

# 54G15SP Camera Serial Communication Interface Specification

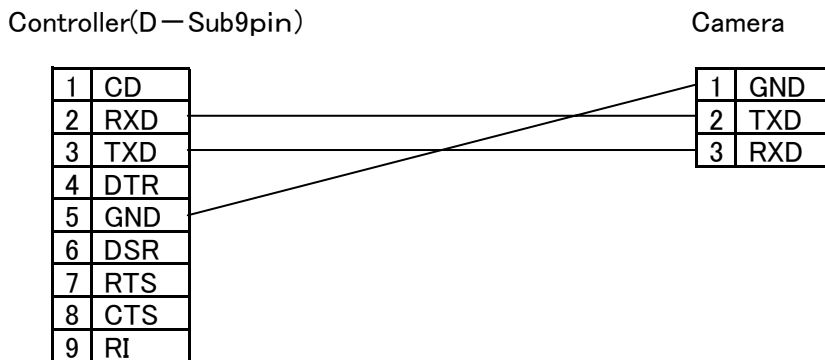
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## 1.BRIEF

The specification of interface by RS232-C to control 54G15SP.  
 By this interface of communication to control ZOOM, FOCUS, WHITE BALANCE etc.  
 The adjustment can be executed from the controller.

## 2.SERIAL COMMUNICATION I/F

### 2.1 The Connection of Controller & Camera



Fi1 Connection of Controller & Camera

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## 2.2 COMMUNICATION FLOW

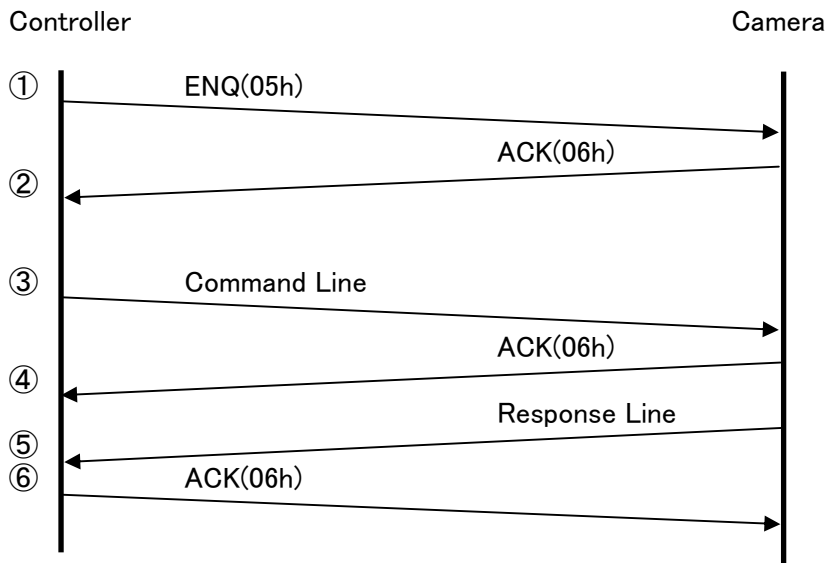


Fig-2 COMMUNICATION FLOW

The communication flow, please refer to Fig-2. TABLE-1 Serial Communication Parameter make sure the connection ①Controller send out of "ENQ", after ②receive "ACK" from camera. (Connection confirm can be omitte)

Baud Rate	9,600 19,200 38,400bps
Data Length	8 Bit
Parity	NO
Stop Bit	1 Bit
Flow Control	NO
Synchrony	Internal

From controller to ③ send "COMMAND" signal into camera, when camera received "COMMAND SIGNAL" then ④return "ACK" back, after that the camera will proceed the "COMMAND" then ⑤ send "RESPONSE" signal back to controller, after the controller received the signal then it will ⑥ sends "ACK" signal to the camera. Repeat following ③~⑥ to communicate. (⑥ can be omitted.)

### \* RS485 Correspond

For corresponding 1 controller to multiple (1:N) camera, ID is added. Transmitted command from controller, only to process same ID cameras. When the commanded camera and after command processing then transmit response data. At the occasion of setting ID to 00h from controller and transmitted command, all of the cameras will process the command. (When ID at 00h, response data can not be transmitted.)

At the occasion of 1 to N, do not transmit (①ENQ, ⑥ACK from controller) (Refer to Fig-2 communication flow). Camera would not transmit ④ ACK.)

### 2.3 COMMUNICATION DATA FORMAT

(1) ENQ Data Length 1byte

05h

(2) ACK:OK Data Length 1byte

06h

(3) NAK:Error Data Length 1byte

15h

(4) Command Line Data Length 7byte

STX	D1	D2	D3	D4	ID	SUM
-----	----	----	----	----	----	-----

STX : 8xh,9xh

ID : When communicate 1 to N, ID for identifying camera) • •  
(00h: All cameras, F0h~FFh (Inhibit using))

SUM : Please set STX~SUM All 7 bytes additional value became to 00h.

(5) Response Line Data Length 7byte

STX	D1	D2	D3	D4	ID	SUM
-----	----	----	----	----	----	-----

STX : 8xh,9xh (Normal)

: Cxh (Error)

ID : ID for identifying camera

SUM : STX~SUM All 7 bytes additional value is set become to 00h. •

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### 3. COMMAND

When communicate 1 to N, D5 is COMM.ID. But 1 to 1 communication is disregard.

#### 3.1 CAMERA.ID

(1)CAMERA.ID Character 1~ Character 20 READ

##### Command Line

80h	00h	D2	D3	D4	D5	SUM
		D2 :01h(Character1)~14h(Character20)				
		D3~D4 :disregard				

##### Response Line

STX	00h	D2	D3	D4	D5	SUM
		STX :80h(Normal)、C0h(Error)				
		D2 :01h(Character1)~14h(Character20)				
		D3 :CAMERA.ID High Byte Data				
		D4 :CAMERA.ID Low Byte Data				

##### The relations of Character & Code

Character	Character Code(hex)	Character	Character Code(hex)	Character	Character Code(hex)
0	0030	A	0041	a	0061
1	0031	B	0042	b	0062
2	0032	C	0043	c	0063
3	0033	D	0044	d	0064
4	0034	E	0045	e	0065
5	0035	F	0046	f	0066
6	0036	G	0047	g	0067
7	0037	H	0048	h	0068
8	0038	I	0049	I	0069
9	0039	J	004A	J	006A
:	003A	K	004B	K	006B
;	003B	L	004C	L	006C
'	0027	M	004D	M	006D
"	0022	N	004E	N	006E
.	002E	O	004F	O	006F
,	002C	P	0050	p	0070
<	003C	Q	0051	q	0071
>	003E	R	0052	r	0072
(	0028	S	0053	s	0073
)	0029	T	0054	t	0074
[	005B	U	0055	u	0075
]	005D	V	0056	v	0076
{	007B	W	0057	w	0077
}	007D	X	0058	x	0078
┌	0015	Y	0059	y	0079
└	0016	Z	005A	z	007A
-	002D				
*	002A	+	002B		
/	002F	(Space)	007E		

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(2) CAMERA.ID Position READ

Command Line

80h	01h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2~D4 :Disregard

Response Line

STX	01h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX :80h(Normal)、C0h(Error)

D2 :Uncertain

D3 :POSITION (00h-UP、01h-DOWN)

D4 :Uncertain

(3) CAMERA.ID Character1~Character20 WRITE

Command Line

80h	80h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2 :01h(Character1)~14h(Character20)

D3 :CAMERA.ID High Byte Data

D4 :CAMERA.ID Low Byte Data

Response Line

STX	80h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX :80h(Normal)、C0h(Error)

D2 :01h(Character1)~14h(Character20)

D3 :CAMERA.ID High Byte Data

D4 :CAMERA.ID Low Byte Data

An OSD display updates the 20th character after WRITE.
--

(4) CAMERA.ID POSITION WRITE

Command Line

80h	82h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2 :POSITION (00h-UP、01h-DOWN)

D3~D4 :Disregard.

Response Line

STX	82h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX :80h(Normal)、C0h(Error)

D2 :Uncertain

D3 :POSITION

D4 :Uncertain

### 3.2 AGC/SENSE UP

#### (1) AGC / SENSE UP READ

##### Command Line

81h	00h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2~D3 : Disregard

##### Response Line

STX	00h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX : 81h(Normal)、C1h(Error)

D2 : Uncertain

D3 : AGC (00h-BASE~08h-MAX)

D4 : SENSE UP (00h-OFF~08h-x64)

#### (2) AGC WRITE

##### Command Line

81h	80h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2 : AGC (00h-BASE~08h-MAX)

D3~D4 : Disregard

##### Response Line

STX	80h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX : 81h(Normal)、C1h(Error)

D2 : Uncertain

D3 : AGC (00h-BASE~08h-MAX)

D4 : SENSE UP (00h-OFF~08h-x64)

#### (3) SENSE UP WRITE

##### Command Line

81h	81h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2 : SENSE UP (00h-BASE~08h-MAX)

D3~D4 : Disregard

##### Response Line

STX	81h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX : 81h(Normal)、C1h(Error)

D2 : Uncertain

D3 : AGC (00h-BASE~08h-MAX)

D4 : SENSE UP (00h-OFF~08h-x64)

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### 3.3 ALC/AES

#### (1) ALC READ

##### Command Line

81h	10h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2~D3 : Disregard

##### Response Line

STX	10h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX : 81h(Normal)、C1h(Error)

D2 : ALC (00h-AUTO、01h-FIX)

D3 : ALC AUTO LEVEL (00h-MIN、08h-MAX)

D4 : ALC FIX LEVEL (00h-MIN、08h-MAX)

#### (2) ALC WRITE

##### Command Line

81h	90h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2 : ALC (00h-AUTO、01h-FIX)

D3~D4 : Disregard

##### Response Line

STX	90h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX : 81h(Normal)、C1h(Error)

D2 : ALC (00h-AUTO、01h-FIX)

D3 : ALC AUTO LEVEL (00h-MIN、08h-MAX)

D4 : ALC FIX LEVEL (00h-MIN、08h-MAX)

#### (3) ALC AUTO LEVEL WRITE

##### Command Line

81h	91h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2 : ALC AUTO LEVEL (00h-MIN、08h-MAX)

D3~D4 : Disregard

##### Response Line

STX	91h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX : 81h(Normal)、C1h(Error)

D2 : ALC (00h-AUTO、01h-FIX)

D3 : ALC AUTO LEVEL (00h-MIN、08h-MAX)

D4 : ALC FIX LEVEL (00h-MIN、08h-MAX)

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(4) ALC FIX LEVEL WRITE

Command Line

81h	92h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2 : ALC FIX LEVEL (00h-MIN, 08h-MAX)  
D3~D4 : Disregard

Response Line

STX	92h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX : 81h(Normal), C1h(Error)  
D2 : ALC (00h-AUTO, 01h-FIX)  
D3 : ALC AUTO LEVEL (00h-MIN, 08h-MAX)  
D4 : ALC FIX LEVEL (00h-MIN, 08h-MAX)

(5) AES READ

Command Line

81h	20h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2~D4 : Disregard

Response Line

STX	20h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX : 81h(Normal), C1h(Error)  
D2 : AES (00h-AUTO, 01h-FIX)  
D3 : AES AUTO LEVEL (00h-MIN, 08h-MAX)  
D4 : AES FIX LEVEL (00h-OFF, 08h-1/10000)

(6) AES WRITE

Command Line

81h	A0h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2 : AES (00h-AUTO, 01h-FIX)  
D3~D4 : Disregard

Response Line

STX	A0h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX : 81h(Normal), C1h(Error)  
D2 : AES (00h-AUTO, 01h-FIX)  
D3 : AES AUTO LEVEL (00h-MIN, 08h-MAX)  
D4 : AES FIX LEVEL (00h-OFF, 08h-1/10000)



(7) AES AUTO LEVEL WRITE

Command Line

81h	A1h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2 :AES AUTO LEVEL(00h-MIN、08h-MAX)  
 D3~D4 :Disregard

Response Line

STX	A1h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX :81h(Normal)、C1h(Error)  
 D2 :AES (00h-AUTO、01h-FIX)  
 D3 :AES AUTO LEVEL (00h-MIN、08h-MAX)  
 D4 :AES FIX LEVEL (00h-OFF、08h-1/10000)

(8) AES FIX LEVEL WRITE

Command Line

81h	A2h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2 :AES FIX LEVEL  
 00h- OFF  
 01h- 1/100  
 02h- 1/120  
 03h- 1/250  
 04h- 1/500  
 05h- 1/1000  
 06h- 1/2000  
 07h- 1/4000  
 08h- 1/10000  
 D3~D4 :Disregard

Response Line

STX	A2h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX :81h(Normal)、C1h(Error)  
 D2 :AES (00h-AUTO、01h-FIX)  
 D3 :AES AUTO LEVEL (00h-MIN、08h-MAX)  
 D4 :AES FIX LEVEL (00h-OFF、08h-1/10000)

### 3.4 BLC

#### (1) BLC READ

##### Command Line

81h	30h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2~D4 :Disregard

##### Response Line

STX	30h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX :81h(Normal)、C1h(Error)

D2 :BLC (00h-OFF、01h-ON)

D3 :BLC LEVEL (00h-MIN、07h-MAX)

D4 :Disregard

#### (2) BLC AREA READ1

##### Command Line

81h	31h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2~D4 :Disregard

##### Response Line

STX	31h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX :81h(Normal)、C1h(Error)

D2 :BLC AREA LINE 1(Each bit 0-OFF、1-ON)

D3 :BLC AREA LINE 2(Each bit 0-OFF、1-ON)

D4 :BLC AREA LINE 3(Each bit 0-OFF、1-ON)

#### (3) BLC AREA READ2

##### Command Line

81h	32h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2~D4 :Disregard

##### Response Line

STX	32h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX :81h(Normal)、C1h(Error)

D2 :BLC AREA LINE 4(Each bit 0-OFF、1-ON)

D3 :BLC AREA LINE 5(Each bit 0-OFF、1-ON)

D4 :BLC AREA LINE 6(Each bit 0-OFF、1-ON)

(4)BLC WRITE

Command Line

81h	B0h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2 :BLC (00h-OFF、01h-ON)  
D3~D4 :Disregard

Response Line

STX	B0h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX :81h(Normal)、C1h(Error)  
D2 :BLC (00h-OFF、01h-ON)  
D3 :BLC LEVEL (00h-MIN、07h-MAX)  
D4 :Uncertain

(5)BLC LEVEL WRITE

Command Line

81h	B1h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2 :BLC LEVEL (00h-MIN、07h-MAX)  
D3~D4 :Disregard

Response Line

STX	B1h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX :81h(Normal)、C1h(Error)  
D2 :BLC (00h-OFF、01h-ON)  
D3 :BLC LEVEL (00h-MIN、07h-MAX)  
D4 :Uncertain

(6)BLC AREA WRITE1

Command Line

81h	B2h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2 :BLC AREA LINE 1(Each bit 0-OFF、1-ON)  
D3 :BLC AREA LINE 2(Each bit 0-OFF、1-ON)  
D4 :BLC AREA LINE 3(Each bit 0-OFF、1-ON)

Response Line

STX	B2h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX :81h(Normal)、C1h(Error)  
D2 :BLC AREA LINE 1(Each bit 0-OFF、1-ON)  
D3 :BLC AREA LINE 2(Each bit 0-OFF、1-ON)  
D4 :BLC AREA LINE 3(Each bit 0-OFF、1-ON)

(7)BLC AREA WRITE2

Command Line

81h	B3h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2 :BLC AREA LINE 4(Each bit 0-OFF、1-ON)

D3 :BLC AREA LINE 5(Each bit 0-OFF、1-ON)

D4 :BLC AREA LINE 6(Each bit 0-OFF、1-ON)

Response Line

STX	B3h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX :81h(Normal)、C1h(Error)

D2 :BLC AREA LINE 4(Each bit 0-OFF、1-ON)

D3 :BLC AREA LINE 5(Each bit 0-OFF、1-ON)

D4 :BLC AREA LINE 6(Each bit 0-OFF、1-ON)

### 3.5 WHITE BALANCE

#### (1) WHITE BALANCE READ

##### Command Line

82h	00h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2~D4 :Disregard

##### Response Line

STX	00h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX :82h(Normal)、C2h(Error)

D2 :WHITE BALANCE (00h-ATW、01h-AWB)

D3~D4 :Uncertain

#### (2) ATW LEVEL READ

##### Command Line

82h	01h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2~D4 :Disregard

##### Response Line

STX	01h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX :82h(Normal)、C2h(Error)

D2 :ATW LEVEL (00h-RED、08h-BLUE)

D3~D4 :Uncertain

#### (3) AWB LEVEL READ

##### Command Line

82h	02h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2~D4 :Disregard

##### Response Line

STX	02h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX :82h(Normal)、C2h(Error)

D2 :AWB LEVEL (00h-RED、08h-BLUE)

D3 :ONE PUSH ACTIVE (00h-In Stopping、01h-In Active)

D4 :Uncertain

(4) R-Y Gain B-Y Gain READ

Command Line

82h	03h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2~D4 : Disregard

Response Line

STX	03h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX : 82h(Normal), C2h(Error)

D2 : R-Y GAIN (00h-MIN, 08h-MAX)

D3 : B-Y GAIN (00h-MIN, 08h-MAX)

D4 : Uncert

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(5) WHITE BALANCE WRITE

Command Line

82h	80h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2 :WHITE BALANCE (00h-ATW, 01h-AWB)

D3~D4 :Disregard

Response Line

STX	80h	D2	D3	D4	D5	D6
-----	-----	----	----	----	----	----

STX :82h(Normal), C2h(Error)

D2 :WHITE BALANCE (00h-ATW, 01h-AWB)

D3~D4 :Uncertain

(6) ATW LEVEL WRITE

Command Line

82h	81h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2 :ATW LEVEL (00h-RED, 08h-BLUE)

D3~D4 :Disregard

Response Line

STX	81h	D2	D3	D4	D5	D6
-----	-----	----	----	----	----	----

STX :82h(Normal), C2h(Error)

D2 :ATW LEVEL (00h-RED, 08h-BLUE)

D3~D4 :Uncertain

(7) AWB LEVEL WRITE

Command Line

82h	82h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2 :AWB LEVEL (00h-RED, 08h-BLUE)

D3~D4 :Disregard

Response Line

STX	82h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX :82h(Normal), C2h(Error)

D2 :AWB LEVEL (00h-RED, 08h-BLUE)

D3 :ONE PUSH ACTIVE (00h-In Stopping, 01h-In Active)

D4 :Uncertain

(8) R-Y Gain WRITE

Command Line

82h	83h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2 : R-Y GAIN (00h-MIN, 08h-MAX)  
D3~D4 : Disregard

Response Line

STX	83h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX : 82h(Normal), C2h(Error)  
D2 : R-Y GAIN (00h-MIN, 08h-MAX)  
D3 : B-Y GAIN (00h-MIN, 08h-MAX)  
D4 : Uncertain

(9) B-Y Gain WRITE

Command Line

82h	84h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2 : B-Y GAIN (00h-MIN, 08h-MAX)  
D3~D4 : Disregard

Response Line

STX	84h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX : 82h(Normal), C2h(Error)  
D2 : R-Y GAIN (00h-MIN, 08h-MAX)  
D3 : B-Y GAIN (00h-MIN, 08h-MAX)  
D4 : Uncertain



(10)AWC TRIGGER WRITE

Command Line

82h	85h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2~D4 :Disregard

Response Line

STX	85h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX :82h(Normal)、C2h(Error)  
D2 :AWB LEVEL (00h-RED、08h-BLUE)  
D3 :ONE PUSH ACTIVE (00h-In Stopping、01h-In Active)  
D4 :Uncertain

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### 3.6 LENS

#### (1) ZOOM READ

##### Command Line

83h	00h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2~D4 :Disregard

##### Response Line

STX	00h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX :83h(Normal)、C3h(Error)

D2 :ZOOM (target position) High Byte

D3 :ZOOM (target position) Low Byte

D4 :Uncertain

#### (2) FOCUS READ

##### Command Line

83h	01h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2~D4 :Disregard

##### Response Line

STX	01h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX :83h(Normal)、C3h(Error)

D2 :FOCUS (target position) High Byte

D3 :FOCUS (target position) Low Byte

D4 :Uncertain

#### (3) AUTO FOCUS READ

##### Command Line

83h	02h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2~D4 :Disregard

##### Response Line

STX	02h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX :83h(Normal)、C3h(Error)

D2 :AUTO FOCUS (00h-OFF、01h-ON)

D3 :ZOOM + AF (00h-OFF、01h-ON)

D4 :AF SLEEP (00h-SLEEP FUNCTION OFF、01h-SLEEP FUNCTION ON)

(4) Digital Zoom MAX READ

Command Line

83h	03h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2~D4 :Disregard

Response Line

STX	03h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX :83h(Normal)、C3h(Error)  
D2 :Digital Zoom MAX(00h-OFF、01h-x2、02h-x4、03h-x6、04h-x8、05h-x10)  
D3~D4 :Uncertain

(5) LENS SPEED READ

Command Line

83h	04h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2~D4 :Disregard

Response Line

STX	04h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX :83h(Normal)、C3h(Error)  
D2 :ZOOM SPEED (00h-MIN~04h-MAX)  
D3 :FOCUS SPEED (00h-MIN~04h-MAX)  
D4 :Uncertain

(6) ZOOM WIDE

Command Line

83h	80h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2~D4 :Disregard

Response Line

STX	80h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX :83h(Normal)、C3h(Error)

D2 :ZOOM (target position) High Byte

D3 :ZOOM (target position) Low Byte

D4 :Uncertain

(7) ZOOM TELE

Command Line

83h	81h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2~D4 :Disregard

Response Line

STX	81h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX :83h(Normal)、C3h(Error)

D2 :ZOOM (target position) High Byte

D3 :ZOOM (target position) Low Byte

D4 :Uncertain

(8) ZOOM STOP

Command Line

83h	82h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2~D4 :Disregard

Response Line

STX	82h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX :83h(Normal)、C3h(Error)

D2 :ZOOM (target position) High Byte

D3 :ZOOM (target position) Low Byte

D4 :Uncertain

(9) FOCUS NEAR

Command Line

83h	83h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2~D4 :Disregard

Response Line

STX	83h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX :83h(Normal)、C3h(Error)

D2 : FOCUS (target position) High Byte

D3 : FOCUS (target position) Low Byte

D4 :Uncertain

(10) FOCUS FAR

Command Line

83h	84h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2~D4 :Disregard

Response Line

STX	84h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX :83h(Normal)、C3h(Error)

D2 : FOCUS (target position) High Byte

D3 : FOCUS (target position) Low Byte

D4 :Uncertain

(11) FOCUS STOP

Command Line

83h	85h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2~D4 :Disregard

Response Line

STX	85h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX :83h(Normal)、C3h(Error)

D2 : FOCUS (target position) High Byte

D3 : FOCUS (target position) Low Byte

D4 :Uncertain

(12) AUTO FOCUS

Command Line

83h	86h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2 :AUTO FOCUS (00h-OFF、01h-ON)  
D3~D4 :Disregard

Response Line

STX	86h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX :83h(Normal)、C3h(Error)  
D2 :AUTO FOCUS (00h-OFF、01h-ON)  
D3 :ZOOM + AF (00h-OFF、01h-ON)  
D4 :AF SLEEP (00h-SLEEP FUNCTION OFF、01h-SLEEP FUNCTION ON)

(13) ZOOM + AF

Command Line

83h	87h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2 :ZOOM + AF (00h-OFF、01h-ON)  
D3~D4 :Disregard

Response Line

STX	87h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX :83h(Normal)、C3h(Error)  
D2 :AUTO FOCUS (00h-OFF、01h-ON)  
D3 :ZOOM + AF (00h-OFF、01h-ON)  
D4 :AF SLEEP (00h-SLEEP FUNCTION OFF、01h-SLEEP FUNCTION ON)

(14) AF SLEEP WRITE

Command Line

83h	88h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2 :AF SLEEP (00h-SLEEP FUNCTION OFF、01h-SLEEP FUNCTION ON)  
D3~D4 :Disregard

Response Line

STX	88h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX :83h(Normal)、C3h(Error)  
D2 :AUTO FOCUS (00h-OFF、01h-ON)  
D3 :ZOOM + AF (00h-OFF、01h-ON)  
D4 :AF SLEEP (00h-SLEEP FUNCTION OFF、01h-SLEEP FUNCTION ON)

(15) ONE PUSH AUTO FOCUS

Command Line

83h	89h	D2	D3	D4	D5	SUM
		D2~D4 :Disregard				

Response Line

STX	89h	D2	D3	D4	D5	SUM
STX		:83h(Normal)、C3h(Error)				
D2		:AUTO FOCUS (00h-OFF、01h-ON)				
D3		:ZOOM + AF (00h-OFF、01h-ON)				
D4		:AF SLEEP (00h-SLEEP FUNCTION OFF、01h-SLEEP FUNCTION ON)				

(16) DIGITAL ZOOM MAX WRITE

Command Line

83h	8Ah	D2	D3	D4	D5	SUM
D2		:Digital Zoom MAX(00h-OFF、01h-x2、02h-x4、03h-x6、04h-x8、05h-x10)				
D3~D4		:Disregard				

Response Line

STX	8Ah	D2	D3	D4	D5	SUM
STX		:83h(Normal)、C3h(Error)				
D2		:Digital Zoom MAX(00h-OFF、01h-x2、02h-x4、03h-x6、04h-x8、05h-x10)				
D3~D4		:Uncertain				

(17) ZOOM STEP APPOINT

Command Line

83h	8Bh	D2	D3	D4	D5	SUM
D2		:ZOOM (target position) High Byte				
D3		:ZOOM (target position) Low Byte				
D4		:Disregard				

Response Line

STX	8Bh	D2	D3	D4	D5	SUM
STX		:83h(Normal)、C3h(Error)				
D2		:ZOOM (target position) High Byte				
D3		:ZOOM (target position) Low Byte				
D4		:Uncertain				

(18) FOCUS STEP APPOINT

Command Line

83h	8Ch	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2 : FOCUS (target position) High Byte  
D3 : FOCUS (target position) Low Byte  
D4 : Disregard

Response Line

STX	8Ch	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX : 83h(Normal)、C3h(Error)  
D2 : FOCUS (target position) High Byte  
D3 : FOCUS (target position) Low Byte  
D4 : Uncertain

(19) ZOOM 1STEP TELE

Command Line

83h	90h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2 : MOVE STEP NUMBER High Byte  
D3 : MOVE STEP NUMBER Low Byte  
D4 : Disregard

Response Line

STX	90h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX : 83h(Normal)、C3h(Error)  
D2 : ZOOM (target position) High Byte  
D3 : ZOOM (target position) Low Byte  
D4 : Uncertain

(20) ZOOM 1STEP WIDE

Command Line

83h	91h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2 : MOVE STEP NUMBER High Byte  
D3 : MOVE STEP NUMBER Low Byte  
D4 : Disregard

Response Line

STX	91h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX : 83h(Normal)、C3h(Error)  
D2 : ZOOM (target position) High Byte  
D3 : ZOOM (target position) Low Byte  
D4 : Uncertain



(21) FOCUS 1STEP NEAR

Command Line

83h	92h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2 :MOVE STEP NUMBER High Byte  
D3 :MOVE STEP NUMBER Low Byte  
D4 :Disregard

Response Line

STX	92h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX :83h(Normal)、C3h(Error)  
D2 :FOCUS (target position) High Byte  
D3 :FOCUS (target position) Low Byte  
D4 :Uncertain

(22) ZOOM 1STEP FAR

Command Line

83h	93h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2 :MOVE STEP NUMBER High Byte  
D3 :MOVE STEP NUMBER Low Byte  
D4 :Disregard

Response Line

STX	93h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX :83h(Normal)、C3h(Error)  
D2 :FOCUS (target position) High Byte  
D3 :FOCUS (target position) Low Byte  
D4 :Uncertain

(23) ZOOM SPEED WRITE

Command Line

83h	94h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2 :ZOOM SPEED (00h-MIN~04h-MAX)  
D3~D4 :Disregard

Response Line

STX	94h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX :83h(Normal)、C3h(Error)  
D2 :ZOOM SPEED (00h-MIN~04h-MAX)  
D3 :FOCUS SPEED (00h-MIN~04h-MAX)  
D4 :Uncertain

(24) FOCUS SPEED WRITE

Command Line

83h	95h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2 : FOCUS SPEED (00h-MIN~04h-MAX)

D3~D4 : Disregard

Response Line

STX	95h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX : 83h(Normal), C3h(Error)

D2 : ZOOM SPEED (00h-MIN~04h-MAX)

D3 : FOCUS SPEED (00h-MIN~04h-MAX)

D4 : Uncertain

### 3.7 POSITION

#### (1) POSITION OSD READ

##### Command Line

84h	00h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2~D4 :Disregard

##### Response Line

STX	00h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX :84h(Normal)、C4h(Error)

D2 :Uncertain

D3 :POSITION OSD (00h-OFF、01h-ON)

D4 :POSITION OSD POSITION (00h-UP、01h-DOWN)

#### (2) POSITION BOARD,ALARM READ

##### Command Line

84h	01h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2~D4 :Disregard

##### Response Line

STX	01h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX :84h(Normal)、C4h(Error)

D2 :BOARD POSITION No(01h~40h)

D3 :ALARM POSITION (00h-OFF、01h~40h-POSITION No.)

D4 :Disregard

#### (3) POSITION No. READ

##### Command Line

84h	02h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2~D4 :Disregard

##### Response Line

STX	02h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX :84h(Normal)、C4h(Error)

D2 :POSITION No. (01h~40h)

D3 :Uncertain

D4 :Uncertain

#### (4) POSITION ZOOM(EEPROM) READ

##### Command Line

84h	03h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2 : POSITION No.

D3~D4 : Disregard

##### Response Line

STX	03h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX : 84h(Normal)、C4h(Error)

D2 : POSITION No.

D3 : ZOOM High Byte (EEPROM)

D4 : ZOOM Low Byte (EEPROM)

#### (5) POSITION FOCUS(EEPROM) READ

##### Command Line

84h	04h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2 : POSITION No.

D3~D4 : Disregard

##### Response Line

STX	04h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX : 84h(Normal)、C4h(Error)

D2 : POSITION No.

D3 : FOCUS High Byte (EEPROM)

D4 : FOCUS Low Byte (EEPROM)

#### (6) POSITION ZOOM(CURRENT) READ

##### Command Line

84h	05h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2~D4 : Disregard

##### Response Line

STX	05h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX : 84h(Normal)、C4h(Error)

D2 : Uncertain

D3 : ZOOM High Byte (CURRENT)

D4 : ZOOM Low Byte (CURRENT)

(7) POSITION FOCUS(CURRENT) READ

Command Line

84h	06h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2~D4 :Disregard

Response Line

STX	06h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX :84h(Normal)、C4h(Error)  
D2 :Uncertain  
D3 : FOCUS High Byte (CURRENT)  
D4 : FOCUS Low Byte (CURRENT)

(8) DEFAULT POSITION READ

Command Line

84h	10h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2~D4 :Disregard

Response Line

STX	10h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX :84h(Normal)、C4h(Error)  
D2 :DEFAULT POSITION (00h-OFF、01h-ON)  
D3 :DEFAULT POSITION No.(01h~40h-POSITION No.)  
D4 :Uncertain

(9) POSITION CURRENT SAVE

Command Line

84h	90h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2 :POSITION No. (01h~40h-POSITION No.)

Response Line

STX	90h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX :84h(Normal)、C4h(Error)  
D2 :POSITION No. (01h~40h-POSITION No.)  
D3 :Uncertain  
D4 :Uncertain

At present Zoom、Focus、Privacy Mask save in appoint Position No.

(10) POSITION ZOOM SAVE

Command Line

84h	80h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2 : POSITION No. (01h~40h-POSITION No.)  
 D3 : ZOOM High Byte  
 D4 : ZOOM Low Byte

Response Line

STX	80h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX : 84h(Normal)、C4h(Error)  
 D2 : POSITION No. (01h~40h-POSITION No.)  
 D3 : ZOOM High Byte  
 D4 : ZOOM Low Byte

(11) POSITION FOCUS SAVE

Command Line

84h	81h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2 : POSITION No. (01h~40h-POSITION No.)  
 D3 : FOCUS High Byte  
 D4 : FOCUS Low Byte

Response Line

STX	81h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX : 84h(Normal)、C4h(Error)  
 D2 : POSITION No. (01h~40h-POSITION No.)  
 D3 : FOCUS High Byte  
 D4 : FOCUS Low Byte

(12) POSITION DATA LOAD

Command Line

84h	82h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2 : POSITION No. (01h~40h-POSITION No.)  
 D3~D4 : Disregard

Response Line

STX	82h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX : 84h(Normal)、C4h(Error)  
 D2 : POSITION No. (01h~40h-POSITION No.)  
 D3 : ZOOM High Byte  
 D4 : ZOOM Low Byte

(13) POSITION OSD WRITE

Command Line

84h	83h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2 : POSITION OSD (00h-OFF, 01h-ON)  
D3~D4 : Disregard

Response Line

STX	83h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX : 84h(Normal), C4h(Error)  
D2 : Uncertain  
D3 : POSITION OSD (00h-OFF, 01h-ON)  
D4 : POSITION OSD POSITION (00h-UP, 01h-DOWN)

(14) ALARM POSITION No. WRITE

Command Line

84h	85h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2 : ALARM POSITION (00h-OFF, 01h~40h-POSITION No.)  
D3~D4 : Disregard

Response Line

STX	85h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX : 84h(Normal), C4h(Error)  
D2 : POSITION No. (01h~40h)  
D3 : ALARM POSITION (00h-OFF, 01h~40h-POSITION No.)  
D4 : Uncertain

(15) DEFAULT POSITION ON/OFF WRITE

Command Line

84h	8Fh	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2 : DEFAULT POSITION (00h-OFF, 01h-ON)  
D3~D4 : Disregard

Response Line

STX	8Fh	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX : 84h(Normal), C4h(Error)  
D2 : Uncertain  
D3 : Uncertain  
D4 : Uncertain

(16) DEFAULT POSITION No. WRITE

Command Line

84h	8Dh	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2 :DEFAULT POSITION No(01h~40h-POSITION No.)

D3~D4 :Disregard

Response Line

STX	8Dh	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX :84h(Normal)、C4h(Error)

D2 :Uncertain

D3 :Uncertain

D4 :Uncertain



### 3.8 MOTION

#### (1) MOTION READ 1

Command Line

85h	10h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2~D4 : Disregard

Response Line

STX	10h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX : 85h(Normal)、C5h(Error)

D2 : MOTION DETECTION (00h-OFF、01h-ON)

D3 : MOTION LEVEL (00h-MIN、09h-MAX)

D4 : Uncertain

#### (2) MOTION READ 2

Command Line

85h	11h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2~D4 : Disregard

Response Line

STX	11h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX : 85h(Normal)、C5h(Error)

D2 : MOTION TIME (00h-10sec、01h-30sec、02h-60sec)

D3 : MOTION OSD (00h-OFF、01h-ON)

D4 : Uncertain

#### (3) MOTION AREA READ 1

Command Line

85h	12h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2~D4 : Disr

Response Line

STX	12h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX : 85h(Normal)、C5h(Error)

D2 : MOTION AREA LINE 1 (Each bit 0-OFF、1-ON)

D3 : MOTION AREA LINE 2 (Each bit 0-OFF、1-ON)

D4 : MOTION AREA LINE 3 (Each bit 0-OFF、1-ON)

	B0	B1	B2	B3	B4	B5	B6	B7
1段目								
2段目								
3段目								
4段目								
5段目								
6段目								

ISSUE DATE

SHEET No.

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#### (4) MOTION AREA READ 2

##### Command Line

85h	13h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2~D4 :Disregard

##### Response Line

STX	13h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX :85h(Normal)、C5h(Error)

D2 :MOTION AREA LINE 4 (Each bit 0-OFF、1-ON)

D3 :MOTION AREA LINE 5 (Each bit 0-OFF、1-ON)

D4 :MOTION AREA LINE 6 (Each bit 0-OFF、1-ON)

#### (5) MOTION DETECTION WRITE

##### Command Line

85h	90h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2 :MOTION DETECTION (00h-OFF、01h-ON)

D3~D4 :Disregard

##### Response Line

STX	90h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX :85h(Normal)、C5h(Error)

D2 :MOTION DETECTION (00h-OFF、01h-ON)

D3 :MOTION LEVEL (00h-MIN、09h-MAX)

D4 :Uncertain

#### (6) MOTION LEVEL WRITE

##### Command Line

85h	91h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2 :MOTION LEVEL (00h-MIN、09h-MAX)

D3~D4 :Disregard

##### Response Line

STX	91h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX :85h(Normal)、C5h(Error)

D2 :MOTION DETECTION (00h-OFF、01h-ON)

D3 :MOTION LEVEL (00h-MIN、09h-MAX)

D4 :Uncertain

(7) MOTION TIME WRITE

Command Line

85h	92h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2 : MOTION TIME (00h-10sec, 01h-30sec, 02h-60sec)  
 D3~D4 : Disregard

Response Line

STX	92h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX : 85h(Normal), C5h(Error)  
 D2 : MOTION TIME (00h-10sec, 01h-30sec, 02h-60sec)  
 D3 : MOTION OSD (00h-OFF, 01h-ON)  
 D4 : Uncertain

(8) MOTION OSD WRITE

Command Line

85h	93h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2 : MOTION OSD (00h-OFF, 01h-ON)  
 D3~D4 : Disregard

Response Line

STX	93h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX : 85h(Normal), C5h(Error)  
 D2 : MOTION TIME (00h-10sec, 01h-30sec, 02h-60sec)  
 D3 : MOTION OSD (00h-OFF, 01h-ON)  
 D4 : Uncertain

(9) MOTION AREA WRITE 1

Command Line

85h	84h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2 : MOTION AREA LINE 1 (Each bit 0-OFF, 1-ON)  
 D3 : MOTION AREA LINE 2 (Each bit 0-OFF, 1-ON)  
 D4 : MOTION AREA LINE 3 (Each bit 0-OFF, 1-ON)

Response Line

STX	84h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX : 25h(Normal), A5h(Error)  
 D2 : MOTION AREA LINE 1 (Each bit 0-OFF, 1-ON)  
 D3 : MOTION AREA LINE 2 (Each bit 0-OFF, 1-ON)  
 D4 : MOTION AREA LINE 3 (Each bit 0-OFF, 1-ON)

(10) MOTION AREA WRITE 2

Command Line

85h	85h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2 : MOTION AREA LINE 4 (Each bit 0-OFF、1-ON)

D3 : MOTION AREA LINE 5 (Each bit 0-OFF、1-ON)

D4 : MOTION AREA LINE 6 (Each bit 0-OFF、1-ON)

Response Line

STX	85h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX : 85h(Normal)、C5h(Error)

D2 : MOTION AREA LINE 4 (Each bit 0-OFF、1-ON)

D3 : MOTION AREA LINE 5 (Each bit 0-OFF、1-ON)

D4 : MOTION AREA LINE 6 (Each bit 0-OFF、1-ON)

### 3.9 OTHER

#### (1) OTHER READ 1

##### Command Line

86h	00h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2~D4 :Disregard

##### Response Line

STX	00h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX :86h(Normal)、C6h(Error)

D2 :PRESET (00h-CANSEL、01h-OK)

D3 :INITIAL (00h-OFF、01h-ON)

D4 :Uncertain

#### (2) OTHER READ 2

##### Command Line

86h	01h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2~D4 :Disregard

##### Response Line

STX	01h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX :86h(Normal)、C6h(Error)

D2 :H-REVERS (00h-OFF、01h-ON)

D3 :V-REVERS (00h-OFF、01h-ON)

D4 :NEGATIVE (00h-OFF、01h-ON)

#### (3) OTHER READ 3

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(4) OTHER READ 4

LACKING NUMBER

(5) OTHER READ 5

Command Line

86h	04h	D2	D3	D4	D5	SUM
D2~D4 : Disregard						

Response Line

STX	04h	D2	D3	D4	D5	SUM
STX	: 86h(Normal)、C6h(Error)					
D2	: GAMMA (00h-GAMMA 1、01h-GAMMA 2)					
D3	: LANGUAGE (00h-English、01h-Chinese、02h-Japanese)					
D4	: Uncertain					

(6) OTHER READ 6

Command Line

86h	05h	D2	D3	D4	D5	SUM
D2~D4 : Disregard						

Response Line

STX	05h	D2	D3	D4	D5	SUM
STX	: 86h(Normal)、C6h(Error)					
D2	: BOARD ALARM (00h-Not ALARM、01h-ALARM)					
D3	: MOTION HAPPEN (00h-Not Happen、01h-Happen)					
D4	: DAY NIGHT (00h-DAY、01h-NIGHT)					

(7) OTHER READ 7

Command Line

86h	06h	D2	D3	D4	D5	SUM
D2~D4 :Disregard						

Response Line

STX	06h	D2	D3	D4	D5	SUM
STX	:86h(Normal)、C6h(Error)					
D2	:Uncertain					
D3	:BOARD H-REVERS (00h-OFF、01h-ON)					
D4	:BOARD V-REVERS (00h-OFF、01h-ON)					

(8) OTHER READ 8

Command Line

86h	07h	D2	D3	D4	D5	SUM
D2~D4 :Disregard						

Response Line

STX	07h	D2	D3	D4	D5	SUM
STX	:86h(Normal)、C6h(Error)					
D2	:TV (00h-PAL、01h-NTSC)					
D3	:Resolution (00h-HIGH、01h-LOW)					
D4	:Uncertain					

(9) H-GAIN,V-GAIN READ

Command Line

86h	08h	D2	D3	D4	D5	SUM
D2~D4 :Disregard						

Response Line

STX	08h	D2	D3	D4	D5	SUM
STX	:86h(Normal)、C6h(Error)					
D2	:H-GAIN (00h-MIN、0Ch-MAX)					
D3	:V-GAIN (00h-MIN、0Ch-MAX)					
D4	:Uncertain					

(10)FREEZE READ

Command Line

86h	09h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2~D4 :Disregard

Response Line

STX	09h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX :86h(Normal)、C6h(Error)

D2 :FREEZE (00h-OFF、01h-ON)

D3 :Uncertain (00h-FIELD、01h-FRAME)

D4 :FREEZE/ALARM (00h-ALARM、01h-FREEZE)

(11)REVERSE READ

Command Line

86h	0Ah	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2~D4 :Disregard

Response Line

STX	0Ah	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX :86h(Normal)、C6h(Error)

D2 :H-Reverse(Board+Software) (00h-OFF、01h-ON)

D3 :V-Reverse(Board+Software) (00h-OFF、01h-ON)

D4 :Uncertain

(12)DAY/NIGHT READ

Command Line

86h	10h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2~D4 :Disregard

Response Line

STX	10h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX :86h(Normal)、C6h(Error)

D2 :DAY/NIGHT (00h-NIGHT、01h-DAY、02h-AUTO)

D3 :DAY/NIGHT LEVEL (00h-MIN~08h-MAX)

D4 :Uncertain



(13) MENU ON/OFF READ

Command Line

86h	12h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2~D4 :Disregard

Response Line

STX	12h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX :86h(Nomal)、C6h(Error)

D2 :Uncertain

D3 :MENU ON/OFF (00h-OFF、00h OVER-ON)

D4 :Uncertain

(14) Blue Back READ

Command Line

86h	13h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2~D4 :Disregard

Response Line

STX	13h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX :86h(Normal)、C6h(Error)

D2 :Blue Back (00h-OFF、01h-ON)

D3 :Color Bar (00h-OFF、01h-ON)

D4 :Uncertain

(15) PRESET WRITE 1

Command Line

86h	80h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2 :02h

D3 :PRESET (00h-OFF、01h-ON)

D4 :Disregard

Response Line

STX	80h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX :26h(Normal)、A6h(Error)

D2 :PRESET (00h-OFF、01h-ON)

D3 :INITIAL (00h-OFF、01h-ON)

D4 :Uncertain

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### (16) PRESET WRITE 2

#### Command Line

86h	80h	D2	D3	D4	D5	SUM
		D2				:00h
		D3~D4				:Disregard

#### Response Line

STX	80h	D2	D3	D4	D5	SUM
		STX				:26h(Normal)、A6h(Error)
		D2				:PRESET (00h-OFF、01h-ON)
		D3				:INITIAL (00h-OFF、01h-ON)
		D4				:Uncertain

#### PRESET STEP

- ① By PRESET WRITE 1 to open the camera preset plug.
- ② To Sent PRESET WRITE 2.

### (17) INITIAL WRITE

#### Command Line

86h	81h	D2	D3	D4	D5	SUM
		D2				:INITIAL (00h-OFF、01h-ON)
		D3~D4				:Disregard

#### Response Line

STX	81h	D2	D3	D4	D5	SUM
		STX				:86h(Normal)、C6h(error)
		D2				:PRESET (00h-OFF、01h-ON)
		D3				:INITIAL (00h-OFF、01h-ON)
		D4				:Uncertain

### (18) H-REVERS WRITE

#### Command Line

86h	82h	D2	D3	D4	D5	SUM
		D2				:H-REVERS (00h-OFF、01h-ON)
		D3~D4				:Disregard

#### Response Line

STX	82h	D2	D3	D4	D5	SUM
		STX				:86h(Normal)、C6h(error)
		D2				:H-REVERS (00h-OFF、01h-ON)
		D3				:V-REVERS (00h-OFF、01h-ON)
		D4				:NEGATIVE (00h-OFF、01h-ON)

(19)V-REVERS WRITE

Command Line

86h	83h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2 :V-REVERS (00h-OFF、01h-ON)  
D3~D4 :Disregard

Response Line

STX	83h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX :86h(Normal)、C6h(Error)  
D2 :H-REVERS (00h-OFF、01h-ON)  
D3 :V-REVERS (00h-OFF、01h-ON)  
D4 :NEGATIVE (00h-OFF、01h-ON)

(20)NEGATIVE WRITE

Command Line

86h	84h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2 :NEGATIVE (00h-OFF、01h-ON)  
D3~D4 :Disregard

Response Line

STX	84h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX :86h(Normal)、C6h(Error)  
D2 :H-REVERS (00h-OFF、01h-ON)  
D3 :V-REVERS (00h-OFF、01h-ON)  
D4 :NEGATIVE (00h-OFF、01h-ON)

(21)SYNC WRITE

LACKING NUMBER

(22) SYNC LEVEL WRITE

LACKING NUMBER

(23) H-REVERS WRITE(EEPROM NO SAVE)

Command Line

86h	88h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2 :H-REVERS (00h-OFF、01h-ON)  
D3~D4 :Disregard

Response Line

STX	88h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX :86h(Normal)、C6h(Error)  
D2 :H-REVERS (00h-OFF、01h-ON)  
D3 :V-REVERS (00h-OFF、01h-ON)  
D4 :NEGATIVE (00h-OFF、01h-ON)

(24) V-REVERS WRITE(EEPROM NO SAVE)

Command Line

86h	89h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2 :V-REVERS (00h-OFF、01h-ON)  
D3~D4 :Disregard

Response Line

STX	89h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX :86h(Normal)、C6h(Error)  
D2 :H-REVERS (00h-OFF、01h-ON)  
D3 :V-REVERS (00h-OFF、01h-ON)  
D4 :NEGATIVE (00h-OFF、01h-ON)

(25) GAMMA WRITE

Command Line

86h	8Ah	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2 : GAMMA (00h-GAMMA 1, 01h-GAMMA 2)  
D3~D4 : Disregard

Response Line

STX	8Ah	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX : 86h(Normal), C6h(Error)  
D2 : GAMMA (00h-GAMMA 1, 01h-GAMMA 2)  
D3 : LANGUAGE (00h-English, 01h-Chinese, 02h-Japanese)  
D4 : Uncertain

(26) LANGUAGE WRITE

Command Line

86h	8Bh	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2 : LANGUAGE (00h-English, 01h-Chinese, 02h-Japanese)  
D3~D4 : Disregard

Response Line

STX	8Bh	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX : 86h(Normal), C6h(Error)  
D2 : GAMMA (00h-GAMMA 1, 01h-GAMMA 2)  
D3 : LANGUAGE (00h-English, 01h-Chinese, 02h-Japanese)  
D4 : Uncertain

(27) H-GAIN WRITE

Command Line

86h	8Dh	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2 : H-GAIN (00h-MIN, 0Ch-MAX)  
D3~D4 : Disregard

Response Line

STX	8Dh	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX : 86h(Normal), C6h(Error)  
D2 : H-GAIN (00h-MIN, 0Ch-MAX)  
D3 : V-GAIN (00h-MIN, 0Ch-MAX)  
D4 : Uncertain

(28)V-GAIN WRITE

Command Line

86h	8Eh	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2 :V-GAIN (00h-MIN、0Ch-MAX)  
 D3~D4 :Disregard

Response Line

STX	8Eh	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX :86h(Normal)、C6h(Error)  
 D2 :H-GAIN (00h-MIN、0Ch-MAX)  
 D3 :V-GAIN (00h-MIN、0Ch-MAX)  
 D4 :Uncertain

(29)FREEZE WRITE

Command Line

86h	90h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2 :FREEZE (00h-OFF、01h-ON)  
 D3~D4 :Disregard

Response Line

STX	90h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX :86h(Normal)、C6h(Error)  
 D2 :FREEZE (00h-OFF、01h-ON)  
 D3 :Uncertain  
 D4 :Uncertain

(30)DAY/NIGHT WRITE

Command Line

86h	A0h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2 :DAY/NIGHT (00h-NIGHT、01h-DAY、02h-AUTO)  
 D3~D4 :Disregard

Response Line

STX	90h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX :86h(Normal)、C6h(Error)  
 D2 :DAY/NIGHT (00h-NIGHT、01h-DAY、02h-AUTO)  
 D3 :DAY/NIGHT LEVEL (00h-MIN~08h-MAX)  
 D4 :Uncertain

(31) DAY/NIGHT LEVEL WRITE

Command Line

86h	A1h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2 :DAY/NIGHT LEVEL (00h-MIN~08h-MAX)  
D3~D4 :Disregard

Response Line

STX	A1h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX :86h(Normal)、C6h(Error)  
D2 :DAY/NIGHT (00h-NIGHT、01h-DAY、02h-AUTO)  
D3 :DAY/NIGHT LEVEL (00h-MIN~08h-MAX)  
D4 :Uncertain

(33) Blue Back WRITE

Command Line

86h	B0h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2 :Blue Back (00h-OFF、01h-ON)  
D3~D4 :Disregard

Response Line

STX	B0h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX :86h(Normal)、C6h(Error)  
D2 :Blue Back (00h-OFF、01h-ON)  
D3 :Color Bar (00h-OFF、01h-ON)  
D4 :Uncertain

(34) Color Bar WRITE

Command Line

86h	B1h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2 :Color Bar (00h-OFF、01h-ON)  
D3~D4 :Disregard

Response Line

STX	B1h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX :86h(Normal)、C6h(Error)  
D2 :Blue Back (00h-OFF、01h-ON)  
D3 :Color Bar (00h-OFF、01h-ON)  
D4 :Uncertain

(35) Freeze Alarm WRITE

Command Line

86h	C0h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2 :FREEZE/ALARM (00h-ALARM、01h-FREEZE)

D3~D4 :Disregard

Response Line

STX	C0h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX :86h(Normal)、C6h(Error)

D2 :DAY/NIGHT (00h-NIGHT、01h-DAY、02h-AUTO、03h-EXT)

D3 :DAY/NIGHT LEVEL (00h-MIN~08h-MAX)

D4 :Uncertain

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### 3.11 MASK

#### (1) MASK READ

##### Command Line

88h	00h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2~D4 : Disregard

##### Response Line

STX	00h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX : 88h(Normal)、C8h(Error)  
D2 : Uncertain  
D3 : MASK ON/OFF  
D4 : CONNECTED ON/OFF

##### D3 Detail

BIT7	BIT6	BIT5	BIT4	BIT3	BIT2	BIT1	BIT0
—	—	—	—	MASK D	MASK C	MASK B	MASK A
0	0	0	0	1:ON 0:OFF	1:ON 0:OFF	1:ON 0:OFF	1:ON 0:OFF

##### D4 Detail

BIT7	BIT6	BIT5	BIT4	BIT3	BIT2	BIT1	BIT0
—	—	—	—	MASK D	MASK C	MASK B	MASK A
0	0	0	0	1:ON 0:OFF	1:ON 0:OFF	1:ON 0:OFF	1:ON 0:OFF

#### (2) MASK H-POSITION READ

##### Command Line

88h	01h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2 : MASK Type (00h-MASK A、01h-MASK B、02h-MASK C、03h-MASK D)  
D3~D4 : Disregard

##### Response Line

STX	01h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX : 88h(Normal)、C8h(Error)  
D2 : MASK Type (00h-MASK A、01h-MASK B、02h-MASK C、03h-MASK D)  
D3 : H-Position Start (00h~FFh)  
D4 : H-Position End (00h~FFh)

(3) MASK V-POSITION READ

Command Line

88h	02h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2 : MASK Type (00h-MASK A, 01h-MASK B, 02h-MASK C, 03h-MASK D)  
 D3~D4 : Disregard

Response Line

STX	02h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX : 88h(Normal), C8h(Error)  
 D2 : MASK Type (00h-MASK A, 01h-MASK B, 02h-MASK C, 03h-MASK D)  
 D3 : V-Position Start (00h~FFh)  
 D4 : V-Position End (00h~FFh)

(4) MASK H-Center, V-Center READ

Command Line

88h	03h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2~D4 : Disregard

Response Line

STX	03h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX : 88h(Normal), C8h(Error)  
 D2 : Hor. Image Center Position  
 D3 : Ver. Image Center Position  
 D4 : Uncertain

(5) MASK H-REVISION READ

Command Line

88h	20h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2~D4 : Disregard

Response Line

STX	20h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX : 88h(Normal), C8h(Error)  
 D2 : H-Revision High Byte  
 D3 : H-Revision Low Byte  
 D4 : Uncertain

(6) MASK V-REVISION READ

Command Line

88h	21h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2~D4 :Disregard

Response Line

STX	21h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX : 88h(Normal)、C8h(Error)  
D2 : V-Revision High Byte  
D3 : V-Revision Low Byte  
D4 : Uncertain

(7) MASK ON/OFF WRITE (EEPROM SAVE)

Command Line

88h	80h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2 : MASK Type (00h-MASK A, 01h-MASK B, 02h-MASK C, 03h-MASK D)  
D3 : MASK (00h-OFF, 01h-ON)  
D4 : Disregard

Response Line

STX	80h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX : 88h(Normal)、C8h(Error)  
D2 : Uncertain  
D3 : Uncertain  
D4 : Uncertain

(8) MASK ON/OFF WRITE (EEPROM NO SAVE)

Command Line

88h	81h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2 : MASK Type (00h-MASK A, 01h-MASK B, 02h-MASK C, 03h-MASK D)  
D3 : MASK (00h-OFF, 01h-ON)  
D4 : Disregard

Response Line

STX	81h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX : 88h(Normal)、C8h(Error)  
D2 : Uncertain  
D3 : Uncertain  
D4 : Uncertain

(9) MASK CONNECTED WRITE (EEPROM SAVE)

Command Line

88h	82h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2 : MASK Type (00h-MASK A, 01h-MASK B, 02h-MASK C, 03h-MASK D)  
 D3 : CONNECTED (00h-OFF, 01h-ON)  
 D4 : Disregard

Response Line

STX	82h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX : 88h(Normal), C8h(Error)  
 D2 : Uncertain  
 D3 : Uncertain  
 D4 : Uncertain

(10) MASK CONNECTED WRITE (EEPROM NO SAVE)

Command Line

88h	83h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2 : MASK Type (00h-MASK A, 01h-MASK B, 02h-MASK C, 03h-MASK D)  
 D3 : CONNECTED (00h-OFF, 01h-ON)  
 D4 : Disregard

Response Line

STX	83h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX : 88h(Normal), C8h(Error)  
 D2 : Uncertain  
 D3 : Uncertain  
 D4 : Uncertain

(11) MASK H-POSITION WRITE (EEPROM SAVE)

Command Line

88h	84h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2 : MASK Type (00h-MASK A, 01h-MASK B, 02h-MASK C, 03h-MASK D)  
 D3 : H-Position Start (00h~FFh)  
 D4 : H-Position End (00h~FFh)

Response Line

STX	84h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX : 88h(Normal), C8h(Error)  
 D2 : Uncertain  
 D3 : Uncertain  
 D4 : Uncertain

(12) MASK H-POSITION WRITE (EEPROM NO SAVE)

Command Line

88h	85h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2 : MASK Type (00h-MASK A, 01h-MASK B, 02h-MASK C, 03h-MASK D)  
D3 : H-Position Start (00h~FFh)  
D4 : H-Position End (00h~FFh)

Response Line

STX	85h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX : 88h(Normal), C8h(Error)  
D2 : Uncertain  
D3 : Uncertain  
D4 : Uncertain

(13) MASK V-POSITION WRITE (EEPROM SAVE)

Command Line

88h	86h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2 : MASK Type (00h-MASK A, 01h-MASK B, 02h-MASK C, 03h-MASK D)  
D3 : V-Position Start (00h~FFh)  
D4 : V-Position End (00h~FFh)

Response Line

STX	86h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX : 88h(Normal), C8h(Error)  
D2 : Uncertain  
D3 : Uncertain  
D4 : Uncertain

(14) MASK V-POSITION WRITE (EEPROM NO SAVE)

Command Line

88h	87h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2 : MASK Type (00h-MASK A, 01h-MASK B, 02h-MASK C, 03h-MASK D)  
D3 : V-Position Start (00h~FFh)  
D4 : V-Position End (00h~FFh)

Response Line

STX	87h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX : 88h(Normal), C8h(Error)  
D2 : Uncertain  
D3 : Uncertain  
D4 : Uncertain

(15) MASK H-REVISION READ

Command Line

88h	A0h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2 :H-Revision High Byte  
D3 :H-Revision Low Byte  
D4 :EEPROM (00h-NO SAVE, 01h-SAVE)

Response Line

STX	A0h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX :88h(Normal), C8h(Error)  
D2~D4 :Uncertain

(16) MASK V-REVISION READ

Command Line

28h	A1h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2 :V-Revision High Byte  
D3 :V-Revision Low Byte  
D4 :EEPROM (00h-NO SAVE, 01h-SAVE)

Response Line

STX	A1h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX :88h(Normal), C8h(Error)  
D2~D4 :Uncertain

3.11 SW

(1)SW WRITE

Command Line

89h	80h	D2	D3	D4	D5	SUM
		D2				

D2 :00h-PRI  
:01h-ENTER  
:02h-DOWN  
:03h-UP  
D3~D4 :Disregard

Response Line

STX	80h	D2	D3	D4	D5	SUM

STX :89h(Normal)、C9h(Error)  
D2~D4 :Uncertain

### 3.12 RS-485 Correspond

#### (1) RS485 READ

##### Command Line

89h	10h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2~D4 : Disregard

##### Response Line

STX	10h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX : 89h(Normal)、C9h(Error)

D2 : COMM.ID (00h~EFh)

D3 : 1 to N COMMUNICATION FLAG (00h-1:1、01h-1:N)

D4 : Uncertain

#### (2) Baud Rate READ

##### Command Line

89h	11h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2~D4 : Disregard

##### Response Line

STX	11h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX : 89h(Normal)、C9h(Error)

D2 : Baud Rate (02h-38,400bps ,01h-19,200bps ,00h-9,600bps)

D3~D4 : Uncertain

#### (3) COMM.ID WRITE

##### Command Line

89h	90h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2 : COMM.ID (00h~EFh)

D3~D4 : Disregard

##### Response Line

STX	90h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX : 89h(Normal)、C9h(Error)

D2 : COMM.ID (00h~EFh)

D3 : 1 to N COMMUNICATION FLAG (00h-1:1、01h-1:N)

D4 : Uncertain



(4) COMM MODE WRITE

Command Line

89h	91h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2 : 1 to N COMMUNICATION FLAG (00h-1:1, 01h-1:N)  
D3~D4 : Disregard

Response Line

STX	91h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX : 89h(Normal), C9h(Error)  
D2 : COMM.ID (00h~EFh)  
D3 : 1 to N COMMUNICATION FLAG (00h-1:1, 01h-1:N)  
D4 : Uncertain

(5) Baud Rate WRITE

Command Line

89h	93h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2 : Baud Rate (02h-38,400bps, 01h-19,200bps, 00h-9,600bps)  
D3~D4 : Disregard

Response Line

STX	93h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX : 89h(Normal), C9h(Error)  
D2~D4 : Uncertain

The command to execute, the camera must be restar after new Baud Rate is effective.

### 3.13 MARK

#### (1) MARK READ

Command Line

8Ah	00h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2~D4 :Disregard

Response Line

STX	00h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX :8Ah(Normal)、CAh(Error)

D2 :MARK (00h-OFF、01h-ON)

D3 :Uncertain

D4 :Uncertain

#### (2) MARK H READ

Command Line

8Ah	01h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2~D4 :Disregard

Response Line

STX	01h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX :8Ah(Normal)、CAh(Error)

D2 :MARK H High Byte

D3 :MARK H Low Byte

D4 :Uncertain

#### (3) MARK V READ

Command Line

8Ah	90h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2~D4 :Disregard

Response Line

STX	90h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX :8Ah(Normal)、CAh(Error)

D2 :MARK V High Byte

D3 :MARK V Low Byte

D4 :Uncertain

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#### (4) MARK WRITE

##### Command Line

8Ah	80h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2 : MARK (00h-OFF, 01h-ON)

D3~D4 : Disregard

##### Response Line

STX	80h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX : 8Ah(Normal)、CAh(Error)

D2 : Uncertain

D3 : Uncertain

D4 : Uncertain

#### (5) MARK H WRITE

##### Command Line

8Ah	81h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2 : MARK H High Byte

D3 : MARK H Low Byte

D4 : EEPROM SAVE (00h-NO SAVE, 01h-SAVE)

##### Response Line

STX	81h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX : 8Ah(Normal)、CAh(Error)

D2 : Uncertain

D3 : Uncertain

D4 : Uncertain

#### (6) MARK V WRITE

##### Command Line

8Ah	82h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

D2 : MARK V High Byte

D3 : MARK V Low Byte

D4 : EEPROM SAVE (00h-NO SAVE, 01h-SAVE)

##### Response Line

STX	82h	D2	D3	D4	D5	SUM
-----	-----	----	----	----	----	-----

STX : 8Ah(Normal)、CAh(Error)

D2 : Uncertain

D3 : Uncertain

D4 : Uncertain