SHARP

External Control

ME series

PN-ME432/PN-ME502 /PN-ME552/PN-ME652 /PN-ME752/PN-ME862 /PN-ME982

Rev.2.0

Contents

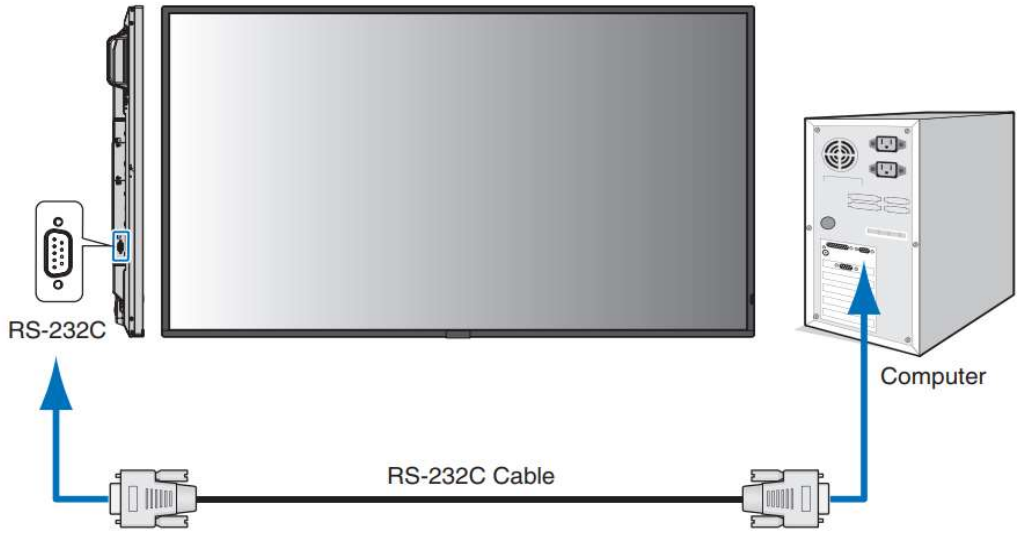
1. Overview

This document specifies the communication method when using the external control function of the SHARP LCD monitor.

2. Connection method

2.1 RS-232C

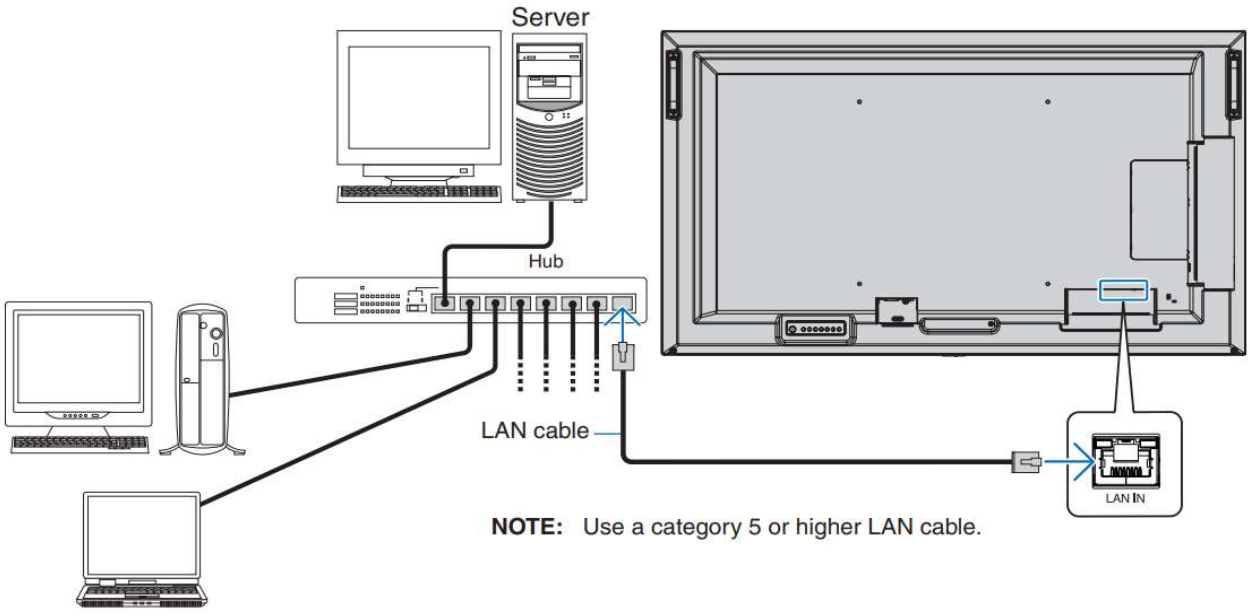
Connector : 9-pin D-sub
Cable : Reverse(Crossing) cable



Note : See "RS-232C remote control" in the instruction manual.

2.2 LAN

Connector : RJ-45 10/100 BASE-T
Cable : Category 5 or higher LAN cable



Note : See "LAN Control" in the Owner's Manual.

3. Communication conditions

3.1 RS-232C

Communication system	Asynchronous
Interface	RS-232C
Baud rate	9600 (bps)
Data length	8 (bit)
Parity	None
Stop bit	1 (bit)

Note:

- Keep the command byte interval within 100 ms.
- When sending commands continuously, send the next command after receiving the response command from the monitor.
- When sending the following commands, wait for the specified interval after receiving the response command, and then send the next command.
  *Approximately 15 seconds after sending power ON and power OFF.
  *Approximately 10 seconds after sending input switching, or all reset.
- When the monitor is "power off" or "power save", the commands that can be received are limited. See chapter 8.1 for details.

3.2 LAN

Communication system	7142 (Fixed)
Communication layer	TCP

For details on various settings, refer to "Network Settings" in the Operating Instructions.

Note:

- The monitor will disconnect after 15 minutes of communication loss.
  Please reconnect every time you communicate after an interval of 15 minutes or more.
- When sending commands continuously, send the next command after receiving the response command from the monitor.
- When sending the following commands, wait for the specified interval after receiving the response command, and then send the next command.
  *Approximately 15 seconds after sending power ON and power OFF.
  *Approximately 10 seconds after sending input switching, or all reset.
- When the monitor is "power off" or "power save", the commands that can be received are limited. See chapter 8.1 for details.

4. Command format

External control commands are roughly classified into two types: CTL and VCP.
Each command consists of four parts, Header, Message, Check code, and Delimiter, as shown below.

Header	Message	Check Code	Delimiter

The content of the message varies depending on the type of command (Header 5th: Message Type).
The common components of CTL and VCP commands are explained in this chapter,
but please refer to the following guidance for details of each.

- Detailed explanation of Message of CTL command
  Refer to "5.CTL Command"

- Detailed explanation of Message of VCP command
  Refer to "6.VCP Command"

4.1 Header (fixed length)

Header	Message	Check Code	Delimiter

4.1.1 Header Format

Header					
1st	2nd	3rd	4th	5th	6th-7th
SOH	Reserved	Destination	Source	Message Type	Message Length

1st) SOH: Start Header
means Start Header.
Specify the ASCII code 'SOH' (01h).

2nd) Reserved: Reserved area for function expansion
Specify ASCII '0' (30h) for this monitor.

3rd) Destination: ID of the device that receives the command
The transmitter side (controller) specifies the monitor ID or group ID of the display to be controlled here.
Specify '0' (30h) on the receiver side (monitor).

Notes : For details, refer to the
"Conversion table between monitor ID and group ID and Destination Address"

4th) Source: ID of the device sending the command
Specify '0' (30h) on the transmitter side (controller).
Specify the monitor ID on the receiver side (monitor).

5th) Message Type: Specify command type
ASCII 'A' (41h): CTL command
ASCII 'B' (42h): CTL command reply
ASCII 'C' (43h): Get VCP command
ASCII 'D' (44h): Get VCP command reply
ASCII 'E' (45h): Set VCP command
ASCII 'F' (46h): Set VCP command reply

6th-7th) Message Length:
Defines the command length of the Message, ranging from STX to ETX following the header.
This length includes STX and ETX.
Byte data must be encoded in ASCII characters.
ex)
If the byte data is 3Ah, specify the ASCII characters '3' and 'A' (33h and 41h).
If the byte data is 0Bh, specify the ASCII characters '0' and 'B' (30h and 42h).

Conversion table between monitor ID and group ID and Destination Address

Monitor ID	Destination Address	Monitor ID	Destination Address	Monitor ID	Destination Address	Monitor ID	Destination Address
1	41h('A')	26	5Ah('Z')	51	73h	76	8Ch
2	42h('B')	27	5Bh	52	74h	77	8Dh
3	43h('C')	28	5Ch	53	75h	78	8Eh
4	44h('D')	29	5Dh	54	76h	79	8Fh
5	45h('E')	30	5Eh	55	77h	80	90h
6	46h('F')	31	5Fh	56	78h	81	91h
7	47h('G')	32	60h	57	79h	82	92h
8	48h('H')	33	61h	58	7Ah	83	93h
9	49h('I')	34	62h	59	7Bh	84	94h
10	4Ah('J')	35	63h	60	7Ch	85	95h
11	4Bh('K')	36	64h	61	7Dh	86	96h
12	4Ch('L')	37	65h	62	7Eh	87	97h
13	4Dh('M')	38	66h	63	7Fh	88	98h
14	4Eh('N')	39	67h	64	80h	89	99h
15	4Fh('O')	40	68h	65	81h	90	9Ah
16	50h('P')	41	69h	66	82h	91	9Bh
17	51h('Q')	42	6Ah	67	83h	92	9Ch
18	52h('R')	43	6Bh	68	84h	93	9Dh
19	53h('S')	44	6Ch	69	85h	94	9Eh
20	54h('T')	45	6Dh	70	86h	95	9Fh
21	55h('U')	46	6Eh	71	87h	96	A0h
22	56h('V')	47	6Fh	72	88h	97	A1h
23	57h('W')	48	70h	73	89h	98	A2h
24	58h('X')	49	71h	74	8Ah	99	A3h
25	59h('Y')	50	72h	75	8Bh	100	A4h
ALL	2Ah('*')						

Group ID	Destination Address	Group ID	Destination Address	Group ID	Destination Address	Monito ID	Destination Address
A	31h('1')	D	34h('4')	G	37h('7')	J	3Ah(':')
B	32h('2')	E	35h('5')	H	38h('8')		
C	33h('3')	F	36h('6')	I	39h('9')		

ex) When controlling the monitor whose "ID No." is set to '1', set the destination address to 'A' (41h).
To control all daisy chained displays, set the destination address to '*' (2Ah).
Note: ME series are not supported daisy-chained functions.

4.2 Message

Header	**Message**	Check Code	Delimiter

The format of Message is determined by the 5th (Message type) of Header, and there are the following 6 types.

CTL command
CTL command reply
Get VCP command
Get VCP command reply
Set VCP command
Set VCP command reply

4.2.1. CTL command

The format of Message in Commands depends on each command.

Notes : Refer to ”5.CTL Command” for detail.

4.2.2. CTL command replay

The monitor responds to commands received from the controller.
The format of Message in Commands depends on each command.

Notes : Refer to ”5.CTL Command” for detail.

4.2.3 Get VCP command

Controller sends this Message with OP code page and OP code when it wants to get status of the monitor.

Notes : For each “OP code page” and “OP code”, please refer to “6.VCP command”.

4.2.3.1. Format and detail of Get VCP command.

Message					
STX	OP Code Page		OP Code		ETX
	Hi	Lo	Hi	Lo	
1st	2nd-3rd		4th-5th		6th

1st) STX : Start of Message
Specify the ASCII code 'STC' (02h).

2nd-3rd) OP code page: Page of operation code
The data in the “OP code page” should be converted to ASCII characters.
ex) Byte data 02h must be converted to ASCII characters '0' and '2' (30h and 32h).
OP code page 02h -> OP code page (Hi) = ASCII '0' (30h)
OP code page (Lo) = ASCII '2' (32h)

4th-5th) OP code: Operation code
The data in the “OP code” should be converted to ASCII characters.
ex) Byte data 3Ah must be converted to ASCII characters '3' and 'A' (33h and 41h).
OP code 3Ah -> OP code (Hi) = ASCII '3' (33h)
OP code (Lo) = ASCII 'A' (41h)

4.2.4. Get VCP command reply

The monitor returns this Message in response to the Get VCP command specified on the OP code page and OP code.

Notes : For each “OP code page” and “OP code”, please refer to “6.VCP command”.

4.2.4.1. Format and detail fo Get VCP command reply

Message																
STX	Result		OP Code Page		OP Code		Reserved		Max value			Current Value			ETX
	Hi	Lo	Hi	Lo	Hi	Lo	Hi	Lo	MSB	···	LSB	MSB	···	LSB	
1st	2nd-3rd		4th-5th		6th-7th		8th-9th		10th-13th			14th-17th			18th

1st) STX : Start of Message
Specify the ASCII code 'STC' (02h).

2nd-3rd) Result code:
Returns the execution result.
00h: No error
01h: Unsupported operation on this monitor, or unsupported operation in its current state.
This result code from the monitor has been converted to ASCII characters.
ex) Byte data 01h is converted to ASCII characters '0' and '1' (30h and 31h).

4th-5th) OP code page: Page of operation code
The data in the “OP code page” should be converted to ASCII characters.
ex) Byte data 02h must be converted to ASCII characters '0' and '2' (30h and 32h).
OP code page 02h -> OP code page (Hi) = ASCII '0' (30h)
OP code page (Lo) = ASCII '2' (32h)

6th-7th) OP code: Operation code
The data in the “OP code” should be converted to ASCII characters.
ex) Byte data 3Ah must be converted to ASCII characters '3' and 'A' (33h and 41h).
OP code 3Ah -> OP code (Hi) = ASCII '3' (33h)
OP code (Lo) = ASCII 'A' (41h)

8th-9th) Reserved
Always specify '0'-'0' (30h, 30h).

10th-13th) Max. value: Maximum value the monitor can accept. (16bits)
This return value from the monitor is converted to ASCII characters.
ex) 0', '1', '2', '3' represent 0123h (291).

14th-17th) Current Value (16bits)
This return value from the monitor is converted to ASCII characters.
ex) 0', '1', '2', '3' represent 0123h (291).

18th) ETX: End of Message
Specify the ASCII code 'ETX' (03h).

4.2.5. Set VCP command

This Message is sent when the controller changes the monitor settings.

Notes : For each “OP code page” and “OP code”, please refer to “6.VCP command”.

4.2.5.1. Format and detail of Set VCP command

Message								
STX	OP Code Page		OP Code		Set value			ETX
	Hi	Lo	Hi	Lo	MSB	···	LSB	
1st	2nd-3rd		4th-5th		6th-9th			10th

1st) STX : Start of Message
Specify the ASCII code 'STC' (02h).

2nd-3rd) OP code page: Page of operation code
The data in the “OP code page” should be converted to ASCII characters.
ex) Byte data 02h must be converted to ASCII characters '0' and '2' (30h and 32h).
OP code page 02h -> OP code page (Hi) = ASCII '0' (30h)
OP code page (Lo) = ASCII '2' (32h)

4th-5th) OP code: Operation code
The data in the “OP code” should be converted to ASCII characters.
ex) Byte data 3Ah must be converted to ASCII characters '3' and 'A' (33h and 41h).
OP code 3Ah -> OP code (Hi) = ASCII '3' (33h)
OP code (Lo) = ASCII 'A' (41h)

6th-9th) Set value (16bit)
This return value from the monitor is converted to ASCII characters.
ex) 0', '1', '2', '3' represent 0123h (291).

10th) ETX: End of Message
Specify the ASCII code 'ETX' (03h).

4.2.6. Set VCP command reply

The monitor will echo back this Message in response to the Set VCP command specified in the OP code page and OP code.

Notes : For each “OP code page” and “OP code”, please refer to “6.VCP command”.

4.2.6.1. Format and detail of Set VCP command reply.

Message																
STX	Result		OP Code Page		OP Code		Reserved		Max value			Requested Setting value			ETX
	Hi	Lo	Hi	Lo	Hi	Lo	Hi	Lo	MSB	···	LSB	MSB	···	LSB	
1st	2nd-3rd		4th-5th		6th-7th		8th-9th		10th-13th			14th-17th			18th

1st) STX : Start of Message
Specify the ASCII code 'STC' (02h).

2nd-3rd) Result code:
Returns the execution result.
00h: No error
01h: Unsupported operation on this monitor, or unsupported operation in its current state.
This result code from the monitor has been converted to ASCII characters.
ex) Byte data 01h is converted to ASCII characters '0' and '1' (30h and 31h).

4th-5th) OP code page: Page of operation code
The data in the “OP code page” should be converted to ASCII characters.
ex) Byte data 02h must be converted to ASCII characters '0' and '2' (30h and 32h).
OP code page 02h -> OP code page (Hi) = ASCII '0' (30h)
OP code page (Lo) = ASCII '2' (32h)

6th-7th) OP code: Operation code
The data in the “OP code” should be converted to ASCII characters.
ex) Byte data 3Ah must be converted to ASCII characters '3' and 'A' (33h and 41h).
OP code 3Ah -> OP code (Hi) = ASCII '3' (33h)
OP code (Lo) = ASCII 'A' (41h)

8th-9th) Reserved
Always specify '0'-'0' (30h, 30h).

10th-13th) Max. value: Maximum value the monitor can accept. (16bits)
This return value from the monitor is converted to ASCII characters.
ex) 0', '1', '2', '3' represent 0123h (291).

14th-17th) Requested setting Value: Echo back the parameters for confirmation. (16bits)
This return value from the monitor is converted to ASCII characters.
ex) 0', '1', '2', '3' represent 0123h (291).

18th) ETX: End of Message
Specify the ASCII code 'ETX' (03h).

4.3. Check code

Header	Message	**Check Code**	Delimiter

4.3.1. Check code format and calculation method

Check code is the Block Check Code (BCC) from Header to end of Message, excluding SOH.
It is calculated by exclusive OR (XOR).

		Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
SOH	D0								
Reserved	D1								
Destination	D2								
Source	D3								
Type	D4								
Length(H)	D5								
Length(L)	D6								
STX	D7								
Data	D8								
|	|								
|	|								
ETX	D_n								
Check code	D_{n+1}	P	P	P	P	P	P	P	P

D_{n+1} =D_1 XOR D_2 XOR D_3 XOR ,,, D_n
XOR : Exclusive OR

An example of Check code (BCC) calculation is shown below.

Header							Message										**Check Code**	Delimiter
SOH	Resv.	Dest	Src	Type	Length		STX	OP code page		OP code		Set Value				ETX		
01h	30h	41h	30h	45h	30h	41h	02h	30h	30h	31h	30h	30h	30h	36h	34h	03h	**77h**	0Dh
D0	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12	D13	D14	D15	D16	D17	D18

Check code (BCC) D17 = D1 xor D2 xor D3 xor ⋯ xor D14 xor D15 xor D16
= 30h xor 41h xor 30h xor 45h xor 30h xor 41h xor 02h xor 30h xor
30h xor 31h xor 30h xor 30h xor 30h xor 36h xor 34h xor 03h
= 77h

4.4. Delimiter

Header	Message	Check Code	**Delimiter**

Delimiter has no format or calculation as described so far.
Specify 'CR'(0Dh) in ASCII for the Delimiter of the command.

5. CTL Command

5.1 CTL Command table

The CTL commands supported by this unit are as follows.

CTL number	Explanation
CTL-07	Get Timing Report and Timing reply
CTL-0C	Save Current Settings
CTL-B1	Self-diagnosis status read
CTL-BE	NULL Message
CTL-01D6	Power status read
CTL-C203-D6	Power control
CTL-C03F	F/W Revision Read Request
CTL-C211	Date & Time Read
CTL-C212	Date & Time Write
CTL-C216	Serial No. Read
CTL-C217	Model Name Read
CTL-C21D	Security Lock Control
CTL-C220	MAC Address Read Request
CTL-C22B-0E-04	Ping Command(IPv4)
CTL-C23D	Schedule Read
CTL-C23E	Schedule Write
CTL-C23F	Enable/Disable Schedule Write
CTL-CA04-00	Input Name Read Request
CTL-CA04-01	Input Name Write Request
CTL-CA04-02	Input Name Reset Request
CTL-CA04-03	Input Name of Designated Terminal Read Request
CTL-CA04-04	Input Name of Designated Terminal Write Request
CTL-CA04-05	Input Name of Designated Terminal Reset Request
CTL-CA0B-00	Power Save Mode Read Request
CTL-CA0B-01	Power Save Mode Write Request
CTL-CA0B-02	Auto Power Save Time Read Request
CTL-CA0B-03	Auto Power Save Time Write Request
CTL-CA0F-00	Get Terminal List
CTL-CA15-00	Set Proof of Play Operation Mode
CTL-CA15-01	Get Proof of Play Current
CTL-CA15-02	Get Proof of Play Status
CTL-CA15-03	Get Proof of Play Number to Number
CTL-CA48	Input Select Setting Read
CTL-CA49	Input Select Setting Write

5.2 Detail of CTL command.

This chapter describes the details of the following Message parts for CTL commands.

Header	**Message**	Check Code	Delimiter

For Header/Check Code/ Delimiter, refer to "4.Command format".

5.2.1 CTL-07. Get Timing Report and Timing reply

This command is used to read the resolution information of the currently displayed image.

【Controller → Monitor】

Message				
STX	Command Code		ETX	ASCII
	'0'	'7'		
02h	30h	37h	03h	HEX
1st	2nd-3rd		4th	

1st) STX : Start Message
Specify the ASCII code 'STX' (02h).

2nd-3rd) Command Code: '0'-'7' (30h, 37h)

4th) ETX: End of Message
Specify the ASCII code 'ETX' (03h).

【Monitor→Controller(ACK)】

Message													
STX	Command Code		Reserved		H Freq.				V Freq.				ETX
	'4'	'E'	'0'	'0'	MSB			LSB	MSB			LSB	
02h	34h	45h	30h	30h	xxh	xxh	xxh	xxh	xxh	xxh	xxh	xxh	03h
1st	2nd-3rd		4th-5th		6th-9th				10th-13th				14th

1st) STX : Start Message
Responds with the ASCII code 'STX' (02h).

2nd-3rd) Command Code: '4'-'E' (34h, 45h)

4th-5th) Reserved: '0'-'0' (30h, 30h)

6th-9th) H Freq: Horizontal sync frequency (0.01kHz unit)
ex) If “H Freq” is '1''2''A''9' (31h, 32h, 41h, 39h), it means 47.77kHz.

10th-13th) V Freq: Vertical sync frequency (0.01Hz unit)
ex) If “V Freq” is '1','7','6','F' (31h, 37h, 36h, 46h), it means 59.99kHz.

14th) ETX: End of Message
Responds with the ASCII code 'ETX' (03h).

5.2.2 CTL-0C. Save Current Settings

This command is used to save adjusted values.
When the monitor receives this command, save the current settings in non-volatile memory such as EEPROM.

【Controller → Monitor】

Message				
STX	Command Code		ETX	
	'0'	'C'		ASCII
02h	30h	43h	03h	HEX
1st	2nd-3rd		4th	

1st) STX : Start Message
Specify the ASCII code 'STX' (02h).

2nd-3rd) Command Code: '0'-'C' (30h, 43h)

4th) ETX: End of Message
Specify the ASCII code 'ETX' (03h).

【Monitor→Controller(ACK)】

Message					
STX	Command Code				ETX	
	'0'	'0'	'0'	'C'		ASCII
02h	30h	30h	30h	43h	03h	HEX
1st	2nd-5th				6th	

1st) STX : Start Message
Responds with the ASCII code 'STX' (02h).

2nd-5th) Command Code: '0'-'0'-'0'-'C' (30h, 30h, 30h, 43h)

6th) ETX: End of Message
Responds with the ASCII code 'ETX' (03h).

5.2.3 CTL-B1. Self-diagnosis status read

This command is used to read the self-diagnostic status.

【Controller → Monitor】

Message				
STX	Command Code		ETX	
	'B'	'1'		ASCII
02h	42h	31h	03h	HEX
1st	2nd-3rd		4th	

1st) STX : Start Message
Specify the ASCII code 'STX' (02h).

2nd-3rd) Command Code: 'B'-'1' (42h, 31h)

4th) ETX: End of Message
Specify the ASCII code 'ETX' (03h).

【Monitor→Controller(ACK)】

Message										
STX	Command Code		Status						ETX	
			ST(0)		ST(1)		-------	ST(N)		
	'A'	'1'	'x'	'x'	'x'	'x'	-------	'x'	'x'	ASCII
02h	41h	31h	xxh	xxh	xxh	xxh	-------	xxh	xxh	03h HEX
1st	2nd-3rd		4th-xxth							(xx+1)th

1st) STX : Start Message
Responds with the ASCII code 'STX' (02h).

2nd-3rd) Command Code: 'A'-'1' (41h, 31h)

4th-xxth) Status: Error code
The monitor responds by specifying the appropriate error code in ASCII.

Error code	説明
'A'-'0'(41h 30h)	Temperature abnormality (shutdown)
'A'-'1'(41h 31h)	Temperature abnormality (half brightness)
'B'-'0'(42h 30h)	NO SIGNAL

Notes:

・If no error has occurred, responded with '0'-'0'(30h 30h).
・If multiple errors have occurred, multiple error codes are responded.
ex) If Temperature abnormality and System error at the same time, ST(0) and ST(1) are specified as follows:
ST(0) : 'A'-'0'(41h 30h) Temperature abnormality (shutdown)
ST(1) : 'B'-'0'(42h 30h) NO SIGNAL

xx+1th) ETX: End of Message
Responds with the ASCII code 'ETX' (03h).

5.2.4 CTL-BE. NULL Message

The monitor notifies a NULL message to the controller under the following conditions.

・When an unsupported CTL command is received.

・When the CTL command is received while the monitor side is in the non-executable state.

Notes : refer to "8.Notes - 8.1 Regarding error reply." too.

【Monitor→Controller(ACK)】

Message				
STX	Command Code		ETX	
	'B'	'E'		ASCII
02h	42h	45h	03h	HEX
1st	2nd-3rd		4th	

1st) STX : Start Message
Responds with the ASCII code 'STX' (02h).

2nd-3rd) Command Code: 'B'-'E' (42h, 45h)

4th) ETX: End of Message
Responds with the ASCII code 'ETX' (03h).

5.2.5 CTL-01D6. Power status read

This command is used to read the power status of the monitor.

【Controller → Monitor】

Message					
STX	Command Code				ETX
	'0'	'1'	'D'	'6'	
02h	30h	31h	44h	36h	03h
1st	2nd-5th				6th

ASCII
HEX

1st) STX : Start Message
Specify the ASCII code 'STX' (02h).

2nd-5th) Command Code: '0'-'1'-'D'-'6' (30h, 31h, 44h, 36h)

6th) ETX: End of Message
Specify the ASCII code 'ETX' (03h).

【Monitor→Controller(ACK)】

Message													
STX	Reserved		Result Code		Command Code				Max				
	'0'	'2'	'x'	'x'	'D'	'6'	'0'	'0'	'0'	'0'	'0'	'4'	ASCII
02h	30h	32h	xxh	xxh	44h	36h	30h	30h	30h	30h	30h	34h	HEX
1st	2nd-3rd		4th-5th		6th-9th				10th-13th				

Message				
Power status				ETX
'x'	'x'	'x'	'x'	ASCII
xxh	xxh	xxh	xxh	03h HEX
14th-17th				18th

1st) STX : Start Message
Responds with the ASCII code 'STX' (02h).

2nd-3rd) Reserved
Responds with ASCII code '0'-'2' (30h, 32h).

4th-5th) Result Code
'0'-'0' (30h, 30h) : No error
'0'-'1' (30h, 31h) : Error

6th-9th) Command Code: 'D'-'6'-'0'-'0' (44h, 36h, 30h, 30h)

10th-13th) Power status Max value
Responds with ASCII code '0'-'0'-'0'-'4' (30h, 30h, 30h, 34h).

14th-17th) Current Power status
0'-'0'-'0'-'1' (30h, 30h, 30h, 31h) : Power on
0'-'0'-'0'-'2' (30h, 30h, 30h, 32h) : Power save
0'-'0'-'0'-'3' (30h, 30h, 30h, 33h) : No use(Reserved)
0'-'0'-'0'-'4' (30h, 30h, 30h, 34h) : Power off

18th) ETX: End of Message
Responds with the ASCII code 'ETX' (03h).

5.2.6 CTL-C203-D6. Power control

This command requests control of the monitor power.

【Controller → Monitor】

Message											
STX	Command Code						Power status				ETX
	'C'	'2'	'0'	'3'	'D'	'6'	'x'	'x'	'x'	'x'		ASCII
02h	43h	32h	30h	33h	44h	36h	xxh	xxh	xxh	xxh	03h	HEX
1st	2nd-7th						8th-11th				12th	

1st) STX : Start Message
Specify the ASCII code 'STX' (02h).

2nd-7th) Command Code: 'C'-'2'-'0'-'3'-'D'-'6' (43h, 32h, 30h, 33h, 44h, 36h)

8th-11th) Power status
0'-'0'-'0'-'1' (30h, 30h, 30h, 31h) : Power on
0'-'0'-'0'-'4' (30h, 30h, 30h, 34h) : Power off

12th) ETX: End of Message
Specify the ASCII code 'ETX' (03h).

【Monitor→Controller(ACK)】

Message													
STX	Result Code		Command Code						Power status				ETX
	'x'	'x'	'C'	'2'	'0'	'3'	'D'	'6'	'x'	'x'	'x'	'x'	
02h	xxh	xxh	43h	32h	30h	33h	44h	36h	xxh	xxh	xxh	xxh	03h
1st	2nd-3rd		4th-9th						10th-13th				14th

1st) STX : Start Message
Responds with the ASCII code 'STX' (02h).

2nd-3rd) Result Code
'0'-'0' (30h, 30h) : No error
'0'-'1' (30h, 31h) : Error

4th-9th) Command Code: 'C'-'2'-'0'-'3'-'D'-'6' (43h, 32h, 30h, 33h, 44h, 36h)

10th-13th) Power status
Returns the same value as the Power status of the received command.
0'-'0'-'0'-'1' (30h, 30h, 30h, 31h) : Power on
0'-'0'-'0'-'4' (30h, 30h, 30h, 34h) : Power off

14th ETX: End of Message
Responds with the ASCII code 'ETX' (03h).

5.2.7 CTL-C03F. F/W Revision Read Request

This command is used to read the display FW version.

【Controller → Monitor】

Message					
STX	Command Code				ETX
	'C'	'0'	'3'	'F'		ASCII
02h	43h	30h	33h	46h	03h	HEX
1st	2nd-5th				6th	

1st) STX : Start Message
Specify the ASCII code 'STX' (02h).

2nd-5th) Command Code: 'C'-'0'-'3'-'F' (43h, 30h, 33h, 46h)

6th) ETX: End of Message
Specify the ASCII code 'ETX' (03h).

【Monitor→Controller(ACK)】

Message						
STX	Command Code				FW Revision strings	ETX
	'C'	'1'	'3'	'F'	Data(0) - Data(N)		ASCII
02h	43h	31h	33h	46h	xxh - xxh	03h	HEX
1st	2nd-5th				6th-xxth	(xx+1)th	

1st) STX : Start Message
Responds with the ASCII code 'STX' (02h).

2nd-5th) Command Code: 'C'-'1'-'3'-'F' (43h, 31h, 33h, 46h)

6th-xxth) FW Version strings
Returns the version of FW according to the following conversion rules.
ex) Case of "R1.000AB"
"R1.000AB" = 52h, 31h, 2Eh, 30h, 30h, 30h, 41h, 42h
= Data(0) : '5' (35h), Data(1) : '2' (32h) } 'R'
Data(2) : '3' (33h), Data(3) : '1' (31h) } '1'
Data(4) : '2' (32h), Data(5) : 'E' (45h) } '.'
Data(6) : '3' (33h), Data(7) : '0' (30h) } '0'
Data(8) : '3' (33h), Data(9) : '0' (30h) } '0'
Data(10) : '3' (33h), Data(11) : '0' (30h) } '0'
Data(12) : '4' (34h), Data(13) : '1' (31h) } 'A'
Data(14) : '4' (34h), Data(15) : '2' (32h) } 'B'

xx+1th) ETX: End of Message
Responds with the ASCII code 'ETX' (03h).

5.2.8 CTL-C211. Date & Time Read

This command is used in order to read the setting of Date & Time.

【Controller → Monitor】

Message						
STX	Command Code				ETX	
	'C'	'2'	'1'	'1'		ASCII
02h	43h	32h	31h	31h	03h	HEX
1st	2nd-5th				6th	

1st) STX: Start of Message
Specify the ASCII code 'STX' (02h).

2nd-5th) Command Code: 'C'-'2'-'1'-'1' (43h, 32h, 31h, 31h)

6th) ETX: End of Message
Specify the ASCII code 'ETX' (03h).

【Monitor→Controller(ACK)】

Message													
STX	Command Code				Year		Month		Day		Weekdays		
	'C'	'3'	'1'	'1'	'x'	'x'	'x'	'x'	'x'	'x'	'x'	'x'	ASCII
02h	43h	33h	31h	31h	xxh	xxh	xxh	xxh	xxh	xxh	xxh	xxh	HEX
1st	2nd-5th				6th-7th		8th-9th		10th-11th		12th-13th		

Message							
Hours		Minutes		Reserved		ETX	
'x'	'x'	'x'	'x'	'0'	'0'		ASCII
xxh	xxh	xxh	xxh	30h	30h	03h	HEX
14h-15th		16th-17th		18th-19th		20th	

1st) STX : Start of Message
Responds with the ASCII code 'STX' (02h).

2nd-5th) Command Code: 'C'-'3'-'1'-'1' (43h, 33h, 31h, 31h)

6th-7th) Year (offset 2000)
'0'-'0' (30h, 30h) : 2000
'1'-'7' (31h, 37h) : 2023 (17h=23)
'6'-'3' (36h, 33h) : 2099 (63h=99)

8th-9th) Month
'0'-'1' (30h, 31h) : 1
～
'0'-'C' (30h, 43h) : 12

10th-11th) Day
'0'-'1' (30h, 31h) : 1
～
'1'-'F' (31h, 46h) : 31

12th-13th) Weekdays
'0'-'0' (30h, 30h) : Sunday
'0'-'1' (30h, 31h) : Monday
'0'-'2' (30h, 32h) : Tuesday
'0'-'3' (30h, 33h) : Wednesday
'0'-'4' (30h, 34h) : Thursday
'0'-'5' (30h, 35h) : Friday
'0'-'6' (30h, 36h) : Saturday

14th-15th) Hours
'0'-'0' (30h, 30h) : 0
～
'1'-'7' (31h, 37h) : 23

16th-17th) Minutes
'0'-'0' (30h, 30h) : 0
～
'3'-'B' (33h, 42h) : 59

18th-19th) Reserved
Specify the ASCII code '0'-'0' (00h, 00h).

20th) ETX: End of Message
Responds with the ASCII code 'ETX' (03h).

5.2.9 CTL-C212. Date & Time Write

This command is used in order to write the setting of the Date & Time.

【Controller → Monitor】

Message													
STX	Command Code				Year		Month		Day		Weekdays		
	'C'	'2'	'1'	'2'	'x'	'x'	'x'	'x'	'x'	'x'	'x'	'x'	ASCII
02h	43h	32h	31h	32h	xxh	xxh	xxh	xxh	xxh	xxh	xxh	xxh	HEX
1st	2nd-5th				6th-7th		8th-9th		10th-11th		12th-13th		

Message							
Hours		Minutes		Reserved		ETX	
'x'	'x'	'x'	'x'	'0'	'0'		ASCII
xxh	xxh	xxh	xxh	30h	30h	03h	HEX
14h-15th		16th-17th		18th-19th		20th	

1st) STX : Start of Message
Specify the ASCII code 'STX' (02h).

2nd-5th) Command Code: 'C'-'2'-'1'-'2' (43h, 32h, 31h, 32h)

6th-7th) Year (offset 2000)
'0'-'0' (30h, 30h) : 2000
'1'-'7' (31h, 37h) : 2023 (17h=23)
'6'-'3' (36h, 33h) : 2099 (63h=99)

8th-9th) Month
'0'-'1' (30h, 30h) : 1
～
'0'-'C' (30h, 43h) : 12

10th-11th) Day
'0'-'1' (30h, 30h) : 1
～
'1'-'F' (31h, 46h) : 31

12th-13th) Weekdays
'0'-'0' (30h, 30h) : Sunday
'0'-'1' (30h, 31h) : Monday
'0'-'2' (30h, 32h) : Tuesday
'0'-'3' (30h, 33h) : Wednesday
'0'-'4' (30h, 34h) : Thursday
'0'-'5' (30h, 35h) : Friday
'0'-'6' (30h, 36h) : Saturday

14th-15th) Hours
'0'-'0' (30h, 30h) : 0
～
'1'-'7' (31h, 37h) : 23

16th-17th) Minutes
'0'-'0' (30h, 30h) : 0
～
'3'-'B' (33h, 42h) : 59

18th-19th) Reserved
Specify the ASCII code '0'-'0' (30h, 30h).

20th) ETX: End of Message
Specify the ASCII code 'ETX' (03h).

【Monitor→Controller(ACK)】

Message												
STX	Command Code				Result Code		Year		Month		Day	
	'C'	'3'	'1'	'2'	'x'	'x'	'x'	'x'	'x'	'x'	'x'	'x'
02h	43h	33h	31h	32h	xxh	xxh	xxh	xxh	xxh	xxh	xxh	xxh
1st	2nd-5th				6th-7th		8th-9th		10th-11th		12th-13th	

Message									
Weekdays		Hours		Minutes		Reserved		ETX	
'x'	'x'	'x'	'x'	'x'	'x'	'0'	'0'		ASCII
xxh	xxh	xxh	xxh	xxh	xxh	30h	30h	03h	HEX
14h-15th		16th-17th		18th-19th		20th-21st		22nd	

1st) STX : Start of Message
Responds with the ASCII code 'STX' (02h).

2nd-5th) Command Code: 'C'-'3'-'1'-'2' (43h, 33h, 31h, 32h)

6th-7th) Result Code
'0'-'0' (30h, 30h) : No error
'0'-'1' (30h, 31h) : Error

8th-9th) Year (offset 2000)
'0'-'0' (30h, 30h) : 2000
'1'-'7' (31h, 37h) : 2023 (17h=23)
'6'-'3' (36h, 33h) : 2099 (63h=99)

10th-11th) Month
'0'-'1' (30h, 31h) : 1
～
'0'-'C' (30h, 43h) : 12

12th-13th) Day
'0'-'1' (30h, 31h) : 1
～
'1'-'F' (31h, 46h) : 31

14th-15th) Weekdays
'0'-'0' (30h, 30h) : Sunday
'0'-'1' (30h, 31h) : Monday
'0'-'2' (30h, 32h) : Tuesday
'0'-'3' (30h, 33h) : Wednesday
'0'-'4' (30h, 34h) : Thursday
'0'-'5' (30h, 35h) : Friday
'0'-'6' (30h, 36h) : Saturday

16th-17th) Hours
'0'-'0' (30h, 30h) : 0
～
'1'-'7' (31h, 37h) : 23

18th-19th) Minutes
'0'-'0' (30h, 30h) : 0
～
'3'-'B' (33h, 42h) : 59

20th-21st) Reserved
'0'-'0' (30h, 30h)

22nd) ETX: End of Message
Responds with the ASCII code 'ETX' (03h).

5.2.10 CTL-C216. Serial No. Read

This command is used to read the serial number of the monitor.

【Controller → Monitor】

Message					
STX	Command Code				ETX
	'C'	'2'	'1'	'6'	
02h	43h	32h	31h	36h	03h
1st	2nd-5th				6th

ASCII
HEX

1st) STX : Start Message
Specify the ASCII code 'STX' (02h).

2nd-5th) Command Code: 'C'-'2'-'1'-'6' (43h, 32h, 31h, 36h)

6th) ETX: End of Message
Specify the ASCII code 'ETX' (03h).

【Monitor→Controller(ACK)】

Message						
STX	Command Code				Serial Number strings	ETX
	'C'	'3'	'1'	'6'	Data(0) - Data(N)	
02h	43h	33h	31h	36h	xxh - xxh	03h
1st	2nd-5th				6th-xxth	(xx+1)th

ASCII
HEX

1st) STX : Start Message
Responds with the ASCII code 'STX' (02h).

2nd-5th) Command Code: 'C'-'3'-'1'-'6' (43h, 33h, 31h, 36h)

6th-xxth) Serial Number Strings
Returns the serial number of the monitor according to the following conversion rules.
ex) Case of Serial Number : "012345"
"012345" = 33h, 30h, 33h, 31h, 33h, 32h, 33h, 33h,33h, 34h,33h, 35h
= Data(0) : '3' (33h)
Data(1) : '0' (30h) } '0'
Data(2) : '3' (33h)
Data(3) : '1' (31h) } '1'
Data(4) : '3' (33h)
Data(5) : '2' (32h) } '2'
Data(6) : '3' (33h)
Data(7) : '3' (33h) } '3'
Data(8) : '3' (33h)
Data(9) : '4' (34h) } '4'
Data(10) : '3' (33h)
Data(11) : '5' (35h) } '5'
※ The following shows an example from STX to ETX.
STX-'C'-'3'-'1'-'6'-**'3'-'0'-'3'-'1'-'3'-'2'-'3'-'3'-'3'-'4'-'3'-'5'**-ETX

xx+1th) ETX: End of Message
Responds with the ASCII code 'ETX' (03h).

5.2.11 CTL-C217. Model Name Read

This command is used to read the model name of the monitor.

【Controller → Monitor】

Message					
STX	Command Code				ETX
	'C'	'2'	'1'	'7'	
02h	43h	32h	31h	37h	03h
1st	2nd-5th				6th

ASCII
HEX

1st) STX : Start Message
Specify the ASCII code 'STX' (02h).

2nd-5th) Command Code: 'C'-'2'-'1'-'7' (43h, 32h, 31h, 37h)

6th) ETX: End of Message
Specify the ASCII code 'ETX' (03h).

【Monitor→Controller(ACK)】

Message						
STX	Command Code				Model Name strings	ETX
	'C'	'3'	'1'	'7'	Data(0) - Data(N)	
02h	43h	33h	31h	37h	xxh - xxh	03h
1st	2nd-5th				6th-xxth	(xx+1)th

ASCII
HEX

1st) STX : Start Message
Responds with the ASCII code 'STX' (02h).

2nd-5th) Command Code: 'C'-'3'-'1'-'7' (43h, 33h, 31h, 37h)

6th-xxth) Model Name strings
Returns the model name of the monitor according to the following conversion rules.
ex) Case of Model Name : "ME432"
"ME432" = 34h, 44h, 34h, 35h, 33h, 34h, 33h, 33h,33h, 32h
= Data(0) : '4' (34h) } 'M'
Data(1) : 'D' (44h) }
Data(2) : '4' (34h) } 'E'
Data(3) : '5' (35h) }
Data(4) : '3' (33h) } '4'
Data(5) : '4' (34h) }
Data(6) : '3' (33h) } '3'
Data(7) : '3' (33h) }
Data(8) : '3' (33h) } '2'
Data(9) : '2' (32h) }
※ The following shows an example from STX to ETX.
STX-'C'-'3'-'1'-'7'-**'4'-'D'-'4'-'5'-'3'-'4'-'3'-'3'-'3'-'2'**-ETX

xx+1th) ETX: End of Message
Responds with the ASCII code 'ETX' (03h).

5.2.12 CTL-C21D. Security Lock Control

This command is used to change the settings of the security lock feature.

If the 4 digit passcode matches the passcode registered in the display,
the command is executed and returns a "No error" Result code and the changed state.
If the passcodes do not match,
the settings are not changed and the result code of "error" and the current status are returned.
If you receive this command while the display is waiting for passcode, it only checks for the passcode.
If passcode is OK, Lock mode will be canceled for a certain period of time,
but the "enable/disable" parameter is not applied(mode is not chnaged).

NOTE

In the case of these models, the display can set a passcode of up to 4 digits or more than 4 digits,
but this command cannot set a 4-digit passcode,
so if the display is set with a passcode other than 4 digits,
the result code of "error" and the current status are returned.

【Controller → Monitor】

Message						
STX	Command Code				Mode	
	'C'	'2'	'1'	'D'	'x'	'x'
02h	43h	32h	31h	44h	xxh	xxh
1st	2nd-5th				6th-7th	

Message									
4 digit passcode								ETX	
1st digit		2st digit		3st digit		4st digit			
'x'	'x'	'x'	'x'	'x'	'x'	'x'	'x'		ASCII
xxh	xxh	xxh	xxh	xxh	xxh	xxh	xxh	03h	HEX
8th-9th		10th-11th		12th-13th		14th-15th		16th	

1st) STX : Start of Message
Specify the ASCII code 'STX' (02h).

2nd-5th) Command Code: 'C'-'2'-'1'-'D' (43h, 32h, 31h, 44h)

6th-7th) Mode
bit0 : Start-up lock
bit1 : control lock
bit2 : Lock Admin Setting
bit3 : (Reserved)
bit4 : (Reserved)
bit5 : (Reserved)
bit6 : (Reserved)
bit7 : (Reserved)
※ Multiple bits can be set ON.
Ex)
'0'-'1' (30h, 31h) : Start-up lock is ON
'0'-'3' (30h, 33h) : Start-up lock and contorl lock are ON
'0'-'4' (30h, 34h) : Lock Admin Setting is ON
'0'-'5' (30h, 35h) : Start-up lock and Lock Admin Setting are ON

8th-9th) 4 digit passcode - 1st digit
'0'-'0' (30h, 30h) : 0
～
'0'-'9' (30h, 39h) : 9

10th-11th) 4 digit passcode - 2nd digit
'0'-'0' (30h, 30h) : 0
～
'0'-'9' (30h, 39h) : 9

12th-13th) 4 digit passcode - 3rd digit
'0'-'0' (30h, 30h) : 0
～
'0'-'9' (30h, 39h) : 9

14th-15th) 4 digit passcode - 4th digit
'0'-'0' (30h, 30h) : 0
～
'0'-'9' (30h, 39h) : 9

16th) ETX: End of Message
Specify the ASCII code 'ETX' (03h).

【Monitor → Controller(ACK)】

Message									
STX	Command Code				Result Code		Current Mode		ETX	
	'C'	'3'	'1'	'D'	'x'	'x'	'x'	'x'		ASCII
02h	43h	33h	31h	44h	xxh	xxh	xxh	xxh	03h	HEX
1st	2nd-5th				6th-7th		8th-9th		10th	

1st) STX : Start of Message
Responds with the ASCII code 'STX' (02h).

2nd-5th) Command Code: 'C'-'3'-'1'-'D' (43h, 33h, 31h, 44h)

6th-7th) Result Code
'0'-'0' (30h, 30h) : No error
'0'-'1' (30h, 31h) : Error

8th-9th) Current Mode
bit0 : Start-up lock
bit1 : control lock
bit2 : Lock Admin Setting
bit3 : (Reserved)
bit4 : (Reserved)
bit5 : (Reserved)
bit6 : (Reserved)
bit7 : (Reserved)
※ Multiple bits can be set ON.
Ex)
'0'-'1' (30h, 31h) : Start-up lock is ON
'0'-'3' (30h, 33h) : Start-up lock and contorl lock are ON
'0'-'4' (30h, 34h) : Lock Admin Setting is ON
'0'-'5' (30h, 35h) : Start-up lock and Lock Admin Setting are ON

10th) ETX: end of Message
Responds with the ASCII code 'ETX' (03h).

5.2.13 CTL-C220. MAC Address Read

This command is used to read the MAC address.

【Controller → Monitor】

Message							
STX	Command Code				Reserved		ETX
	'C'	'2'	'2'	'0'	'0'	'0'	ASCII
02h	43h	32h	32h	30h	30h	30h	03h HEX
1st	2nd-5th				6th-7th		8th

1st) STX : Start Message
Specify the ASCII code 'STX' (02h).

2nd-5th) Command Code: 'C'-'2'-'2'-'0' (43h, 32h, 32h, 30h)

6th-7th) Reserved: '0'-'0' (30h, 30h)

8th) ETX: End of Message
Specify the ASCII code 'ETX' (03h).

【Monitor→Controller(ACK)】

Message								
STX	Command Code				Select Device		MAC Address strings	ETX
	'C'	'3'	'2'	'0'	'0'	'0'	Data(0) - Data(11)	ASCII
02h	43h	33h	32h	30h	30h	30h	xxh - xxh	03h HEX
1st	2nd-5th				6th-7th		8th-xxth	(xx+1)th

1st) STX : Start Message
Responds with the ASCII code 'STX' (02h).

2nd-5th) Command Code: 'C'-'3'-'2'-'0' (43h, 33h, 32h, 30h)

6th-7th) Select Device
This is the area used if the monitor is a model with multiple MAC Addresses.
If there is only one MAC Address, specify the ASCII code '0'-'0' (30h, 30h).

8th-xxth) MAC Address strings
Returns the MAC Address of the monitor according to the following conversion rules.
ex) Case of MAC Address : "11-22-33-44-55-66"
Data(0) : '1' (31h)
Data(1) : '1' (31h)
Data(2) : '2' (32h)
Data(3) : '2' (32h)
Data(4) : '3' (33h)
Data(5) : '3' (33h)
Data(6) : '4' (34h)
Data(7) : '4' (34h)
Data(8) : '5' (35h)
Data(9) : '5' (35h)
Data(10) : '6' (36h)
Data(11) : '6' (36h)

※ Maximum 12 bytes
※ The following shows an example from STX to ETX.
STX-'C'-'3'-'2'-'0'-**'1'-'1'-'2'-'2'-'3'-'3'-'4'-'4'-'5'-'5'-'6'-'6'**-ETX

xx+1th) ETX: End of Message
Responds with the ASCII code 'ETX' (03h).

5.2.14 CTL-C22B-0E-04. Ping Command(IPv4)

This command uses the "PING" function of the monitor and causes it to perform a ping.

【Controller → Monitor】

Message												
STX	Command Code				Index		IP Version		IP address Oct1		IP address Oct2	
	'C'	'2'	'2'	'B'	'0'	'E'	'0'	'4'	'x'	'x'	'x'	'x'
02h	43h	32h	32h	42h	30h	45h	30h	34h	xxh	xxh	xxh	xxh
1st	2nd-5th				6th-7th		8th-9th		10th-11th		12th-13th	

Message					
IP address Oct3		IP address Oct4		ETX	
'x'	'x'	'x'	'x'		ASCII
xxh	xxh	xxh	xxh	03h	HEX
14th-15th		16th-17th		18th	

1st) STX : Start Message
Specify the ASCII code 'STX' (02h).

2nd-5th) Command Code: 'C'-'2'-'2'-'0' (43h, 32h, 32h, 42h)

6th-7th) Index: '0'-'E'('30h' '45h)

8th-9th) IP Version: '0'-'4'('30h' '34h')

10th-11th) IP address Oct1
Specifies the first octet of the destination IP address. ※2 bytes in hexadecimal
0('30h' 30h') ～ FF('46h' '46h')

12th-13th) IP address Oct2
Specifies the second octet of the destination IP address. ※2 bytes in hexadecimal
0('30h' 30h') ～ FF('46h' '46h')

14th-15th) IP address Oct2
Specifies the 3rd octet of the destination IP address. ※2 bytes in hexadecimal
0('30h' 30h') ～ FF('46h' '46h')

16th-17th) IP address Oct2
Specifies the 4th octet of the destination IP address. ※2 bytes in hexadecimal
0('30h' 30h') ～ FF('46h' '46h')

18th) ETX: End of Message
Specify the ASCII code 'ETX' (03h).

【Monitor→Controller(ACK)】

Message									
STX	Command Code				Result code		Index		ETX	
	'C'	'3'	'2'	'B'	'x'	x'	'0'	'E'		ASCII
02h	43h	33h	32h	42h	xxh	xxh	30h	45h	03h	HEX
1st	2nd-5th				6th-7th		8th-9th		10th	

1st) STX : Start Message
Responds with the ASCII code 'STX' (02h).

2nd-5th) Command Code: 'C'-'3'-'1'-'D' (43h, 33h, 31h, 44h)

6th-7th) Result Code
'0'-'0' (30h, 30h) : Normal PING is succeeded
'0'-'1' (30h, 31h) : abnormal PING execution is Failed.

8th-9th) Index' 0'-'E'
0E(30h 45h)

10th ETX: End of Message
Responds with the ASCII code 'ETX' (03h).

5.2.15 CTL-C23D. Schedule Read

This command is used to read the schedule settings.

【Controller → Monitor】

Message							
STX	Command Code				Program No		ETX
	'C'	'2'	'3'	'D'	'x'	x'	ASCII
02h	43h	32h	33h	44h	xxh	xxh	03h HEX
1st	2nd-5th				6th-7th		8th

1st) STX : Start Message
Specify the ASCII code 'STX' (02h).

2nd-5th) Command Code: 'C'-'2'-'3'-'D' (43h, 32h, 33h, 44h)

6th-7th) Program No
Specify Program number as below.
'0'-'0' (30h, 30h) : No.1
~
'0'-'E' (30h, 45h) : No.15

8th) ETX: End of Message
Specify the ASCII code 'ETX' (03h).

【Monitor→Controller(ACK)】

Message													
STX	Command Code				Program No		Schedule Event		Time (hour)		Time (minute)		
	'C'	'3'	'3'	'D'	'x'	x'	'x'	x'	'x'	x'	'x'	x'	ASCII
02h	43h	33h	33h	44h	xxh	xxh	xxh	xxh	xxh	xxh	xxh	xxh	HEX
1st	2nd-5th				6th-7th		8th-9th		10th-11th		12th-13th		

Message							
Input Terminal		Week Setting		Schedule type		Picture mode	
'x'	x'	'x'	x'	'x'	x'	'x'	x'
xxh	xxh	xxh	xxh	xxh	xxh	xxh	xxh
14th-15th		16th-17th		18th-19th		20th-21st	

Message														
Year		Month		Day		Order		Ext1		Ext2		Ext3		ETX
'x'	x'	'x'	x'	'x'	x'	'x'	x'	'0'	'0'	'0'	'0'	'0'	'0'	
xxh	xxh	xxh	xxh	xxh	xxh	xxh	xxh	30h	30h	30h	30h	30h	30h	03h
22nd-23rd		24th-25th		26th-27th		28th-29th		30th-31st		32nd-33rd		34th-35th		36th

1st) STX : Start Message
Responds with the ASCII code 'STX' (02h).

2nd-5th) Command Code: 'C'-'2'-'3'-'D' (43h, 32h, 33h, 44h)

6th-7th) Program No
Specify Program number as below.
'0'-'0' (30h, 30h) : No.1
~
'0'-'E' (30h, 45h) : No.15

8th-9th) Schedule event

'0'-'1' (30h, 31h) : Power ON
'0'-'2' (30h, 32h) : Power OFF
'0'-'3' (30h, 33h) : Reserved
'0'-'4' (30h, 34h) : Reboot

10th-11th) Execution time of schedule（hour）

'0'-'0' (30h, 30h) : 0 ～
'1'-'7' (31h, 37h) : 23
'1'-'8' (31h, 38h) : "----" Default

12th-13th) Execution time of schedule（min）

'0'-'0' (30h, 30h) : 0 ～
'3'-'B' (33h, 42h) : 59
'3'-'C' (33h, 43h) : "----" Default

14th-15th) Input Terminal

'0'-'0' (30h, 30h) : No mean (works on last memory)
'1'-'1' (31h, 31h) : HDMI1
'1'-'2' (31h, 32h) : HDMI2
'8'-'2' (38h, 32h) : HDMI3
'8'-'9' (38h, 39h) : USB-C
'8'-'7' (38h, 37h) : Home

16th-17th) Day of the week setting

Returns a bit pattern of the execution action being set.

bit 0 : Mon
bit 1 : Tues
bit 2 : Wed
bit 3 : Thurs
bit 4 : Fri
bit 5 : Sat
bit 6 : Sun

More than one may be set up at the same time.
For examples） Mon and Sat are set at the same time.
bit0,bit5 → 01**0**0001 → 0x21 ⇒'2'-'1' (32h, 31h)
If Schedule event is "Reboot", all bits are set.
bit0～bit6 → 0111111 → 0x7F → '7'-'F' (37h, 46h)

18th-19th) Schedule Type

Returns a bit pattern of the execution action being set.

bit 0 : (Reserved)
bit 1 : WEEK the week of execution ※Always "1"
bit 2 : Enable/Disable Enable/disable designated program number
bit 3 : (Reserved)
bit 4 : (Reserved)
bit 5 : (Reserved)
bit 6 : (Reserved)
bit 7 : (Reserved)

in this case of WEEK, the operation day is based on the "Day of the week setting"
Refer to CTL-C23E. Schedule Write for details.

20th-21st) Picture mode

Not supported by this monitor. '0' for all.

22nd-23rd) Year Date of Execution

Not supported by this monitor. '0' for all.

24th-25th) Month Date of Execution
Not supported by this monitor. '0' for all.

26th-27th) Day Date of Execution
Not supported by this monitor. '0' for all.

28th-35th) Order, Ext1 ,Ext2, Ext3
Not supported by this monitor. '0' for all.

36th) ETX: Message End
Responds with the ASCII code 'ETX' (03h).

5.2.16 CTL-C23E. Schedule Write

This command is used to set the schedule settings.

【Controller → Monitor】

Message												
STX	Command Code				Program No		Schedule Event		Time (hour)		Time (minute)	
	'C'	'2'	'3'	'E'	'x'	x'	'x'	x'	'x'	x'	'x'	x'
02h	43h	32h	33h	45h	xxh	xxh	xxh	xxh	xxh	xxh	xxh	xxh
1st	2nd-5th				6th-7th		8th-9th		10th-11th		12th-13th	

Message							
Input Terminal		Week Setting		Schedule type		Picture mode	
'x'	x'	'x'	x'	'x'	x'	'x'	x'
xxh	xxh	xxh	xxh	xxh	xxh	xxh	xxh
14th-15th		16th-17th		18th-19th		20th-21st	

Message														
Year		Month		Day		Order		Ext1		Ext2		Ext3		ETX
'x'	x'	'x'	x'	'x'	x'	'x'	x'	'0'	'0'	'0'	'0'	'0'	'0'	
xxh	xxh	xxh	xxh	xxh	xxh	xxh	xxh	30h	30h	30h	30h	30h	30h	03h
22nd-23rd		24th-25th		26th-27th		28th-29th		30th-31st		32nd-33rd		34th-35th		36th

1st) STX : Start Message
Specify the ASCII code 'STX' (02h).

2nd-5th) Command Code: 'C'-'2'-'3'-'E' (43h, 32h, 33h, 45h)

6th-7th) Program No
'0'-'0' (30h, 30h) : No.1
~
'0'-'E' (30h, 45h) : No.15

8th-9th) Schedule event
'0'-'1' (30h, 31h) : Power ON
'0'-'2' (30h, 32h) : Power OFF
'0'-'3' (30h, 33h) : Reserved
'0'-'4' (30h, 34h) : Reboot

10th-11th) Execution time of schedule（hour)
'0'-'0' (30h, 30h) : 0 ～
'1'-'7' (31h, 37h) : 23
'1'-'8' (31h, 38h) : "----" default

12th-13th) Execution time of schedule（min)
'0'-'0' (30h, 30h) : 0 ～
'3'-'B' (33h, 42h) : 59
'3'-'C' (33h, 43h) : "----" default

14th-15th) Input terminal
'0'-'0' (30h, 30h) : No mean (works on last memory)
'1'-'1' (31h, 31h) : HDMI1
'1'-'2' (31h, 32h) : HDMI2
'8'-'2' (38h, 32h) : HDMI3
'8'-'9' (38h, 39h) : USB-C
'8'-'7' (38h, 37h) : Home

16th-17th) Day of the week setting

Specify a bit pattern of the execution action being set.

bit 0 : Mon
bit 1 : Tues
bit 2 : Wed
bit 3 : Thurs
bit 4 : Fri
bit 5 : Sat
bit 6 : Sun

More than one may be set up at the same time.
For examples） Mon and Sat are set at the same time.
bit0,bit5 → 01**0**0001 → 0x21 ⇒'2'-'1' (32h, 31h)
If Schedule event is "Reboot", Day of the week setting is ignored,
and Reboot is executed everyday.

18th-19th) Schedule Type

Specify a bit pattern of the execution action being set.

bit 0 : (Reserved)
bit 1 : (Reserved)
bit 2 : Enable/Disable Enable/disable designated program number
bit 3 : (Reserved)
bit 4 : (Reserved)
bit 5 : (Reserved)
bit 6 : (Reserved)
bit 7 : (Reserved)

20th-21st) Picture mode

Don't care.

22nd-23rd) Year

Don't care.

24th-25th) Month

Don't care.

26th-27th) Day

Don't care.

28th-35th) Order, Ext1 ,Ext2, Ext3

Don't care.

36th) ETX: Message End

Specify the ASCII code 'ETX' (03h).

【Monitor→Controller(ACK)】

Message														
STX	Command Code				Result Code		Program No		Schedule Event		Time (hour)		Time (minute)	
	'C'	'3'	'3'	'E'	'x'	x'	'x'	x'	'x'	x'	'x'	x'	'x'	x'
02h	43h	33h	33h	44h	xxh	xxh	xxh	xxh	xxh	xxh	xxh	xxh	xxh	xxh
1st	2nd-5th				6th-7th		8th-9th		10th-11th		12th-13th		14th-15th	

Message							
Input Terminal		Week Setting		Schedule type		Picture mode	
'x'	x'	'x'	x'	'x'	x'	'x'	x'
xxh	xxh	xxh	xxh	xxh	xxh	xxh	xxh
16th-17th		18th-19th		20th-21st		22nd-23rd	

Message														
Year		Month		Day		Order		Ext1		Ext2		Ext3		ETX
'x'	x'	'x'	x'	'x'	x'	'x'	x'	'0'	'0'	'0'	'0'	'0'	'0'	
xxh	xxh	xxh	xxh	xxh	xxh	xxh	xxh	30h	30h	30h	30h	30h	30h	03h
24th-25th		26th-27th		28th-29th		30th-31st		32nd-33rd		34th-35th		36th-37th		38th

1st) STX : Start Message
Responds with the ASCII code 'STX' (02h).

2nd-5th) Command Code: 'C'-'3'-'3'-'E' (43h, 33h, 33h, 44h)

6th-7th) Result Code
'0'-'0' (30h, 30h) : No error It means that the setup was successful
'0'-'1' (30h, 31h) : Error It means that the setup was failed.

The following returns the contents of the command as it was when it was set up.
8th-9th) Program No
'0'-'0' (30h, 30h) : No.1
~
'0'-'E' (30h, 45h) : No.15

10th-11th) Schedule Event
'0'-'1' (30h, 31h) : Power ON
'0'-'2' (30h, 32h) : Power OFF
'0'-'3' (30h, 33h) : Reserved
'0'-'4' (30h, 34h) : Reboot

12th-13th) Execution time of schedule（hour)
'0'-'0' (30h, 30h) : 0 ～
'1'-'7' (31h, 37h) : 23
'1'-'8' (31h, 38h) : None

14th-15th) Execution time of schedule（min)
'0'-'0' (30h, 30h) : 0 ～
'3'-'B' (33h, 42h) : 59
'3'-'C' (33h, 43h) : "----" default

16th-17th) Input Terminal
'0'-'0' (30h, 30h) : No mean (works on last memory)
'1'-'1' (31h, 31h) : HDMI1
'1'-'2' (31h, 32h) : HDMI2
'8'-'2' (38h, 32h) : HDMI3
'8'-'9' (38h, 39h) : USB-C
'8'-'7' (38h, 37h) : Home

18th-19th) Day of the week setting

bit 0	:	Mon
bit 1	:	Tues
bit 2	:	Wed
bit 3	:	Thurs
bit 4	:	Fri
bit 5	:	Sat
bit 6	:	Sun

20th-21st) Schedule Type

bit 0	:	(Reserved)	
bit 1	:	WEEK	the week of execution
bit 2	:	Enable/Disable	Enable/disable designated program number
bit 3	:	(Reserved)	
bit 4	:	(Reserved)	
bit 5	:	(Reserved)	
bit 6	:	(Reserved)	
bit 7	:	(Reserved)	

22nd-23rd) Picture mode

Don't care.

24th-25th) Year

Don't care.

26th-27th) Month

Don't care.

28th-29th) Day

Don't care.

30th-37th) Order, Ext1 ,Ext2, Ext3

Don't care.

38th)ETX: Message End

Responds with the ASCII code 'ETX' (03h).

5.2.17 CTL-C23F. Enable/Disable Schedule writes

this command is to set/read enable or disable Schedule function.
【Controller → Monitor】

Message										
STX	Command Code				Program No		Enable/ Disable		ETX	
	'C'	'2'	'3'	'F'	'x'	x'	'x'	x'		ASCII
02h	43h	32h	33h	46h	xxh	xxh	xxh	xxh	03h	HEX
1st	2nd-5th				6th-7th		8th-9th		10th	

1st) STX : Message start
Specify ASCII Code 'STX'(02h)

2nd-5th) Command Code: 'C'-'2'-'3'-'F' (43h, 32h, 33h, 46h)

6th-7th) Program No
'0'-'0' (30h, 30h) : No.1
~
'0'-'D' (30h, 44h) : No.14

8th-9th) Enable / Disable
0'-'0' (30h, 30h) : Disable
0'-'1' (30h, 31h) : Enable
0'-'2' (30h, 32h) : Delete

10th) ETX: Message End
Specify the ASCII code 'ETX' (03h).

【Monitor→Controller(ACK)】

Message												
STX	Command Code				Result Code		Program No		Enable/ Disable		ETX	
	'C'	'3'	'3'	'F'	'x'	x'	'x'	x'	'x'	x'		
02h	43h	33h	33h	46h	xxh	xxh	xxh	xxh	xxh	xxh	03h	ASCII
1st	2nd-5th				6th-7th		8th-9th		10th-11th		12th	HEX

1st) STX : Message Start
Responds with the ASCII code 'STX' (02h).

2nd-5th) Command Code: 'C'-'2'-'3'-'F' (43h, 32h, 33h, 46h)

6th -7th) Result Code
'0'-'0' (30h, 30h) : No error
'0'-'1' (30h, 31h) : Error

The following returns the contents of the command as it was when it was set up.
8th-9th) Program No
'0'-'0' (30h, 30h) : No.1
~
'0'-'D' (30h, 44h) : No.14

10th-11th) Enable / Disable
0'-'0' (30h, 30h) : Disable
0'-'1' (30h, 31h) : Enable
0'-'2' (30h, 32h) : Delete

12th) ETX: MessageEnd
Responds with the ASCII code 'ETX' (03h).

5.2.18 CTL-CA04-00. Input Name Read Request

This command is used to read the current input terminal name.

【Controller → Monitor】

Message							
STX	Command Code						ETX
	'C'	'A'	'0'	'4'	'0'	'0'		ASCII
02h	43h	41h	30h	34h	30h	30h	03h	HEX
1st	2nd-7th						8th	

1st) STX : Start of Message
Specify the ASCII code 'STX' (02h).

2nd-7th) Command Code: 'C'-'A'-'0'-'4'-'0'-'0' (43h, 41h, 30h, 34h, 30h, 30h)

8th) ETX: End of Message
Specify the ASCII code 'ETX' (03h).

【Monitor→Controller(ACK)】

Message								
STX	Command Code						Input Name	ETX
	'C'	'B'	'0'	'4'	'0'	'0'	Data(0) - Data(N)		ASCII
02h	43h	42h	30h	34h	30h	30h	xxh - xxh	03h	HEX
1st	2nd-7th						8th-xxth	(xx+1)th	

1st) STX : Start of Message
Responds with the ASCII code 'STX' (02h).

2nd-7th) Command Code: 'C'-'B'-'0'-'4'-'0'-'0' (43h, 42h, 30h, 34h, 30h, 30h)

8th-xxth) Input Name
'Returns the current input terminal name according to the following conversion rules.
Ex.) In case "HDMI1"
"HDMI1" = 48h, 44h, 4Dh, 49h, 31h
= Data(0) : '4' (34h) } 'H'
Data(1) : '8' (38h) }
Data(2) : '4' (34h) } 'D'
Data(3) : '4' (34h) }
Data(4) : '4' (34h) } 'M'
Data(5) : 'D' (44h) }
Data(6) : '4' (34h) } 'I'
Data(7) : '9' (39h) }
Data(8) : '3' (33h) } '1'
Data(9) : '1' (31h) }
※ Max 28byte (Max 14 character)

xx+1th) ETX: End of Message
Responds with the ASCII code 'ETX' (03h).

5.2.19 CTL-CA04-01. Input Name Write Request

This command is used to write the current input terminal name.

【Controller → Monitor】

Message								
STX	Command Code						Input Name	ETX	
	'C'	'A'	'0'	'4'	'0'	'1'	Data(0) - Data(N)		ASCII
02h	43h	41h	30h	34h	30h	31h	xxh - xxh	03h	HEX
1st	2nd-7th						8th-xxth	(xx+1)th	

1st) STX : Start of Message
Specify the ASCII code 'STX' (02h).

2nd-7th) Command Code: 'C'-'A'-'0'-'4'-'0'-'1' (43h, 41h, 30h, 34h, 30h, 31h)

8th-xxth) Input Name
Specify the name of the rewritten Input Name according to the following rules.
Ex.) In case "HDMI1"
"HDMI1" = 48h, 44h, 4Dh, 49h, 31h
= Data(0) : '4' (34h) } 'H'
Data(1) : '8' (38h) }
Data(2) : '4' (34h) } 'D'
Data(3) : '4' (34h) }
Data(4) : '4' (34h) } 'M'
Data(5) : 'D' (44h) }
Data(6) : '4' (34h) } 'I'
Data(7) : '9' (39h) }
Data(8) : '3' (33h) } '1'
Data(9) : '1' (31h) }
※ Max 28byte (Max 14 character)

xx+1th) ETX: End of Message
Specify the ASCII code 'ETX' (03h).

【Monitor→Controller(ACK)】

Message								
STX	Command Code						ETX	
	'C'	'B'	'0'	'4'	'0'	'1'		ASCII
02h	43h	42h	30h	34h	30h	31h	03h	HEX
1st	2nd-7th						8th	

1st) STX : Start of Message
Responds with the ASCII code 'STX' (02h).

2nd-7th) Command Code: 'C'-'B'-'0'-'4'-'0'-'1' (43h, 42h, 30h, 34h, 30h, 31h)

8th) ETX: End of Message
Responds with the ASCII code 'ETX' (03h).

5.2.20 CTL-CA04-02. Input Name Reset Request

This command is used to reset the input terminal name.
When the display receives this command,
it changes the input terminal name of the currently selected input terminal to the initial value.

【Controller → Monitor】

Message								
STX	Command Code						ETX	
	'C'	'A'	'0'	'4'	'0'	'2'		ASCII
02h	43h	41h	30h	34h	30h	32h	03h	HEX
1st	2nd-7th						8th	

1st) STX : Start of Message
Specify the ASCII code 'STX' (02h).

2nd-7th) Command Code: 'C'-'A'-'0'-'4'-'0'-'2' (43h, 41h, 30h, 34h, 30h, 32h)

8th ETX: End of Message
Specify the ASCII code 'ETX' (03h).

【Monitor → Controller(ACK)】

Message									
STX	Command Code						Result Code		ETX	
	'C'	'B'	'0'	'4'	'0'	'2'	'x'	'x'		ASCII
02h	43h	42h	30h	34h	30h	32h	xxh	xxh	03h	HEX
1st	2nd-7th						8th-9th		10th	

1st) STX : Start of Message
Responds with the ASCII code 'STX' (02h).

2nd-7th) Command Code: 'C'-'B'-'0'-'4'-'0'-'2' (43h, 42h, 30h, 34h, 30h, 32h)

8th-9th) Result Code
'0'-'0' (30h, 30h) : No error
'0'-'1' (30h, 31h) : Error

10th) ETX: End of Message
Responds with the ASCII code 'ETX' (03h).

5.2.21 CTL-CA04-03. Input Name of Designated Terminal Read Request

This command is used to read the name setting of the specified input terminal.

【Controller → Monitor】

Message									
STX	Command Code						Input Terminal		ETX	
	'C'	'A'	'0'	'4'	'0'	'3'	'x'	'x'		ASCII
02h	43h	41h	30h	34h	30h	33h	xxh	xxh	03h	HEX
1st	2nd-7th						8th-9th		10th	

1st) STX : Start of Message
Specify the ASCII code 'STX' (02h).

2nd-7th) Command Code: 'C'-'A'-'0'-'4'-'0'-'3' (43h, 41h, 30h, 34h, 30h, 33h)

8th-9th) Input Terminal
'1'-'1' (31h, 31h) : HDMI1
'1'-'2' (31h, 32h) : HDMI2
'8'-'2' (38h, 32h) : HDMI3
'8'-'9' (38h, 39h) : USB-C
'8'-'7' (38h, 37h) : HOME

10th) ETX: End of Message
Specify the ASCII code 'ETX' (03h).

【Monitor→Controller(ACK)】

Message										
STX	Command Code						Result Code		Input Terminal	
	'C'	'B'	'0'	'4'	'0'	'3'	'x'	'x'	'x'	'x'
02h	43h	42h	30h	34h	30h	33h	xxh	xxh	xxh	xxh
1st	2nd-7th						8th-9th		10th-11th	

Message		
Input Name	ETX	
Data(0) - Data(N)		ASCII
xxh - xxh	03h	HEX
12th-xxth	(xx+1)th	

1st) STX : Start of Messgae
Responds with the ASCII code 'STX' (02h).

2nd-7th) Command Code: 'C'-'B'-'0'-'4'-'0'-'3' (43h, 42h, 30h, 34h, 30h, 33h)

8th-9th) Result Code
'0'-'0' (30h, 30h) : No error
'0'-'1' (30h, 31h) : Error

10th-11th) Input Terminal
'1'-'1' (31h, 31h) : HDMI1
'1'-'2' (31h, 31h) : HDMI2
'8'-'2' (38h, 32h) : HDMI3
'8'-'9' (38h, 39h) : USB-C
'8'-'7' (38h, 37h) : HOME

12th-xxth) Input Name
The input terminal name of the specified input terminal is returned according to the following conversion rules.

Ex.) In case "HDMI1"
"HDMI1" = 48h, 44h, 4Dh, 49h, 31h
= Data(0) : '4' (34h) } 'H'
Data(1) : '8' (38h) }
Data(2) : '4' (34h) } 'D'
Data(3) : '4' (34h) }
Data(4) : '4' (34h) } 'M'
Data(5) : 'D' (44h) }
Data(6) : '4' (34h) } 'I'
Data(7) : '9' (39h) }
Data(8) : '3' (33h) } '1'
Data(9) : '1' (31h) }
※ Max 28 byte (Max 14 character)

xx+1th) ETX: End of Message
Responds with the ASCII code 'ETX' (03h).

5.2.22 CTL-CA04-04. Input Name of Designated Terminal Write Request

This command is used to write the input terminal name of the specified input terminal.

【Controller → Monitor】

Message										
STX	Command Code						Input Terminal		Input Name	ETX
	'C'	'A'	'0'	'4'	'0'	'4'	'x'	'x'	Data(0) - Data(N)	
02h	43h	41h	30h	34h	30h	34h	xxh	xxh	xxh - xxh	03h
1st	2nd-7th						8th-9th		10th-xxth	(xx+1)th

1st) STX : Start of Message
Specify the ASCII code 'STX' (02h).

2nd-7th) Command Code: 'C'-'A'-'0'-'4'-'0'-'4' (43h, 41h, 30h, 34h, 30h, 34h)

8th-9th) Input Terminal
'1'-'1' (31h, 31h) : HDMI1
'1'-'2' (31h, 32h) : HDMI2
'8'-'2' (38h, 32h) : HDMI3
'8'-'9' (38h, 39h) : USB-C
'8'-'7' (38h, 37h) : HOME

10th-xxth) Input Name
The input terminal name of the specified input terminal is spcified according to the following conversion rules.

Ex.) In case "HDMI1"
"HDMI1" = 48h, 44h, 4Dh, 49h, 31h
= Data(0) : '4' (34h) } 'H'
Data(1) : '8' (38h) }
Data(2) : '4' (34h) } 'D'
Data(3) : '4' (34h) }
Data(4) : '4' (34h) } 'M'
Data(5) : 'D' (44h) }
Data(6) : '4' (34h) } 'I'
Data(7) : '9' (39h) }
Data(8) : '3' (33h) } '1'
Data(9) : '1' (31h) }
※ Max 28 byte (Max 14 character)

xx+1th) ETX: End of Message
Specify the ASCII code 'ETX' (03h).

【Monitor→Controller(ACK)】

Message										
STX	Command Code						Result Code		ETX	
	'C'	'B'	'0'	'4'	'0'	'4'	'x'	'x'		ASCII
02h	43h	42h	30h	34h	30h	34h	xxh	xxh	03h	HEX
1st	2nd-7th						8th-9th		10th	

1st) STX : Start of Message
Responds with the ASCII code 'STX' (02h).

2nd-7th) Command Code: 'C'-'B'-'0'-'4'-'0'-'4' (43h, 42h, 30h, 34h, 30h, 34h)

8th-9th) Result Code
'0'-'0' (30h, 30h) : No error
'0'-'1' (30h, 31h) : Error

10th) ETX: End of Message
Responds with the ASCII code 'ETX' (03h).

5.2.23 CTL-CA04-05. Input Name of Designated Terminal Reset Request

This command is used to reset the name of the specified input terminal.
When the display receives this command,
it changes the input terminal name of the specified input terminal to the initial value.

【Controller → Monitor】

Message									
STX	Command Code						Input Terminal		ETX	
	'C'	'A'	'0'	'4'	'0'	'5'	'x'	'x'		ASCII
02h	43h	41h	30h	34h	30h	35h	xxh	xxh	03h	HEX
1st	2nd-7th						8th-9th		10th	

1st) STX : Start of Message
Specify the ASCII code 'STX' (02h).

2nd-7th) Command Code: 'C'-'A'-'0'-'4'-'0'-'5' (43h, 41h, 30h, 34h, 30h, 35h)

8th-9th) Input Terminal
'1'-'1' (31h, 31h) : HDMI1
'1'-'2' (31h, 32h) : HDMI2
'8'-'2' (38h, 32h) : HDMI3
'8'-'9' (38h, 39h) : USB-C
'C'-'0' (43h, 30h) : HOME
'C'-'1' (43h, 31h) : Application1
'C'-'2' (43h, 32h) : Application2
'C'-'3' (43h, 33h) : Application3
'C'-'4' (43h, 34h) : Application4
'C'-'5' (43h, 35h) : Application5
'C'-'6' (43h, 36h) : Application6

10th) ETX: End of Message
Specify the ASCII code 'ETX' (03h).

【Monitor → Controller(ACK)】

Message									
STX	Command Code						Result Code		ETX	
	'C'	'B'	'0'	'4'	'0'	'5'	'x'	'x'		ASCII
02h	43h	42h	30h	34h	30h	35h	xxh	xxh	03h	HEX
1st	2nd-7th						8th-9th		10th	

1st) STX : Start of Message
Responds with the ASCII code 'STX' (02h).

2nd-7th) Command Code: 'C'-'B'-'0'-'4'-'0'-'5' (43h, 42h, 30h, 34h, 30h, 35h)

8th-9th) Result Code
'0'-'0' (30h, 30h) : No error
'0'-'1' (30h, 31h) : Error

10th) ETX: End of Message
Responds with the ASCII code 'ETX' (03h).

5.2.24 CTL-CA0B-00. Power Save Mode Read Request

This command is for read Power save mode.

【Controller → Monitor】

Message							
STX	Command Code				Index		ETX
	'C'	'A'	'0'	'B'	'0'	'0'	
02h	43h	41h	30h	42h	30h	30h	03h
1st	2nd-5th				6th-7th		8th

1st) STX : Message Start
Specify ASCII Code 'STX'(02h)

2nd-5th) Command Code : 'C'-'A'-'0'-'B' (43h, 41h, 30h, 42h,)

6th-7th) Index : '0'-'0' (30h, 30h,)

8th) ETX: Message End
Specify the ASCII code 'ETX' (03h).

【Monitor→Controller(ACK)】

Message									
STX	Command Code				Index		PowerSave Mode		ETX
	'C'	'B'	'0'	'B'	'0'	'0'	'x'	'x'	
02h	43h	42h	30h	42h	30h	30h	xxh	xxh	03h
1st	2nd-5th				6th-7th		8th-9th		10th

1st) STX : Message Start
Responds with the ASCII code 'STX' (02h).

2nd-5th) Command Code : 'C'-'B'-'0'-'B' (43h, 42h, 30h, 42h,)

6th-7th)Index : '0'-'0' (30h, 30h,)

8th-9th) Power Save Mode
'0'-'0' (30h, 30h) : ENABLE
'0'-'1' (30h, 31h) : Not Support
'0'-'2' (30h, 32h) : DISABLE

10th) ETX: MessageEnd
Responds with the ASCII code 'ETX' (03h).

5.2.25. CTL-CA0B-01. Power Save Mode Write Request

This command is for write Power save mode.

【Controller → Monitor】

Message									
STX	Command Code				Index		PowerSave Mode		ETX
	'C'	'A'	'0'	'B'	'0'	'1'	'x'	'x'	
02h	43h	41h	30h	42h	30h	31h	xxh	xxh	03h
1st	2nd-5th				6th-7th		8th-9th		10th

1st) STX : Message Start
Specify ASCII Code 'STX'(02h)

2nd-5th) Command Code : 'C'-'A'-'0'-'B' (43h, 41h, 30h, 42h,)

6th-7th)Index : '0'-'1' (30h, 30h,)

8th-9th) Power Save Mode
'0'-'0' (30h, 30h) : ENABLE
'0'-'1' (30h, 31h) : Not Support
'0'-'2' (30h, 32h) : DISABLE

10th ETX: Message is end.
Specify the ASCII code 'ETX' (03h).

【Monitor→Controller(ACK)】

Message									
STX	Command Code				Index		Result Code		ETX
	'C'	'B'	'0'	'B'	'0'	'1'	'x'	'x'	
02h	43h	42h	30h	42h	30h	31h	xxh	xxh	03h
1st	2nd-5th				6th-7th		8th-9th		10th

1st) STX : Message Start
Responds with the ASCII code 'STX' (02h).

2nd-5th) Command Code : 'C'-'B'-'0'-'B' (43h, 42h, 30h, 42h,)

6th-7th) Index : '0'-'1' (30h, 31h,)

8th-9th) Result Code
'0'-'0' (30h, 30h) : No error
'0'-'1' (30h, 31h) : Error

10th) ETX: Message is end.
Responds with the ASCII code 'ETX' (03h).

5.2.26 CTL-CA0B-02. Auto Power Save Time Read Request

This command is used to read the auto power save time setting.

【Controller → Monitor】

Message							
STX	Command Code						ETX
	'C'	'A'	'0'	'B'	'0'	'2'	
02h	43h	41h	30h	42h	30h	32h	03h
1st	2nd-7th						8th

ASCII
HEX

1st) STX : Start of Message
Specify the ASCII code 'STX' (02h).

2nd-7th) Command Code: 'C'-'A'-'0'-'B'-'0'-'2' (43h, 41h, 30h, 42h, 30h, 32h)

8th) ETX: End of Message
Specify the ASCII code 'ETX' (03h).

【Monitor→ Controller(ACK)】

Message									
STX	Command Code						Time Setting		ETX
	'C'	'B'	'0'	'B'	'0'	'2'	'x'	'x'	
02h	43h	42h	30h	42h	30h	32h	xxh	xxh	03h
1st	2nd-7th						8th-9th		10th

ASCII
HEX

1st) STX : Start of Message
Responds with the ASCII code 'STX' (02h).

2nd-7th) Command Code: 'C'-'B'-'0'-'B'-'0'-'2' (43h, 42h, 30h, 42h, 30h, 32h)

8th-9th) Time Setting
Returns the value of the currently set Power Save Time Setting.（1 Step=5 sec.）
'0'-'1' (30h, 31h) : 1 (5 sec)
～
'7'-'8' (37h, 38h) : 120 (600 sec)

10th) ETX: End of Message
Responds with the ASCII code 'ETX' (03h).

5.2.27 CTL-CA0B-03. Auto Power Save Time Write Request

This command is used to write the auto-power save time setting.

【Controller → Monitor】

Message									
STX	Command Code						Time Setting		ETX	
	'C'	'A'	'0'	'B'	'0'	'3'	'x'	'x'		ASCII
02h	43h	41h	30h	42h	30h	33h	xxh	xxh	03h	HEX
1st	2nd-7th						8th-9th		10th	

1st) STX : Start of Message
Specify the ASCII code 'STX' (02h).

2nd-7th) Command Code: 'C'-'A'-'0'-'B'-'0'-'3' (43h, 41h, 30h, 42h, 30h, 33h)

8th-9th) Time Setting
Specifies the Time Setting value for the power save to be written. (1 Step=5 sec.)
'0'-'1' (30h, 31h) : 1 (5 sec)
～
'7'-'8' (37h, 38h) : 120 (600 sec)

10th ETX: End of Message
Specify the ASCII code 'ETX'(03h).

【Monitor → Controller(ACK)】

Message									
STX	Command Code						Result Code		ETX	
	'C'	'B'	'0'	'B'	'0'	'3'	'x'	'x'		ASCII
02h	43h	42h	30h	42h	30h	33h	xxh	xxh	03h	HEX
1st	2nd-7th						8th-9th		10th	

1st) STX : Start of Message
Responds with the ASCII code 'STX' (02h).

2nd-7th) Command Code: 'C'-'B'-'0'-'B'-'0'-'3' (43h, 42h, 30h, 42h, 30h, 33h)

8th-9th) Result Code
'0'-'0' (30h, 30h) : No error
'0'-'1' (30h, 31h) : Error

10th) ETX: End of Message
Responds with the ASCII code 'ETX' (03h).

5.2.28 CTL-CA0F-00. Get Terminal List

This command is used in order to read Terminal List.

【Controller → Monitor】

Message							
STX	Command Code				Index		ETX
	'C'	'A'	'0'	'F'	'0'	'0'	
02h	43h	41h	30h	46h	30h	30h	03h
1st	2nd-5th				6nd-7th		8th

ASCII
HEX

1st) STX : Start of Message
Specify the ASCII code 'STX' (02h).

2nd-5th) Command Code: 'C'-'A'-'0'-'F'' (43h, 41h, 30h, 46h)

6th-7th) Index: '0'-'0' (30h, 30h)

8th) ETX: End of Message
Specify the ASCII code 'ETX'(03h).

【Monitor → Controller(ACK)】

Message										
STX	Command Code				Index		Result Code		Number of Terminal	
	'C'	'B'	'0'	'F'	'0'	'0'	'x'	'x'	'x'	'x'
02h	43h	42h	30h	46h	30h	30h	xxh	xxh	xxh	xxh
1st	2nd-5th				6nd-7th		8th-9th		10th-11th	

Message	
TERMINAL List	ETX
'Data(0)-Data(N)'	
xxh-xxh	03h
12th-xxth	(xx+1)th

ASCII
HEX

1st) STX : Start of Message
Responds with the ASCII code 'STX' (02h).

2nd-5th) Command Code: 'C'-'B'-'0'-'F'' (43h, 42h, 30h, 46h)

6th-7th) Index: '0'-'0' (30h, 30h)

8th-9th) Result Code
'0'-'0' (30h, 30h) : No error
'0'-'1' (30h, 31h) : Error

10th-11th) Number of Terminal
Returns the number of terminal.

Ex) If number of terminals is 5, please respond the following.
'0'-'5' (30h, 35h) : 5 terminals.

Notes :
For these models, the number of terminals is 5.

12th-xxth) TERMINAL List
Returns a list of terminals.

Notes :
For these models, the list of terminals are HOME/HDMI1/HDMI2/HDMI3/USB-C.
So terminla list of these models are the following.

TERMINAL List										
HOME		HDMI1		HDMI2		HDMI3		USB-C		
'8'	'7'	'1'	'1'	'1'	'2'	'8'	'2'	'8'	'9'	ASCII
38h	37h	31h	31h	31h	32h	38h	32h	38h	39h	HEX
12th	13th	14th	15th	16th	17th	18th	19th	20th	21st	

xx+1th) ETX: End of Message
Responds with the ASCII code 'ETX' (03h).

5.2.29 CTL-CA15-00. Set Proof of Play Operation Mode

This command is used in order to set operation mode of "Proof of Play".

【Controller → Monitor】

Message									
STX	Command Code				Index		Mode of Proof of Play		ETX	
	'C'	'A'	'1'	'5'	'0'	'0'	'x'	'x'		ASCII
02h	43h	41h	31h	35h	30h	30h	xxh	xxh	03h	HEX
1st	2nd-5th				6th-7th		8th-9th		10th	

1st) STX : Start of Message
Specify the ASCII code 'STX' (02h).

2nd-5th) Command Code : 'C'-'A'-'1'-'5' (43h, 41h, 31h, 35h)

6th-7th) Index : '0'-'0' (30h, 30h)

8th-9th) Mode of Proof of Play
Set Proof of Play Operation mode command
'0'-'0' (30h, 30h) : Stop
'0'-'1' (30h, 31h) : Start
'0'-'2' (30h, 32h) : Clear Log data

10th) ETX: End of Message
Specify the ASCII code 'ETX'(03h).

【Monitor → Controller(ACK)】

Message									
STX	Command Code				Index		Mode of Proof of Play		ETX	
	'C'	'B'	'1'	'5'	'0'	'0'	'x'	'x'		ASCII
02h	43h	42h	31h	35h	30h	30h	xxh	xxh	03h	HEX
1st	2nd-5th				6th-7th		8th-9th		10th	

1st) STX : Start of Message
Responds with the ASCII code 'STX' (02h).

2nd-5th) Command Code : 'C'-'B'-'1'-'5' (43h, 42h, 31h, 35h)

6th-7th) Index : '0'-'0' (30h, 30h)

8th-9th) Mode of Proof of Play
Reply Proof of Play Operation mode
'0'-'0' (30h, 30h) : No Error
'0'-'1' (30h, 31h) : Error
'0'-'2' (30h, 32h) : Already Start/Stop/Clear

10th) ETX: End of Message
Responds with the ASCII code 'ETX' (03h).

5.2.30 CTL-CA15-01. Get Proof of Play Current

This command is used in order to get current log data of "Proof of Play".
Note : Proof of Play information cannot be read from the display when it is in either DC Off or PMS states.
The display must be fully powered on to read Proof Of Play information.
Also the display does not continue to create any new logs while it is in DC Off or PMS states.

【Controller → Monitor】

Message							
STX	Command Code				Index		ETX
	'C'	'A'	'1'	'5'	'0'	'1'	
02h	43h	41h	31h	35h	30h	31h	03h
1st	2nd-5th				6th-7th		8th

ASCII
HEX

1st) STX : Start of Message
Specify the ASCII code 'STX' (02h).

2nd-5th) Command Code : 'C'-'A'-'1'-'5' (43h, 41h, 31h, 35h,)

6th-7th) Index : '0'-'1' (30h, 31h,)

8th) ETX: End of Message
Specify the ASCII code 'ETX'(03h).

【Monitor → Controller(ACK)】

Message												
STX	Command Code				Index		Result Code		Current log data Number (High byte)(Low byte)			
	'C'	'B'	'1'	'5'	'0'	'1'	'x'	'x'	'x'	x'	'x'	x'
02h	43h	42h	31h	35h	30h	31h	xxh	xxh	xxh	xxh	xxh	xxh
1st	2nd-5th				6th-7th		8th-9th		10th-13th			

Message													
Check Input Picture		Check Input Signal								Reserved		Reserved	
'x'	'x'	'x'	'x'	'x'	'x'	'x'	'x'	'x'	'x'	'0'	'0'	'0'	'2'
xxh	xxh	xxh	xxh	xxh	xxh	xxh	xxh	xxh	xxh	30h	30h	30h	32h
14th-15th		16th-23rd								24th-25th		26th-27th	

Message													
Check status (Picture)		Check status (Audio)		Year				Month		Day		Hour	
'x'	'x'	'x'	'x'	'x'	'x'	'x'	'x'	'x'	'x'	'x'	'x'	'x'	'x'
xxh	xxh	xxh	xxh	xxh	xxh	xxh	xxh	xxh	xxh	xxh	xxh	xxh	xxh
28th-29th		30th-31st		32nd-35th				36th-37th		38th-39th		40th-41st	

Message											
Min		Sec		Extension parameter		Reserved				ETX	
'x'	'x'	'x'	'x'	'x'	'x'	'0'	'0'	'0'	'0'		ASCII
xxh	xxh	xxh	xxh	xxh	xxh	30h	30h	30h	30h	03h	HEX
42nd-43rd		44th-45th		46th-47th		48th-51st				52nd	

1st) STX : Start of Message
Responds with the ASCII code 'STX' (02h).

2nd-5th) Command Code : 'C'-'B'-'1'-'5' (43h, 42h, 31h, 35h,)

6th-7th) Index : '0'-'1' (30h, 31h,)

8th-9th) Result Code
'0'-'0' (30h, 30h) : No error
'0'-'1' (30h, 31h) : Error

10th-13th) Current log data Number (High byte)(Low byte)
'0'-'0'-'0'-'0' (30h, 30h, 30h, 30h) : 1
~
'F'-'F'-'F'-'F' (46h, 46h, 46h, 46h) : 65535

14th-15th) Check Input Picture
'0'-'0' (30h, 30h) : No mean
'1'-'1' (31h, 31h) : HDMI1
'1'-'2' (31h, 32h) : HDMI2
'8'-'2' (38h, 32h) : HDMI3
'8'-'9' (38h, 39h) : USB-C
'8'-'7' (38h, 37h) : Home

16th-23rd) Check Input Signal
"00000000"(30h, 30h, 30h, 30h, 30h, 30h, 30h, 30h) : No signal
"FFFFFFFF"(46h, 46h, 46h, 46h, 46h, 46h, 46h, 46h) : Invalid signal
"********"(**h, **h, **h, **h, **h, **h, **h, **h) : Input signal
Ex) If input signal is 1920 x 1080,
"07800438" : 1920(0768h) x 1080(0438h)

24th-25th) Reserved
Always reply '0'-'0' (30h, 30h).

26th-27th) Reserved
Always reply '0'-'2' (30h, 32h).

28th-29th) Check status (Picture)
'0'-'0' (30h, 30h) : Normal Picture
'0'-'1' (30h, 31h) : No Picture

28th-29th) Check status (Audio)
'0'-'0' (30h, 30h) : Normal Audio
'0'-'1' (30h, 31h) : No Audio

32nd-35th) Year (Offset is 2000)
'0'-'0' (30h, 30h) : 2000
'1'-'7' (31h, 37h) : 2023 (17h=23)
'6'-'3' (36h, 33h) : 2099 (63h=99)

36th-37th) Month
'0'-'1' (30h, 31h) : January
~
'0'-'C' (30h, 43h) : December

38th-39th) Day
'0'-'1' (30h, 31h) : 1
~
'1'-'F' (31h, 46h) : 31

40th-41st) Hour
'0'-'0' (30h, 30h) : 0
～
'1'-'7' (31h, 37h) : 23

42nd-43rd) Minutes
'0'-'0' (30h, 30h) : 0
～
'3'-'B' (33h, 42h) : 59

44th-45th) Sec
'0'-'0' (30h, 30h) : 0
～
'3'-'B' (33h, 42h) : 59

46th-47th) Extension parameter
01h: Proof of Play event is “last power on time”
02h: Power On
03h: Power Off
10h: MEDIA PLAYER is stop
11h: MEDIA PLAYER is start
12h: MEDIA PLAYER is pause
13h: MEDIA PLAYER error occur
40h: Human detected (Human sensor Status)
41h: Human detect cleared (Human Sensor Status)

48th-51st) Reserved
Always reply '0'-'0'-'0'-'0' (30h, 30h, 30h, 30h).

52nd) ETX: End of Message
Responds with the ASCII code 'ETX' (03h).

5.2.31 CTL-CA15-02. Get Proof of Play Status

This command is used in order to get status of "Proof of Play".

【Controller → Monitor】

Message								
STX	Command Code				Index		ETX	
	'C'	'A'	'1'	'5'	'0'	'2'		ASCII
02h	43h	41h	31h	35h	30h	32h	03h	HEX
1st	2nd-5th				6th-7th		8th	

1st) STX : Start of Message
Specify the ASCII code 'STX' (02h).

2nd-5th) Command Code : 'C'-'A'-'1'-'5' (43h, 41h, 31h, 35h)

6th-7th) Index : '0'-'2' (30h, 32h)

8th) ETX: End of Message
Specify the ASCII code 'ETX'(03h).

【Monitor → Controller(ACK)】

Message								
STX	Command Code				Index		Error Status	
	'C'	'B'	'1'	'5'	'0'	'2'	'x'	'x'
02h	43h	42h	31h	35h	30h	32h	xxh	xxh
1st	2nd-5th				6th-7th		8th-9th	

Message										
Total log data Number (High byte)(Low byte)				Max log data Number (High byte)(Low byte)				Current status		ETX	
'x'	'x'	'x'	'x'	'x'	'x'	'x'	'x'	'x'	'x'		ASCII
xxh	xxh	xxh	xxh	xxh	xxh	xxh	xxh	xxh	xxh	03h	HEX
10th-13th				14th-17th				18th-19th		20th	

1st) STX : Start of Message
Responds with the ASCII code 'STX' (02h).

2nd-5th) Command Code : 'C'-'B'-'1'-'5' (43h, 42h, 31h, 35h)

6th-7th) Index : '0'-'2' (30h, 32h)

8th-9th) Error Status
'0'-'0' (30h, 30h) : No error
'0'-'1' (30h, 31h) : Memory full (some date has been lost)
'0'-'2' (30h, 32h) : other error (If there is also a memory full, '0'-'1' is returned in priority.)

10th-13th) Total log data Number (High byte)(Low byte)
'0'-'0'-'0'-'0' (30h, 30h, 30h, 30h) : 1
~
'F'-'F'-'F'-'F' (46h, 46h, 46h, 46h) : 65535

14th-17th) Max log data Number (High byte)(Low byte)
'0'-'0'-'0'-'0' (30h, 30h, 30h, 30h) : 1
~
'F'-'F'-'F'-'F' (46h, 46h, 46h, 46h) : 65535

18th-19th) Current status
'0'-'0' (30h, 30h) : Stop
'0'-'1' (30h, 31h) : Start

20th) ETX: End of Message
Responds with the ASCII code 'ETX' (03h).

5.2.32 CTL-CA15-02. Get Proof of Play Number to Number

This command is used in order to get Number to Number Log Data of "Proof of Play ".

【Controller → Monitor】

Message						
STX	Command Code				Index	
	'C'	'A'	'1'	'5'	'0'	'3'
02h	43h	41h	31h	35h	30h	33h
1st	2nd-5th				6th-7th	

Message									
Block Number of Start (High byte)(Low byte)				Block Number of Stop (High byte)(Low byte)				ETX	
'x'	'x'	'x'	'x'	'x'	'x'	'x'	'x'		ASCII
xxh	xxh	xxh	xxh	xxh	xxh	xxh	xxh	03h	HEX
8th-11th				12th-15th				16th	

1st) STX : Start of Message
Specify the ASCII code 'STX' (02h).

2nd-5th) Command Code : 'C'-'A'-'1'-'5' (43h, 41h, 31h, 35h)

6th-7th) Index : '0'-'3' (30h, 33h)

8th-11th) Block Number of Start (High byte)(Low byte)

12th-15th) Block Number of Stop (High byte)(Low byte)
Ex) If you set '0'-'0'-'0'-'0' (30h, 30h, 30h, 30h) in Block Number of Start and you set '0'-'0'-'0'-'0' (30h, 30h, 30h, 30h) in Block Number of Stop, you can get the first log data.

Note: Proof of Play data is maximum 100 data.

16th) ETX: End of Message
Specify the ASCII code 'ETX'(03h).

【Monitor → Controller(ACK)】

Message								
STX	Command Code				Index		Result Code	
	'C'	'B'	'1'	'5'	'0'	'3'	'x'	'x'
02h	43h	42h	31h	35h	30h	33h	xxh	xxh
1st	2nd-5th				6th-7th		8th-9th	

Message									
Log number (High byte)(Low byte)				Proof of Play Information				ETX	
'x'	'x'	'x'	'x'	'x'	…	…	'x'		ASCII
xxh	xxh	xxh	xxh	xxh	…	…	xxh	03h	HEX
10th-13th				14th-51st				52nd	

1st) STX : Start of Message
Responds with the ASCII code 'STX' (02h).

2nd-5th) Command Code : 'C'-'A'-'1'-'5' (43h, 41h, 31h, 35h)

6th-7th) Index : '0'-'3' (30h, 33h)

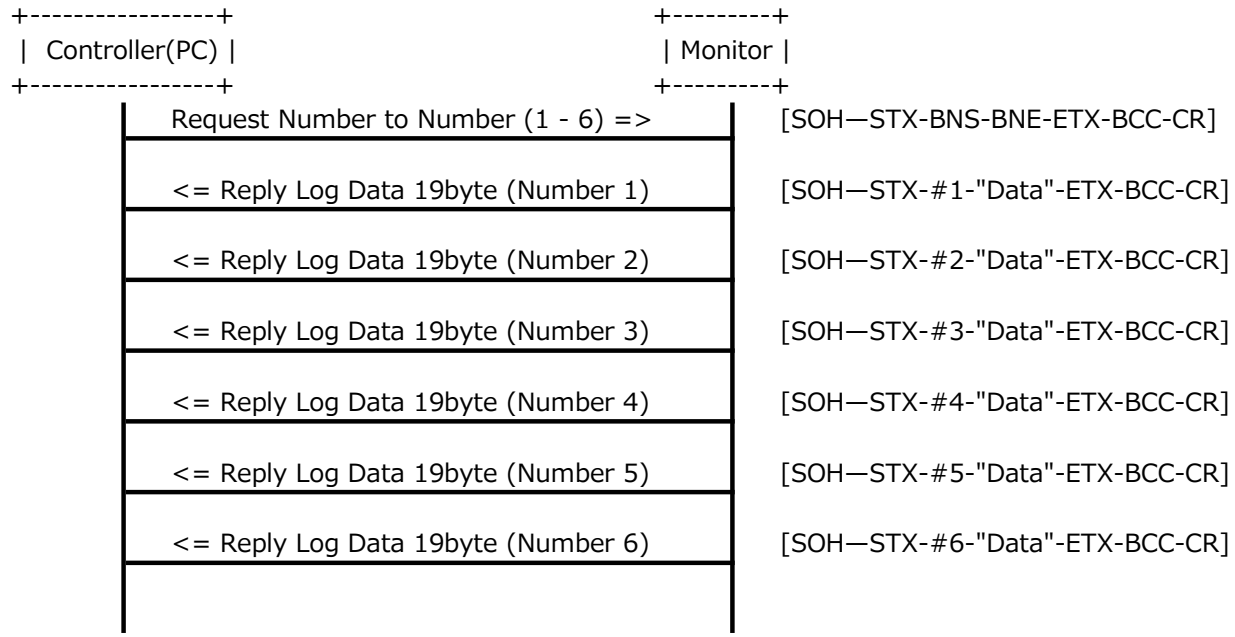
8th-9th) Result Code
'0'-'0' (30h, 30h) : No error
'0'-'1' (30h, 31h) : Error

10th-13th) Log number (High byte)(Low byte)

14th-51st) Proof of Play Information
Log Data of Proof of Play of STOP
Refer to 5.2.30 CTL-CA15-01. Get Proof of Play Current
Return the data from "14th-15th) Check Input Picture" to "48th-51th) Reserved"

52nd) ETX: End of Message
Responds with the ASCII code 'ETX' (03h).

Note: A reply returns 19 data in order from specified Number to specified Number.
Ex) Number to Number : 1 to 6



5.2.33 CTL-CA48 Input Select Setting Read

This command is used in order to get input Select Setting.

Note:
・If an unsupported input source is designated, the command is invalid.
The display returns “result code = 1” as an ACK response.

【Controller → Monitor】

Message												
STX	Command Code				Input Source				Reserved		ETX	
	'C'	'A'	'4'	'8'	'x'	'x'	'x'	'x'	'0'	'0'		ASCII
02h	43h	41h	34h	38h	xxh	xxh	xxh	xxh	30h	30h	03h	HEX
1st	2nd-5th				6th-9th				10th-11th		12th	

1st) STX : Start of Message
Specify the ASCII code 'STX' (02h).

2nd-5th) Command Code: 'C'-'A'-'4'-'8' (43h, 41h, 34h, 38h)

6th-9th) Input Source
Same as "VCP-00-60. Input Source Select".
Refer to "VCP-00-60. Input Source Select".

ex) Case of "HDMI1"
"HDMI1" = 0011h

	Input Source			
=	'0'	'0'	'1'	'1'
	30h	30h	31h	31h
	6th-9th			

10th-11th) Reserved
00(30H 30H) : $Reserved

12th) ETX: End of Message
Specify the ASCII code 'ETX' (03h).

【Monitor→Controller(ACK)】

Message												
STX	Command Code				Result Code		Input Source				Mode Select	
	'C'	'B'	'4'	'8'	'x'	'x'	'x'	'x'	'x'	'x'	'x'	'x'
02h	43h	42h	34h	38h	xxh	xxh	xxh	xxh	xxh	xxh	xxh	xxh
1st	2nd-5th				6th-7th		8th-11th				12th-13th	

Message			
Reserved		ETX	
'0'	'0'		ASCII
30h	30h	03h	HEX
14th-15th		16th	

1st) STX : Start of Message
Specify the ASCII code 'STX' (02h).

2nd-5th) Command Code: 'C'-'B'-'4'-'8' (43h, 42h, 34h, 38h)

6th-7th) Result Code
'0'-'0' (30h, 30h) : No error
'0'-'1' (30h, 31h) : Error

8th-11th) Input Source
Same as "VCP-00-60. Input Source Select".
Refer to "VCP-00-60. Input Source Select".

ex) Case of "HDMI1"
"HDMI1" = 0011h

	Input Source			
=	'0'	'0'	'1'	'1'
	30h	30h	31h	31h
	6th-9th			

12th-13th) Mode Select
'0'-'0' (30h, 30h) : Off
'0'-'1' (30h, 31h) : On
'0'-'2' (30h, 32h) : Auto

10th-11th) Reserved
00(30H 30H) : $Reserved

12th) ETX: End of Message

5.2.34 CTL-CA49 Input Select Setting Write

This command is used in order to set Input Select Setting.

Note:

- ・If an unsupported input source is designated, the command is invalid.
  The display returns “Result Code = 1” as an ACK response.
- ・If an unsupported mode is designated, the command is invalid.
  The display returns “Result Code = 1” as an ACK response.
- ・When the Input Source is HOME (0087H), mode has only two choices: Off (00H) and On (01H).
- ・When the Input Source is HOME (0087H), mode Auto (02H) will be invalid.
  The display returns “Result Code = 1” as an ACK response.

【Controller → Monitor】

Message													
STX	Command Code				Input Source				Mode Select		Reserved		ETX
	'C'	'A'	'4'	'9'	'x'	'x'	'x'	'x'	'x'	'x'	'0'	'0'	
02h	43h	41h	34h	39h	xxh	xxh	xxh	xxh	xxh	xxh	30h	30h	03h
1st	2nd-5th				6th-9th				10th-11th		12th-13th		14th

ASCII
HEX

1st) STX : Start of Message
Specify the ASCII code 'STX' (02h).

2nd-5th) Command Code: 'C'-'A'-'4'-'8' (43h, 41h, 34h, 38h)

6th-9th) Input Source
Same as "VCP-00-60. Input Source Select".
Refer to "VCP-00-60. Input Source Select".

ex) Case of "HDMI1"
"HDMI1" = 0011h

	Input Source			
=	'0'	'0'	'1'	'1'
	30h	30h	31h	31h
	6th-9th			

10th-11th) Mode Select
'0'-'0' (30h, 30h) : Off
'0'-'1' (30h, 31h) : On
'0'-'2' (30h, 32h) : Auto

12th-13th) Reserved
00(30H 30H) : $Reserved

14th) ETX: End of Message
Specify the ASCII code 'ETX' (03h).

【Monitor→Controller(ACK)】

Message										
STX	Command Code				Result Code		Reserved		ETX	
	'C'	'B'	'4'	'9'	'x'	'x'	'0'	'0'		ASCII
02h	43h	42h	34h	38h	xxh	xxh	30h	30h	03h	HEX
1st	2nd-5th				6th-7th		8th-9th		10th	

1st) STX : Start of Message
Specify the ASCII code 'STX' (02h).

2nd-5th) Command Code: 'C'-'B'-'4'-'8' (43h, 42h, 34h, 38h)

6th-7th) Result Code
'0'-'0' (30h, 30h) : No error
'0'-'1' (30h, 31h) : Error

8th-9th) Reserved
00(30H 30H) : $Reserved

10th) ETX: End of Message

6. VCP Command

6.1 VCP Command table

The VCP commands supported by this unit are as follows.

OP Code Page	OP Code	Parameter	Explanation
00h	10h	0000h - 0064h (Dark) - (Bright)	Backlight
00h	12h	0000h - 0064h (Low) - (High)	Contrast
00h	14h	0002h : Thru 0009h : 10000K 000Bh : Custom	Color settings If Color tempreature is not Thru or Custom, the monitor will reply 0009h.
00h	16h	0000h - 00FFh (Dark) - (Bright)	R Gain
00h	18h	0000h - 00FFh (Dark) - (Bright)	G Gain
00h	1Ah	0000h - 00FFh (Dark) - (Bright)	B Gain
00h	54h	0000h - 004Ah (2600K) - (10000K) 1step : 100K	Color temperature ※Cannot Set Thru with this command.
00h	60h	0011h : HDMI1 0012h : HDMI2 0082h : HDMI3 0089h : USB-C 0087h : Home	Input Source Select
00h	62h	0000h - 0064h (Small) - (Big)	Audio volume
00h	68h	0000h : No mean 0001h : English 0002h : German 0003h : French 0004h : Spanish 0005h : Japanese 0006h : Italian 0007h : Swedish 0009h : Russian 000Eh : Chinese	Language
00h	87h	0000h - 0064h (Soft) - (Sharp)	Sharpness
00h	8Ah	0000h - 0064h (Pale) - (To Deep)	Color
00h	8Ch	0000h - 0064h (Soft) - (Sharp)	Sharpness ※Same as VCP-00-87
00h	8Dh	0000h : Un mute 0001h : Mute 0002h : Un mute	Audio mute

00h	8Fh	0000h - 000Ah (De-emphasized) - (Emphasized)	AUDIO Treble
00h	91h	0000h - 000Ah (De-emphasized) - (Emphasized)	AUDIO Bass
00h	92h	0000h - 0064h (Dark) - (Bright)	Video black level
00h	93h	0000h - 0019h - 0032h (L50) - (Center) - (R50)	AUDIO balance (1 step = 2)
00h	9Bh	0000h - 0064h (To Magenta) - (To Yellow)	Color Control - RED (1 step = 2)
00h	9Ch	0000h - 0064h (To Red) - (To Green)	Color Control - YELLOW (1 step = 2)
00h	9Dh	0000h - 0064h (To Yellow) - (To Cyan)	Color Control - GREEN (1 step = 2)
00h	9Eh	0000h - 0064h (To Green) - (To Blue)	Color Control - CYAN (1 step = 2)
00h	9Fh	0000h - 0064h (To Cyan) - (To Magenta)	Color Control - BLUE (1 step = 2)
00h	A0h	0000h - 0064h (To Blue) - (To Red)	Color Control - MAGENDA (1 step = 2)
00h	D6h	0001h : Power on 0002h : Power save 0003h : No use(Reserved) 0004h : Power off	Power statys read (Read only)
00h	E1h	0000h : DISABLE 0001h : ENABLE	Power save
00h	FCh	0000h : Ignored 0001h : Ignored 0002h - 0030h (10sec.) - (240sec.)	OSD time
02h	1Ah	0003h : HIGHBRIGHT 0008h : CUSTOM 001Ch : RETAIL 001Dh : CONFERENCING 001Eh : TRANSPORTATION 001Fh : NATIVE	Picture mode
02h	1Fh	0000h - 0064h (Pale) - (To Deep)	Color ※Same as VCP-00-8A
02h	3Dh	0000h : OFF 0001h : ON	Information OSD
02h	3Eh	0001h - 0019h (1) - (25)	Monitor ID
02h	40h	0000h : FIRST DETECT 0001h : LAST DETECT 0002h : NONE 0004h : CUSTOM DETECT	Auto Input change
02h	41h	0000h : LANDSCAPE 0001h : PORTRAIT 0003h : 180degree	Screen rotation

02h	68h	0001h : NATIVE 0004h : 2.2 0005h : DICOM SIM. 0006h : PROGRAMABLE 0007h : S GAMMA 0008h : 2.4	Gamma
02h	6Fh	0000h : No mean 0001h - 00C9h (100%) - (300%)	Aspect - zoom ※Small scaling is possible with VCP-11-2C
02h	70h	0001h : Normal 0002h : Full 0003h : Wide 0004h : Zoom 0007h : OFF(1:1)	Aspect
02h	71h	0000h : No mean 0001h : Small 0002h : Medium 0003h : Large	PIP Size
02h	72h	0000h : No mean 0001h : Disable 0002h : Enable	PIP Enable
02h	73h	0000h : No mean 0011h : HDMI 0012h : HDMI2 0082h : HDMI3 0087h : Home 0089h : USB-C	PIP Source
02h	79h	0000h - FFFFh	Temperature (1Step = 0.5℃) ※Minus is two's complement. ※Get the temperature of the sensor selected by VCP-02h-78h.
02h	8Dh	0001h : OFF 0002h : Low 0004h : high	Adaptive Contrast
02h	B4h	0000h - FFFFh	AMBIENT LIGHT SENSING - Illuminance ※Read only
02h	BEh	0001h : ON 0002h : OFF	POWER INDICATOR
02h	CBh	0000h : No mean 0001h : Factory Reset 0002h : Picture 0004h : Audio 0010h : Network 0011h : Protect 0012h : System 0013h : Input & Output 0014h : Setup 0015h : Application	Menu Tree Reset
02h	D0h	0001h - 0005h (1) - (5)	TILE MATRIX - H MONITORS
02h	D1h	0001h - 0005h (1) - (5)	TILE MATRIX - V MONITORS

02h	D2h	0001h - 0019h (1) - (25)	TILE MATRIX - POSITION
02h	D3h	0001h : Disable(off) 0002h : Enable(on)	TILE MATRIX - CONFIRM SETTINGS
02h	D5h	0001h : NO 0002h : YES	TILE COMP
02h	D8h	0000h - 0032h (0 sec) - (50 sec)	Power on delay - delay time
10h	10h	0000h - 03E7h	CARBON SAVINGS（g） ※Read only
10h	11h	0000h - FFFFh	CARBON SAVINGS（kg） ※Read only
10h	26h	0000h - 03E7h	CARBON USAGE(g) ※Read only
10h	27h	0000h - FFFFh	CARBON USAGE(kg) ※Read only
10h	28h	0000h - 03E7h	CARBON SAVINGS（g）−Unresettable counter ※Returns the same value as VCP-10-10. ※Read only
10h	29h	0000h - FFFFh	CARBON SAVINGS(kg)−Unresettable counter ※Returns the same value as VCP-10-11. ※Read only
10h	2Ah	0000h - 03E7h	CARBON USAGE(g)−Unresettable counter ※Returns the same value as VCP-10-26. ※Read only
10h	2Bh	0000h - FFFFh	CARBON USAGE(kg)−Unresettable counter ※Returns the same value as VCP-10-27. ※Read only
10h	2Eh	0000h : --- 0011h : HDMI1 0012h : HDMI2 0082h : HDMI3 0089h : USB-C 0087h : Home	Auto Input change - Priority 1
10h	2Fh	0000h : --- 0011h : HDMI1 0012h : HDMI2 0082h : HDMI3 0089h : USB-C 0087h : Home	Auto Input change - Priority 2
10h	30h	0000h : --- 0011h : HDMI1 0012h : HDMI2 0082h : HDMI3 0089h : USB-C 0087h : Home	Auto Input change - Priority 3

10h	33h	0000h - 0064h (Dark) - (Bright)	AMBIENT LIGHT SENSING - IN BRIGHT - Backlight
10h	34h	0000h - 0064h (Dark) - (Bright)	AMBIENT LIGHT SENSING - IN DARK - Backlight
10h	3Eh	0000h : No mean 0001h : RS-232C 0002h : LAN	Control Terminal
10h	40h	0001h : EXPANDED SIGNAL 0002h : RAW SIGNAL 0003h : AUTO	Video range
10h	75h	0001h : OFF 0002h : AUTO OFF 0004h : CUSTOM	Human sensor - Mode
10h	78h	001Eh - 0258h (30 sec) - (600 sec)	Human sensor - Wait time
10h	81h	0001h : FIXED 0002h : VARIABLE	Line out
10h	B6h	0000h : No mean 0001h : Video mute 0002h : Video unmute	Video mute
10h	C6h	0000h - 0064h (Dark) - (Bright)	Human sensor - Backlight
10h	C7h	0000h - 0064h (Small) - (Big)	Human sensor - Volume
10h	C8h	0001h : OFF 0002h : ON	AMBIENT LIGHT SENSING - mode
10h	CAh	0001h : OFF 0002h : ON	Audio delay
10h	CBh	0000h - 0064h (Small) - (Big)	Audio delay - delay time
10h	D0h	0011h : HDMI1 0012h : HDMI2 0082h : HDMI3 0089h : USB-C 0087h : Home	Human sensor - Input select
10h	D4h	0000h : No mean 0001h : UNLOCK 0002h : ALL LOCK 0003h : CUSTOM LOCK	IR LOCK SETTING - MODE SELECT
10h	D5h	0000h : No mean 0001h : UNLOCK 0002h : LOCK	IR LOCK SETTING - POWER
10h	D6h	0000h : No mean 0001h : UNLOCK 0002h : LOCK	IR LOCK SETTING - VOLUME
10h	D7h	0000h - 0064h (0) - (100)	IR LOCK SETTING - MIN VOL
10h	D8h	0000h - 0064h (0) - (100)	IR LOCK SETTING - MAX VOL
10h	D9h	0000h : No mean 0001h : UNLOCK 0002h : LOCK	IR LOCK SETTING - INPUT

10h	DDh	0001h : OFF 0002h : ON	Human sensor - Backlight
10h	DEh	0001h : OFF 0002h : ON	Human sensor - Volume
10h	DFh	0001h : OFF 0002h : ON	Human sensor - Input select
11h	06h	0011h : HDMI1 0012h : HDMI2 0082h : HDMI3 0089h : USB-C 0087h : Home	Input Source Select
11h	0Eh	0011h : HDMI1 0012h : HDMI2 0082h : HDMI3 0089h : USB-C 0087h : Home	PIP Source
11h	17h	0001h : OFF 0002h : ON	Communication Information
11h	2Ch	005Ah - 012Ch (0.90%) - (3.00%)	Aspect - Zoom
11h	49h	0000h : No mean 0001h : Logo disable 0002h : Logo enable	Logo Screen
11h	4Eh	0001h : OFF 0002h : ON	Backlight Dimming
11h	68h	0001h : settings 1 0002h : settings 2	HDMI Mode setting
11h	6Ah	0000h : No mean 0001h : UNLOCK 0002h : ALL LOCK 0003h : CUSTOM LOCK	KEY LOCK SETTING - MODE SELECT
11h	6Bh	0000h : No mean 0001h : UNLOCK 0002h : LOCK	KEY LOCK SETTING - POWER
11h	6Ch	0000h : No mean 0001h : UNLOCK 0002h : LOCK	KEY LOCK SETTING - VOLUME
11h	6Dh	0000h - 0064h (0) - (100)	KEY LOCK SETTING - MIN VOL
11h	6Eh	0000h - 0064h (0) - (100)	KEY LOCK SETTING - MAX VOL
11h	6Fh	0000h : No mean 0001h : UNLOCK 0002h : LOCK	KEY LOCK SETTING - INPUT
11h	75h	0001h : ON 0002h : AUTO 0003h : OFF	USB power
11h	76h	0001h : OFF 0002h : ON	CEC
11h	77h	0001h : DISABLE 0002h : ENABLE	POWER CONTROL LINK

11h	78h	0001h : DISABLE 0002h : ENABLE	Audio receiver
11h	7Bh	0001h : OFF 0002h : ON	Power save message
11h	88h	0001h : PIP Bottom-Left 0002h : PIP Bottom-Right 0003h : PIP Up-Left 0004h : PIP Up-Right	PIP Position
11h	BBh	0000h : No mean 0001h : OFF 0002h : ON	Internal Speaker
11h	CFh	0000h : No mean 0001h : Disable 0002h : Enable	Enable/Disable Display Control LAN Port
11h	D3h	0000h : No mean 0001h : USB2.0 0003h : Auto	USB-C Setting
11h	D8h	0001h : RETAIL 0002h : CONFERENCING 0003h : HIGHBRIGHT 0004h : TRANSPORTATION 0005h : CUSTOM1 0007h : NATIVE	Audio mode
11h	E5h	0004h : Low 0005h : Mid 0006h : High	HDR MODE
11h	E9h	0001h : AUDIO 0002h : VIDEO 0003h : AUDIO&VIDEO	Mute Setting
11h	EAh	0001h : DISABLE 0002h : ENABLE	Quick start
11h	EEh	0001h : LOW POWER 0002h : NORMAL	Power save settings - mode
11h	F5h	0000h - 0064h (Dark) - (Bright)	Auto dimming - IN BRIGHT - Illuminance
11h	F6h	0000h - 0064h (Dark) - (Bright)	Auto dimming - IN DARK - Illuminance
11h	FCh	0000h - 0064h (0) - (100)	AMBIENT LIGHT SENSING - Backlight ※Read only
13h	2Ch	0000h : No mean 0001h : OFF 0002h : ON	Startup App
13h	2Dh	0000h : No mean 0001h : OFF 0002h : ON	Input Alias Switch
13h	2Eh	0000h : No mean 0001h : OFF 0002h : ON	Wireless LAN
13h	2Fh	0000h : No mean 0001h : OFF 0002h : ON	Bluetooth

13h	30h	0000h : No mean 0001h : None 0002h : Control System 0003h : Fusion On Premises 0004h : Fusion in the Cloud	Crestron Function Select
13h	31h	0000h : No mean 0001h : Disable 0002h : Enable	XiO Cloud
13h	32h	0000h : OFF 000Ah : 10 minutes 003Ch : 1 hour 0078h : 2 hours 00B4h : 3 hours 00F0h : 4 hours	Home Screen display time
13h	33h	0000h : No mean 0001h : OFF 0002h : ON	User Apps Installation
13h	34h	0000h : No mean 0001h : Disable 0002h : Enable	Application Lock
13h	35h	0000h : No mean 0001h : OFF 0002h : ON	Enable USB Drive
13h	36h	0000h : No mean 0001h : OFF 0002h : ON	Startup Animation
13h	37h	0000h : No mean 0001h : Picture 1 0002h : Picture 2 0003h : Picture 3 0004h : Picture 4 0005h : Picture 5 0006h : Picture 6 0007h : Picture 7	Wallpaper Select

7. OSD menu correspondence table

(Common menu)

OSD itmes	Message Type	VCP		CTL
		OP Code Page	OP Code	CTL number
Picture				
Picture Mode	VCP	02h	1Ah	
Backlight	VCP	00h	10h	
Backlight Dimming	VCP	11h	4Eh	
Video Black Level	VCP	00h	92h	
Gamma	VCP	02h	68H	
Color				
Color	VCP	02h	1Fh	
	VCP	00h	8Ah	
Color Temperature	VCP	00h	14h	
	VCP	00h	54h	
R Gain	VCP	00h	16h	
G Gain	VCP	00h	18h	
B Gain	VCP	00h	1Ah	
Color Control				
R	VCP	00h	9Bh	
Y	VCP	00h	9Ch	
G	VCP	00h	9Dh	
C	VCP	00h	9Eh	
B	VCP	00h	9Fh	
M	VCP	00h	A0h	
Contrast	VCP	00h	12h	
Advanced				
HDR Mode	VCP	11h	E5h	
Sharpness	VCP	00h	87h	
	VCP	00h	8Ch	
Adaptive Contrast	VCP	02h	8Dh	
Aspect	VCP	02h	70h	
Zoom	VCP	02h	6Fh	
	VCP	11h	2Ch	
Amebient Light Sensing	VCP	10h	C8h	
Reset	VCP	02h	CBh	
Audio				
Audio Mode	VCP	11h	D8h	
Volume	VCP	00h	62h	
Balance	VCP	00h	93h	
Treble	VCP	00h	8Fh	
Bass	VCP	00h	91h	
Reset	VCP	02h	CBh	

(Administrator setting)

OSD items	Message Type	VCP		CTL
		OP Code Page	OP Code	CTL number
Input & Output				
Input Change				
Startup App	VCP	13h	2Ch	
Auto Input Change	VCP	02h	40h	
Custom Detect Priority 1	VCP	10h	2Eh	
Custom Detect Priority 2	VCP	10h	2Fh	
Custom Detect Priority 3	VCP	10h	30h	
Input Name Setting	CTL			CA04-03/04
Input Alias Switch	VCP	13h	2Dh	
Input Select Setting	CTL			CA48/49
Signal Settings				
HDMI1				
HDMI Mode	VCP	11h	68h	
Video Range	VCP	10h	40h	
HDMI2				
HDMI Mode	VCP	11h	68h	
Video Range	VCP	10h	40h	
HDMI3				
HDMI Mode	VCP	11h	68h	
Video Range	VCP	10h	40h	
USB-C				
USB-C setting	VCP	11h	D3h	
Video Range	VCP	10h	40h	
Sound Setting				
Line Out	VCP	10h	81h	
Internal Speaker	VCP	11h	BBh	
Audio Delay	VCP	10h	CAh	
Delay Time	VCP	10h	CBh	
CEC				
CEC	VCP	11h	76h	
Auto Turn Off	VCP	11h	77h	
Audio Receiver	VCP	11h	78h	
Reset	VCP	02h	CBh	
Schedule				
Power On Schedule	CTL			C23E / C23F
Power Off Schedule	CTL			C23E / C23F
Reboot Schedule	CTL			C23E / C23F
Schedule List	CTL			C23D
Reset	VCP	02h	CBh	
Network				
Ethernet				
Obtain IP Address Automatically				
IP Address				
Default Gateway				
Netmask				
DNS1				
DNS2				
MAC Address				
Proxy				
Proxy Host Name				
Proxy Port				
Bypass Proxy Fro				
Pac				
Wireless LAN				
Wi-Fi	VCP	13h	2Eh	
Bluetooth	VCP	13h	2Fh	
Ping	CTL			C22B-0E-04

Network Setting		VCP	11h	CFh	
NaViSet Secure					
Monitor Control					
IP Addres Filter					
Crestron Connected					
	Control System	VCP	13h	30h	
	Fusion On Premises	VCP	13h	30h	
	Fusion in the Cloud	VCP	13h	30h	
	XiO Cloud	VCP	13h	31h	
Reset		VCP	02h	CBh	
Protect					
Power Save Settings					
					CA0B-00
		CTL			CA0B-01
	Power Save	VCP	00h	E1h	
					CA0B-02
	Time Setting	CTL			CA0B-03
	Mode	VCP	11h	EEh	
	USB Power	VCP	11h	75h	
	Power Save Message	VCP	11h	7Bh	
	Quick Start	VCP	11h	EAh	
	Off if No Operation				
		Home Screen	VCP	13h	32h
Security Settings					
	Password	CTL			C21D
	Lock Admin Setting	CTL			C21D
	Start-Up Lock	CTL			C21D
	Control Lock	CTL			C21D
Lock Settings					
		VCP	10h	D4h	
	Select	VCP	11h	6A	
		VCP	10h	D4h	
	Mode	VCP	11h	6A	
		VCP	10h	D5	
	Power	VCP	11h	6B	
		VCP	10h	D6	
	Volume	VCP	11h	6C	
		VCP	10h	D7	
	Min Vol	VCP	11h	6D	
		VCP	10h	D8	
	Max Vol	VCP	11h	6E	
		VCP	10h	D9	
	Input	VCP	11h	6F	
	Activate				
Advanced					
	User Apps Installaation	VCP	13h	33h	
	Application Lock	VCP	13h	34h	
	Enable USB Drive	VCP	13h	35h	
	Power On Delay				
		Delay Time	VCP	02h	D8h
Reset		VCP	02h	CBh	

Setup					
	App Icon Layout				
	PIP				
		PIP Enable	VCP	02h	72h
		PIP Source	VCP	02h	73h
		PIP Position	VCP	11h	88h
		PIP Size	VCP	02h	71h
	Tile Matrix				
		Tile Matrix	VCP	02h	D3h
			H MONITORS	VCP	02h	D0h
			V MONITORS	VCP	02h	D1h
			Position	VCP	02h	D2h
			Tile Comp	VCP	02h	D5h
	Human Sensing		VCP	10h	75h
				VCP	10h	C6h
		Backlight	VCP	10h	DDh
				VCP	10h	C7h
		Volume	VCP	10h	DEh
				VCP	10h	D0h
		Input	VCP	10h	DFh
		Waiting Time	VCP	10h	78h
	Clone Setting				
	Advanced				
		Power Indicator	VCP	02h	BEh
		Mute Setting	VCP	11h	E9h
		Command Format			
		Control Terminal	VCP	10h	3Eh
		Monitor ID	VCP	02h	3Eh
		Reset	VCP	02h	CBh
Application					
	User Application				
	User Application and SystemApplications				
	Reset app preference				
System					
			CTL			C211
	Date & Time		CTL			C212
	Language & Keyboard				
		Language	VCP	00h	68h
		Virtual Keyboard			
		Physical Keyboard			
	OSD				
		OSD Time	VCP	00h	FCh
		Information OSD	VCP	02h	3Dh
		Communication Information	VCP	11h	17h
		Screen Rotation	VCP	02h	41h
		Logo Screen	VCP	11h	49h
		Startup Animation	VCP	13h	36h
		Wallpaper	VCP	13h	37h
	Storage Space				
	Update Firmware				
	Security				
	Reset		VCP	02h	CBh
	Factory Reset		VCP	02h	CBh

About					
	Monitor Information				
		Model:	CTL			C217
		Serial:	CTL			C216
		Firmware Version	CTL			C03F
		Android Version				
		Kernel Version				
		Build Number				
		MAC Address	CTL			C220
		Internal Temperature	VCP	02h	79h	
		Status	CTL			B1
		Carbon Usage	VCP	10h	26h	
			VCP	10h	27h	
			VCP	10h	2Ah	
			VCP	10h	2Bh	
		Carbon Savings	VCP	10h	10h	
			VCP	10h	11h	
			VCP	10h	28h	
			VCP	10h	29h	
	Legal Information					

Notes : For details on each CTL command, refer to ”5.CTL Command”.
For details on each CTL command, refer to ”6.VCP Command”.

8. Notes

8.1 Command reception at power off and power save.

When the monitor is "power off" or "power save", the commands that can be received are limited to the following commands.

CTL Command

CTL Number	Explanation
CTL-B1	Self-diagnosis status read
CTL-01D6	Power status read
CTL-C203-D6	Power control
CTL-C216	Serial No. Read
CTL-C217	Model Name Read

VCP Command

OP Code Page	OP Code	Explanation
02h	3Eh	Monitor ID

Notes :

If you want to use all commands even with "Power Off" and "Power Save", set "Quick Start" in the OSD menu to "ENABLE".

※Power consumption increases when "Quick Start" is set to "ENABLE".

8.2 Regarding error reply.

The monitor returns an error response according to the following divisions.

Divisions		VCP command reply	CTL Command reply
Command error	Undefined command	Result Code:01h (error)	Null Message (CTL-BE)
	Unsupported command		
	The monitor side is in a non-executable state		
Command parameter error	Specified by the controller Setting value is out of range	Result Code:00h (No error)	Result Code:00h (No error)

Notes : If the controller sends a command to the monitor with settings out of range, the monitor does nothing and responds with "Result Code: 00h (no error)".


SHARP