VC-A30/ VC-G30/ VC-A50/ VC-G50/ VC-302/ VC-502

RS-232 command set

No	Issue Date	Description	Apply Firmware
1	2013/07/16	First version.	TBD
2	2013/09/09	1. CAM_AF Speed Inq : Add new command 2. AF Sensitivity : Add new command 3. Black Level: Add new command 4. SYS_Menu: Add new command	
3	2013/10/02	1. ower_LoadState/ Power_LoadStateInq: Load preset settings 2. Resolution Setting and Resolution SettingInq: Modify command as 8x 01 06 35 00 0p FF	
4	2013/10/21	1. AE Bright Ctrl : Add AE Bright command	
5	2013/12/17	1. Resolution Setting : Add index for 59.94/29.97 2. CAM_MemSave: Add new command 3. Zoom Focus Position Table: Update he Max Dzoom Step	
6	2014/02/07	1. CAM_WB/CAM_WBModeInq: Add Wide Auto 2. Digital Zoom Position Table : Update the value 3. Remove 8x 09 7E 7E 02 FF command:Byte 12 4. CAM_WD/ CAM_WDParameterInq: update the comments	206R
7	2014/05/12	1. CAM_SERIAL_NINE/ CAM SERIAL INQ: Add new command 2. CAM_HighSensitivity/ CAM_AE_Response Time: Remove command 3. CAM_ImageModeBrightness/ CAM_ImageModeContrast: Revise	208R

		the setting range 4. CAM_ ReplyIntervalTimeSet: Revise the setting range 5. Motor Table Select: Pan/Tilt speed Table select description	
8	2014/08/20	1. Add PelcoD command list	210R
9	2014/11/18	1. Add Iris Priority mode	214R
10	2015/02/04	1. CAM_AF_FRAME : Add AF Frame : Auto 2. Add AE_Iris Table	219R
11	2015/06/01	1. Add command: CAM_RGain/ CAM_BGain/ CAM_RGainInq/ CAM_BGainInq 2. Revise command: CAM_WB/ CAM_WBModeInq/ Camera Control System Inquiry(Byte2~Byte5)	224R
12	2015/07/13	1. Revise command: CAM_WB, adding Manual Mode	224R
13	2015/11/11	1. Modify the PelcoD Address 0x01~0xFF 2. AE_Iris_Table: increased from 8 to 15 segments 3. Revise command: CAM_Iris_Direct, Position Range 0~14	231R
14	2016/04/11	1. Revise command: CAM_AEModeInq/ CAM_AE	234

***Notice:**

1. **The RS-232/ PelcoD command list is for VC-A30/ VC-G30/ VC-A50/ VC-G50/ VC-302/ VC-502.**
2. **The yellow highlight means the latest update.**
3. **The blue highlight means the deleted item.**

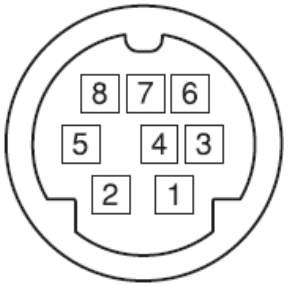
1. Communication Protocol

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	Y = socket number
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: Inqurity 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	88 30 01 FF	Always broadcasted
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 Digital Tele end Tele end	
	0000 to 4000 to 4033(12X)/4028(4X)	
Focus Position	Far end Near end	
	000 to 1C6	pqrs:000~1C6

9. Digital Zoom Position Table

Digital Zoom Ratio	pq
x1	00
x2	1B
x3	24
x4	28
x5	2B
x6	2C
x7	2E
x8	2F
x9	30
x10	31
x11	32
x12	33

10. AE_Iris Table

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

11. AE_Shutter Table

	Index(pq)	60/30 mode	50/25 mode
Shutter Speed	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

	Index(pq)	Value
Gain	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

	Index(p)	Value
Gain	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

	Index(pq)	Value(Level)	(Gain)Value
Exposure Comp.	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

15. 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
	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 VISCA 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
	Tele (Standard)	8x 01 04 07 02 FF	
	Wide (Standard)	8x 01 04 07 03 FF	

Command Set	Command	Command Packet	Comments
	Tele Step	8x 01 04 07 04 FF	
	Wide Step	8x 01 04 07 05 FF	
	Tele (Variable)	8x 01 04 07 2p FF	p=0 (Low) to 7 (High)
	Wide (Variable)	8x 01 04 07 3p FF	
	Direct	8x 01 04 47 0p 0q 0r 0s FF	pqrs: Zoom Position(0x0000~0x4000) , Optical Zoom Tele max position: 0x4000
	Direct(Speed Variable)	8x 01 04 47 0p 0q 0r 0s 0t FF	pqrs: Zoom Position(0x0000~0x4000) , 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(No use in Separate Mode)
	Off	8x 01 04 06 03 FF	
CAM_Focus	Stop	8x 01 04 08 00 FF	p=0 (Low) to 7 (High) * Enabled during Manual Mode
	Far (Standard)	8x 01 04 08 02 FF	
	Near (Standard)	8x 01 04 08 03 FF	
	Far Step	8x 01 04 08 04 FF	
	Near Step	8x 01 04 08 05 FF	
	Far (Variable)	8x 01 04 08 2p FF	
	Near (Variable)	8x 01 04 08 3p FF	
	Direct	8x 01 04 48 0p 0q 0r 0s FF	pqrs: Focus Position , pqrs parameters are in the General Zoom Foucs Table 0x00~0x1C6
	Auto Focus	8x 01 04 38 02 FF	AF ON/OFF
	Manual Focus	8x 01 04 38 03 FF	
	Auto/Manual	8x 01 04 38 10 FF	
	One Push Trigger	8x 01 04 18 01 FF	One Push AF Trigger(* Enabled during Manual Mode)
CAM_ZoomFocus	Direct	8x 01 04 47 0p 0q 0r 0s 0t 0u 0v	pqrs: Zoom Position(0x0000~0x4000) tuvw: Focus

Command Set	Command	Command Packet	Comments
		0w FF	Position(0x00~0x1C6)
CAM_Initialize	Lens	8x 01 04 19 01 FF	Lens Initialization Start
	Camera	8x 01 04 19 03 FF	Camera reset
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 0x0C:1080p-2997 0x0D:720p-5994 0x0E:720p-2997
CAM_WB	Auto	8x 01 04 35 00 FF	Normal Auto
	Indoor	8x 01 04 35 01 FF	Indoor mode
	Outdoor	8x 01 04 35 02 FF	Outdoor mode
	One Push WB	8x 01 04 35 03 FF	One Push WB mode
	ATW	8x 01 04 35 04 FF	Auto Tracing White Balance
	Manual	8x 01 04 35 05 FF	Manual Mode
	3000K	8x 01 04 35 06 FF	Color temperture fixed at 3000K mode

Command Set	Command	Command Packet	Comments
	4300K	8x 01 04 35 07 FF	Color temperture fixed at 4300K mode
	5000K	8x 01 04 35 08 FF	Color temperture fixed at 5000K mode
	6500K	8x 01 04 35 09 FF	Color temperture fixed at 6500K mode
	8300K	8x 01 04 35 0A FF	Color temperture fixed at 8300K mode
	Wide Auto	8x 01 04 35 0B FF	Wide Auto
	Sodium Lamp	8x 01 04 35 0C FF	Sodium lamp source fixed mode
	One Push Trigger	8x 01 04 10 05 FF	One Push WB Trigger(* Enabled during One Push WB Mode)
CAM_AE	Smooth Auto	8x 01 04 39 9F FF	Smooth Automatic Exposure Mode
	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
	White Board	8x 01 04 39 5F FF	White Board Mode
CAM_Iris	Reset	8x 01 04 0B 00 FF	Iris Setting (* Enabled during Iris Priority/Manaual Mode)
	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 , pq: 0x00~0x07 (only HD200E and PTC120), pq: 0x00 To 0x0E(Others)
	Iris Limit	8x 01 04 2B 0p FF	p: Iris Position , p: 0x00~0x07 (F18~F1.6)
CAM_Shutter	Reset	8x 01 04 0A 00 FF	Shutter Setting (* Enabled during Shutter Priority/Manaual Mode)
	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 , pq: 0x00 To 0x15
CAM_Gain	Reset	8x 01 04 0C 00 FF	Gain Setting

Command Set	Command	Command Packet	Comments
	Up	8x 01 04 0C 02 FF	(* Enabled during Manaual Mode)
	Down	8x 01 04 0C 03 FF	
	Direct	8x 01 04 4C 00 00 0p 0q FF	pq: Gain Position, pq: 0x00 To 0x0F
	Gain Limit	8x 01 04 2C 0p FF	p: Gain Position , p: 0x4 To 0xF
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 , pq: 00 To 0A
CAM_BackLight	On	8x 01 04 33 02 FF	Back Light Compensation ON/OFF
	Off	8x 01 04 33 03 FF	
CAM_SpotAE	On	8x 01 04 59 02 FF	Spot Automatic Exposure Setting,Enable during AE
	Off	8x 01 04 59 03 FF	Auto mode
	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
	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, pq: 00 To 0F
CAM_HR	On	8x 01 04 52 02 FF	High-Resolusion Mode ON/OFF
	Off	8x 01 04 52 03 FF	
CAM_2DNR	—	8x 01 04 53 0p FF	p: NR Setting , p: 0 To 6 (0: OFF, 5: Max 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
	Off	8x 01 04 61 03 FF	
CAM_Freeze	On	8x 01 04 62 02 FF	Still Image ON/OFF
	Off	8x 01 04 62 03 FF	
CAM_PictureEffect	Off	8x 01 04 63 00 FF	Picture Effect Setting
	Neg.Art	8x 01 04 63 02 FF	
	B&W	8x 01 04 63 04 FF	
CAM_PictureFlip	On	8x 01 04 66 02 FF	Picture flip ON/OFF
	Off	8x 01 04 66 03 FF	
CAM_ICR	On	8x 01 04 01 02 FF	Infrared Mode ON/OFF
	Off	8x 01 04 01 03 FF	
CAM_Memory (Preset)	Reset	8x 01 04 3F 00 pp FF	pp: Memory Number (pp: 0x00 To 0x7F)
	Set	8x 01 04 3F 01 pp FF	
	Recall	8x 01 04 3F 02 pp FF	
CAM_Mute	On	8x 01 04 75 02 FF	Muting ON/OFF
	Off	8x 01 04 75 03 FF	
	On/Off	8x 01 04 75 10 FF	
CAM_IDWrite	—	8x 01 04 22 0p 0q 0r 0s FF	pqrs: Camera ID (=0000 to FFFF)
CAM_Day&Night Mode	On	8x 01 04 6B 02 FF	Alarm ON/OFF
	Off	8x 01 04 6B 03 FF	
	SetDayNighLevel	8x 01 04 6D 0p 0p 0p 0q 0q 0q FF	ppp: Day judgement level setting qqq: Night judgement level setting,ppp: 000 To FFF qqq: 000 To FFF
	Alarm(Reply)	y0 07 04 6B 01 FF	Detection level “Low” ->“High”, y= camera address + 8

Command Set	Command	Command Packet	Comments
		y0 07 04 6B 00 FF	Detection level “High” ->“Low”, y= camera address + 8
CAM_ ReplyIntervalTimeSet	Effect the Daay and Night message reply time	8x 01 04 6A 00 00 0p 0p FF	pp: 0x01~0xFF, Interval Time [Vertical timing]
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
	Off	8x 01 06 08 03 FF	
	On/Off	8x 01 06 08 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	
Pan-tiltDrive	Up 3)	8x 01 06 01 VV WW 03 01 FF	VV: Pan speed 0x01 (low speed) to 0x18 (high speed) ，0x19 ~ 0xFE (speed follow zoom position) WW: Tilt Speed 0x01 (low speed) to 0x18 (high speed)，0x19 ~ 0xFE (speed follow zoom position) YYYY: Pan Position 0000 to 0AD4 & F52C to FFFF (center 0000) ZZZZ: Tilt Position 0000 to 05C1 & FE1B to FFFF (center 0000) .
	Down 3)	8x 01 06 01 VV WW 03 02 FF	
	Left 3)	8x 01 06 01 VV WW 01 03 FF	
	Right 3)	8x 01 06 01 VV WW 02 03 FF	
	UpLeft 3)	8x 01 06 01 VV WW 01 01 FF	
	UpRight 3)	8x 01 06 01 VV WW 02 01 FF	
	DownLeft 3)	8x 01 06 01 VV WW 01 02 FF	
	DownRight 3)	8x 01 06 01 VV WW 02 02 FF	
	Stop 3)	8x 01 06 01 VV WW 03 03 FF	
	AbsolutePosition	8x 01 06 02 VV WW 0Y 0Y 0Y 0Y	

Command Set	Command	Command Packet	Comments
		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 YYYY: Pan Limit Position 0000~0AD4 ZZZZ: Tilt Limit Position 0000~05C1
	LimitClear	8x 01 06 07 01 0W 07 0F 0F 0F 07 0F 0F 0F FF	W: 0 DownLeft YYYY: Pan Limit Position FFFF~F52C ZZZZ: Tilt Limit Position FFFF~FE1B
Firmware	Firmware version	8x 01 02 03 FF	
Error Code	Read Error Code	8x 01 01 01 FF	
	Clear Error Code Record	8x 02 02 02 FF	
Factory Reset	System Factroy 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
Output Video Type	Select the oupt Video type	8x 01 04 3F 05 0p FF	P: 0~1,0:SDI,1:YPbPr/DVI
Preset Speed	Set Preset Speed	8x 01 06 20 0p FF	p: 0 to 2, 0:150 degree/second, 1:250 degree/second, 2: 300 degree/second
Motor Table Select	Select Motor Speed Table	8x 01 06 20 30 40 0p FF	p:Table number [0: Default mode 1: Engineer mode]
CAM Prompt	Set Prompt On/Off	8x 01 04 07 00 0p FF	p: 2 to 3, 2:Prompt On , 3:Prompt Off
CAM_MemSave	Write Mem Data	8x 01 04 23 0X 0p 0p 0q 0q FF	X: 00 to 07 (Address), total 16 byte ppqq: 0x0000 to 0xFFFF (Data)
CAM Model ID	Set Camera model ID	8x 01 04 23 pp qq rr ss FF	ppqq: Vender ID , rrss:Model ID, default: HD1
CAM_SERIAL_NINE	Serial Number With 9 ascii codes	8x 02 18 aabbccddeeffgghhiiFF	aabbccddeeffgghhii 9 Serial code(Ascii)
CAM_AF_SPEED	Normal	8x 01 04 56 02 FF	Set anytime AF speed : Normal / Fast

Command Set	Command	Command Packet	Comments
	Fast	8x 01 04 56 03 FF	
	Normal / Fast	8x 01 04 56 10 FF	
CAM_AF_SENSITIVE	-	8x 01 04 58 0p FF	p: 1 to 3, 1:High , 2:Middle, 3:Low
CAM_AF_FRAME	Auto	8x 01 04 5C 01 FF	Set AF frame : Auto / Full Frame / Center
	Full Frame	8x 01 04 5C 02 FF	
	Center	8x 01 04 5C 03 FF	
	Auto / Full Frame / Center	8x 01 04 5C 10 FF	
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
CAM_Skin_Tone	select red level	8x 01 04 75 06 0p FF	p: 0~4
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
Power_LoadState	Load Preset 0 when power on and Pan/tilt reset	8x 01 04 75 6A 02 FF	Load preset 0 when power on
		8x 01 04 75 6A 03 FF	Load Last status when power on
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
CAM_AE_Bright_Ctrl	Reset	8x 01 04 0D 00 FF	AE Bright Control(Using EV)
	Up	8x 01 04 0D 02 FF	
	Down	8x 01 04 0D 03 FF	
Model Downgrade	Downgrade On	8x 01 04 75 55 66 78 FF	HD200 only, 1080p60 -> 1080p30
	Downgrade Off	8x 01 04 62 AA 55 12 56 34 FF	HD200 only, 1080p30 -> 1080p60
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	

Command Set	Command	Command Packet	Comments
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 FF	pq: B Gain, 0x00~0x3C

16. RS232 Inquiry Command List

Inquiry Command	Command Packet	Inquiry Packet	Comments
CAM_PowerInq	8x 09 04 00 FF	y0 50 02 FF	On
		y0 50 03 FF	Off (Standby)
CAM_OpticalZoomPosInq	8x 09 04 47 FF	y0 50 0p 0q 0r 0s FF	pqrs: Zoom Position , pqrs: 0x0000~0x4000
CAM_DZoomModeInq	8x 09 04 06 FF	y0 50 02 FF	D-Zoom On
		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: 0x00 To 0x33
CAM_FocusModeInq	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, pqrs: 0x000 to 0x1C6
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

Inquiry Command	Command Packet	Inquiry Packet	Comments
			0x0E:720p-2997
CAM_WBModeInq	8x 09 04 35 FF	y0 50 00 FF	Auto
		y0 50 01 FF	In Door
		y0 50 02 FF	Out Door
		y0 50 03 FF	One Push WB
		y0 50 04 FF	ATW
		y0 50 05 FF	Manual Control mode
		y0 50 06 FF	3000K
		y0 50 07 FF	4300K
		y0 50 08 FF	5000K
		y0 50 09 FF	6500K
		y0 50 0A FF	8300K

Inquiry Command	Command Packet	Inquiry Packet	Comments
		y0 50 0B FF	Wide Auto
		y050 0C FF	Sodium Lamp
CAM_AEModeInq	8x 09 04 39 FF	y0 50 9F FF	Smooth Auto
		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 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, pq: 0x00~0x07 (only HD200E and PTC120), pq: 0x00 To 0x0E(Others)
CAM_GainPosInq	8x 09 04 4C FF	y0 50 00 00 0p 0q FF	pq: Gain Position, pq: 0x00 To 0x0F
CAM_GainLimitInq	8x 09 04 2C FF	y0 50 0q FF	p: Gain Limit,p: 0x4 To 0xF
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, pq: 00 To 0A
CAM_BackLightModeInq	8x 09 04 33 FF	y0 50 02 FF	On
		y0 50 03 FF	Off
CAM_SpotAEModeInq	8x 09 04 59 FF	y0 50 02 FF	On
		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

Inquiry Command	Command Packet	Inquiry Packet	Comments
CAM_HRModeInq	8x 09 04 52 FF	y0 50 02 FF	On (Hi-Resolution)
		y0 50 03 FF	Off
CAM_2DNRModeInq	8x 09 04 53 FF	y0 50 0p FF	Noise Reduction p: 0:off 5:max 6:Auto
CAM_3DNRModeInq	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_ReverseModeInq	8x 09 04 61 FF	y0 50 02 FF	On
		y0 50 03 FF	Off
CAM_FreezeModeInq	8x 09 04 62 FF	y0 50 02 FF	On
		y0 50 03 FF	Off
CAM_PictureEffectModeInq	8x 09 04 63 FF	y0 50 00 FF	Off
		y0 50 02 FF	Neg.Art
		y0 50 04 FF	B&W
CAM_PictureFlipModeInq	8x 09 04 66 FF	y0 50 02 FF	On
		y0 50 03 FF	Off
CAM_ICRModeInq	8x 09 04 01 FF	y0 50 02 FF	On
		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_MuteModeInq	8x 09 04 75 FF	y0 50 02 FF	On
		y0 50 03 FF	Off
CAM_IDInq	8x 09 04 22 FF	y0 50 0p 0q 0r 0s FF	pqrs: Camera ID, pqrs: 0000 To FFFF
CAM_Day&NightInq	8x 09 04 6B FF	y0 50 02 FF	On
		y0 50 03 FF	Off
CAM_AlarmDayNightLevelInq	8x 09 04 6D FF	y0 50 0p 0p 0p 0q 0q 0q 0r 0r 0r FF	ppp: Day judgement level setting qqq: Night judgement level setting rrr: Current Automatic Exposure level setting

Inquiry Command	Command Packet	Inquiry Packet	Comments
			ppp: 000 To FFF , qqq: 000 To FFF , rrr: 0x180 To 0x310
CAM_AlarmDetectLevelInq	8x 09 04 6E FF	y0 50 01 FF	Detection level “High”
		y0 50 00 FF	Detection level “Low”
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
SYS_MenuModeInq	8x 09 06 06 FF	y0 50 02 FF	On
		y0 50 03 FF	Off
IR_Receive	8x 09 06 08 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
Pan-tiltMaxSpeedInq	8x 09 06 11 FF	y0 50 ww zz FF	ww = Pan Max Speed, ww: 0x18 zz = Tilt Max Speed, zz: 0x18
Pan-tiltPosInq	8x 09 06 12 FF	y0 50 0w 0w 0w 0w 0z 0z 0z 0z FF	wwww: 0000 To 0AD4 or F52C To FFFF , zzzz: 0000 To 05C1 or FE1B To FFFF wwww = Pan Position zzzz = Tilt Position
Pan-tiltModeInq	8x 09 06 10 FF	y0 50 pq rs FF	pqrs: 0000 To FFFF, see the General Pan Tilt Mode Status Table
CAM Image ModeInq	8x 09 04 3F 04 FF	y0 50 0p FF	p:0 To 6
Preset SpeedInq	8x 09 06 20 FF	y0 50 0p FF	p:0 To 2 VC-A50, 0: 150 degree/second 1:250 degree/second, 2:300

Inquiry Command	Command Packet	Inquiry Packet	Comments
			degree/second VC-A30, 0: 120 degree/second VC-302/VC-502, 0:150 degree/second
Prompt Inq	8x 09 04 07 00 FF	y0 50 0p FF	Prompt OnOff 2:On,3:Off
CAM Version Inq	8x 09 00 02 FF	y0 50 pp qq rr ss jj jj kk FF	ppqq: Vender ID,rrss: Model ID,jjjj: Rom revision,kk: Maxinum socket
CAM SERIAL INQ	8x 09 02 18 FF	y0 50 aabbccddeeffgghhiiFF	aabbccddeeffgghhii Serial code (ascii)
AF Sensitivity	8x 09 04 58 FF	y0 50 0p FF	p: 1 to 3, 1:High , 2:Middle, 3:Low
CAM_AF Speed Inq	8x 09 04 56 FF	y0 50 02 FF	Normal
		y0 50 03 FF	Fast
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
Power_LoadStateInq	8x 09 04 75 6A FF	y0 50 02 FF	Load preset 0 when power on or pan/tilt reset
		y0 50 03 FF	Load Last status when power on or pan/tilt reset
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,

17. Camera Block Inquiry Command List

16.1 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	Zoom Position (HH)
	1	
	2	
	3	
	4	0
	5	0
	6	0
	7	0

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

Byte	Bit	Comments
	6	0
	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	Digital Zoom 1: On 0: Off
	2	0
	3	0
	4	0
	5	0

Byte	Bit	Comments
	6	0
	7	0
Byte14	0	Zoom Command 1: Executing 0: Stopped
	1	Focus Command 1: Executing 0: Stopped
	2	Camera Memory Recall 1: Executing 0: Stopped
	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)

16.2 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	R Gain (H)
	1	
	2	
	3	
	4	0
	5	0
	6	0
	7	0

Byte	Bit	Comments
Byte3	0	R Gain (L)
	1	
	2	
	3	
	4	0
	5	0
	6	0
	7	0
Byte4	0	B Gain (H)
	1	
	2	
	3	
	4	0
	5	0
	6	0
	7	0
Byte5	0	B Gain (L)
	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 Gain
	1	
	2	
	3	
	4	0
	5	0
	6	0
	7	0
Byte8	0	Exposure Mode
	1	
	2	
	3	
	4	
	5	0
	6	0
	7	0

Byte	Bit	Comments
Byte9	0	0
	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	0
	6	0
	7	0

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

Byte	Bit	Comments
Byte14	0	Exposure Comp. 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)

16.3 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	Freeze 1: On 0: Off
	4	ICR 1: On 0: Off
	5	0
	6	0
	7	0
Byte4	0	0
	1	0
	2	0
	3	0
	4	Mute 1: On 0: Off
	5	0
	6	0
	7	0
Byte5	0	Picture Effect Mode
	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	Camera ID (HH)
	1	
	2	
	3	
	4	0
	5	0
	6	0
	7	0

Byte	Bit	Comments
Byte9	0	Camera ID (HL)
	1	
	2	
	3	
	4	0
	5	0
	6	0
	7	0
Byte10	0	Camera ID (LH)
	1	
	2	
	3	
	4	0
	5	0
	6	0
	7	0

Byte	Bit	Comments
Byte11	0	Camera ID (LL)
	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
	7	0
Byte15	0	1
	1	1
	2	1
	3	1
	4	1
	5	1
	6	1
	7	1 Terminator (FFh)

16.4 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	Digital Zoom Position (H)
	1	
	2	
	3	
	4	0
	5	0
	6	0
	7	0

Byte	Bit	Comments
Byte3	0	Digital Zoom Position (L)
	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	Alarm (1: On, 0: Off)
	2	0
	3	0
	4	0
	5	0
	6	0
	7	0

Byte	Bit	Comments
Byte11	0	Picture flip (1: Provided, 0: Not provided)
	1	0
	2	Advanced Privacy (1: Provided, 0: Not provided)
	3	Color Gain (0h (60%) to Eh (200%))
	4	
	5	
	6	
	7	0
Byte12	0	AE Response
	1	
	2	
	3	
	4	
	5	0
	6	0
	7	0

Byte	Bit	Comments
Byte13	0	2NR Level
	1	
	2	
	3	High Sensitivity mode (1: ON, 0: OFF)
	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)

16.5 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	WideD mode (0: OFF, 1: ON,)
	1	
	2	
	3	0
	4	0
	5	0
	6	0
	7	0
Byte3	0	0
	1	0
	2	0
	3	0
	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
Byte6	0	0
	1	0
	2	0
	3	0
	4	0
	5	0
	6	
	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)

16.6 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 (0h(− 14 degrees) to Eh(+ 14 degrees))
	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)

18. 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	VV : Pan speed 0x01 (low speed) to 0x18 (high speed) ，0x19 ~ 0xFE (speed follow zoom position) WW : Tilt speed 0x01 (low speed) to 0x18 (high speed) ，0x19 ~ 0xFE (speed follow zoom position)
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	
Riight -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
CheckSum = Mod((Byte 2 + Byte 3 + Byte 4 + Byte 5 + Byte 6), 0x100);								

19. PelcoD External Command List

19.1 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	
POWER	0xFF	0x01 ~ 0xFF	0x00	0x45	0x00	On:0x01 Off: 0x02	CheckSum	Power On/Off

External Command	Byte 1	Byte 2 (Address)	Byte 3	Byte 4	Byte 5	Byte 6	Byte 7	Comments
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 (* Enabled during AE Full Auto Mode)
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 Foucus / 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

19.2 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 Position	0xFF	0x01 ~ 0xFF	0x00	0x53	0x00	0x00	CheckSum	Get Tilt Postion
Query Zoom	0xFF	0x01 ~ 0xFF	0x00	0x55	0x00	0x00	CheckSum	Get Zoom Position

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	0xpq	0xrz	CheckSum	pqrz: 0x0000 To 0x0AD4 or 0xF52C To 0xFFFF
Query Tilt Response	0xFF	0x01 ~ 0xFF	0x00	0x5B	0xpq	0xrz	CheckSum	pqrz: 0x0000 To 0x05C1 or 0xFE1B To 0xFFFF
Query Zoom Response	0xFF	0x01 ~ 0xFF	0x00	0x5D	0xpq	0xrz	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);								