COMREON®

Serial Control Command set

No.	Function	Test Item	Send the command	Explanation	Actual result	Notes
1	AddressSet	Broadcast	88 30 01 FF	Address setting	OK	
2	CAM_Power	On	8x 01 04 00 02 FF	Power ON/OFF	OK	
		Off	8x 01 04 00 03 FF		OK	
3	CAM_Zoom	Stop	8x 01 04 07 00 FF		OK	
		Tele(Standard)	8x 01 04 07 02 FF		OK	
		Wide(Standard)	8x 01 04 07 03 FF		OK	
		Tele(Variable)	8x 01 04 07 2p FF	p = 0(low) - 7(high)	OK	
		Wide(Variable)	8x 01 04 07 3p FF		OK	
		Direct	8x 01 04 47 0p 0q 0r 0s FF	pqrs: Zoom Position pqrs Max:4000	OK	
4	CAM_DZoom	D-Zoom Limit	8x 01 04 26 0p FF	p = 0(x1), 1(x1.5), 2(x2), 3(x4)	NG	no support
5	CAM_Focus	Stop	8x 01 04 08 00 FF		OK	
		Far(Standard)	8x 01 04 08 02 FF		OK	
		Near(Standard)	8x 01 04 08 03 FF		OK	
		Far(Variable)	8x 01 04 08 2p FF	p = 0(low) - 7(high)	OK	
		Near(Variable)	8x 01 04 08 3p FF		OK	
		Direct	8x 01 04 48 0p 0q 0r 0s FF	pqrs: Focus Position	OK	
		Auto Focus	8x 01 04 38 02 FF	AF On/Off	OK	
		Manual Focus	8x 01 04 38 03 FF		OK	
		Auto/Manual	8x 01 04 38 10 FF		OK	
		One Push Triger	8x 01 04 18 01 FF	One Push Triger	NG	
		Infinity	8x 01 04 18 02 FF	Forced Infinity	NG	no support
		Near Limit	8x 01 04 28 0p 0q 0r 0s FF	pqrs:Focus Near Limit Positon	NG	
6	CAM_WB(white balance)	Auto	8x 01 04 35 00 FF	Normal Auto	OK	
		Indoor mode	8x 01 04 35 01 FF	Indoor mode	OK	
		Outdoor mode	8x 01 04 35 02 FF	Outdoor mode	OK	
		OnePush mode	8x 01 04 35 03 FF	One Push WB mode	OK	
		Manual	8x 01 04 35 05 FF	Manual Control mode	OK	
		OnePush trigger	8x 01 04 10 05 FF	One Push WB Trigger	OK	
7	CAM_Rgain(Red Gain)	Reset	8x 01 04 03 00 FF	Manual Control of R Gain	OK	
		Up	8x 01 04 03 02 FF		OK	
		Down	8x 01 04 03 03 FF		OK	
		Direct	8x 01 04 43 00 00 0p 0q FF	pq: R Gain	OK	
8	CAM_Bgain(Blue Gain)	Reset	8x 01 04 04 00 FF	Manual Control of B Gain	OK	
		Up	8x 01 04 04 02 FF		OK	
		Down	8x 01 04 04 03 FF		OK	
		Direct	8x 01 04 44 00 00 0p 0q FF	pq: B Gain	OK	
9	CAM_AE(Exposure)	Full Auto	8x 01 04 39 00 FF	Automatic Exposure mode	OK	
		Manual	8x 01 04 39 03 FF	Manual Control mode	OK	
		Shutter priority	8x 01 04 39 0A FF	Shutter Priority Automatic Exposure mode	OK	
		Iris priority	8x 01 04 39 0B FF	Iris Priority Automatic Exposure mode	OK	
		Bright	8x 01 04 39 0D FF	Bright Mode(Manual control)	OK	
		Cam SpotLight	8x 01 04 39 10 FF	Spot light mode	NG	no support
10	CAM_MeteringMode (metering mode)	Average	8x 01 04 3A 00 FF	Average Metering	OK	
		Center-weighted	8x 01 04 3A 01 FF	Center-weighted Average Metering	OK	
11	CAM_SlowShutter	AutoSlowShutterLimit	8x 01 04 2A 0p 00 FF		NG	no support
12	CAM_Shutter	Reset	8x 01 04 0A 00 FF	Shutter Setting	OK	
		Up	8x 01 04 0A 02 FF		OK	
		Down	8x 01 04 0A 03 FF		OK	
		Direct	8x 01 04 4A 00 00 0p 0q FF	pq: Shutter Position	OK	
13	CAM_Iris	Reset	8x 01 04 0B 00 FF	Iris Setting	OK	
		Up	8x 01 04 0B 02 FF		OK	
		Down	8x 01 04 0B 03 FF		OK	
		Direct	8x 01 04 4B 00 00 0p 0q FF	pq: Iris Position	OK	
14	CAM_Gain（Gain in manual exposure）	Reset	8x 01 04 0C 00 FF	Manual----Gain Setting	OK	
		Up	8x 01 04 0C 02 FF		OK	
		Down	8x 01 04 0C 03 FF		OK	
		Direct	8x 01 04 0C 00 00 0p 0q FF	pq: Gain Position	OK	
	Exposure—automatic mode	Gain Limit	81 01 04 2C 0p FF	p: Gain Position	OK	
15	CAM_Bright	Reset	8x 01 04 0D 00 FF	Bright Setting	OK	
		Up	8x 01 04 0D 02 FF		OK	
		Down	8x 01 04 0D 03 FF		OK	
		Direct	8x 01 04 0D 00 00 0p 0q FF	pq: Bright Position	OK	

16	CAM_WDRStrength(Wide Dynamic)	Reset	8x 01 04 21 00 FF	WDR Level Setting	NG	no support
		Up	8x 01 04 21 02 FF		NG	
		Down	8x 01 04 21 03 FF		NG	
		Direct	8x 01 04 51 00 00 0p 0q FF	pq: WDR Level Positon	NG	
17	CAM_ExpComp	On	8x 01 04 3E 02 FF	Exposure Compensation On/Off	OK	
		Off	8x 01 04 3E 03 FF		OK	
		Reset	8x 01 04 0E 00 FF	Exposure Compensation Amount Setting	OK	
		Up	8x 01 04 0E 02 FF		OK	
		Down	8x 01 04 0E 03 FF		OK	
		Direct	8x 01 04 4E 00 00 0p 0q FF	pq: ExpComp Position	OK	
18	CAM_BackLight	On	8x 01 04 33 02 FF	Back Light Compensation On/Off	OK	
		Off	8x 01 04 33 03 FF		OK	
19	CAM_NR(2D)	-	8x 01 04 53 0p FF	p: NR Setting (0: Off, level 1 to 5)	OK	
20	CAM_NR(3D)	-	8x 01 04 54 0p FF	p: NR Setting (0: Off, level 1 to 5)	OK	
21	CAM_Gamma	-	8x 01 04 5B 0p FF	p: Gamma setting (0: Standard, 1 to 4)	OK	
22	CAM_Flicker	-	8x 01 04 23 0p FF	p: Flicker Settings (0: Off, 1: 50Hz, 2: 60Hz)	OK	
23	CAM_DHotPixel	-	8x 01 04 56 0p FF	p: Dynamic Hot Pixel Setting (0: 0ff, level 1 to 5)	NG	Only the return value, not the menu item
24	CAM_Aperture	Reset	8x 01 04 02 00 FF	Aperture Control	OK	
		Up	8x 01 04 02 02 FF		OK	
		Down	8x 01 04 02 03 FF		OK	
		Direct	8x 01 04 42 00 00 0p 0q FF	pq: Aperture Gain	OK	
25	CAM_PictureEffect	Off	8x 01 04 63 00 FF	Picture Effect Setting	OK	
		B&W	8x 01 04 63 04 FF		OK	
26	CAM_Memory(preset position)	Reset	8x 01 04 3F 00 pp FF	pp: Memory Number(=0 to 127)	OK	
		Set	8x 01 04 3F 01 pp FF		OK	
		Recall	8x 01 04 3F 02 pp FF		OK	
27	CAM_LR_Reverse（Image Horizontal Flip）	On	8x 01 04 61 02 FF	Image Flip Horizontal On/Off	OK	
		Off	8x 01 04 61 03 FF		OK	
28	CAM_PictureFlip（Image vertical Flip）	On	8x 01 04 66 02 FF	Image Flip Vertical On/Off	OK	
		Off	8x 01 04 66 03 FF		OK	
29	CAM_RegisterValue	-	8x 01 04 24 mn 0p 0q FF	mm: Register No. (=00-7F) pp: Register Value (=00-7F)	NG	Only the return value, not the menu item
30	CAM_ColorGain	Diret	8x 01 04 49 00 00 00 0p FF	p: Color Gain setting 0h (60%) to Eh (200%)	OK	
31	CAM_ICR	On	8x 01 04 01 02 FF	Infrared Mode On/Off	NG	Only the return value, not the menu item
		Off	8x 01 04 01 03 FF		NG	
32	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	OK	
		Down	8x 01 06 01 VV WW 03 02 FF		OK	
		Left	8x 01 06 01 VV WW 01 03 FF		OK	
		Right	8x 01 06 01 VV WW 02 03 FF		OK	
		Upleft	8x 01 06 01 VV WW 01 01 FF		OK	
		Upright	8x 01 06 01 VV WW 02 01 FF		OK	
		DownLeft	8x 01 06 01 VV WW 01 02 FF		OK	
		DownRight	8x 01 06 01 VV WW 02 02 FF		OK	
		Stop	8x 01 06 01 VV WW 03 03 FF		OK	
		AbsolutePosition	8x 01 06 02 VV WW 0Y 0Y 0Y 0Y 0Z 0Z 0Z 0Z FF		OK	
		RelativePosition	8x 01 06 03 VV WW 0Y 0Y 0Y 0Y 0Z 0Z 0Z 0Z FF		OK	
		Home	8x 01 06 04 FF		OK	
		Reset	8x 01 06 05 FF		OK	
33	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	OK	
		LimitClear	8x 01 06 07 01 0W 07 0F 0F 0F 07 0F 0F 0F FF		OK	
34	CAM_AFSensitivity	High	8x 01 04 58 01 FF	AF Sensitivity High/Normal/Low	OK	
		Normal	8x 01 04 58 02 FF		OK	
		Low	8x 01 04 58 03 FF		OK	
35	CAM_SettingReset	Reset	8x 01 04 A0 10 FF	Reset Factory Setting	OK	
36	CAM_Brightness	Direct	8x 01 04 A1 00 00 0p 0q FF	pq: Brightness Position	OK	
37	CAM_Contrast	Direct	8x 01 04 A2 00 00 0p 0q FF	pq: Contrast Position	OK	
38	CAM_Flip	Off	8x 01 04 A4 00 FF	Single Command For Video Flip	OK	
		Flip-H	8x 01 04 A4 01 FF		OK	
		Flip-V	8x 01 04 A4 02 FF		OK	
		Flip-HV	8x 01 04 A4 03 FF		OK	
39	CAM_SettingSave	Save	8x 01 04 A5 10 FF	Save Current Setting	OK	
40	CAM_AWBSensitivity	High	8x 01 04 A9 00 FF	High	OK	
		Normal	8x 01 04 A9 01 FF	Normal	OK	
		Low	8x 01 04 A9 02 FF	Low	OK	

41	CAM_AFZone	Top	8x 01 04 AA 00 FF	AF Zone weight select	OK	
		Center	8x 01 04 AA 01 FF		OK	
		Bottom	8x 01 04 AA 02 FF		OK	
42	CAM_DVIMode/DVI Mode	HDMI	8x 01 04 AB 02 FF	DVI output mode, default: HDMI	OK	
		DVI	8x 01 04 AB 03 FF		OK	
43	Serial Control command-menu "determine" function	determine	81 01 06 06 05 FF	The menu to determine	OK	
44	Serial Control command-menu "return" function	return	81 01 06 06 04 FF	Returns the previous level menu	OK	
45	CAM_ColorHue(Color sensitivity/tone)	Direct	8x 01 04 4F 00 00 00 0p FF	p: Color Hue setting 0h (− 7 dgrees) to Eh (+7 degrees)	OK	
46	Infrared	Open	81 01 06 08 02 FF		OK	
		Close	81 01 06 08 03 FF		OK	
47	CAM_Gamma(Gamma Correction)	CAM_AFZone	8x 01 04 5B 0p FF	p: Gamma setting (0x00~0x0A)	OK	

Serial Query Command Set

No.	Order	Command package	Return packet	Explanation	Actual result	Notes
1	CAM_PowerInq	8x 09 04 00 FF	y0 50 02 FF	On	OK	
			y0 50 03 FF	Off(Standby)	OK	
2	CAM_ZoomPosInq	8x 09 04 47 FF	y0 50 0p 0q 0r 0s FF	pqrs: Zoom Position	OK	
3	CAM_FocusAFModeInq	8x 09 04 38 FF	y0 50 02 FF	Auto Focus	OK	
			y0 50 03 FF	Manual Focus	OK	
4	CAM_FocusPosInq	8x 09 04 48 FF	y0 50 0p 0q 0r 0s FF	pqrs: Focus Position	OK	
5	CAM_FocusNearLimitInq	8x 09 04 28 FF	y0 50 0p 0q 0r 0s FF	pqrs: Focus Near LimitPosition	NG	
6	CAM_WBModeInq	8x 09 04 35 FF	y0 50 00 FF	Auto	OK	
			y0 50 01 FF	Indoor mode	OK	
			y0 50 02 FF	Outdoor mode	OK	
			y0 50 03 FF	OnePush mode	OK	
			y0 50 05 FF	Manual	OK	
7	CAM_RGainInq	8x 09 04 43 FF	y0 50 00 00 0p 0q FF	pq: R Gain	OK	
8	CAM_BGainInq	8x 09 04 44 FF	y0 50 00 00 0p 0q FF	pq: B Gain	OK	
9	CAM_AEModeInq	8x 09 04 39 FF	y0 50 00 FF	Full Auto	OK	
			y0 50 03 FF	Manual	OK	
			y0 50 0A FF	Shutter priority	OK	
			y0 50 0B FF	Iris priority	OK	
			y0 50 0D FF	Bright	OK	
10	CAM_ShutterPosInq	8x 09 04 4A FF	y0 50 00 00 0p 0q FF	pq: Shutter Position	OK	
11	CAM_IrisPosInq	8x 09 04 4B FF	y0 50 00 00 0p 0q FF	pq: Iris Position	OK	
12	CAM_GainPosInq	8x 09 04 4C FF	y0 50 00 00 0p 0q FF	pq: Gain Position	OK	
13	CAM_BrightPosInq	8x 09 04 4D FF	y0 50 00 00 0p 0q FF	pq: Bright Position	OK	
14	CAM_ExpCompModeInq	8x 09 04 3E FF	y0 50 02 FF	On	OK	
			y0 50 03 FF	Off	OK	
15	CAM_ExpCompPosInq	8x 09 04 4E FF	y0 50 00 00 0p 0q FF	pq: ExpComp Position	OK	
16	CAM_BacklightModeInq	8x 09 04 33 FF	y0 50 02 FF	On	OK	
			y0 50 03 FF	Off	OK	
17	CAM_Noise2DModeInq	8x 09 04 53 FF	y0 50 0p FF	Noise Reduction (2D) p: 0 to 5	OK	
18	CAM_Noise3DModeInq	8x 09 04 54 FF	y0 50 0p FF	Noise Reduction (3D) p: 0 to 5	OK	
19	CAM_FlickerModeInq	8x 09 04 55 FF	y0 50 0p FF	p: Flicker Settings(0: OFF, 1: 50Hz, 2: 60Hz)	OK	
20	CAM_ApertureInq	8x 09 04 42 FF	y0 50 00 00 0p 0q FF	pq: Aperture Gain	OK	
21	CAM_PictureEffectModeInq	8x 09 04 63 FF	y0 50 02 FF	Off	OK	
			y0 50 03 FF	Neg.Art	OK	
			y0 50 04 FF	B&W	OK	
22	CAM_MemoryInq	8x 09 04 3F FF	y0 50 0p FF	p: Memory number last operated.	OK	
23	SYS_MenuModeInq	8x 09 06 06 FF	y0 50 02 FF	On	OK	
			y0 50 03 FF	Off	OK	
24	CAM_LR_ReverseInq	8x 09 04 61 FF	y0 50 02 FF	On	OK	
			y0 50 03 FF	Off	OK	
25	CAM_PictureFlipInq	8x 09 04 66 FF	y0 50 02 FF	On	OK	
			y0 50 03 FF	Off	OK	
26	CAM_IDInq	8x 09 04 22 FF	y0 50 0p 0q 0r 0s FF	pqrs: Camera ID	OK	
27	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	OK	
28	Pan-tiltMaxSpeedInq	8x 09 06 11 FF	y0 50 ww zz FF	ww: Pan Max Speed zz: Tilt Max Speed	OK	
29	Pan-tiltPosInq	8x 09 06 12 FF	y0 50 0w 0w 0w 0w 0z 0z 0z 0z FF	wwww: Pan Position zzzz: Tilt Position	OK	

30	Pan-tiltModeInq	8x 09 06 10 FF	y0 50 pq rs FF	pqrs: Pan/Tilt Status	NG	
31	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	OK	
32	CAM_ModeInq	8x 09 04 A6 FF	y0 50 00 FF	Mode0	OK	
			y0 50 02 FF	Mode2	OK	
33	CAM_MeteringModeInq	8x 09 04 3A FF	y0 50 00 FF	Average Metering	OK	
			y0 50 01 FF	Center-weighted Average Metering	OK	
34	CAM_GainLimitInq	8x 09 04 2C FF	y0 50 0q FF	p: Gain Limit	OK	
35	CAM_DHotPixelInq	8x 09 04 56 FF	y0 50 0q FF	p: Dynamic Hot Pixel Setting (0: 0ff, level 1 to 5)	OK	
36	CAM_AFSensitivityInq	8x 09 04 58 FF	y0 50 01 FF	High	OK	
			y0 50 02 FF	Normal	OK	
			y0 50 03 FF	Low	OK	
37	CAM_BrightnessInq	8x 09 04 A1 FF	y0 50 00 00 0p 0q FF	pq: Brightness Position	OK	
38	CAM_ContrastInq	8x 09 04 A2 FF	y0 50 00 00 0p 0q FF	pq: Contrast Position	OK	
39	CAM_FlipInq	8x 09 04 A4 FF	y0 50 00 FF	Off	OK	
			y0 50 01 FF	Flip-H	OK	
			y0 50 02 FF	Flip-V	OK	
			y0 50 03 FF	Flip-HV	OK	
40	CAM_IridixInq	8x 09 04 A7 FF	y0 50 00 00 0p 0q FF	pq: Iridix Position	OK	
41	Color System Inq	8x 09 04 A8 FF	y0 50 02 FF	VGA Mode On	OK	
			y0 50 03 FF	VGA Mode Off	OK	
42	CAM_GammaInq	8x 09 04 5B FF	y0 50 0p FF	p: Gamma setting (0x00~0x0A)	NG	
43	CAM_AFZone	8x 09 04 AA FF	y0 50 00 FF	Top	OK	
			y0 50 01 FF	Center	OK	
			y0 50 02 FF	Bottom	OK	
44	CAM_DVIModeInq	8x 09 04 AB FF	y0 50 02 FF	DVI Mode:HDMI	OK	
			y0 50 03 FF	DVI Mode:DVI	OK	
45	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	OK	
46	CAM_AWBSensitivityInq	8x 09 04 A9 FF	y0 50 00 FF	High	OK	
			y0 50 01 FF	Normal	OK	
			y0 50 02 FF	Low	OK	
47	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	OK	
48	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	OK	
49	CAM_EnlargementBlockInq	8x 09 7E 7E 03 FF	y0 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:Flip-V, 3:Flip-HV) t.bit2~0: NR2D Level u: Gain Limit	OK	

COMREON®

Serial Return Command

No.	Command	Function	Command package	Annotation		Notes
1	ACK/Comletion Messages	ACK	z0 4y FF (y: Socket No.)	Return when the command is accepted.	OK	
		Completion	z0 5y FF (y: Socket No.)	Return when the command has been executed.	OK	
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.	OK	
		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.	OK	
		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.	OK	
		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.	OK	
		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.	OK	