53S85 Camera Serial Communication Interface Specification

Page

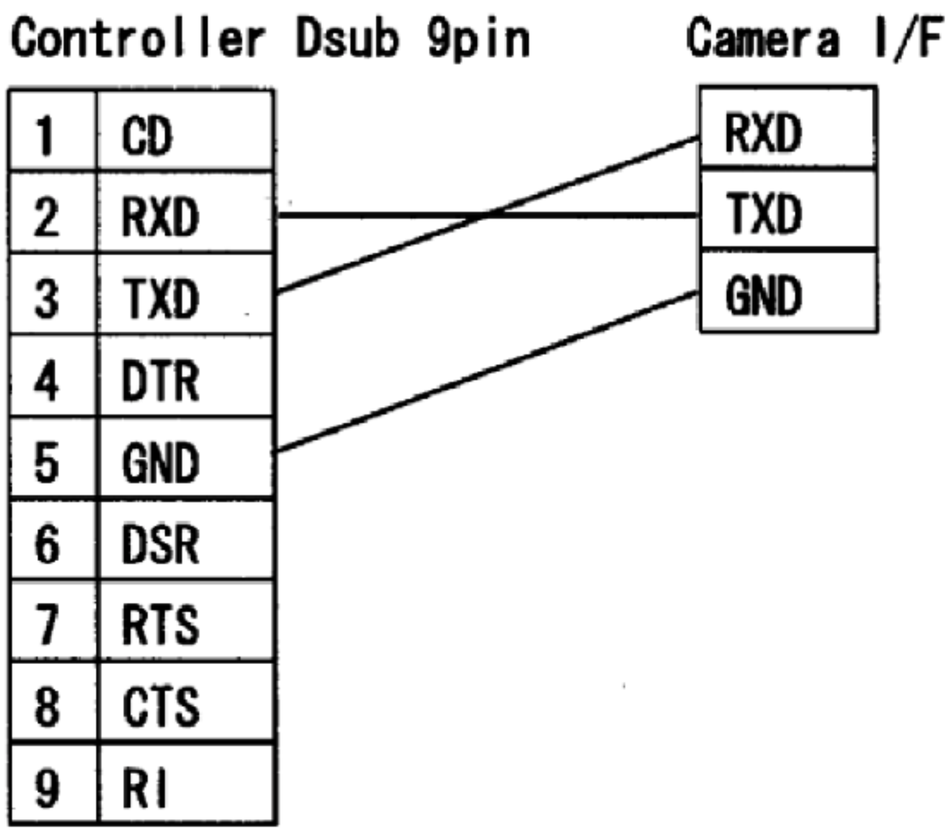
1. Brief

The document is description of remote control camera by the RS-232 I/F, The I/F is able to control with adjust for IRIS, White Balance… etc.

2. Serial Communication I/F

2.1 The Connection of Controller & Camera

Fi1 Connection of Controller & Camera



Form 1 Parameter

Baud Rate	9,600bps
Data Length	8 Bit
Parity	NO
Stop Bit	1 Bit
Control	NO
Synchrony	Internal

Fig-1 The Connection I / F of Controller & Camera

2.2 Communication Flow

The communication flow, please refer to Fig-2.
Make sure the connection ① Controller send out of "ENQ", after ② receive "ACK" from camera. (Connection confirms can be omitted)
From controller to ③send "COMMAND" signal into camera , when camera received "COMMAND SIGNAL" Flow then ④ return "ACK" back, after that the camera will proceed the "COMMAND" then ⑤ send "RESPONSE" signal back to controller.
Repeat following ③~ ⑤ to communicate.

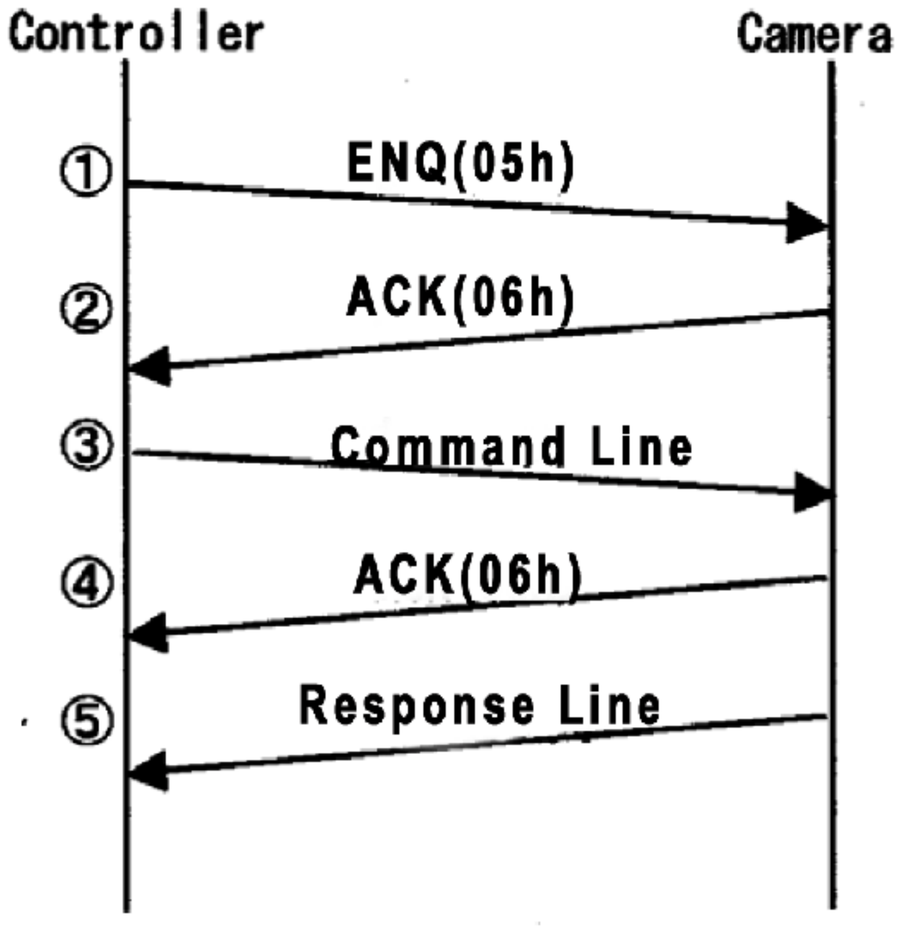


Fig-2 communication flow

2.3 Communication 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	00h	SUM

STX : 8xh, 9xh

D1~D4 : Command Data

00h : 00h (Reserved)

SUM : STX~SUM add total value of 7 byte with put on 00h.

(5) Response Line Data length 7byte

STX	D1	D2	D3	D4	00h	SUM

STX : 8xh, 9xh (Normal)

: Cxh (ERROR)

00h : 00h (Reserved)

SUM : STX~SUM add total value of 7 byte with put on 00h.

3. Command

3.1 Setup1 Command

(1) Setup1 all read 1

Command line

80h	00h	D2	D3	D4	00h	SUM

D2~D4 : Non-ues

Response line

STX	00h	D2	D3	D4	00h	SUM

STX : 80h (Normal), C0h (Error)
D2 : 8bit_data1 *1
D3 : 8bit_data2 *2
D4 : Non-definition

*1 8bit_data1 Detailed
D7 : Function SW Enable 0:Enable, 1=Disable
D6 : Non-definition
D5 : Non-definition
D4 : Non-definition
D3 : Sense up 0=OFF, 1=ON
D2 : FLC 0=OFF, 1=ON
D1 : AES/ALC 0=AES, 1=ALC
D0 : Color bar 0=OFF, 1=ON

*2 8bit_data2 Detailed
D7 : Gamma 0=Type A, 1=Type B
D6 : Enhancer 0=High, 1=Middle
D5 : ZOOM 0=OFF, 1=ON
D4 : BLC 0=OFF, 1=ON
D3 : V Reverse 0=OFF, 1=ON
D2 : H Reverse 0=OFF, 1=ON
D1 : ATW/AWB 0=ATW, 1=AWB
D0 : AGC 0=OFF, 1=ON

(2) Setup1 all read 2

Command line

80h	01h	D2	D3	D4	00h	SUM

D2~D4 : Non-ues

Response line

STX	01h	D2	D3	D4	00h	SUM

STX : 80h (Normal), C0h (Error)
D2 : Day/Night 00h=Auto, 01h=Day, 02h=Night, 03h=EXT.
D3 : Shutter
NTSC : 0=OFF, 1=1/100, 2=1/250, 3=1/500, 4=1/1000, 5=1/2000, 6=1/4000, 7=1/10000
PAL : 0=OFF, 1=1/120, 2=1/250, 3=1/500, 4=1/1000, 5=1/2000, 6=1/4000, 7=1/10000
D4 : Non-definition

(3) AGC READ

Command line

80h	02h	D2	D3	D4	00h	SUM

D2~D4 : Non-use

Response line

STX	02h	D2	D3	D4	00h	SUM

STX : 80h (Normal), C0h (Error)
D2 : AGC 00h=OFF, 01h=ON
D3~D4 : Non-definition

(4) AGC WRITE

Command line

80h	82h	D2	D3	D4	00h	SUM

D2 : AGC 00h=OFF, 01h=ON
D3 : EEPROM SAVE 00h=NO SAVE, 01h=SAVE
D4 : Non-use

Response line

STX	82h	D2	D3	D4	00h	SUM

STX : 80h (Normal), C0h (Error)
D2 : AGC 00h=OFF, 01h=ON
D3 : EEPROM SAVE 00h=NO SAVE, 01h=SAVE
D4 : Non-definition

(5) ATW/AWB READ

Command line

80h	03h	D2	D3	D4	00h	SUM

D2~D4 : Non-use

Response line

STX	03h	D2	D3	D4	00h	SUM

STX : 80h (Normal), C0h (Error)
D2 : ATW/AWB 00h=ATW, 01h=AWB
D3~D4 : Non-definition

(6) ATW/AWB WRITE

Command line

80h	83h	D2	D3	D4	00h	SUM

D2 : ATW/AWB 00h=ATW, 01h=AWB
D3 : EEPROM SAVE 00h=NO SAVE, 01h=SAVE
D4 : Non-use

Response line

STX	83h	D2	D3	D4	00h	SUM

STX : 80h (Normal), C0h (Error)
D2 : ATW/AWB 00h=ATW, 01h=AWB
D3 : EEPROM SAVE 00h=NO SAVE, 01h=SAVE
D4 : Non-definition

(7) H Reverse READ

Command line

80h	04h	D2	D3	D4	00h	SUM

D2~D4 : Non-use

Response line

STX	04h	D2	D3	D4	00h	SUM

STX : 80h (Normal), C0h (Error)
D2 : H Reverse 00h=OFF, 01h=ON
D3~D4 : Non-definition

(8) H Reverse WRITE

Command line

80h	84h	D2	D3	D4	00h	SUM

D2 : H Reverse 00h=OFF, 01h=ON
D3 : EEPROM SAVE 00h=NO SAVE, 01h=SAVE
D4 : Non-use

Response line

STX	84h	D2	D3	D4	00h	SUM

STX : 80h (Normal), C0h (Error)
D2 : H Reverse 00h=OFF, 01h=ON
D3 : EEPROM SAVE 00h=NO SAVE, 01h=SAVE
D4 : Non-definition

(9) V Reverse READ

Command line

80h	05h	D2	D3	D4	00h	SUM

D2~D4 : Non-use

Response line

STX	05h	D2	D3	D4	00h	SUM

STX : 80h (Normal), C0h (Error)
D2 : V Reverse 00h=OFF, 01h=ON
D3~D4 : Non-definition

(10) V Reverse WRITE

Command line

80h	85h	D2	D3	D4	00h	SUM

D2 : V Reverse 00h=OFF, 01h=ON
D3 : EEPROM SAVE 00h=NO SAVE, 01h=SAVE
D4 : Non-use

Response line

STX	85h	D2	D3	D4	00h	SUM

STX : 80h (Normal), C0h (Error)
D2 : V Reverse 00h=OFF, 01h=ON
D3 : EEPROM SAVE 00h=NO SAVE, 01h=SAVE
D4 : Non-definition

(11) BLC READ

Command line

80h	06h	D2	D3	D4	00h	SUM

D2~D4 : Non-use

Response line

STX	06h	D2	D3	D4	00h	SUM

STX : 80h (Normal), C0h (Error)
D2 : BLC 00h=OFF, 01h=ON
D3~D4 : Non-definition

(12) BLC WRITE

Command line

80h	86h	D2	D3	D4	00h	SUM

D2 : BLC 00h=OFF, 01h=ON
D3 : EEPROM SAVE 00h=NO SAVE, 01h=SAVE
D4 : Non-use

Response line

STX	86h	D2	D3	D4	00h	SUM

STX : 80h (Normal), C0h (Error)
D2 : BLC 00h=OFF, 01h=ON
D3 : EEPROM SAVE 00h=NO SAVE, 01h=SAVE
D4 : Non-definition

(13) ZOOM READ

Command line

80h	07h	D2	D3	D4	00h	SUM

D2~D4 : Non-use

Response line

STX	07h	D2	D3	D4	00h	SUM

STX : 80h (Normal), C0h (Error)
D2 : ZOOM 00h=OFF, 01h=ON
D3~D4 : Non-definition

(14) ZOOM WRITE

Command line

80h	87h	D2	D3	D4	00h	SUM

D2 : ZOOM 00h=OFF, 01h=ON
D3 : EEPROM SAVE 00h=NO SAVE, 01h=SAVE
D4 : Non-use

Response line

STX	87h	D2	D3	D4	00h	SUM

STX : 80h (Normal), C0h (Error)
D2 : ZOOM 00h=OFF, 01h=ON
D3~D4 : Non-definition

(15) Enhancer READ

Command line

80h	08h	D2	D3	D4	00h	SUM

D2~D4 : Non-use

Response line

STX	08h	D2	D3	D4	00h	SUM

STX : 80h (Normal), C0h (Error)
D2 : Enhancer 00h=High, 01h=Middle
D3~D4 : Non-definition

(16) Enhancer WRITE

Command line

80h	88h	D2	D3	D4	00h	SUM

D2 : Enhancer 00h=High, 01h=Middle
D3 : EEPROM SAVE 00h=NO SAVE, 01h=SAVE
D4 : Non-use

Response line

STX	88h	D2	D3	D4	00h	SUM

STX : 80h (Normal), C0h (Error)
D2 : Enhancer 00h=High, 01h=Middle
D3 : EEPROM SAVE 00h=NO SAVE, 01h=SAVE
D4 : Non-definition

(17) Gamma READ

Command line

80h	09h	D2	D3	D4	00h	SUM

D2~D4 : Non-use

Response line

STX	09h	D2	D3	D4	00h	SUM

STX : 80h (Normal), C0h (Error)
D2 : Gamma 00h=Type A, 01h= Type B
D3~D4 : Non-definition

(18) Gamma WRITE

Command line

80h	89h	D2	D3	D4	00h	SUM

D2 : Gamma 00h=Type A, 01h= Type B
D3 : EEPROM SAVE 00h=NO SAVE, 01h=SAVE
D4 : Non-use

Response line

STX	89h	D2	D3	D4	00h	SUM

STX : 80h (Normal), C0h (Error)
D2 : Gamma 00h=Type A, 01h= Type B
D3 : EEPROM SAVE 00h=NO SAVE, 01h=SAVE
D4 : Non-definition

(19) Color bar READ

Command line

80h	0Ah	D2	D3	D4	00h	SUM

D2~D4 : Non-use

Response line

STX	0Ah	D2	D3	D4	00h	SUM

STX : 80h (Normal), C0h (Error)
D2 : Color bar 00h=OFF, 01h=ON
D3~D4 : Non-definition

(20) Color bar WRITE

Command line

80h	8Ah	D2	D3	D4	00h	SUM

D2 : Color bar 00h=OFF, 01h=ON
D3 : EEPROM SAVE 00h=NO SAVE, 01h=SAVE
D4 : Non-use

Response line

STX	8Ah	D2	D3	D4	00h	SUM

STX : 80h (Normal), C0h (Error)
D2 : Color bar 00h=OFF, 01h=ON
D3 : EEPROM SAVE 00h=NO SAVE, 01h=SAVE
D4 : Non-definition

(21) AES/ALC READ

Command line

80h	0Bh	D2	D3	D4	00h	SUM

D2~D4 : Non-use

Response line

STX	0Bh	D2	D3	D4	00h	SUM

STX : 80h (Normal), C0h (Error)
D2 : AES/ALC 00h=AES, 01h=ALC
D3~D4 : Non-definition

(22) AES/ALC WRITE

Command line

80h	8Bh	D2	D3	D4	00h	SUM

D2 : AES/ALC 00h=AES, 01h=ALC
D3 : EEPROM SAVE 00h=NO SAVE, 01h=SAVE
D4 : Non-use

Response line

STX	8Bh	D2	D3	D4	00h	SUM

STX : 80h (Normal), C0h (Error)
D2 : AES/ALC 00h=AES, 01h=ALC
D3 : EEPROM SAVE 00h=NO SAVE, 01h=SAVE
D4 : Non-definition

(23) FLC READ

Command line

80h	0Ch	D2	D3	D4	00h	SUM

D2~D4 : Non-use

Response line

STX	0Ch	D2	D3	D4	00h	SUM

STX : 80h (Normal), C0h (Error)
D2 : FLC 00h=OFF, 01h=ON
D3~D4 : Non-definition

(24) FLC WRITE

Command line

80h	8Ch	D2	D3	D4	00h	SUM

D2 : FLC 00h=OFF, 01h=ON
D3 : EEPROM SAVE 00h=NO SAVE, 01h=SAVE
D4 : Non-use

Response line

STX	8Ch	D2	D3	D4	00h	SUM

STX : 80h (Normal), C0h (Error)
D2 : FLC 00h=OFF, 01h=ON
D3 : EEPROM SAVE 00h=NO SAVE, 01h=SAVE
D4 : Non-definition

(25) Sense up READ

Command line

80h	0Dh	D2	D3	D4	00h	SUM

D2~D4 : Non-use

Response line

STX	0Dh	D2	D3	D4	00h	SUM

STX : 80h (Normal), C0h (Error)
D2 : Sense up 00h=OFF, 01h=ON
D3~D4 : Non-definition

(26) Sense up WRITE

Command line

80h	8Dh	D2	D3	D4	00h	SUM

D2 : Sense up 00h=OFF, 01h=ON
D3 : EEPROM SAVE 00h=NO SAVE, 01h=SAVE
D4 : Non-use

Response line

STX	8Dh	D2	D3	D4	00h	SUM

STX : 80h (Normal), C0h (Error)
D2 : Sense up 00h=OFF, 01h=ON
D3 : EEPROM SAVE 00h=NO SAVE, 01h=SAVE
D4 : Non-definition

(27) Day/Night READ

Command line

80h	0Eh	D2	D3	D4	00h	SUM

D2～D4 : Non-use

Response line

STX	0Eh	D2	D3	D4	00h	SUM

STX : 80h (Normal), C0h (Error)
D2 : Day/Night 00h=Auto, 01h=Day, 02h=Night, 03h=EXT.
D3～D4 : Non-definition

(28) Day/Night WRITE

Command line

80h	8Eh	D2	D3	D4	00h	SUM

D2 : Day/Night 00h=Auto, 01h=Day, 02h=Night, 03h=EXT.
D3 : EEPROM SAVE 00h=NO SAVE, 01h=SAVE
D4 : Non-use

Response line

STX	8Eh	D2	D3	D4	00h	SUM

STX : 80h (Normal), C0h (Error)
D2 : Day/Night 00h=Auto, 01h=Day, 02h=Night, 03h=EXT.
D3 : EEPROM SAVE 00h=NO SAVE, 01h=SAVE
D4 : Non-definition

(29) Shutter READ

Command line

80h	0Fh	D2	D3	D4	00h	SUM

D2～D4 : Non-use

Response line

STX	0Fh	D2	D3	D4	00h	SUM

STX : 80h (Normal), C0h (Error)
D2 : Shutter *1
D3～D4 : Non-definition

(30) Shutter WRITE

Command line

80h	8Fh	D2	D3	D4	00h	SUM

D2 : Shutter *1
D3 : EEPROM SAVE 00h=NO SAVE, 01h=SAVE
D4 : Non-use

Response line

STX	8Fh	D2	D3	D4	00h	SUM

STX : 80h (Normal), C0h (Error)
D2 : Shutter *1
D3 : EEPROM SAVE 00h=NO SAVE, 01h=SAVE
D4 : Non-definition

*1 Shutter
NTSC : 0=OFF, 1=1/100, 2=1/250, 3=1/500, 4=1/1000, 5=1/2000, 6=1/4000, 7=1/10000
PAL : 0=OFF, 1=1/120, 2=1/250, 3=1/500, 4=1/1000, 5=1/2000, 6=1/4000, 7=1/10000

3.2 Setup2 Command

(1) Setup2 all read

Command line

81h	00h	D2	D3	D4	00h	SUM

D2～D4 : **Non-use**

Response line

STX	00h	D2	D3	D4	00h	SUM

STX : **81h (Normal), C1h (Error)**
D2 : 8bit_data *1
D3 : Title position 00h=Up-Left, 01h=Up-Right, 02h=Down-Left, 03h=Down-Right
D4 : Sense up max 0=×2, 1=×4, 2=×8, 3=×16, 4=×32, 5=×64, 6=×128, 7=×256

*1 8bit_data Detailed
D7 : **Non-definition**
D6 : **Non-definition**
D5 : Priority 0=AGC, 1=Sense up
D4 : Title 0=OFF, 1=ON
D3 : Mask D 0=OFF, 1=ON
D2 : Mask C 0=OFF, 1=ON
D1 : Mask B 0=OFF, 1=ON
D0 : Mask A 0=OFF, 1=ON

(2) Sense up max READ

Command line

81h	02h	D2	D3	D4	00h	SUM

D2～D4 : **Non-use**

Response line

STX	02h	D2	D3	D4	00h	SUM

STX : **81h (Normal), C1h (Error)**
D2 : Sense up max 0=×2, 1=×4, 2=×8, 3=×16, 4=×32, 5=×64, 6=×128, 7=×256
D3～D4 : **Non-definition**

(3) Sense up max WRITE

Command line

81h	82h	D2	D3	D4	00h	SUM

D2 : Sense up max 0=×2, 1=×4, 2=×8, 3=×16, 4=×32, 5=×64, 6=×128, 7=×256
D3 : EEPROM SAVE 00h=NO SAVE, 01h=SAVE
D4 : **Non-use**

Response line

STX	82h	D2	D3	D4	00h	SUM

STX : **81h (Normal), C1h (Error)**
D2 : Sense up max 0=×2, 1=×4, 2=×8, 3=×16, 4=×32, 5=×64, 6=×128, 7=×256
D3 : EEPROM SAVE 00h=NO SAVE, 01h=SAVE
D4 : **Non-definition**

(4) Title ON/OFF READ

Command line

81h	03h	D2	D3	D4	00h	SUM

D2~D4 : Non-use

Response line

STX	03h	D2	D3	D4	00h	SUM

STX : 81h (Normal), C1h (Error)
D2 : Title 00h=OFF, 01h=ON
D3~D4 : Non-definition

(5) Title ON/OFF WRITE

Command line

81h	83h	D2	D3	D4	00h	SUM

D2 : Title 00h=OFF, 01h=ON
D3 : EEPROM SAVE 00h=NO SAVE, 01h=SAVE
D4 : Non-use

Response line

STX	83h	D2	D3	D4	00h	SUM

STX : 81h (Normal), C1h (Error)
D2 : Title 00h=OFF, 01h=ON
D3 : EEPROM SAVE 00h=NO SAVE, 01h=SAVE
D4 : Non-definition

(6) Title Position READ

Command line

81h	04h	D2	D3	D4	00h	SUM

D2~D4 : Non-use

Response line

STX	04h	D2	D3	D4	00h	SUM

STX : 81h (Normal), C1h (Error)
D2 : Title position 00h=Up-Left, 01h=Up-Right, 02h=Down-Left, 03h=Down-Right
D3~D4 : Non-definition

(7) Title Position WRITE

Command line

81h	84h	D2	D3	D4	00h	SUM

D2 : Title position 00h=Up-Left, 01h=Up-Right, 02h=Down-Left, 03h=Down-Right
D3 : EEPROM SAVE 00h=NO SAVE, 01h=SAVE
D4 : Non-use

Response line

STX	84h	D2	D3	D4	00h	SUM

STX : 81h (Normal), C1h (Error)
D2 : Title position 00h=Up-Left, 01h=Up-Right, 02h=Down-Left, 03h=Down-Right
D3 : EEPROM SAVE 00h=NO SAVE, 01h=SAVE
D4 : Non-definition

(8) Title Character READ

Command line

81h	05h	D2	D3	D4	00h	SUM

D2 : Character No. *1

D3～D4 : Non-use

Response line

STX	05h	D2	D3	D4	00h	SUM

STX : 81h (Normal), C1h (Error)

D2 : Character No. *1

D3 : Character code *1

D4 : Character code *1

(9) Title Character WRITE

Command line

81h	85h	D2	D3	D4	00h	SUM

D2 : Character No. *1

D3 : Character code *1

D4 : Character code *1

Response line

STX	85h	D2	D3	D4	00h	SUM

STX : 81h (Normal), C1h (Error)

D2 : Character No. *1

D3 : Character code *1

D4 : Character code *1

*1 The relationship with character code and character No to indicate as follows.

Character No.		Character code		
D2 = 00h	:	D3 = 1	Character code,	D4 = 2 Character code
D2 = 01h	:	D3 = 3	Character code,	D4 = 4 Character code
D2 = 02h	:	D3 = 5	Character code,	D4 = 6 Character code
D2 = 03h	:	D3 = 7	Character code,	D4 = 8 Character code
D2 = 04h	:	D3 = 9	Character code,	D4 =10 Character code
D2 = 05h	:	D3 =11	Character code,	D4 =12 Character code
D2 = 06h	:	D3 =13	Character code,	D4 =14 Character code
D2 = 07h	:	D3 =15	Character code,	D4 =16 Character code
D2 = 08h	:	D3 =17	Character code,	D4 =18 Character code
D2 = 09h	:	D3 =19	Character code,	D4 =20 Character code

(10) Mask A ON/OFF READ

Command line

81h	07h	D2	D3	D4	00h	SUM

D2~D4 : Non-use

Response line

STX	07h	D2	D3	D4	00h	SUM

STX : 81h (Normal), C1h (Error)
D2 : Mask A 00h=OFF, 01h=ON
D3~D4 : Non-definition

(11) Mask A ON/OFF WRITE

Command line

81h	87h	D2	D3	D4	00h	SUM

D2 : Mask A 00h=OFF, 01h=ON
D3 : EEPROM SAVE 00h=NO SAVE, 01h=SAVE
D4 : Non-use

Response line

STX	87h	D2	D3	D4	00h	SUM

STX : 81h (Normal), C1h (Error)
D2 : Mask A 00h=OFF, 01h=ON
D3 : EEPROM SAVE 00h=NO SAVE, 01h=SAVE
D4 : Non-definition

(12) Mask B ON/OFF READ

Command line

81h	08h	D2	D3	D4	00h	SUM

D2~D4 : Non-use

Response line

STX	08h	D2	D3	D4	00h	SUM

STX : 81h (Normal), C1h (Error)
D2 : Mask B 00h=OFF, 01h=ON
D3~D4 : Non-definition

(13) Mask B ON/OFF WRITE

Command line

81h	88h	D2	D3	D4	00h	SUM

D2 : Mask B 00h=OFF, 01h=ON
D3 : EEPROM SAVE 00h=NO SAVE, 01h=SAVE
D4 : Non-use

Response line

STX	88h	D2	D3	D4	00h	SUM

STX : 81h (Normal), C1h (Error)
D2 : Mask B 00h=OFF, 01h=ON
D3 : EEPROM SAVE 00h=NO SAVE, 01h=SAVE
D4 : Non-definition

(14) Mask C ON/OFF READ

Command line

81h	09h	D2	D3	D4	00h	SUM

D2~D4 : **Non-use**

Response line

STX	09h	D2	D3	D4	00h	SUM

STX : **81h (Normal), C1h (Error)**
D2 : **Mask C** 00h=OFF, 01h=ON
D3~D4 : **Non-definition**

(15) Mask C ON/OFF WRITE

Command line

81h	89h	D2	D3	D4	00h	SUM

D2 : **Mask C** 00h=OFF, 01h=ON
D3 : **EEPROM SAVE** 00h=NO SAVE, 01h=SAVE
D4 : **Non-use**

Response line

STX	89h	D2	D3	D4	00h	SUM

STX : **81h (Normal), C1h (Error)**
D2 : **Mask C** 00h=OFF, 01h=ON
D3 : **EEPROM SAVE** 00h=NO SAVE, 01h=SAVE
D4 : **Non-definition**

(16) Mask D ON/OFF READ

Command line

81h	0Ah	D2	D3	D4	00h	SUM

D2~D4 : **Non-use**

Response line

STX	0Ah	D2	D3	D4	00h	SUM

STX : **81h (Normal), C1h (Error)**
D2 : **Mask D** 00h=OFF, 01h=ON
D3~D4 : **Non-definition**

(17) Mask D ON/OFF WRITE

Command line

81h	8Ah	D2	D3	D4	00h	SUM

D2 : **Mask D** 00h=OFF, 01h=ON
D3 : **EEPROM SAVE** 00h=NO SAVE, 01h=SAVE
D4 : **Non-use**

Response line

STX	8Ah	D2	D3	D4	00h	SUM

STX : **81h (Normal), C1h (Error)**
D2 : **Mask D** 00h=OFF, 01h=ON
D3 : **EEPROM SAVE** 00h=NO SAVE, 01h=SAVE
D4 : **Non-definition**

(18) Priority READ

Command line

81h	0Bh	D2	D3	D4	00h	SUM

D2~D4 : Non-use

Response line

STX	0Bh	D2	D3	D4	00h	SUM

STX : 81h (Normal), C1h (Error)
D2 : Priority 00h=AGC, 01h=Sense up
D3~D4 : Non-definition

(19) Priority WRITE

Command line

81h	8Bh	D2	D3	D4	00h	SUM

D2 : Priority 00h=AGC, 01h=Sense up
D3 : EEPROM SAVE 00h=NO SAVE, 01h=SAVE
D4 : Non-use

Response line

STX	8Bh	D2	D3	D4	00h	SUM

STX : 81h (Normal), C1h (Error)
D2 : Priority 00h=AGC, 01h=Sense up
D3 : EEPROM SAVE 00h=NO SAVE, 01h=SAVE
D4 : Non-definition

3.3 Mask Position

(1) Mask Position Limit read

(Mask A/B/C/D Common)

Command line

A0h	D1	D2	D3	D4	00h	SUM

D1～D4 : Non-use

Response line

STX	D1	D2	D3	D4	00h	SUM

STX : A0h (Normal), E0h (Error)
D1 : H Start/End position Min.
D2 : H Start/End position Max.
D3 : V Start/End position Min.
D4 : V Start/End position Max.

(2) Mask A Position READ

Command line

A1h	D1	D2	D3	D4	00h	SUM

D1～D4 : Non-use

Response line

STX	D1	D2	D3	D4	00h	SUM

STX : A1h (Normal), E1h (Error)
D1 : Mask A H Start position
D2 : Mask A V Start position
D3 : Mask A H End position
D4 : Mask A V End position

(3) Mask A Position WRITE

Command line

A5h	D1	D2	D3	D4	00h	SUM

D1 : Mask A H Start position
D2 : Mask A V Start position
D3 : Mask A H End position
D4 : Mask A V End position

Response line

STX	D1	D2	D3	D4	00h	SUM

STX : A5h (Normal), E5h (Error)
D1 : Mask A H Start position
D2 : Mask A V Start position
D3 : Mask A H End position
D4 : Mask A V End position

(4) Mask B Position READ

Command line

A2h	D1	D2	D3	D4	00h	SUM

D1~D4 : Non-use

Response line

STX	D1	D2	D3	D4	00h	SUM

STX : A2h (Normal), E2h (Error)
D1 : Mask B H Start position
D2 : Mask B V Start position
D3 : Mask B H End position
D4 : Mask B V End position

(5) Mask B Position WRITE

Command line

A6h	D1	D2	D3	D4	00h	SUM

D1 : Mask B H Start position
D2 : Mask B V Start position
D3 : Mask B H End position
D4 : Mask B V End position

Response line

STX	D1	D2	D3	D4	00h	SUM

STX : A6h (Normal), E6h (Error)
D1 : Mask B H Start position
D2 : Mask B V Start position
D3 : Mask B H End position
D4 : Mask B V End position

(6) Mask C Position READ

Command line

A3h	D1	D2	D3	D4	00h	SUM

D1~D4 : Non-use

Response line

STX	D1	D2	D3	D4	00h	SUM

STX : A3h (Normal), E3h (Error)
D1 : Mask C H Start position
D2 : Mask C V Start position
D3 : Mask C H End position
D4 : Mask C V End position

(7) Mask C Position WRITE

Command line

A7h	D1	D2	D3	D4	00h	SUM

D1 : Mask C H Start position
D2 : Mask C V Start position
D3 : Mask C H End position
D4 : Mask C V End position

Response line

STX	D1	D2	D3	D4	00h	SUM

STX : A7h (Normal), E7h (Error)
D1 : Mask C H Start position
D2 : Mask C V Start position
D3 : Mask C H End position
D4 : Mask C V End position

(8) Mask D Position READ

Command line

A4h	D1	D2	D3	D4	00h	SUM

D1~D4 : Non-use

Response line

STX	D1	D2	D3	D4	00h	SUM

STX : A4h (Normal), E4h (Error)
D1 : Mask D H Start position
D2 : Mask D V Start position
D3 : Mask D H End position
D4 : Mask D V End position

(9) Mask D Position WRITE

Command line

A8h	D1	D2	D3	D4	00h	SUM

D1 : Mask D H Start position
D2 : Mask D V Start position
D3 : Mask D H End position
D4 : Mask D V End position

Response line

STX	D1	D2	D3	D4	00h	SUM

STX : A8h (Normal), E8h (Error)
D1 : Mask D H Start position
D2 : Mask D V Start position
D3 : Mask D H End position
D4 : Mask D V End position

3. 4 SW Command

(1) SW WRITE

OSD MENU Control Command

Command line

85h	01h	D2	D3	D4	00h	SUM

D2 : SW 00h=RIGHT, 01h=LEFT, 02h=DOWN, 03h=UP, 04h=ENTER

D3~D4 : Non-use

Response line

STX	01h	D2	D3	D4	00h	SUM

STX : 85h (Normal), C5h (Error)

D2 : SW 00h=RIGHT, 01h=LEFT, 02h=DOWN, 03h=UP, 04h=ENTER

D3~D4 : Non-definition

4. CAEMRA TITLE Character Code

OSD Character	Character Code (hex)
0	30
1	31
2	32
3	33
4	34
5	35
6	36
7	37
8	38
9	39
A	41
B	42
C	43
D	44
E	45
F	46
G	47
H	48
I	49
J	4A
K	4B
L	4C
M	4D
N	4E
O	4F
P	50
Q	51
R	52
S	53
T	54
U	55
V	56
W	57
X	58
Y	59
Z	5A

OSD Character	Character code (hex)
a	61
b	62
c	63
d	64
e	65
f	66
g	67
h	68
i	69
j	6A
k	6B
l	6C
m	6D
n	6E
o	6F
p	70
q	71
r	72
s	73
t	74
u	75
v	76
w	77
x	78
y	79
z	7A

OSD Character	Character code (hex)
+	2B
−	2D
=	3D
/	2F
#	23
:	3A
;	3B
,	2C
.	2E
[	5B
]	5D
(	28
)	29