VC-A70H

RS-232 command set

No	Issue Date	Description	Apply Firmware
1	2016/06/08	1. First version.	VFA101_VFB107
2	2016/12/02	1. Add Pan/Tilt Speed and Inquiry command 2. General->AE_Gain_Table, increase to 42db 3. CAM_GainPosInq add 0x0F	VFA104_VFB107
3	**2017/10/06**	**1. Add VISCA command CAM_WDR** **2. Default of "Set Camera model ID" changed from EVI-HD1 to SRG-300H**	**VFA107_VFB118**

***Notice:**

1. **The RS-232/ PelcoD command list is for VC-A70H.**
2. **The yellow highlight means the latest update.**
3. **The blue highlight means the deleted item.**

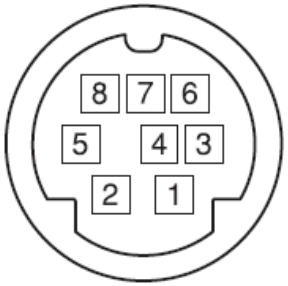
1. Communication Protocol

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: 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 Tele end Digital Tele end	
	0000 to 4000 to 7AC0	
Focus Position	Far end Near end	
	1000 to F000	pqrs:1000~F000

9. AE_Iris Table

	Index(pq)	Value
Iris	11	F1.8
	10	F2
	0F	F2.4
	0E	F2.8
	0D	F3.4
	0C	F4
	0B	F4.8
	0A	F5.6
	09	F6.8
	08	F8
	07	F9.6
	06	F11
	05	F14
	00	Close

10. AE_Shutter Table

	Index(pq)	59.94/ 29.97 mode	50/25 mode
Shutter Speed	15	1/10000	1/10000
	14	1/6000	1/6000
	13	1/4000	1/3500
	12	1/3000	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	1/125	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

11. AE_Gain Table

	Index(pq)	Value
Gain	0F	42 dB
	0E	39 dB
	0D	36 dB
	0C	33 dB
	0B	30 dB
	0A	27 dB
	09	24 dB
	08	21 dB
	07	18 dB
	06	15 dB
	05	12 dB
	04	9 dB
	03	6 dB
	02	3 dB
	01	0 dB

12. AE_Gain Limit Table

	Index(p)	(High Sensitivity OFF)Value	(High Sensitivity ON)Value
Gain	C	33 dB	45 dB
	B	30 dB	42 dB
	A	27 dB	39 dB
	9	24 dB	36 dB
	8	21 dB	33 dB
	7	18 dB	30 dB
	6	15 dB	27 dB
	5	12 dB	24 dB
	4	9 dB	21 dB

13. AE_Exposure Comp. Table

	Index(p)	Value(Level)	(Gain)Value
Exposure Comp.	0E	+7	+10.5 dB
	0D	+6	+9 dB
	0C	+5	+7.5 dB
	0B	+4	+6 dB
	0A	+3	+4.5 dB
	09	+2	+3 dB
	08	+1	+1.5 dB
	07	0	0 dB
	06	-1	-1.5 dB
	05	-2	-3 dB
	04	-3	-4.5 dB
	03	-4	-6 dB
	02	-5	-7.5 dB
	01	-6	-9 dB
	00	-7	-10.5 dB

14. AE_Bright Table

	OSD Index	Index(pq)	Iris	Gain
Bright	28	1B	F1.8	42 dB
	27	1A	F1.8	39 dB
	26	19	F1.8	36 dB
	25	18	F1.8	33 dB
	24	17	F1.8	30 dB
	23	16	F1.8	27 dB
	22	15	F1.8	24 dB
	21	14	F1.8	21 dB
	20	13	F1.8	18 dB
	19	12	F1.8	15 dB
	18	11	F1.8	12 dB
	17	10	F1.8	9 dB
	16	0F	F1.8	6 dB
	15	0E	F1.8	3 dB
	14	0D	F1.8	0 dB
	13	0C	F2	0 dB
	12	0B	F2.4	0 dB
	11	0A	F2.8	0 dB
	10	09	F3.4	0 dB
	9	08	F4	0 dB
	8	07	F4.8	0 dB
	7	06	F5.6	0 dB
	6	05	F6.8	0 dB
	5	04	F8	0 dB

	4	03	F9.6	0 dB
	3	02	F11	0 dB
	2	01	F14	0 dB
	1	00	CLOSE	0 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_Zoom	Stop	8x 01 04 07 00 FF	
	Tele (Standard)	8x 01 04 07 02 FF	
	Wide (Standard)	8x 01 04 07 03 FF	
	Tele (Variable)	8x 01 04 07 2p FF	p=0 (Low) to 7 (High)
	Wide (Variable)	8x 01 04 07 3p FF	
	Direct	8x 01 04 47 0p 0q 0r 0s FF	pqrs: Zoom Position Min. 0000h Max. 4000h (DZoom=Off) Max. 59C0h (DZoom=Clear Image Zoom, and monitoring mode QFHD) Max. 6000h (DZoom=Clear Image Zoom, and monitoring mode FHD or less) Max. 7AC0h (DZoom=On)
CAM_DZoom	On	8x 01 04 06 02 FF	Digital Zoom On/Off/Clear Image Zoom
	Off	8x 01 04 06 03 FF	
	Clear Image Zoom	8x 01 04 06 04 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 (Variable)	8x 01 04 08 2p FF	

Command Set	Command	Command Packet	Comments
	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 0x1000~0xF000(Near Limit 可限制最大值)
	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)
	Near Limit	8x 01 04 28 0p 0q 0r 0s FF	pqrs: FocusNear Limit Position 0x1000~0xE000, The lower 1 byte is fixed at 00
CAM_ZoomFocus	Direct	8x 01 04 47 0p 0q 0r 0s 0t 0u 0v 0w FF	pqrs: Zoom Position Min. 0000h Max. 4000h (DZoom=Off) Max. 59C0h (DZoom=Clear Image Zoom, and monitoring mode QFHD) Max. 6000h (DZoom=Clear Image Zoom, and monitoring mode FHD or less) Max. 7AC0h (DZoom=On) tuvw: Focus Position(0x1000~0xF000) (需在 MF mode 下)

Command Set	Command	Command Packet	Comments
Resolution Settting	—	8x 01 06 35 00 0p FF	p: 0x00: 3840x2160 29.97p 0x01: 3840x2160 25p 0x02: 1920x1080 59.94p 0x03: 1920x1080 50p 0x04: 1920x1080 59.94i 0x05: 1920x1080 50i 0x06: 1280x720 59.94p 0x07: 1280x720 50p
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 Control mode
	Outdoor Auto	8x 01 04 35 06 FF	Outdoor auto
	Sodium Lamp Auto	8x 01 04 35 07 FF	Auto including sodium lamp source
	Sodium Lamp	8x 01 04 35 08 FF	Sodium lamp source fixed mode
	Sodium Lamp Outdoor Auto	8x 01 04 35 09 FF	Outdoor auto including sodium lamp source
	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
	Manual	8x 01 04 39 03 FF	Manual Control mode
	Shutter Priority	8x 01 04 39 0A FF	Shutter Priority Automatic Exposure mode
	Iris Priority	8x 01 04 39 0B FF	Iris Priority Automatic Exposure mode
	Bright	8x 01 04 39 0D FF	Bright Mode (Manual control)

Command Set	Command	Command Packet	Comments
CAM_Iris	Reset	8x 01 04 0B 00 FF	Iris Setting
	Up	8x 01 04 0B 02 FF	(* Enabled during Iris Priority/Manual Mode)
	Down	8x 01 04 0B 03 FF	
	Direct	8x 01 04 4B 00 00 0p 0q FF	pq: Iris Position , pq: close 0x00, F14~F1.8 0x05~0x11
CAM_Shutter	Reset	8x 01 04 0A 00 FF	Shutter Setting
	Up	8x 01 04 0A 02 FF	(* Enabled during Shutter Priority/Manual Mode)
	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
	Up	8x 01 04 0C 02 FF	(* Enabled during Manual Mode)
	Down	8x 01 04 0C 03 FF	
	Direct	8x 01 04 4C 00 00 0p 0q FF	pq: Gain Position, pq:0x01 To 0x0C
	Gain Limit	8x 01 04 2C 0p FF	p: Gain Limit , p: 0x04 To 0x0C
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: 0x00 To 0x0E
CAM_BackLight	On	8x 01 04 33 02 FF	Back Light Compensation ON/OFF
	Off	8x 01 04 33 03 FF	(* Enabled during AE Full Auto Mode)
CAM_SpotAE	On	8x 01 04 59 02 FF	Spot Automatic Exposure Setting,Enable during AE Auto mode
	Off	8x 01 04 59 03 FF	
	Position	8x 01 04 29 0p 0q 0r 0s FF	pq: X (0x00 To 0x0F), rs: Y (0x00 To 0x0F)
CAM_VE	Off	8x 01 04 3D 03 FF	Off

Command Set	Command	Command Packet	Comments
	VE On	8x 01 04 3D 06 FF	VE on
	Set Parameter	8x 01 04 2D 00 0q 0r 0s 00 00 00 00 FF	q: Display brightness level (0: Dark to 6: Bright) r: Brightness compensation selection (0: Very dark, 1: Dark,2: Standard, 3: Bright) s: Compensation level (0: Low, 1: Mid, 2: High)
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: 0x00 To 0x0F
CAM_HR	On	8x 01 04 52 02 FF	High-Resolusion Mode ON/OFF
	Off	8x 01 04 52 03 FF	
CAM_NR	—	8x 01 04 53 0p FF	p: NR Setting (0: Off, level 1 to 5)
CAM_Gamma	—	8x 01 04 5B 0p FF	p: Gamma Setting (0x0: 1, 0x1: 2)
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
	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	ICR 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	

Command Set	Command	Command Packet	Comments
	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 (= 0x0000 to 0xFFFF)
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 0p FF	p: 0x00~0x0E
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	24 段: VV: Pan speed 0x01 (low speed) to 0x18 (high speed) ，Out of defined range (speed follow zoom position) WW: Tilt Speed 0x01 (low speed) to 0x18 (high speed)，Out of defined range (speed follow zoom position) 100 段: VV: Pan speed 0x01 (low speed) to 0x64 (high speed) ，Out of defined range (speed follow zoom position) WW: Tilt Speed 0x01 (low speed) to 0x64 (high speed)，Out of defined
	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	

Command Set	Command	Command Packet	Comments
		FF	range (speed follow zoom position) YYYY: Pan Position 0000 to 0AD4 & F52C to FFFF (center 0000). Out of defined range (keep the boundary) ZZZZ: Tilt Position 0000 to 05C1 & FE1B to FFFF (center 0000) . Out of defined range (keep the boundary)
	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 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 W: 0 DownLeft YYYY: Pan Limit Position FFFF~F52C ZZZZ: Tilt Limit Position FFFF~FE1B Out of defined range (keep the boundary)
	LimitClear	8x 01 06 07 01 0W 07 0F 0F 0F 07 0F 0F 0F FF	
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	

Command Set	Command	Command Packet	Comments
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
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, default: SRG-300H (pp, qq, rr, ss: 0x00~0xFE)
CAM_SERIAL_NINE	Serial Number With 9 ascii codes	8x 02 18 aa bb cc dd ee ff gg hh ii FF	aabbccddeeffgghhii 9 Serial code(Ascii)
CAM_AF_SENSITIVE	Normal	8x 01 04 58 02 FF	AF Sensitivity Normal/Low
	Low	8x 01 04 58 03 FF	
Power_LoadState	Load Preset 0 when power on	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
SYS_Enter	Menu Enter	8x 01 7E 01 02 00 01 FF	menu enter
CAM_AFMode	Normal AF	8x 01 04 57 00 FF	AF Movement Mode
	Interval AF	8x 01 04 57 01 FF	
	Zoom Trigger AF	8x 01 04 57 02 FF	
	Active/Interval Time	8x 01 04 27 0p 0q 0r 0s FF	pq: Movement Time 0x00~0xFF, rs: Interval 0x00~0xFF (Unit: one second)
CAM_RGain	Reset	8x 01 04 03 00 FF	
	Up	8x 01 04 03 02 FF	
	Down	8x 01 04 03 03 FF	
	Direct	8x 01 04 43 00 00 0p 0q FF	pq: R Gain 0x00~0xFF
CAM_BGain	Reset	8x 01 04 04 00 FF	Manual Control of B Gain

Command Set	Command	Command Packet	Comments
	Up	8x 01 04 04 02 FF	
	Down	8x 01 04 04 03 FF	
	Direct	8x 01 04 44 00 00 0p 0q FF	pq: B Gain 0x00~0xFF
CAM_AutoSlowShutter	On	8x 01 04 5A 02 FF	Auto Slow Shutter On/Off
	Off	8x 01 04 5A 03 FF	
CAM_Bright	Reset	8x 01 04 0D 00 FF	Bright Setting
	Up	8x 01 04 0D 02 FF	
	Down	8x 01 04 0D 03 FF	
	Direct	8x 01 04 4D 00 00 0p 0q FF	pq: level 0x00~0x1B
CAM_HighSensitivity	On	8x 01 04 5E 02 FF	High Sensitivity mode On/Off
	Off	8x 01 04 5E 03 FF	
Pan speed table update command	-	8x 01 06 1A 0u 0v 0p 0q 0r 0s FF	uv: Table Index (0x1 ~ 0x64), pqrs: speed value (0x1 ~ 0x1BD)
Tilt speed table update command	-	8x 01 06 1B 0u 0v 0p 0q 0r 0s FF	uv: Table Index (0x1 ~ 0x64), pqrs: speed value (0x1 ~ 0x1BD)
Pan/Tilt speed table to default	-	8x 01 06 1C 0p 0q 0D 0E 0F FF	pq: 0x18 or 0x64
Pan/tilt speed table size	-	8x 01 06 1D 0p 0q FF	pq: 0x18 or 0x64
Pan/tilt speed table save	-	8x 01 06 1E FF	
Tally Mode	-	8x 01 7E 01 0A 01 0p FF	p: 0 OFF 4: ON (LOW) 5: ON (HIGH)
Tally Lamp	-	8x 01 7E 01 0A 00 0p FF	p: 2 ON 3: OFF
System_Motionless_Preset	On	8x 01 07 01 02 FF	Motionless Preset On/Off
	Off	8x 01 07 01 03 FF	
System_Low_Latency	On	8x 01 07 02 02 FF	Low Latency On/Off
	Off	8x 01 07 02 03 FF	

Command Set	Command	Command Packet	Comments
Digital Output	-	8x 01 07 03 0p FF	p: 0 YUV 1: RGB
CAM_PanTiltSpeed	Normal	8x 01 06 1F 00 FF	
	Smooth	8x 01 06 1F 01 FF	
CAM_WDR	Set Parameter	8x 01 04 2D 0p FF	p: 0 ~ 3, 0: Off, 1~3: mode 1~3

16. RS232 Inquiry Command List

Inquiry Command	Command Packet	Inquiry Packet	Comments
CAM_PowerInq	8x 09 04 00 FF	y0 50 03 FF	Off (Standby)
CAM_ZoomPosInq	8x 09 04 47 FF	y0 50 0p 0q 0r 0s FF	pqrs: Zoom Position , pqrs: 0x0000~Max. Max. 4000h (DZoom=Off) Max. 59C0h (DZoom=Clear Image Zoom, and monitoring mode QFHD) Max. 6000h (DZoom=Clear Image Zoom, and monitoring mode FHD or less) Max. 7AC0h (DZoom=On)
CAM_DZoomModeInq	8x 09 04 06 FF	y0 50 02 FF	D-Zoom On
		y0 50 03 FF	D-Zoom Off
		y0 50 04 FF	Clear Image Zoom
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: 0x1000 to 0xF000
CAM_FocusNearLimitInq	8x 09 04 28 FF	y0 50 0p 0q 0r 0s FF	pqrs: Focus Near Limit Position, pqrs: 0x1000 to 0xE000, The lower 1 byte is fixed at 00
Resolution SetttingInq	8x 09 06 23 FF	y0 50 0p FF	p:

Inquiry Command	Command Packet	Inquiry Packet	Comments
			0x00: 3840x2160 29.97p 0x01: 3840x2160 25p 0x02: 1920x1080 59.94p 0x03: 1920x1080 50p 0x04: 1920x1080 59.94i 0x05: 1920x1080 50i 0x06: 1280x720 59.94p 0x07: 1280x720 50p
CAM_WBModeInq	8x 09 04 35 FF	y0 50 00 FF	Auto
		y0 50 01 FF	Indoor
		y0 50 02 FF	Outdoor
		y0 50 03 FF	One Push WB
		y0 50 04 FF	ATW
		y0 50 05 FF	Manual
		y0 50 06 FF	Outdoor Auto
		y0 50 07 FF	Sodium Lamp Auto
		y0 50 08 FF	Sodium Lamp
		y0 50 09 FF	Sodium Lamp Outdoor Auto
CAM_AEModeInq	8x 09 04 39 FF	y0 50 00 FF	Full Auto
		y0 50 03 FF	Manual
		y0 50 0A FF	Shutter Priority
		y0 50 0B FF	Iris Priority
		y0 50 0D FF	Bright
CAM_ShutterPosInq	8x 09 04 4A FF	y0 50 00 00 0p 0q FF	pq: Shutter Position, pq: 0x00 To 0x15
CAM_IrisPosInq	8x 09 04 4B FF	y0 50 00 00 0p 0q FF	pq: Iris Position, pq: close 0x00, F14~F1.8 0x05~0x11

Inquiry Command	Command Packet	Inquiry Packet	Comments
CAM_GainPosInq	8x 09 04 4C FF	y0 50 00 00 0p 0q FF	pq: Gain Position, pq: 0x01 To 0x0F
CAM_GainLimitInq	8x 09 04 2C FF	y0 50 0q FF	p: Gain Limit,p: 0x04 To 0x0C
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: 0x00 To 0x0E
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_WDParameterInq	8x 09 04 2D FF	y0 50 0p FF	p: 0 ~ 3, 0: Off, 1~3: mode 1~3
CAM_ApertureInq	8x 09 04 42 FF	y0 50 00 00 0p 0q FF	pq: Aperture Gain, pq: 00 To 0F
CAM_HRModeInq	8x 09 04 52 FF	y0 50 02 FF	On (Hi-Resolution)
		y0 50 03 FF	Off
CAM_NRModeInq	8x 09 04 53 FF	y0 50 0p FF	Noise Reduction p: (0: Off, level 1 to 5)
CAM_GammaInq	8x 09 04 5B FF	y0 50 0p FF	Gamma p: (0: 1, 1: 2)
CAM_HighSensitivityInq	8x 09 04 5E FF	y0 50 02 FF	On
		y0 50 03 FF	Off
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 04 FF	B&W
CAM_PictureFlipModeInq	8x 09 04 66 FF	y0 50 02 FF	On

Inquiry Command	Command Packet	Inquiry Packet	Comments
		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
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 0x0E
CAM_ColorHueInq	8x 09 04 4F FF	y0 50 00 00 00 0p FF	p: Color Hue setting p: 0x00 To 0x0E
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 or 0x64 zz = Tilt Max Speed, zz: 0x18 or 0x64
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

Inquiry Command	Command Packet	Inquiry Packet	Comments
			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
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 aa bb cc dd ee ff gg hh ii FF	aabbccddeeffgghhii Serial code (ascii)
AF Sensitivity	8x 09 04 58 FF	y0 50 0p FF	p: 2:Normal, 3:Low
CAM_AF Speed Inq	8x 09 04 56 FF	y0 50 pp FF	pp: 0x00 = Normal, 0x11 = 1, 0x21 = 2, 0x31 = 3, 0x41= 4, 0x51 = 5
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
CAM_RGainInq	8x 09 04 43 FF	y0 50 00 00 0p 0q FF	pq: R Gain, 0x00~0xFF,
CAM_BGainInq	8x 09 04 44 FF	y0 50 00 00 0p 0q FF	pq: B Gain, 0x00~0xFF,
Pan speed table inq	8x 09 06 1A 0p 0q FF	y0 50 0p 0q 0r 0s FF	pq: Table index (0x1 ~ 0x64), pqrs: speed value (0x1 ~ 0x1BD)
Tilt speed table inq	8x 09 06 1B 0p 0q FF	y0 50 0p 0q 0r 0s FF	pq: Table index (0x1 ~ 0x64), pqrs: speed value (0x1 ~ 0x1BD)
Pan/Tilt speed table size inq	8x 09 06 1C FF	y0 50 0p 0q 0r 0s FF	pqrs: Table size (0x18 or 0x64)
Tally Mode Inq	8x 09 7E 01 0A 01 FF	y0 50 0p FF	p: 0 OFF 4: ON (LOW) 5: ON (HIGH)
Tally Lamp Inq	8x 09 7E 01 0A 00 FF	y0 50 0p FF	p: 2 ON 3: OFF
System_MotionlessPresetInq	8x 09 07 01 FF	y0 50 02 FF	On
		y0 50 03 FF	Off
System_LowLatencyInq	8x 09 07 02 FF	y0 50 02 FF	On

Inquiry Command	Command Packet	Inquiry Packet	Comments
		y0 50 03 FF	Off
Digital Output Inq	8x 09 07 03 FF	y0 50 0p FF	p: 0 YUV 1: RGB
CAM_PanTiltSpeedInq	8x 09 06 1F FF	y0 50 00 FF	Normal
		y0 50 01 FF	Smooth Auto

17. Camera Block Inquiry Command List

17.1 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	Focus Near Limit (H)
	1	
	2	
	3	
	4	0
	5	0
	6	0
	7	0
Byte7	0	Focus Near Limit (L)
	1	
	2	
	3	
	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

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	Digital Zoom 1: On 0: Off
	2	AF Sensitivity 0: Low 1: Normal
	3	0: Normal 1: Interval
	4	2: Zoom Trigger
	5	Reserved

Byte	Bit	Comments
	6	Clear Image Zoom 1:On 0:Off
	7	0
Byte14	0	Reserved
	1	Reserved
	2	Reserved
	3	Reserved
	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)

17.2 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	Reserved
	5	Reserved
	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	Slow Shutter 1: On 0: Off
	1	Exposure Comp. 1: On 0: Off
	2	Back Light 1: On 0: Off
	3	Spot AE 1: On 0: Off
	4	VE 1: On 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	Bright Position
	1	
	2	
	3	
	4	
	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)

17.3 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	Reserved
	3	Reserved
	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	ICR 1: On 0: Off
	5	0
	6	0
	7	0
Byte4	0	0
	1	0
	2	Reserved
	3	Reserved
	4	Reserved
	5	Reserved
	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	System 1: 1/50, 1/25 0: 1/59.94, 1/29.97
	1	Reserved
	2	
	3	
	4	
	5	
	6	
	7	
Byte13	0	0
	1	0
	2	0
	3	0

Byte	Bit	Comments
	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)

17.4 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	AF Activation Time (H)
	1	
	2	
	3	
	4	0
	5	0
	6	0
	7	0
Byte5	0	AF Activation Time (L)
	1	
	2	
	3	
	4	0
	5	0
	6	0
	7	0

Byte	Bit	Comments
Byte6	0	AF Interval Time (H)
	1	
	2	
	3	
	4	0
	5	0
	6	0
	7	0
Byte7	0	AF Interval Time (L)
	1	
	2	
	3	
	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	E-Flip (1: On, 0: Off)
	1	0
	2	Reserved
	3	0
	4	0
	5	0
	6	0
	7	0

Byte	Bit	Comments
Byte11	0	Reserved
	1	Reserved
	2	Reserved
	3	Color Gain (0h (60%) to Eh (200%))
	4	
	5	
	6	
	7	0
Byte12	0	Reserved
	1	
	2	
	3	
	4	
	5	0
	6	0
	7	0

Byte	Bit	Comments
Byte13	0	NR Level
	1	
	2	
	3	Reserved
	4	Reserved
	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)

17.5 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	VE 0: Off 2: VE On
	1	
	2	0
	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	Display brightness level setting 0: Dark to 6: Bright
	1	
	2	
	3	0
	4	0
	5	0
	6	0
	7	0
Byte5	0	Brightness compensation selection 0: Very dark 1: Dark 2: Standard 3: Bright
	1	
	2	0
	3	0
	4	0
	5	0
	6	0
	7	0
Byte6	0	Compensation level 0: Low 1: Mid 2: High
	1	
	2	0
	3	0
	4	0
	5	0
	6	0
	7	0
Byte7	0	Reserved
	1	0
	2	0
	3	0
	4	0
	5	0
	6	0
	7	0
Byte8	0	Reserved
	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)

17.6 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	24 Segment: VV: Pan speed 0x01 (low speed) to 0x18 (high speed) ，Out of defined range (speed follow zoom position) WW: Tilt Speed 0x01 (low speed) to 0x18 (high speed)，Out of defined range (speed follow zoom position) VV and WW speed = 0x00 and speed = 0x01 are the same 100 Segment: VV: Pan speed 0x01 (low speed) to 0x64 (high speed) ，Out of defined range (speed follow zoom position) WW: Tilt Speed 0x01 (low speed) to 0x64 (high speed)，Out of defined range (speed follow zoom position) VV and WW speed = 0x00 and speed = 0x01 are the same
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) = 0x06
Zoom Wide	0xFF	0x01 ~ 0xFF	0x00	0x40	0x00	0x00	CheckSum	Speed = VISCA Wide (Variable) = 0x06
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	24 Segments:

Zoom Tele+Left	0xFF	0x01 ~ 0xFF	0x00	0x24	0xVV	0xWW	CheckSum	VV: Pan speed 0x01 (low speed) to 0x18 (high speed) ，Out of defined range (speed follow zoom position) WW: Tilt Speed 0x01 (low speed) to 0x18 (high speed)，Out of defined range (speed follow zoom position) VV and WW speed = 0x00 same as speed = 0x01 100 Segments: VV: Pan speed 0x01 (low speed) to 0x64 (high speed) ，Out of defined range (speed follow zoom position) WW: Tilt Speed 0x01 (low speed) to 0x64 (high speed)，Out of defined range (speed follow zoom position) VV and WW speed = 0x00 same as speed = 0x01
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	
Zoom Tele+Right -Down	0xFF	0x01 ~ 0xFF	0x00	0x32	0xVV	0xWW	CheckSum	
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	
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);								

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
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:	CheckSum	Still Image ON/OFF

						0x02		
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 List

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 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	0xpq	0xrz	CheckSum	pqrz: 0x0000 To 0x0AD4 or 0xF52C To 0xFFFF

Query Command	Byte 1	Byte 2 (Address)	Byte 3	Byte 4	Byte 5	Byte 6	Byte 7	Comments
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:Off 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);								