

Aver Auto Tracking Camera

PTC500S / PTC115

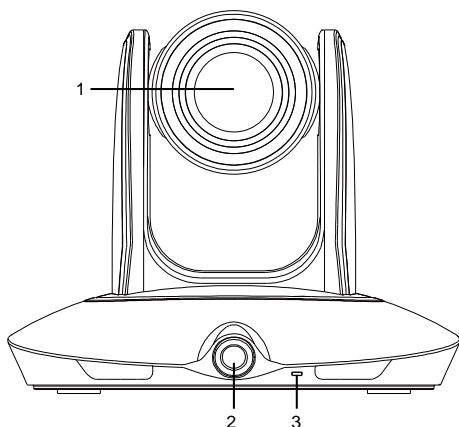
Control Codes

2021.3.30 v5



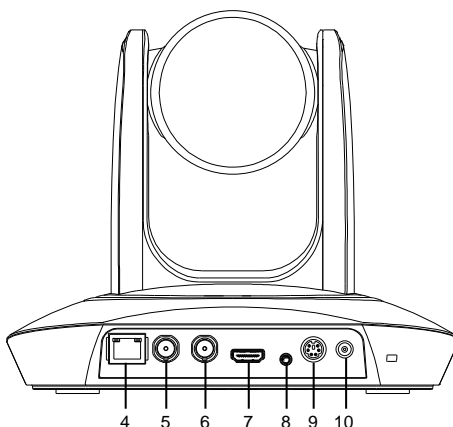
Product Introduction

Overview



- 1. PTZ camera
- 2. Panoramic camera
- 3. Power indicator
- 4. RJ-45 port
- 5. 3G-SDI 2 port(Panoramic view)

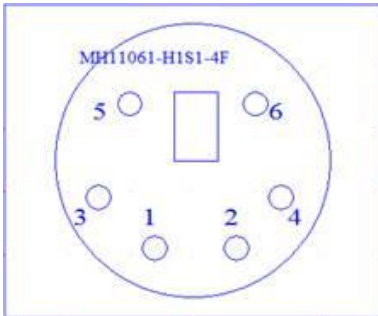
*Audio input level: 1Vrms(max.)



- 6. 3G-SDI 1 port(PTZ view)
- 7. HDMI port(PTZ view)
- 8. Audio in port*
- 9. RS-232 port
- 10. Power jack

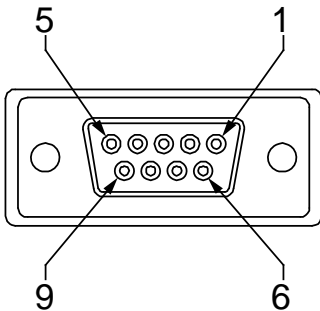
RS232 Connection

RS232 Pin Definition



Pin	Definition
1	RS232_DTR
2	RS232_DSR
3	N.C.
4	RS232_TXD
5	GND
6	RS232_RXD

● Din6 to D-Sub9 Cable Pin Definition



Advanced Setting

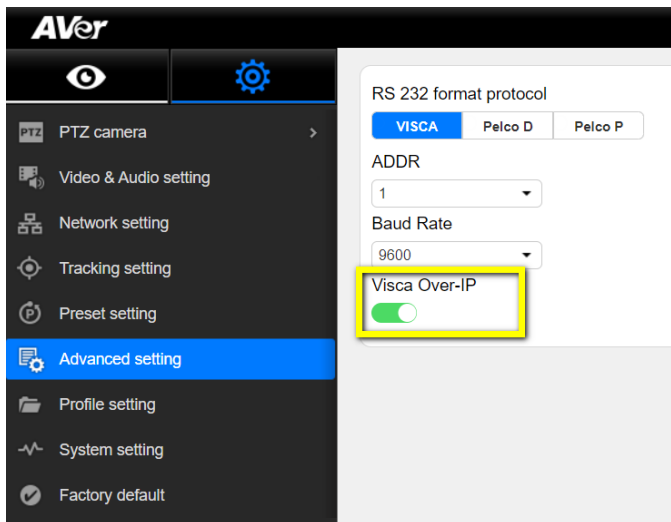
To adjust RS232 protocol, address and baud rate, select Advance Setting from OSD menu.

OSD Tree

Tracking	On
Camera	>
Video Format	>
Advanced Setting	>
Preset	>
Language	>
Profile	>
Factory Default	>
Information	>

RS232 Protocol	VISCA
Address(ADDRD)	1
Baud Rate	9600
VISCA-over-IP	off

Web Interface



Enable Visca-over-IP if needed.

RS232/422 VISCA Command Table

Command Set	Command	Command Packet	Comments
IF_Clear		8x 01 00 01 FF	x = Cam address
IF_Clear(broadcast)		88 01 00 01 FF	
CAM_Power	On	8x 01 04 00 02 FF	*RS-232 support, over IP not support
	Off	8x 01 04 00 03 FF	
CAM_Zoom	Stop	8x 01 04 07 00 FF	
	Tele(Variable)	8x 01 04 07 2p FF	p=0 (Low) to 7 (High)
	Wide(Variable)	8x 01 04 07 3p FF	
	Direct	8x 01 04 47 0Y 0Y 0Y 0Y FF	0xYYYY = zoom pos
CAM_Focus	Far(Variable)	8x 01 04 08 2P FF	p=0-F
	Near(Variable)	8x 01 04 08 3P FF	p=0-F
	Auto Focus	8x 01 04 38 02 FF	
	Manual Focus	8x 01 04 38 03 FF	
	One Push	8x 01 04 18 01 FF	
CAM_WB	Auto	8x 01 04 35 00 FF	Normal Auto
	One Push WB	8x 01 04 35 03 FF	One Push WB mode
	Manual	8x 01 04 35 05 FF	Manual Control mode
	One Push	8x 01 04 10 05 FF	One Push WB Trigger
CAM_RGain	Up	8x 01 04 03 02 FF	Manual Control of R Gain
	Down	8x 01 04 03 03 FF	
CAM_Bgain	Up	8x 01 04 04 02 FF	Manual Control of B Gain
	Down	8x 01 04 04 03 FF	
CAM_AE	Full Auto	8x 01 04 39 00 FF	Automatic Exposure mode
	Manual	8x 01 04 39 03 FF	Manual Control mode
	Shutter Priority	8x 01 04 39 0A FF	Shutter Priority Automatic Exposure mode
	Iris Priority	8x 01 04 39 0B FF	Iris Priority Automatic Exposure mode
	Bright	8x 01 04 39 0D FF	Bright Mode (Manual control)
CAM_Shutter	Up	8x 01 04 0A 02 FF	Shutter Setting
	Down	8x 01 04 0A 03 FF	
CAM_Iris	Up	8x 01 04 0B 02 FF	Iris Setting
	Down	8x 01 04 0B 03 FF	
CAM_Bright	Up	8x 01 04 0D 02 FF	Bright Setting
	Down	8x 01 04 0D 03 FF	
CAM_ExpComp	Up	8x 01 04 0E 02 FF	Exposure Compensation Amount Setting
	Down	8x 01 04 0E 03 FF	
CAM_Backlight	On	8x 01 04 33 02 FF	Back Light Compensation ON/OFF
	Off	8x 01 04 33 03 FF	
CAM_Preset	reset	8x 01 04 3F 00 YY FF	YY = preset num(0-0x7F)
	set	8x 01 04 3F 01 YY FF	
	recall	8x 01 04 3F 02 YY FF	
CAM_Menu	On/Off	8x 01 06 06 10 FF	Display ON/OFF
Pan-tilt Drive	Up	8x 01 06 01 VV WW 03 01 FF	VV=pan speed: 0x00-0x0F WW = tilt speed: 0x00-0x0F
	Down	8x 01 06 01 VV WW 03 02 FF	
	Left	8x 01 06 01 VV WW 01 03 FF	
	Right	8x 01 06 01 VV WW 02 03 FF	
	UpLeft	8x 01 06 01 VV WW 01 01 FF	
	UpRight	8x 01 06 01 VV WW 02 01 FF	
	DownLeft	8x 01 06 01 VV WW 01 02 FF	
	DownRight	8x 01 06 01 VV WW 02 02 FF	
	Stop	8x 01 06 01 VV WW 03 03 FF	
	Home	8x 01 06 04 FF	
	Reset	8x 01 06 05 FF	
PT_Direct	8x 01 06 02 00 00 0Y 0Y 0Y 0V 0V 0V 0V FF	0xYYYY = pan position 0xVVVV = tilt position	
CAM_Track_ON		8x 01 04 7D 02 00 FF	
CAM_Track_OFF		8x 01 04 7D 03 00 FF	
CAM_Profile_Read		8x 01 04 40 01 YY FF	YY = profile num(0x01-0x05)
CAM_Profile_Save		8x 01 04 40 02 YY FF	
CAM_WOL_ON		8x 01 04 7E 02 00 FF	
CAM_WOL_OFF		8x 01 04 7E 03 00 FF	
CAM_PIP_SET		8x 01 04 7F 01 YY FF	YY = pip num(0x01-0x09)
CAM_PIP_OFF		8x 01 04 7F 02 00 FF	

Inquiry Command	Command Packet	Reply Packet	Comments
CAM_PowerInq	8x 09 04 00 FF	y0 50 02 FF	On
		y0 50 03 FF	Off
CAM_WBModelInq	8x 09 04 35 FF	y0 50 00 FF	Auto
		y0 50 05 FF	Manual
CAM_RGainInq	8x 09 04 43 FF	y0 50 00 00 0p 0q FF	pq: R Gain
CAM_BGainInq	8x 09 04 44 FF	y0 50 00 00 0p 0q FF	pq: B Gain
CAM_AEModelInq	8x 09 04 39 FF	y0 50 00 FF	Full Auto
		y0 50 03 FF	Manual
		y0 50 0A FF	Shutter Priority
		y0 50 0B FF	Iris Priority
		y0 50 0D FF	Bright
CAM_ShutterPosInq	8x 09 04 4A FF	y0 50 00 00 0p 0q FF	pq: Shutter Position
CAM_IrisPosInq	8x 09 04 4B FF	y0 50 00 00 0p 0q FF	pq: Iris Position
CAM_GainPosInq	8x 09 04 4C FF	y0 50 00 00 0p 0q FF	pq: Gain Position
CAM_BrightPosInq	8x 09 04 4D FF	y0 50 00 00 0p 0q FF	pq: Bright Position
CAM_ExpCompPosInq	8x 09 04 4E FF	y0 50 00 00 0p 0q FF	pq: ExpComp Position
CAM_VersionInq	8x 09 00 02 FF		
PT_Pos_Inq	8x 09 06 12 FF	y0 50 0Y 0Y 0Y 0Y 0V 0V 0V 0V FF	0xYYYY = pan position 0xVVVV = tilt position
Zoom_Pos_Inq	8x 09 04 47 FF	y0 50 0Y 0Y 0Y 0Y FF	0xYYYY = zoom pos
Preset Inq	8x 09 04 3F FF	y0 50 pp FF	Return the last preset number which has been operated pp:01 - FF

The x value = VISCA Camera ID: 1 to 7 for RS232/RS422 connection.

Visca-over-IP Settings

VISCA over IP

PORT

Internet protocol	IPv4
Transport protocol	UDP
Port address	52381

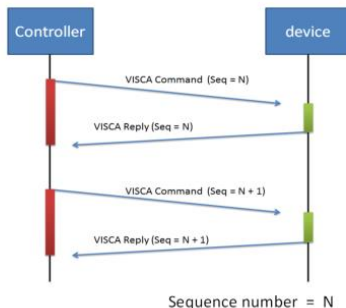
FORMAT

func	byte 0	byte 1	byte 2	byte 3	byte 4	byte 5	byte 6	byte 7	byte8 ~~~~	byte23
data	Value1	Value2	1~16 (0x0001~0x0010)		0X00000000 ~ 0XFFFFFFF			VISCA Packet (see page VISCA)		

Payload type

Name	Value1	Value2	Description
VISCA command	0x01	0x00	Stores the VISCA command.
VISCA inquiry	0x01	0x10	Stores the VISCA inquiry.
VISCA reply	0x01	0x11	Stores the reply for the VISCA command or VISCA inquiry

Sequence number



The x value should be 1 for Visca-over-IP string, e.g. 01 00 00 09 00 00 00 01 81 01 06 01 07 07 01 03 FF

Pelco-P Command Table

PAN AND TILT COMMAND P/T bit(byte4.0) = 0									
	byte 1	byte 2	byte 3	byte 4	byte 5	byte 6	byte 7	byte 8	
func	STX	ADDR	data1	data2	data3	data4	ETX	checksum	
data	0xA0	0~7F	cmd 1	cmd 2	Pan speed	Tilt speed	0xAF	1~7 XOR	
note : speed = 0x00~0x30									
byte3 : command 1									
	bit 7	bit 6	bit 5	bit 4	bit 3	bit 2	bit 1	bit 0	
	NA	CAM ON	NA	CAM ON/OFF	NA	NA	NA	NA	
note : power off : byte3.6 = 0 & byte3.4 = 1									
byte4 : command 2									
	bit 7	bit 6	bit 5	bit 4	bit 3	bit 2	bit 1	bit 0	
	NA	ZOOM Wide	ZOOM Tele	TILT Down	TILT Up	PAN Left	PAN Right	P/T bit (0always)	
EXTENDED COMMAND SE P/T bit(byte4.0) = 1									
	byte 1	byte 2	byte 3	byte 4	byte 5	byte 6	byte 7	byte 8	
func	STX	ADDR	data1	data2	data3	data4	ETX	checksum	
Set Preset XX	0xA0	0~7	0x00	0x03	0x00	Preset #	0xAF	1~7 XOR	
Go To Preset XX	0xA0	0~7	0x00	0x07	0x00	Preset #	0xAF	1~7 XOR	
Track ON	0xA0	0~7	0x00	0x65	0x00	0x00	0xAF	1~7 XOR	
Track OFF	0xA0	0~7	0x00	0x67	0x00	0x00	0xAF	1~7 XOR	
WOL ON	0xA0	0~7	0x00	0x69	0x00	0x00	0xAF	1~7 XOR	
WOL OFF	0xA0	0~7	0x00	0x6B	0x00	0x00	0xAF	1~7 XOR	
Read Profile XX	0xA0	0~7	0x00	0x6D	0x00	Profile #	0xAF	1~7 XOR	
Save To Profile XX	0xA0	0~7	0x00	0x6F	0x00	Profile #	0xAF	1~7 XOR	
note : Preset # : 0x01 ~ 0xFF Profile # : 0x01 ~ 0x05									

Pelco-D Command Table

PAN AND TILT COMMAND P/T bit(byte4.0) = 0									
	byte 1	byte 2	byte 3	byte 4	byte 5	byte 6	byte 7		
func	SYNC	ADDR	cmd 1	cmd 2	data1	data2	checksum		
data	0xFF	1~80	cmd 1	cmd 2	Pan speed	Tilt speed	2~6 SUM		
note : speed = 0x00~0x30									
byte3 : command 1									
	bit 7	bit 6	bit 5	bit 4	bit 3	bit 2	bit 1	bit 0	
	SENSE ON	NA	NA	NA	CAM ON/OFF	NA	NA	NA	
note : power off : byte3.7 = 0 & byte3.3 =									
byte4 : command 2									
	bit 7	bit 6	bit 5	bit 4	bit 3	bit 2	bit 1	bit 0	
	NA	ZOOM Wide	ZOOM Tele	TILT Down	TILT Up	PAN Left	PAN Right	P/T bit (0always)	
EXTENDED COMMAND SE P/T bit(byte4.0) = 1									
	byte 1	byte 2	byte 3	byte 4	byte 5	byte 6	byte 7		
func	SYNC	ADDR	data1	data2	data3	data4	checksum		
Set Preset XX	0xFF	1~8	0x00	0x03	0x00	Preset #	2~6 SUM		
Go To Preset XX	0xFF	1~8	0x00	0x07	0x00	Preset #	2~6 SUM		
Track ON	0xFF	1~8	0x00	0x65	0x00	0x00	2~6 SUM		
Track OFF	0xFF	1~8	0x00	0x67	0x00	0x00	2~6 SUM		
WOL ON	0xFF	1~8	0x00	0x69	0x00	0x00	2~6 SUM		
WOL OFF	0xFF	1~8	0x00	0x6B	0x00	0x00	2~6 SUM		
Read Profile XX	0xFF	1~8	0x00	0x6D	0x00	Profile #	2~6 SUM		
Save To Profile XX	0xFF	1~8	0x00	0x6F	0x00	Profile #	2~6 SUM		
note : Preset # : 0x01 ~ 0xFF Profile # : 0x01 ~ 0x05									

Example:

Camera Address: 1

Pan Left at high speed: FF 01 00 04 3F 00 44

Pan Right at medium speed: FF 01 00 02 20 00 23

Tilt Up at high speed: FF 01 00 08 00 3F 48

Tilt Down at medium speed: FF 01 00 10 20 00 31

Stop all actions (Pan / Tilt / Zoom / Iris etc.): FF 01 00 00 00 00 01

CGI Command Table

CGI List for Video Transmission					
CGI item name	URL	Command	Parameter Name	Parameter value	Description
Get MJPEG stream	http://ip/livestream/livestream?action=get				640x360
Get RTSP stream	rtsp://ip/live_st1				
GET JPEG	/webui?StartStreaming=ActionPTZ				
	/webui?SaveImage=Mod_cram_ptz1.jpg	Mod_cram_ptz1.jpg - Mod_cram_ptz4.jpg			
	/Mod_cram_ptz1.jpg				
CGI List for Camera Control					
CGI item name	URL	Command	Parameter Name	Parameter value	Description
up start	/webui?SetPtzf=	1,0,1&(random)			
up end	/webui?SetPtzf=	1,0,2&(random)			
down start	/webui?SetPtzf=	1,1,1&(random)			
down end	/webui?SetPtzf=	1,1,2&(random)			
left start	/webui?SetPtzf=	0,1,1&(random)			
left end	/webui?SetPtzf=	0,1,2&(random)			
right start	/webui?SetPtzf=	0,0,1&(random)			
right end	/webui?SetPtzf=	0,0,2&(random)			
zoom_in start	/webui?SetPtzf=	2,0,1&(random)			
zoom_in end	/webui?SetPtzf=	2,0,2&(random)			
zoom_out start	/webui?SetPtzf=	2,1,1&(random)			
zoom_out end	/webui?SetPtzf=	2,1,2&(random)			
set preset:	/webui?ActiPreset=	1,N&(random)			N : position
load preset:	/webui?SetPtzf=	0,N&(random)			N : position
CGI List for Various Settings					
CGI item name	URL	Command	Parameter Name	Parameter value	Description
exposure value	/webui?Set=	img_expo_expo,3,N&(random)	value	1 - 9	N : value
saturation	/webui?Set=	img_saturation,3,N&(random)	value	0 - 10	N : value
contrast	/webui?Set=	img_contrast,3,N&(random)	value	0 - 4	N : value
Tracking on:	/webui?Set=	trk_tracking,3,1&(random)			
Tracking off:	/webui?Set=	trk_tracking,3,0&(random)			
Reboot	/webui?Set=reboot,3,1&X				X : random value
Factory Reset	/webui?OnePush=C_DEFAULT&X				X : random value
Call Profile	http://ip/webui?ActiProFiles=	call,3,N&(random)			N= Profile number
Save Profile	/webui?ActiProFiles=	save,3,N&(random)			N= Profile number
Set Profile Name	/webui?ActiProNames=	Set,N,(Name)&(random)			N= Profile number
Tracking On/Off Get	/webui?Get=trk_tracking,3&_X	PTC	- Reply	On trk_tracking=1 Off trk_tracking=0	X : random value
Call Profile	/webui?ActiProFiles=	call,3,N&(random)			N= Profile number
Save Profile	/webui?ActiProFiles=	save,3,N&(random)			N= Profile number
Set Profile Name	/webui?ActiProNames=	Set,N,(Name)&(random)			N= Profile number