



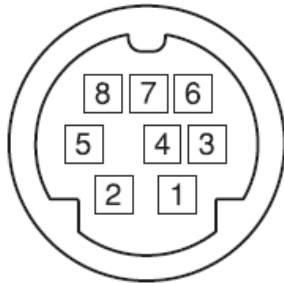
### 1. Communication Protocol

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 5Y ... 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: 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	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 406E
Focus Position	Far end		Near end	
	000		to	1C6
				pqrs:000~1C6

## 9. Digital Zoom Position Table

Digital Zoom Ratio	pq
x1	00
x2	3C
x3	50
x4	5A
x5	60
x6	64
x7	66
x8	69
x9	6A
x10	6C
x11	6D
x12	6E

## 10. 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	

### 11. 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	

### 12. 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

### 13. AE\_Exposure Comp. Table

Exposure Comp.	Index(p)	Value(Level)
	0B	5
	0A	4
	09	3
	08	2
	07	1
	06	0
	05	-1
	04	-2
	03	-3
	02	-4
	01	-5

## 14. Camera 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	
	Tele (Standard)	8x 01 04 07 02 FF	
	Wide (Standard)	8x 01 04 07 03 FF	
	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_Focus	Stop	8x 01 04 08 00 FF	p=0 (Low) to 7 (High)
	Far (Standard)	8x 01 04 08 02 FF	(* Enabled during Manual Focus Mode)



Command Set	Command	Command Packet	Comments
	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 Focuss Table 0x00 ~ 0x101 (* Enabled during Manual Focus Mode)
	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 Focus Mode)
CAM_ZoomFocus	Direct	8x 01 04 47 0p 0q 0r 0s 0t 0u 0v 0w FF	pqrs: Zoom Position(0x0000~0x4000) tuvw: Focus Position(0x00 ~ 0x101) (* Enabled during Manual Focus Mode)

Command Set	Command	Command Packet	Comments
Resolution Settting	—	8x 01 06 35 00 0p FF	p: 0x00:1080p-60 0x01:1080p-59.94 0x02:1080p-50 0x03:1080p-30 0x04:1080p-29.97 0x05:1080p-25 0x06:1080i-60 0x07:1080i-59.94 0x08:1080i-50 0x09:720p-60 0x0A:720p-59.94 0x0B:720p-50
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
	Sodium Lamp	8x 01 04 35 06 FF	Sodium lamp source fixed mode
	3000K	8x 01 04 35 07 FF	Color temperture fixed at 3000K mode
	4300K	8x 01 04 35 08 FF	Color temperture fixed at 4300K mode
	5000K	8x 01 04 35 09 FF	Color temperture fixed at 5000K mode
	6500K	8x 01 04 35 0A FF	Color temperture fixed at 6500K mode
	8000K	8x 01 04 35 0B FF	Color temperture fixed at 8000K mode
	WideAuto	8x 01 04 35 0C FF	Wide Auto mode

Command Set	Command	Command Packet	Comments
	One Push Trigger	8x 01 04 10 05 FF	One Push WB Trigger(* Enabled during One Push WB Mode)
CAM_WB_RGAIN	Reset	8x 01 04 03 00 FF	Manual R gain Setting (* Enabled during WB Manual mode )
	Up	8x 01 04 03 02 FF	
	Down	8x 01 04 03 03 FF	
	Direct	8x 01 04 43 00 00 0p 0q FF	
CAM_WB_BGAIN	Reset	8x 01 04 04 00 FF	Manual B gain Setting (* Enabled during WB Manual mode )
	Up	8x 01 04 04 02 FF	
	Down	8x 01 04 04 03 FF	
	Direct	8x 01 04 44 00 00 0p 0q FF	
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
	White Board	8x 01 04 39 5F FF	White Board Mode
CAM_Shutter	Reset	8x 01 04 0A 00 FF	Shutter Setting (* Enabled during AE Shutter Priority/Manual 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	
CAM_Gain	Reset	8x 01 04 0C 00 FF	Gain Setting (* Enabled during AE Manual Mode)
	Up	8x 01 04 0C 02 FF	
	Down	8x 01 04 0C 03 FF	
	Direct	8x 01 04 4C 00 00 0p 0q FF	pq: Gain Position, pq:00 To 0F (* Enabled during AE Manual Mode)
	Gain Limit	8x 01 04 2C 0p FF	p: Gain Position , p: 4 To F (* Disabled during AE Manual Mode)

Command Set	Command	Command Packet	Comments
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 (* Enabled during ExpComp On )
	Up	8x 01 04 0E 02 FF	
	Down	8x 01 04 0E 03 FF	
	Direct	8x 01 04 4E 00 00 0p 0q FF	
CAM_BackLight	On	8x 01 04 33 02 FF	Back Light Compensation ON/OFF (* Enabled during AE Full Auto Mode)
	Off	8x 01 04 33 03 FF	
CAM_WD	Set Parameter	8x 01 04 2D 0p FF	WDR Mode p:0~5
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-Resolution 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: Auto,1:Off 6: Max )
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 (* Enabled during Image Mode = Custom mode )
CAM_HighSensitivity	On	8x 01 04 5E 02 FF	High Sensitivity mode ON/OFF
	Off	8x 01 04 5E 03 FF	
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

Command Set	Command	Command Packet	Comments
	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_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_Iris_dec_Ctrl	—	8x 01 04 20 00 0x 0x FF	xx: 00~ FF, 00(Full open),FF(close)
CAM_ColorGain(Saturation)	Direct	8x 01 04 49 00 00 00 pq FF	pq:0x00~0x19 (* Enabled during Image Mode = Custom mode )
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) WW: Tilt Speed 0x01 (low speed) to 0x18 (high speed) VV: 00 To 0x18 WW: 00 To 0x18
	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	

Command Set	Command	Command Packet	Comments
	UpLeft 3)	8x 01 06 01 VV WW 01 01 FF	YYYY: Pan Position 0x0000 to 0x3A80 & 0xC580 to 0xFFFF (center 0000) ZZZZ: Tilt Position 0x0000 to 0x3DE0 & 0xEB60 to 0xFFFF (center 0000)
	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 0x0000~0x3A80 ZZZZ: Tilt Limit Position 0x0000~0x3DE0
	LimitClear	8x 01 06 07 01 0W 07 0F 0F 0F 07 0F 0F 0F FF	W: 0 DownLeft YYYY: Pan Limit Position 0xFFFF~0xC580 ZZZZ: Tilt Limit Position 0xFFFF~0xEB60
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 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, 6:Custom 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 Model ID	Set Camera model ID	8x 01 04 23 pp qq rr ss FF	ppqq: Vender ID , rrrs:Model ID, default: HD1
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	
AF Sensitivity	-	8x 01 04 58 0p FF	p: 1 to 3, 1:High , 2:Middle, 3:Low
CAM_ImageModeBrightness	Set Brightness	8x 01 04 75 67 pq FF	pq: 0x00~0x19(* Enabled during Image Mode = Custom mode )
CAM_ImageModeContrast	Set Contrast	8x 01 04 75 68 pq FF	pq: 0x00~0x19(* Enabled during Image Mode = Custom mode )
CAM_Skin_Tone	select red level	8x 01 04 75 06 0p FF	p: 0~5(* Enabled during Image Mode = Custom mode )
Black Level	Black Level	8x 01 04 75 69 0p FF	p: 0 to 5, 0:Off, 1:Type 1, 2:Type 2, 3:Type 3, 4:Type 4, 5:Type 5 (* Enabled during Image Mode = Custom mode )
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

## 15. 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_FocusModelInq	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 0x101

Inquiry Command	Command Packet	Inquiry Packet	Comments
Resolution SetttingInq	8x 09 06 23 FF	y0 50 0p FF	p: 0x00:1080p-60 0x01:1080p-59.94 0x02:1080p-50 0x03:1080p-30 0x04:1080p-29.97 0x05:1080p-25 0x06:1080i-60 0x07:1080i-59.94 0x08:1080i-50 0x09:720p-60 0x0A:720p-59.94 0x0B:720p-50
CAM_WBModelInq	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
		y0 50 06 FF	Sodium Lamp
		y0 50 07 FF	3000K
		y0 50 08 FF	4300K
		y0 50 09 FF	5000K
		y0 50 0A FF	6500K
		y0 50 0B FF	8000K
		y0 50 0B FF	Wide Auto



Inquiry Command	Command Packet	Inquiry Packet	Comments
CAM_AEModelnq	8x 09 04 39 FF	y0 50 00 FF	Full Auto
		y0 50 03 FF	Manual
		y0 50 0A FF	Shutter Priority
		90 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_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_ExpCompModelnq	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 0B
CAM_BackLightModelnq	8x 09 04 33 FF	y0 50 02 FF	On
		y0 50 03 FF	Off
CAM_WDModelnq	8x 09 04 3D FF	y0 50 02 FF	On Wide-D
		y0 50 03 FF	Off
CAM_WDParameterInq	8x 09 04 2D FF	y0 50 0p FF	p: WDR mode off/mid/max(p: 0 To 5)
CAM_ApertureInq	8x 09 04 42 FF	y0 50 00 00 0p 0q FF	pq: Aperture Gain, pq: 00 To 0F
CAM_HRModelnq	8x 09 04 52 FF	y0 50 02 FF	On (Hi-Resolution)
		y0 50 03 FF	Off
CAM_2DNRModelnq	8x 09 04 53 FF	y0 50 0p FF	p: NR Setting , p: 0 To 6 (0: Auto,1:Off 6: Max )
CAM_3DNRModelnq	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_HighSensitivityInq	8x 09 04 5E FF	y0 50 02 FF	On
		y0 50 03 FF	Off
CAM_LR_ReverseModelnq	8x 09 04 61 FF	y0 50 02 FF	On
		y0 50 03 FF	Off

Inquiry Command	Command Packet	Inquiry Packet	Comments
CAM_FreezeModelnq	8x 09 04 62 FF	y0 50 02 FF	On
		y0 50 03 FF	Off
CAM_PictureEffectModelnq	8x 09 04 63 FF	y0 50 00 FF	Off
		y0 50 02 FF	Neg.Art
		y0 50 04 FF	B&W
CAM_PictureFlipModelnq	8x 09 04 66 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 To 0x7F
CAM_MemSaveInq	8x 09 04 23 0X FF	y0 50 0p 0p 0q 0q FF	X: 00 to 07 (Address) ppqq: 0x0000 to 0xFFFF (Data)
CAM_MuteModelnq	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_ColorGainInq	8x 09 04 49 FF	y0 50 00 00 00 pq FF	pq: Color Gain setting , pq: 0x00 To 0x19
SYS_MenuModelnq	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  (IR_Receive Return Message On)	8x 01 7D 01 03 00 00 FF	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(All memory set)
		y0 07 7D 01 06 01 FF	Pan_tiltDrive

Inquiry Command	Command Packet	Inquiry Packet	Comments
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: 【0x0000 To 0x3A80】 or 【0xFFFF To 0xC580】 zzzz: 【0x0000 To 0x3DE0】 or 【0xFFFF To 0xEB60】 wwww = Pan Position zzzz = Tilt Position
Pan-tiltModelInq	8x 09 06 10 FF	y0 50 pq rs FF	pqrs: 0000 To FFFF, see the General Pan Tilt Mode Status Table
CAM Image ModelInq	8x 09 04 3F 04 FF	y0 50 0p FF	p:0 To 6
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
AF SensitivityInq	8x 09 04 49 FF	y0 50 00 00 00 pq FF	pq: Color Gain setting , pq: 0x00 To 0x19
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 3,4:Type 4,5:Type 5
Power_LoadStatelInq	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

## 16. 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
Byte12	6	0
	7	0
	0	0
	1	0
	2	0
	3	0
	4	0
	5	0
Byte13	6	0
	7	0
	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
Byte14	6	0
	7	0
Byte15	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	0
	5	0
	6	0
	7	0

Byte	Bit	Comments
Byte9	0	Reserved
	1	Exposure Comp. 1: On 0: Off
	2	Back Light 1: On 0: Off
	3	Reserved
	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	0
	5	
	6	
	7	

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

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	1: 1/50, 1/25 0: 1/60, 1/30
	1	0
	2	ICR 1: Provided 0: Not provided
	3	0
	4	Memory 1: Provided 0: Not provided
	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	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	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	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	0
	1	0
	2	0
	3	0
	4	0
	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	0
Byte14	7	0
	0	Gain Limit
	1	
	2	
	3	Reserved
	4	
	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

Byte	Bit	Comments
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

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)

**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	Reserved
	1	
	2	
	3	
	4	0
	5	0
	6	0
	7	0

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

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

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

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

Byte	Bit	Comments
Byte13	0	
	1	
	2	
	3	
	4	
	5	
	6	
7	0	
Byte14	0	
	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)	