

SHARP

External Control

ME series

**PN-ME432/PN-ME502
/PN-ME552/PN-ME652**

R1.0

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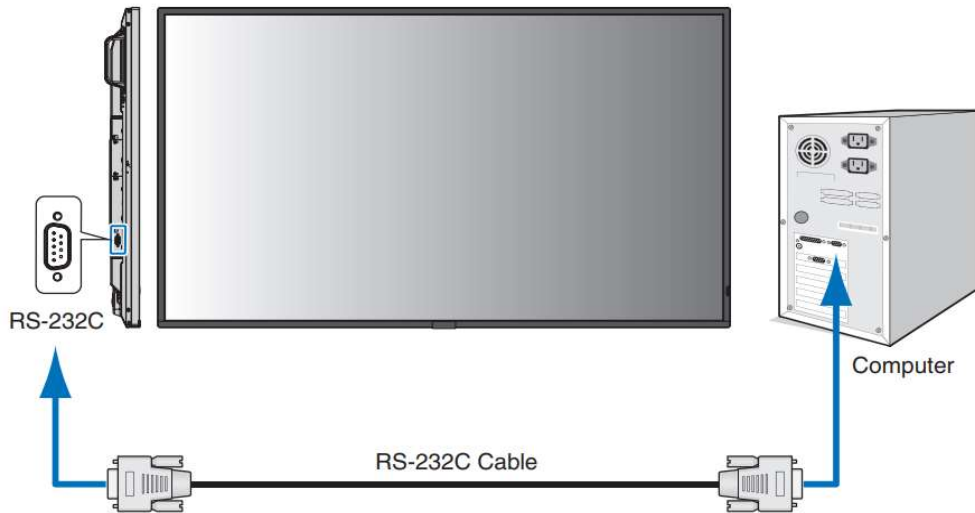
1. Overview

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

2. Connection method

2.1 RS-232C

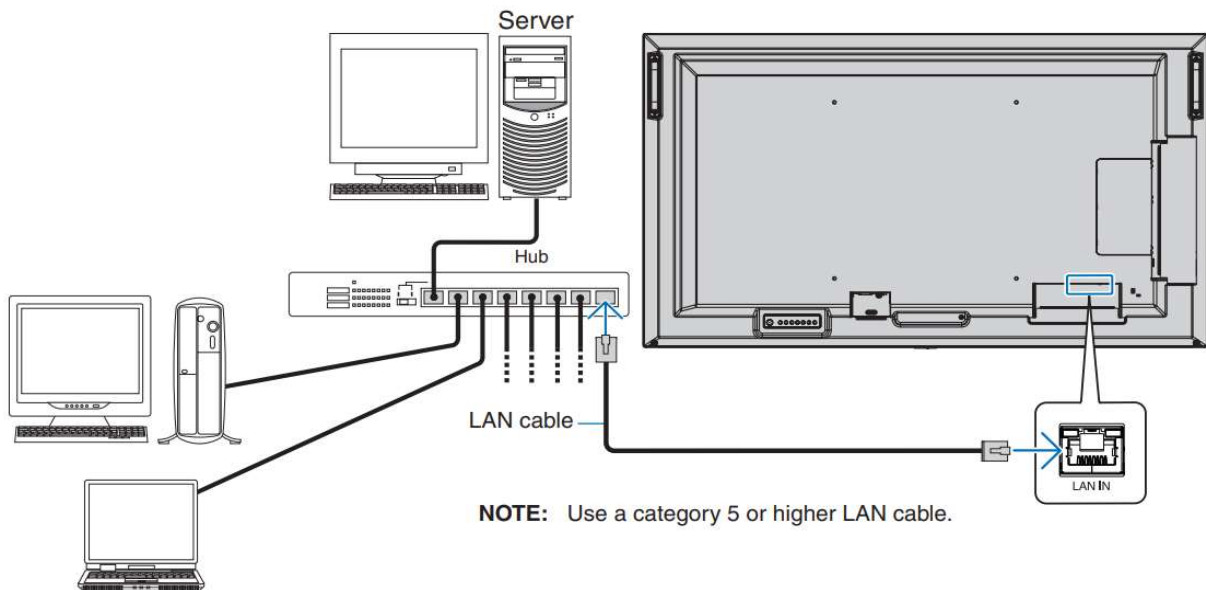
Connector : 9-pin D-sub
Cable : Crossing(reverse) cable



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: VCP and CTL. 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 VCP and CTL 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

Monito ID	Destination Address	Monito ID	Destination Address	Monito ID	Destination Address	Monito 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).

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.

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

4.2.1 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".

4.2.1.1. 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)

4.2.2. 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".

4.2.2.1. 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).

4.2.3. 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".

4.2.3.1. 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).

4.2.4. 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".

4.2.4.1. 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).

4.2.5. CTL command

The format of Message in Commands depends on each command.

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

4.2.6. 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.

4.3. Check code



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	Dn								
Check code	Dn+1	P	P	P	P	P	P	P	P

$$D_{n+1} = D_1 \text{ XOR } D_2 \text{ XOR } D_3 \text{ XOR } \dots \text{ XOR } D_n$$

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

$$\begin{aligned} \text{Check code (BCC) D17} &= D_1 \text{ xor } D_2 \text{ xor } D_3 \text{ xor } \dots \text{ xor } D_{14} \text{ xor } D_{15} \text{ xor } D_{16} \\ &= 30\text{h} \text{ xor } 41\text{h} \text{ xor } 30\text{h} \text{ xor } 45\text{h} \text{ xor } 30\text{h} \text{ xor } 41\text{h} \text{ xor } 02\text{h} \text{ xor } 30\text{h} \text{ xor} \\ &\quad 30\text{h} \text{ xor } 31\text{h} \text{ xor } 30\text{h} \text{ xor } 30\text{h} \text{ xor } 30\text{h} \text{ xor } 36\text{h} \text{ xor } 34\text{h} \text{ xor } 03\text{h} \\ &= 77\text{h} \end{aligned}$$

4.4. 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

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)

10th-13th) V Freq: Vertical sync frequency (0.01Hz unit)

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

ex) If "H Freq" is '1"2"A"9' (31h, 32h, 41h, 39h), it means 47.77kHz.

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'	
02h	30h	43h	03h
1st	2nd-3rd		4th

ASCII
HEX

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'	
02h	30h	30h	30h	43h	03h
1st	2nd-5th				6th

ASCII
HEX

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'	
02h	42h	31h	03h
1st	2nd-3rd		4th

ASCII
HEX

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'	
02h	41h	31h	30h	xxh	xxh	xxh	-----	xxh	xxh	03h
1st	2nd-3rd		4th-xxth						(xx+1)th	

ASCII
HEX

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
'E'-'0'(45h 30h)	System error / EEPROM error

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) : 'E'-'0'(45h 30h) System error

(xx+1)th 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'	
02h	42h	45h	03h
1st	2nd-3rd		4th

ASCII
HEX

- 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'
02h	41h	31h	xxh	xxh	44h	36h	30h	30h	30h	30h	30h	34h	HEX
1st	2nd-3rd		4th-5th		6th-9th				10th-13th				

Message					
Power status				ETX	ASCII
'x'	'x'	'x'	'x'		
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'		
02h	43h	32h	30h	33h	44h	36h	xxh	xxh	xxh	xxh	03h	ASCII
1st	2nd-7th						8th-11th				12th	HEX

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	30h	31h	30h	31h	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-3th) Result Code

'0'-'0' (30h, 30h) : No error

'0'-'1' (30h, 31h) : Error

4nd-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 revision.

【Controller → Monitor】

Message						
STX	Command Code				ETX	ASCII HEX
	'C'	'0'	'3'	'F'		
02h	43h	30h	33h	46h	03h	
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'		
02h	43h	31h	33h	46h	Data(0) - Data(N) 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'-'1'-'3'-'F' (43h, 31h, 33h, 46h)

6th-xxth) FW Revision strings

Returns the revision 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' (52h)	}	'R'
Data(1) : '2' (32h)		
Data(2) : '3' (33h)	}	'1'
Data(3) : '1' (31h)		
Data(4) : '2' (32h)	}	.'
Data(5) : 'E' (45h)		
Data(6) : '3' (33h)	}	'0'
Data(7) : '0' (30h)		
Data(8) : '3' (33h)	}	'0'
Data(9) : '0' (30h)		
Data(10) : '3' (33h)	}	'0'
Data(11) : '0' (30h)		
Data(12) : '4' (34h)	}	'A'
Data(13) : '1' (31h)		
Data(14) : '4' (34h)	}	'B'
Data(15) : '2' (32h)		

xx+1)th 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'	
02h	43h	32h	31h	31h	03h
1st	2nd-5th				6th

ASCII
HEX

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'	
02h	43h	33h	31h	31h	xxh	xxh	xxh	xxh	xxh	xxh	xxh	xxh	ASCII 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, 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' (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		ASCII HEX
	'C'	'2'	'1'	'2'	'x'	'x'	'x'	'x'	'x'	'x'	'x'	'x'	
02h	43h	32h	31h	32h	xxh	xxh	xxh	xxh	xxh	xxh	xxh	xxh	
1st	2nd-5th				6th-7th		8th-9th		10th-11th		12th-13th		

Message							
Hours		Minutes		Reserved		ETX	ASCII HEX
'x'	'x'	'x'	'x'	'0'	'0'		
xxh	xxh	xxh	xxh	30h	30h	03h	
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-21th		22th	

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, 30h) : 1
 ~
 '0'-'C' (30h, 43h) : 12

12th-13th) Day

'0'-'1' (30h, 30h) : 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-21th) Reserved

'0'-'0' (30h, 30h)

22th) 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		
Command		

STX	Code				Serial Number strings	ETX	ASCII HEX
	'C'	'3'	'1'	'6'	Data(0) - Data(N)		
02h	43h	33h	31h	36h	xxh - xxh	03h	
1st	2nd-5th				6th-17th	18th	

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)	}	'0'
Data(1) : '0' (30h)		
Data(2) : '3' (33h)	}	'1'
Data(3) : '1' (31h)		
Data(4) : '3' (33h)	}	'2'
Data(5) : '2' (32h)		
Data(6) : '3' (33h)	}	'3'
Data(7) : '3' (33h)		
Data(8) : '3' (33h)	}	'4'
Data(9) : '4' (34h)		
Data(10) : '3' (33h)	}	'5'
Data(11) : '5' (35h)		

※ 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

18th 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	ASCII HEX
	'C'	'2'	'1'	'7'		
02h	43h	32h	31h	36h	03h	
1st	2nd-5th				6th	

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' (32h)		
Data(6) : '3' (33h)	}	'3'
Data(7) : '3' (33h)		
Data(8) : '3' (33h)	}	'2'
Data(9) : '2' (34h)		

※ 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+1)th 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 changed).

NOTE

In the case of Aladdin, 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 HEX
xxh	xxh	xxh	xxh	xxh	xxh	xxh	xxh	
8th-9th		10th-11th		12th-13th		14th-15th		6th

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, 30h) : Start-up lock is ON

'0'-'3' (30h, 33h) : Start-up lock and control 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'	
02h	43h	33h	31h	44h	xxh	xxh	xxh	xxh	03h
1st	2nd-5th				6th-7th		8th-9th		10th

ASCII
HEX

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, 30h) : Start-up lock is ON
- '0'-'3' (30h, 33h) : Start-up lock and control 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'	
02h	43h	32h	32h	30h	30h	30h	03h
1st	2nd-5th				6th-7th		8th

ASCII
HEX

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
	02h	'C'	'3'	'2'	'0'	'0'	'0'	
	43h	33h	32h	30h	30h	30h	xxh - xxh	
1st	2nd-5th				6th-7th		8th-xxth	(xx+1)th

ASCII
HEX

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+1)th 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'	
xxh	xxh	xxh	xxh	
14th-15th		16th-17th		18th

ASCII
HEX

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'

0E(30h 45h)

8th -9th) IP Version

04(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'	
02h	43h	33h	32h	42h	xxh	xxh	30h	45h	03h
1st	2nd-5th				6th-7th		8th-9th		10th

ASCII
HEX

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'	
02h	43h	32h	33h	44h	xxh	xxh	03h
1st	2nd-5th			6th-7th		8th	

ASCII
HEX

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'	
02h	43h	33h	33h	44h	xxh	xxh	xxh	xxh	xxh	xxh	xxh	xxh
1st	2nd-5th			6th-7th		8th-9th		10th-11th		12th-13th		

ASCII
HEX

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-21th	

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
22th-23th		24th-25th		26th-27th		28th-29th		30th-31th		32th-33h		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 → 0100001 → 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 -21th)Picture mode

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

22th -23th)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-21th	

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
22th-23th		24th-25th		26th-27th		28th-29th		30th-31th		32th-33h		34th-35th		36th

1st) STX : Start Message

Specify the ASCII code 'STX' (02h).

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

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 → 0100001 → 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 -21th)Picture mode

Don't care.

22th -23th)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-21th		22th-23th	

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-31th		32th-33th		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 -21th)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)

22th -23th)Picture mode

24th -25th)Year

26th -27th)Month

28th -29th)Day

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

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		10th	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'		
02h	43h	41h	30h	34h	30h	30h	03h	ASCII
1st	2nd-7th						8th	HEX

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'		
02h	43h	42h	30h	32h	30h	30h	xxh - xxh	03h
1st	2nd-7th						8th-xxth	(xx+1)th

ASCII
HEX

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) }
 Data(1) : '8' (38h) } 'H'
 Data(2) : '4' (34h) }
 Data(3) : '4' (34h) } 'D'
 Data(4) : '4' (34h) }
 Data(5) : 'D' (44h) } 'M'
 Data(6) : '4' (34h) }
 Data(7) : '9' (49h) } 'I'
 Data(8) : '3' (33h) }
 Data(9) : '1' (31h) } '1'

※ Max 28byte (Max 14 character)

xx+1)th 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'		
02h	43h	41h	30h	34h	30h	31h	xxh - xxh	03h
1st	2nd-7th						8th-xxth	(xx+1)th

ASCII
HEX

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) }
  Data(1) : '8' (38h) } 'H'
  Data(2) : '4' (34h) }
  Data(3) : '4' (34h) } 'D'
  Data(4) : '4' (34h) }
  Data(5) : 'D' (44h) } 'M'
  Data(6) : '4' (34h) }
  Data(7) : '9' (49h) } 'I'
  Data(8) : '3' (33h) }
  Data(9) : '1' (31h) } '1'
```

※ Max 28byte (Max 14 character)

(xx+1)th ETX: End of Message

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

【Monitor→Controller(ACK)】

Message							
STX	Command Code						ETX
	'C'	'B'	'0'	'4'	'0'	'1'	
02h	43h	42h	30h	32h	30h	31h	03h
1st	2nd-7th						8th

ASCII
HEX

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'	
02h	43h	41h	30h	34h	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'-'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	ASCII HEX
	'C'	'B'	'0'	'4'	'0'	'2'	'x'	'x'		
02h	43h	42h	30h	32h	30h	32h	xxh	xxh	03h	
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	ASCII HEX
	'C'	'A'	'0'	'4'	'0'	'3'	'x'	'x'		
02h	43h	41h	30h	34h	30h	33h	xxh	xxh	03h	
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, 31h) : 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	32h	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' (49h)		
Data(8) : '3' (33h)	}	'1'
Data(9) : '1' (31h)		

※ Max 28 byte (Max 14 character)

xx+1)th 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, 31h) : 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		ETX	ASCII HEX
	'C'	'B'	'0'	'4'	'0'	'4'	'x'	'x'		
02h	43h	42h	30h	32h	30h	34h	xxh	xxh	03h	
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	ASCII HEX
	'C'	'A'	'0'	'4'	'0'	'5'	'x'	'x'		
02h	43h	41h	30h	34h	30h	35h	xxh	xxh	03h	
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, 31h) : 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	ASCII HEX
	'C'	'B'	'0'	'4'	'0'	'5'	'x'	'x'		
02h	43h	42h	30h	32h	30h	35h	xxh	xxh	03h	
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, 41h, 30h, 42h,)

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

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		ETX
	Time Setting		

	'C'	'B'	'0'	'B'	'0'	'2'	'x'	'x'		ASCII
02h	43h	42h	30h	42h	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'-'B'-'0'-'2' (43h, 42h, 30h, 43h, 30h, 32h)

8th-9th) Time Setting

Returns the value of the currently set Power Save Time Setting. (1 Step=5 sec.)

'0'-'1' (30h, 30h) : 1 (5 sec)

~

'7'-'8' (33h, 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	ASCII HEX
	'C'	'A'	'0'	'B'	'0'	'3'	'x'	'x'		
02h	43h	41h	30h	42h	30h	33h	xxh	xxh	03h	
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, 30h) : 1 (5 sec)

~

'7'-'8' (33h, 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	ASCII HEX
	'C'	'B'	'0'	'B'	'0'	'3'	'x'	'x'		
02h	43h	42h	30h	42h	30h	33h	xxh	xxh	03h	
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, 43h, 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 Aladdin, the number of terminals is 5.

12th-xxth) TERMINAL List

Returns a list of terminals.

Notes :

For Aladdin, the list of terminals is HOME/HDMI1/HDMI2/HDMI3/USB-C.

So terminla list of Aladdin is the following.

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

xx+1th ETX: End of Message

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

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 settings
00h	12h	0000H - 0064H (Low) - (High)	Contrast settings
00h	14h	0002h : Thru 0009h : 10000K 000Bh : Custom	Color settings If Color temperature is not Thru or Custom, the monitor will reply 0009h.
00h	16h	0000H - 00FFH (Dark) - (Bright)	R Gain settings
00h	18h	0000H - 00FFH (Dark) - (Bright)	G Gain settings
00h	1Ah	0000H - 00FFH (Dark) - (Bright)	B Gain settings
00h	54h	0000H - 004AH (2600K) - (10000K) 1step : 100K	Color temperature settings ※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 settings
00h	68h	0000H : No mean 0001H : English 0002H : German 0003H : French 0004H : Spanish 0005H : Japanese 0006H : Italian 0007H : Swedish 0009H : Russian 000EH : Chinese	Language settings
00h	87h	0000H - 000AH (Soft) - (Sharp)	Sharpness (1 step = 10)
00h	8Ah	0000H - 0064H (Pale) - (To Deep)	Color
00h	8Ch	0000H - 000AH (Soft) - (Sharp)	Sharpness (1 step = 10) ※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)	6 axes - RED (1 step = 2)
00h	9Ch	0000H - 0064H (To Red) - (To Green)	6 axes - YELLOW (1 step = 2)
00h	9Dh	0000H - 0064H (To Yellow) - (To Cyan)	6 axes - GREEN (1 step = 2)
00h	9Eh	0000H - 0064H (To Green) - (To Blue)	6 axes - CYAN (1 step = 2)
00h	9Fh	0000H - 0064H (To Cyan) - (To Magenta)	6 axes - BLUE (1 step = 2)
00h	A0h	0000H - 0064H (To Blue) - (To Red)	6 axes - MAGENDA (1 step = 2)
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 : CUSTOM1 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	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	79h	0000H - FFFFH	Temperature (1Step = 0.5°C) ※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 : All(=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	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	17h	0001H : OFF 0002H : ON	Communication Information
11h	2Ch	005AH - 012CH (0.90%) - (3.00%)	Aspect - Zoom
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	BBh	0000H : No mean 0001H : OFF 0002H : ON	Internal Speaker
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

7. OSD menu correspondence table

(Common menu)

OSD itmes	Message Type	VCP		CTL
		OP Code Page	OP Code	CTL number
PICTURE				
PICUTER MODE	VCP	02h	1Ah	
BACKLIGHT	VCP	00h	10h	
BACKLIGHT DIMMING	VCP	11h	4Eh	
VIDEO BALACK LEVEL	VCP	00h	92h	
GAMMA	VCP	00h	68H	
COLOR				
COLOR	VCP	02h	1Fh	
	VCP	00h	8Ah	
COLOR TEMP	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	7Dh	
ZOOM	VCP	02h	6Fh	
	VCP	11h	2Ch	
AMBIENT LIGHT SENSING	VCP	02h	8Dh	
AUDIO				
AUDIO MODE	VCP	11h	D8h	
VOLUME	VCP	00h	62h	
BALANCE	VCP	00h	93h	
TREBLE	VCP	00h	8Fh	
BASS	VCP	00h	91h	

(Administrator setting)

OSD items	Message Type	VCP		CTL
		OP Code Page	OP Code	CTL number
INPUT				
Input Change				
Startup from App				
Startup App				

AUTO INPUT CHANGE	VCP	02h	40h	
PRIORITY 1	VCP	10h	2Eh	
PRIORITY 2	VCP	10h	2Fh	
PRIORITY 3	VCP	10h	30h	
Input Name Setting	CTL			CA04-03/04
Input Select Setting				
INPUT SIGNAL SETTINGS				
HDMI1				
HDMI MODE	VCP	11h	68h	
VIDOE RANGE	VCP	10h	40h	
HDMI2				
HDMI MODE	VCP	11h	68h	
VIDOE RANGE	VCP	10h	40h	
HDMI3				
HDMI MODE	VCP	11h	68h	
VIDOE RANGE	VCP	10h	40h	
USB-C				
USB-C setting	VCP	11h	68h	
VIDOE RANGE	VCP	10h	40h	
AUDIO				
LINE OUT	VCP	10h	81h	
INTERNL SPEAKER	VCP	11h	BBh	
AUDIO DELAY	VCP	10h	CAh	
DELAY TIME	VCP	10h	CBh	
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
Power Off Schedule	CTL			C23E
Reboot Schedule	CTL			C23E
Schedule List	CTL			C23D
RESET	VCP	02h	CBh	
NETWORK				
Ethernet				
Obtain IP Address Automatically	N/A			
IP SETTING	N/A			
DEFAULT GATEWAY	N/A			
SUBNET MASK	N/A			
DNS1	N/A			
DNS2	N/A			
MAC ADDRESS	N/A			
Proxy	N/A			
[Manual]Proxy Host Name	N/A			
[Manual]Proxy Port	N/A			
[Manual]Bypass Proxy Fro	N/A			
[Auto] Pac				
Wireless LAN				
Bluetooth				
PING	CTL			C22B-0E-04
Network Setting				
Monitor Control				
IP Adres Filter				

Crestron					
RESET		VCP	02h	CBh	
PROTECT					
POWER SAVE SETTINGS					
POWER SAVE	CTL			CA0B-00	
	VCP	00h	E1h	CA0B-01	
TIME SETTING	CTL			CA0B-02	
MODEL	VCP	11h	EEh	CA0B-03	
USB POWER	VCP	11h	75h		
POWER SAVE MESSAGE	VCP	11h	7Bh		
QUICK START	VCP	11h	EAh		
SECURITY SETTINGS					
PASSWORD	CTL			C21D	
Lock Admi Setting					
START-UP LOCK	CTL			C21D	
CONTROL LOCK	CTL			C21D	
LOCK SETTINGS					
SELECT	VCP	10h	D4h		
	VCP	11h	6A		
MODE	VCP	10h	D4h		
	VCP	11h	6A		
POWER	VCP	10h	D5		
	VCP	11h	6B		
VOLUME	VCP	10h	D6		
	VCP	11h	6C		
MIN VOL	VCP	10h	D7		
	VCP	11h	6D		
MAX VOL	VCP	10h	D8		
	VCP	11h	6E		
INPUT	VCP	10h	D9		
	VCP	11h	6F		
ACTIVATE	N/A				
ADVANCED					
User Apps Installatio					
Application Lock					
Enable USB Drive					
SCREEN SAVER					
MOTION	VCP	02h	DDh		
INTERVAL	VCP	02h	DDh		
RESET	VCP	02h	CBh		
SET UP					
App Icon Layout					
PIP					
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		
BACKLIGHT	VCP	10h	C6h		
	VCP	10h	DDh		
	VCP	10h	C7h		

VOLUME	VCP	10h	Deh	
	VCP	10h	D0h	
INPUT	VCP	10h	DFh	
WAIT TIME	VCP	10h	78h	
CLONE SETTING	N/A			
ADVANCED				
POWER INDICATOR	VCP	02h	BEh	
MUTE SETTING	VCP	11h	E9h	
Communication Format				
EXTERNAL CONTROL	N/A			
MONITOR ID	VCP	02h	3Eh	
Application				
Hide System				
Show System				
Restet app preference				
SYSTEM				
	CTL			C211
DATE & TIME	CTL			C212
Language & Keyboard				
LANGUAGE	VCP	00h	68h	
Virtual Keyboard				
Physical Keyboard				
Current Keyboard				
OSD				
OSD TIME	VCP	00h	FCh	
Information OSD	VCP	02h	3Dh	
IP setting	VCP	11h	17h	
Screen Rotation				
Logo Screen				
Startup Animation				
Wallpaper				
Storage Space				
Update Firmware	N/A			
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	
	VCP	10h	10h	
	VCP	10h	11h	
	VCP	10h	28h	
CARBON SAVINGS	VCP	10h	29h	
	VCP	10h	26h	
	VCP	10h	27h	
	VCP	10h	2Ah	

	CARBON USAGE	VCP	10h	2Bh	
	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-C03F	F/W Revision Read Request
CTL-01D6	Power status read
CTL-C203-D6	Power control
CTL-C216	Serial No. Read
CTL-C217	Model Name Read
CTL-CA20	MAC Address Read Request

VCP Command

OP Code Page	OP Code	Explanation
00h	60h	Input Source Select
02h	3Eh	Monitor ID
11h	06h	Input Source Select

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".

8.1 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)".