PTZOptics G3 VISCA over IP Commands

Camera Responses

Command Set	Command		Command Package	Note
Camera Responses	ACK/Completion	ACK	90 4y FF	Return when the command is accepted
		Completion	90 5y FF	Return when the command has been executed
	Error Messages	Syntax Error	90 60 02 FF	Returned when the command format is different or when a command with illegal command parameters is accepted
		Command Buffer Full	90 60 03 FF	Indicates that two sockets are already being used(executing two commands) and the command could not be accepted when received
		Command Canceled	90 6y 04 FF	Returned when a command which is being executed in a socket specified by the cancel command is canceled. The completion message for the command is not returned
		No Socket	90 6y 05 FF	Returned when no command is executed in a socket specifild by the cancel command, or when an invalid socket number is specified
		Command Not Executable	90 6y 41 FF	Returned when a command canot be executed due to current conditions. For example, when commands controlling the focus manually are received during auto focus

Camera Commands

Command Set	Command		Command Package	Note
Image	Luminance	Direct	81 01 04 A1 00 00 00 0p FF	p: Luminance Position (0x0=0 ~ E=14)
	Contrast	Direct	81 01 04 A2 00 00 00 0p FF	p: Contrast Position (0x0=0 ~ E=14)
	Sharpness	Reset	81 01 04 02 00 FF	Resets to default position 0x09 (9) value
		Up	81 01 04 02 02 FF	Aperture Control
		Down	81 01 04 02 03 FF	Aperture Control
		Direct	81 01 04 42 00 00 0p 0q FF	pq: Aperture Gain (0x00=0 ~ 0xB=11)
	Horizontal Flip	On	81 01 04 61 0p FF	p: 0x2=On, 0x3=Off
	Vertical Flip	On	81 01 04 66 0p FF	p: 0x2=On, 0x3=Off
	Image Flip	Off	81 01 04 A4 0p FF	p: 0x0=Off, 0x1=Horizontal Flip, 0x2=Vertical Flip, 0x3=Flip Both
	Black & White	Direct	81 01 04 63 0p FF	p: 0x0=Off, 0x4=On
Exposure	Exposure Mode	Mode	81 01 04 39 0p FF	p: 0x0=Auto, 0x3=Manual, 0xA=Shutter, 0xB=Iris
		On / Off	81 01 04 3E 0p FF	p: 0x2=On, 0x3=Off
	Exposure Compensation	Reset	81 01 04 0E 00 FF	Resets to 0x7 (0) value
		Up	81 01 04 0E 02 FF	ExpComp Setting
		Down	81 01 04 0E 03 FF	ExpComp Setting
		Direct	81 01 04 4E 00 00 0p 0q FF	pq: ExpComp Position (0x0=-7 ~ 0x7=0 ~ 0xE=+7)
	Dynamic Range Control	Direct	81 01 04 25 00 00 00 0p FF	p: 0x0 (low) ~ 0x8(high)
	Backlight	On / Off	81 01 04 33 0p FF	p: 0x2=On, 0x3=Off
	Iris	Reset	81 01 04 0B 00 FF	Resets to 0xC (F1.8) value
		Up	81 01 04 0B 02 FF	Iris Setting
		Down	81 01 04 0B 03 FF	Iris Setting
		Direct	81 01 04 4B 00 00 00 0p FF	p: Iris Position (0x0=Close ~ 0xC=F1.8)
	Shutter	Reset	81 01 04 0A 00 FF	Resets to 0x5 (1/125) value
		Up	81 01 04 0A 02 FF	Shutter Setting
		Down	81 01 04 0A 03 FF	Shutter Setting
		Direct	81 01 04 4A 00 00 0p 0q FF	pq: Shutter Position (0x01=1/30 ~ 0x11=1/10000)
	Gain	Reset	81 01 04 0C 00 FF	Resets to 0x2 (2) value
		Up	81 01 04 0C 02 FF	Gain Setting
		Down	81 01 04 0C 03 FF	Gain Setting
		Direct	81 01 04 0C 00 00 0p 0q FF	pq: Gain Position (0x00=0 ~ 0x07=7)
	Gain Limit	Direct	81 01 04 2C 0p FF	p: Gain Limit Position (0x0=0 ~ 0xF=15)
	Anti-Flicker	Direct	81 01 04 23 0p FF	p: Flicker Settings - (0x0=Off, 0x1=50Hz, 0x2=60Hz)
Color	White Balance Mode	Mode	81 01 04 35 pq FF	pq: 0x00=Auto, 0x01=Indoor, 0x02=Outdoor, 03=OnePush, 0x05=Manual, 0x20=ColorTemperature
	OnePush Trigger	Action	81 01 04 10 05 FF	One Push WB Trigger
	Red Tuning	Direct	81 0A 01 12 pq FF	pq: Red Tuning position (0x00=-10 ~ 0x0A=0 ~ 0x14=+10)
	Blue Tuning	Direct	81 0A 01 13 pq FF	pq: Blue Tuning position (0x00=-10 ~ 0x0A=0 ~ 0x14=+10)
	Saturation	Direct	81 01 04 49 00 00 00 0p FF	p: Saturation setting (0x0=60% ~ 0xE=200%)
	Hue	Direct	81 01 04 4F 00 00 00 0p FF	p: Color Hue Setting (0x0=0 ~ 0xE=14)
	Red Gain	Reset	81 01 04 03 00 FF	Reset to 0x38 (56) value
		Up	81 01 04 03 02 FF	Red Gain Setting
		Down	81 01 04 03 03 FF	Red Gain Setting
		Direct	81 01 04 43 00 00 0p 0q FF	pq: R Gain (0x00=0 ~ 0xFF=255)
	Blue Gain	Reset	81 01 04 04 00 FF	Reset to 0x2B (43) value
		Up	81 01 04 04 02 FF	Blue Gain Settings
		Down	81 01 04 04 03 FF	Blue Gain Settings
		Direct	81 01 04 44 00 00 0p 0q FF	pq: B Gain (0x00=0 ~ 0xFF=255)
	Color Temperature	Reset	81 01 04 20 00 FF	Reset to 0x28 (6500K) value
		Up	81 01 04 20 02 FF	ColorTemperature Setting
		Down	81 01 04 20 03 FF	ColorTemperature Setting
		Direct	81 01 04 20 0p 0q FF	pq: Color Temperature position (0x00=2500K ~ 0x37=8000K)
	Auto White Balance Sensitivity[1]	High	81 01 04 A9 0p FF	p: 0x0=High, 0x1=Normal, 0x2=Low
	[1]Only available for Move SE cameras			
Pan Tilt	Pan Tilt Drive	Up	81 01 06 01 vv ww 03 01 FF	vv: Pan speed 0x01 (low speed) ~ 0x18 (high speed), ww: Tilt speed 0x01 (low speed) ~ 0x14 (high speed)
		Down	81 01 06 01 vv ww 03 02 FF	vv: Pan speed 0x01 (low speed) ~ 0x18 (high speed), ww: Tilt speed 0x01 (low speed) ~ 0x14 (high speed)
		Left	81 01 06 01 vv ww 01 03 FF	vv: Pan speed 0x01 (low speed) ~ 0x18 (high speed), ww: Tilt speed 0x01 (low speed) ~ 0x14 (high speed)
		Right	81 01 06 01 vv ww 02 03 FF	vv: Pan speed 0x01 (low speed) ~ 0x18 (high speed), ww: Tilt speed 0x01 (low speed) ~ 0x14 (high speed)
		UpLeft	81 01 06 01 vv ww 01 01 FF	vv: Pan speed 0x01 (low speed) ~ 0x18 (high speed), ww: Tilt speed 0x01 (low speed) ~ 0x14 (high speed)
		UpRight	81 01 06 01 vv ww 02 01 FF	vv: Pan speed 0x01 (low speed) ~ 0x18 (high speed), ww: Tilt speed 0x01 (low speed) ~ 0x14 (high speed)
		DownLeft	81 01 06 01 vv ww 01 02 FF	vv: Pan speed 0x01 (low speed) ~ 0x18 (high speed), ww: Tilt speed 0x01 (low speed) ~ 0x14 (high speed)
		DownRight	81 01 06 01 vv ww 02 02 FF	vv: Pan speed 0x01 (low speed) ~ 0x18 (high speed), ww: Tilt speed 0x01 (low speed) ~ 0x14 (high speed)
		Stop	81 01 06 01 vv ww 03 03 FF	vv: Pan speed 0x01 (low speed) ~ 0x18 (high speed), ww: Tilt speed 0x01 (low speed) ~ 0x14 (high speed)
		AbsolutePosition	81 01 06 02 vv ww 0y 0y 0y 0y 0z 0z 0z 0z FF	vv: Pan speed 0x01 (low speed) ~ 0x18 (high speed), ww: Tilt speed 0x01 (low speed) ~ 0x14 (high speed), yyyy: Pan Position zzzz: Tilt Position
		RelativePosition	81 01 06 03 vv ww 0y 0y 0y 0y 0z 0z 0z 0z FF	vv: Pan speed 0x01 (low speed) ~ 0x18 (high speed), ww: Tilt speed 0x01 (low speed) ~ 0x14 (high speed), yyyy: Pan Position zzzz: Tilt Position
		Home	81 01 06 04 FF	
		Reset	81 01 06 05 FF	
	Pan Tilt Limit	LimitSet	81 01 06 07 00 0w 0y 0y 0y 0y 0z 0z 0z 0z FF	w: 0x1=UpRight, 0x0=DownLeft, yyyy: Pan Limit Position, zzzz: Tilt Limit Position
		LimitClear	81 01 06 07 01 0w 07 0f 0f 0f 07 0f 0f 0f FF	w: 0x1=UpRight, 0x0=DownLeft
Zoom	Stop	Direct	81 01 04 07 00 FF	
	Tele	Standard	81 01 04 07 02 FF	
	Wide	Standard	81 01 04 07 03 FF	
	Tele	Adjustable Speed	81 01 04 07 2p FF	p: 0x0(low) ~ 0x7(high)
	Wide	Adjustable Speed	81 01 04 07 3p FF	p: 0x0(low) ~ 0x7(high)
	Direct	Direct	81 01 04 47 0p 0q 0r 0s FF	pqrs: 0x4000 (Full Tele), 0x0000 (Full Wide)

10/27/2023

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Category	Command Set	Type	Command Package	Note
		Auto / Manual	81 01 04 38 0p FF	p: 0x2=Auto, 0x3=Manual
	Mode	Toggle	81 01 04 38 10 FF	
	Stop	Direct	81 01 04 08 00 FF	
	Far	Standard Speed	81 01 04 08 02 FF	
	Near	Standard Speed	81 01 04 08 03 FF	
	Far	Adjustable Speed	81 01 04 08 2p FF	p: 0x0(low) ~ 0x7(high)
	Near	Adjustable Speed	81 01 04 08 3p FF	p: 0x0(low) ~ 0x7(high)
	Direct	Direct	81 01 04 48 0p 0q 0r 0s FF	pqrs: Focus Position 0xpqrs=(0000 is focused all the way out. Maximum range is dependant on camera model)
	OnePush Auto Focus	Action	81 01 04 38 04 FF	Focus image while maintaining manual focus mode
	Focus Lock	Direct	81 0a 04 68 0p FF	p: 0x2=Lock, 0x3=Unlock
	Focus Zone	Direct	81 01 04 AA 0p FF	p: 0x0=Top, 0x1=Center, 0x2=Bottom
	Focus Range	Direct	81 0A 11 42 0p rs tv FF	p: 0x0=Off, 0x1=On, rs: furthest position 0x00 (1m) ~ 0x0B (INF), tv: nearest position 0x00 (1m) ~ 0x0B (INF)
Focus	Recalibrates Camera Focus	Action	81 0A 01 03 12 FF	Advanced command. Improper use of this command could result in the camera's focus failing.
		Reset	81 01 04 3F 00 pp FF	pp: 0x00=0 ~ 0xFE=254)
		Set	81 01 04 3F 01 pp FF	pp: 0x00=0 ~ 0xFE=254)
	Preset	Recall	81 01 04 3F 02 pp FF	pp: 0x00=0 ~ 0xFE=254)
	Preset Speed	Direct	81 01 06 01 pp FF	pp: 0x01 (low speed) ~ 0x18 (high speed)
		PTZ Motion Sync On	81 0A 11 13 02 FF	p: 0x2=On, 0x3=Off
Preset	Motion Sync	PTZ MS Max Speed Limit	81 0A 11 14 0p FF	p: speed stage (0x0=185 ~ 0x9=230)
	Open / Close	Action	81 01 04 3F 02 5F FF	
	Close	Action	81 01 06 06 03 FF	
	Navigate Up	Action	81 01 06 01 0E 0E 03 01 FF	
	Navigate Down	Action	81 01 06 01 0E 0E 03 02 FF	
	Navigate Left	Action	81 01 06 01 0E 0E 01 03 FF	
	Navigate Right	Action	81 01 06 01 0E 0E 02 03 FF	
	Enter	Action	81 01 06 06 05 FF	
Camera Menu	Return	Action	81 01 06 06 04 FF	
	Auto Tracking	On / Off	81 0A 11 54 0p FF	p: 0x2=On, 0x3=Off
	Subject Selection²	Direct	81 0A 11 A3 0p FF	p: 0x2=Subject Left, 0x3=Subject Right, 0x4=Confirm Subject
Automation	²Only available for Move 4K cameras			
	Power	Action	81 01 04 00 0p FF	p: 0x2=On, 0x3=Standby
	I/F Clear	Direct	81 01 00 01 FF	I/F Clear
	Video Template	Direct	81 0B 01 0p FF	p: 0x1=High, 0x2=Medium, 0x3=Low, 0x4=Off
	Multicast	On / Off	81 0B 01 23 0p FF	p: 0x1=Off, 0x2=On
		Stream 1	81 0A 11 A8 1p FF	p: 0x2=On, 0x3=Off
	RTMP	Stream 2	81 0A 11 A8 2p FF	p: 0x2=On, 0x3=Off
	Standby Light	Direct	81 0A 02 02 0p FF	p: 0x1=Flashing, 0x2=Light always on, 0x3=Normal
	USB Audio	USB Audio On	81 2a 02 a0 04 0p FF	p: 0x2=On, 0x3=Off
	Pause Video	Freeze Image	81 01 04 62 0p FF	p: 0x2=On, 0x3=Off
System	Save	Action	81 01 04 A5 10 FF	Save Current Setting

Camera Inquiry Commands				
Category	Command Set	Command Package	Return Package	Note
	Luminance	81 09 04 A1 FF	90 50 00 00 0p 0q FF	p: Luminance Position (0x00=0 ~ 0x0E=14)
	Contrast	81 09 04 A2 FF	90 50 00 00 0p 0q FF	p: Contrast Position (0x00=0 ~ 0x0E=14)
	Sharpness	81 09 04 42 FF	90 50 00 00 0p 0q FF	pq: Saturation (0x00=0 ~ 0x0B=11)
	Horizontal Flip	81 09 04 61 FF	90 50 0p FF	p: 0x2=On, 0x3=Off
	Veritcal Flip	81 09 04 66 FF	90 50 0p FF	p: 0x2=On, 0x3=Off
	Image Flip	81 09 04 A4 FF	90 50 0p FF	p: 0x0=Off, 0x1=Horizontal Flip, 0x2=Vertical Flip, 0x3=Flip Both
Image Inquiry	Black & White	81 09 04 63 FF	90 50 02 FF	p: 0x2=Off, 0x4=On
	Mode	81 09 04 39 FF	90 50 0p FF	p: 0x0=Auto, 0x3=Manual, 0xA=Shutter, 0xB=Iris
	Exposure Compensation Mode	81 09 04 3E FF	90 50 0p FF	p: 0x2=On, 0x3=Off
	Exposure Compensation Position	81 09 04 4E FF	90 50 00 00 0p 0q FF	pq: ExpComp Position (0x0=-7 ~ 0x7=0 ~ 0xE=+7)
	Backlight	81 09 04 33 FF	90 50 0p FF	p: 0x2=On, 0x3=Off
	Iris	81 09 04 4B FF	90 50 0p 0q FF	p: Iris Position (0x0=Close ~ 0xC=F1.8)
	Shutter	81 09 04 4A FF	90 50 0p 0q FF	pq: Shutter Position (0x01=1/30 ~ 0x11=1/10000)
	Gain Limit	81 09 04 2C FF	90 50 0p FF	p: Gain Limit Position (0x0=0 ~ 0xF=15)
Exposure Inquiry	Anti-Flicker	81 09 04 55 FF	90 50 0p FF	p: 0x0=Off, 0x1=50Hz, 0x2=60Hz
	White Balance Mode	81 09 04 35 FF	90 50 pq FF	pq: 0x00=Auto, 0x01=Indoor, 0x02=Outdoor, 0x03=OnePush, 0x05=Manual, 0x20=ColorTemperature
	Red Tuning	81 09 04 12 FF	90 50 00 00 0p 0q FF	pq: Red Tuning position (0x00=-10 ~ 0x0A=0 ~ 0x14=+10)
	Blue Tuning	81 09 04 13 FF	90 50 00 00 0p 0q FF	pq: Blue Tuning position (0x00=-10 ~ 0x0A=0 ~ 0x14=+10)
	Saturation	81 09 04 49 FF	90 50 00 00 00 0p FF	p: Saturation setting (0x0=60% ~ 0xE=200%)
	Hue	81 09 04 4F FF	90 50 00 00 00 0p FF	p: Color Hue Setting (0x0=0 ~ 0xE=14)
	Red Gain	81 09 04 43 FF	90 50 00 00 0p 0q FF	pq: R Gain (0x00=0 ~ 0xFF=255)
	Blue Gain	81 09 04 44 FF	90 50 00 00 0p 0q FF	pq: B Gain (0x00=0 ~ 0xFF=255)
	Color Temperature	81 09 04 20 FF	90 50 pq FF	pq: Color Temperature position (0x00=2500K ~ 0x37=8000K)
	Auto White Balance Sensitivity³	81 09 04 A9 FF	90 50 0p FF	p: 0x0=High, 0x1=Normal, 0x2=Low
Color Inquiry	³Only available for Move SE cameras			
	3D Noise Reduction	81 09 04 54 FF	90 50 0p FF	p: Noise Reduction (0x0=0 ~ 0x8=8)
	2D Noise Reduction⁴	81 09 04 53 FF	90 50 0p FF	p: Noise Reduction (0x0=0 ~ 0x5=5)
Noise Reduction Inquiry	⁴Only available for Move SE cameras			
Pan Tilt Inquiry	Pan & Tilt Position	81 09 06 12 FF	90 50 0w 0w 0w 0w 0z 0z 0z 0z FF	wwww: Pan Position, zzzz: Tilt Position
Zoom Inquiry	Zoom Position	81 09 04 47 FF	90 50 0p 0q 0r 0s FF	pqrs: Zoom Position
	Mode	81 09 11 13 FF	90 50 0p FF	p: 0x0=Off, 0x1=On
Motion Sync Inquiry	MotionSync Speed	81 09 11 14 FF	90 50 0p FF	pq: Max MotionSync speed 0x00 (185) ~ 0x09 (230)
	Mode	81 09 04 38 FF	90 50 02 FF	p: 0x2=Auto, 0x3=Manual
	Focus Position	81 09 04 48 FF	90 50 0p 0q 0r 0s FF	pqrs: Focus Position
	Focus Zone	81 09 04 AA FF	90 50 0p FF	p: 0x0=Top, 0x1=Center, 0x2=Bottom
	Auto Focus Sensitivity	81 09 04 58 FF	90 50 0p FF	p: 0x1=High, 0x2=Normal, 0x3=Low
Focus Inquiry	Focus Range	81 09 06 69 FF	90 50 0p rs tv FF	p: 0x0=Off, 0x1=On, rs: furthest position 0x00 (1m) ~ 0x0B (INF), tv: nearest position 0x00 (1m) ~ 0x0B (INF)
	Menu Open / Close	81 09 06 06 FF	90 50 0p FF	p: 0x2=Open, 0x3=Closed
	USB Audio	81 2A 02 A0 04 FF	90 50 0p FF	p: 0x2=On, 0x3=Off
System Inquiry	RTMP	81 09 11 53 FF	90 50 0p FF	p: 0x0=Both Streams Off, 0x1=Stream 1 On, 0x2=Stream 2 On, 0x3=Both Streams On

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Block Inquiry Commands			
Command Set	Command Package	Return Package	Note
Block Lens Inquiry	81 09 7E 7E 00 FF	90 50 0u 0u 0u 0u 00 00 0v 0v 0v 0v 00 0w 00 FF	uuuu: Zoom position
			vvvv: Focus position
			w.bit0: Focus mode 1: Auto, 0: Manual
Block Color & Exposure Inquiry	81 09 7E 7E 01 FF	90 50 0p 0p 0q 0q 0r 0s tt 0u vv ww 00 xx 0z FF	pp: R Gain (00=0 ~ FF=255)
			qq: B Gain (00=0 ~ FF=255)
			r: WB Mode (0=Auto, 1=Indoor, 2=Outdoor, 3=OnePush, 5=Manual)
			s: Saturation (0=0 ~ B=11)
			tt: AE Mode (0=Auto, 3=Manual, A=Shutter, B=Iris)
			u.bit2: Backlight
			u.bit1: Exposure Comp
			vv: Shutter Position (01=1/30 ~ 11=1/10000)
			ww: Iris Position (0=Close ~ C=F1.8)
			xx:Luminance Position (0=0 ~ E=14)
			z: Exposure Compensation Position (0=-7 ~ 7=0 ~ E=+7)
Block Power & Image Effect Inquiry	81 09 7E 7E 02 FF	90 50 0p 0q 00 0r 00 00 00 00 00 00 00 00 00 FF	p.bit0: Power 1: On, 0: Off
			q.bit2: LR Reverse 1: On, 0: Off
			r.bit3~0: Picture Effect Mode
Block Image Inquiry	81 09 7E 7E 03 FF	90 50 00 00 00 00 00 00 00 0p 0q rr 0s 0t 0u FF	p: AF sensitivity
			q.bit0: Picture flip 1: On, 0: Off
			rr.bit6~3: Color Gain (0h (60%) to Eh (200%))
			s: Flip 0: Off, 1: Flip-H, 2: FlipV, 3: FlipHV
			t.bit2~0: NR2D Level
			u: Gain limit