NET / VISCA Commands

The serial port controls the command set

No	Function	Testing Item	Send Command	Instruction
1	AddressSet	Broadcast	88 30 01 FF	Address setting
2	CAM_Power	On	81 01 04 00 02 FF	Power ON/OFF
		Off	81 01 04 00 03 FF	
3	CAM_Zoom	Stop	81 01 04 07 00 FF	
		Tele(Standard)	81 01 04 07 02 FF	
		Wide(Standard)	81 01 04 07 03 FF	
		Tele(Variable)	81 01 04 07 2p FF	p = 0(low) - 7(high)
		Wide(Variable)	81 01 04 07 3p FF	
		Direct	81 01 04 47 0p 0q 0r 0s FF	pqrs: Zoom Position pqrs max value:4000
4	CAM_Focus	Stop	81 01 04 08 00 FF	
		Far(Standard)	81 01 04 08 02 FF	
		Near(Standard)	81 01 04 08 03 FF	
		Far(Variable)	81 01 04 08 2p FF	p = 0(low) - 7(high)
		Near(Variable)	81 01 04 08 3p FF	
		Direct	81 01 04 48 0p 0q 0r 0s FF	pqrs: Focus Position
		Auto Focus	81 01 04 38 02 FF	AF On/Off
		Manual Focus	81 01 04 38 03 FF	
		Auto/Manual	81 01 04 38 10 FF	
5	CAM_WB(White balance)	Auto	81 01 04 35 00 FF	Normal Auto
		Indoor mode	81 01 04 35 01 FF	Indoor mode
		Outdoor mode	81 01 04 35 02 FF	Outdoor mode
		OnePush mode	81 01 04 35 03 FF	One Push WB mode
		Manual	81 01 04 35 05 FF	Manual Control mode
		OnePush trigger	81 01 04 10 05 FF	One Push WB Trigger
		VAR	81 01 04 35 20 FF	
6	CAM_Rgain(Red gain)	Reset	81 01 04 03 00 FF	Manual Control of R Gain
		Up	81 01 04 03 02 FF	
		Down	81 01 04 03 03 FF	
		Direct	81 01 04 43 00 00 0p 0q FF	pq: R Gain
7	CAM_Bgain(Blue gain)	Reset	81 01 04 04 00 FF	Manual Control of B Gain
		Up	81 01 04 04 02 FF	
		Down	81 01 04 04 03 FF	
		Direct	81 01 04 44 00 00 0p 0q FF	pq: B Gain
8	CAM_AE(Exposure)	Full Auto	81 01 04 39 00 FF	Automatic Exposure mode
		Manual	81 01 04 39 03 FF	Manual Control mode
		Shutter priority	81 01 04 39 0A FF	Shutter Priority Automatic Exposure mode
		Iris priority	81 01 04 39 0B FF	Iris Priority Automatic Exposure mode

		Bright	81 01 04 39 0D FF	Bright Mode(Manual control)
		Cam SpotLight	81 01 04 39 10 FF	Spot light mode
9	CAM_MeteringMode (Metering Mode)	Average	81 01 04 3A 00 FF	Average Metering
		Center-weighted	81 01 04 3A 01 FF	Center-weighted Average Metering
		Smart	81 01 04 3A 02 FF	
		Top	82 01 04 3A 03 FF	
10	CAM_Shutter	Reset	81 01 04 0A 00 FF	Shutter Setting
		Up	81 01 04 0A 02 FF	
		Down	81 01 04 0A 03 FF	
		Direct	81 01 04 4A 00 00 0p 0q FF	pq: Shutter Position
11	CAM_Iris	Reset	81 01 04 0B 00 FF	Iris Setting
		Up	81 01 04 0B 02 FF	
		Down	81 01 04 0B 03 FF	
		Direct	81 01 04 4B 00 00 0p 0q FF	pq: Iris Position
12	CAM_Gain（Gain under manual exposure）	Reset	81 01 04 0C 00 FF	Gain Setting
		Up	81 01 04 0C 02 FF	
		Down	81 01 04 0C 03 FF	
		Direct	81 01 04 0C 00 00 0p 0q FF	pq: Gain Position
		Gain Limit	81 01 04 2C 0p FF	p: Gain Position
13	CAM_Bright	Reset	81 01 04 0D 00 FF	Bright Setting
		Up	81 01 04 0D 02 FF	
		Down	81 01 04 0D 03 FF	
		Direct	81 01 04 0D 00 00 0p 0q FF	pq: Bright Position
14	CAM_ExpComp	On	81 01 04 3E 02 FF	Exposure Compensation On/Off
		Off	81 01 04 3E 03 FF	
		Reset	81 01 04 0E 00 FF	Exposure Compensation Amount Setting
		Up	81 01 04 0E 02 FF	
		Down	81 01 04 0E 03 FF	
		Direct	81 01 04 4E 00 00 0p 0q FF	pq: ExpComp Position
15	CAM_BackLight	On	81 01 04 33 02 FF	Back Light Compensation On/Off
		Off	81 01 04 33 03 FF	
16	CAM_NR(2D)	-	81 01 04 53 0p FF	p: NR Setting (0: Off, level 1 to 5)
17	CAM_NR(3D)	-	81 01 04 54 0p FF	p: NR Setting (0: Off, level 1 to 5)
18	CAM_Gamma	-	81 01 04 5B 0p FF	p: Gamma setting (0: Standard, 1 to 4) 0：default； 1:0.45； 2:0.5； 3:0.56； 4:0.63；
19	CAM_Flicker	-	81 01 04 23 0p FF	p: Flicker Settings (0: Off, 1: 50Hz, 2: 60Hz)
20	CAM_ApertureMode(sharpness)	Auto	81 01 04 05 02 FF	Sharpness Auto

		Manual	81 01 04 05 03 FF	Sharpness Manual
21	CAM_Sharpness	Reset	81 01 04 02 00 FF	Aperture Control
		Up	81 01 04 02 02 FF	
		Down	81 01 04 02 03 FF	
		Direct	81 01 04 42 00 00 0p 0q FF	pq: Aperture Gain
22	CAM_PictureEffect	Off	81 01 04 63 00 FF	Picture Effect Setting
		B&W	81 01 04 63 04 FF	
23	CAM_Memory(Preset）	Reset	81 01 04 3F 00 pp FF	pp: Memory Number(=0 to 254)
		Set	81 01 04 3F 01 pp FF	
		Recall	81 01 04 3F 02 pp FF	
24	CAM_LR_Reverse（Image Flip Horizontal ）	On	81 01 04 61 02 FF	Image Flip Horizontal On/Off
		Off	81 01 04 61 03 FF	
25	CAM_PictureFlip（Image Flip Vertical ）	On	81 01 04 66 02 FF	Image Flip Vertical On/Off
		Off	81 01 04 66 03 FF	
26	CAM_Saturation	Diret	81 01 04 49 00 00 00 0p FF	p: Color Gain setting 0h (60%) to Eh (200%)
27	Pan_tiltDrive	Up	81 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	81 01 06 01 VV WW 03 02 FF	
		Left	81 01 06 01 VV WW 01 03 FF	
		Right	81 01 06 01 VV WW 02 03 FF	
		Upleft	81 01 06 01 VV WW 01 01 FF	
		Upright	81 01 06 01 VV WW 02 01 FF	
		DownLeft	81 01 06 01 VV WW 01 02 FF	
		DownRight	81 01 06 01 VV WW 02 02 FF	
		Stop	81 01 06 01 VV WW 03 03 FF	
		AbsolutePosition	81 01 06 02 VV WW 0Y 0Y 0Y 0Y 0Z 0Z 0Z 0Z FF	
		RelativePosition	81 01 06 03 VV WW 0Y 0Y 0Y 0Y 0Z 0Z 0Z 0Z FF	
		Home	81 01 06 04 FF	
		Reset	81 01 06 05 FF	
28	Pan_tiltLimitSet	LimitSet	81 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	81 01 06 07 01 0W 07 0F 0F 0F 07 0F 0F 0F FF	
29	CAM_AFSensitivity	High	81 01 04 58 01 FF	AF Sensitivity High/Normal/Low
		Normal	81 01 04 58 02 FF	
		Low	81 01 04 58 03 FF	
30	CAM_SettingReset	Reset	81 01 04 A0 10 FF	Reset Factory Setting
31	CAM_Brightness	Direct	81 01 04 A1 00 00 0p 0q FF	pq: Brightness Position

32	CAM_Contrast	Direct	81 01 04 A2 00 00 0p 0q FF	pq: Contrast Position
33	CAM_Flip	Off	81 01 04 A4 00 FF	Single Command For Video Flip
		Flip-H	81 01 04 A4 01 FF	
		Flip-V	81 01 04 A4 02 FF	
		Flip-HV	81 01 04 A4 03 FF	
34	CAM_SettingSave)	Save	81 01 04 A5 10 FF	Save Current Setting
35	CAM_AWBSensitivity	High	81 01 04 A9 00 FF	High
		Normal	81 01 04 A9 01 FF	Normal
		Low	81 01 04 A9 02 FF	Low
36	CAM_AFZone	Top	81 01 04 AA 00 FF	AF Zone weight select
		Center	81 01 04 AA 01 FF	
		Bottom	81 01 04 AA 02 FF	
37	CAM_DVIMode	HDMI	81 01 04 AB 02 FF	DVI output mode, default: HDMI
		DVI	81 01 04 AB 03 FF	
38	CAM_ColorHue	Direct	81 01 04 4F 00 00 00 0p FF	p: Color Hue setting 0h (− 7 dgrees) to Eh (+7 degrees)
39	Infrared		81 01 06 08 02 FF	
			81 01 06 08 03 FF	

Serial port query command set

No.	Command	Command Package	Return Package	Instruction
1	CAM_PowerInq	81 09 04 00 FF	y0 50 02 FF	On
			y0 50 03 FF	Off(Standby)
2	CAM_ZoomPosInq	81 09 04 47 FF	y0 50 0p 0q 0r 0s FF	pqrs: Zoom Position
3	CAM_FocusAFModeInq	81 09 04 38 FF	y0 50 02 FF	Auto Focus
			y0 50 03 FF	Manual Focus
4	CAM_FocusPosInq	81 09 04 48 FF	y0 50 0p 0q 0r 0s FF	pqrs: Focus Position
5	CAM_WBModeInq	81 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 20 FF	VAR
6	CAM_RGainInq	81 09 04 43 FF	y0 50 00 00 0p 0q FF	pq: R Gain
7	CAM_BGainInq	81 09 04 44 FF	y0 50 00 00 0p 0q FF	pq: B Gain
8	CAM_AEModeInq	81 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
9	CAM_ShutterPosInq	81 09 04 4A FF	y0 50 00 00 0p 0q FF	pq: Shutter Position
10	CAM_IrisPosInq	81 09 04 4B FF	y0 50 00 00 0p 0q FF	pq: Iris Position
11	CAM_GainPosInq	81 09 04 4C FF	y0 50 00 00 0p 0q FF	pq: Gain Position
12	CAM_BrightPosInq	81 09 04 4D FF	y0 50 00 00 0p 0q FF	pq: Bright Position
13	CAM_ExpCompModeInq	81 09 04 3E FF	y0 50 02 FF	On
			y0 50 03 FF	Off

14	CAM_ExpCompPosInq	81 09 04 4E FF	y0 50 00 00 0p 0q FF	pq: ExpComp Position
15	CAM_BacklightModeInq	81 09 04 33 FF	y0 50 02 FF	On
			y0 50 03 FF	Off
16	CAM_Noise2DModeInq	81 09 04 53 FF	y0 50 0p FF	Noise Reduction (2D) p: 0 to 5
17	CAM_Noise3DModeInq	81 09 04 54 FF	y0 50 0p FF	Noise Reduction (3D) p: 0 to 5
18	CAM_FlickerModeInq	81 09 04 55 FF	y0 50 0p FF	p: Flicker Settings(0: OFF, 1: 50Hz, 2: 60Hz)
19	CAM_ApertureInq	81 09 04 42 FF	y0 50 00 00 0p 0q FF	pq: Aperture Gain
20	CAM_PictureEffectModeInq	81 09 04 63 FF	y0 50 02 FF	Off
			y0 50 03 FF	Neg.Art
			y0 50 04 FF	B&W
21	CAM_MemoryInq	81 09 04 3F FF	y0 50 0p FF	p: Memory number last operated.
22	SYS_MenuModeInq	81 09 06 06 FF	y0 50 02 FF	On
			y0 50 03 FF	Off
23	CAM_LR_ReverseInq	81 09 04 61 FF	y0 50 02 FF	On
			y0 50 03 FF	Off
24	CAM_PictureFlipInq	81 09 04 66 FF	y0 50 02 FF	On
			y0 50 03 FF	Off
25	CAM_IDInq	81 09 04 22 FF	y0 50 0p 0q 0r 0s FF	pqrs: Camera ID
26	CAM_VersionInq	81 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
27	Pan-tiltMaxSpeedInq	81 09 06 11 FF	y0 50 ww zz FF	ww: Pan Max Speed zz: Tilt Max Speed
28	Pan-tiltPosInq	81 09 06 12 FF	y0 50 0w 0w 0w 0w 0z 0z 0z 0z FF	wwww: Pan Position zzzz: Tilt Position
29	CAM_DateInq	81 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
30	CAM_ModeInq	81 09 04 A6 FF	y0 50 00 FF	Mode0
			y0 50 02 FF	Mode2
31	CAM_MeteringModeInq	81 09 04 3A FF	y0 50 00 FF	Average Metering
			y0 50 01 FF	Center-weighted Average Metering
			y0 50 02 FF	Smart
			y0 50 03 FF	Top
32	CAM_GainLimitInq	81 09 04 2C FF	y0 50 0q FF	p: Gain Limit
33	CAM_DHotPixelInq	81 09 04 56 FF	y0 50 0q FF	p: Dynamic Hot Pixel Setting (0: 0ff, level 1 to 5)
34	CAM_AFSensitivityInq	81 09 04 58 FF	y0 50 01 FF	High

			y0 50 02 FF	Normal
			y0 50 03 FF	Low
35	CAM_BrightnessInq	81 09 04 A1 FF	y0 50 00 00 0p 0q FF	pq: Brightness Position
36	CAM_ContrastInq	81 09 04 A2 FF	y0 50 00 00 0p 0q FF	pq: Contrast Position
37	CAM_FlipInq	81 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
38	CAM_IridixInq	81 09 04 A7 FF	y0 50 00 00 0p 0q FF	pq: Iridix Position
39	Color System Inq	81 09 04 A8 FF	y0 50 02 FF	VGA Mode On
			y0 50 03 FF	VGA Mode Off
40	CAM_AFZone	81 09 04 AA FF	y0 50 00 FF	Top
			y0 50 01 FF	Center
			y0 50 02 FF	Bottom
41	CAM_DVIModeInq	81 09 04 AB FF	y0 50 02 FF	DVI Mode:HDMI
			y0 50 03 FF	DVI Mode:DVI
42	CAM_ColorHueInq	81 09 04 4F FF	y0 50 00 00 00 0p FF	p: Color Hue setting 0h (−14 dgrees) to Eh (+14 degrees
43	CAM_AWBSensitivityInq	81 09 04 A9 FF	y0 50 00 FF	High
			y0 50 01 FF	Normal
			y0 50 02 FF	Low
44	CAM_LensBlockInq	81 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
45	CAM_CameraBlockInq	81 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
46	CAM_EnlargementBlockInq	81 09 7E 7E 03 FF	y0 50 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 Levelu: Gain Limit

Visca return commands

No.	Command	Function	Command	Instruction
1	ACK/Comletion Messages	ACK	z0 4y FF (y: Socket No.)	Return when the command is accepted.
		Completion	z0 5y FF (y: Socket No.)	Return when the command has been executed.
2	Error Messages	Syntax Error	z0 60 02 FF	Returned when the command format is different or when a command with illegal command parameters is accepted.
		Command Buffer Full	z0 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	z0 6y 04 FF (y: Socket No.)	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	z0 6y 05 FF (y: Socket No.)	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	z0 6y 41 FF(y: Execution command Socket No. Inquiry command: 0)	Returned when a command canot be executed due to current conditions.For example, when commands controlling the focus manually are received during auto focus.