

# AVer Pro-AV Quick Start Guide to

# Camera Control using Visca over IP (UDP)

# January 2024

Steps to verify the Aver PTZ3xxV1/V2, PTZ2xx, TR530+/TR530/320 and TR3xxV1/V2 cameras to be controlled with Visca over IP command connections.

**Visca over IP** offers the ability to send several different control commands over a network (RJ45) connection, without the need to add additional cabling.

The AVer **CL01** Camera controller can control up to 255 separate cameras on the same subnet using the Visca over IP protocol.

**AVer** has high quality image Cameras (TR3xxV1/V2, TR530/TR530+, PTZ3xxV1/V2) that will integrate with these workflows for peak performance and ease of use. We will show the configuration process for these cameras using the Visca Over IP.

There are several 3<sup>rd</sup> party controllers available that integrate with the AVer Pro-AV cameras, Crestron, Extron, QSC, Altona, RTI, to name a few. In this document we will discuss how to test the basic controls via software should there be an issue where the before mentioned controllers are not working as expected.



There are some pre-requisites and additional information needed for this to happen, see below.

#### **VISCA over IP Packets**

If you are using a 3<sup>rd</sup> party controller, Crestron, Extron, QSC, Altona, etc. verify the command structure you are using is correct for BOTH the controller and the camera.

VISCA over IP commands need to be sent in full packet order: Packet header + VISCA command.

Let's take **PT\_Up** as an example. The full command should be 01 00 00 09 00 00 00 01 81 01 06 01 08 08 03 01 ff.

RED part of command is for VISCA over IP packet header. BLUE part of command is for VISCA command.

Also, after any pan tilt movement command is sent, it needs to send **PT\_Stop** command to stop movement, which should be 01 00 00 09 00 00 00 01 81 01 06 01 08 08 03 03 ff.

\*Note: If sending a Pan\_Stop command to a PTZ310/330/N camera running an earlier FW than 0.70, the command string will be: 01 00 00 09 00 00 00 03 81 01 06 01 08 08 03 03 FF

For the VISCA over IP header, the 3rd & 4th bytes of the header are important. They indicate <u>length</u> of payload (VISCA command). At this point, the value could be varying depending on what VISCA command is sent.

#### For example:

Inquiry (listed as "info"): 01 00 00 05 00 00 00 01 81 09 00 02 FF Settings (listed as "framing"): 01 00 00 07 00 00 00 01 81 01 04 7D 00 00 FF Command (movements): 01 00 00 09 00 00 00 01 81 01 06 01 08 08 03 01 FF

#### Visca over IP selection

For Visca-over-IP, (8x) the digit x following 8 must be set to 1. Example:

> **Power Off** command to the PTZ3xx camera. 01 00 00 06 00 00 00 00 81 01 04 00 03 FF

For RS232/422 serial connection, the digit x following 8 is the Visca ID# (Camera address 1~7)

# VISCA over IP Packets (continued)

dvanced Se	tting		
1 <sup>st</sup> Layer	2 <sup>nd</sup> Layer	3 <sup>rd</sup> Layer	4 <sup>th</sup> Layer
Advanced Setting	Audio	Input Type	Line In/Mic In
		Audio Volume	0-10
	Control	Serial Port	RS-232/RS-422
		Protocol	VISCA/PELCO D/PELCO P
		Camera Address	1-7
		Baud Rate	4800/9600/38400
	Tracking	Off/On	-
	Tracking Mode	Presenter	-
		Zone	-
		Hybrid	-



The x value of 8x should be 1 for the Visca-over-IP string.

## **AVer Cameras "VISCA Customized Function" settings**

Some of the AVer Pro-AV cameras support a feature called "VISCA Customized Function". This is a very useful tool when wanting to customize a certain Preset# to do a specific function, like turn "Auto Tracking ON". This makes programming easy for other devices, like when using the AVer CL01 camera controller.



You will notice there are no dedicated buttons for some commands like "*Switch Presenter, Enter Zone Mode, Tally On/Off*", etc. So, the ability to just use a Preset# recall from the CL01 makes it easy to do those functions.

#### Question:

What if I also want to send control commands from another device/touch panel, would using these *Visca customized functions* change the programming?

The answer is YES, it would.

If that particular function was enabled in the WebUI, it would take precedence over the original VISCA over IP command string!

### AVer Cameras "VISCA Customized Function" settings (continued)

Once the camera has been placed on the network, login to the camera by using a Chrome Browser, and type in its IP address.

<b>A) 6</b> - 4	Rich Login Password	English	Port	
Aver		Reboot Export Log	FUIL	-
Live View	Change Cancel	Power Schedule Set Date/Time	On Off	
Camera Settings	Status OSD	Setting	Status LiveView	
Video & Audio	On Off	Import Setting Export Setting	On Off	VISCA Customized Function
器 Network	Power Up to Preset	Power Off to Preset	Power Off Completely	
Tracking Settings	Preset 0 V	Preset 52 V	On Off	
NDI NDI	Sleep to Preset	Sleep Timer		
System	Preset 52 V	Off 10 sec 5 min 10 min		
Tracking Control	Sleep mode can be enabled in USB Only Video Mode and set a preset for Sleep position.			

Go to the "System" tab, look for the "VISCA Customized Function".

Once selected, another window will appear, revealing the "Functions" and "Preset Numbers" associated with those functions.

Enable	Function Name	Preset Number
	Auto Tracking On	30
<b>Z</b>	Auto Tracking Off	31
	Enable Presenter mode	32
	Enable Zone mode	33
	Enable Hybrid mode	34
	Recall Tracking Point	35
	Switch Presenter	36
	Switch Tracking Mode	37
	Full Body	38
	Upper Body	39
	Tally On	40
	Tally Off	41
	OSD menu On/Off	42
	Reboot	200
	ОК	

If the Customized Function is Enabled, the remote control VISCA over IP command would change.

#### Example:

Original TR313V2 Presenter Tracking command: HEX: 01 00 00 07 00 00 00 00 81 01 04 3F 01 A4 FF

Since the Customized Command is ENABLED, it would NOT work.

You would need to send the Preset Recall command for Preset#32.

HEX: 01 00 00 07 00 00 00 00 81 01 04 3F 02 20 ff

\*Preset #32 in Decimal = 20 in HEX

#### **Hercules Software**

To verify "network" connectivity and control at a basic level, there is a "free" software available (Windows) for use to test the Visca over IP command strings. This is a valuable tool to "bypass" any hardware issues or programming issues from the "in-room" devices being used.

#### It can be found here:

https://www.hw-group.com/software/hercules-setup-utility

Security HW-group.com	- 🗆 X
UDP Setup Serial TCP Client TCP Server UDP Test Mode About	
Received data	
	Module IP Port
	192.168.0.223 52381
	Local port 52381 A Listen
	Server settings
Sent data	Server echo
	Redirect to TCP Server
	Redirect to TUP Lilent
	UDP broadcast
	File name:
	No file
	Load file Send
Send	
01 00 00 09 00 00 00 00 81 01 7E 01 0A 00 02 FF	Send
01 00 00 09 00 00 00 00 81 01 04 3F 02 14 FF	Send www.HW-group.com
01 00 00 09 00 00 00 00 01 01 04 7F 01 08 FF	Send Hercules SETUP utility Version 3.2.8

#### **Packet Sender Software**

There is another option to use "Packet Sender", it is geared more for Visca over IP commands, you can also "Save" the command sets in ASCII and HEX for future use.



It can be found here: https://packetsender.com/

### **Network Connection**

The AVer cameras can be connected in one of several different ways, one of those is to connect the cameras via network, using a good quality Cat5E (or better) network cable to a Gigabit network switch.

\*Note: Some of our cameras do support PoE+.

PTZ310/N/W and PTZ330/N/W require **25watts** per LAN port.

TR3xxV1 / TR3xxV2 require **18 watts** per LAN port.

PTZ3xxUV2/UNV2 require 19 watts per LAN port.

TR530+ requires 25.5 watts per LAN port.

Here is a typical camera network connection diagram.



For the AVer CL01 to communicate to the cameras via Visca Over IP, set the camera Protocol to SonyVisca, selectable via the CL01 menu.



\*Note: For more detailed information on the CL01 setup and configuration, refer to the CL01 Camera Controller Connection Guide or User Manual.

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

# **Network Connection (continued)**

#### **Network Ports**

To check camera settings and camera control via a Chrome browser, verify the following ports are open/available.

VISCA Control port: 52381Internet protocol: IPv4CGI port: 80Transport protocol: UDPRTSP port: 554

# AVer PTZ3xxV1 / PTZ2xx / PTZ3xxV2 Camera Setup

The AVer PTZ310/330(N), PTZ211/231, and PTZ3xxV2offers exceptional optical quality up to 2160p/60 video standards, Quad Output, SDI, HDMI, NDI support, SRT Ready, SmartShoot motion tracking, and PoE+ support.



### WebUI Network Connection:

Sign in http://192.168.0.222

 Once all the equipment is connected, network IP's have been assigned and configured, verify you can gain access to the AVer PTZ Camera by typing in the camera IP address in a Chrome browser.

\*Note: Edge, Safari and other browsers are not supported.



## AVer PTZ3xxV1 / PTZ2xx / PTZ3xxV2 Camera Setup (continued)

#### WebUI Network Connection:

If this is the first time accessing the cameras WebUI, it will ask you for the default login credentials, which are: "admin" and "admin".

It will then ask you to change the default values, PLEASE write that information down, and then login with the NEW credentials.

2. Next, verify you can control the camera via the WebUI PTZ controls and can control the Presets, Save, Load functions.



- At this point you should have full control of the camera, ability to Save and Recall Presets, if you do NOT have control, most likely the control port has been disabled/blocked. Verify that port 52381 is open on the network.
- 4. Once the basic controls have been verified working from the WebUI of the camera, the next step is to verify that sending Visca over IP commands works via the Hercules software.

### AVer PTZ3xxV1 / PTZ2xx / PTZ3xxV2 Camera Setup (continued)

#### **Hercules Software Testing**

In this next section we will discuss using the Hercules software in a very specific way to test the Visca over IP commands are being recognized by the AVer camera.

1. Open the Hercules software and select the UDP tab.

SETUP utility by HW-group.com			-		×
UDP Setup   Serial   TCP Client   TCP Server UDP   Test Mode   Abo	ut				
Received data		UDP Module IP 192.168.0 Local port 52381	.221	Port 52381	n
		Server set	tings —		
Sent data		E Serve	er echo rect to TCP	Server	
		, Redi	ect to TCP	Client	
		UDP broa	dcast		
		File name: No file			
		Load	file	Send	
Send					
01 00 00 09 00 00 00 00 81 01 7E 01 0A 00 02 FF	₩ HEX	Send	HU	gro	u p
01 00 00 09 00 00 00 00 81 01 04 3F 02 14 FF	I HEX	Send	www.H	W-group.c	om
01 00 00 09 00 00 00 00 81 01 04 3F 02 01 FF	I▼ HE×	Send	V	ersion 3.	2.8

- 2. Next, enter the IP address of the camera as well as Port number 52381.
- 3. Next, select "Listen", you should see a green message appear, "UDP socket created".



 Next, we now want to send a basic command to the camera via Visca over IP.
 For a complete list of commands, refer to the PTZ310/PTZ330/PTZ330N/PTZ3xxW Control Codes document.

https://www.averusa.com/pro-av/support/ look in the "Download" section.

# AVer PTZ3xxV1 / PTZ2xx / PTZ3xxV2 Camera Setup (continued) Hercules Software Testing

In this example we will send a **Power Off** command to the camera.
 01 00 00 06 00 00 00 81 01 04 00 03 FF

CAM Power	On	8x 01 04 00 02 FF
CAM_FORCE	Off	8x 01 04 00 03 FF

Recules SETUP utility by HW-group.com	- 🗆 X
UDP Setup   Serial   TCP Client   TCP Server UDP   Test Mode   About	
Received data	UDB
UDP socket created	UDP         Port           Module IP         Port           192.168.1.222         52381           Local port         52381           S2381         X Close
Sent data {01}{00}{00}{06}{00}{00}{00} {01}{04}{00}{03} {FF}	Server settings Server echo Redirect to TCP Server Redirect to TCP Client
	UDP broadcast File name: No file
Send 01 00 00 06 00 00 00 81 01 04 00 03 FF	Send

- 6. Sending the **Power Off** command is instant, the camera "may" go to a preset before powering off, if it is configured that way, the result should be that the camera has a solid "Orange/Amber" LED on the front now.
- Next, let us send a Power On command.
   01 00 00 06 00 00 00 01 81 01 04 00 02 FF

Send		
01 00 00 06 00 00 00 00 81 01 04 00 02 FF	F HEX	Send

The Orange LED should now start to blink for about 5 seconds, then the Power Up routine kicks in. The PTZ310/330 camera will take about 45 seconds to boot up.

\*Note: In later FW, the Power On/Off may be instant, no re-boot will occur.

#### **Hercules Software Testing**

Next, let us test the Presets, Recall Preset #1
 01 00 00 07 00 00 00 00 81 01 04 3F 02 01 FF

	Reset	8x 01 04 3F 00 pp FF		
CAM_Memory	Set	8x 01 04 3F 01 pp FF	pp: 0x00 To 0xFF pp: 0x5A => Smartl pp: 0x5B => Smartl pp: 0x5C => Smart pp: 0x5C => Smart pp: 0x5C => Smart pp: 0x5E => Smart pp: 0x5F => Trun o	Frame Enable Frame Disable Frame Trigger Shoot Enable Shoot Disable n OSD menu
	Recall	8x 01 04 3F 02 pp FF		
Sent data				☐ Rec
{01}{00}{	00}{06}{00	)}{00}{00}{00} {00} {01}{	04}{00}{03}	
{FF}{01}{	00}{00}{00}	5}{00}{00}{00}{00} {	01}{04}{00}	Rec
{02} {FF} {	$01$ { $00$ } { $00$	)}{07}{00}{00}{00}{00}	0} {01}{04}?	
{02}{01} <b>{</b>	FF}			UDP bro
				File name No file
				Load
Send				
01 00 00 07 0	00 00 00 00 81 0	1 04 3F 02 01 FF	I HEX	Send

At this point, the camera should have moved to Preset #1, if it was configured.

**\*Note:** If sending a Pan\_Stop command to a **PTZ310/330/N** camera running an earlier FW than 0.70, the command string will be: 01 00 00 09 00 00 01 03 81 01 06 01 08 08 03 03 FF

9. If the commands being sent are NOT working, check the UDP ports.

In Windows open a "CMD" window and type in: netstat -a -p udp

UDP	192.168.0.121:52104	* • *	UDP	0.0.0.0:5355	* • *
UDP	192.168.0.121:52381	* • *	UDP	0.0.0.0:52381	*:*
			UDP	0.0.0.0:52787	* • *
:\User	s\v002712>		UDP	0.0.0.0:59446	* *

Verify that Port 52381 is listed.

- 10. Verify/check your Network cable connections and how they are made, adhering to BICSI standards. Typically, 568B wiring is the most common for network connections.
- 11. If you are using a Managed network switch, verify ports are opened.
- 12. This concludes the basic Visca over IP verification testing for the AVer PTZ310/330 cameras.

### AVer PTZ3xxV1 / PTZ2xx / PTZ3xxV2 Camera Setup

#### **Packet Sender Software**

In this next section we will discuss using the Packet Sender Software to test the Visca over IP commands and verify that they are being recognized by the AVer camera.

1. Open the Packet Sender software, you should see the following.

File Tools	Multicast Panels Help		
Name	PTZ310 Camera Power OFF		
ASCII	\01\00\00\00\00\00\00\00\00\00\81\01\04\00\03\ff		🗙 Load File
HEX	01 00 00 09 00 00 00 08 1 01 04 00 03 FF		<u> </u>
Addre	s 192.168.1.222	🗙 Port 52381 🗙 Resend Delay 0 💌 🖮	UDP Send Save

- 2. Enter the Name of the command you want to create, (i.e. PTZ310 Camera Power Off).
- Enter the HEX command for the *Power Off* command.
   01 00 00 06 00 00 01 81 01 04 00 03 FF
   The ASCII command will be "Auto populated".

The full command should be 01 00 00 06 00 00 00 01 81 01 04 00 03 FF. RED part of command is for VISCA over IP packet header. BLUE part of command is for the VISCA command.

RT										
	Internet protocol	IPv4								
	Transport protoco	UDP								
	Port address	52381								
RMAT										
		byte 0	byte 1	byte 2	byte 3	byte 4	byte 5	byte 6	byte 7	byte8 ~~~ byte23
	func	Payloa	d type	Payload	length		Sequence	number		Payload (1 to 16 bytes)
	data	Value1	Value2	1~16 (0x000	01~0x0010)	0X0	0000000 ~	OXFFFFFFFF		VISCA Packet (see page VISCA)
			18-18-18-18-18-18-18-18-18-18-18-18-18-1							
fload type	-			-						
	Name	Value1	Value2	Description	n					
	VISCA command	0x01	0x00	Stores the	VISCA com	mand.				
	A FIRST AND A COMMANDARY	0.01	0+10	Stores the		Terr r				
	VISCA inquiry	0401	0410	Stores the	VISCA inqui	iry.				
quence number	VISCA reply	0x01	0x11	Stores the	VISCA inqui reply for th	e VISCA con	nmand or V	/ISCA inquir	γ	
quence number	VISCA inquiry VISCA reply	oller visca	VISCA Com	mand (Seq = N	visca inqui reply for th de	vice	nmand or V	'ISCA inquir	Y	

(The x value of 8x should be 1 for the Visca-over-IP string command.)

# AVer PTZ3xxV1 / PTZ2xx / PTZ3xxV2 Camera Setup (continued) Packet Sender Software

Visca command strings:

Inquiry (listed as "info"): 01 00 00 05 00 00 00 01 81 09 00 02 FF Settings (listed as "framing"): 01 00 00 07 00 00 00 01 81 01 04 7D 00 00 FF Command (movements): 01 00 00 09 00 00 00 01 81 01 06 01 08 08 03 01 FF

- 4. Enter the IP address of the camera that you want to control.
- 5. Enter the Port Number, 52381.

**\*Note**: With later FW (0.90) PTZ3xxV1 cameras, the UDP Port Number can be customized. You would need to login to the cameras *WebUI*, next go to the *Network* tab and look for the *Visca Port Mode*.

Visca Port Mode	Visca Port Number	
Default 🗸	Port 52381	Save

- 6. Next, Enter the connection type, UDP.
- 7. Select "Save" to save this command for future reference.
- 8. Next, select "Send" and you should see a response in the lower section of Packet Sender.

	Time 🔷	From IF	From Port	To Address	lo Port	Methoc	Erroi	ASCII	Hex
ė	2024-01-16 19:06:52.928	192.168	52381	You	52381	UDP		\01\11\00\03\00\00\00\90Q\ff	01 11 00 03 00 00 00 00 90 51 FF
ŵ	2024-01-16 19:06:46.827	You	52381	192.168.1.222	52381	UDP		\01\00\00\t\00\00\00\00\81\01\04\00\03\ff	01 00 00 09 00 00 00 00 81 01 04 00 03 ff

9. At his point, the PTZ3xxV1 camera should Power Off and show an Amber LED on the front.

10. Next send the Power On command:

01 00 00  $\underline{06}$  00 00 00 01 81 01 04 00 02 FF

The ASCII command will be "Auto populated".



11. Select *Send*, the PTZ3xxV1 camera should be powering up resulting in a Blue LED on the front.

The AVer TR3xxV1 and TR3xxV2 cameras offer exceptional optical quality up to 4K UHD 2160p/60 video standards, Quad Output, SDI, HDMI, NDI HX support, SRT Ready, Advanced AI Auto Tracking, and PoE+ support.



### WebUI Network Connection:

 Once all the equipment is connected, network IP's have been assigned and configured, verify you can gain access to the TR3xxV1 / TR3xxV2 Camera by typing in the IP address in a Chrome browser.

\*Note: Edge, Safari and other browsers are not supported.



If this is the first time accessing the cameras WebUI, it will ask you for the default login credentials, which are: "admin" and "admin".

It will then ask you to change the default values, PLEASE write that information down, and then login with the NEW credentials.

# AVer TR3xxV1 / TR3xxV2 Camera Setup WebUI Network Connection (continued):

	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
<b>RTSP Output</b>	×	x	$\checkmark$	✓

#### Video and Audio Settings, Video Mode Available Outputs

2. Next, verify you can control the camera via the WebUI PTZ controls and can control the Presets, Save, Load functions.

Camera Control		Preset		Preset						
		FA 27		Save Preset		Load Preset				
	Ð		Ð	0	Save	0		Load		
		MF Focus		Video Freeze while Preset		Quick Call				
	Zoom	<b>F</b> • <b>F</b>	Zoom	•	•	0	1	2	3	4
	$\sim$	163		On	Off	5	6	7	8	9
$\bullet$	Q	Focus Near Limit	Q	Preset Speed	50	10	11	12	13	14
		1.5m 💙		5	200	15	16	17	18	19

- At this point you should have full control of the camera, ability to Save and Recall Presets, if you do NOT have control, most likely the control port has been disabled/blocked. Verify that port 52381 is open on the network.
- 4. Once the basic controls have been verified working from the WebUI of the camera, the next step is to verify the sending of Visca over IP commands work via the *Hercules* or *Packet Sender* software.

#### **Hercules Software Testing**

In this next section we will discuss using the Hercules software in a very specific way to test the Visca over IP commands are being recognized by the AVer cameras.

1. Open the Hercules software and select the UDP tab.



- 2. Next, enter the IP address of the camera as well as the Local/Port number 52381.
- 3. Next, select "Listen", you should see a green message appear, "UDP socket created".

Second Se	
UDP Setup Serial TCP Client TCP Server UDP Test Mode About	
Received data	UDP Module IP 192.168.0.2 Local port 52381 Server settin

 Next, we now want to send a basic command to the camera via Visca over IP. For a complete list of commands, refer to the TR3xxV1 / TR3xxV2 Control Codes document.

https://www.averusa.com/pro-av/support/ look in the "Download" section.

In this example we will send a **Power Off** command to the camera. 01 00 00 06 00 00 01 81 01 04 00 03 FF

Command Set	Commanu	Commanu Facket	comments	
CAM Dowor	On	8x 01 04 00 02 FF	Dewar ON/OFF	
CAM_POWER	Off	8x 01 04 00 03 FF	Power ON/OFF	

Hercules Software Testing (continued)

Security Security By HW-group.com	– 🗆 X
UDP Setup Serial TCP Client TCP Server UDP Test Mode About	
Received data	
UDP socket created	Module IP         Port           192.168.1.226         52381           Local port         52381           52381         X Close
Sent data {01}{00}{00}{06}{00}{00}{01} {01}{04}{00}{03} {FF}	Server settings Server echo Redirect to TCP Server Redirect to TCP Client
	UDP broadcast File name: No file Load file
Send	
01 00 00 06 00 00 00 01 81 01 04 00 03 FF	Send HU group

- 5. Sending the **Power Off** command is instant, the camera "may" go to a preset before powering off, if it is configured that way, the result should be that the camera has a solid "Orange" LED on the front now and no video output.
- Next, let us send a Power On command.
   01 00 00 06 00 00 00 01 81 01 04 00 02 FF

Sent data	Bedirect h
$\{01\}\{00\}\{00\}\{00\}\{00\}\{00\}\{00\}\{01\}\{01\}\{04\}\{00\}\{03\}$	j neuliectu
<pre>{FF} {01} {00} {00} {06} {00} {00} {01} {01} {04} {00}</pre>	E Redirect to
{02} <b>{FF}</b>	
	UDP broadcas
	File name:
	No file
	Land Ga
l	
	Send
UT 00 00 06 00 00 00 01 81 01 04 00 02 FF IV HEX	sena

The Orange LED should now start to blink, then the Power Up routine kicks in. The TR3xxV1/TR3xxV2 camera will take about 1 minute to completely boot up.

### Hercules Software Testing (continued)

7. Next, let us test the **Presets**, **Recall Preset #1** 

01 00 00 07 00 00 00 00 81 01 04 3F 02 01 FF

	Reset	8x 01 04 3F 00 pp FF				
CAM_Preset	Set	pp:	pp: Preset Number 0x00~0xFF			
	Recall	8x 01 04 3F 02 pp FF				
{02} <b>{FF}</b> {01} {02}{01} <b>{FF</b> }	{00}{00}{07}	<pre>(00}{00}{00} {00} {00}</pre>	1}{04} <b>?</b>	UDP broa File name: No file Load		
Send	00.00.01.01.04.05.0	0.01.55		( <b>1</b>		
101 00 00 07 00 00	00 00 81 01 04 31 0	2011	I▲ HE×	Send		

At this point, the camera should have moved to Preset #1 if it was configured.

#### **Tracking Enable**

01 00 00 09 00 00 00 03 81 01 04 7D 02 FF	▼ HE×	Send

#### Tracking Disable

01 00 00 09 00 00 00 03 81 01 04 7D 03 FF	₩ HEX	Send
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8. If the commands being sent are NOT working, check the UDP ports.

In Windows, open a "CMD" window and type in: netstat -a -p udp

UDP	192.168.0.121:52104	* • *	UDP	0.0.0.0:5355	* *
UDP	192.168.0.121:52381	* • *	UDP	0.0.0.0:52381	
:\Users	\v002712>		UDP UDP	0.0.0.0:52787 0.0.0.0:59446	*•*

Verify that Port 52381 is listed.

- 9. Verify/check your Network cable connections and how they are made, adhering to BICSI standards. Typically, 568B wiring is the most common for network connections.
- 10. If you are using a Managed network switch, verify ports are opened.
- 11. This concludes the basic Visca over IP verification testing for the AVer TR3xxV1/V2 cameras.

# AVer TR530+ / TR530 / TR320 Camera Setup

The AVer TR530+ / TR530 / TR320 cameras offer exceptional optical quality up to 1080p/60 video standards, SDI, HDMI, RTSP, and with the TR530+ you will have a USB output.



### WebUI Network Connection:

 Once all the equipment is connected, network IP's have been assigned and configured, verify you can gain access to the TR530/320 Camera by typing in the IP address in a Chrome or IE-11 browser.

\*Note: Edge, Safari and other browsers are not supported.

		$\leftrightarrow$ $\rightarrow$ C (	🗅 🔺 Not secu	re   192.168.0.221/ma	ain.html
		👖 Apps 📃 Zo	om Rooms 📃 Vide	o Software 📙 AVer	Downloads   A
		AVer			
		•	ø		
	×	Live view	PT	Z camera	
assword		PTZ camera		II.	1.
		Tracking			
Login	- L	Video 1080P,60FF	PS		1 1
		Output I/O 3G-SDi 1, P	PTZ camera		

If this is the first time accessing the cameras WebUI, it will ask you for the default login password, which is: "admin".

It "may" ask you to change the default values, PLEASE write that information down, and then login with the NEW credentials.

2. Next, verify you can control the camera via the WebUI PTZ controls and can control the Presets, Save, Load functions.



#### WebUI Network Connection (continued):

3. Next, with the TR530+ / TR530 / TR320 camera we must verify that the camera has been configured for use with Visca Over IP, this is done by checking the *Advanced Setting* tab.

AVer							
	0	<b>Ö</b> t			RS 232 form	nat protocol	
PTZ	PTZ camera		>		VISCA	Pelco D	Pelco P
-	Video & Audio s	etting			ADDR 1	•	
몲	Network setting				Baud Rate		
۲	Tracking setting				9600 Visca Ovor I	•	
ø	Preset setting						
P <sub>o</sub>	Advanced settin	g					
~	D 61 W						

Make sure it has been ENABLED.

- Next, at this point you should have control of the camera, ability to Save and Recall Presets, if you do NOT have control, most likely the control port has been disabled/blocked. Verify that port 52381 is open on the network.
- 5. Once the basic controls have been verified working from the WebUI of the camera, the next step is to verify that sending Visca over IP commands works via the Hercules software.

### **Hercules Software Testing**

In this next section we will discuss using the Hercules software in a very specific way to test the Visca over IP commands are being recognized by the AVer camera.

1. Open the Hercules software and select the UDP tab.

Second Se	- 🗆 X
UDP Setup Serial TCP Client TCP Server UDP Test Mode About	
Received data	UDP Module IP Port 192.168.0.221 52381 Local port 52381 Aisten
	Server settings
Cash data	Server echo
	Redirect to TCP Server
	Redirect to TCP Client
	UDP broadcast File name: No file
	Load hie Send
Send	
01 00 00 09 00 00 00 00 81 01 7E 01 0A 00 02 FF	Send HU group
01 00 00 09 00 00 00 00 81 01 04 3F 02 14 FF	Send www.HW-group.com Hercules SETUP stility
01 00 00 09 00 00 00 00 81 01 04 3F 02 01 FF	Send Version 3.2.8

- 2. Next, enter the IP address of the camera as well as Port number 52381.
- 3. Next, select "Listen", you should see a green message appear, "UDP socket created".



 Next, we now want to send a basic command to the camera via Visca over IP.
 For a complete list of commands, refer to the TR530 / TR320 Control Codes document. <u>https://www.averusa.com/pro-av/support/</u> look in the "Download" section.

#### NOTE:

In the previous camera examples, we showed Power On/OFF, the TR530+/TR530/320 camera does NOT support the Power ON command via <u>Visca OVER IP</u>. It does, however, work when connected via RS-232.

CAM_Power	On	8x 01 04 00 02 FF	*DS 222 support over ID pet support
	Off	8x 01 04 00 03 FF	RS-232 support, over IP not support

#### Hercules Software Testing (continued)

In this example we will send a **Camera Tracking ON** command to the camera. 01 00 00 07 00 00 00 00 81 01 04 7D 02 00 FF

	CAM_Track_ON	8x 01 04 7D 02 00 FF	
- 1	CAM_Track_OFF	8x 01 04 7D 03 00 FF	
. 1			_

0	Sent data {01}{00}{00}{07}{00}{00}{00}{01} {01}{04}}{02}{00} {FF}	}	☐ Red
		ſ	UDP bro
r			File name No file
¢			Load
e	Send		
	01 00 00 07 00 00 01 81 01 04 7D 02 00 FF	IEX	Send

- 5. You should see the TR530/TR530+ front blue LED begin to blink every 2 seconds.
- Next, send the Camera Tracking OFF command to the camera.
   01 00 00 07 00 00 00 00 81 01 04 7D 03 00 FF
- 7. Next, let us test the Presets, Recall Preset #101 00 00 07 00 00 00 00 81 01 04 3F 02 01 FF

	reset	8x 01 04 3F 00 YY FF		
CAM_Preset	set	8x 01 04 3F 01 YY FF	YY	= preset num(0~0x7F
	recall	8x 01 04 3F 02 YY FF		
Sent data				E Bed
?{FF} ?	(FF)			1 1100
				Red
				-
				ODF bro
				File name
				The fiame
				Nofile
				Load
Send				
01.00.00.00.0	0 00 00 00 01 01 0			Court 1
01 00 00 09 0	0 00 00 00 81 01 04	4 3F UZ UT FF	IN HEX	Send

At this point, the camera should have moved to Preset #1 if it was configured.

#### Hercules Software Testing (continued)

8. If the commands being sent are NOT working, check the UDP ports.

In Windows, open a "CMD" window and type in: netstat -a -p udp

UDP UDP	192.168.0.121:52104 192.168.0.121:52381	*•*	UDP UDP	0.0.0.0:5355 0.0.0.0:52381	* *
:\Users	s\v002712>		UDP UDP	0.0.0.0:52787 0.0.0.0:59446	* • *

Verify that Port 52381 is listed.

- 9. Verify/check your Network cable connections and how they are made adhering to BICSI standards. Typically, 568B wiring is the most common for network connections.
- 10. If you are using a Managed network switch, verify ports are opened.
- 11. This concludes the basic Visca over IP verification testing for the AVer Pro-AV cameras.

#### **Crestron Example:**

I had captured some Crestron control line syntax from another project, they were using Crestron Toolbox. This example shows Recalling Preset 5 on a TR530 camera.

	-	in second in the second s	1988 1973 II
	1	User set CAM1_Preset5_tp to Press	
	$\mathbf{\hat{O}}$	CAM1_Preset5_tp	1
	<b>1</b>	CAM1_Preset4_fb	0
	0	CAM1_Preset5_fb	1
	<b>1</b>	CAM_Preset4_fb	0
	0	CAM_Preset5_fb	1
		User set CAM1_Preset5_tp to Release	
	<b>4</b>	CAM1_Preset5_tp	0
	ABC.	CAM1_bt\$	0x810x011x04?0x020x040xFF
	680	//CAM1_nx\$	Vx90AA
	(HBC	//CAM1_nx\$	WFFIx90Q
	680	I/CAM1_rx\$	Q\xFF
¥	<		