

VC-A51_VC-A51S_VC-A52S RS-232 command set

No	Issue Date	Description	Apply Firmware
1	2017/11/30	First version.	VGR100
2	2018/01/16	Revise the command: 8x 09 7E 7E 04 FF	VGR101
3	2019/02/12	Add Power_LoadState command: 8x 01 04 75 6A 02 FF: Load preset 0 when power on 8x 01 04 75 6A 03 FF: Load Last Memory when power on	VGR104
4	2019/07/30	Output Video Type: Add HDMI for VC-A52S	VC-A51S: VGR104 VC-A52S: VMC106

*Notice:

1. The RS-232/ PelcoD command list is for VC-A51_VC-A51S_VC-A52S
2. The yellow highlight  means the latest update.
3. The blue highlight  means the deleted item.

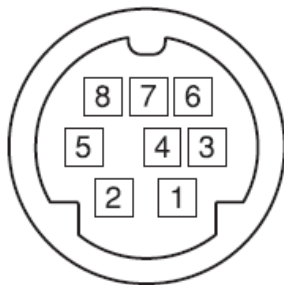
1. Communication Protocol

Transmit Method: Asynchronous Interface Half
Duplex Serial Communication

- Transmit Speed: 9600bps or 38400bps
- Start bit: 1Bit
- Parity Check: NA
- Data Bit: 8Bit
- Stop Bit: 1Bit

2. The wire diagram

The RS232 wire diagram between presenter and remote controller as below



No	Pins
1	DTR IN
2	DSR IN
3	TXD IN
4	GND
5	RXD IN
6	GND

3. ACK & Completion message

	Reply Packet	Note
Ack	X0 4Y FF	Y = socket number
Completion (commands)	X0 5Y FF	Y = socket number
Completion (Inquiries)	X0 50 ... FF	
X = 9 to F==>camera address + 8 , Y=1 to 2		

4. Error message

Error Packet	Description
X0 60 02 FF	Syntax Error
X0 60 03 FF	Command buffer full
X0 6Y 04 FF	Command cancelled
X0 6Y 05 FF	No socket (to be cancelled)
X0 6Y 41 FF	Command not executable
X = 9 to F==>camera address + 8, Y = socket number, Y=0 to 2, 0: Inquiry not execution	

5. Command execution cancel

	Cancel Packet	Note
Cancel	8X 2Y FF	Y = socket number
X = 1 to 7==>camera address, Y = socket number, Y=1 to 2		

6. Network Change

	Packet	Note
Address set	88 30 01 FF	Always broadcasted(Reply:88 30 0w FF, w:1+Address)
Network Change	X0 38 FF	
X = 9 to F==>camera address + 8		

7. IF_Clear

	Command	Reply Packet Note
IF_Clear	8X 01 00 01 FF	X0 50 FF
IF_Clear (broadcast)	88 01 00 01 FF	88 01 00 01 FF
X = 1 to 7==>camera address (For inquiry packet)		
X = 9 to F==>camera address +8 (For reply packet)		

8. Zoom Focus Position Table

Zoom Position	Wide end	Optical Tele end	Digital Tele end	
	0x0000	to 0x4000	to 0x4033(720p)/0x406E(1080p)	
Focus Position		Far end	Near end	
		0x000	to 0x3C3	

9. Digital Zoom Position Table

Digital Zoom Ratio	pq(720p)	pq(1080p)
x1	00	0
x2	1B	3C
x3	24	50
x4	28	5A
x5	2B	60
x6	2C	64
x7	2E	67
x8	2F	69
x9	30	6B
x10	31	6C
x11	32	6D
x12	33	6E

10. AE_Iris Table

Iris	Index(pq)	Value
	0F	F1.6
	0E	F2
	0D	F2.2
	0C	F2.7
	0B	F3.2
	0A	F3.8
	09	F4.5
	08	F5.4
	07	F6.3
	06	F7.8
	05	F9
	04	F11
	03	F13
	02	F16
	01	F18

11. AE_Shutter Table

Shutter Speed	Index(pq)	60/30 mode	50/25 mode
	15	1/10000	1/10000
	14	1/5000	1/5000
	13	1/3000	1/3000
	12	1/2500	1/2500
	11	1/2000	1/1750
	10	1/1500	1/1250
	0F	1/1000	1/1000
	0E	1/725	1/600
	0D	1/500	1/425
	0C	1/350	1/300
	0B	1/250	1/215
	0A	1/180	1/150
	09	1/120	1/120
	08	1/100	1/100
	07	1/90	1/75
	06	1/60	1/50
	05	1/30	1/25
	04	1/15	1/12
	03	1/8	1/6
	02	1/4	1/3
	01	1/2	1/2
	00	1/1	1/1

12. AE_Gain Table

Gain	Index(pq)	Value
	0F	+30 dB
	0E	+28 dB
	0D	+26 dB
	0C	+24 dB
	0B	+22 dB
	0A	+20 dB
	09	+18 dB
	08	+16 dB
	07	+14 dB
	06	+12 dB
	05	+10 dB
	04	+8 dB
	03	+6 dB
	02	+4 dB
	01	+2 dB
	00	0 dB

13. AE_Gain Limit Table

Gain	Index(p)	Value
	0F	+30 dB
	0E	+28 dB
	0D	+26 dB
	0C	+24 dB
	0B	+22 dB
	0A	+20 dB
	09	+18 dB
	08	+16 dB
	07	+14 dB
	06	+12 dB
	05	+10 dB
	04	+8 dB

14. AE_Exposure Comp. Table

Exposure Comp.	Index(pq)	Value(Level)	(Gain)Value
	0A	4	+6 dB
	09	3	+4.5 dB
	08	2	+3 dB
	07	1	+1.5 dB
	06	0	0 dB
	05	-1	-1.5 dB
	04	-2	-3 dB
	03	-3	-4.5 dB
	02	-4	-6 dB
	01	-5	-7.5 dB
	00	-6	-9 dB

15. Pan/Tilt Position

PAN	0x06A4 ~ 0xF95C (+1700 ~ -1700)
TILT	0x0384 ~ 0xFED4 (+900 ~ -300)

16. Camera RS232 Command List

Command Set	Command	Command Packet	Comments
AddressSet	Broadcast	88 30 01 FF	Address setting
IF_Clear	Broadcast	88 01 00 01 FF	I/F Clear
CommandCancel	—	8x 2p FF	p: Socket No. (=1 or 2)
CAM_Power	On	8x 01 04 00 02 FF	Power ON/OFF
CAM_Power	Off (Standby)	8x 01 04 00 03 FF	
CAM_AutoPowerOff	Direct	8x 01 04 40 0p 0q 0r 0s FF	Auto Power Off, pqrs: 0000 To FFFF pqrs: Power Off Timer 0000 (Timer Off) to FFFF (65535min) Initial value: 0000 The power automatically turns off if the camera does not receive any commands or any signals from the Remote Commander for the duration you set in the timer.
CAM_Zoom	Stop	8x 01 04 07 00 FF	Zoom Position: 0~0x4000~0x4033(720p)/0x406E(1080p)
CAM_Zoom	Tele (Standard)	8x 01 04 07 02 FF	
CAM_Zoom	Wide (Standard)	8x 01 04 07 03 FF	
CAM_Zoom	Tele Step	8x 01 04 07 04 FF	
CAM_Zoom	Wide Step	8x 01 04 07 05 FF	
CAM_Zoom	Tele (Variable)	8x 01 04 07 2p FF	p=0 (Low) to 7 (High)
CAM_Zoom	Wide (Variable)	8x 01 04 07 3p FF	
CAM_Zoom	Direct	8x 01 04 47 0p 0q 0r 0s FF	pqrs: Zoom Position(0x0000~0x4033(720p)/0x406E(1080p)) , Optical Zoom Tele max position: 0x4000
CAM_Zoom	Direct(Speed Variable)	8x 01 04 47 0p 0q 0r 0s 0t FF	pqrs: Zoom Position(0x0000~0x4033(720p)/0x406E(1080p)) , Optical Zoom Tele max position: 0x4000, t:0~7(0 :Low, 7:High)
CAM_DZoom	On	8x 01 04 06 02 FF	Digital zoom ON/OFF
CAM_DZoom	Off	8x 01 04 06 03 FF	

Command Set	Command	Command Packet	Comments
CAM_Focus	Stop	8x 01 04 08 00 FF	
CAM_Focus	Far (Standard)	8x 01 04 08 02 FF	
CAM_Focus	Near (Standard)	8x 01 04 08 03 FF	
CAM_Focus	Far (Variable)	8x 01 04 08 2p FF	p=0 (Low) to 7 (High) * Enabled during Manual Mode
CAM_Focus	Near (Variable)	8x 01 04 08 3p FF	p=0 (Low) to 7 (High) * Enabled during Manual Mode
CAM_Focus	Direct	8x 01 04 48 0p 0q 0r 0s FF	pqrs: Focus Position
CAM_Focus	Auto Focus	8x 01 04 38 02 FF	
CAM_Focus	Manual Focus	8x 01 04 38 03 FF	
CAM_Focus	Auto/Manual	8x 01 04 38 10 FF	AF ON/OFF
CAM_Focus	One Push Trigger	8x 01 04 18 01 FF	One Push AF Trigger(* Enabled during Manual Mode)
Resolution Settting	—	8x 01 06 35 00 0p FF	p: 0x00:1080p-60 0x01:1080p-50 0x02:1080p-30 0x03:1080p-25 0x04:1080i-60 0x05:1080i-50 0x06:720p-60 0x07:720p-50 0x08:720p-30 0x09:720p-25 0x0A:1080p-5994 0x0B:1080i-5994

Command Set	Command	Command Packet	Comments
			0x0C:1080p-2997 0x0D:720p-5994 0x0E:720p-2997
CAM_WB	Auto	8x 01 04 35 00 FF	Normal Auto
CAM_WB	Indoor	8x 01 04 35 01 FF	Indoor mode
CAM_WB	Outdoor	8x 01 04 35 02 FF	Outdoor mode
CAM_WB	One Push WB	8x 01 04 35 03 FF	One Push WB mode
CAM_WB	ATW	8x 01 04 35 04 FF	Auto Tracing White Balance
CAM_WB	Manual	8x 01 04 35 05 FF	Manual mode
CAM_WB	3000K	8x 01 04 35 06 FF	Color temperature fixed at 3000K mode
CAM_WB	4300K	8x 01 04 35 07 FF	Color temperature fixed at 4300K mode
CAM_WB	5000K	8x 01 04 35 08 FF	Color temperature fixed at 5000K mode
CAM_WB	6500K	8x 01 04 35 09 FF	Color temperature fixed at 6500K mode
CAM_WB	8300K	8x 01 04 35 0A FF	Color temperature fixed at 8300K mode
CAM_WB	Wide Auto	8x 01 04 35 0B FF	Wide Auto

Command Set	Command	Command Packet	Comments
CAM_WB	Sodium Lamp	8x 01 04 35 0C FF	Sodium lamp source fixed mode
CAM_WB	One Push Trigger	8x 01 04 10 05 FF	One Push WB Trigger(* Enabled during One Push WB Mode)
CAM_AE	Full Auto	8x 01 04 39 00 FF	Automatic Exposure mode
CAM_AE	Manual	8x 01 04 39 03 FF	Manual Control mode
CAM_AE	Shutter Priority	8x 01 04 39 0A FF	Shutter Priority Automatic Exposure mode
CAM_AE	Iris Priority	8x 01 04 39 0B FF	Iris Priority Automatic Exposure mode
CAM_AE	White Board	8x 01 04 39 5F FF	White Board Mode
CAM_Shutter	Reset	8x 01 04 0A 00 FF	Shutter Setting (* Enabled during Shutter Priority/Manual Mode)
CAM_Shutter	Up	8x 01 04 0A 02 FF	
CAM_Shutter	Down	8x 01 04 0A 03 FF	
CAM_Shutter	Direct	8x 01 04 4A 00 00 0p 0q FF	pq: Shutter Position , pq: 00 To 15
CAM_Iris	Reset	8x 01 04 0B 00 FF	Iris Setting (* Enabled during Iris Priority/ Manual Mode)
CAM_Iris	Up	8x 01 04 0B 02 FF	
CAM_Iris	Down	8x 01 04 0B 03 FF	
CAM_Iris	Direct	8x 01 04 4B 00 00 0p 0q FF	pq: Iris Position(refer to AE Iris Table)
CAM_Gain	Reset	8x 01 04 0C 00 FF	Gain Setting (* Enabled during Manual Mode)
CAM_Gain	Up	8x 01 04 0C 02 FF	
CAM_Gain	Down	8x 01 04 0C 03 FF	
CAM_Gain	Direct	8x 01 04 4C 00 00 0p 0q FF	pq: Gain Position, pq:00 To 0F

Command Set	Command	Command Packet	Comments
CAM_Gain	Gain Limit	8x 01 04 2C 0p FF	p: Gain Position , p: 4 To F
CAM_ExpComp	On	8x 01 04 3E 02 FF	Exposure Compensation ON/OFF
CAM_ExpComp	Off	8x 01 04 3E 03 FF	
CAM_ExpComp	Reset	8x 01 04 0E 00 FF	Exposure Compensation Amount Setting
CAM_ExpComp	Up	8x 01 04 0E 02 FF	
CAM_ExpComp	Down	8x 01 04 0E 03 FF	
CAM_ExpComp	Direct	8x 01 04 4E 00 00 0p 0q FF	pq: ExpComp Position , pq: 00 To 0A
CAM_BackLight	On	8x 01 04 33 02 FF	Back Light Compensation ON/OFF
CAM_BackLight	Off	8x 01 04 33 03 FF	
CAM_SpotAE	On	8x 01 04 59 02 FF	
CAM_SpotAE	Off	8x 01 04 59 03 FF	
CAM_SpotAE	Position	8x 01 04 29 0p 0q 0r 0s FF	pq: X (00 To 08), rs: Y (00 To 06)
CAM_WD	Set Parameter	8x 01 04 2D 0p FF	p: 0 ~ 5, 0: Off, 1~5: mode 1~5
CAM_Aperture(Sharpness)	Reset	8x 01 04 02 00 FF	Aperture Control
CAM_Aperture(Sharpness)	Up	8x 01 04 02 02 FF	
CAM_Aperture(Sharpness)	Down	8x 01 04 02 03 FF	
CAM_Aperture(Sharpness)	Direct	8x 01 04 42 00 00 0p 0q FF	pq: Aperture Gain, pq: 00 To 0F
CAM_HR	On	8x 01 04 52 02 FF	High-Resolution Mode ON/OFF
CAM_HR	Off	8x 01 04 52 03 FF	
CAM_2DNR	—	8x 01 04 53 0p FF	p: NR Setting , p: 0 To 6 (0: OFF, 1~5: 1~5, 6:Auto)
CAM_3DNR	—	8x 01 04 54 0p FF	p: NR Setting , p: 0:Off 1:Low 2:Typ 3:Max 4:Auto
CAM_Gamma	—	8x 01 04 5B 0p FF	p: Gamma setting ,p: 0 To 3

Command Set	Command	Command Packet	Comments
CAM_LR_Reverse	On	8x 01 04 61 02 FF	Mirror Image ON/OFF
CAM_LR_Reverse	Off	8x 01 04 61 03 FF	
CAM_Freeze	On	8x 01 04 62 02 FF	Still Image ON/OFF
CAM_Freeze	Off	8x 01 04 62 03 FF	
CAM_PictureEffect	Off	8x 01 04 63 00 FF	Picture Effect Setting
CAM_PictureEffect	Neg.Art	8x 01 04 63 02 FF	
CAM_PictureEffect	B&W	8x 01 04 63 04 FF	
CAM_PictureFlip	On	8x 01 04 66 02 FF	Picture flip ON/OFF
CAM_PictureFlip	Off	8x 01 04 66 03 FF	
CAM_Memory(Preset)	Reset	8x 01 04 3F 00 pp FF	pp: Memory Number (pp: 0x00 To 0x7F)
CAM_Memory(Preset)	Set	8x 01 04 3F 01 pp FF	pp: Memory Number (pp: 0x00 To 0x7F)
CAM_Memory(Preset)	Recall	8x 01 04 3F 02 pp FF	pp: Memory Number (pp: 0x00 To 0x7F)
CAM_Mute	On	8x 01 04 75 02 FF	Muting ON/OFF
CAM_Mute	Off	8x 01 04 75 03 FF	
CAM_Mute	On/Off	8x 01 04 75 10 FF	
CAM_ChromaSuppress		8x 01 04 5F pp FF	pp: Chroma Suppress setting level, pp:00 To 03 00: OFF 1 to 3: ON (3 levels) Effect increases as the level number increases.
CAM_ColorGain(Saturation)	Direct	8x 01 04 49 00 00 00 pq FF	pq:0x00~0x19
CAM_ColorHue	Direct	8x 01 04 4F 00 00 00 0p FF	p: 0x00~0x0E
IR_Receive	On	8x 01 06 08 02 FF	IR(remote commander) receive ON/OFF
IR_Receive	Off	8x 01 06 08 03 FF	

Command Set	Command	Command Packet	Comments
IR_Receive	On/Off	8x 01 06 08 10 FF	
Pan-tiltDrive	Up 3)	8x 01 06 01 VV WW 03 01 FF	<p>Normal Speed: VV: Pan speed 0x01 (low speed) to 0x18 (high speed) WW: Tilt Speed 0x01 (low speed) to 0x18 (high speed)</p> <p>Smooth Speed: VV: Pan speed 0x01 (low speed) to 0x64 (high speed) WW: Tilt Speed 0x01 (low speed) to 0x64 (high speed)</p>
Pan-tiltDrive	Down 3)	8x 01 06 01 VV WW 03 02 FF	
Pan-tiltDrive	Left 3)	8x 01 06 01 VV WW 01 03 FF	
Pan-tiltDrive	Right 3)	8x 01 06 01 VV WW 02 03 FF	
Pan-tiltDrive	UpLeft 3)	8x 01 06 01 VV WW 01 01 FF	
Pan-tiltDrive	UpRight 3)	8x 01 06 01 VV WW 02 01 FF	
Pan-tiltDrive	DownLeft 3)	8x 01 06 01 VV WW 01 02 FF	
Pan-tiltDrive	DownRight 3)	8x 01 06 01 VV WW 02 02 FF	
Pan-tiltDrive	Stop 3)	8x 01 06 01 VV WW 03 03 FF	
Pan-tiltDrive	AbsolutePosition	8x 01 06 02 VV WW 0Y	<p>YYYY: Pan Position ZZZZ: Tilt Position</p>
Pan-tiltDrive		0Y 0Y 0Y 0Z 0Z 0Z 0Z FF	
Pan-tiltDrive	RelativePosition	8x 01 06 03 VV WW 0Y	
Pan-tiltDrive		0Y 0Y 0Y 0Z 0Z 0Z 0Z FF	

Command Set	Command	Command Packet	Comments
Pan-tiltDrive	Home	8x 01 06 04 FF	
Pan-tiltDrive	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 YYYY: Pan Limit Position ZZZZ: Tilt Limit Position W: 0 DownLeft YYYY: Pan Limit Position ZZZZ: Tilt Limit Position
Pan-tiltLimitSet	LimitClear	8x 01 06 07 01 0W 07 0F 0F 0F 07 0F 0F 0F FF	W: 1 UpRight W: 0 DownLeft
Firmware	Firmware version	8x 01 02 03 FF	reply packet: 88 7x 56 47 54 aa bb cc dd FF //CM VGTabcd(ascii) 88 7x 56 47 53 ee ff gg hh FF //ISP VGSeffgh(ascii) 88 7x 56 47 52 ii jj kk ll FF //Master VGRijkl(ascii) example: 88 7x 56 47 54 30 32 32 6C FF //CM VGT022I 88 7x 56 47 53 30 31 30 63 FF //ISP VGS010c 88 7x 56 47 52 30 32 36 65 FF //Master VGR026e
Error Code	Read Error Code	8x 01 01 01 FF	
Error Code	Clear Error Code Record	8x 02 02 02 FF	
Factory Reset	System Factory Reset	8x 01 04 3F 03 00 FF	
CAM_Image_Mode	Select CAM Image Mode	8x 01 04 3F 04 0p FF	p: 0~6, 0:Custom mode
CAM_Dzoom	D-Zoom Limit	8x 01 04 26 0p FF	p = 0(x1), 1(x2), 2(x3), 3(x4), 4(x5), 5(x6), 6(x7), 7(x8), 8(x9), 9(x10), A(x11), B(x12)
CAM_Skin_Tone	select red level	8x 01 04 75 06 0p FF	p: 0~4
CAM_ImageModeBrightness	Set Brightness	8x 01 04 75 67 0p FF	p: 0x0~0xE
CAM_ImageModeContrast	Set Contrast	8x 01 04 75 68 0p FF	p: 0x0~0xE
Black Level	Black Level	8x 01 04 75 69 0p FF	p: 0 to 3, 0:Off, 1:Type 1, 2:Type 2, 3:Type 3

Command Set	Command	Command Packet	Comments
CAM_AF_SENSITIVE	-	8x 01 04 58 0p FF	p: 1 to 3, 1:High , 2:Middle, 3:Low
CAM_AF_FRAME	Full Frame	8x 01 04 5C 02 FF	Set AF frame : Full Frame / Center
CAM_AF_FRAME	Center	8x 01 04 5C 03 FF	
CAM_AF_FRAME	Full Frame / Center	8x 01 04 5C 10 FF	
IR_ReceiveReturn	On	8x 01 7D 01 03 00 00 FF	IR (remote commander) receive message via the VISCA communication ON/OFF
	Off	8x 01 7D 01 13 00 00 FF	
Output Video Type	Select the oupt Video type	8x 01 04 3F 05 0p FF	P: 0~1,0:SDI,1:YPbPr/DVI/HDMI
CAM Prompt	Set Prompt On/Off	8x 01 04 07 00 0p FF	p: 2 to 3, 2:Prompt On , 3:Prompt Off
CAM Model ID	Set Camera model ID	8x 01 04 23 pp qq rr ss FF	ppqq: Vender ID , rrss:Model ID
SYS_Menu	On	8x 01 06 06 02 FF	turn on the menu screen
	Off	8x 01 06 06 03 FF	turn off the menu screen
	On/Off	8x 01 06 06 10 FF	turn on/off the menu screen
SYS_Enter	Menu Enter	8x 01 7E 01 02 00 01 FF	menu enter
CAM_RGain	Reset	8x 01 04 03 00 FF	
CAM_RGain	Up	8x 01 04 03 02 FF	
CAM_RGain	Down	8x 01 04 03 03 FF	
CAM_RGain	Direct	8x 01 04 43 00 00 0p 0q FF	pq: R Gain, 0x00~0x3C
CAM_BGain	Reset	8x 01 04 04 00 FF	
CAM_BGain	Up	8x 01 04 04 02 FF	
CAM_BGain	Down	8x 01 04 04 03 FF	
CAM_BGain	Direct	8x 01 04 44 00 00 0p 0q	pq: B Gain, 0x00~0x3C

Command Set	Command	Command Packet	Comments
		FF	
CAM_PanTiltSpeed	Normal	8x 01 06 1F 00 FF	
	Smooth	8x 01 06 1F 01 FF	
CAM_Pan_Reverse	On	8x 01 04 67 3F 02 FF	Pan Direction Reverse
	Off	8x 01 04 67 3F 03 FF	
CAM_Tilt_Reverse	On	8x 01 04 68 3F 02 FF	Tilt Direction Reverse
	Off	8x 01 04 68 3F 03 FF	
CAM_Motionless	On	8x 01 07 01 02 FF	Motionless Preset function On
	Off	8x 01 07 01 03 FF	Motionless Preset function Off
Preset speed	-	8x 01 06 20 0p FF	p: 0: 80 deg/sec (CV620BK2 5 deg/sec) 1: 120 deg/sec (CV620BK2 25 deg/sec) 2: 160 deg/sec (CV620BK2 50 deg/sec) 3: 200 deg/sec (CV620BK2 80 deg/sec) 4: 300 deg/sec (CV620BK2 120 deg/sec) 5:(CV620BK2 160 deg/sec) 6:(CV620BK2 200 deg/sec) 7:(CV620BK2 300 deg/sec)
CAM_IDWrite	-	8x 01 04 22 0p 0q 0r 0s FF	pqrs: Camera ID (= 0x0000 to 0xFFFF)
Power_LoadState	Load Preset 0	8x 01 04 75 6A 02 FF	Load preset 0 when power on
	Load Last Memory	8x 01 04 75 6A 03 FF	Load Last Memory when power on

17. RS232 Inquiry Command List

Inquiry Command	Command Packet	Inquiry Packet	Comments
CAM_PowerInq	8x 09 04 00 FF	y0 50 02 FF	On
CAM_PowerInq		y0 50 03 FF	Off (Standby)
CAM_ZoomPosInq	8x 09 04 47 FF	y0 50 0p 0q 0r 0s FF	pqrs: Zoom Position(0x0000~0x4033(720p)/0x406E(1080p)) , Optical Zoom Tele max position: 0x4000
CAM_DZoomModelInq	8x 09 04 06 FF	y0 50 02 FF	D-Zoom On
CAM_DZoomModelInq		y0 50 03 FF	D-Zoom Off
Digital Zoom Position	8x 09 04 46 FF	y0 50 00 00 0p 0q FF	pq: D-Zoom Position(*Enabled during Separate Mode), pq: 00 To 33(720p)/6E(1080p)
CAM_FocusModelInq	8x 09 04 38 FF	y0 50 02 FF	Auto Focus
CAM_FocusModelInq		y0 50 03 FF	Manual Focus
CAM_FocusPosInq	8x 09 04 48 FF	y0 50 0p 0q 0r 0s FF	pqrs: Focus Position
CAM_WBModelInq	8x 09 04 35 FF	y0 50 00 FF	Auto
CAM_WBModelInq		y0 50 01 FF	In Door
CAM_WBModelInq		y0 50 02 FF	Out Door
CAM_WBModelInq		y0 50 03 FF	One Push WB
CAM_WBModelInq		y0 50 04 FF	ATW
CAM_WBModelInq		y0 50 05 FF	Manual
CAM_WBModelInq		y0 50 06 FF	3000K
CAM_WBModelInq		y0 50 07 FF	4300K
CAM_WBModelInq		y0 50 08 FF	5000K
CAM_WBModelInq		y0 50 09 FF	6500K
CAM_WBModelInq		y0 50 0A FF	8300K
CAM_WBModelInq		y0 50 0B FF	Wide Auto
CAM_WBModelInq		y0 50 0C FF	Sodium Lamp

CAM_AEModelInq	8x 09 04 39 FF	y0 50 00 FF	Full Auto
CAM_AEModelInq		y0 50 03 FF	Manual
CAM_AEModelInq		y0 50 0A FF	Shutter Priority
CAM_AEModelInq		y0 50 0B FF	Iris Priority
CAM_AEModelInq		y0 50 5F FF	White Board
CAM_ShutterPosInq	8x 09 04 4A FF	y0 50 00 00 0p 0q FF	pq: Shutter Position, pq: 00 To 15
CAM_IrisPosInq	8x 09 04 4B FF	y0 50 00 00 0p 0q FF	pq: Iris Position(refer to AE Iris Table)
CAM_GainPosInq	8x 09 04 4C FF	y0 50 00 00 0p 0q FF	pq: Gain Position, pq: 00 To 0F
CAM_GainLimitInq	8x 09 04 2C FF	y0 50 0q FF	p: Gain Limit,p: 4 To F
CAM_ExpCompModelInq	8x 09 04 3E FF	y0 50 02 FF	On
CAM_ExpCompModelInq		y0 50 03 FF	Off
CAM_ExpCompPosInq	8x 09 04 4E FF	y0 50 00 00 0p 0q FF	pq: ExpComp Position, pq: 00 To 0A
CAM_BackLightModelInq	8x 09 04 33 FF	y0 50 02 FF	On
CAM_BackLightModelInq		y0 50 03 FF	Off
CAM_SpotAEModelInq	8x 09 04 59 FF	y0 50 02 FF	On
CAM_SpotAEModelInq		y0 50 03 FF	Off
CAM_SpotAEPosInq	8x 09 04 29 FF	y0 50 0p 0q 0r 0s FF	pq: X position, rs: Y position, pq: 00 To 08, rs: 00 To 06
CAM_WDParameterInq	8x 09 04 2D FF	y0 50 0p FF	p: 0 ~ 5, 0: Off, 1~5: mode 1~5
CAM_ApertureInq	8x 09 04 42 FF	y0 50 00 00 0p 0q FF	pq: Aperture Gain, pq: 00 To 0F
CAM_HRModelInq	8x 09 04 52 FF	y0 50 02 FF	On (Hi-Resolution)
CAM_HRModelInq		y0 50 03 FF	Off
CAM_2DNRMModelInq	8x 09 04 53 FF	y0 50 0p FF	p: NR Setting , p: 0 To 6 (0: OFF, 1~5: 1~5, 6:Auto)
CAM_3DNRMModelInq	8x 09 04 54 FF	y0 50 0p FF	p: NR Setting , p: 0:Off 1:Low 2:Typ 3:Max 4:Auto
CAM_GammaInq	8x 09 04 5B FF	y0 50 0p FF	Gamma p: 0 To 3
CAM_LR_ReverseModelInq	8x 09 04 61 FF	y0 50 02 FF	On
CAM_LR_ReverseModelInq		y0 50 03 FF	Off

CAM_FreezeModelInq	8x 09 04 62 FF	y0 50 02 FF	On
CAM_FreezeModelInq		y0 50 03 FF	Off
CAM_PictureEffectModelInq	8x 09 04 63 FF	y0 50 00 FF	Off
CAM_PictureEffectModelInq		y0 50 02 FF	Neg.Art
CAM_PictureEffectModelInq		y0 50 04 FF	B&W
CAM_PictureFlipModelInq	8x 09 04 66 FF	y0 50 02 FF	On
CAM_PictureFlipModelInq		y0 50 03 FF	Off
CAM_MemoryInq	8x 09 04 3F FF	y0 50 pp FF	pp: Memory number recalled last, default value(no get any recall command) pp:0x00 , pp: 0x00 To 0x7F
CAM_MuteModelInq	8x 09 04 75 FF	y0 50 02 FF	On
CAM_MuteModelInq		y0 50 03 FF	Off
CAM_ChromaSuppressInq	8x 09 04 5F FF	y0 50 pp FF	pp: Chroma Suppress setting level, pp: 00 To 03
CAM_ColorGainInq	8x 09 04 49 FF	y0 50 00 00 00 pq FF	pq: Color Gain setting , pq: 0x00 To 0x19
CAM_ColorHueInq	8x 09 04 4F FF	y0 50 00 00 00 0p FF	p: Color Hue setting p: 0 To E
IR_Receive	8x 09 06 08 FF	y0 50 02 FF	On
IR_Receive		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	www: Pan Position zzzz: Tilt Position
CAM Image ModelInq	8x 09 04 3F 04 FF	y0 50 0p FF	p: 0~6, 0:Custom mode

CAM Version Inq	8x 09 00 02 FF	y0 50 pp qq rr ss jj jj kk FF	ppqq: Vender ID(0001) rrss: Model ID(0513) jjjj: Rom revision(0104) kk: Maxinum socket(02)
CAM Version Inq	8x 09 00 02 FF	y0 50 pp qq rr ss jj jj kk FF	ppqq: Vender ID(1518) rrss: Model ID(0014) jjjj: Rom revision(0104) kk: Maxinum socket(02)
CAM_AF_SENSITIVE_INQ	8x 09 04 58 FF	y0 50 0p FF	p: 1 to 3, 1:High , 2:Middle, 3:Low
Resolution SetttingInq	8x 09 06 23 FF	y0 50 0p FF	p: 0x00:1080p-60 0x01:1080p-50 0x02:1080p-30 0x03:1080p-25 0x04:1080i-60 0x05:1080i-50 0x06:720p-60 0x07:720p-50 0x08:720p-30 0x09:720p-25 0x0A:1080p-5994 0x0B:1080i-5994 0x0C:1080p-2997 0x0D:720p-5994 0x0E:720p-2997
CAM_DZoomLimitInq	8x 09 04 26 FF	y0 50 0p FF	p = 0(x1), 1(x2), 2(x3), 3(x4), 4(x5), 5(x6), 6(x7), 7(x8), 8(x9), 9(x10), A(x11), B(x12)

BlackLevelInq	8x 09 04 75 69 FF	y0 50 0p FF	p: 0 to 3, 0:Off, 1:Type 1, 2:Type 2, 3:Type 3
CAM_Skin_ToneInq	8x 09 04 75 06 FF	y0 50 0p FF	p: 0~4
CAM_ImageModeBrightnessInq	8x 09 04 75 67 FF	y0 50 0p FF	p: 0x0~0xE
CAM_ImageModeContrastInq	8x 09 04 75 68 FF	y0 50 0p FF	p: 0x0~0xE
Preset SpeedInq	8x 09 06 20 FF	y0 50 0p FF	<p>p 0~4 (CV620BK2 0~7):</p> <p>0: 80 deg/sec (CV620BK2 5 deg/sec)</p> <p>1: 120 deg/sec (CV620BK2 25 deg/sec)</p> <p>2: 160 deg/sec (CV620BK2 50 deg/sec)</p> <p>3: 200 deg/sec (CV620BK2 80 deg/sec)</p> <p>4: 300 deg/sec (CV620BK2 120 deg/sec)</p> <p>5:(CV620BK2 160 deg/sec)</p> <p>6:(CV620BK2 200 deg/sec)</p> <p>7:(CV620BK2 300 deg/sec)</p>
CAM_MemSaveInq	8x 09 04 23 0X FF	y0 50 0p 0p 0q 0q FF	<p>X: 00 to 07 (Address)</p> <p>ppqq: 0x0000 to 0xFFFF (Data)</p>
CAM_IDInq	8x 09 04 22 FF	y0 50 0p 0q 0r 0s FF	pqrs: Camera ID, pqrs: 0000 To FFFF
SYS_MenuModelInq	8x 09 06 06 FF	y0 50 02 FF	On
		y0 50 03 FF	Off
IR_ReceiveReturn	8x 01 7D 01 03 00 00 FF (IR_Receive Return Message On)	y0 07 7D 01 04 00 FF	Power ON/OFF
		y0 07 7D 01 04 07 FF	Zoom tele/wide
		y0 07 7D 01 04 38 FF	AF On/Off
		y0 07 7D 01 04 33 FF	CAM_Backlight
		y0 07 7D 01 04 3F FF	CAM_Memory
		y0 07 7D 01 06 01 FF	Pan_tiltDrive

Prompt Inq	8x 09 04 07 00 FF	y0 50 0p FF	Prompt OnOff 2:On,3:Off
CAM_RGainInq	8x 09 04 43 FF	y0 50 00 00 0p 0q FF	pq: R Gain, 0x00~0x3C,
CAM_BGainInq	8x 09 04 44 FF	y0 50 00 00 0p 0q FF	pq: B Gain, 0x00~0x3C,
CAM_PanTiltSpeedInq	8x 09 06 1F FF	y0 50 00 FF	Normal
		y0 50 01 FF	Smooth
CAM_Pan_ReverseInq	8x 09 06 67 3F FF	y0 50 02 FF	On
		y0 50 03 FF	Off
CAM_Tilt_ReverseInq	8x 09 06 68 3F FF	y0 50 02 FF	On
		y0 50 03 FF	Off
CAM_MotionlessInq	8x 09 07 01 FF	y0 50 02 FF	Motionless Preset function On
		y0 50 03 FF	Motionless Preset function Off
Power_LoadStateInq	8x 09 04 75 6A FF	y0 50 02 FF	Load preset 0 when power on
		y0 50 03 FF	Load Last status when power on

18. Camera Block Inquiry Command List

18.1 Lens Control System Inquiry Commands.....Command Set 8x 09 7E 7E 00 FF

Byte	Bit	Comments
Byte0	0	Source Address
	1	
	2	
	3	
	4	Destination Address
	5	
	6	
	7	
Byte1	0	0
	1	0
	2	0
	3	0
	4	1
	5	0
	6	1
	7	0 Completion Message (50h)
Byte2	0	Optical Zoom Position (HH)
	1	
	2	
	3	
	4	0
	5	0
	6	0
	7	0

Byte	Bit	Comments
Byte3	0	Optical Zoom Position (HL)
	1	
	2	
	3	
	4	0
	5	0
	6	0
	7	0
Byte4	0	Optical Zoom Position (LH)
	1	
	2	
	3	
	4	0
	5	0
	6	0
	7	0
Byte5	0	Optical Zoom Position (LL)
	1	
	2	
	3	
	4	0
	5	0
	6	0
	7	0

Byte	Bit	Comments
Byte6	0	0
	1	0
	2	0
	3	0
	4	0
	5	0
	6	0
	7	0
Byte7	0	0
	1	0
	2	0
	3	0
	4	0
	5	0
	6	0
	7	0
Byte8	0	Focus Position (HH)
	1	
	2	
	3	
	4	0
	5	0
	6	0
	7	0

Byte	Bit	Comments
Byte9	0	Focus Position (HL)
	1	
	2	
	3	
	4	0
	5	0
	6	0
	7	0
Byte10	0	Focus Position (LH)
	1	
	2	
	3	
	4	0
	5	0
	6	0
	7	0
Byte11	0	Focus Position (LL)
	1	
	2	
	3	
	4	0
	5	0
	6	0
	7	0

Byte	Bit	Comments
	7	0
Byte12	0	0
	1	0
	2	0
	3	0
	4	0
	5	0
	6	0
	7	0
Byte13	0	Focus Mode 0: Manual 1: Auto
	1	0
	2	Reserved
	3	Reserved
	4	Reserved
	5	Reserved

Byte	Bit	Comments
	6	Reserved
	7	Reserved
Byte14	0	0
	1	0
	2	0
	3	0
	4	0
	5	0
	6	0
	7	0
Byte15	0	1
	1	1
	2	1
	3	1
	4	1
	5	1
	6	1
	7	1 Terminator (FFh)

18.2 Camera Control System Inquiry Commands.....Command Set 8x 09 7E 7E 01 FF

Byte	Bit	Comments
Byte0	0	Source Address
	1	
	2	
	3	
	4	Destination Address
	5	
	6	
	7	
Byte1	0	0
	1	0
	2	0
	3	0
	4	1
	5	0
	6	1
	7	0 Completion Message (50h)
Byte2	0	Reserved
	1	
	2	
	3	
	4	0
	5	0
	6	0
	7	0

Byte	Bit	Comments
Byte3	0	Reserved
	1	
	2	
	3	
	4	0
	5	0
	6	0
	7	0
Byte4	0	Reserved
	1	
	2	
	3	
	4	0
	5	0
	6	0
	7	0
Byte5	0	Reserved
	1	
	2	
	3	
	4	0
	5	0
	6	0
	7	0

Byte	Bit	Comments
Byte6	0	WB Mode
	1	
	2	
	3	
	4	0
	5	0
	6	0
	7	0
Byte7	0	Aperture
	1	
	2	
	3	
	4	0
	5	0
	6	0
	7	0
Byte8	0	Exposure Mode
	1	
	2	
	3	
	4	
	5	
	6	
	7	

Byte	Bit	Comments
Byte9	0	Reserved
	1	Exposure Comp. 1: On 0: Off
	2	Back Light 1: On 0: Off
	3	Spot AE 1: On 0: Off
	4	Wide-D (1: Other than Off,0: Off)
	5	High-Resolution 1: On 0: Off
	6	0
	7	0
Byte10	0	Shutter Position
	1	
	2	
	3	
	4	
	5	
	6	
	7	

Byte	Bit	Comments
Byte11	0	Iris Position
	1	
	2	
	3	
	4	Gain Position
	5	
	6	
	7	
Byte12	0	Gain Position
	1	
	2	
	3	
	4	0
	5	0
	6	0
	7	0
Byte13	0	Reserved
	1	
	2	
	3	
	4	
	5	
	6	
	7	

Byte	Bit	Comments
Byte14	0	ExpComp Position
	1	
	2	
	3	
	4	0
	5	0
	6	0
	7	0
Byte15	0	1
	1	1
	2	1
	3	1
	4	1
	5	1
	6	1
	7	1 Terminator (FFh)

18.3 Other Inquiry Commands.....Command Set 8x 09 7E 7E 02 FF

Byte	Bit	Comments
Byte0	0	Source Address
	1	
	2	
	3	
	4	Destination Address
	5	
	6	
	7	
Byte1	0	0
	1	0
	2	0
	3	0
	4	1
	5	0
	6	1
	7	0 Completion Message (50h)
Byte2	0	Power 1: On 0: Off
	1	0
	2	0
	3	0
	4	0
	5	0
	6	0
	7	0

Byte	Bit	Comments
Byte3	0	0
	1	0
	2	LR Reverse 1: On 0: Off
	3	Reserved
	4	Reserved
	5	0
	6	0
	7	0
Byte4	0	0
	1	0
	2	0
	3	0
	4	Reserved
	5	0
	6	0
	7	0
Byte5	0	Picture Effect
	1	
	2	
	3	
	4	0
	5	0
	6	0
	7	0

Byte	Bit	Comments
Byte6	0	0
	1	0
	2	0
	3	0
	4	0
	5	0
	6	0
	7	0
Byte7	0	0
	1	0
	2	0
	3	0
	4	0
	5	0
	6	0
	7	0
Byte8	0	Reserved
	1	
	2	
	3	
	4	0
	5	0
	6	0
	7	0

Byte	Bit	Comments
Byte9	0	Reserved
	1	
	2	
	3	
	4	0
	5	0
	6	0
	7	0
Byte10	0	Reserved
	1	
	2	
	3	
	4	0
	5	0
	6	0
	7	0

Byte	Bit	Comments
Byte11	0	Reserved
	1	
	2	
	3	
	4	0
	5	0
	6	0
	7	0
Byte12	0	0
	1	0
	2	0
	3	0
	4	0
	5	0
	6	0
	7	0
Byte13	0	0

Byte	Bit	Comments
	1	0
	2	0
	3	0
	4	0
	5	0
	6	0
	7	0
Byte14	0	0
	1	0
	2	0
	3	0
	4	0
	5	0
	6	0
Byte15	7	0
	0	1
	1	1
	2	1
	3	1
	4	1
	5	1
	6	1
	7	1 Terminator (FFh)

18.4 Enlargement Function1 Query Command.....Command Set 8x 09 7E 7E 03 FF

Byte	Bit	Comments
Byte0	0	Source Address
	1	
	2	
	3	
	4	Destination Address
	5	
	6	
	7	
Byte1	0	0
	1	0
	2	0
	3	0
	4	1
	5	0
	6	1
	7	0 Completion Message (50h)
Byte2	0	Reserved
	1	
	2	
	3	
	4	0
	5	0
	6	0
	7	0

Byte	Bit	Comments
Byte3	0	Reserved
	1	
	2	
	3	
	4	0
	5	0
	6	0
	7	0
Byte4	0	0
	1	0
	2	0
	3	0
	4	0
	5	0
	6	0
	7	0
Byte5	0	0
	1	0
	2	0
	3	0
	4	0
	5	0
	6	0
	7	0

Byte	Bit	Comments
Byte6	0	0
	1	0
	2	0
	3	0
	4	0
	5	0
	6	0
	7	0
Byte7	0	0
	1	0
	2	0
	3	0
	4	0
	5	0
	6	0
	7	0
Byte8	0	SpotAE Position (X)
	1	
	2	
	3	
	4	0
	5	0
	6	0
	7	0

Byte	Bit	Comments
Byte9	0	SpotAE Position (Y)
	1	
	2	
	3	
	4	0
	5	0
	6	0
	7	0
Byte10	0	Picture flip (1: On, 0: Off)
	1	Reserved
	2	0
	3	0
	4	0
	5	0
	6	0
	7	0

Byte	Bit	Comments
Byte11	0	Color Gain
	1	
	2	
	3	
	4	
	5	
	6	
	7	
Byte12	0	0
	1	0
	2	0
	3	0
	4	0
	5	0
	6	0
	7	0

Byte	Bit	Comments
Byte13	0	2DNR Level
	1	
	2	
	3	0
	4	Gamma
	5	
	6	
	7	0
Byte14	0	Gain Limit
	1	
	2	
	3	
	4	Chroma Suppress
	5	
	6	
	7	0
Byte15	0	1
	1	1
	2	1
	3	1
	4	1
	5	1
	6	1
	7	1 Terminator (FFh)

18.5 Enlargement Function2 Query Command.....Command Set 8x 09 7E 7E 04 FF

Byte	Bit	Comments
Byte0	0	Source Address
	1	
	2	
	3	
	4	Destination Address
	5	
	6	
	7	
Byte1	0	0
	1	0
	2	0
	3	0
	4	1
	5	0
	6	1
	7	0 Completion Message (50h)
Byte2	0	Reserved
	1	
	2	
	3	0
	4	0
	5	0
	6	0
	7	0

Byte	Bit	Comments
Byte3	0	0
	1	0
	2	0
	3	0
	4	0
	5	0
	6	0
	7	0
Byte4	0	Reserved
	1	
	2	
	3	
	4	
	5	
	6	
	7	
Byte5	0	0
	1	0
	2	0
	3	0
	4	0
	5	0
	6	0
	7	0

Byte	Bit	Comments
Byte6	0	0
	1	0
	2	0
	3	0
	4	0
	5	0
	6	0
	7	0
Byte7	0	0
	1	0
	2	0
	3	0
	4	0
	5	0
	6	0
	7	0
Byte8	0	0
	1	0
	2	0
	3	0
	4	0
	5	0
	6	0
	7	0

Byte	Bit	Comments
Byte9	0	0
	1	0
	2	0
	3	0
	4	0
	5	0
	6	0
	7	0
Byte10	0	0
	1	0
	2	0
	3	0
	4	0
	5	0
	6	0
	7	0

Byte	Bit	Comments
Byte11	0	0
	1	0
	2	0
	3	0
	4	0
	5	0
	6	0
	7	0
Byte12	0	0
	1	0
	2	0
	3	0
	4	0
	5	0
	6	0
	7	0

Byte	Bit	Comments
Byte13	0	0
	1	0
	2	0
	3	0
	4	0
	5	0
	6	0
	7	0
Byte14	0	0
	1	0
	2	0
	3	0
	4	0
	5	0
	6	0
	7	0
Byte15	0	1
	1	1
	2	1
	3	1
	4	1
	5	1
	6	1
	7	1 Terminator (FFh)

18.6 Enlargement Function3 Query Command.....Command Set 8x 09 7E 7E 05 FF

Byte	Bit	Comments
Byte0	0	Source Address
	1	
	2	
	3	
	4	Destination Address
	5	
	6	
	7	
Byte1	0	0
	1	0
	2	0
	3	0
	4	1
	5	0
	6	1
	7	0 Completion Message (50h)
Byte2	0	Color Hue
	1	
	2	
	3	
	4	0
	5	0
	6	0
	7	0

Byte	Bit	Comments
Byte3	0	Reserved
	1	
	2	
	3	
	4	
	5	
	6	
	7	0
Byte4	0	Reserved
	1	
	2	
	3	
	4	
	5	
	6	
	7	0
Byte5	0	Reserved
	1	
	2	
	3	
	4	
	5	
	6	
	7	0

Byte	Bit	Comments
Byte6	0	Reserved
	1	
	2	
	3	
	4	
	5	
	6	
	7	0
Byte7	0	Reserved
	1	
	2	
	3	
	4	
	5	
	6	
	7	0
Byte8	0	Reserved
	1	
	2	
	3	
	4	
	5	
	6	
	7	0

Byte	Bit	Comments
Byte9	0	Reserved
	1	
	2	
	3	
	4	
	5	
	6	
	7	0
Byte10	0	Reserved
	1	
	2	
	3	
	4	
	5	
	6	
	7	0

Byte	Bit	Comments
Byte11	0	Reserved
	1	
	2	
	3	
	4	
	5	
	6	
	7	0
Byte12	0	Reserved
	1	
	2	
	3	
	4	
	5	
	6	
	7	0

Byte	Bit	Comments
Byte13	0	Reserved
	1	
	2	
	3	
	4	
	5	
	6	
	7	0
Byte14	0	Reserved
	1	
	2	
	3	
	4	
	5	
	6	
	7	0
Byte15	0	1
	1	1
	2	1
	3	1
	4	1
	5	1
	6	1
	7	1 Terminator (FFh)

19. PelcoD Internal Command List

Internal Command	Byte 1	Byte 2 (Address)	Byte 3	Byte 4	Byte 5	Byte 6	Byte 7	Comments
Right	0xFF	0x01 ~ 0xFF	0x00	0x02	0xVV	0xWW	Checksum	Normal Speed: VV: Pan speed 0x01 (low speed) to 0x18 (high speed) WW: Tilt Speed 0x01 (low speed) to 0x18 (high speed) Smooth Speed: VV: Pan speed 0x01 (low speed) to 0x64 (high speed) WW: Tilt Speed 0x01 (low speed) to 0x64 (high speed)
Left	0xFF	0x01 ~ 0xFF	0x00	0x04	0xVV	0xWW	Checksum	
Up	0xFF	0x01 ~ 0xFF	0x00	0x08	0xVV	0xWW	Checksum	
Down	0xFF	0x01 ~ 0xFF	0x00	0x10	0xVV	0xWW	Checksum	
Right - Up	0xFF	0x01 ~ 0xFF	0x00	0x0A	0xVV	0xWW	Checksum	
Left - Up	0xFF	0x01 ~ 0xFF	0x00	0x0C	0xVV	0xWW	Checksum	
Right -Down	0xFF	0x01 ~ 0xFF	0x00	0x12	0xVV	0xWW	Checksum	
Left - Down	0xFF	0x01 ~ 0xFF	0x00	0x14	0xVV	0xWW	Checksum	
Stop	0xFF	0x01 ~ 0xFF	0x00	0x00	0x00	0x00	Checksum	Stop Pan/Tilt & Zomm/Focus
Zoom Tele	0xFF	0x01 ~ 0xFF	0x00	0x20	0x00	0x00	Checksum	Speed = VISCA Tele (Variable) = 0x03
Zoom Wide	0xFF	0x01 ~ 0xFF	0x00	0x40	0x00	0x00	Checksum	Speed = VISCA Wide (Variable) = 0x03
Focus Far	0xFF	0x01 ~ 0xFF	0x00	0x80	0x00	0x00	Checksum	Speed = VISCA Far (Variable) = 0x02
Focus Near	0xFF	0x01 ~ 0xFF	0x01	0x00	0x00	0x00	Checksum	Speed = VISCA Near (Variable) = 0x02
Zoom Tele+Right	0xFF	0x01 ~ 0xFF	0x00	0x22	0xVV	0xWW	Checksum	Normal Speed: VV: Pan speed 0x01 (low speed) to 0x18 (high speed) WW: Tilt Speed 0x01 (low speed) to 0x18 (high speed) Smooth Speed: VV: Pan speed 0x01 (low speed) to 0x64 (high speed)
Zoom Tele+Left	0xFF	0x01 ~ 0xFF	0x00	0x24	0xVV	0xWW	Checksum	
Zoom Tele+Up	0xFF	0x01 ~ 0xFF	0x00	0x28	0xVV	0xWW	Checksum	
Zoom Tele+Down	0xFF	0x01 ~ 0xFF	0x00	0x30	0xVV	0xWW	Checksum	
Zoom Tele+Right - Up	0xFF	0x01 ~ 0xFF	0x00	0x2A	0xVV	0xWW	Checksum	
Zoom Tele+Left - Up	0xFF	0x01 ~ 0xFF	0x00	0x2C	0xVV	0xWW	Checksum	

Internal Command	Byte 1	Byte 2 (Address)	Byte 3	Byte 4	Byte 5	Byte 6	Byte 7	Comments
Zoom Tele+Right -Down	0xFF	0x01 ~ 0xFF	0x00	0x32	0xVV	0xWW	Checksum	WW: Tilt Speed 0x01 (low speed) to 0x64 (high speed)
Zoom Tele+Left - Down	0xFF	0x01 ~ 0xFF	0x00	0x34	0xVV	0xWW	Checksum	
Zoom Wide+Right	0xFF	0x01 ~ 0xFF	0x00	0x42	0xVV	0xWW	Checksum	
Zoom Wide+Left	0xFF	0x01 ~ 0xFF	0x00	0x44	0xVV	0xWW	Checksum	
Zoom Wide+Up	0xFF	0x01 ~ 0xFF	0x00	0x48	0xVV	0xWW	Checksum	
Zoom Wide+Down	0xFF	0x01 ~ 0xFF	0x00	0x50	0xVV	0xWW	Checksum	
Zoom Wide+Right - Up	0xFF	0x01 ~ 0xFF	0x00	0x4A	0xVV	0xWW	Checksum	
Zoom Wide+Left - Up	0xFF	0x01 ~ 0xFF	0x00	0x4C	0xVV	0xWW	Checksum	
Zoom Wide+Right -Down	0xFF	0x01 ~ 0xFF	0x00	0x52	0xVV	0xWW	Checksum	
Zoom Wide+Left - Down	0xFF	0x01 ~ 0xFF	0x00	0x54	0xVV	0xWW	Checksum	
Focus Far+Right	0xFF	0x01 ~ 0xFF	0x00	0x82	0xVV	0xWW	Checksum	
Focus Far+Left	0xFF	0x01 ~ 0xFF	0x00	0x84	0xVV	0xWW	Checksum	
Focus Far+Up	0xFF	0x01 ~ 0xFF	0x00	0x88	0xVV	0xWW	Checksum	
Focus Far+Down	0xFF	0x01 ~ 0xFF	0x00	0x90	0xVV	0xWW	Checksum	
Focus Far+Right - Up	0xFF	0x01 ~ 0xFF	0x00	0x8A	0xVV	0xWW	Checksum	
Focus Far+Left - Up	0xFF	0x01 ~ 0xFF	0x00	0x8C	0xVV	0xWW	Checksum	

RS109 - VC-A51 VC-A51S RS-232 command set

Internal Command	Byte 1	Byte 2 (Address)	Byte 3	Byte 4	Byte 5	Byte 6	Byte 7	Comments
Focus Far+Right -Down	0xFF	0x01 ~ 0xFF	0x00	0x92	0xVV	0xWW	CheckSum	
Focus Far+Left -Down	0xFF	0x01 ~ 0xFF	0x00	0x94	0xVV	0xWW	CheckSum	
Focus Near+Right	0xFF	0x01 ~ 0xFF	0x01	0x02	0xVV	0xWW	CheckSum	
Focus Near+Left	0xFF	0x01 ~ 0xFF	0x01	0x04	0xVV	0xWW	CheckSum	
Focus Near+Up	0xFF	0x01 ~ 0xFF	0x01	0x08	0xVV	0xWW	CheckSum	
Focus Near+Down	0xFF	0x01 ~ 0xFF	0x01	0x10	0xVV	0xWW	CheckSum	
Focus Near+Right - Up	0xFF	0x01 ~ 0xFF	0x01	0x0A	0xVV	0xWW	CheckSum	
Focus Near+Left - Up	0xFF	0x01 ~ 0xFF	0x01	0x0C	0xVV	0xWW	CheckSum	
Focus Near+Right -Down	0xFF	0x01 ~ 0xFF	0x01	0x12	0xVV	0xWW	CheckSum	
Focus Near+Left - Down	0xFF	0x01 ~ 0xFF	0x01	0x14	0xVV	0xWW	CheckSum	
CheckSum = Mod((Byte 2 + Byte 3 + Byte 4 + Byte 5 + Byte 6), 0x100);								

20. PelcoD External Command List

20.1 External Command

External Command	Byte 1	Byte 2 (Address)	Byte 3	Byte 4	Byte 5	Byte 6	Byte 7	Comments
Set Preset	0xFF	0x01 ~ 0xFF	0x00	0x03	0x00	0xpq	CheckSum	Memory Number(pq:0x00 To 0x7F)
Clear Preset	0xFF	0x01 ~ 0xFF	0x00	0x05	0x00	0xpq	CheckSum	
Goto Preset	0xFF	0x01 ~ 0xFF	0x00	0x07	0x00	0xpq	CheckSum	

External Command	Byte 1	Byte 2 (Address)	Byte 3	Byte 4	Byte 5	Byte 6	Byte 7	Comments
POWER	0xFF	0x01 ~ 0xFF	0x00	0x45	0x00	On:0x01 Off: 0x02	CheckSum	Power On/Off
MENU	0xFF	0x01 ~ 0xFF	0x00	0x47	0x00	On:0x01 Off: 0x02	CheckSum	System Menu On/Off
ENTER	0xFF	0x01 ~ 0xFF	0x00	0x49	0x00	0x00	CheckSum	Menu Enter
BACKLIGHT	0xFF	0x01 ~ 0xFF	0x00	0x31	0x00	On:0x01 Off: 0x02	CheckSum	Back Light Compensation ON/OFF
MIRROR	0xFF	0x01 ~ 0xFF	0x00	0x4B	0x00	0x01:Normal 0x02:Mirror 0x03:Flip 0x04:Mirror+Flip	CheckSum	Mirror Image ON/OFF & Picture flip ON/OFF
FREEZE	0xFF	0x01 ~ 0xFF	0x00	0x4D	0x00	On:0x01 Off: 0x02	CheckSum	Still Image ON/OFF
Auto Focus / Manual Focus	0xFF	0x01 ~ 0xFF	0x00	0x2B	0x00	AF:0x01 MF: 0x02	CheckSum	AF/MF Switch
Bright Ctrl Up	0xFF	0x01 ~ 0xFF	0x00	0xA1	0x00	0x00	CheckSum	AE Bright Control Up
Bright Ctrl Down	0xFF	0x01 ~ 0xFF	0x00	0xA3	0x00	0x00	CheckSum	AE Bright Control Down

20.2 Query Command

Query Command	Byte 1	Byte 2 (Address)	Byte 3	Byte 4	Byte 5	Byte 6	Byte 7	Comments
Query Command Package								
Query Pan Position	0xFF	0x01 ~ 0xFF	0x00	0x51	0x00	0x00	CheckSum	Get Pan Postion
Query Tilt	0xFF	0x01 ~ 0xFF	0x00	0x53	0x00	0x00	CheckSum	Get Tilt Postion

Position								
Query Zoom Position	0xFF	0x01 ~ 0xFF	0x00	0x55	0x00	0x00	Checksum	Get Zoom Position
Query POWER	0xFF	0x01 ~ 0xFF	0x00	0x61	0x00	0x00	Checksum	Get Power On/Off Status
Query MENU	0xFF	0x01 ~ 0xFF	0x00	0x63	0x00	0x00	Checksum	Get Menu On/Off Status
Query BACKLIGHT	0xFF	0x01 ~ 0xFF	0x00	0x65	0x00	0x00	Checksum	Get Backlight On/Off Status
Query MIRROR	0xFF	0x01 ~ 0xFF	0x00	0x67	0x00	0x00	Checksum	Get Mirror & Flip Status
Query FREEZE	0xFF	0x01 ~ 0xFF	0x00	0x69	0x00	0x00	Checksum	Get Freeze Status
Query Ack Package								
Query Pan Response	0xFF	0x01 ~ 0xFF	0x00	0x59	0x00	0x00	Checksum	pqrz: Pan position
Query Tilt Response	0xFF	0x01 ~ 0xFF	0x00	0x5B	0x00	0x00	Checksum	pqrz: Tilt position
Query Zoom Response	0xFF	0x01 ~ 0xFF	0x00	0x5D	0x00	0x00	Checksum	pqrs: Zoom Position , pqrs: 0x0000~0x4000
Query POWER Response	0xFF	0x01 ~ 0xFF	0x00	0x71	0x00	On:0x01 Off:0x02	Checksum	Power Status Response
Query MENU Response	0xFF	0x01 ~ 0xFF	0x00	0x73	0x00	On:0x01 Off:0x02	Checksum	Menu Status Response
Query BACKLIGHT Response	0xFF	0x01 ~ 0xFF	0x00	0x75	0x00	On:0x01 Off:0x02	Checksum	Backlight Status Response
Query MIRROR Response	0xFF	0x01 ~ 0xFF	0x00	0x77	0x00	0x01:Normal 0x02:Mirror 0x03:Flip 0x04:Mirror+Flip	Checksum	Mirror & Flip Status Response
Query FREEZE Response	0xFF	0x01 ~ 0xFF	0x00	0x79	0x00	On:0x01 Off:0x02	Checksum	Freeze Status Response

Checksum = Mod((Byte 2 + Byte 3 + Byte 4 + Byte 5 + Byte 6), 0x100);	
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