

# AVer TR320/530, PTZ310/330/N, and New TR311/TR333

# **Camera Integration with Microsoft Teams and Skype Platform**

#### Integrating the New TR, PTZ and TR Cameras with Microsoft Teams and Skype (October 2020)

**AVer Pro-AV** has high quality image Cameras (TR310/311/311HN/313/333, TR320/530 and PTZ310/330) that will integrate with the Microsoft Teams and Skype workflows for peak performance and ease of use. We will show the configuration process for the New TR, PTZ and TR Camera lines and Microsoft Teams/Skype environment.

Microsoft Teams has enterprise level security, compliance, and manageability as with Office 365, many built in apps, combines instant messaging, video conferencing, calling, and document collaboration. Skype for Business will be replaced with Teams at or around July 31, 2021.
Microsoft Skype is typically used to make free video and voice one-to-one and group calls, send instant messaging and share files with other people on Skype. You can use Skype on your mobile, computer or tablet.

#### **AVer Cameras with Microsoft products**

The workflow from the AVer cameras is seamless; there are three main methods to configuring the capture device depending on the environment. We will discuss each environment:

- 1. SDI / HDMI
- 2. USB
- 3. RTSP (Streaming)

## AVer PTZ310/330/N Camera Setup

The AVer PTZ310/330(N) and TR320/530 cameras have various video output capabilities; here is a brief overview of each.











**Package Contents** 



Overview



(1) Camera lens (2) IR sensor (3) Power indicator (4) Kensington lock



(6) RS232 port (7) RS422 port (8) Audio IN



(9) micro-USB port (10) HDMI port (11) 3G-SDI port (12) DC Power jack

#### TR 320/530 Camera



## TR 320/530 Camera (Device connections)



3

## TR310 / 311 / 311HN / 313 / 333 Camera





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

\*Line input level: 1Vrms (max.).

\*Mic input level: 50mVrms (max.); Supplied voltage: 2.5V

\*1: This feature(Tally) is not supported on TR310.

\*2: This feature(3G-SDI) is not supported on TR310&TR311HN.



## AVer PTZ 310/330/N Camera integration with Microsoft Teams and Skype

The following are the steps needed to configure the AVer Camera with the Microsoft platform. The PTZ camera has various outputs for video; Microsoft can support any one of these video connections.

They are:

- HDMI
- 3G-SDI (Coaxial connection, SMPTE 424M)
- USB (Micro USB connection on Camera)
- IP Network RTMP (RJ45 Gbit network connection)

We can combine the outputs into 2 main groups of emphasis:

- 1. HDMI/SDI/USB connection type
- 2. IP/Streaming (RTMP) connection type

#### PTZ 310/330 Camera HDMI/SDI/USB Output to Teams

1. Type the IP address of the camera in your Chrome browser (Setup on same subnet) and you should now see the login to the PTZ310/330 camera shown below.

Sign in					
http://192.16 Your connec		site is not	t private		
Username					
Password					
				Sign in	Cancel

- The default Username/password is "administrator" or "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.
- 3. Next, you should now see the main login screen with a "Live View" of the PTZ Camera.



## AVer PTZ 310/330/N Camera integration with Microsoft Teams and Skype

4. Next, after selecting the *Video & Audio* setting, verify the Video Mode you are in. In this setup you should *NOT* be in NDI and *Stream Only* Video Mode, as it will disable the USB output.

**\*Note:** Some servers require a minimum bitrate of 2.5Mbps for their environment.

AVer	Video Mode		
Live View	Stream Only USB Only USB + Streaming NDI		
Camera Settings	Stream Video Output Bitrate	coding Type	_
Video & Audio	1920x1080     ▼     16Mbps	El 264	MJPEG
器 Network	30 V	O VBR	O CBR
Advanced Settings	16Mbps 32Mbps Audio Input Type Audio Volume 5	_	_
-v- System	Line in MIC in 0 10		
	Encoding Type Sampling Rate		
	0 0 0 AAC 0.711 48K ▼		

The PTZ Camera will have an SDI/HDMI video output in ALL modes.

	Stream Only	USB Only	USB + Streaming	NDI
Video Standard->	(Various)	(Various)	(Various)	(1080p/60)
SDI Output	<b>√</b>	✓	$\checkmark$	✓
HDMI Output	<b>√</b>	✓	$\checkmark$	✓
USB Output	x	✓	$\checkmark$	X
RTSP Output	$\checkmark$	X	$\checkmark$	✓

## PTZ310/330 Camera HDMI/SDI/USB connection to Microsoft

When connecting the camera to a Microsoft Teams/Skype platform the PTZ310/330 provides HDMI, SDI, and USB output standards. If you are using a desktop with a video capture card, at times they can have a direct HDMI input connection with high performance data transfer.

If you are using a laptop to capture video, you can use a direct USB connection, a portable HDMI to USB dongle like the AVer Media BU110, or a portable SDI to USB dongle like the AVer Media BU111 which provides a high speed, high quality connection.

#### **Two Likely Scenarios:**

- HDMI or USB direct connection from PTZ camera
- HDMI / SDI connection using an AVer Media converter to USB connection



## **Microsoft OS Device Manager**

Once the AVer PTZ310/330 Camera has been connected to a USB port on the PC using the USB to Micro-USB cable provided, verify that Windows does see the camera in the "Device Manager" window under Cameras.

EDevice Manager     File Action View Help     Im

#### **Microsoft Teams Desktop App**

Settings

- One of the very first things to check is if Microsoft Teams has permission to access your camera and microphone. There are instances where the App will not detect your camera if left disabled in your PC's settings.
- 2. Press the *Windows Key* and *I* key together. This will bring up the *Windows Settings* page.



- 3. Next, look for the *Privacy* setting and select it.
- 4. Next, from the left sidebar, under App permissions click on Camera.



#### **Microsoft Teams Desktop App (continued)**

- 5. Next, on the *Camera* page, you want to make sure the option *Allow Apps to access camera* is turned *On*.
- 6. You also want to make sure that under *Choose which app can access your camera,* that *Microsoft Teams* is turned *On.*
- 7. Now Microsoft Teams will appear here in this list if you have the Microsoft Teams desktop app installed.

#### **Microsoft Teams Web App**

If you are using your web browser instead of using Microsoft Teams Windows app, you will need to make sure that the site has given permission to use your camera.

- 1. Go to Microsoft Teams using your search browser (Google Chrome or Mozilla Firefox).
- 2. Depending on your search browser, proceed with its appropriate steps:

#### **Google Chrome**

Click on the lock icon in the search URL box (at the top) as shown below.



3. Next, click Site Settings.



#### **Microsoft Teams Web App (continued)**

4. You will be brought to your Google Chrome settings where under *Permissions* you will want to make sure that *Camera* is set to *Allow* rather than *Block* or *Ask*.

Settings	Q_ Search settings	
🚊 People	https://teams.microsoft.com	
🗐 Autofill		
Appearance	289 MB - 15 cookies	Clear data
्, Search engine		
Default browser		
(1) On startup	Q Location	Block (default) *
Advanced	III Camera	Ask (default)
	Microphone	Ask (default) Allow Block
Eanguages		
Downloads	🙌 Motion sensors	Allow (default) 👻
🖶 Printing	A Notifications	Block (default) 👻
T Accessibility	<> JavaScript	Allow (default) *
🔧 System	🎓 Flash	Block (default) 👻
Reset and clean up	🖪 Images	Allow (default) *
Extensions	Pop-ups and redirects	Block (default)
About Chrome		
	Biock if site shows intrusive or mislearling and	Block (default) 👻

*Ask* is a secure option if you do not want your camera turned on without being prompted every time you access Microsoft Teams. *Block* prevents Microsoft Teams from accessing or even detecting your camera.

**Mozilla Firefox:** Click on the Firefox menu button  $\equiv$  Mozilla Firefox menu and select **Options**.

- 1. Next, click **Privacy & Security** from the left menu.
- 2. Then scroll down to the **Permissions** section and click the **Settings** button for the **Camera** option.
- Now enter the website URL in the search field for the site that you want to access your camera. In our case, we will need to enter https://teams.microsoft.com/ to allow Microsoft Teams access to our camera. Hit the Enter key.

Firefox makes it a secure and straightforward way to handle the websites that you want to provide access and the ones to not. You can remove it at any time by selecting it from the list and clicking the **Remove Website**. Finally don't forget to select the **Save changes** button!

4. Try testing to see if your camera works after enabling the camera access for the Microsoft Teams web app.

#### **IP/STREAMING (RTMP)**

#### PTZ Camera RTMP Output to Microsoft Teams using Microsoft Stream

Microsoft Stream accepts live feeds from a variety of different encoders that output RTMP or RTMPS.

Below we will cover how to configure the PTZ camera manually for a Live event.

Connect the PTZ330 camera via RJ45 Network Cat5E (or better) connection; verify IP address of Camera in order to connect via Web browser. If IP address is not known, locate the remote, select the "Menu" icon and navigate to the "Network->DHCP->" setting, verify DHCP is set to "On" in order 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 Network > DHCP > On.

Camera Video Output				
Network	DHCP	On	Off	
Advanced Setting	Static IP		On	
System				

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

Camera					
Video Output					
Network					
Advanced Setting					
System	Camera Selector				
	Status OSD	On			
	Language	English			
	Information		Model Name	PTZ310	
	Factory Default		Version	0.0.0000.32	
			IP Address	192.168.0.100	
			MAC	50:33:8b:9a:94:38	

 Another way to find the Camera IP address (On same Subnet) is to use the AVer IPCam Utility to find the camera. AVer software can be found here:

https://www.aver.com/download-center.

twork Devic	e		-	Login				
tel(R) Ether	net Connection (	6) I219-V 🔹	Search	User	ID	Passw	ord	
								_
twork Cattie	a loste (Toma Ca		nce   Import/Export	Curfe I				
earch Resul		cong   Mancena	nce   import/Export	conng				
Select A	a							
No.	Status	Progress	Model Name	Device Name	FW version	IPv4 Address	MAC Address	IPv6
□1 □2	Working Working		Tracking Camera PTZ330	Tracking Camera PTZ330	0.0.1000.41 0.0.0000.55	10.10.0.165:80 10.10.0.46:80	00:18:1a:04:b5:4d 00:18:1a:04:a4:30	[]:80 []:80
<								3
iettings								
Device Nam	ne:			Start IP Address:		• •		
C DHCP				End IP Address:				
Static IF	,			Subnet Mask:				
				Gateway:				
	ch will start after	settings change	dt	Primary DNS:				
"Auto sear								

3. 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.

Sign in				
http://192.1 Your connec	58.0.106 tion to this site is r	not private		
Usemame				
Password				
			Sign in	Cancel

- 4. The default Username/password is "administrator" or "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.
- 5. Next, you should now see the main login screen with a "Live View" of the PTZ Camera.

<b>AV</b> er		10
O Live View		
Camera Settings		BOR ST
Video & Audio		
Retwork		
Advanced Settings		
-w- System	Camera Control	Preset
		[AF]

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.

AVer	Video Mode	• •	
O Live View	Stream Only USB Only	USB + Streaming NDI	
Camera Settings	Stream Video Output	Bitrate	Encoding Type
Video & Audio	1920x1080 Framerate	Teleforence for the second sec	H 264 MJPEG
Retwork	30	2Mbps 4Mbps 8Mbps	O ● VBR CBR
Advanced Settings	Audio Input Type	16Mbps 32Mbps Audio Volume 5	
-vv- System	● O Line In MIC In	0 10	
	Encoding Type	Sampling Rate	
	AAC 6.711	48K <b>v</b>	

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

## **Recommended settings from Microsoft**

#### **Ingest protocols**

• Single bitrate RTMPS or RTMP

#### Video format

- Codec: H.264
- Profile: High (Level 4.0)
- Bitrate: Up to 5Mbps (5000 kbps)
- Strict Constant Bitrate (CBR)
- Keyframe/GOP: 2 seconds
  - There must be an IDR frame at the beginning of each GOP
  - Frame Rate: 29.97 or 30fps
  - Resolution: 1280 x 720 (720P)
  - Interlace Mode: Progressive
- Pixel Aspect Ratio (PAR): Square

#### Audio format

- Codec: AAC (LC)
- Bitrate: 192 kbps
- Sample Rate: 48 kHz or 44.1 kHz (recommend 48 kHz)

#### **Playback requirements**

• Both an audio and video stream must be present in order to playback content in Microsoft Stream.

## **Configuration tips**

- Whenever possible, use a hardwired internet connection.
- A good rule of thumb when determining bandwidth requirements is to double the streaming bitrates. While this is not a mandatory requirement, it will help mitigate the impact of network congestion.
- When using software based encoders, close any unnecessary programs.
- Don't change your encoder configuration after it has started pushing. It has negative effects on the event and can cause the event to be unstable. If you want to do this before the event has started, you must disconnect using the producer controls in Microsoft Stream and start setup again.
- If the encoder is disconnected during the live event, reconnect it keeping the same timestamps of continuing process. Note that any discontinuity may cause audio or video issues on certain browsers and devices.
- Give yourself ample time to setup your event. For high scale events, it's recommended to start the setup an hour before your event.

#### **IP/STREAMING (RTMP)**

6. Next, select the *Network* setting; this is where you will enter the RTMP *Server URL* and *Stream Key*. *RTSP Security* to either "On" or "Off" depending if you want encryption when using *RTSP*.

<b>AV</b> er	DHCP		
O Live View	On Off	Netmask	
Camera Settings	192.168.0.107	255.255.255.0	
Video & Audio	Gateway	DNS	
<b>몲</b> Network	192.168.0.1	192.168.0.1	Confirm
Advanced Settings	RTMP Settings	RTSP Security	
Advanced Settings	RTMP Settings Server URL	RTSP Security On Off	
		• 0	
	Server URL	• 0	

\*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.

 Next, go to your Microsoft Stream account and login to obtain the Server URL and Stream name/key. Once obtained, you will copy that information and paste it into the PTZ Camera Server URL and Stream Key fields.

Before you can go live you'll n	ed to connect your external encoder. Learn more
elect encoder	
Configure manually	~
Haivision Makito X Encoder	^
Switcher Studio	
Wirecast	
Wirecast S	y npu7ksujj2x63z4f-use22.channel.media.azure.net:1935/live/d2 Copy

#### **IP/STREAMING (RTMP)**

8. Next, go back to the PTZ WebLogin and select *Start Stream*; this will begin the stream to Microsoft Stream. You should see a *Streaming* icon appear to indicate the process has started.



9. To verify, go to Microsoft Stream and verify you are able to see the preview of the video feed from the PTZ330 camera in **Encoder preview**.



- 10. To end the streaming feed from the PTZ camera, go to the WebLogin and select "STOP".
- 11. To verify, go back to your Microsoft Stream preview, it should now be displaying "nothing".

## **Microsoft Teams configuration**

In a Teams live event, you can stream video from an external encoder to Microsoft Stream if the encoder supports Real-Time Messaging Protocol (RTMP).

- 1. In Teams, select Calendar Meetings button, then your live event, and Join.
- 2. Until you start the event, you'll see the title, date, and time in the **Encoder preview** window.
- 3. Click **Start setup**. **\*Note:** Setup may take some time to complete.
- 4. Once you see the message **Ready to connect**, go to the **Settings** tab and copy the Server ingest URL into the encoder (PTZ Camera) to start ingesting.
- 5. Once you start streaming from the PTZ camera to *Stream* using the ingest URL, you should see the preview of the video in **Encoder Preview.**
- 6. Once satisfied with the setup and video preview, click **Start event**. Once the live event starts, the video from the PTZ camera is broadcast to the event.
- 7. To end the event, click **End event.** \*Note: Once the live event ends, it cannot be restarted.
- 8. This concludes the AVer PTZ330 Camera Streaming with a Microsoft setup.

#### AVer TR 320/530 Camera integration with Microsoft Teams and Skype

Here are the steps to configure the AVer Camera while using the Microsoft Teams platform. The TR camera has various outputs for video and an audio Line-in; Microsoft can support any one of these audio/video connections.

They are:

- HDMI
- 3G-SDI (x2) (Coaxial connection, SMPTE 424M)
- IP Network RTMP (RJ45 network connection)
- Audio Line-In (Use with Powered Mic or Audio Mixer, 1vrms)

We can combine the outputs into 2 main groups of emphasis:

- 1. HDMI/SDI connection type
- 2. IP/Streaming (RTMP) connection type

## TR530/320 Camera HDMI/SDI Output to Microsoft Teams

If you are using a laptop to capture video, a portable HDMI to USB dongle like the AVer Media BU110 and BU111 provides a high speed, high quality connection.

 Connect the TR530 camera via RJ45 Network Cat5E (or better) cable; verify IP address of Camera in order to connect via Web browser. If IP address is not known, locate the remote, select the "Menu" icon and navigate to the "Camera->DHCP->" setting, verify DHCP is set to "On" in order 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.

Tracking	Off			
Camera	>	Camera ID		
Video Format	>	DHCP	> DHCP 10.100.93.34 On On	
Advanced Setting	>		Off	
Preset	>	PTZ Camera		
Language	>			
Profile	>			
Factory Default	>			
Information	>			
Display	>			

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

Tracking	Off	
Camera	>	
Video Format	>	
Advanced Setting	>	
Preset	>	
Language	>	
Profile	>	
Factory Default	>	
Information	> Firm	0.0.1000.38
Display	> IP A	10.100.93.34
	MAG	

- Another way to find the Camera IP address (On same Subnet) is to use the AVer IPCam Utility to find the camera. AVer software can be found here: <u>https://www.aver.com/download-center.</u>
- 3. Next, type the IP address in your Chrome browser (Setup on same subnet) and you should now see a login to the TR320/530 camera shown below.

	×
Password	
Login	

4. The default password is "admin".

## TR530/320 Camera HDMI/SDI/USB Output to Microsoft Teams

5. Next, you should now see the main login screen with a "Live View" of the TR Camera.



6. Next, select the settings gearbox **(a)**, then select **Video & Audio setting**, this is

where you can select the Video Output of the TR320/530.

	Ner		
	<b>O</b>	Video Output	Audio Input
PTZ	PTZ camera >	3G-SDI 1/ HDMI:PTZ Camera 1080P/60	Audio line in format
r	Video & Audio setting	3G-SDI 2 Panoramic - 1080P/60 🗹	G711 AAC
몲	Network setting	IP Streaming Mode	
	Tracking setting	Mode 1	Mode 2
	Preset setting	Mode 1	
r.	Advanced setting	PTZ Panoramic	
1	Profile setting	Select PTZ or Panoramic for streaming	
	System setting	PTZ camera	
Ø	Factory default	Resolution/fps         Toda/rod         Toda/rod         Toda/rod         Toda/rod         Toda/rod         Hourso         Hourso	
			Save Cancel

7. Next, selecting 3G-SDI / HDMI will open the following window, allowing you to choose which video standard or the ability to set it to *Auto*.

3G-S[	DI 1/ HDMI:PTZ Camera	×
	Auto	
	1080P/60	
	1080P/50	
	1080i/50	
	1080P/30	
	1080i/60	
	720P/60	
		Save

\*Note: Only the standards listed are currently available, no 29.97/59.94 video selection.

## TR320/530 Camera HDMI/SDI connection to Microsoft Teams

The TR camera does not offer a direct USB output, like the PTZ camera does. If the PC you are using happens to have an HDMI Input connection, you can direct connect to it. If there is no HDMI Input and you are using a laptop to capture video, a portable HDMI/SDI to USB dongle like the AVer Media BU110 and BU111 provides a high speed, high quality connection.

#### Likely Scenario:

• HDMI / SDI connection using an AVer Media converter to USB



## **Microsoft OS Device Manager**

Once the AVer TR320/530 Camera has been connected to a USB port on the PC using the HDMI to USB converter, verify that Windows does see the camera in the "Device Manager" window under Cameras. Depending on converter used, in this case the "AVerMedia ExtremeCap UVC".



#### Microsoft Teams Desktop App

- One of the very first things to check is if Microsoft Teams has permission to access your camera and microphone. There are instances where the App will not detect your camera if left disabled in your PC's settings.
- 2. Press the *Windows Key* and *I* key together. This will bring up the *Windows Settings* page.



- 3. Next, look for the *Privacy* setting and select it.
- 4. Next, from the left sidebar, under *App permissions* click on *Camera*.

← Settings	×
û Home	Camera
Find a setting	Allow access to the camera on this device
Privacy	If you allow access, people using this device will be able to choose if their apps have camera access by using the settings on this page. Denying access blocks Microsoft Store apps and most desktop apps from accessing the camera. It does not block
Windows permissions	Windows Hello.
H Activity history	Camera access for this device is on Change
App permissions	
ሉ Location	Allow apps to access your camera
<ul> <li>Camera</li> </ul>	If you allow access, you can choose which apps can access your camera by using the settings on this page. Denying access blocks apps from accessing your camera. It does not block Windows
Microphone	Hello.
Voice activation	On On
Notifications	Some desktop apps may still be able to access your camera when settings on this page are off. Find out why
AE Account info	Choose which Microsoft Store apps can access
g <sup>R</sup> Contacts	your camera

- 5. Next, on the *Camera* page, you want to make sure the option *Allow Apps to access camera* is turned *On*.
- 6. You also want to make sure that under *Choose which app can access your camera,* that *Microsoft Teams* is turned *On.*
- 7. Now Microsoft Teams will appear here in this list if you have the Microsoft Teams desktop app installed.

## Microsoft Teams Web App

If you are using your web browser instead of using Microsoft Teams Windows app, you will need to make sure that the site has given permission to use your camera.

- 1. Go to Microsoft Teams using your search browser (Google Chrome or Mozilla Firefox).
- 2. Depending on your search browser, proceed with its appropriate steps:

#### **Google Chrome**

You need to click on the lock icon in the search URL box (at the top) as shown below.

$\leftarrow \   \rightarrow $	с (	eteams.microsoft.com/_	#/calendarv2?viewDa	ate=2019-12-21T16:00:00.000Z		
	Mic	rosoft Teams			S	earch or type a comm
 Activity	Ē	Calendar				
Chat	(‡)	Today < > Dec	ember 2019 $^{\smallsetminus}$			
Teams		<b>23</b> Monday		<b>24</b> Tuesday		<b>25</b> Wednesday
assignments	8 AM					
Calendar	9 AM					

3. Next, click *Site Settings*.

$\leftarrow \   \rightarrow $	с (	teams.microsoft.com/_#/	′calendarv2?viewDate	=2019-12-21T16:00:00.000Z	
	Mi			S	earch or type a command
Activity	e	Your information (for example, p card numbers) is private when it Learn more			
Chat		🕵 Location	Block (default) 👻		
tiii Tearns		h Notifications	Block (default) 👻	<b>4</b> :sday	<b>25</b> Wednesday
assignments	8 AM	Certificate (Valid)			
	9 AM	🚯 Cookies (43 in use)			
Calendar		🔅 Site settings			
<b>C</b> alls	10 AM				
Files					
	11 AM				

4. You will be brought to your Google Chrome settings where under *Permissions* you will want to make sure that *Camera* is set to *Allow* rather than *Block* or *Ask*.

Settings	Q. Search settings	
🙏 People	https://teams.microsoft.com	
🗊 Autofil		
Appearance	289 MB · 15 cookies	Clear data
Q, Search engine		
Default browser		
( <sup>1</sup> ) On startup	Q Location	Block (default) -
Advanced A		Ask (default)
	J Microphone	Ask (default) Allow Block
Eanguages	00 Motion sensors	Allow (default)
🖶 Printing	Notifications	Block (default) -
1 Accessibility	<> JavaScript	Allow (default)
System	🏂 Flash	Block (default) 👻
<ol> <li>Reset and clean up</li> </ol>	📼 Images	Allow (default) 👻
Extensions	Pop-ups and redirects	Block (default) 👻
About Chrome		Book (defeeld)

*Ask* is a secure option if you do not want your camera turned on without being prompted every time you access Microsoft Teams. *Block* prevents Microsoft Teams from accessing or even detecting your camera.

### **Microsoft Teams Web App (continued)**

#### **Mozilla Firefox**

You need to click on the Firefox menu button  $\exists$  Mozilla Firefox menu and select **Options**.

- 1. Next, click **Privacy & Security** from the left menu.
- 2. Then scroll down to the **Permissions** section and click the **Settings**... button for the **Camera** option.
- Now enter the website URL in the search field for the site that you want to access your camera. In our case, we will need to enter https://teams.microsoft.com/ to allow Microsoft Teams access to our camera. Hit the Enter key.

Firefox makes it a secure and straightforward way to handle the websites that you want to provide access and the ones to not. You can remove it at any time by selecting it from the list and clicking the **Remove Website**. Finally don't forget to select the **Save changes** button!

4. Try testing to see if your camera works after enabling the camera access for Microsoft Teams web app.

## TR320/530 Camera RTMP Output to Microsoft Teams using Microsoft Stream

Microsoft Stream accepts live feeds from a variety of different encoders that output RTMP or RTMPS.

Below we will cover how to configure the PTZ camera manually for a Live event.

 Connect the TR530 camera via RJ45 Network Cat5E (or better) cable; verify IP address of Camera in order to connect via Web browser. If IP address is not known, locate the remote, select the "Menu" icon and navigate to the "Camera->DHCP->" setting, verify DHCP is set to "On" in order 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.

Tracking	Off				
Camera	>	Camera ID			
Video Format	>	DHCP	> DHCI	On	On
Advanced Setting	>	Static IP			Off
Preset	>	PTZ Camera			
Language	>				
Profile	>				
Factory Default	>				
Information	>				
Display	>				

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

Tracking	Off	
Camera	>	
Video Format	>	
Advanced Setting	>	
Preset	>	
Language	>	
Profile	>	
Factory Default	>	
Information	> Firmware Version	0.0.1000.38
Display	> IP Address	10.100.93.34
	MAC	

- Another way to find the Camera IP address (On same Subnet) is to use the AVer IPCam Utility to find the camera. AVer software can be found here: https://www.aver.com/download-center.
- 3. Next, type the IP address in your Chrome browser (Setup on same subnet) and you should now see a login to the TR320/530 camera shown below.



4. The default password is "admin".

## TR320/530 Camera RTMP Output to Microsoft Teams using Microsoft Stream

5. Next, you should now see the main login screen with a "Live View" of the PTZ Camera.



6. Next, select the settings gearbox **example**, then select *Video & Audio setting*, this is

where you can select Video Output, Audio, and the type of Streaming mode to use and Streaming video standard. **\*Note:** This *IP Streaming Mode* is used for RTSP and RTMP Streaming.

<b>AV</b> er		
<b>O</b> 🔅	Video Output Audio Input	
PTZ PTZ camera >	3G-SDI 1/ HDMI:PTZ Camera 1080P/60	
Video & Audio setting	3G-SDI 2 Panoramic - 1080P/60 🗹 G711 AAC	
器 Network setting	IP Streaming Mode	
Tracking setting	Mode 1 Mode 2	
Preset setting	Mode 1	
R Advanced setting	PTZ Panoramic	
Frofile setting	Select PTZ or Panoramic for streaming	
-v- System setting	PTZ camera	
Factory default	Resolution/fps Teaching Teachi	
	Save	Cancel

**Mode 1:** You will use either the PTZ Camera OR Panoramic Camera view for your stream with varying video selections.

**Mode 2:** There will be 2 simultaneous streams from PTZ and Panoramic views set to (1080p/30) with adjustable **bps** (bits per second) if selected.

	Mo	de 1	
Mode 2			
PTZ camera			
Resolution	1080P/30		
bps (Bits per second)	6.0M	3.0M	1.5M
Panoramic camera			
Resolution/fps	1080P/30		
bps (Bits per second)	6.0M	3.0M	1.5M

## **Recommended settings from Microsoft**

#### **Ingest protocols**

• Single bitrate RTMPS or RTMP

#### Video format

- Codec: H.264
- Profile: High (Level 4.0)
- Bitrate: Up to 5Mbps (5000 kbps)
- Strict Constant Bitrate (CBR)
- Keyframe/GOP: 2 seconds
  - There must be an IDR frame at the beginning of each GOP
  - Frame Rate: 29.97 or 30fps
  - Resolution: 1280 x 720 (720P)
  - Interlace Mode: Progressive
- Pixel Aspect Ratio (PAR): Square

#### Audio format

- Codec: AAC (LC)
- Bitrate: 192 kbps
- Sample Rate: 48 kHz or 44.1 kHz (recommend 48 kHz)

#### **Playback requirements**

• Both an audio and video stream must be present in order to playback content in Microsoft Stream.

## **Configuration tips**

- Whenever possible, use a hardwired internet connection.
- A good rule of thumb when determining bandwidth requirements is to double the streaming bitrates. While this is not a mandatory requirement, it will help mitigate the impact of network congestion.
- When using software based encoders, close any unnecessary programs.
- Don't change your encoder configuration after it has started pushing. It has negative effects on the event and can cause the event to be unstable. If you want to do this before the event has started, you must disconnect using the producer controls in Microsoft Stream and start setup again.
- If the encoder is disconnected during the live event, reconnect it keeping the same timestamps of continuing process. Note that any discontinuity may cause audio or video issues on certain browsers and devices.
- Give yourself ample time to setup your event. For high scale events, it's recommended to start the setup an hour before your event.

#### TR320/530 Camera RTMP Output to Microsoft Teams using Microsoft Stream

7. Next, select *Network Setting*. You should now see the following information displayed.

AVer			
•	Network		
PTZ PTZ camera >	DHCP enable	Netmask	
<ul> <li>Video &amp; Audio setting</li> <li>器 Network setting</li> </ul>	10	255 . 255 . 255 . 0	
· Tracking setting	Gateway	DNS	
Preset setting		10	Apply
R Advanced setting	RTMP Server (PTZ)		
Frofile setting	Server URL	Stream Key	
-vv- System setting	rtmp://a.rtmp		Connect
Factory default	RTSP (PTZ camera: rtsp://Camera IP:554/live_st	1; Panoramic camera: rtsp://Camera IP:8554/live_st2)	
	Password Confirmation		

Next, notice the *RTMP Server URL* selection, this is where you will "paste" the URL string from *Microsoft Stream* as well as the *Stream Key* from *Microsoft Stream*. \*Note: The RTMP Stream will use the *PTZ IP Stream Mode* output configuration.

RTMP Server (PTZ)		
Server URL	Stream Key	1
rtmp://a.rtmp.		Connect

9. Next, go to your Microsoft Stream account and login to obtain the *Server URL* and *Stream name/key*. Once obtained, you will copy that information and paste it into the TR Camera *Server URL* and *Stream Key* fields.



10. Next, to begin the Stream from the TR Camera, select *Connect*, you should see a red "Streaming" text appear, to indicate you are now streaming. This is where you would also "Disconnect" from the stream.



## TR320/530 Camera RTMP Output to Microsoft Teams using Microsoft Stream

11. To verify, go to Microsoft Stream and verify you can see the preview of the video feed from the TR320/530 camera in **Encoder preview**.



12. To end the streaming feed from the TR camera, go to the WebLogin and select "Disconnect".

13. To verify, go back to your Microsoft Stream preview, it should now be displaying "nothing".

#### **Microsoft Teams configuration**

In a Teams live event, you can stream video from an external encoder to Microsoft Stream if the encoder supports Real-Time Messaging Protocol (RTMP).

- 1. In Teams, select Calendar Meetings button, then your live event, and Join.
- 2. Until you start the event, you'll see the title, date, and time in the **Encoder preview** window.
- 3. Click **Start setup**. **\*Note:** Setup may take some time to complete.
- 4. Once you see the message **Ready to connect**, go to the **Settings** tab and copy the Server ingest URL into the encoder (TR Camera) to start ingesting.
- 5. Once you start streaming from the TR camera to *MS Stream* using the ingest URL, you should see the preview of the video in **Encoder Preview.**
- 6. Once satisfied with the setup and video preview, click **Start event**. Once the live event starts, the video from the TR camera is broadcast to the event.
- 7. To end the event, click **End event.** \*Note: Once the live event ends, it cannot be restarted.
- 8. This concludes the AVer TR320/530 Camera Streaming with a Microsoft setup.

## TR310/311/311HN/313/333 Camera integration with Microsoft Teams and Skype

The following are the steps needed to configure the AVer Camera with the Microsoft platform. The TR camera has various outputs for video; Microsoft can support any one of these video connections.

They are:

- HDMI
- 3G-SDI (Coaxial connection, SMPTE 424M)
- USB (Micro USB connection on Camera)
- IP Network RTMP (RJ45 Gbit network connection)

We can combine the outputs into 2 main groups of emphasis:

- 1. HDMI/SDI/USB connection type
- 2. IP/Streaming (RTMP) connection type

## TR 310/333 Camera HDMI / SDI / USB Output to Teams

1. Type the IP address of the camera in your Chrome browser (Setup on same subnet) and you should now see the login to the TR310/333 camera shown below.

Sign in				
http://192.16 Your connec	58.0.106 tion to this site	is not private		
Username	1			
Password				
			Sign in	Cancel

2. The default Username/password is "admin / admin".

\*Note: If this is the first time accessing the TR310/333 camera via the Web login it will ask you to change the Username/Password.

3. Next, you should now see the main login screen with a "Live View" of the PTZ Camera.



4. Next, after selecting the *Video & Audio* setting, verify the Video Mode you are in. In this setup you should *NOT* be in NDI and *Stream Only* Video Mode, as it will disable the USB output.

\*Note: Some servers require a minimum bitrate of 2.5Mbps for their environment.

## TR 310/333 Camera HDMI / SDI / USB Output to Teams (continued)

<b>AV</b> er	Priority Mode
AVG	2160p 1080p
Live View	
Camera Settings	Power Frequency
Video & Audio	50Hz 59.94Hz 60Hz
器 Network	Video Mode
• Tracking Settings	USB + Streaming  Stream Only USB Only
-√- System	VISB + Streaming Bitrate Enco
	1920x1080 × 4Mbps ×
	Framerate I-VOP Interval (S) 1s Rate

The PTZ Camera will have an SDI/HDMI video output in ALL modes.

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

## TR310 to TR333 Camera USB connected CaptureShare Software

Aver Information Inc. offers a free software for the NEW TR series of cameras, CaptureShare, that works in Windows and MAC. It allows you to be able to configure the TR camera for Presenter and Zone Mode Tracking, as well as some of the basic video settings such as Contrast, Saturation, Mirroring, and video output settings while being ONLY 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 TR310/333 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 also have the ability to record locally and "stream" out to YouTube/FB/other streaming services once the RTMP Server / RTMP Key are configured.



## TR310 to TR333 Camera USB connected CaptureShare Software (continued)

7. Opening the AVerCamera Setting Tool will allow you to setup the camera without the additional tools for Streaming, Recording, etc.



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

#### TR Camera HDMI/SDI/USB connection to Microsoft

When connecting the camera to a Microsoft Teams/Skype platform the TR311/333 provides HDMI, SDI, and USB output standards. If you are using a desktop with a video capture card, at times they can have a direct HDMI input connection with high performance data transfer.

If you are using a laptop to capture video, you can use a direct USB connection, a portable HDMI to USB dongle like the AVer Media BU110, or a portable SDI to USB dongle like the AVer Media BU111 which provides a high speed, high quality connection.

#### **Two Likely Scenarios:**

- HDMI or USB direct connection from TR camera
- HDMI / SDI connection using an AVer Media converter to USB connection



## TR Camera HDMI/SDI/USB connection to Microsoft



## **Microsoft OS Device Manager**

Once the AVer TR310/333 Camera has been connected to a USB port on the PC using a USB-C to USB-A cable, verify that Windows does see the camera in the "Device Manager" window under Cameras.



#### **Microsoft Teams Desktop App**

Settings

- One of the very first things to check is if Microsoft Teams has permission to access your camera and microphone. There are instances where the App will not detect your camera if left disabled in your PC's settings.
- 2. Press the Windows Key and I key together. This will bring up the Windows Settings page.

- 🗆 🗙

- Personalization Apps Uninstall, defaults, optional features Background, lock screen, colors AP Time & Language Accounts Your accounts, email, sync, work, other people Speech, region, date Gaming Game bar, captures, broadcasting, Game Mode Ease of Access Narrator, magnifier, high contrast O Search O Cortana Find my files, permissions Cortana language, permissions, notifications Δ Privacy Update & Security Location, camera, microphone Windows Update, recovery, backup
- 3. Next, look for the *Privacy* setting and select it.
- 4. Next, from the left sidebar, under *App permissions* click on *Camera*.



- 5. Next, on the *Camera* page, you want to make sure the option *Allow Apps to access camera* is turned *On*.
- 6. You also want to make sure that under *Choose which app can access your camera,* that *Microsoft Teams* is turned *On.*
- 7. Now Microsoft Teams will appear here in this list if you have the Microsoft Teams desktop app installed.

#### Microsoft Teams Web App

If you are using your web browser instead of using Microsoft Teams Windows app, you will need to make sure that the site has given permission to use your camera.

- 1. Go to Microsoft Teams using your search browser (Google Chrome or Mozilla Firefox).
- 2. Depending on your search browser, proceed with its appropriate steps:

#### **Google Chrome**

Click on the lock icon in the search URL box (at the top) as shown below.

$\leftarrow \rightarrow$	C 🔒 tean	ns.microsoft.com/_#/calendarv2?view	vDate=2019-12-21T16:00:00.000Z	
	Microsoft	Teams	ď	Search or type a comm
L Activity	💼 Cal	endar		
E Chat	🚺 Today	$<$ $>$ December 2019 $\vee$		
iii Teams	23 Monda		<b>24</b> Tuesday	<b>25</b> Wednesday
assignments	8 AM			
E Calendar	9 AM			

3. Next, click Site Settings.

	Mi				×		Si	arc
Activity	E	card	information (for e numbers) is privat n more					
Chat.		e	Location	Block (default)				
iii Tearra		4	Notifications	Block (default)		<b>4</b> sday		2 w
<b>B</b>	8 AM	۵	Certificate (Valid)					
	9 AM	٥	Cookies (43 in us					
alendar		¢	Site settings					
<b>د</b> .	10 AM							
files								

4. You will be brought to your Google Chrome settings where under *Permissions* you will want to make sure that *Camera* is set to *Allow* rather than *Block* or *Ask*.

Image	Sett	ings	Q. Search settings	
Integre         Integre           Integre         289 MB 15 cookes         Clear dis           Seach angle         289 MB 15 cookes         Clear dis           Default howser         Parmissions         East parmissions         East parmissions           Default howser         Parmissions         East parmissions         East parmissions           Memory         O Location         East parmissions         Add (out-out)           Integree         Add conceptores         Add (out-out)         Parmissions           Integree         Add conceptores         Add (out-out)         Parmissions           Integree         Add conceptores         Add (out-out)         Parmissions           Integree         Add conceptores         Add conceptores         Add conceptores           Printing         Add Integree         Add conceptores         Add conceptores           Integree         Add conceptores         Add conceptores         Add conceptores           Integree         Add con		People	https://teams.microsoft.com	
39 MB : 16 cookies     Clear data       Central borease     Pursisions     Rest germations       Construip     © location     Root (default)       Construit     @ location     Root (default)	Ð	Autofill		
Interfact     Permissions     Rest permissions       Image:     Image:     Image:     Image:       Image:     Image:     Image:     Image:		Appearance	289 MB - 15 cookies	Clear data
Image		Search engine		
Image:     Image:     Nation     Nation (setlinal)     Image:       Image:     Image:     Nation (setlinal)     Image:     Nation (setlinal)     Image:       Image:     Image:     Image:     Nation (setlinal)     Image:     Image:       Image:     Image:     Nation (setlinal)     Image:     Nation (setlinal)     Image:       Image:     Image:     Nation (setlinal)     Image:     Nation (setlinal)     Image:		Default browser		
Process and security     Conners     Process     Angle (detail)     Process     Conners     Conne		On startup	Q Location	Block (default) -
	Adva	nced *	EK Camera	
i compage			Microphone	Allow
i boundada     in Nanfarationa     Block (default)     ·       i Printeg     ii Nanfarationa     Block (default)     ·       i Accessibility     C) Jassifirgt     Allow (default)     ·       i Sprett     iii Pas page and redirects     Block (default)     ·			Pl Motion sensors	
Accessibility     Accessibility				
Anoregication     Anoregi				
Synth         Synth         Block (default)         +           ©         Reset and clean up         Item types         Allow (default)         +           Extensions         C         Pice ups and redirects         Mone (default)         +			<> JavaScript	Allow (default) *
Extensions C Pice ups and redirects Micro (default) -			🗯 Flash	Block (default) *
Pop-ups and redirects Block (default) *		Reset and clean up	Images	Allow (default) *
	Exter	nsions 🖸	Pop-ups and redirects	Block (default) 👻
About Chrome Adda Block (default)	Abos	it Chrome		Direk (default)

#### **Microsoft Teams Web App (continued)**

*Ask* is a secure option if you do not want your camera turned on without being prompted every time you access Microsoft Teams. *Block* prevents Microsoft Teams from accessing or even detecting your camera.

**Mozilla Firefox:** Click on the Firefox menu button  $\equiv$  Mozilla Firefox menu and select **Options**.

- 5. Next, click **Privacy & Security** from the left menu.
- 6. Then scroll down to the **Permissions** section and click the **Settings** button for the **Camera** option.
- Now enter the website URL in the search field for the site that you want to access your camera. In our case, we will need to enter https://teams.microsoft.com/ to allow Microsoft Teams access to our camera. Hit the Enter key.

Firefox makes it a secure and straightforward way to handle the websites that you want to provide access and the ones to not. You can remove it at any time by selecting it from the list and clicking the **Remove Website**. Finally, don't forget to select the **Save changes** button!

8. Try testing to see if your camera works after enabling the camera access for the Microsoft Teams web app.

#### **IP/STREAMING (RTMP)**

#### TR Camera RTMP Output to Microsoft Teams using Microsoft Stream

Microsoft Stream accepts live feeds from a variety of different encoders that output RTMP or RTMPS.

Below we will cover how to configure the TR camera manually for a Live event.

Connect the TR310/333 camera via RJ45 Network Cat5E (or better) connection; verify IP address of Camera in order to connect via Web browser. If IP address is not known, locate the remote, select the "Menu" icon and navigate to the "Network->DHCP->" setting, verify DHCP is set to "On" in order 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 Network > DHCP > On.



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

Camera	Camera Selector		Model N	lame TR313
Advanced Setting	Status OSD	ON	Firmwa	re Version 0.0.0000.18
Video Output	Language	English	IP	192,168.0.223
Network	NDI	OFF	MAC	00:18:1A:04:4C:7D
System	CameNet0_TR313_N		1	ALC: NO.
	Tally	Enable		
	Information	8		
	Factory Default	OFF		

 Another way to find the Camera IP address (On same Subnet) is to use the AVer IPCam Utility to find the camera. AVer software can be found here:

twork Devic	ce			Login				
tel(R) Ethe	rnet Connection (	6) I219-V 💌	Search	User	ID	Pa	ssword	
twork Setti iearch Resu Select /	t .	etting   Maintena	nce   Import/Export	Config				
No.	Status	Progress	Model Name	Device Name	FW version	IPv4 Address	MAC Address	IPv6
1 2	Working Working		Tracking Camera PTZ330	Tracking Camera PTZ330	0.0.1000.41 0.0.0000.55	10.10.0.165:80 10.10.0.46:80	00:18:1a:04:b5:4d 00:18:1a:04:a4:30	[]:80
<							_	
ettings								
Device Nar	ne:			Start IP Address:				
1				End IP Address:				
C DHCP				Subnet Mask:				
<ul> <li>Static I</li> </ul>	P				· ·			
				Gateway:				
	rch will start after	settings change	dt	Primary DNS:	1.000	A		
"Auto sea	ICH WH Start arcer							

https://www.aver.com/download-center.

#### TR Camera RTMP Output to Microsoft Teams using Microsoft Stream (continued)

3. 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 TR310/333 camera shown below.

Sign in			
http://192.16 Your connect	8.0.106 ion to this site is not private		
Username	1		
Password			
		Sign in	Cancel

- 4. The default Username/password is "admin / admin".
  \*Note: If this is the first time accessing the TR310/333 camera via the Web login it will ask you to change the Username/Password.
- 5. Next, you should now see the main login screen with a "Live View" of the PTZ Camera.



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.

\*NDI Mode: If NDI is selected, the USB output is disabled, this is by design.

AVer	Priority Mode	
Live View	2160p 1080p	
Camera Settings	Power Frequency	
Video & Audio	50Hz 59.94Hz 60Hz	
品 Network	Video Mode	
• Tracking Settings	USB + Streaming	
-vv- System	USB + Streaming NDI Bitrate	
	1920x1080 ¥ 4Mbps	~
	Framerate I-VOP Interval (S)	1s

## **Recommended settings from Microsoft**

#### **Ingest protocols**

• Single bitrate RTMPS or RTMP

#### Video format

- Codec: H.264
- Profile: High (Level 4.0)
- Bitrate: Up to 5Mbps (5000 kbps)
- Strict Constant Bitrate (CBR)
- Keyframe/GOP: 2 seconds
  - There must be an IDR frame at the beginning of each GOP
  - Frame Rate: 29.97 or 30fps
  - Resolution: 1280 x 720 (720P)
  - Interlace Mode: Progressive
- Pixel Aspect Ratio (PAR): Square

#### Audio format

- Codec: AAC (LC)
- Bitrate: 192 kbps
- Sample Rate: 48 kHz or 44.1 kHz (recommend 48 kHz)

#### **Playback requirements**

• Both an audio and video stream must be present in order to playback content in Microsoft Stream.

## **Configuration tips**

- Whenever possible, use a hardwired internet connection.
- A good rule of thumb when determining bandwidth requirements is to double the streaming bitrates. While this is not a mandatory requirement, it will help mitigate the impact of network congestion.
- When using software-based encoders, close any unnecessary programs.
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- If the encoder is disconnected during the live event, reconnect it keeping the same timestamps of continuing process. Note that any discontinuity may cause audio or video issues on certain browsers and devices.
- Give yourself ample time to setup your event. For high scale events, it's recommended to start the setup an hour before your event.

## TR Camera RTMP Output to Microsoft Teams using Microsoft Stream (continued)

6. Next, select the *Network* setting; this is where you will enter the RTMP *Server URL* and *Stream Key*. Set *RTSP Security* to either "On" or "Off" depending if you want encryption when using *RTSP (Username/Password)*.

AVer			
O Live View	On Off	Netmask	
Camera Settings	192.168.0.223	255.255.255.0	
Video & Audio	Gateway	DNS	
品 Network	192.168.0.1	192.168.0.1	Confirm
• Tracking Settings	RTMP Settings	RTSP Security	
-vv- System	Server URL rtmp://a.rtmp.youtube.com/live2/	On Off	
	Stream Key Cyyq-		
	Start Stream STOP		
	SRT Settings		
	Destination IP Port	Encryption	

\*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.

 Next, go to your Microsoft Stream account and login to obtain the Server URL and Stream name/key. Once obtained, you will copy that information and paste it into the PTZ Camera Server URL and Stream Key fields.

ncoder setup	Analytics	Health O			
Before you ca	an go live you'll ne	ed to connect you	ir external encoder. Learn more		
Select encoder					
Configure mar	nually	$\sim$			
Haivision Mak	tito X Encoder	~			
Switcher Stud	io				
Wirecast					
Wirecast S		aj npu7ks	ujj2x63z4f-use22.channel.media.azure.net:1935/liv	e/dž	Сору
Secondary serv	er ingest URL	100			
		e22esw5npjmpu7ks	ujj2x63z4f-use22.channel.media.azure.net:1936/liv	e/dž	Сору

8. Next, go back to the TR WebLogin and select *Start Stream*; this will begin the stream to Microsoft Stream. You should see a *Streaming* icon appear to indicate the process has started.

## TR Camera RTMP Output to Microsoft Teams using Microsoft Stream (continued)



9. To verify, go to Microsoft Stream and verify you can see the preview of the video feed from the TR310/333 camera in **Encoder preview**.



10. To end the streaming feed from the PTZ camera, go to the WebLogin and select "STOP".

11. To verify, go back to your Microsoft Stream preview, it should now be displaying "nothing".

## **Microsoft Teams configuration**

In a Teams live event, you can stream video from an external encoder to Microsoft Stream if the encoder supports Real-Time Messaging Protocol (RTMP).

- 1. In Teams, select **Calendar Meetings button**, then your live event, and **Join**.
- 2. Until you start the event, you'll see the title, date, and time in the **Encoder preview** window.
- 3. Click **Start setup**. **\*Note:** Setup may take some time to complete.
- 4. Once you see the message **Ready to connect**, go to the **Settings** tab and copy the Server ingest URL into the encoder (TR Camera) to start ingesting.
- 5. Once you start streaming from the TR camera to *Stream* using the ingest URL, you should see the preview of the video in **Encoder Preview.**
- 6. Once satisfied with the setup and video preview, click **Start event**. Once the live event starts, the video from the TR camera is broadcast to the event.
- 7. To end the event, click **End event. \*Note:** Once the live event ends, it cannot be restarted.
- 8. This concludes the AVer TR310/333 Camera Streaming with a Microsoft setup.