VISCA Commands Guide

For all MSolutions PTZ Cameras

Control Commands

VISCA protocol commands can be used to control your MSolutions PTZ Cameras, retrieve information on camera settings and get information on command send status. Below is a detailed list of the relevant commands. RS-232 and IP control connectivity for each camera can be found on the user manual of that camera.

Command	Command value	Return value	Note	Remarks
AddressSet	Broadcast	88 30 01 FF	Address setting	
CAM_Power	On	8x 01 04 00 02 FF	Power ON/OFF	
	Off	8x 01 04 00 03 FF		
CAM_Zoom	Stop	8x 01 04 07 00 FF		
	Tele(Standard)	8x 01 04 07 02 FF		
	Wide(Standard)	8x 01 04 07 03 FF		
	Tele(Variable)	8x 01 04 07 2p FF	p = 0(low) - 7(high)	
	Wide(Variable)	8x 01 04 07 3p FF		
	Direct	8x 01 04 47 0p 0q 0r 0s FF	pqrs: Zoom Position	
CAM_Focus	Stop	8x 01 04 08 00 FF		
	Far(Standard)	8x 01 04 08 02 FF		
	Near(Standard)	8x 01 04 08 03 FF		
	Far(Variable)	8x 01 04 08 2p FF	p = 0(low) - 7(high)	
	Near(Variable)	8x 01 04 08 3p FF		
	Direct	8x 01 04 48 0p 0q 0r 0s FF	pqrs: Focus Position	
	Auto Focus	8x 01 04 38 02 FF		
	Manual Focus	8x 01 04 38 03 FF	AF On/Off	
	Auto/Manual	8x 01 04 38 10 FF		
CAM_WB	Auto	8x 01 04 35 00 FF	Normal Auto	
	Indoor mode	8x 01 04 35 01 FF	Indoor mode	
	Outdoor mode	8x 01 04 35 02 FF	Outdoor mode	
	OnePush mode	8x 01 04 35 03 FF	One Push WB mode	
	Manual	8x 01 04 35 05 FF	Manual Control mode	
	OnePush trigger	8x 01 04 10 05 FF	One Push WB Trigger	
CAM_RGain	Reset	8x 01 04 03 00 FF	Manual Control of R Gain	
	Up	8x 01 04 03 02 FF		
	Down	8x 01 04 03 03 FF		
	Direct	8x 01 04 43 00 00 0p 0q FF	pq: R Gain	
CAM_Bgain	Reset	8x 01 04 04 00 FF	Manual Control of B Gain	
	Up	8x 01 04 04 02 FF		
	Down	8x 01 04 04 03 FF		
	Direct	8x 01 04 44 00 00 0p 0q FF	pq: B Gain	
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_SlowShutter	AutoSlowShutterLimit	8x 01 04 2A 0p 00 FF		
CAM_Shutter	Reset	8x 01 04 0A 00 FF	Shutter Setting	
	Up	8x 01 04 0A 02 FF		
	Down	8x 01 04 0A 03 FF		
	Direct	8x 01 04 4A 00 00 0p 0q FF	pq: Shutter Position	
CAM_Iris	Reset	8x 01 04 0B 00 FF	Iris Setting	
	Up	8x 01 04 0B 02 FF		
	Down	8x 01 04 0B 03 FF		
	Direct	8x 01 04 4B 00 00 0p 0q FF	pq: Iris Position	
CAM_Gain	Reset	8x 01 04 0C 00 FF	Gain Setting	
	Up	8x 01 04 0C 02 FF		
	Down	8x 01 04 0C 03 FF		
	Direct	8x 01 04 4C 00 00 0p 0q FF	pq: Gain Position	
	Gain Limit	8x 01 04 2C 0p FF	p: Gain Position	

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Command	Command value	Return value	Note	Remarks
CAM_Bright	Reset	8x 01 04 0D 00 FF	Bright Setting	
	Up	8x 01 04 0D 02 FF		
	Down	8x 01 04 0D 03 FF		
	Direct	8x 01 04 0D 00 00 0p 0q FF	pq: Bright Position	
CAM_ExpComp	On	8x 01 04 3E 02 FF	Exposure Compensation On/Off	
	Off	8x 01 04 3E 03 FF		
	Reset	8x 01 04 0E 00 FF	Exposure Compensation Amount Setting	
	Up	8x 01 04 0E 02 FF		
	Down	8x 01 04 0E 03 FF		
	Direct	8x 01 04 4E 00 00 0p 0q FF	pq: ExpComp Position	
CAM_BackLight	On	8x 01 04 33 02 FF	Back Light Compensation On/Off	
	Off	8x 01 04 33 03 FF		
CAM_NR(2D)Mode	Auto	8x 01 04 50 02 FF	ND2D Auto/Manual	
	Manual	8x 01 04 50 03 FF		
CAM_NR(2D)Level	-	8x 01 04 53 0p FF	p: NR Setting (0: Off, level 1 to 5)	
CAM_NR(3D)Level	-	8x 01 04 54 0p FF	p: NR Setting (0: Off, level 1 to 8)	
CAM_Gamma	-	8x 01 04 5B 0p FF	p: Gamma setting (0: Standard, 1 to 4)	
CAM_Flicker	-	8x 01 04 23 0p FF	p: Flicker Settings (0: Off, 1: 50Hz, 2: 60Hz)	
CAM_Aperture(sharpness)	Reset	8x 01 04 02 00 FF	Aperture Control	
	Up	8x 01 04 02 02 FF		
	Down	8x 01 04 02 03 FF		
	Direct	8x 01 04 42 00 00 0p 0q FF	pq: Aperture Gain	
CAM_PictureEffect	Off	8x 01 04 63 00 FF	Picture Effect Setting	
	B&W	8x 01 04 63 04 FF		
CAM_Memory	Reset	8x 01 04 3F 00 pp FF	pp: Memory Number(=0 to 127)	
	Set	8x 01 04 3F 01 pp FF		
	Recall	8x 01 04 3F 02 pp FF		
CAM_LR_Reverse	On	8x 01 04 61 02 FF	Image Flip Horizontal On/Off	
	Off	8x 01 04 61 03 FF		
CAM_PictureFlip	On	8x 01 04 66 02 FF	Image Flip Vertical On/Off	
	Off	8x 01 04 66 03 FF		
CAM_ColorGain	Diret	8x 01 04 49 00 00 00 0p FF	p: Color Gain setting 0h (60%) to Eh (200%)	
CAM_ICR	On	8x 01 04 01 02 FF	Infrared Mode On/Off	
	Off	8x 01 04 01 03 FF		
SYS_Menu	Off	8x 01 06 06 03 FF	Turns off the menu screen	
Pan_tiltDrive	Up	8x 01 06 01 VV WW 03 01 FF	VV: Pan speed 0x01 (low speed) to 0x18 (high speed) WW: Tilt speed 0x01 (low speed) to 0x14 (high speed) YYYY: Pan Position ZZZZ: Tilt Position	
	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		
	AbsolutePosition	8x 01 06 02 VV WW 0Y 0Y 0Y 0Y 0Z 0Z 0Z 0Z FF		
	RelativePosition	8x 01 06 03 VV WW 0Y 0Y 0Y 0Y 0Z 0Z 0Z 0Z FF		
	Home	8x 01 06 04 FF		
	Reset	8x 01 06 05 FF		
Pan_tiltLimitSet	LimitSet	8x 01 06 07 00 0W 0Y 0Y 0Y 0Y 0Z 0Z 0Z 0Z FF	W: 1 UpRight 0: DownLeft YYYY: Pan Limit Position ZZZZ: Tilt Position	
	LimitClear	8x 01 06 07 01 0W 07 0F 0F 0F 07 0F 0F 0F FF		

Control Commands

Command	Command value	Return value	Note	Remarks
CAM_AFSensitivity	High	8x 01 04 58 01 FF	AF Sensitivity High/Normal/Low	
	Normal	8x 01 04 58 02 FF		
	Low	8x 01 04 58 03 FF		
CAM_SettingReset	Reset	8x 01 04 A0 10 FF	Reset Factory Setting	
CAM_Brightness	Direct	8x 01 04 A1 00 00 0p 0q FF	pq: Brightness Position	
CAM_Contrast	Direct	8x 01 04 A2 00 00 0p 0q FF	pq: Contrast Position	
CAM_Flip	Off	8x 01 04 A4 00 FF	Single Command For Video Flip	
	Flip-H	8x 01 04 A4 01 FF		
	Flip-V	8x 01 04 A4 02 FF		
	Flip-HV	8x 01 04 A4 03 FF		
CAM_SettingSave	Save	8x 01 04 A5 10 FF	Save Current Setting	
CAM_Iridix	Direct	8x 01 04 A7 00 00 0p 0q FF	pq: Iridix Position	
CAM_AWBSensitivity	High	8x 01 04 A9 00 FF	High	
	Normal	8x 01 04 A9 01 FF	Normal	
	Low	8x 01 04 A9 02 FF	Low	
CAM_AFZone	Top	8x 01 04 AA 00 FF	AF Zone weight select	
	Center	8x 01 04 AA 01 FF		
	Bottom	8x 01 04 AA 02 FF		
CAM_ColorHue	Direct	8x 01 04 4F 00 00 00 0p FF	p: Color Hue setting 0h (− 14 dgrees) to Eh (+14 degrees	
For MS-4K81-12TR Tracking camera		Turn on tracking		
		TX:81 0A 11 54 02 FF		
		RX:90 42 FF 90 52 FF		
		=======Turn off tracking=======		
		TX:81 0A 11 54 03 FF		
		RX:90 41 FF 90 51 FF		
		=======Select the left person as the tracking target=======		
		TX:81 0A 11 A3 02 FF		
		RX:90 42 FF 90 52 FF		
		=======Select the right person as the tracking target=======		
		TX:81 0A 11 A3 03 FF		
		RX:90 41 FF 90 51 FF		
		=======Confirm to turn on tracking=======		
		TX:81 0A 11 A3 04 FF		
		RX:90 42 FF		
		RX:90 52 FF		
		=======Turn on the voice		

Inquiry Commands

Command	Command value	Return value	Notes	Remarks
CAM_PowerInq	8x 09 04 00 FF	y0 50 02 FF	On	
		y0 50 03 FF	Off(Standby)	
		y0 50 04 FF	Internal power ciruit error	
CAM_ZoomPosInq	8x 09 04 47 FF	y0 50 0p 0q 0r 0s FF	pqrs: Zoom Position	
CAM_FocusAFModeInq	8x 09 04 38 FF	y0 50 02 FF	Auto Focus	
		y0 50 03 FF	Manual Focus	
CAM_FocusPosInq	8x 09 04 48 FF	y0 50 0p 0q 0r 0s FF	pqrs: Focus Position	
CAM_WBModeInq	8x 09 04 35 FF	y0 50 00 FF	Auto	
		y0 50 01 FF	Indoor mode	
		y0 50 02 FF	Outdoor mode	
		y0 50 03 FF	OnePush mode	
		y0 50 05 FF	Manual	
		y0 50 2p FF	p:Color Temperature	
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_AEModeInq	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	
		y0 50 10 FF	Cam SpotLight	
		y0 50 21 FF	WDR	
		y0 50 22 FF	Low Light	
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_ExpCompModeInq	8x 09 04 3E FF	y0 50 02 FF	On	
		y0 50 03 FF	Off	
CAM_ExpCompPosInq	8x 09 04 4E FF	y0 50 00 00 0p 0q FF	pq: ExpComp Position	
CAM_BacklightModeInq	8x 09 04 33 FF	y0 50 02 FF	On	
		y0 50 03 FF	Off	
CAM_Nosise2DModeInq	8x 09 04 50 FF	y0 50 02 FF	Auto Noise 2D	
		y0 50 03 FF	Manual Noise 3D	
CAM_Nosise2DLevel	8x 09 04 53 FF	y0 50 0p FF	Noise Reduction (2D) p: 0 to 5	
CAM_Noise3DLevel	8x 09 04 54 FF	y0 50 0p FF	Noise Reduction (3D) p: 0 to 8	
CAM_FlickerModeInq	8x 09 04 55 FF	y0 50 0p FF	p: Flicker Settings(0: OFF, 1: 50Hz, 2: 60Hz)	
CAM_ApertureModeInq(Sharpness)	8x 09 04 05 FF	y0 50 02 FF	Auto Sharpness	
		y0 50 03 FF	Manual Sharpness	
CAM_ApertureInq(Sharpness)	8x 09 04 42 FF	y0 50 00 00 0p 0q FF	pq: Aperture Gain	
CAM_PictureEffectModeInq	8x 09 04 63 FF	y0 50 02 FF	Off	
		y0 50 03 FF	Neg.Art	
		y0 50 04 FF	B&W	
CAM_MemoryInq	8x 09 04 3F FF	y0 50 0p FF	p: Memory number last operated.	
SYS_MenuModeInq	8x 09 06 06 FF	y0 50 02 FF	On	
		y0 50 03 FF	Off	
CAM_PictureFlipInq	8x 09 04 66 FF	y0 50 02 FF	On	
		y0 50 03 FF	Off	
CAM_RegisterValueInq	8x 09 04 24 mm FF	y0 50 0p 0p ff	mm: Register No. (00 to FF) pp: Register Value (00 to FF)	
CAM_ColorGainInq	8x 09 04 49 FF	y0 50 00 00 00 0p FF	p: Color Gain setting 0h (60%) to Eh (200%)	
CAM_IDInq	8x 09 04 22 FF	y0 50 0p 0q 0r 0s FF	pqrs: Camera ID	

Inquiry Commands

Command	Command value	Return value	Notes	Remarks
CAM_VersionInq	8x 09 00 02 FF	y0 50 ab cd mn pq rs tu vw FF	ab: Factory Code(00: VHD, 01:MR, 08:T) cd: Hardware Version mnpq: ARM Version rstu: FPGA Version vw: Camera model 01: C Type 02: M Type 03: S Type	
VideoSystemInq	8x 09 06 23 FF	y0 50 00 FF	1920x1080i60	
		y0 50 01 FF	1920x1080p30	
		y0 50 02 FF	1280x720p60	
		y0 50 03 FF	1280x720p30	
		y0 50 04 FF	NTSC	
		y0 50 05 FF	NTSC	
		y0 50 06 FF	NTSC	
		y0 50 07 FF	1920x1080p60	
		y0 50 08 FF	1920x1080i50	
		y0 50 09 FF	1920x1080p25	
		y0 50 0A FF	1280x720p50	
		y0 50 0B FF	1280x720p25	
		y0 50 0C FF	PAL	
		y0 50 0D FF	PAL	
		y0 50 0E FF	PAL	
		y0 50 0F FF	1920x1080p50	
IR_Receive	8x 09 06 08 FF	y0 50 02 FF	On	
		y0 50 03 FF	Off	
Pan-tiltMaxSpeedInq	8x 09 06 11 FF	y0 50 ww zz FF	ww: Pan Max Speed zz: Tilt Max Speed	
Pan-tiltPosInq	8x 09 06 12 FF	y0 50 0w 0w 0w 0w 0z 0z 0z 0z FF	wwww: Pan Position zzzz: Tilt Position	
CAM_TypeInq	8x 09 00 03 FF	y0 50 01 FF	C Type	
		y0 50 02 FF	M Type	
		y0 50 03 FF	S Type	
CAM_DateInq	8x 09 00 04 FF	y0 50 0r ss uu uu vv ww 0D FF	Version date r: Big Version Number ss: Little Version Number uuuu: Year vv: Month ww: Day	
CAM_ModeInq	8x 09 04 A6 FF	y0 50 00 FF	Mode0	
		y0 50 02 FF	Mode2	
CAM_GainLimitInq	8x 09 04 2C FF	y0 50 0q FF	p: Gain Limit	
CAM_DHotPixelInq	8x 09 04 56 FF	y0 50 0q FF	p: Dynamic Hot Pixel Setting (0: 0ff, level 1 to 6)	
CAM_ICRModeInq	8x 09 04 01 FF	y0 50 02 FF	On	
		y0 50 03 FF	Off	
CAM_AFSensitivityInq	8x 09 04 58 FF	y0 50 01 FF	High	
		y0 50 02 FF	Normal	
		y0 50 03 FF	Low	
CAM_BrightnessInq	8x 09 04 A1 FF	y0 50 00 00 0p 0q FF	pq: Brightness Position	
CAM_ContrastInq	8x 09 04 A2 FF	y0 50 00 00 0p 0q FF	pq: Contrast Position	
CAM_FlipInq	8x 09 04 A4 FF	y0 50 00 FF	Off	
		y0 50 01 FF	Flip-H	
		y0 50 02 FF	Flip-V	
		y0 50 03 FF	Flip-HV	

Inquiry Commands

Command	Command value	Return value	Notes	Remarks
CAM_IridixInq	8x 09 04 A7 FF	y0 50 00 00 0p 0q FF	pq: Iridix Position	
CAM_AFZone	8x 09 04 AA FF	y0 50 00 FF	Top	
		y0 50 01 FF	Center	
		y0 50 02 FF	Bottom	
CAM_DRCInq	8x 09 04 25 FF	y0 50 00 00 0p 0q FF	pq: DRC Position	
CAM_RG_tuningInq	8x 09 04 12 FF	y0 50 00 00 0p 0q FF	pq: RG_tuning Position	
CAM_BG_tuningInq	8x 09 04 13 FF	y0 50 00 00 0p 0q FF	pq: BG_tuning Position	
CAM_ColorHueInq	8x 09 04 4F FF	y0 50 00 00 00 0p FF	p: Color Hue setting 0h (− 14 dgrees) to Eh (+14 degrees	
CAM_AWBSensitivityInq	8x 09 04 A9 FF	y0 50 00 FF	High	
		y0 50 01 FF	Normal	
		y0 50 02 FF	Low	
CAM_BrightnessInq	8x 09 04 A1 FF	y0 50 00 00 0p 0q FF	pq: Brightness Position	
CAM_DRCInq	8x 09 04 25 FF	y0 50 00 00 0p 0q FF	pq: DRC Position	

p: Color Hue setting 0h (− 14 dgrees) to

Block Inquiry Commands

Command	Command value	Return value	Notes	Remarks
CAM_LensBlockInq	8x 09 7E 7E 00 FF	y0 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	
CAM_CameraBlockInq	8x 09 7E 7E 01 FF	y0 50 0p 0p 0q 0q 0r 0s tt 0u vv ww 00 xx 0z FF	pp: R_Gain qq: B_Gain r: WB Mode s: Aperture tt: AE Mode u.bit2: Back Light u.bit1: Exposure Comp. vv: Shutter Position ww: Iris Position xx: Bright Position z: Exposure Comp. Position	
CAM_OtherBlockInq	8x 09 7E 7E 02 FF	y0 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	
CAM_EnlargementBlockInq	8x 09 7E 7E 03 FF	y0 50 00 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:Flip-V, 3:Flip-HV) t.bit2~0: NR2D Level u: Gain Limit	

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