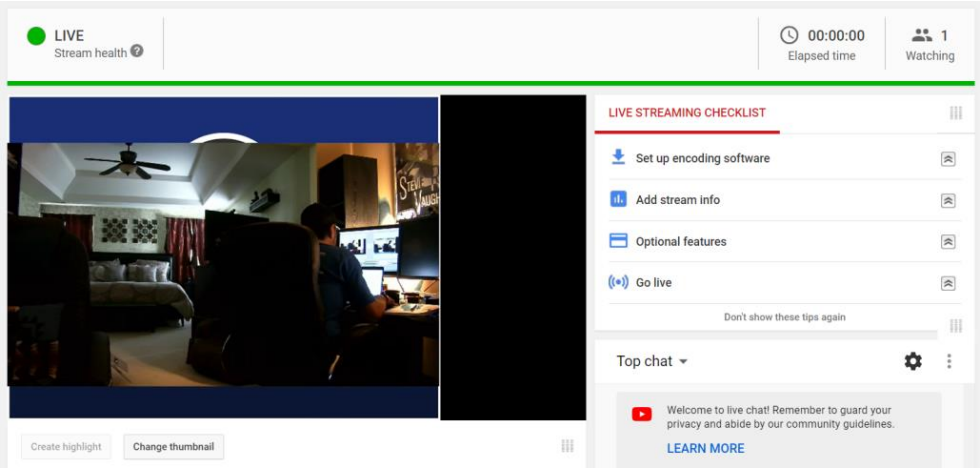


5. Next, select “OK”, then select “Stream” and it should change color, from grey to orange, then red.

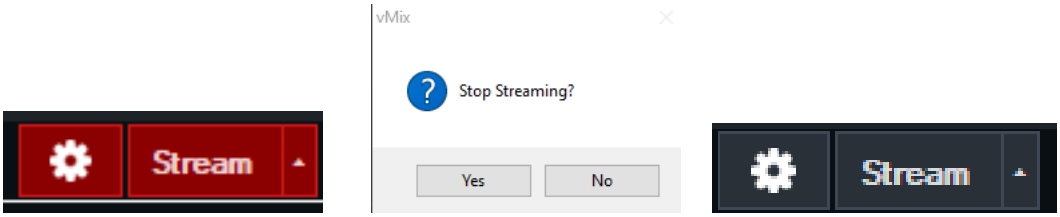
6. You can select more streams like Facebook, StreamingChurch.tv, Twitch, etc. the process would be the same way.



7. To verify, go to your YouTube Live Dashboard and verify the video feed from vMix.

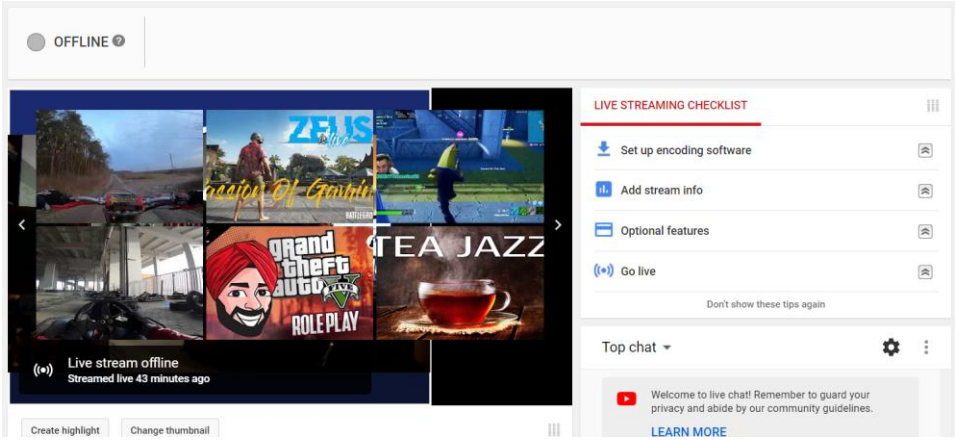


8. To end the streaming feed from vMix, select “Stream”, another window will pop up, select “Yes” to stop streaming, the indicator will turn back to grey.



PTZ310/PTZ330 Camera RTMP Output STREAMING from vMix (continued)

9. To verify on YouTube, go back to your YouTube Live Dashboard, it should now be displaying “OFFLINE”.



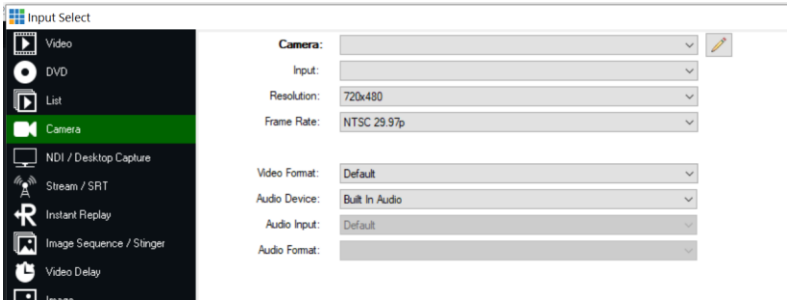
10. This concludes the AVer PTZ310/330 Camera integration within the vMix Software.

PTZ310/PTZ330 Camera Control from vMix system

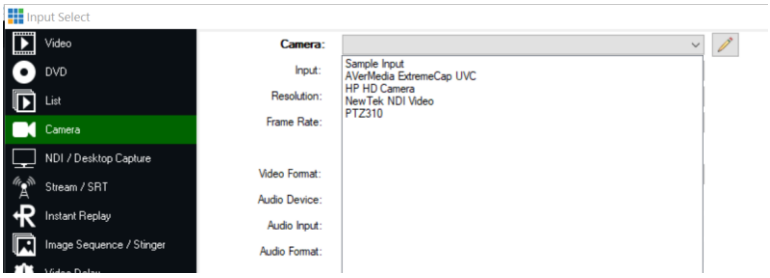
There are two main ways to control the PTZ camera via USB/UVC from vMix, either using standard PTZ commands or by using shortcut (hotkeys) from the vMix interface.

PTZ commands using UVC PTZ:

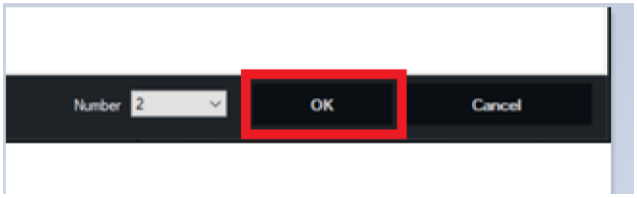
1. Open vMix software and add an Input by selecting "*Add Input*" in the lower left corner, then select "Camera" as the source.



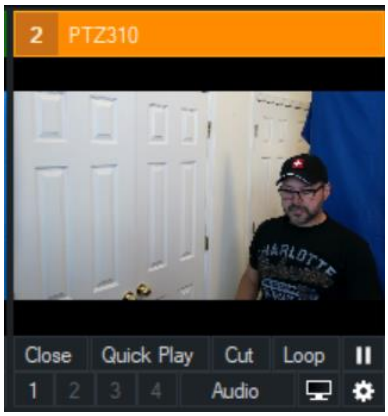
2. Next, select the PTZ310/330 camera as the source input.



3. Next, select "OK" on the bottom of the display.

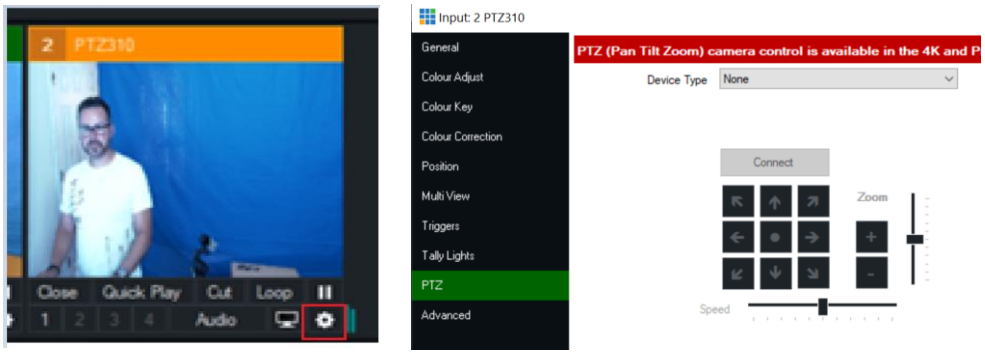


4. Next, you should now see a new video Input in vMix.

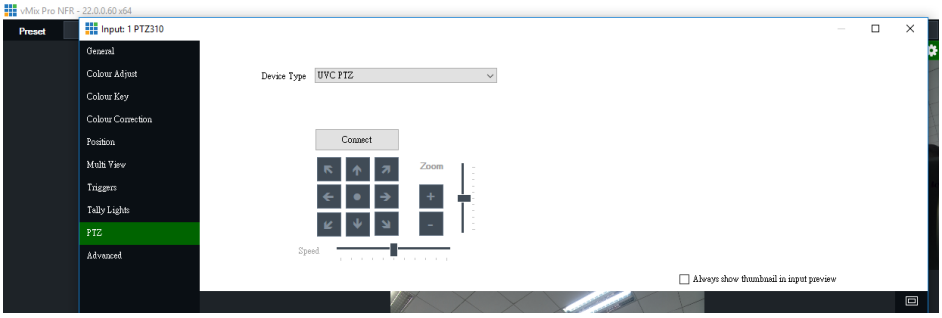


PTZ310/PTZ330 Camera Control from vMix system (continued)

5. Next, select the gear icon "*Settings*" to access the menu and select the PTZ submenu.



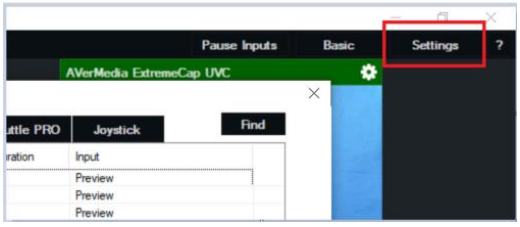
6. Next, under "*Device Type*" select **UVC PTZ**, then "*Connect*" to have Pan/Tilt/Zoom control of the AVer PTZ310/330 camera from vMix as a USB device.

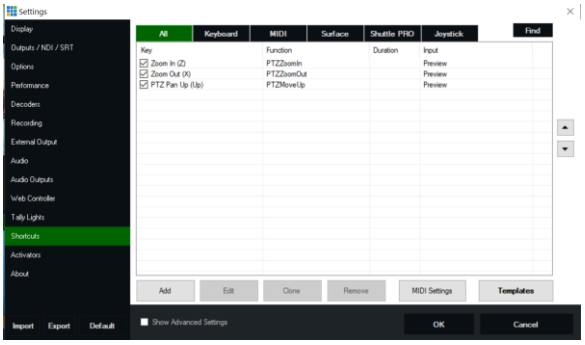


7. At this point you should have Pan/Tilt/Zoom control of the camera from vMix.

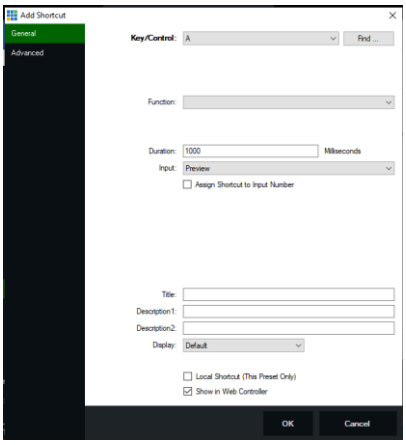
Pan/Tilt/Zoom commands using HotKeys/Shortcuts:

1. Open vMix and in the upper right corner you will see the “Settings” tab, select it, then select “Shortcuts”.

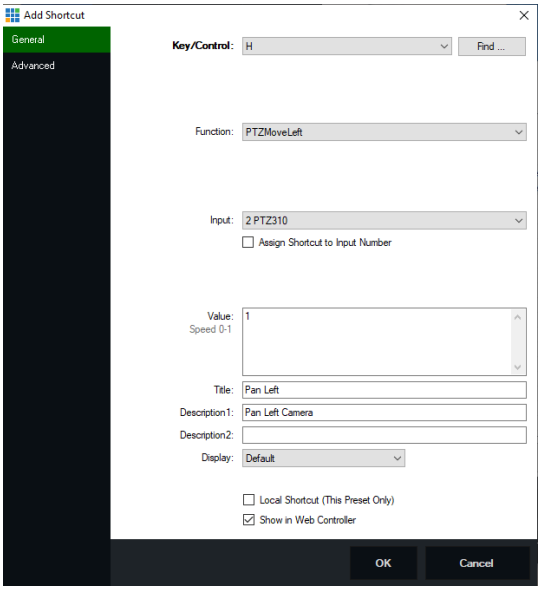




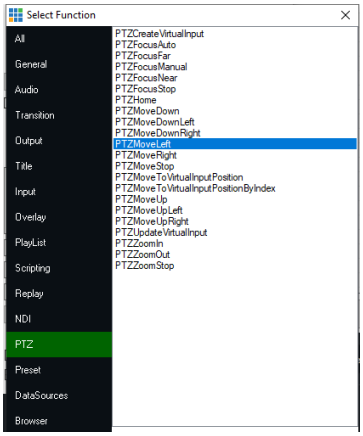
2. Next, typically there will be nothing displayed in the Shortcuts window, select “Add” to open another menu.



3. Next, select the Key/Control you would like for the shortcut, in this example we are using the letter “H” for Pan Left control of the PTZ310 camera connected via USB.



4. Next, use the same configuration process to create shortcuts for Pan Right, MoveUp, etc. from the available PTZ selections.

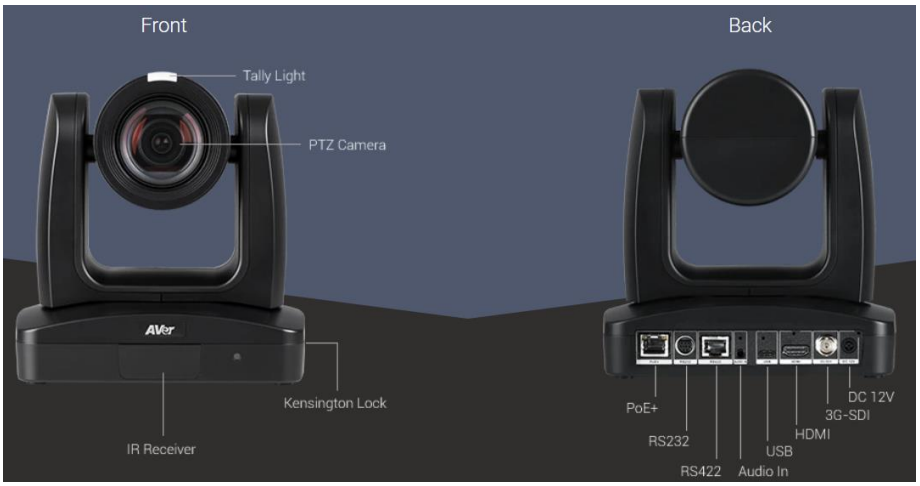


5. This concludes the setup process for Hotkeys/Shortcuts for the PTZ310/330 camera connected via USB.

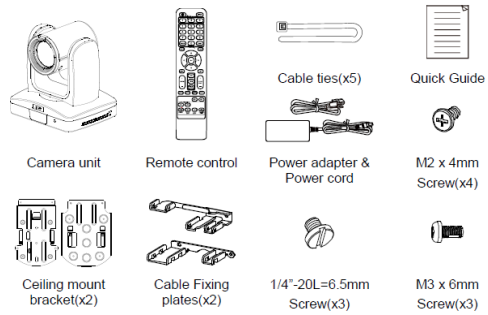
TR3xx/TR3xxV2 Cameras

AVer Pro-AV first introduced the New AI Auto Tracking Algorithms with the TR3xx line of cameras. We have introduced a NEW V2 version of these cameras that are now TAA compliant, the TR313V2 and TR333V2. We will describe these New TAA compliant cameras as TR3xxV2 in this document.

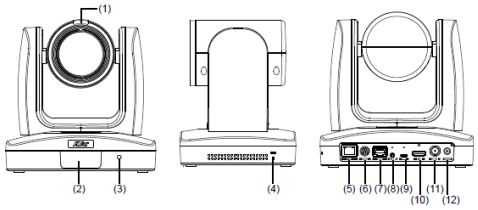
- AVer TR313 Camera and accessories.



Package Contents



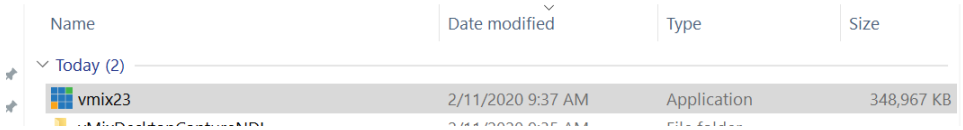
Overview



(1) Tally Lamp
(2) IR Sensor
(3) Power Indicator
(4) Kensington Lock
(5) PoE+ IEEE 802.3AT
(6) RS232 Port
(7) RS422 Port
(8) Audio In
(9) USB 3.0 Port (Type C)
(10) HDMI Port
(11) 3G-SDI Port
(12) DC Power Jack

TR3xx/TR3xxV2 Cameras with vMix (continued)

- Chrome Browser, version 79.0.3945.xxx and later.
- vMix 23 Software for Windows, currently version (23.0.0.39), approx. 350MB in size.



- .Net Framework 3.5 installed for VMix Software.
- Windows 10 Pro OS used in this setup.

1. If vMix software is not installed, install, and follow the prompts.
2. There are 3 main ways to integrate the AVer TR camera with vMix, they are:
    - USB Connection
    - NDI (TR311HN, TR3xxNV2 only with *NDI Key)
    - (Streaming) RTSP Input and RTMP Output

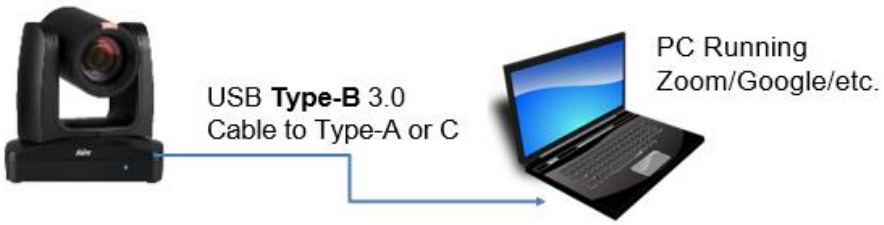
USB Connection (TR313): Connect the AVer TR313 Camera to a USB port on the PC using a Type-C USB cable to Type-A/C USB cable and verify that Windows does see the device in the "Device Manager" window.
***Note:** If it is a long cable run, you can "step down" the Type-C USB 3.0 to a USB Type-A/C 2.0 cable and still get good quality video (1080p/30) with USB 2.0 cable.

USB Connection (TR313V2): Connect the AVer TR313V2 Camera to a USB port on the PC using a Type-B USB cable to Type-A/C USB cable and verify that Windows does see the device in the "Device Manager" window.
***Note:** If it is a long cable run, you can "step down" the Type-B USB 3.0 to a USB Type-A/C 2.0 cable and still get good quality video (1080p/30) with USB 2.0 cable.

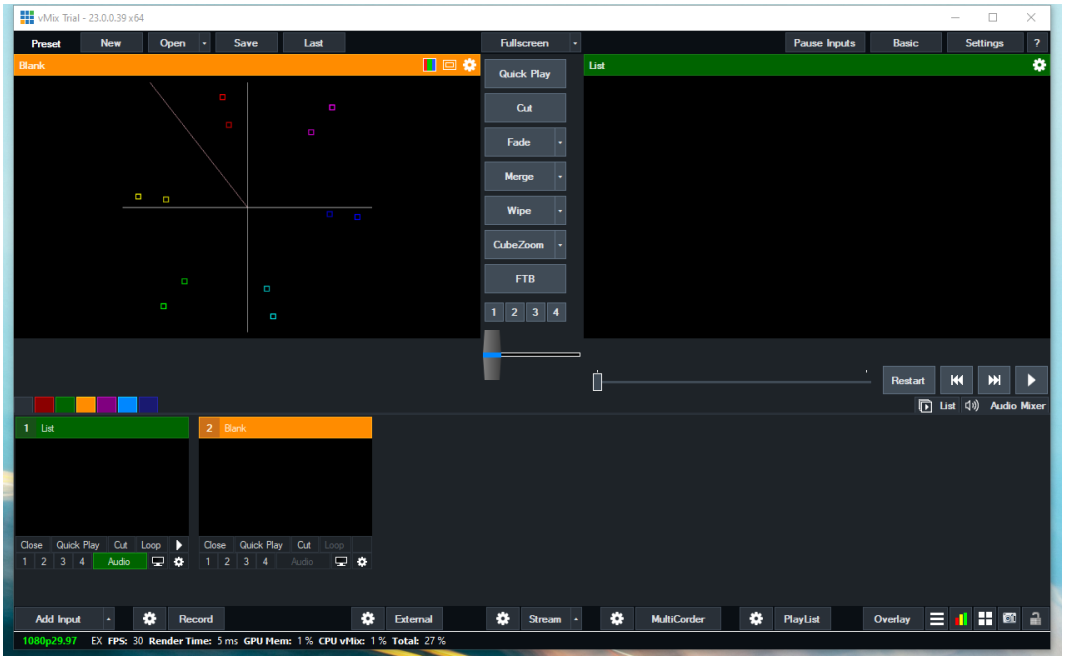
TR3xx/TR3xxV2 Cameras with vMix (continued)

Here is a link to an AVer Support Article for the USB compatibility list:
https://averusa.force.com/support/s/article/USB-Extender-Compatibility-List-ProAV

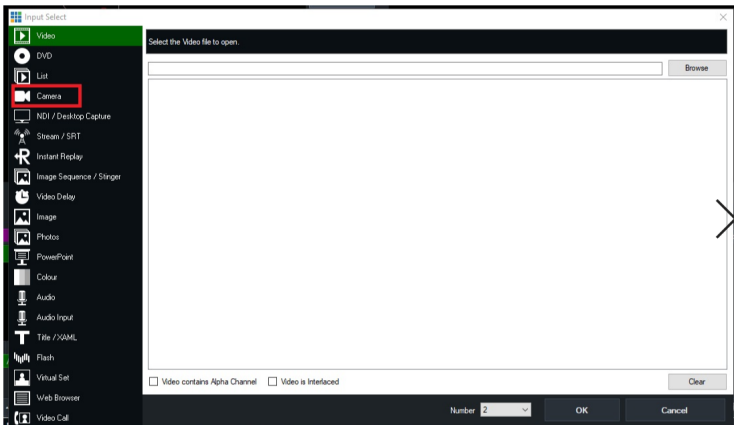
Typical Connection: Power Supply is needed.



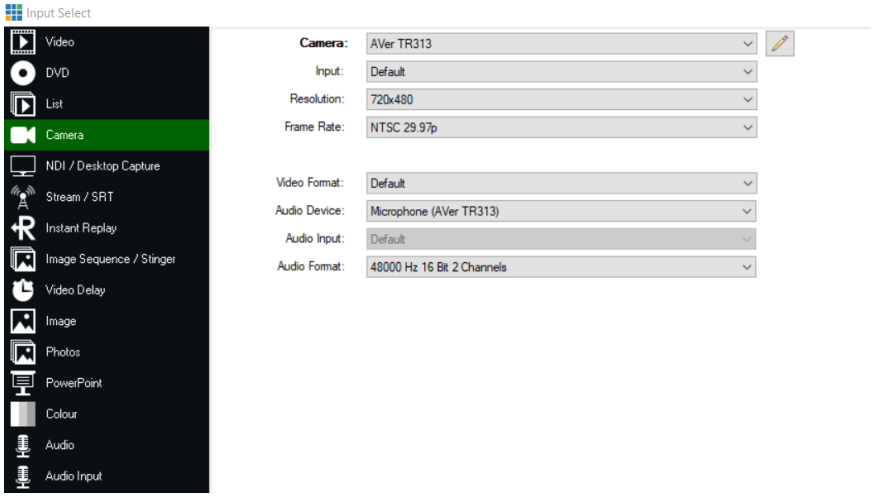
3. Next, open the vMix software and select "*Add Input*" located on the lower left of display.



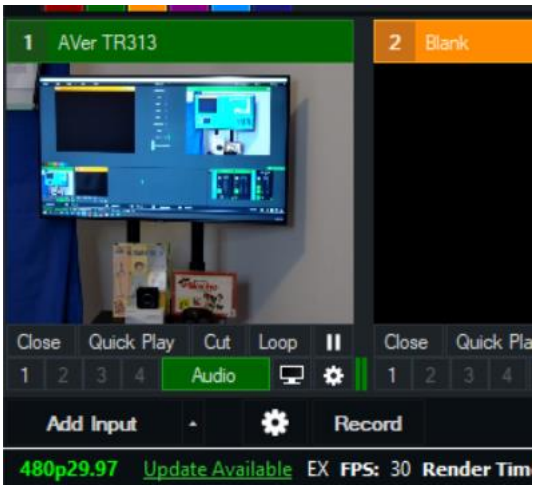
4. You should now see the following dialog box.



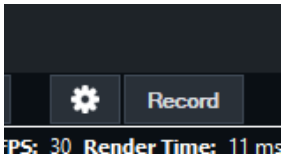
5. Next, select Camera, there will be a drop-down menu for Camera selection, select the AVer TR313 camera.

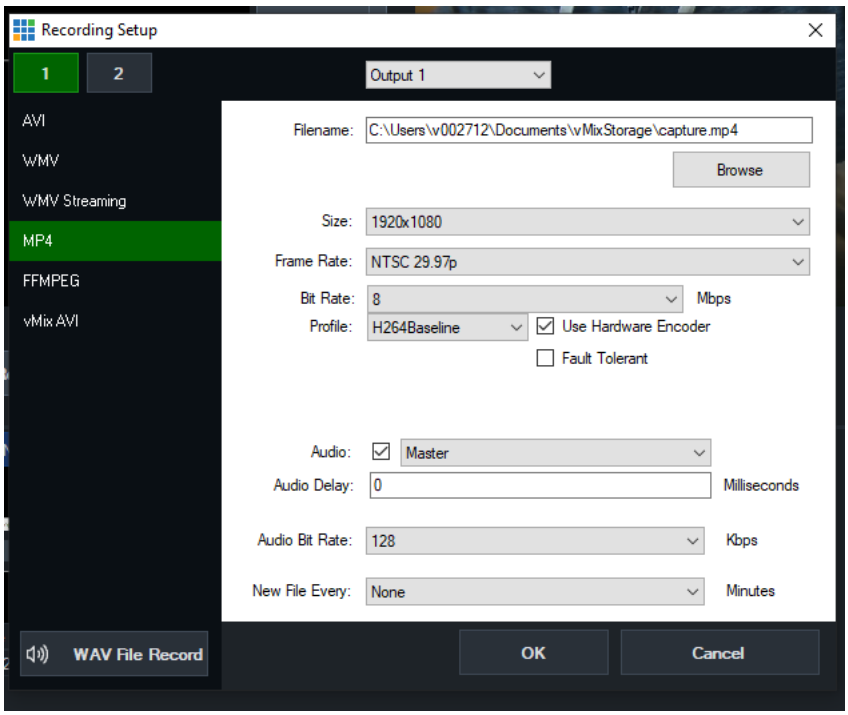


6. Select the Resolution and Frame rate as well as Video Format and Audio, then select “OK” once configured.
7. You will be brought back to the vMix Main page, you should now see video in the Input display.

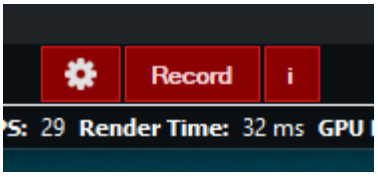


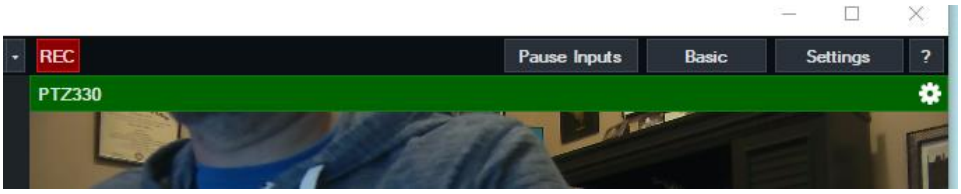
8. Next, select the “Settings/Gear” icon next to Record; this will open the selections for the Recording Setup for both Audio and Video.



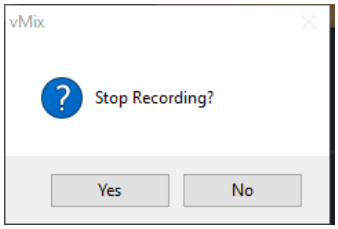


9. Once the selections have been made, select “OK” to confirm.
10. When you are ready to Record, select the “Record” button and you should see the “Settings/Record/I” selection turn red, as well as the red REC icon in the Preview Out.





11. Once you are ready to “Stop” recording, select the RECORD button, a pop-up will appear asking if you are ready to “Stop Recording”.



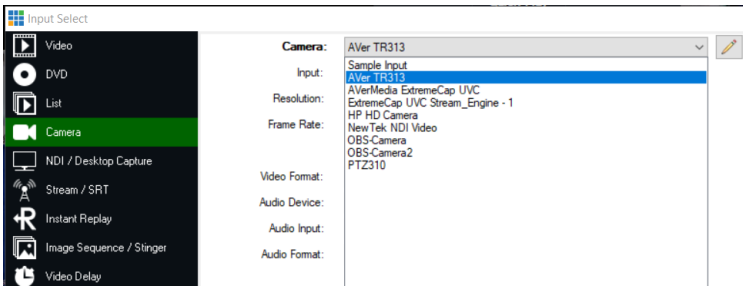
12. The recorded media can be found where you had selected the Filename earlier in the “Recording Setup”, typically located in “*C:\Users\Rich\Documents\vMixStorage\capture.xxx*”.

TR313 Camera with vMix – USB connection and UVC

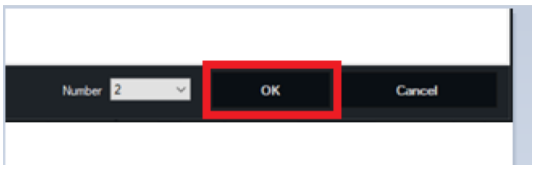
There are two main ways to control the TR camera via USB/UVC from vMix, either using standard PTZ commands or by using shortcut (hotkeys) from the vMix interface.

PTZ commands using UVC PTZ:

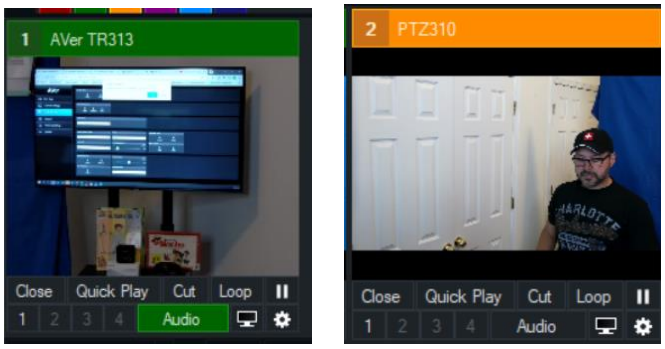
1. Open vMix software and add an Input by selecting “*Add Input*” in the lower left corner, then select “Camera”, then select the TR313 camera as the source input.



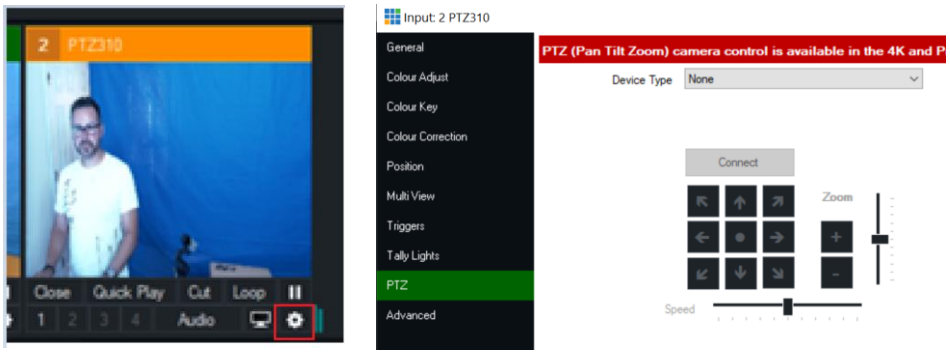
2. Next, select “OK” on the bottom of the display.



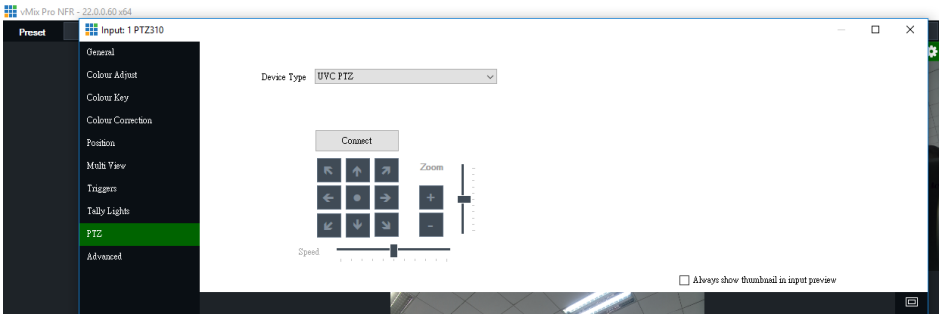
3. Next, you should now see a new video Input in vMix.



4. Next, select the gear icon "*Settings*" to access the menu and select the PTZ submenu.



5. Next, under "*Device Type*" select **UVC PTZ**, then "*Connect*" to have Pan/Tilt/Zoom control of the AVer TR313 series camera from vMix as a USB device.



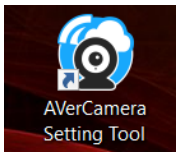
6. At this point you should have Pan/Tilt/Zoom control of the camera from vMix.

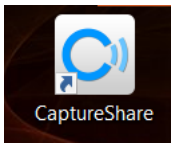
TR3xx/TR33xxV2 Camera USB connected CaptureShare Software

Aver Information Inc. offers a *free* software for the NEW TR series of cameras, *CaptureShare*, that works with Windows and MAC machines. It allows you to be able to configure the TR3xx/TR3xxV2 camera for Presenter, Zone, and Hybrid Tracking Modes, as well as some of the basic video settings such as Contrast, Saturation, Mirroring, and video output settings while ONLY being connected to the camera via USB.

Once downloaded and installed you will have two modules:

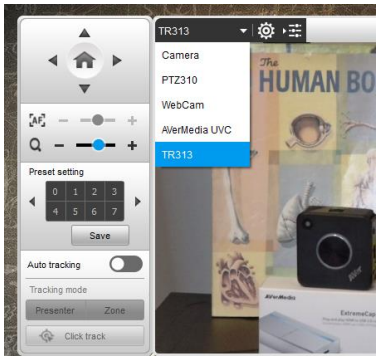
- **AverCamera Setting Tool**; used if you only need control/configuration of the camera.
- **CaptureShare**; has additional features, like PiP, annotation, recording, streaming, etc.



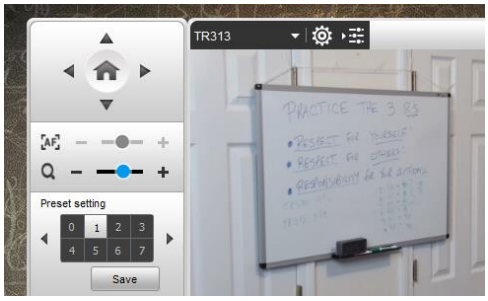


For more detailed information, download the User Manual on the AVer Pro-AV website.
The following is used to setup the TR3xx/TR3xxV2 camera with CaptureShare.

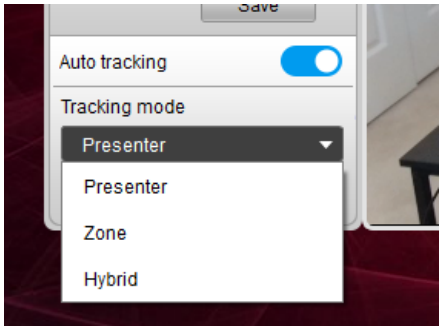
1. Once CaptureShare is opened, select the Camera carrot, and then select the TR313 camera as the source.



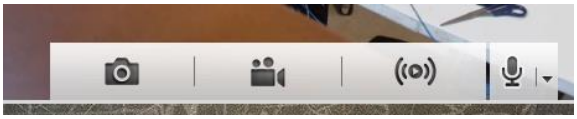
2. Next, you should see video from the camera, and have control via the Up/Down and Left/Right arrows.
3. Use the Up/Down and Left/Right arrows to position the camera to save Preset #1, then select *"Save".* This preset is used when in *Presenter Mode* tracking, if tracking is lost, the camera will automatically go to Preset #1 after 5 seconds.

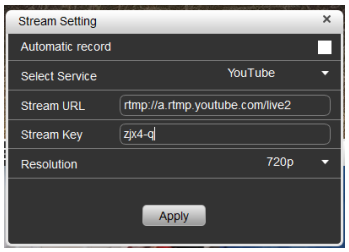


4. Next, save Presets 6, 7, 8, and 9, these presets are used when in *Zone Mode* tracking.
5. You can Enable/Disable Tracking via CaptureShare and the camera remote.

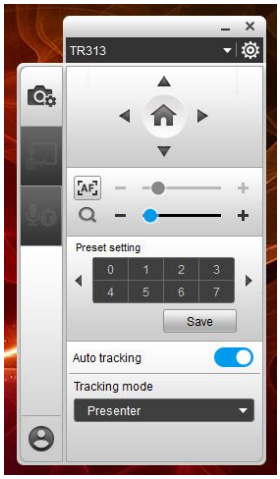


6. You can also record locally and “stream” out to YouTube/FB/other streaming services once the RTMP Server / RTMP Key are configured.





7. Opening the *AVerCamera Setting Tool* will allow you to setup the camera without the additional tools for Streaming, Recording, etc. This can be used while the camera is being used on a Zoom/Teams call.



8. This concludes the brief introduction to *CaptureShare* and the *AVerCamera Setting Tool*.

TR3xx/TR3xxV2 (NDI) / Desktop Connection

The Network Device Interface (NDI) is a high-performance standard that allows anyone to use real time, ultra-low latency video on existing IP video networks.

For this configuration the AVer camera will be designated as a TR311HN or TR323NV2, the “N” designates that the camera can integrate with the NewTek NDI protocol. You can go to https://www.ndi.tv/ to learn more about NDI or download the NDI Tools software pack if needed.

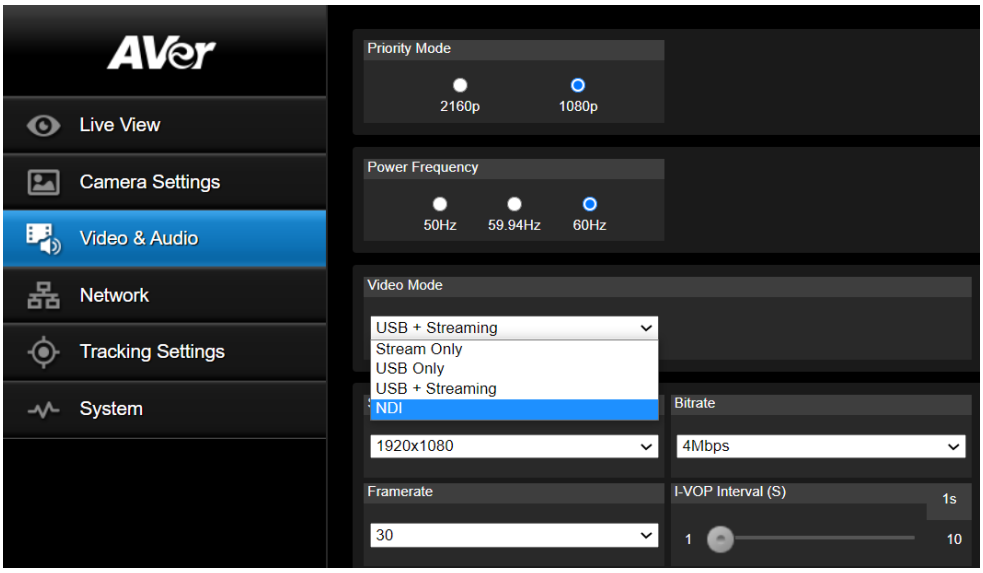
1. First step is to verify that your TR311HN or TR323NV2 has the NDI key enabled, and is setup for NDI, use the Web Login and go to the “Video & Audio” settings, verify that “NDI” is selected via the “Video Mode” drop down menu.

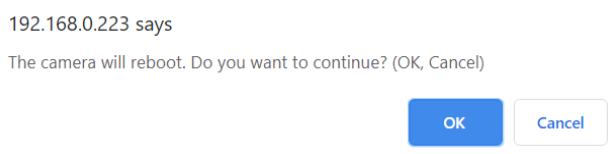
   ***Note**: The camera will need to re-boot when changing to/from NDI video mode, re-boot takes about 1:30 – 2:00 minutes. The NDI video resolution for the TR3xx camera is adjustable from 1080p/60 to 360p/60.

   The HDMI/SDI video output will only have the following selections in NDI mode for video output:

   - 1080p/60
   - 1080p/30
   - 1080i/60
   - 720p/60

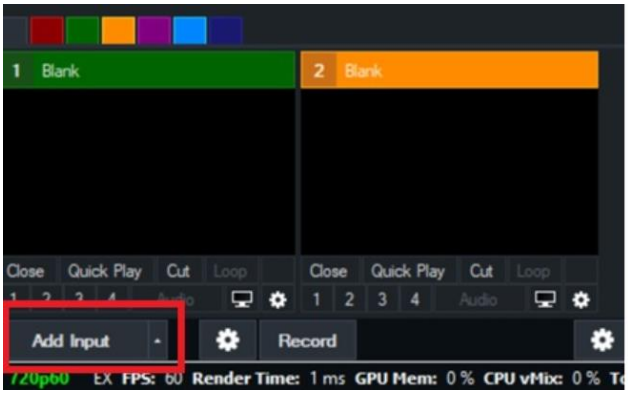
   Also, when in NDI Mode, the **USB output will be disabled**, this is by design.



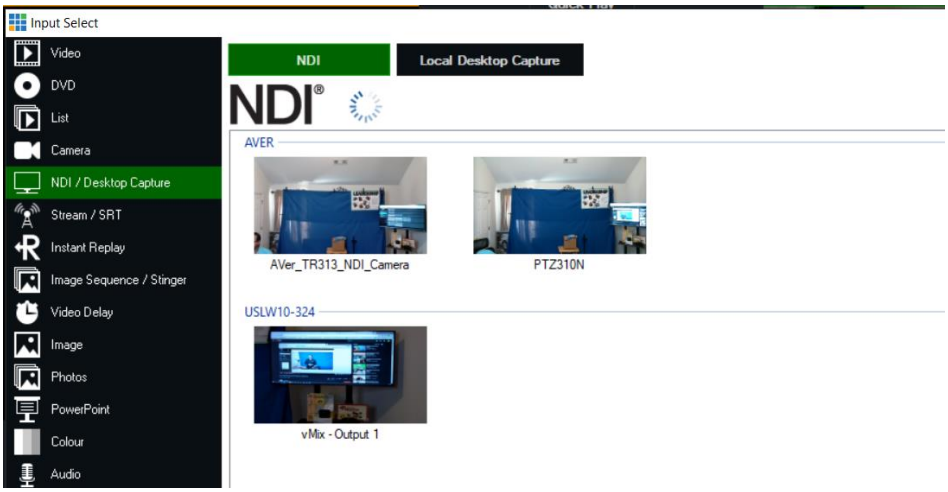


TR3xx/TR3xxV2 (NDI) / Desktop Connection

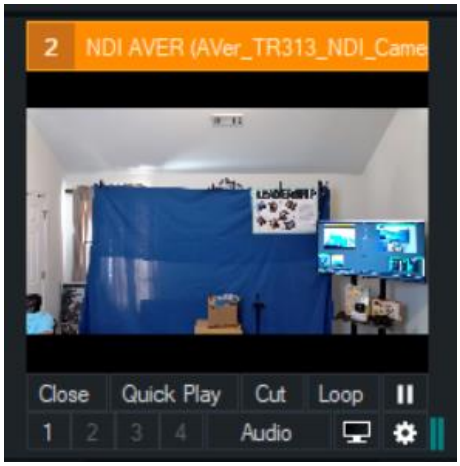
2. Next, go to vMix and select “Add Input”, located in the lower left of the display, it will open the “Input Select” window.



3. Next, select “NDI / Desktop Capture” setting, you should see a selection for AVER-TR313 and the live video camera capture.



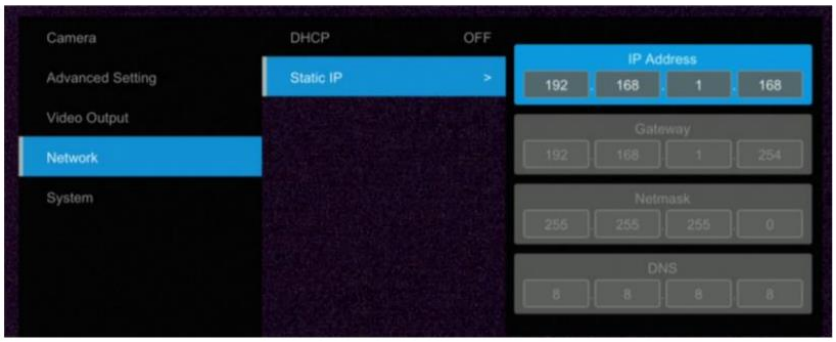
4. Next, select the AVER-TR313 NDI device and “OK” at the bottom of the screen.
   ***Note:** The Number field should be assigned/incremented automatically when this happens.
5. You should now have a new NDI AVER video Input assigned to vMix as a source.



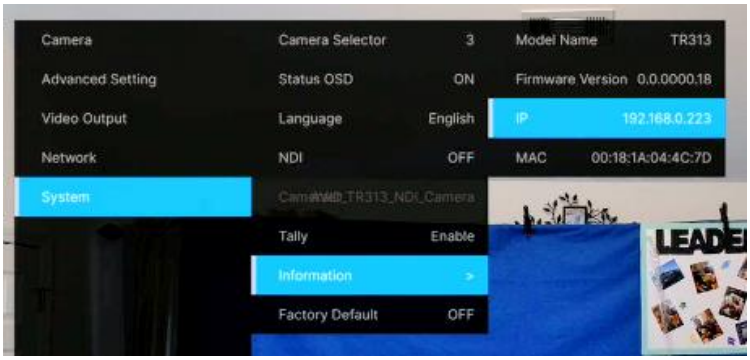
TR3xx/TR3xxV2 Camera RTSP STREAMING to the vMix system

1. Connect the TR313 camera via Network RJ45 connection; verify IP address of Camera to connect via Web browser. Locate the remote, select the “Menu” icon on the remote and navigate to the “Network->DHCP->” setting, verify it is set to DHCP “On” to grab an available IP address. If you are reserving IP addresses, verify it is set to “OFF” and that the correct IP address has been set.

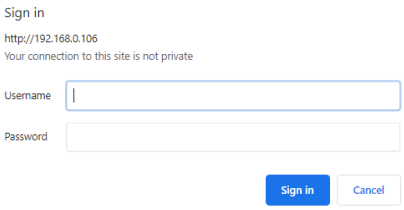
   ***Note:** The DEFAULT IP address of the camera is set to **192.168.1.168**,
   and is set to “DHCP – OFF” by default.



If using **DHCP-ON**, you would then go to “System→Information→IP to see what IP address was assigned to the camera.

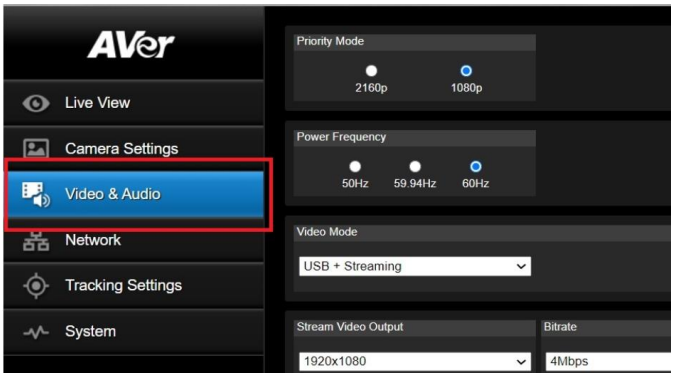


2. Once you have the IP address setup, type the IP address in your Chrome browser (Setup on same subnet) and you should now see the login to the TR313 camera shown below.

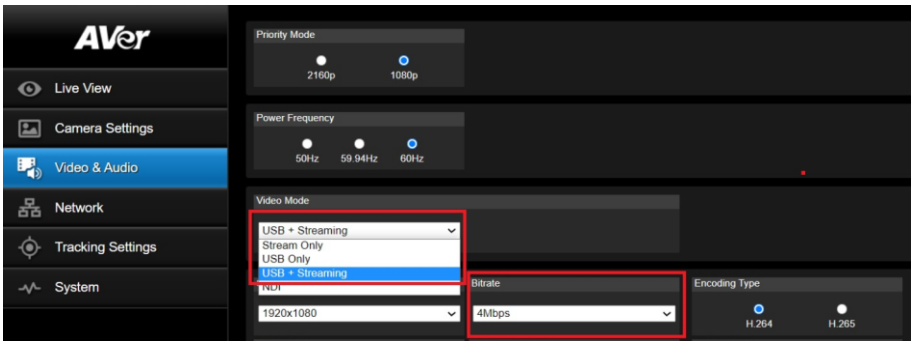


3. The default Username/Password is “*admin* / *admin*”. ***Note:** If this is the first time accessing the TR313 camera via the Web login it will ask you to change the Username/Password. Please write down the NEW credentials.

4. Next, you should now see the main login screen with a “Live View” of the TR Camera.



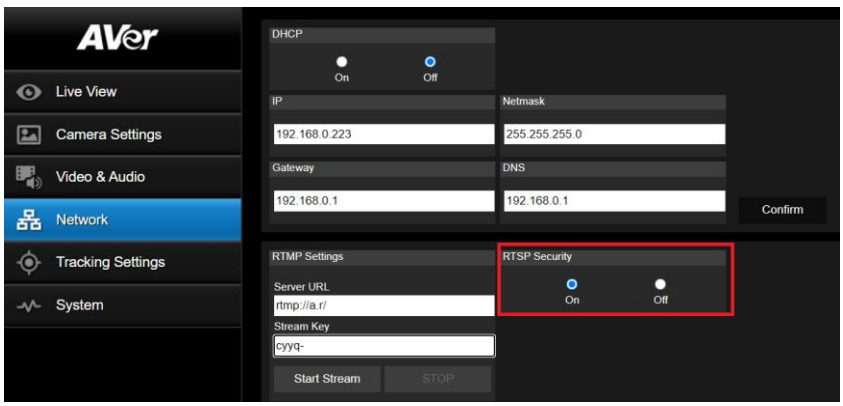
5. Next, select the *Video & Audio* setting, verify that you have either “Stream Only” selected or “USB + Streaming” selected. Select your Stream Video Output, Bitrate, Framerate, Encoding, etc.



***Note:** If using the H.265 Encoder, make sure you have the H.265 Decoder installed on the receiver end.

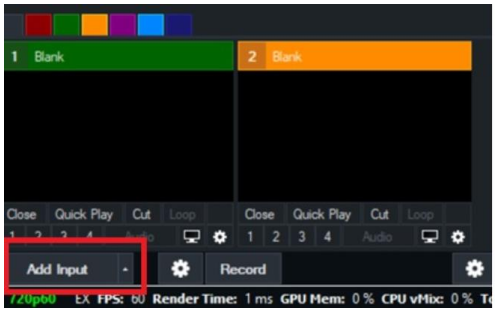
Video Standard->	Stream Only (Various)	USB Only (Various)	USB + Streaming (Various)	NDI (1080p/60)
SDI Output	✓	✓	✓	✓
HDMI Output	✓	✓	✓	✓
USB Output	x	✓	✓	x
RTSP Output	✓	x	✓	✓

6. Next, select the “*Network*” setting, set the “RTSP Security” to either “On” or “Off”, depending on how you configure the security of the Stream on the network to be accessed.

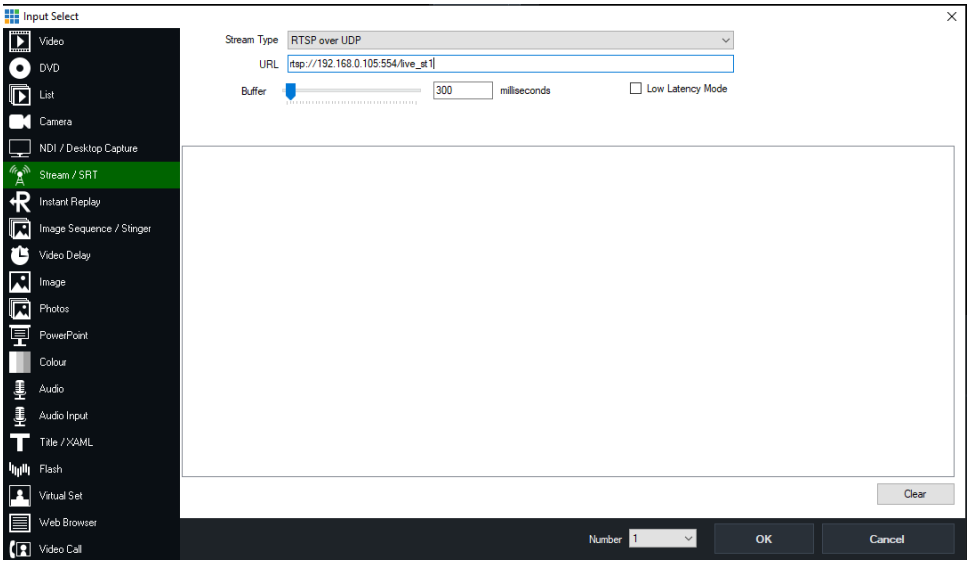


TR3xx/TR3xxV2 Camera RTSP STREAMING to the vMix system (continued)

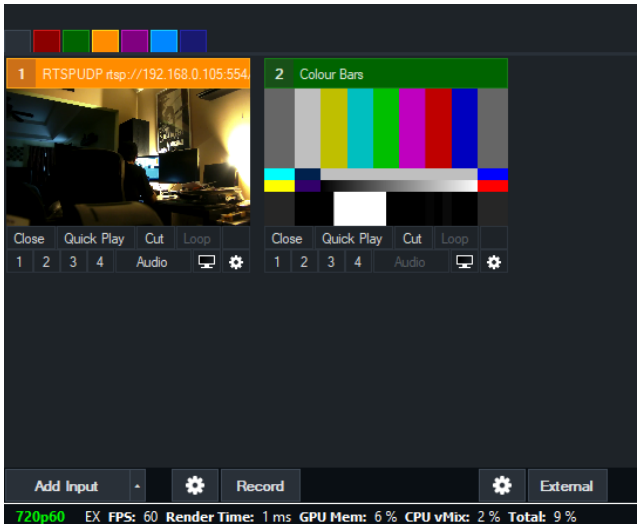
7. Next, go to vMix and select "*Add Input*", located in the lower left of the display, it will open the "Input Select" window.



8. Next, select the "*Stream / SRT*" setting, where the URL setting is type in the following syntax for the TR313 RTSP feed,
   "rtsp://Camera IP:554/live_st1", where Camera IP is the actual IP address of the camera.

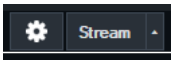


9. Next, select "OK", you should now be seeing camera video on your vMix display streaming from the TR313 camera.

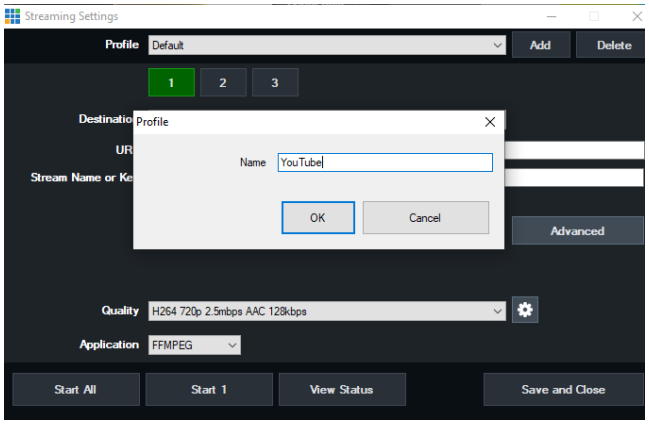


Streaming RTMP Output from vMix system

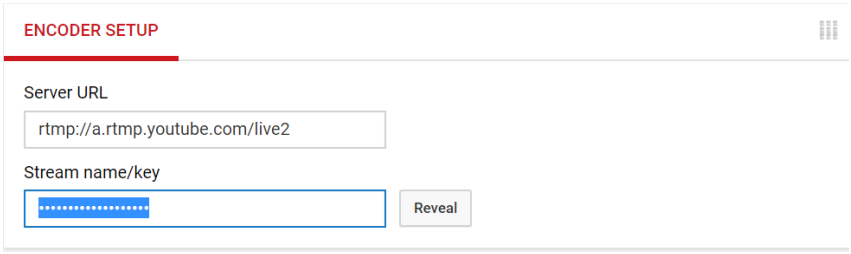
To connect to a streaming service like YouTube, Vimeo, Twitch, Facebook, etc., from vMix, do the following steps.

1. In vMix select the gear icon located next to "*Stream*" 

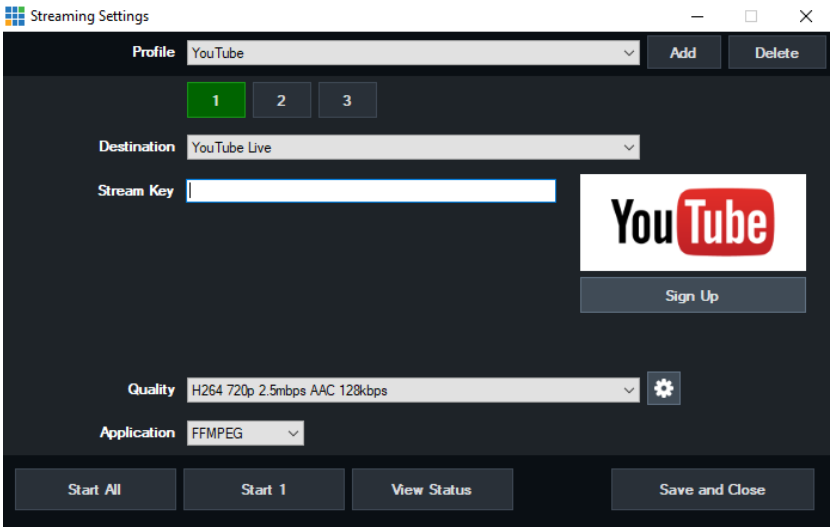
. Select "*Add*" at the top of the window, give it a name, then select "OK".



2. Next, select the "*Destination*" you want to stream to, in this example we are using YouTube Live.
3. Next, you will need your YouTube "Stream Key" to complete the process, go to your account and find the "Encoder Setup" information, copy the "Stream name/key" information. You may have to switch to "Classic view" to find it quicker.



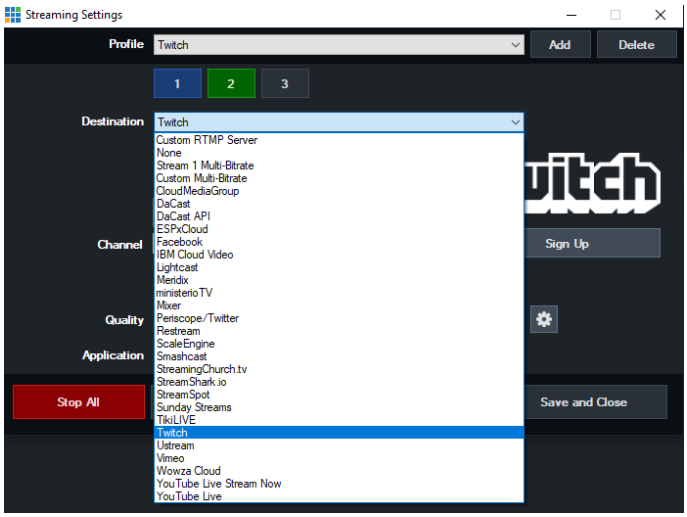
4. Next, go to the vMix Stream Key selection and paste that information into the space provided.



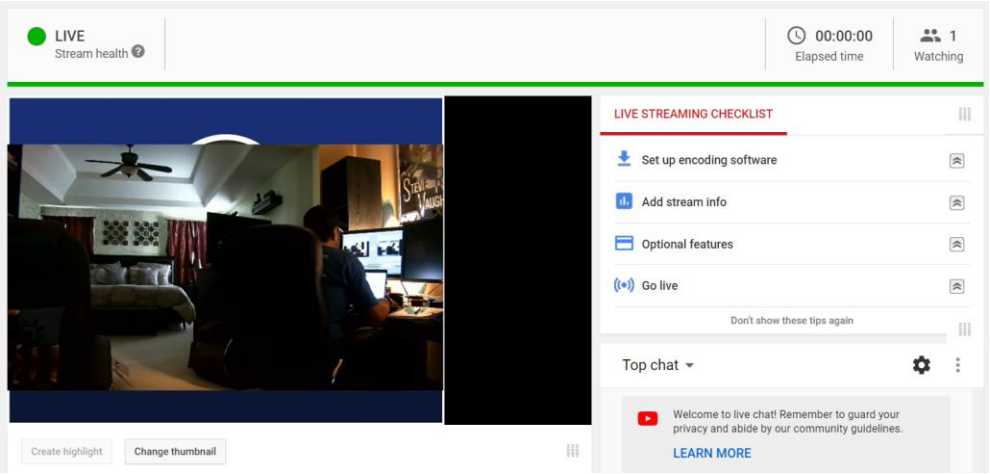
Streaming RTMP Output from vMix system (continued)

5. Next, select “OK”, then select “Stream” and it should change color, from grey to orange, then red.

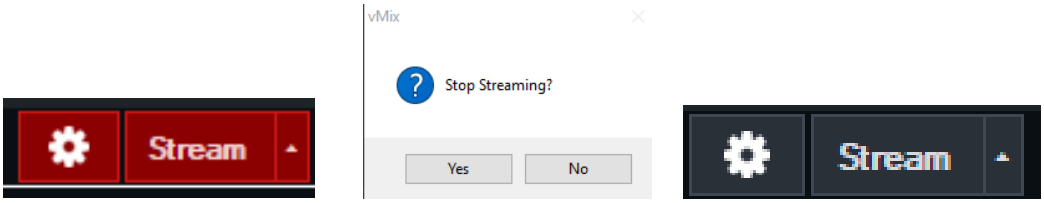
6. You can select more streams like Facebook, StreamingChurch.tv, Twitch, etc. the process would be the same way.



7. To verify, go to your YouTube Live Dashboard and verify the video feed from vMix.

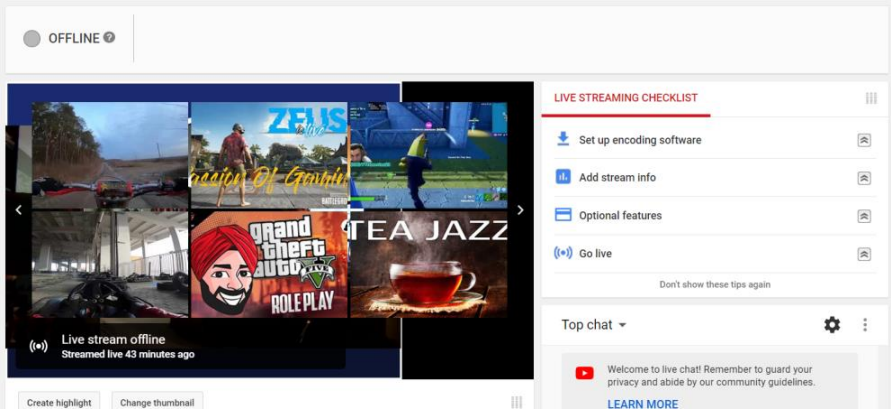


8. To end the streaming feed from vMix, select “Stream”, another window will pop up, select “Yes” to stop streaming, the indicator will turn back to grey.



Streaming RTMP Output from vMix system (continued)

9. To verify on YouTube, go back to your YouTube Live Dashboard, it should now be displaying “OFFLINE”.



10. This concludes the AVer TR3xx/TR3xV2 series Camera integration within the vMix Software.

Check the AVer Pro-AV website for any additional support documentation.

https://www.averusa.com/pro-av/support/