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I. Application

This document defines the communications method for control of the NEC LCD monitor, MultiSync P403/P463 /P553 /P703 /P801 /X464UN /X554UN /X464UNV /X554UNS /X474HB /X464UNS /X554UNV /X555UNS /X555UNV /X754HB /X554HB /UN551S /UN551VS /X464UNS-2 /X554UNS-2 when using an external controller.

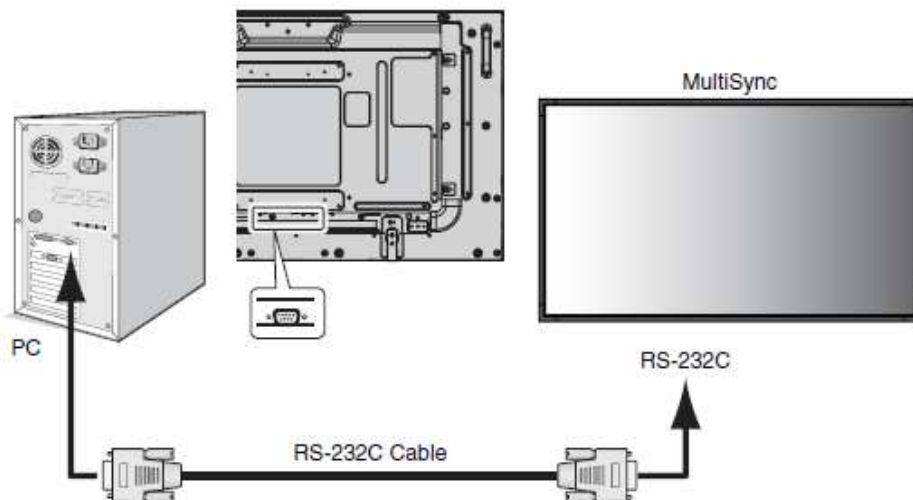
II. Preparation

2. Connectors and wiring

2.1 RS-232C Remote control

Connector: 9-pin D-Sub

Cable: Cross (reversed) cable or null modem cable

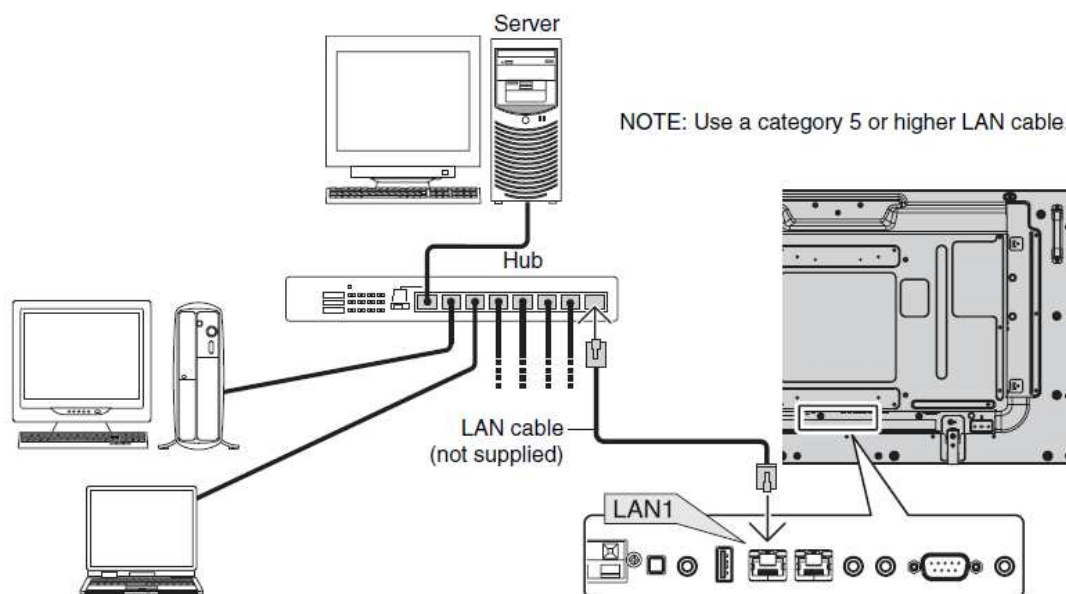


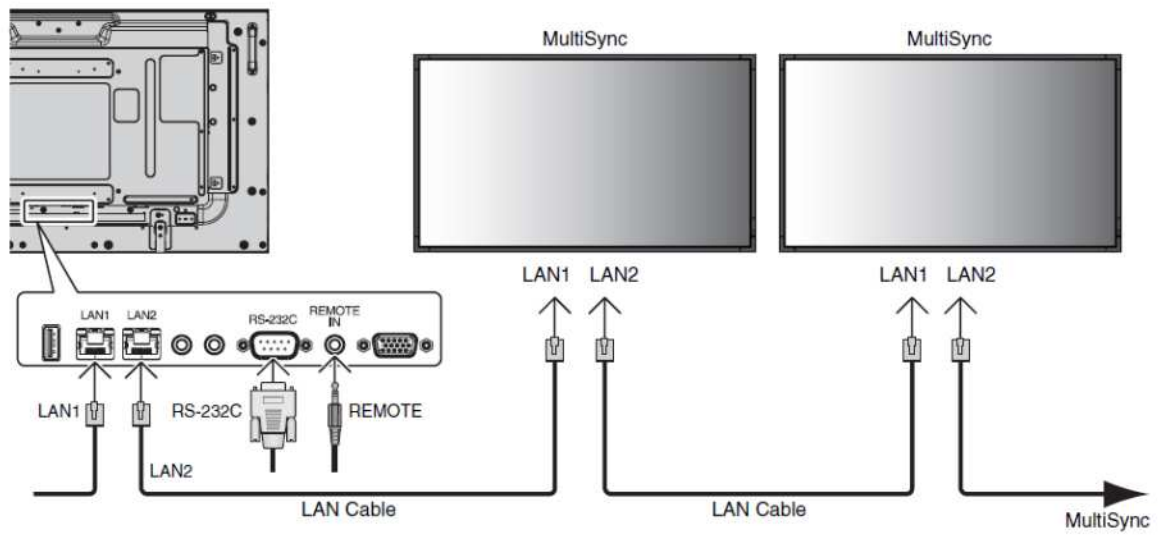
(Please refer "Controlling the LCD monitor via RS-232C Remote control" on User's manual.)

2.2 LAN control

Connector: RJ-45 10/100 BASE-T

Cable: Category 5 or higher LAN cable





(Please refer "Controlling the LCD monitor via LAN control" on User's manual.)

III. Communication specification

3. Communication Parameter

3.1 RS-232C Remote control

(1) Communication system	Asynchronous
(2) Interface	RS-232C
(3) Baud rate	9600bps
(4) Data length	8bits
(5) Parity	None
(6) Stop bit	1 bit
(7) Communication code	ASCII

3.2 LAN control

(1) Communication system	TCP/IP (Internet protocol suite)
(2) Interface	Ethernet (CSMA/CD)
(3) Communication layer	Transport layer (TCP) * Using the payload of TCP segment.
(4) IP address	(Default) Automatic setup * If you need to change, Please refer "Network settings" on User's manual.
(5) Port No.	7142 (Fixed)

(Note)

The monitor will disconnect the connection if no packet data is received for 15 minutes.
And the controller (PC) has to re-connect to control the monitor again, after 15 minutes or more.

3.3 Communication timing

The controller should wait for a reply packet before the next command is sent.

(Note)

When the following commands are sent, a controller should wait for specified period after receiving the reply command before sending the next command.

- Power On, Power Off: 15 seconds
- Input, PIP Input, Auto Setup, Factory Reset: 10 seconds

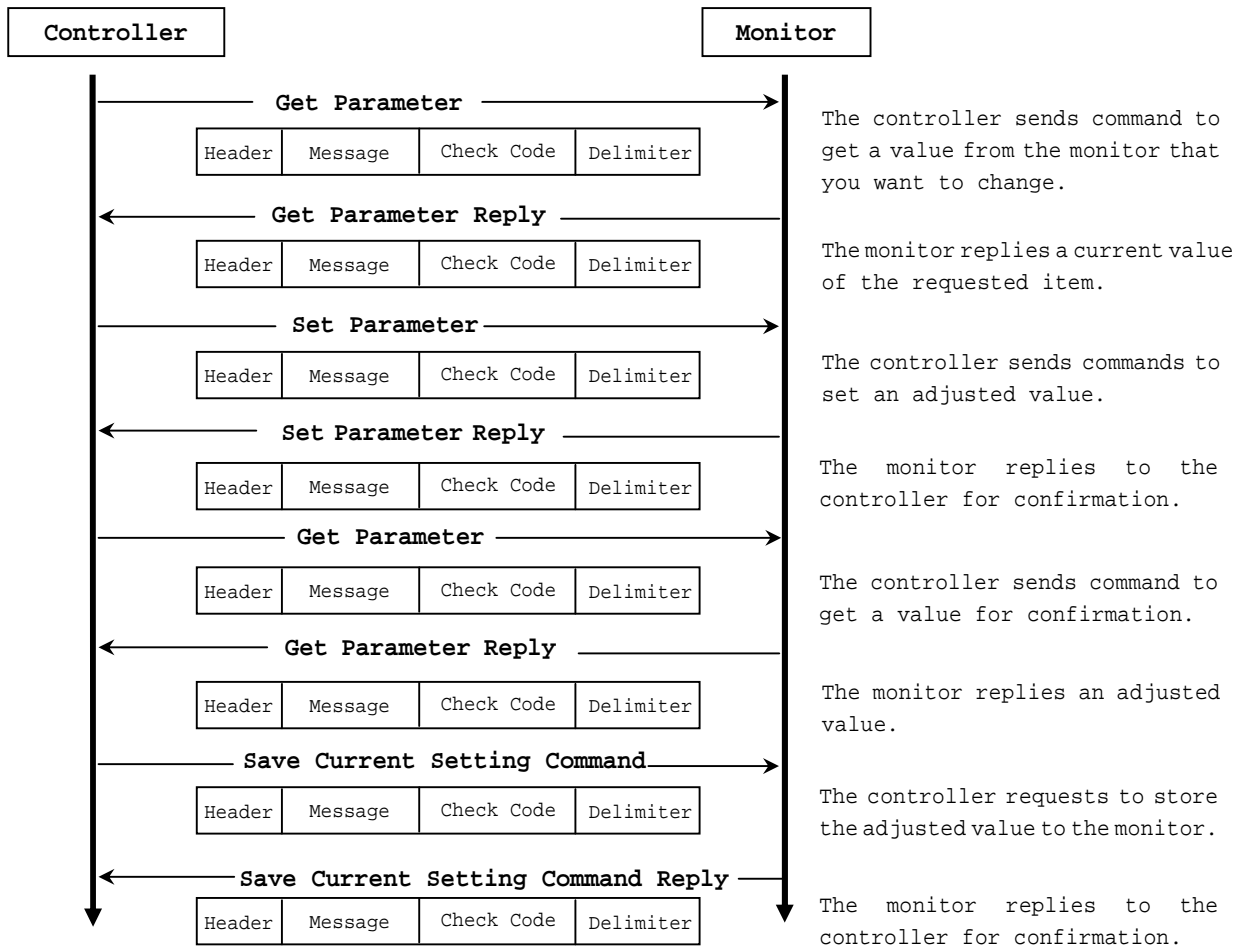
4. Communication Format

Header	Message	Check Code	Delimiter
--------	---------	------------	-----------

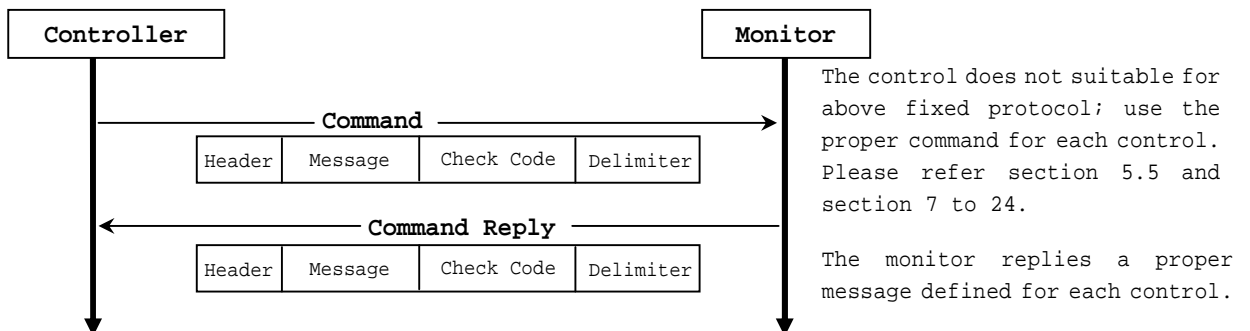
The command packet consists of four parts, Header, Message, Check code and Delimiter.

Recommended sequence of a typical procedure to control a monitor is as follows,
[A controller and a monitor, two-way communication composition figure]

- For the general command (see the part "6.3. Operation Code (OP code) Table")



- For the special command (see the part 7 to 24. and 5.5.2)



4.1 Header block format (fixed length)

Header	Message	Check code	Delimiter
--------	---------	------------	-----------

SOH	Reserved '0'	Destination	Source	Message Type	Message Length
1 st	2 nd	3 rd	4 th	5 th	6 th - 7 th

1stbyte) SOH: Start of Header

ASCII SOH (01h)

2ndbyte) Reserved: Reserved for future extensions.

On this monitor, it must be ASCII '0'(30h).

3rdbyte) Destination: Destination equipment ID. (Receiver)

Specify a commands receiver's address.

The controller sets the "MONITOR ID" or "GROUP ID" of the monitor controlled in here.

On the reply, the monitor sets '0' (30h), always.

"MONITOR ID", "GROUP ID" to "Destination Address" conversion table is as follows,

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	Group 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.) If you want to control a monitor that has the "ID No." as '1', specify a destination address 'A' (41h). If you want to control all of the monitors which are connected by a daisy chain, specify a destination address '*' (2Ah).

4thbyte) Source: Source equipment ID. (Sender)

Specify a sender address.

The controller must be '0' (30h).

On the reply, the monitor sets the own MONITOR ID in here.

5thbyte) Message Type: (Case sensitive.)

Refer to section 4.2 "Message block format" for more details.

ASCII 'A' (41h): Command.

ASCII 'B' (42h): Command reply.

ASCII 'C' (43h): Get current parameter from a monitor.

ASCII 'D' (44h): "Get parameter" reply.

ASCII 'E' (45h): Set parameter.

ASCII 'F' (46h): "Set parameter" reply.

6th -7th bytes) Message Length:

Specify the length of the message (that follows the header) from STX to ETX.

This length includes STX and ETX.

The byte data must be encoded to ASCII characters.

Ex.) The byte data 3Ah must be encoded to ASCII characters '3' and 'A' (33h and 41h).

The byte data 0Bh must be encoded to ASCII characters '0' and 'B' (30h and 42h).

4.2 Message block format

Header	Message	Check code	Delimiter
--------	----------------	------------	-----------

"Message block format" is allied to the "Message Type" in the "Header".

Refer to the section 4.1 "Header block format" for more detail.

1)Get current parameter

The controller sends this message when you want to get the status of the monitor.

For the status that you want to get, specify the "OP code page" and "OP code", refer to "Appendix A. Operation code table".

"Message format" of the "Get current parameter" is as follows,

STX	OP code page		OP code		ETX
	Hi	Lo	Hi	Lo	

➤ Refer to section 5.1 "Get current parameter from a monitor." for more details.

2)Get Parameter reply

The monitor will reply with the status of the requested item specified by the controller in the "Get parameter message".

"Message format" of the "Get parameter reply" is as follows,

STX	Result		OP code page		OP code		Type		Max value			Current Value			ETX
	Hi	Lo	Hi	Lo	Hi	Lo	Hi	Lo	MSB		LSB	MSB		LSB	

➤ Refer to section 5.2 "Get parameter reply" for more details.

3)Set parameter

The controller sends this message to change a setting of the monitor.

Message format of the "Set parameter" is as follows,

STX	OP code page		OP code		Set Value			ETX
	Hi	Lo	Hi	Lo	MSB		LSB	

➤ Refer to section 5.3 "Set parameter" for more details.

4)Set Parameter reply

The monitor replies with this message for a confirmation of the "Set parameter message".

Message format of the "Set parameter reply" is as follows,

STX	Result		OP code page		OP code		Type		Max value			Requested setting Value			ETX
	Hi	Lo	Hi	Lo	Hi	Lo	Hi	Lo	MSB		LSB	MSB		LSB	

➤ Refer to section 5.4 "Set parameter reply" for more details.

5)Command

"Command message" format depends on each command.

Usually, this "command message" is used for some non-slider controls and some special operations,

such as "Save current settings", "Get timing report", "power control", "Schedule", etc. Refer to section 5.5 "Commands message" for more details.

6)Command reply

The monitor replies to a query from the controller.

"Command reply message" format depends on each command.

Refer to section 5.5 "Commands message" for more details.

4.3 Check code

Header	Message	Check code	Delimiter
--------	---------	-------------------	-----------

Check code is the Block Check Code (BCC) between the Header and the End of Message except SOH.

		2^7	2^6	2^5	2^4	2^3	2^2	2^1	2^0
SOH	D_0								
Reserved	D_1								
Destination	D_2								
Source	D_3								
Type	D_4								
Length(H)	D_5								
Length(L)	D_6								
STX	D_7								
Data	D_8								
ETX	D_n								
Check code	D_{n+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

Following is an example of a Check code (BCC) calculation.

Header							Message										Check code (BCC)	Delimiter
SOH	Reserved	Destination Address	Source Address	Message type	Message length		STX	OP code page		Set Value				ETX				
01	30	41	30	45	30	41	02	30	30	31	30	30	30	36	34	03	77	0D
D_0	D_1	D_2	D_3	D_4	D_5	D_6	D_7	D_8	D_9	D_{10}	D_{11}	D_{12}	D_{13}	D_{14}	D_{15}	D_{16}	D_{17}	D_{18}

$$\begin{aligned}
 \text{Check code (BCC) } D_{17} &= D_1 \text{ xor } D_2 \text{ xor } D_3 \text{ xor } \dots \text{ xor } D_{14} \text{ xor } D_{15} \text{ xor } D_{16} \\
 &= 30\text{h xor } 41\text{h xor } 30\text{h xor } 45\text{h xor } 30\text{h xor } 41\text{h} \\
 &\quad \text{xor } 02\text{h xor } 30\text{h xor } 30\text{h xor } 31\text{h xor } 30\text{h xor } 30\text{h} \\
 &\quad \text{xor } 30\text{h xor } 36\text{h xor } 34\text{h xor } 03\text{h} \\
 &= 77\text{h}
 \end{aligned}$$

4.4 Delimiter

Header	Message	Check code	Delimiter
--------	---------	------------	------------------

Packet delimiter code; ASCII CR(0Dh).

5. Message type

5.1 Get current Parameter from a monitor.

STX	OP code page		OP code		ETX
	Hi	Lo	Hi	Lo	
1 st	2 nd -3 rd		4 th -5 th		6 th

Send this message when you want to get the status of a monitor.

For the status that you want to get, specify the "OP code page" the "OP code", refer to "Appendix A. Operation code table".

1stbyte) STX: Start of Message

ASCII STX (02h)

2nd-3rdbytes) OP code page: Operation code page.

Specify the "OP code page" for the control which you want to get the status.

Refer to "Appendix A Operation code table" for each item.

OP code page data must be encoded to ASCII characters.

Ex.) The byte data 02h must be encoded 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)

Refer to Operation code table. (Appendix A)

4th-5thbytes) OP code: Operation code

Refer to "Appendix A Operation code table" for each item.

OP code data must be encoded to ASCII characters.

Ex.) The byte data 3Ah must be encoded to ASCII characters '3' and 'A' (33h and 41h).

OP code 3Ah -> OP code (Hi) = ASCII '3' (33h)

OP code (Lo) = ASCII 'A' (41h)

Refer to Operation code table.

6thbyte) ETX: End of Message

ASCII ETX (03h)

5.2 "Get parameter" reply

STX	Result		OP code page		OP code		Type		Max value			Current Value			ETX
	Hi	Lo	Hi	Lo	Hi	Lo	Hi	Lo	MSB		LSB	MSB		LSB	
1 st	2 nd -3 rd		4 th -5 th		6 th -7 th		8 th -9 th		10 th -13 th			14 th -17 th			18 th

The monitor replies with a current value and the status of the requested item (operation code).

1stbyte) STX: Start of Message

ASCII STX (02h)

2nd-3rdbytes) Result code.

These bytes indicate a result of the requested commands as follows,

00h: No Error.

01h: Unsupported operation with this monitor or unsupported operation under current condition.

This result code from the monitor is encoded to ASCII characters.

Ex.) The byte data 01h is encoded to ASCII character '0' and '1' (30h and 31h).

4th-5thbytes) OP code page: Operation code page.

These bytes indicate a replying item's OP code page.

This returned value from the monitor is encoded to ASCII characters.

Ex.) The byte data 02h is encoded to ASCII character '0' and '2' (30h and 32h).

Refer to the operation code table.

6th-7thbytes) OP code: Operation code

These bytes indicate a replying item's OP code.

This returned value from the monitor is encoded to ASCII characters.

Refer to the operation code table.

Ex.) The byte data 1Ah is encoded to ASCII character '1' and 'A' (31h and 41h).

8th-9thbytes) Type: Operation type code

00h: Set parameter

01h: Momentary

Like the Auto Setup function which automatically changes the parameter.

This returned value from the monitor is encoded to ASCII characters.

Ex.) The byte data 01h is encoded to ASCII character '0' and '1' (30h and 31h).

10th-13thbytes) Max. value: Maximum value which monitor can accept. (16bits)

This returned value from the monitor is encoded to ASCII characters.

Ex.) '0','1','2' and '3' means 0123h (291)

14th-17thbytes) Current Value: (16bits)

This returned value from the monitor is encoded to ASCII characters.

Ex.) '0','1','2' and '3' means 0123h (291)

18th byte) ETX: End of Message

ASCII ETX (03h)

5.3 Set parameter

STX	OP code page		OP code		Set Value			ETX
	Hi	Lo	Hi	Lo	MSB		LSB	
1 st	2 nd -3 rd		4 th -5 th		6 th -9 th			10 th

Send this message to change monitor's adjustment and so on.

The controller requests a monitor to change value.

1stbyte) STX: Start of Message

ASCII STX (02h)

2nd-3rdbytes) OP code page: Operation code page

This OP code page data must be encoded to ASCII characters.

Ex.) The byte data 02h must be encoded to ASCII '0' and '2' (30h and 32h).

Refer to the Operation code table.

4th-5thbytes) OP code: Operation code

This OP code data must be encoded to ASCII characters.

Ex.) OP code 1Ah -> OP code (Hi) = ASCII '1' (31h)

OP code (Lo) = ASCII 'A' (41h)

Refer to the Operation code table.

6th-9thbytes) Set value: (16bit)

This data must be encoded to ASCII characters.

Ex.) 0123h -> 1st(MSB) = ASCII '0' (30h)

2nd = ASCII '1' (31h)

3rd = ASCII '2' (32h)

4th(LSB) = ASCII '3' (33h)

10thbyte) ETX: End of Message

ASCII ETX (03h)

5.4 "Set parameter" reply

STX	Result		OP code page		OP code		Type		Max value				Requested setting Value				ETX
	Hi	Lo	Hi	Lo	Hi	Lo	Hi	Lo	MSB			LSB	MSB			LSB	
1 st	2 nd -3 rd		4 th -5 th		6 th -7 th		8 th -9 th		10 th -13 th				14 th -17 th				18 th

The Monitor echoes back the parameter and status of the requested operation code.

1stbyte) STX: Start of Message

ASCII STX (02h)

2nd-3rdbytes) Result code

ASCII '0' '0' (30h, 30h): No Error.

ASCII '0' '1' (30h, 31h): Unsupported operation with this monitor or unsupported operation under current condition.

4th-5thbytes) OP code page: Echoes back the Operation code page for confirmation.

Reply data from the monitor is encoded to ASCII characters.

Ex.) OP code page 02h -> OP code page = ASCII '0' and '2' (30h and 32h)

Refer to Operation code table.

6th-7thbytes) OP code: Echoes back the Operation code for confirmation.

Reply data from the monitor is encoded to ASCII characters.

Ex.) OP code 1Ah -> OP code (Hi) = ASCII '1' (31h)

OP code (Lo) = ASCII 'A' (41h)

Refer to Operation code table

8th-9thbytes) Type: Operation type code

ASCII '0' '0' (30h, 30h): Set parameter

ASCII '0' '1' (30h, 31h): Momentary

Like Auto Setup function, that automatically changes the parameter.

10th-13thbytes) Max. value: Maximum value that monitor can accept. (16bits)

Reply data from the monitor is encoded to ASCII characters.

Ex.) '0' '1' '2' '3' means 0123h (291)

14th-17thbytes) Requested setting Value: Echoes back the parameter for confirmation. (16bits)

Reply data from the monitor is encoded to ASCII characters.

Ex.) '0' '1' '2' '3' means 0123h (291)

18thbyte) ETX: End of Message

ASCII ETX (03h)

5.5 Commands

"Command message format" depends on each command. Some commands are shown with usage. Refer to section 7 to 13.

5.5.1 Save Current Settings.

The controller requests for the monitor to store the adjusted value.

STX	Command code		ETX
	'0'	'C'	

- Send "0C"(30h, 43h) as Save current settings command.
- Complete "Save Current setting" command packet as follows;

ASCII: 01h-30h-41h-30h-41h-30h-34h-02h-30h-43h-03h-CHK-0Dh

SOH-'0'-'A'-'0'-'A'-'0'-'4'-STX-'0'-'C'-ETX-CHK- CR

The monitor replies the packet for confirmation as follows;

SOH-'0'-'0'-'A'-'B'-'0'-'6'-STX-'0'-'0'-'0'-'C'-ETX-CHK- CR

5.5.2 Get Timing Report and Timing reply.

The controller requests the monitor to report the displayed image timing.

STX	Command code		ETX
	'0'	'7'	

- Send "07"(30h, 37h) as Get Timing Report command.
- Complete "Get Timing Report" command packet as follows;

ASCII: 01h-30h-41h-30h-41h-30h-34h-02h-30h-37h-03h-CHK-0Dh

SOH-'0'-'A'-'0'-'A'-'0'-'4'-STX-'0'-'7'-ETX-CHK- CR

The monitor replies status as the following format;

STX	Command		SS		H Freq.			V Freq.			ETX
	'4'	'E'	Hi	Lo	MSB		LSB	MSB		LSB	

- SS: Timing status byte
 - Bit 7 = 1: Sync Frequency is out of range.
 - Bit 6 = 1: Unstable count
 - Bit 5-2 Reserved (Don't care)
 - Bit 1 1:Positive Horizontal sync polarity.
0:Negative Horizontal sync polarity.
 - Bit 0 1:Positive Vertical sync polarity.
0:Negative Vertical sync polarity.
- H Freq: Horizontal Frequency in unit 0.01kHz
- V Freq: Vertical Frequency in unit 0.01Hz
 - Ex.) When H Freq is '1'2'A'9' (31h, 32h, 41h, 39h), it means 47.77kHz.

5.5.3 NULL Message

STX	Command code		ETX
	'B'	'E'	

The NULL message returned from the monitor is used in the following cases;

- To tell the controller that the monitor does not have any answer to give to the host (not ready or not expected)
- A null message will be returned by the monitor if the "Start Proof of Play" command is sent and the monitor has already started Proof of Play.
- A null message will be returned by the monitor if the "Stop Proof of Play" command is sent and the monitor has not started Proof of Play.
- Complete "NULL Message" command packet as follows;
01h-30h-30h-41h-42h-30h-34h-02h-42h-45h-03h-CHK-0Dh
SOH-'0'-'0'-'A'-'B'-'0'-'4'-STX-'B'-'E'-ETX-CHK- CR

IV. Control Commands

6. Typical procedure example

The following is a sample of procedures to control the monitor, these are examples of "Get parameter", "Set parameter" and "Save current settings".

6.1. How to change the "Backlight" setting.

Step 1. The controller requests the Monitor to reply with the current brightness setting and capability to support this operation. (Get parameter)

Header	Message	Check code	Delimiter
SOH-'0'-Monitor ID-'0'-'C'-'0'-'6'	STX-'0'-'0'-'1'-'0'-ETX	BCC	CR

Header

SOH (01h): Start of Header
'0' (30h): Reserved
Monitor ID: Specify the Monitor ID from which you want to get a value.
Ex.) If Monitor ID is '1', specify 'A'.
'0' (30h): Message sender is the controller.
'C' (43h): Message type is "Get parameter command".
'0'-'6' (30h, 36h): Message length is 6 bytes.

Message

STX (02h): Start of Message
'0'-'0' (30h, 30h): Operation code page number is 0.
'1'-'0' (31h, 30h): Operation code is 10h (in the OP code page 0).
ETX (03h): End of Message

Check code

BCC: Block Check Code
Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

Step 2. The monitor replies with current Backlight setting and capability to support this operation.

Header	Message	Check code	Delimiter
SOH-'0'-'0'-Monitor ID-'D'-'1'-'2'	STX-'0'-'0'-'0'-'0'-'1'-'0'-'0'-'0'-'0'-'0'-'6'-'4'-'0'-'0'-'3'-'2'-ETX	BCC	CR

Header

SOH (01h): Start of Header
'0' (30h): Reserved
'0' (30h): Message receiver is the controller.
Monitor ID: Indicate a replying Monitor ID.
Ex.) When this byte is set to 'A', the replying Monitor ID is '1'.
'D' (44h): Message Type is "Get parameter reply".
'1'-'2' (31h, 32h): Message length is 18 bytes.

Message

STX (02h): Start of Message
'0'-'0' (30h, 30h): Result code. No error.
'0'-'0' (30h, 30h): Operation code page number is 0.
'1'-'0' (31h, 30h): Operation code is 10h (in the page 0).
'0'-'0' (30h, 30h): This operation is "Set parameter" type.
'0'-'0'-'6'-'4' (30h, 30h, 36h, 34h): Backlight max value is 100(0064h).
'0'-'0'-'3'-'2' (30h, 30h, 33h, 32h): Current Backlight setting is 50(0032h) .
ETX (03h): End of Message

Check code

BCC: Block Check Code
Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

Step 3. The controller request the monitor to change the Backlight setting

Header	Message	Check code	Delimiter
SOH-'0'-Monitor ID-'0'-'E'-'0'-'A'	STX-'0'-'0'-'1'-'0'-'0'-'0'-'5'-'0'-ETX	BCC	CR

Header

SOH (01h): Start of Header

'0' (30h): Reserved

Monitor ID: Specify the Monitor ID of which you want to change a setting.

Ex.) If Monitor ID is '1', specify 'A'.

'0' (30h): Message sender is the controller.

'E' (45h): Message Type is "Set parameter command".

'0'-'A' (30h, 41h): Message length is 10 bytes.

Message

STX (02h): Start of Message

'0'-'0' (30h, 30h): Operation code page number is 0.

'1'-'0' (31h, 30h): Operation code is 10h (in the page 0).

'0'-'0'-'5'-'0' (30h, 30h, 35h, 30h): Set Backlight setting 80(0050h).

ETX (03h): End of Message

Check code

BCC: Block Check Code

Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

Step 4. The monitor replies with a message for confirmation.

Header	Message	Check code	Delimiter
SOH-'0'-'0'- Monitor ID - 'F'-'1'-'2'	STX-'0'-'0'-'0'-'0'-'1'-'0'-'0'-'0'-'0'-'0'-'6'-'4'-'0'-'0'-'5'-'0'-ETX	BCC	CR

Header

SOH (01h): Start of Header

'0' (30h): Reserved

'0' (30h): Message receiver is the controller.

Monitor ID: Indicate a replying Monitor ID.

Ex.) When this byte is set to 'A', the replying Monitor ID is '1'.

'F' (46h): Message Type is "Set parameter reply".

'1'-'2' (31h, 32h): Message length is 18 bytes.

Message

STX (02h): Start of Message

'0'-'0' (30h, 30h): Result code. No error.

'0'-'0' (30h, 30h): Operation code page number is 0.

'1'-'0' (31h, 30h): Operation code is 10h (in the page 0).

'0'-'0' (30h, 30h): This operation is "Set parameter" type.

'0'-'0'-'6'-'4' (30h, 30h, 36h, 34h): Backlight max value is 100(0064h).

'0'-'0'-'5'-'0' (30h, 30h, 35h, 30h): Received a Backlight setting was 80(0050h) .

ETX (03h): End of Message

Check code

BCC: Block Check Code

Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

➤ Repeat Step 1 and Step 2, if you need to check the Backlight setting. (Recommended)

Step 5. Request the monitor to store the Backlight setting. (Save Current Settings Command)

Header	Message	Check code	Delimiter
SOH-'0'-Monitor ID- '0'-'A'-'0'-'4'	STX-'0'-'C'-ETX	BCC	CR

Header

SOH (01h): Start of Header

'0' (30h): Reserved

Monitor ID: Specify the Monitor ID which you want to store the setting.

Ex.) If Monitor ID is '1', specify 'A'.

'0' (30h): Message sender is the controller.

'A' (41h): Message type is "Command".

'0'-'4' (30h, 34h): Message length is 4 bytes.

Message

STX (02h): Start of Message

'0'-'C' (30h, 43h): Command code is 0Ch as "Save current settings".

ETX (03h): End of Message

Check code

BCC: Block Check Code

Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

6.2. How to read the measurement value of the built-in temperature sensors.

MultiSync P403/ P463 /P553 /P703 /P801 /X464UN /X554UN /X464UNV /X554UNS /X474HB /X464UNS /X554UNV /X555UNS /X555UNV /X754HB /X554HB /UN551S /UN551VS /X464UNS-2 /X554UNS-2 have three built-in temperature sensors.

The controller can monitor inside temperatures by using those sensors with external control.

The following shows the procedure for reading the temperatures from the sensors.

Step 1. Select a temperature sensor which you want to read.

Header	Message	Check code	Delimiter
SOH-'0'-Monitor ID-'0'-'E'-'0'-'A'	STX-'0'-'2'-'7'-'8'-'0'-'0'-'0'-'1'-ETX	BCC	CR

Header

SOH (01h): Start of Header
 '0' (30h): Reserved
 Monitor ID: Specify the Monitor ID which you want to get a value.
 Ex.) If Monitor ID is '1', specify 'A'.
 '0' (30h): Message sender is the controller.
 'E' (45h): Message Type is "Set parameter command".
 '0'-'A' (30h, 41h): Message length is 10 bytes.

Message

STX (02h): Start of Message
 '0'-'2' (30h, 32h): Operation code page number is 2.
 '7'-'8' (37h, 38h): Operation code is 78h (on page 2).
 '0'-'0'-'0'-'1' (30h, 30h, 30h, 31h): Select the temperature sensor #1 (01h).
 00h: No meaning
 01h: Sensor #1
 02h: Sensor #2
 03h: Sensor #3
 ETX (03h): End of Message

Check code

BCC: Block Check Code
 Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

Step 2. The monitor replies for confirmation.

Header	Message	Check code	Delimiter
SOH-'0'-'0'-Monitor ID-'F'-'1'-'2'	STX-'0'-'0'-'0'-'2'-'7'-'8'-'0'-'0'-'0'-'3'-'0'-'0'-'0'-'1'-ETX	BCC	CR

Header

SOH (01h): Start of Header
 '0' (30h): Reserved
 '0' (30h): Message receiver is the controller.
 Monitor ID: Indicates a replying Monitor ID.
 Ex.) When this byte is set to 'A', the replying Monitor ID is '1'.
 'F' (46h): Message Type is "Set parameter reply".
 '1'-'2' (31h, 32h): Message length is 18 bytes.

Message

STX (02h): Start of Message
 '0'-'0' (30h, 30h): Result code. No error.
 '0'-'2' (30h, 32h): Operation code page number is 2.
 '7'-'8' (37h, 38h): Operation code is 78h (in the page 2).
 '0'-'0' (30h, 30h): This operation is "Set parameter" type.

'0'-'0'-'0'-'3' (30h, 30h, 30h, 33h): Number of temperature sensors are 3 (0003h).
 '0'-'0'-'0'-'1' (30h, 30h, 30h, 31h): temperature sensor is #1.
 ETX (03h): End of Message

Check code

BCC: Block Check Code
 Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

Step 3. The controller requests the monitor to send the temperature from the selected sensor.

Header	Message	Check code	Delimiter
SOH-'0'-Monitor ID- '0'-'C'-'0'-'6'	STX-'0'-'2'-'7'-'9'-ETX	BCC	CR

Header

SOH (01h): Start of Header
 '0' (30h): Reserved
 Monitor ID: Specify the Monitor ID which you want to get a value.
 Ex.) If Monitor ID is '1', specify 'A'.
 '0' (30h): Message sender is the controller.
 'C' (43h): Message Type is "Get parameter".
 '0'-'6' (30h, 36h): Message length is 6 bytes.

Message

STX (02h): Start of Message
 '0'-'2' (30h, 32h): Operation code page number is 2.
 '7'-'9' (37h, 39h): Operation code is 79h (in the page 2).
 ETX (03h): End of Message

Check code

BCC: Block Check Code
 Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

Step 4. The monitor replies a temperature of selected sensor.

Header	Message	Check code	Delimiter
SOH-'0'-'0'-Monitor ID- 'D'-'1'-'2'	STX-'0'-'0'-'0'-'2'-'7'-'9'-'0'-'0' -'F'-'F'-'F'-'F'-'0'-'0'-'3'-'2'-ETX	BCC	CR

Header

SOH (01h): Start of Header
 '0' (30h): Reserved
 '0' (30h): Message receiver is the controller.
 Monitor ID: Indicate a replying Monitor ID.
 Ex.) When this byte is set to 'A', the replying Monitor ID is '1'.
 'D' (44h): Message Type is "Get parameter reply".
 '1'-'2' (31h, 32h): Message length is 18 bytes.

Message

STX (02h): Start of Message
 '0'-'0' (30h, 30h): Result code. No error.
 '0'-'2' (30h, 32h): Operation code page number is 2.
 '7'-'9' (37h, 39h): Operation code is 79h (in the page 2).
 '0'-'0' (30h, 30h): This operation is "Set parameter" type.
 'F'-'F'-'F'-'F' (46h, 46h, 46h, 46h): Maximum value.
 '0'-'0'-'3'-'2' (30h, 30h, 33h, 32h): The temperature is 25 degrees Celsius.

Readout value is 2's complement.

Temperature[Celsius]	Readout value	
	Binary	Hexadecimal
+125.0	0000 0000 1111 1010	00FAh
+ 25.0	0000 0000 0011 0010	0032h
+ 0.5	0000 0000 0000 0001	0001h
0	0000 0000 0000 0000	0000h
- 0.5	1111 1111 1111 1111	FFFFh
- 25.0	1111 1111 1100 1110	FFCEh
- 55.0	1111 1111 1001 0010	FF92h

ETX (03h): End of Message

Check code

BCC: Block Check Code

Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

6.3. Operation Code (OP code) Table

	Item	OP code page	OP code	Parameter	Remarks	
PICTURE	BACKLIGHT	00h	10h	0: dark 100(64h): bright		
	CONTRAST	00h	12h	0: low 100(64h): high		
	SHARPNESS	00h	8Ch	0: dull 24(18h): sharp		
	BRIGHTNESS	00h	92h	0: dark 100(64h): bright		
	HUE	00h	90h	0: purplish 100(64h): greenish		
	COLOR	02h	1Fh	0: pale 100(64h): deep		
	COLOR TEMPERATURE	00h	54h	0:2600K 74(4Ah):10000K	100K/step	
	COLOR TEMPERATURE (CUSTOM)	00h	14h	9: 10000K 11(0Bh): CUSTOM		
	R GAIN	00h	16h	0: Dark 255(FFh): Bright		
	B GAIN	00h	18h	0: Dark 255(FFh): Bright		
	G GAIN	00h	1Ah	0: Dark 255(FFh): Bright		
	COLOR CONTROL	00h	RED: 9Bh YELLOW: 9Ch GREEN: 9Dh CYAN: 9Eh BLUE: 9Fh MAGENTA: A0h	0: 100(64h):(center) 200(C8h):		
	GAMMA CORRECTION	02h	68h	0: No mean 1: NATIVE 4: 2.2 8: 2.4 7: S GAMMA 5: DICOM SIM. 6: PROGRAMABLE1 13(0Bh): PROGRAMABLE2 14(0Ch): PROGRAMABLE3		
	MOVIE SETTINGS	ADAPTIVE CONTRAST	02h	8Dh	0: No mean 1: Off 2: LOW 4: High	
		NOISE REDUCTION	02h	26h	0: Off 7: High	Page02 OPcode20h also works as same.

	Item	OP code page	OP code	Parameter	Remarks
	TELECINE	02h	23h	0: No mean 1: Off 2: Auto	
	PICTURE MODE	02h	1Ah	0: No mean 1: sRGB 3: HIGHBRIGHT 4: STANDARD 5: CINEMA 8: CUSTOM1 9: CUSTOM2	sRGB: PC mode only CINEMA: A/V mode only
	RESET (PICTURE)	02h	CBh	0: No mean 2: Reset Picture category	Momentary
ADJUST	AUTO SETUP	00h	1Eh	0: No mean 1: Execute	Momentary
	AUTO ADJUST	10h	B7h	0: No mean 1: OFF 2: ON	
	H POSITION	00h	20h	0: Left side Max.: Right side	Depends on a display timing
	V POSITION	00h	30h	0: Bottom side Max.: Top side	Depends on a display timing
	CLOCK	00h	0Eh	0: Max. :	
	PHASE	00h	3Eh	0: Max. :	
	H RESOLUTION	02h	50h	0: Low Max. : High	
	V RESOLUTION	02h	51h	0: Low Max.: High	

Item		OP code page	OP code	Parameter	Remarks
INPUT RESOLUTION		02h	DAh	Input Resolution select 0:No mean 1:Item 1(always Auto) 2:Item 2 3:Item 3 4:Item 4 5:Item 5 Ex) Item 1= AUTO Item 2= -- / 1024x768 / 1400x1050 / 800x600 / 1280x960 Item 3= -- / 1280x768 / 1680x1050 / 1024x576 / 1600x900 / Item 4= -- / 1360x768 / -- / -- / -- Item 5= -- / 1366x768 -- / -- / --	
ASPECT		02h	70h	0: No mean 1: NORMAL 2: FULL 3: WIDE 4: ZOOM 6: DYNAMIC 7: 1:1	Wide: Dynamic A/V mode only
Zoom Control	ZOOM	11h	2Ch	0-89(59h): No mean 90(5Ah): 90% 91(5Bh): 91% 100(64h): 100% 300(12Ch): 300%	The following commands can also be used. OP code page 02h OP code 6Fh Parameter 0: No mean 1: 100% 2: 101% 201(C9h): 300%
	H ZOOM	11h	2Dh	0-89(59h): No mean 90(5Ah): 90% 91(5Bh): 91% 100(64h): 100% 300(12Ch): 300%	The following commands can also be used. OP code page 02h OP code 6Ch Parameter 0: No mean 1: 100% 2: 101% 201(C9h): 300%

	Item	OP code page	OP code	Parameter	Remarks
	V ZOOM	11h	2Eh	0-89(59h): No mean 90(5Ah): 90% 91(5Bh): 91% 100(64h): 100% 300(12Ch): 300%	The following commands can also be used. OP code page 02h OP code 6Dh Parameter 0: No mean 1: 100% 2: 101% 201(C9h): 300%
	H POS	02h	CCh	0: Left side 200(C8h): Right side	
	V POS	02h	CDh	0: Down side 200(C8h): Up side	
	IMAGE FLIP	02h	D7h	0: No mean 1: NONE 2: H FLIP 3: V FLIP 4: 180 ROTATE	
	OSD FLIP	10h	B8h	0: No mean 1: OFF 2: ON	
	RESET (ADJUST)	02h	CBh	0: No mean 3: Reset Adjust category	Momentary
	VOLUME	00h	62h	0: whisper 100(64h): loud	
	BALANCE	00h	93h	0: Left 30(1Eh):(Center) 60(3Ch): Right	
		00h	94h	0: No mean 1: MONAURAL 2: STEREO	
	TREBLE	00h	8Fh	0: Min. 6:(Center) 12(0Ch): Max.	
BASS	00h	91h	0: Min. 6:(Center) 12(0Ch): Max.		
PIP AUDIO	10h	80h	0: No mean 1: MAIN AUDIO 2: PIP AUDIO		
LINE OUT	10h	81h	0: No mean 1: FIXED 2: VARIABLE		
SURROUND	02h	34h	0: No mean 1: OFF 2: ON		

AUDIO

	Item		OP code page	OP code	Parameter	Remarks	
	AUDIO INPUT		02h	2Eh	0: No mean 1: IN1 2: IN2 3: IN3 4: HDMI 6: OPTION 7: DPORT 8: DPORT2 9: DPORT3 10(0Ah): HDMI2 11(0Bh): HDMI3		
	AUDIO DELAY		10h	CAh	0: No mean 1: OFF 2: ON		
	DELAY TIME		10h	CBh	0: (small) 100(64h): (large)		
	RESET (AUDIO)		02h	CBh	0: No mean 4: Reset Audio category	Momentary	
SCHEDULE	OFF TIMER		02h	2Bh	0: Off 1: 1 hour 24(18h): 24 hours	1 hour/step	
	SCHEDULE	ENABLE	02h	E5h	0: No mean 1: No.1 Enable 7: No.7 Enable		
		DISABLE	02h	E6h	0: No mean 1: No.1 Disable 7: No.7 Disable		
	SCHEDULE SETTINGS		Refer to chapter 10				
	DATE & TIME		Refer to chapter 9				
	DAYLIGHT SAVING		Refer to chapter 9 and 15				
	RESET (SCHEDULE)		02h	CBh	0: No mean 5: Reset Schedule category	Momentary	
PIP	KEEP PIP MODE		10h	82h	0: No mean 1: OFF 2: ON		
	PIP MODE		02h	72h	0: No mean 1: OFF 2: PIP 3: POP (4: STILL) 5: PICTURE BY PICTURE - ASPECT 6: PICTURE BY PICTURE - Full		
	PIP SIZE		10h	B9h	0(small) 80(large)		
	PIP POSITION	X	02h	74h	0: left 100(64h): right		
		Y	02h	75h	0: top 100(64h): bottom		

Item		OP code page	OP code	Parameter	Remarks	
ASPECT		10h	83h	0: No mean 1: NORMAL 2: FULL 3: WIDE 4: ZOOM		
TEXT TICKER	MODE	10h	08h	0: No mean 1: OFF 2: HORIZONTAL 3: VERTICAL		
	POSITION	10h	09h	0: Top/Left 100(64h): Bottom/Right		
	SIZE	10h	0Ah	0-1: Do not set. 2: Narrow(2/24) 8: Wide(8/24)		
	BLEND	10h	0Bh	0: No mean 1: 10% 10(0Ah): 100%		
	DETECT	10h	0Ch	0: No mean 1: AUTO 2: OFF		
	FADE IN	10h	0Dh	0: No mean 1: ON 2: OFF		
PIP INPUT(SUB INPUT)		02h	73h	0: No mean 1: VGA 2: RGB/HV 3: DVI 4: HDMI (Set only) 5: VIDEO 7: S-VIDEO 12(0Ch): Y/Pb/Pr 13(0Dh): OPTION 14(0Eh): Y/Pb/Pr2 (SCART) 15(0Fh): DPORT 16(10h): DPORT2 17(11h): HDMI 18(12h): HDMI2 128(80h): DPORT3 130(82h): HDMI3	This operation has limitation of selection. Please refer to the monitor instruction manual.	
RESET (PIP)		02h	CBh	0: No mean 6: Reset PIP Category	Momentary	
OSD	LANGUAGE		00h	68h	0: No mean 1: ENGLISH 2: GERMAN 3: FRENCH 4: SPANISH 5: JAPANESE 6: ITALIAN 7: SWEDISH 9: RUSSIAN 14(0Eh): CHINESE	OSD Language
	MENU DISPLAY TIME		00h	FCh	0-1: Do not set. 2: 10s 3: 15s 48(30h): 240s	5sec/step
	OSD POSITION	X	02h	38h	0: Left 255(FFh): Right	

Item		OP code page	OP code	Parameter	Remarks	
	Y	02h	39h	0: Down 255(FFh): Up		
INFORMATION OSD		02h	3Dh	0:Disable information OSD 3-10(0Ah): OSD timer [seconds]		
MONITOR INFORMATION	MODEL NAME	Refer to chapter 12				
	SERIAL	Refer to chapter 12				
	FIRMWARE1	Refer to chapter 16				
	FIRMWARE2	Refer to chapter 16				
	CARBON SAVINGS	10h	10h (g) /11h (kg)	0 - 999(3E7h)(g) 0 - 65535(FFFFh)(kg)	Read Only	
CARBON USAGE	10h	26h (g) /27h (kg)	0 - 999(3E7h)(g) 0 - 65535(FFFFh)(kg)	Read Only		
OSD TRANSPARENCY		02h	B8h	0: No mean 1: OFF 2: ON		
OSD ROTATION		02h	41h	0: Landscape 1: Rotated		
INPUT NAME		Refer to chapter 18				
NAME RESET						
MEMO		10h	BAh	0: No mean 1: Display a Memo 2: Undisplay a Memo		
RESET (OSD)		02h	CBh	0: No mean 7: Reset OSD category	Momentary	
MONITOR ID		02h	3Eh	1-100:ID		
GROUP ID		10h	7Fh	0: No assignment 1: Group A 2: Group B 3: Group AB 4: Group C 5: Group AC 1023(3FFh):Group ABCDEFGHIJ	Bit0:Group A Bit1:Group B Bit2:Group C Bit3:Group D Bit4:Group E Bit5:Group F Bit6:Group G Bit7:Group H Bit8:Group I Bit9:Group J	
AUTO ID		Refer to chapter 17				
AUTO ID RESET		Refer to chapter 17				
MULTI DISPLAY	IR LOCK SETTING	MODE SELECT	10h	D4h	0: No mean 1: UNLOCK 2: ALL LOCK 3: CUSTOM LOCK	The following commands can also be used. OP code page 02h OP code 3Fh Parameter 0: No mean 1: NORMAL 4: LOCK
		POWER	10h	D5h	0: No mean 1: UNLOCK 2: LOCK	
		VOLUME	10h	D6h	0: No mean 1: UNLOCK 2: LOCK	

Item	OP code page	OP code	Parameter	Remarks	
	MIN VOL	10h	D7h	0 (whisper) 100(64h) (laud)	
	MAX VOL	10h	D8h	0 (whisper) 100(64h) (laud)	
	INPUT	10h	D9h	0: No mean 1: UNLOCK 2: LOCK	
	UNLOCK SELECT	10h	DAh	0: No mean 1: VGA 2: RGB/HV 3: DVI 4: HDMI (Set only)	
		10h	DBh	5: VIDEO 6: VIDEO2 7: S-VIDEO 12(0Ch): Y/Pb/Pr 13(0Dh): OPTION 14(0Eh): Y/Pb/Pr2 (SCART)	
		10h	DCh	15(0Fh): DPORT 16(10h): DPORT2 17(11h): HDMI 128(80h): DPORT3 130(82h): HDMI3	
	TILE MATRIX	H MONITOR	02h	D0h	0: No mean 1 10(0Ah)
V MONITOR		02h	D1h	0: No mean 1 10(0Ah)	Number of V-division
POSITION		02h	D2h	0: No mean 1 100(64h)	
TILE COMP		02h	D5h	0: No mean 1: NO 2: YES	
ENABLE		02h	D3h	0: No mean 1: NO 2: YES	
FRAME COMP		11h	01h	0: No mean 1: NONE 2: AUTO 3: MANUAL	Available on X464UN, X554UN, X464UNV, X554UNS
AUTO		11h	02h	0: No mean 50(32h): 0.5F 100(64h): 1.0F 150(96h): 1.5F 200(C8h): 2.0F	Available on X464UN, X554UN, X464UNV, X554UNS This command is used when FRAME COMP is set as "AUTO".

Item		OP code page	OP code	Parameter	Remarks	
	MANUAL	11h	03h	0: No mean 25(19h): 0.25F 50(32h): 0.50F 75(4Bh): 0.75F 100(64h): 1.00F 125(7Dh): 1.25F 150(96h): 1.50F 175(Afh): 1.75F 200(C8h): 2.00F	Available on X464UN, X554UN, X464UNV, X554UNS This command is used when FRAME COMP is set as "MANUAL".	
	V SCAN REVERSE	11h	04h	0: No mean 1: NONE 2: AUTO 3: MANUAL	Available on X464UN, X554UN, X464UNV, X554UNS	
	MANUAL	11h	05h	0: No mean 1: NON REVERSE 2: REVERSE	Available on X464UN, X554UN, X464UNV, X554UNS This command is used when V SCAN REVERSE is set as "MANUAL".	
TILE MATRIX MEM		10h	4Ah	0: No mean 1: COMMON 2: INPUT		
AUTO TILE MATRIX SETIP		Refer to chapter 19				
POWER ON DELAY		02h	D8h	0: Off (0sec) 50(32h): 50sec		
LINK TO ID		10h	BCh	0: No mean 1: OFF 2: ON		
VIDEO OUT SETTING		10h	EAh	0: No mean 1: ON 2: OFF		
POWER INDICATOR		02h	BEh	0: No mean 1: ON 2: OFF		
SETTING COPY		Refer to Chapter 21				
RESET (MULTI DISPLAY)		02h	CBh	0: No mean 8: Reset Multi Display Category	Momentary	
DISPLAY PROTECTION	POWER SAVE		Refer to Chapter 20			
	HEAT STATUS	FAN1/2/3	02h	7Ah /7Bh	Select target FAN. (7Ah) 0: No mean 1: FAN#1 2: FAN#2 3: FAN#3 Read status of target FAN.(7Bh) 0: OFF 1: ON 2: ERROR	Read Only
	BACKLIGHT		Refer to Chapter 11 (Self-diagnosis status read)			
	TEMPERATURE SENSOR1/2/3		02h	79h	Return value is 2's complement. (0.5°C step)	Offset affects to a selected sensor. Select sensor (Page02h OPcode78h) 1 : SENSOR #1 2 : SENSOR #2 3 : SENSOR #3

Item		OP code page	OP code	Parameter	Remarks	
FAN CONTROL	COOLING FAN	02h	7Dh	0: No mean 1: AUTO 2: ON		
	FAN SPEED	10h	3Fh	0: No mean 1: HIGH 2: LOW		
	SENSOR1	10h	E0h/E1h	E0h: Set centigrade 0 - 65535(FFFFh) E1h: Set offset frommax. value 0 - 10(0Ah)		
	SENSOR2	10h	E2h/E3h	E2h: Set centigrade 0 - 65535(FFFFh) E3h: Set offset frommax. value 0 - 10(0Ah)		
	SENSOR3	10h	E4h/E5h	E4h: Set centigrade 0 - 65535(FFFFh) E5h: Set offset frommax. value 0 - 10(0Ah)		
SCREEN SAVER	GAMMA	02h	DBh	0: No mean 1: OFF 2: ON		
	BACKLIGHT	02h	DCh	0: No mean 1: OFF 2: ON		
	MOTION	INTER VAL	02h	DDh	0: OFF(0s) 90(5Ah): 900s	10s/step
	ZOOM	10h	35h	0 : 95% 5 : 100% 10(0Ah) : 105%		
SIDE BORDER COLOR		02h	DFh	0: Black 100(64h): White		
CHANGE PASSWORD				N/A		
SECURITY		Refer to Chapter 22				
RESET (DISPLAY PROTECTION)		02h	CBh	0: No mean 9: Reset Display Protection category	Momentary	
EXTERNAL CONTROL	IP ADDRESS SETTING				N/A	
	MAC ADDRESS		Refer to Chapter 23			
	LAN POWER		10h	D3h	0: No mean 1: OFF 2: ON	
	DDC/CI		10h	BEh	0: No mean 1: OFF 2: ON	
	PING				N/A	
	IP ADDRESS RESET				N/A	
	RESET (EXTERNAL CONTROL)		02h	CBh	0: No mean 12(0Ch): Reset External Control Category	Momentary

	Item	OP code page	OP code	Parameter	Remarks	
ADVANCED OPTION1	INPUT DETECT	02h	40h	0: FIRST DETECT 1: LAST DETECT 2: NONE 3: VIDEO DETECT 4: CUSTOM DETECT		
	CUSTOM DETECT	PRIORITY1	10h	2Eh	0: No mean 1: VGA 2: RGB/HV 3: DVI 4: HDMI (Set only) 5: VIDEO	
		PRIORITY2	10h	2Fh	7: S-VIDEO 12(0Ch): Y/Pb/Pr 13(0Dh): OPTION 14(0Eh): Y/Pb/Pr2 (SCART)	
		PRIORITY3	10h	30h	15(0Fh): DPORT 16(10h): DPORT2 17(11h): HDMI 18(12h): HDMI2 128(80h): DPORT3: 130(82h): HDMI3	
	LONG CABLE COMP	ON/OFF	10h	3Dh	0: No mean 1: OFF 2: ON	
		SOG PEAK	10h	37h	0 - 32(20h)	
		GAIN	10h	38h	0 - 32(20h)	
		R-H. POSITION	02h	58h	0 - 7	
		G-H. POSITION	02h	59h	0 - 7	
		B-H. POSITION	02h	5Ah	0 - 7	
	INPUT CHANGE	SYNC TERMINATION	02h	E1h	0: No mean 1: HIGH 2: LOW	
		INPUT CHANGE	10h	86h	0: No mean 1: NORMAL 2: QUICK 3: SUPER	When you set up "SUPER", please set up INPUT1 and INPUT2 first.
		INPUT1	10h	CEh	0: No mean 1: VGA 2: RGB/HV 3: DVI 4: HDMI (Set only) 5: VIDEO 7: S-VIDEO	
	INPUT2	10h	CFh	12(0Ch): Y/Pb/Pr 13(0Dh): OPTION 14(0Eh): Y/Pb/Pr2 15(0Fh): DPORT 16(10h): DPORT2 17(11h): HDMI 18(12h): HDMI2 128(80h): DPORT3 130(82h): HDMI3		
	TERMINAL SETTING	DVI MODE	02h	CFh	0: No mean 1: DVI-PC 2: DVI-HD	
		BNC MODE	10h	7Eh	0: No mean 1: RGB 2: COMPONENT	

Item		OP code page	OP code	Parameter	Remarks		
	D-SUB MODE	10h	8Eh	0: No mean 1: RGB 2: COMPONENT			
	SCART MODE	02h	9Eh	0: OFF 1: ON			
	DisplayPort	10h	F1h/F2h	Select target DPORT. (F1h) 0: No mean 1: DPORT 2: DPORT2 3: DPORT3 Read / Write status of target DPORT.(F2h) 0: No mean 1: 1.1a 2: 1.2			
	HDMI SIGNAL	10h	40h	0: No mean 1: EXPAND 2: RAW			
DEINTERLACE		02h	25h	0: No mean 1: Off 2: ON			
COLOR SYSTEM		02h	21h	0: No mean 1: NTSC 2: PAL 3: SECAM 4: AUTO 5: 4.43NTSC 6: PAL-60			
OVER SCAN		02h	E3h	0: No mean 1: OFF 2: ON			
OPTION SETTING	OPTION POWER		10h	41h	0: OFF 1: ON		
	AUDIO		10h	B0h	0: No mean 1: ANALOG 2: DIGITAL		
	INTERNAL PC	OFF WARNIN G	10h	C0h	0: No mean 1: OFF 2: ON		
		AUTO OFF	10h	C1h	0: No mean 1: OFF 2: ON		
		START UP PC	10h	C2h	0: No mean 1: Execute		
		FORCE QUIT	10h	C3h	0: No mean 1: Execute		
120Hz		10h	87h	0: No mean 1: ON 2: OFF			
TOUCH PANEL	STANDBY		10h	C4h	0: No mean 1: OFF 2: ON		
	PC SOURCE		10h	C5h	0: No mean 1: AUTO 2: EXTERNAL PC		
RESET (ADVANCED OPTION1)		02h	CBh	0: No mean 10(0Ah): Reset Advanced option1 category	Momentary		
AD	AUTO DIMMING	AUTO BRIGHTNESS		02h	2Dh	0: OFF 1: ON	

Item		OP code page	OP code	Parameter	Remarks	
	ROOM LIGHT SENSING	10h	C8h	0: No mean 1: OFF 2: MODE1 3: MODE2		
	BACKLIGHT SETTING	MAX LIMIT	10h	C9h	0 - 100(64h)	
		IN BRIGHT	10h	33h	0 - 100(64h)	
		IN DARK	10h	34h	0 - 100(64h)	
		SENSING LUX	02h	B4h	Current Illuminance read	Read only
HUMAN SENSING	HUMAN SENSING MODE		10h	75h	0: No mean 1: DISABLE 2: AUTO OFF 4: CUSTOM	
	BACKLIGHT	ON/OFF	10h	DDh	0: No mean 1: Off 2: On	
		BACKLIGHT	10h	C6h	0: dark 100(64h): light	
	VOLUME	ON/OFF	10h	DEh	0: No mean 1: Off 2: On	
		VOLUME	10h	C7h	0: whisper 100(64h): loud	
	INPUT SELECT	ON/OFF	10h	DFh/D0h	0: No mean 1: Off 2: On	
		INPUT	10h	D0h	0: No mean 1: VGA 2: RGB/HV 3: DVI 4: HDMI (Set only) 5: VIDEO 7: S-VIDEO 12(0Ch): Y/Pb/Pr 13(0Dh): OPTION 14(0Eh): Y/Pb/Pr2 (SCART) 15(0Fh): DPORT 16(10h): DPORT2 17(11h): HDMI 18(12h): HDMI2 128(80h): DPORT3 130(82h): HDMI3	
	WAITING TIME		10h	78h	30(1Eh): short 600(258h): long *1step: 1sec.	
INTELLI WIRELESS DATA		10h	ECh	0: No mean 1: OFF 2: ON		
RESET (ADVANCED OPTION2)		02h	CBh	0: No mean 11(0Bh): Reset Advanced option category	Momentary	
FACTORY RESET		02h	CBh	0: No mean 1: Factory Reset	Momentary	

Item	OP code page	OP code	Parameter	Remarks
INPUT	00h	60h	0: No mean 1: VGA 2: RGB/HV 3: DVI 4: HDMI (Set only) 5: VIDEO 7: S-VIDEO 12(0Ch): Y/Pb/Pr 13(0Dh): OPTION 14(0Eh): Y/Pb/Pr2 (SCART) 15(0Fh): DPORT 16(10h): DPORT2 17(11h): HDMI 18(12h): HDMI2 128(80h): DPORT3 130(82h): HDMI3	OP code page 11h, OP code 06h operation is same.
AUDIO INPUT	02h	2Eh	0: No mean 1: IN1 2: IN2 3: IN3 4: HDMI 6: OPTION 7: DPORT 8: DPORT2 9: DPORT3 10(0Ah): HDMI2 11(0Bh): HDMI3	
VOLUME UP/DOWN	00h	62h	0: whisper 100(64h): loud	
MUTE	00h	8Dh	0: UNMUTE(Set only) 1: MUTE 2: UNMUTE	
SCREEN MUTE	10h	B6h	0: No mean 1: SCREEN MUTE ON 2: SCREEN MUTE OFF	
MTS	02h	2Ch	0: No mean 1: Main 2: Sub 3: Main + Sub	This operation requires supported option TV tuner.
SOUND	02h	34h	0: No mean 1: Off 2: ON	Same as 'SURROUND'
PICTURE MODE	02h	1Ah	0: No mean 1: sRGB 3: HIGHBRIGHT 4: STANDARD 5: CINEMA 8: CUSTOM1 9: CUSTOM2	sRGB: PC mode only CINEMA: A/V mode only
ASPECT	02h	70h	0: No mean 1: NORMAL 2: FULL 3: WIDE 4: ZOOM 6: DYNAMIC 7: 1:1 (Off/dot by dot)	WIDE: A/V mode only

	Item	OP code page	OP code	Parameter	Remarks
	PIP ON/OFF STILL ON/OFF	02h	72h	0: No mean 1: Off 2: PIP 3: POP 4: STILL 5: PICTUR BY PICTURE - ASPECT 6: PICTURE BY PICTURE - FULL	
	PIP INPUT	02h	73h	0: No mean 1: VGA 2: RGB/HV 3: DVI 4: HDMI (Set only) 5: VIDEO 7: S-VIDEO 12(0Ch): Y/Pb/Pr 13(0Dh): OPTION 14(0Eh): Y/Pb/Pr2 (SCART) 15(0Fh): DPORT 16(10h): DPORT2 17(11h): HDMI 18(12h): HDMI2 128(80h): DPORT3 130(82h): HDMI3	This operation has limitation of selection. Please refer to the monitor instruction manual.
	STILL CAPTURE	02h	76h	0: OFF 1: CAPTURE	Momentary
	SIGNAL INFORMATION	02h	EAh	0: No mean 1: OFF 2: ON	
	AUTO SETUP	00h	1Eh	0: No mean 1: Execute	Momentary
	TV-CHANNEL UP/DOWN	00h	8Bh	0: No mean 1: UP 2: DOWN	This operation requires supported option TV tuner.
TEMPERATURE SENSOR	SELECT TEMPERATURE SENSOR	02h	78h	0: No mean 1: SENSOR #1 2: SENSOR #2 3: SENSOR #3	
	READOUT A TEMPERATURE	02h	79h	Returned value is 2's complement. Refer to section 6.2	Read only
CARBON FOOTPRINT	READOUT CARBON FOOTPRINT (g)	10h	10h	0: 999(3E7h):	Read only
	READOUT CARBON FOOTPRINT (kg)	10h	11h	0: 65535(FFFFh):	Read only
	READOUT CARBON USAGE (g)	10h	26h	0: 999(3E7h):	Read only
	READOUT CARBON USAGE (kg)	10h	27h	0: 65535(FFFFh):	Read only

7. Power control procedure

7.1 Power status read

- 1) The controller requests the monitor to reply a current power status.

Header	Message	Check code	Delimiter
SOH-'0'-Monitor ID-'0'-'A'-'0'-'6'	STX-'0'-'1'-'D'-'6'-ETX	BCC	CR

Header

SOH (01h): Start of Header
 '0' (30h): Reserved
 Monitor ID: Specify the Monitor ID from which you want to get status.
 Ex.) If Monitor ID is '1', specify 'A'.
 '0' (30h): Message sender is the controller.
 'A' (41h): Message Type is "Command".
 '0'-'6' (30h, 36h): Message length is 6 bytes.

Message

STX (02h): Start of Message
 '0'-'1'-'D'-'6': Get power status command.
 ETX (03h): End of Message

Check code

BCC: Block Check Code
 Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

- 2) The monitor returns with the current power status.

Header	Message	Check code	Delimiter
SOH-'0'-'0'-Monitor ID-'B'-'1'-'2'	STX-'0'-'2'-'0'-'0'-'D'-'6'-'0'-'0'-'0'-'0'-'4'-'0'-'0'-'0'-'1'-ETX	BCC	CR

Header

SOH (01h): Start of Header
 '0' (30h): Reserved
 '0' (30h): Message receiver is the controller.
 Monitor ID: Indicate a replying Monitor ID.
 Ex.) When this byte is set to 'A', the replying Monitor ID is '1'.
 'B' (42h): Message Type is "Command reply".
 '1'-'2' (31h, 32h): Message length is 18 bytes.

Message

STX (02h): Start of Message
 '0'-'2' (30h, 32h): Reserved data
 '0'-'0' (30h, 30h): Result code
 00: No Error.
 01: Unsupported.
 'D'-'6' (44h, 36h): Display power mode code
 '0'-'0' (30h, 30h): Parameter type code is "Set parameter".
 '0'-'0'-'0'-'4' (30h, 30h, 30h, 34h): Power mode is 4 types.
 '0'-'0'-'0'-'1' (30h, 30h, 30h, 31h): Current power mode
 <Status>
 0001: ON
 0002: Stand-by (power save)
 0003: Suspend (power save)
 0004: OFF (same as IR power off)
 ETX (03h): End of Message

Check code

BCC: Block Check Code

Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

7.2 Power control

1) The controller requests the monitor to control monitor power.

Header	Message	Check code	Delimiter
SOH-'0'-Monitor ID-'0'-'A'-'0'-'C'	STX-'C'-'2'-'0'-'3'-'D'-'6'-'0'-'0'-'0'-'1'-ETX	BCC	CR

Header

SOH (01h): Start of Header
 '0' (30h): Reserved
 Monitor ID: Specify the Monitor ID which you want to change a setting.
 Ex.) If Monitor ID is '1', specify 'A'.
 '0' (30h): Message sender is the controller.
 'A' (41h): Message type is "Command".
 '0'-'C' (30h, 43h): Message length is 12 bytes.

Message

STX (02h): Start of Message
 'C'-'2'-'0'-'3'-'D'-'6' (43h, 32h, 30h, 33h, 44h, 36h): power control command
 '0'-'0'-'0'-'1' (30h, 30h, 30h, 31h): Power mode
 0001: ON
 0002, 0003: Do not set.
 0004: OFF (same as the power off by IR)
 ETX (03h): End of Message

Check code

BCC: Block Check Code
 Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

2) The monitor replies a data for confirmation.

Header	Message	Check code	Delimiter
SOH-'0'-'0'-Monitor ID-'B'-'0'-'E'	STX-'0'-'0'-'C'-'2'-'0'-'3'-'D'-'6'-'0'-'0'-'0'-'1'-ETX	BCC	CR

Header

SOH (01h): Start of Header
 '0' (30h): Reserved
 '0' (30h): Message receiver is the controller.
 Monitor ID: Indicate a replying Monitor ID.
 Ex.) When this byte is set to 'A', the replying Monitor ID is '1'.
 'B' (42h): Message type is "Command reply".
 'N'-'N': Message length
 Note.) The maximum data length that can be written to the monitor at a time is 32bytes.
 Ex.) The byte data 20h is encoded as ASCII characters '2' and '0' (32h and 30h).

Message

STX (02h): Start of Message
 '0'-'0' (30h, 30h): Result code. No error.
 'C'-'2', '0'-'3'-'D'-'6' (43h, 32h, 30h, 33h, 44h, 36h): power control reply command
 ➤ The monitor replies same as power control command to the controller.
 '0'-'0'-'0'-'1' (30h, 30h, 30h, 31h): Power mode
 0001: ON
 0002, 0003: Do not set.
 0004: OFF (same as the power off by IR)
 ETX (03h): End of Message

Check code

BCC: Block Check Code

Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

8. Asset Data read and write

MultiSync P403/ P463 /P553 /P703 /P801 /X464UN /X554UN /X464UNV /X554UNS /X474HB /X464UNS /X554UNV /X555UNS /X555UNV /X754HB /X554HB /UN551S /UN551VS /X464UNS-2 /X554UNS-2 have the area for to store user's asset data of up to 64bytes.

8.1 Asset Data Read Request and reply

This command is used in order to read Asset Data.

1) The controller requests the monitor to reply with Asset data.

Header	Message	Check code	Delimiter
SOH-'0'-Monitor ID-'0'-'A'-'0'-'A'	STX-'C'-'0'-'0'-'B'-'0'-'0'-'2'-'0'-ETX	BCC	CR

Header

SOH (01h): Start of Header
 '0' (30h): Reserved
 Monitor ID: Specify the Monitor ID from which you want to get data.
 Ex.) If Monitor ID is '1', specify 'A'.
 '0' (30h): Message sender is the controller.
 'A' (41h): Message type is "Command".
 '0'-'A' (30h, 41h): Message length is 10 bytes.

Message

STX (02h): Start of Message
 'C'-'0'-'0'-'B' (43h, 30h, 30h, 42h): Asset read request command.
 '0'-'0' (30h, 30h): Offset data from top of the Asset data.
 At first set 00h: Read data from the top of Asset data area.
 '2'-'0' (32h, 30h): Read out data length is 32bytes.
 Secondly set 20h: Read data from the 32bytes offset point in the Asset data area.
 Maximum readout length is 32bytes at a time.
 ETX (03h): End of Message

Check code

BCC: Block Check Code
 Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

2) The monitor replies Asset data to the controller.

Header	Message	Check code	Delimiter
SOH-'0'-'0'-Monitor ID-'B'-N-N	STX-'C'-'1'-'0'-'B'-Data(0)-Data(1)---Data(N)-ETX	BCC	CR

Header

SOH (01h): Start of Header
 '0' (30h): Reserved
 '0' (30h): Message receiver is the controller.
 Monitor ID: Indicate a replying Monitor ID.
 Ex.) When this byte is set to 'A', the replying Monitor ID is '1'.
 'B' (42h): Message type is "Command reply"
 N-N: Message length
 Note.) This length includes STX and ETX.

Message

STX (02h): Start of Message
 'C'-'1'-'0'-'B' (43h, 31h, 30h, 42h): Asset read reply command
 Data(0) - Data(N): Retuned Asset data
 Ex.) When Data(n) is 1234h, replying data is (31h 32h, 33h, 34h).
 ETX (03h): End of Message

Check code

BCC: Block Check Code

Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

8.2 Asset Data write

This command is used in order to write Asset Data.

1) The controller requests the monitor to write Asset data.

Header	Message	Check code	Delimiter
SOH-'0'-Monitor ID-'0'-'A'-N-N	STX-'C'-'0'-'0'-'E'-'0'-'0'-Data(0)-Data(1)---Data(N)-ETX	BCC	CR

Header

SOH (01h): Start of Header

'0' (30h): Reserved

Monitor ID: Specify the Monitor ID in which you want to write data.

Ex.) If Monitor ID is '1', specify 'A'.

'0' (30h): Message sender is the controller.

'A' (41h): Message type is "Command".

N-N: Message length

Note.) The maximum data length that can be written to the monitor at a time is 32bytes.

Message

STX (02h): Start of Message

'C'-'0'-'0'-'E' (43h, 30h, 30h, 45h): Asset Data writes command

'0'-'0'(30h, 30h): Offset address from top of Asset data.

00h : Write data from top of the Asset data area.

Data(0) -- Data(N): Asset data. The data must be ASCII characters strings.

ETX (03h): End of Message

Check code

BCC: Block Check Code

Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

2) The monitor replies a data for confirmation.

Header	Message	Check code	Delimiter
SOH-'0'-'0'-Monitor ID-'B'-N-N	STX-'0'-'0'-'C'-'0'-'0'-'E'-'0'-'0'-Data(0)-Data(1)---Data(N)-ETX	BCC	CR

Header

SOH (01h): Start of Header

'0' (30h): Reserved

'0' (30h): Message receiver is the controller.

Monitor ID: Indicate a replying Monitor ID.

Ex.) When this byte is set to 'A', the replying Monitor ID is '1'.

'B' (42h): Message type is "Command reply".

N-N: Message length

Note.) The maximum data length that can be written to the monitor at a time is 32bytes.

Message

STX (02h): Start of Message

'0'-'0': Result code. No error.

'C'-'0'-'0'-'E' (43h, 30h, 30h, 45h): Asset Data write command

'0'-'0'(30h, 30h): Offset address from top of Asset data.

00h : Write data into from top of the Asset data area.

Data(0) -- Data(N): Asset data. The data must be ASCII characters strings.

ETX (03h): End of Message

Check code

BCC: Block Check Code

Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

9. Date & Time read and write

9.1 Date & Time Read

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

1) The controller requests the monitor to reply with the Date & Time.

Header	Message	Check code	Delimiter
SOH-'0'-Monitor ID-'0'-'A'-'0'-'6'	STX-'C'-'2'-'1'-'1'-ETX	BCC	CR

Header

SOH (01h): Start of Header

'0' (30h): Reserved

Monitor ID: Specify the Monitor ID of which you want to get status.

Ex.) If Monitor ID is '1', specify 'A'.

'0' (30h): Message sender is the controller.

'A' (41h): Message type is "Command".

'0'-'6'(30h, 36h): Message length

Message

STX (02h): Start of Message

'C'-'2'-'1'-'1' (43h, 32h, 31h, 31h): Date & time read request command.

ETX (03h): End of Message

Check code

BCC: Block Check Code

Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

2) The monitor replies Date & Time to the controller.

Header	Message	Check code	Delimiter
SOH-'0'-'0'-Monitor ID-'B'-'1'-'4'	STX-'C'-'3'-'1'-'1'- YY-MM-DD-WW-HH-MN-DS-ETX	BCC	CR

Header

SOH (01h): Start of Header

'0' (30h): Reserved

'0' (30h): Message receiver is the controller

Monitor ID: Indicate a replying Monitor ID

Ex.) When this byte is set to 'A', the replying Monitor ID is '1'.

'B' (42h): Message type is "Command reply"

'1'-'4'(31h, 34h): Message length

Message

STX (02h): Start of Message

'C'-'3'-'1'-'1' (43h, 33h, 31h, 31h): Date & Time read reply command

'YY'-'MM'-'DD'-'WW'-'HH'-'MN'-'DS': Date & Time data

YY: Year (offset 2000)

'0'-'0'(30h, 30h): 2000

|

'6'-'3'(36h, 33h): 2099 (99 = 63h)

MM: Month

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

|

'0'-'C'(30h, 43h): December

DD: Day

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

|

'1'-'E'(31h, 45h): 30(=1Eh)

'1'-'F'(31h, 46h): 31(=1Fh)

WW: 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

HH: Hours

'0'-'0'(30h, 30h): 0
|
'1'-'7'(31h, 37h): 23 (=17h)

MN: Minutes

'0'-'0'(30h, 30h): 0
|
'3'-'B'(33h, 42h): 59 (=3Bh)

DS: Daylight saving (Summer time)

'0'-'0'(30h, 30h): NO
'0'-'1'(30h, 31h): YES

ETX (03h): End of Message

Check code

BCC: Block Check Code

Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

9.2 Date & Time Write

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

- 1) The controller requests the monitor to write Date & Time.

Header	Message	Check code	Delimiter
SOH-'0'-Monitor ID-'0'-'A'-'1'-'2'	STX-'C'-'2'-'1'-'2'-'YY-MM-DD-WW-HH-MN-DS-ETX	BCC	CR

Header

SOH (01h): Start of Header
 '0' (30h): Reserved
 Monitor ID: Specify the Monitor ID of which you want to change the setting.
 Ex.) If Monitor ID is '1', specify 'A'.
 '0' (30h): Message sender is the controller.
 'A' (41h): Message type is "Command".
 '1'-'2'(31h, 32h): Message length

Message

STX (02h): Start of Message
 'C'-'2'-'1'-'2' (43h, 32h, 31h, 32h): Date & Time write command
 'YY'-'MM'-'DD'-'WW'-'HH'-'MN'-'DS': Date & Time data
 YY: Year (offset 2000)
 '0'-'0'(30h, 30h): 2000
 |
 '6'-'3'(36h, 33h): 2099 (99 = 63h)

 MM: Month
 '0'-'1'(30h, 31h): JANUARY
 |
 '0'-'C'(30h, 43h): DECEMBER

 DD: Day
 '0'-'1'(30h, 31h): 1
 |
 '1'-'E'(31h, 45h): 30(=1Eh)
 '1'-'F'(31h, 46h): 31(=1Fh)

 WW: 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

 HH: Hours
 '0'-'0'(30h, 30h): 0
 |
 '1'-'7'(31h, 37h): 23 (=17h)

 MN: Minutes
 '0'-'0'(30h, 30h): 0
 |
 '3'-'B'(33h, 42h): 59 (=3Bh)

 DS: Daylight saving (Summer time)
 '0'-'0'(30h, 30h): NO
 '0'-'1'(30h, 31h): YES

ETX (03h): End of Message

Check code

BCC: Block Check Code
 Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

2) The monitor replies a data for confirmation.

Header	Message	Check code	Delimiter
SOH-'0'-'0'-Monitor ID-'B'-'1'-'6'	STX-'C'-'3'-'1'-'2'-ST-YY-MM-DD-WW-HH-MN-DS-ETX	BCC	CR

Header

SOH (01h): Start of Header

'0' (30h): Reserved

'0' (30h): Message receiver is the controller.

Monitor ID: Indicate a replying Monitor ID.

Ex.) When this byte is set to 'A', the replying Monitor ID is '1'.

'B' (42h): Message type is "Command reply".

'1'-'6'(31h, 36h): Message length

Message

STX (02h): Start of Message

'C'-'3'-'1'-'2' (43h, 33h, 31h, 32h): Date & Time write reply command

ST: Date & Time Status command

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

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

'YY'-'MM'-'DD'-'WW'-'HH'-'MN'-'DS': Date & Time data

YY: Year (offset 2000)

'0'-'0'(30h, 30h): 2000

|

'6'-'3'(36h, 33h): 2099 (99 = 63h)

MM: Month

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

|

'0'-'C'(30h, 43h): DECEMBER

DD: Day

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

|

'1'-'E'(31h, 45h): 30(=1Eh)

'1'-'F'(31h, 46h): 31(=1Fh)

WW: 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

HH: Hours

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

|

'1'-'7'(31h, 37h): 23 (=17h)

MN: Minutes

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

|

'3'-'B'(33h, 42h): 59 (=3Bh)

DS: Daylight saving (Summer time)

'0'-'0'(30h, 30h): NO

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

ETX (03h): End of Message

Check code

BCC: Block Check Code

Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

10. Schedule read and write

10.1 Schedule Read

This command is used in order to read the setting of the Schedule.

1) The controller requests the monitor to read Schedule.

Header	Message	Check code	Delimiter
SOH-'0'-Monitor ID-'0'-'A'-'0'-'8'	STX-'C'-'2'-'2'-'1'-PG-ETX	BCC	CR

Header

SOH (01h): Start of Header

'0' (30h): Reserved

Monitor ID: Specify the Monitor ID of which you want to get status.

Ex.) If Monitor ID is '1', specify 'A'.

'0' (30h): Message sender is the controller.

'A' (41h): Message type is "Command".

'0'-'8'(30h, 38h): Message length

Message

STX (02h): Start of Message

'C'-'2'-'2'-'1' (43h, 32h, 32h, 31h): Schedule read request command.

PG: Program No.

➤ The data must be ASCII characters strings.

ETX (03h): End of Message

Check code

BCC: Block Check Code

Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

2) The monitor replies Schedule to the controller.

Header	Message	Check code	Delimiter
SOH-'0'-'0'-Monitor ID-'B'-'2'-'6'	STX-'C'-'3'-'2'-'1'-PG-ON HOUR-ON MIN-OFF HOUR-OFF MIN-INPUT-WD-FL-P MODE-EXT1-EXT2-EXT3-EXT4-EXT5-EXT6-EXT7-ETX	BCC	CR

Header

SOH (01h): Start of Header

'0' (30h): Reserved

'0' (30h): Message receiver is the controller.

Monitor ID: Indicate a replying Monitor ID.

Ex.) When this byte is set to 'A', the replying Monitor ID is '1'.

'B' (42h): Message type is "Command reply".

'2'-'6'(32h, 36h): Message length

Message

STX (02h): Start of Message

'C'-'3'-'2'-'1' (43h, 33h, 32h, 31h): Schedule read reply command

PG-ON HOURS-ON MIN-OFF HOURS-OFF MIN-INPUT-WD-FL-P MODE-

EXT1-EXT2-EXT3-EXT4-EXT5-EXT6-EXT7: Schedule data

PG: Program No.

'0'-'0'(30h, 30h): Program No.1

|

'0'-'6'(30h, 36h): Program No.7

ON_HOUR: Turn on time (hour)

'0'-'0'(30h, 30h): 00

|

'1'-'7'(31h, 37h): 23 (=17h)

```

'1'-'8'(31h, 38h): ON timer isn't set.

ON_MIN: Turn on time (minute)
'0'-'0'(30h, 30h): 0
|
'3'-'B'(33h, 42h): 59
'3'-'C'(33h, 43h): On timer isn't set.

OFF_HOUR: Turn off time (hour)
'0'-'0'(30h, 30h): 00
|
'1'-'7'(31h, 37h): 23 (=17h)
'1'-'8'(31h, 38h): Off timer isn't set.

OFF_MIN: Turn off time (minute)
'0'-'0'(30h, 30h): 0
|
'3'-'B'(33h, 42h): 59 (=3Bh)
'3'-'C'(33h, 43h): Off timer isn't set.

INPUT: Timer input
'0'-'0'(30h,30h): No mean (works on last memory)
'0'-'1'(30h,31h): VGA
'0'-'2'(30h,32h): RGB/HV
'0'-'3'(30h,33h): DVI
'0'-'5'(30h,35h): VIDEO
'0'-'7'(30h,37h): S-VIDEO
'0'-'C'(30h,43h): Y/Pb/Pr
'0'-'D'(30h,44h): OPTION
'0'-'E'(30h,45h): Y/Pb/Pr2(SCART)
'0'-'F'(30h,46h): DPORT
'1'-'0'(31h,30h): DPORT2
'1'-'1'(31h,31h): HDMI
'1'-'2'(31h,32h): HDMI2
'8'-'0'(38h,30h): DPORT3

WD: Week setting
bit 0: MONDAY
bit 1: TUESDAY
bit 2: WEDNESDAY
bit 3: THURSDAY
bit 4: FRIDAY
bit 5: SATURDAY
bit 6: SUNDAY

EX.
'0'-'1'(30h, 31h): MONDAY
'0'-'4'(30h, 34h): TUESDAY
'0'-'F'(30h, 46h): MONDAY, TUESDAY, WEDNESDAY and THURSDAY
'7'-'F'(37h, 46h): MONDAY to SUNDAY

FL: Option
bit 0: 0:once 1:Everyday
bit 1: 0:once 1:Every week
bit 2: 0:Disable 1:Enable

EX.
'0'-'1'(30h, 31h): Disable, Everyday
'0'-'4'(30h, 34h): Enable, once

P MODE: Picture mode
'0'-'0'(30h,30h): No mean (works on last memory)
'0'-'1'(30h,31h): sRGB
'0'-'3'(30h,33h): HIGHBRIGHT
'0'-'4'(30h,34h): STANDARD
'0'-'5'(30h,34h): CINEMA
'0'-'D'(30h,44h): CUSTOM1
'0'-'E'(30h,45h): CUSTOM2

```

EXT1: Extension 1
'0'-'0'(30h,30h): (On this monitor, it is always '00')

EXT2: Extension 2
'0'-'0'(30h,30h): (On this monitor, it is always '00')

EXT3: Extension 3
'0'-'0'(30h,30h): (On this monitor, it is always '00')

EXT4: Extension 4
'0'-'0'(30h,30h): (On this monitor, it is always '00')

EXT5: Extension 5
'0'-'0'(30h,30h): (On this monitor, it is always '00')

EXT6: Extension 6
'0'-'0'(30h,30h): (On this monitor, it is always '00')

EXT7: Extension 7
'0'-'0'(30h,30h): (On this monitor, it is always '00')

ETX (03h): End of Message

Check code

BCC: Block Check Code

Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

***Following command also can be used for to keep backward compatibility, in order to read the setting of the Schedule.

1) The controller requests the monitor to read Schedule.

Header	Message	Check code	Delimiter
SOH-'0'-Monitor ID-'0'-'A'-'0'-'8'	STX-'C'-'2'-'1'-'3'-PG-ETX	BCC	CR

Header

SOH (01h): Start of Header
 '0' (30h): Reserved
 Monitor ID: Specify the Monitor ID of which you want to get status.
 Ex.) If Monitor ID is '1', specify 'A'.
 '0' (30h): Message sender is the controller.
 'A' (41h): Message type is "Command".
 '0'-'8'(30h, 38h): Message length

Message

STX (02h): Start of Message
 'C'-'2'-'1'-'3' (43h, 32h, 31h, 33h): Schedule read request command.
 PG: Program No.
 ➤ The data must be ASCII characters strings.
 ETX (03h): End of Message

Check code

BCC: Block Check Code
 Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

2) The monitor replies Schedule to the controller.

Header	Message	Check code	Delimiter
SOH-'0'-'0'-Monitor ID-'B'-'1'-'6'	STX-'C'-'3'-'1'-'3'-PG-ON HOUR-ON MIN-OFF HOUR-OFF MIN-INPUT-WD-FL-ETX	BCC	CR

Header

SOH (01h): Start of Header
 '0' (30h): Reserved
 '0' (30h): Message receiver is the controller.
 Monitor ID: Indicate a replying Monitor ID.
 Ex.) When this byte is set to 'A', the replying Monitor ID is '1'.
 'B' (42h): Message type is "Command reply".
 '1'-'6'(31h, 36h): Message length

Message

STX (02h): Start of Message
 'C'-'3'-'1'-'3' (43h, 33h, 31h, 33h): Schedule read reply command
 PG-ON HOURS-ON MIN-OFF HOURS-OFF MIN-INPUT-WD-FL: Schedule data
 PG: Program No.
 '0'-'0'(30h, 30h): Program No.1
 |
 '0'-'6'(30h, 36h): Program No.7

 ON_HOUR: Turn on time (hour)
 '0'-'0'(30h, 30h): 00
 |
 '1'-'7'(31h, 37h): 23 (=17h)
 '1'-'8'(31h, 38h): ON timer isn't set.

```

ON_MIN: Turn on time (minute)
'0'-'0'(30h, 30h): 0
|
'3'-'B'(33h, 42h): 59
'3'-'C'(33h, 43h): On timer isn't set.

OFF_HOUR: Turn off time (hour)
'0'-'0'(30h, 30h): 00
|
'1'-'7'(31h, 37h): 23 (=17h)
'1'-'8'(31h, 38h): Off timer isn't set.

OFF_MIN: Turn off time (minute)
'0'-'0'(30h, 30h): 0
|
'3'-'B'(33h, 42h): 59 (=3Bh)
'3'-'C'(33h, 43h): Off timer isn't set.

INPUT: Timer input
'0'-'0'(30h, 30h): DVI
'0'-'1'(30h, 31h): VGA
'0'-'2'(30h, 32h): RGB/HV
'0'-'3'(30h, 33h): Y/Pb/Pr
'0'-'4'(30h, 34h): VIDEO
'0'-'5'(30h, 35h): S-VIDEO
'0'-'7'(30h,30h): No mean (Works on last memory)

WD: Week setting
bit 0: MONDAY
bit 1: TUESDAY
bit 2: WEDNESDAY
bit 3: THURSDAY
bit 4: FRIDAY
bit 5: SATURDAY
bit 6: SUNDAY

EX.
'0'-'1'(30h, 31h): MONDAY
'0'-'4'(30h, 34h): TUESDAY
'0'-'F'(30h, 46h): MONDAY, TUESDAY, WEDNESDAY and THURSDAY
'7'-'F'(37h, 46h): MONDAY to SUNDAY

FL: Option
bit 0: 0:once 1:Everyday
bit 1: 0:once 1:Every week
bit 2: 0:Disable 1:Enable

EX.
'0'-'1'(30h, 31h): Disable, Everyday
'0'-'4'(30h, 34h): Enable, once

ETX (03h): End of Message

Check code
BCC: Block Check Code
Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter
CR (0Dh): End of packet

```

10.2 Schedule Write

This command is used in order to write the setting of the Schedule.

1) The controller requests the monitor to write Schedule.

Header	Message	Check code	Delimiter
SOH-'0'-Monitor ID-'0'-'A'-'2'-'6'	STX-'C'-'2'-'2'-'2'-PG-ON HOUR-ON MIN-OFF HOUR-OFF MIN-INPUT-WD-FL-P MODE-EXT1-EXT2-EXT3-EXT4-EXT5-EXT6-EXT7-ETX	BCC	CR

Header

SOH (01h): Start of Header
 '0' (30h): Reserved
 Monitor ID: Specify the Monitor ID of which you want to change a setting.
 Ex.) If Monitor ID is '1', specify 'A'.
 '0' (30h): Message sender is the controller.
 'A' (41h): Message type is "Command".
 '2'-'6'(32h, 36h): Message length.

Message

STX (02h): Start of Message
 'C'-'2'-'2'-'2' (43h, 32h, 32h, 32h): Schedule writes command
 PG-ON HOURS-ON MIN-OFF HOURS-OFF MIN-INPUT-WD-FL-P MODE
 EXT1-EXT2-EXT3-EXT4-EXT5-EXT6-EXT7: Schedule data

PG: Program No.
 '0'-'0'(30h, 30h): Program No.1
 |
 '0'-'6'(30h, 36h): Program No.7

ON_HOUR: Turn on time (hour)
 '0'-'0'(30h, 30h): 00
 |
 '1'-'7'(31h, 37h): 23 (=17h)
 '1'-'8'(31h, 38h): ON timer isn't set.

ON_MIN: Turn on time (minute)
 '0'-'0'(30h, 30h): 0
 |
 '3'-'B'(33h, 42h): 59
 '3'-'C'(33h, 43h): On timer isn't set.

OFF_HOUR: Turn off time (hour)
 '0'-'0'(30h, 30h): 00
 |
 '1'-'7'(31h, 37h): 23 (=17h)
 '1'-'8'(31h, 38h): Off timer isn't set.

OFF_MIN: Turn off time (minute)
 '0'-'0'(30h, 30h): 0
 |
 '3'-'B'(33h, 42h): 59 (=3Bh)
 '3'-'C'(33h, 43h): Off timer isn't set.

Note:

- * The same time as ON time and OFF time cannot be set.
- * Set '1'-'8' to ON/OFF_HOUR and '3'-'C' to ON/OFF_MIN, when ON/OFF time is deleted.

INPUT: Timer input
 '0'-'0'(30h,30h): No mean (works on last memory)
 '0'-'1'(30h,31h): VGA
 '0'-'2'(30h,32h): RGB/HV
 '0'-'3'(30h,33h): DVI
 '0'-'5'(30h,35h): VIDEO
 '0'-'7'(30h,37h): S-VIDEO
 '0'-'C'(30h,43h): Y/Pb/Pr
 '0'-'D'(30h,44h): OPTION

'0'-'E'(30h,45h): Y/Pb/Pr2(SCART)
'0'-'F'(30h,46h): DPORT
'1'-'0'(31h,30h): DPORT2
'1'-'1'(31h,31h): HDMI
'1'-'2'(31h,32h): HDMI2
'8'-'0'(38h,30h): DPORT3
* Please select active input on your system (setting).
* If you select inactive input here, the input change execution will be ignored.

WD: Week setting
bit 0: MONDAY
bit 1: TUESDAY
bit 2: WEDNESDAY
bit 3: THURSDAY
bit 4: FRIDAY
bit 5: SATURDAY
bit 6: SUNDAY

EX.
'0'-'1'(30h, 31h): MONDAY
'0'-'4'(30h, 34h): TUESDAY
'0'-'F'(30h, 46h): MONDAY, TUESDAY, WEDNESDAY and THURSDAY
'7'-'F'(37h, 46h): MONDAY to SUNDAY

FL: Option
bit 0: 0:once 1:Everyday
bit 1: 0:once 1:Every week
bit 2: 0:Disable 1:Enable
* When bit 0 and bit 1 are '1', it behaves as Everyday.

EX.
'0'-'1'(30h, 31h): Disable, Everyday
'0'-'4'(30h, 34h): Enable, once

P MODE: Picture mode
'0'-'0'(30h,30h): No mean (works on last memory)
'0'-'1'(30h,31h): sRGB
'0'-'3'(30h,33h): HIGHBRIGHT
'0'-'4'(30h,34h): STANDARD
'0'-'5'(30h,34h): CINEMA
'0'-'D'(30h,44h): CUSTOM1
'0'-'E'(30h,45h): CUSTOM2
* Please select active picture mode on your system (setting).
* If you select inactive picture mode here, the input change execution will be ignored.

EXT1: Extension 1
'0'-'0'(30h,30h): (On this monitor, it is always '00')

EXT2: Extension 2
'0'-'0'(30h,30h): (On this monitor, it is always '00')

EXT3: Extension 3
'0'-'0'(30h,30h): (On this monitor, it is always '00')

EXT4: Extension 4
'0'-'0'(30h,30h): (On this monitor, it is always '00')

EXT5: Extension 5
'0'-'0'(30h,30h): (On this monitor, it is always '00')

EXT6: Extension 6
'0'-'0'(30h,30h): (On this monitor, it is always '00')

EXT7: Extension 7
'0'-'0'(30h,30h): (On this monitor, it is always '00')

ETX (03h): End of Message

Check code

BCC: Block Check Code

Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

2) The monitor replies a data for confirmation.

Header	Message	Check code	Delimiter
SOH-'0'-'0'-Monitor ID-'B'-'2'-'8'	STX-'C'-'3'-'2'-'2'-ST-PG-ON HOUR-ON MIN-OFF HOUR-OFF MIN-INPUT-WD-FL-P MODE-EXT1-EXT2-EXT3-EXT4-EXT5-EXT6-EXT7-ETX	BCC	CR

Header

SOH (01h): Start of Header

'0' (30h): Reserved

'0' (30h): Message receiver is the controller.

Monitor ID: Indicate a replying Monitor ID.

Ex.) When this byte is set to 'A', the replying Monitor ID is '1'.

'B' (42h): Message type is "Command reply".

'2'-'8'(32h, 38h): Message length

Message

STX (02h): Start of Message

'C'-'3'-'2'-'2' (43h, 33h, 32h, 32h): Schedule writes reply command

ST: Schedule Status command

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

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

PG-ON HOURS-ON MIN-OFF HOURS-OFF MIN-INPUT-WD-FL-P MODE

EXT1-EXT2-EXT3-EXT4-EXT5-EXT6-EXT7: Schedule data

PG: Program No.

'0'-'0'(30h, 30h): Program No.1

|

'0'-'6'(30h, 36h): Program No.7

ON_HOUR: Turn on time (hour)

'0'-'0'(30h, 30h): 00

|

'1'-'7'(31h, 37h): 23 (=17h)

'1'-'8'(31h, 38h): ON timer isn't set.

ON_MIN: Turn on time (minute)

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

|

'3'-'B'(33h, 42h): 59

'3'-'C'(33h, 43h): On timer isn't set.

OFF_HOUR: Turn off time (hour)

'0'-'0'(30h, 30h): 00

|

'1'-'7'(31h, 37h): 23 (=17h)

'1'-'8'(31h, 38h): Off timer isn't set.

OFF_MIN: Turn off time (minute)

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

|

'3'-'B'(33h, 42h): 59 (=3Bh)

'3'-'C'(33h, 43h): Off timer isn't set.

INPUT: Timer input

'0'-'0'(30h,30h): No mean (works on last memory)

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

'0'-'2'(30h,32h): RGB/HV

'0'-'3'(30h,33h): DVI

'0'-'5'(30h,35h): VIDEO

'0'-'7'(30h,37h): S-VIDEO

'0'-'C'(30h,43h): Y/Pb/Pr

'0'-'D'(30h,44h): OPTION
'0'-'E'(30h,45h): Y/Pb/Pr2(SCART)
'0'-'F'(30h,46h): DPORT
'1'-'0'(31h,30h): DPORT2
'1'-'1'(31h,31h): HDMI
'1'-'2'(31h,32h): HDMI2
'8'-'0'(38h,30h): DPORT3

WD: Week setting
bit 0: MONDAY
bit 1: TUESDAY
bit 2: WEDNESDAY
bit 3: THURSDAY
bit 4: FRIDAY
bit 5: SATURDAY
bit 6: SUNDAY

EX.
'0'-'1'(30h, 31h): MONDAY
'0'-'4'(30h, 34h): TUESDAY
'0'-'F'(30h, 46h): MONDAY, TUESDAY, WEDNESDAY and THURSDAY
'7'-'F'(37h, 46h): MONDAY to SUNDAY

FL: Option
bit 0: 0:once 1:Everyday
bit 1: 0:once 1:Every week
bit 2: 0:Disable 1:Enable
* When bit 0 and bit 1 are '1', it behaves as Everyday.

EX.
'0'-'1'(30h, 31h): Disable, Everyday
'0'-'4'(30h, 34h): Enable, once

P MODE: Picture mode
'0'-'0'(30h,30h): No mean (works on last memory)
'0'-'1'(30h,31h): sRGB
'0'-'3'(30h,33h): HIGHBRIGHT
'0'-'4'(30h,34h): STANDARD
'0'-'5'(30h,34h): CINEMA
'0'-'D'(30h,44h): CUSTOM1
'0'-'E'(30h,45h): CUSTOM2

EXT1: Extension1
'0'-'0'(30h,30h): (On this monitor, it is always '00')

EXT2: Extension 2
'0'-'0'(30h,30h): (On this monitor, it is always '00')

EXT3: Extension 3
'0'-'0'(30h,30h): (On this monitor, it is always '00')

EXT4: Extension 4
'0'-'0'(30h,30h): (On this monitor, it is always '00')

EXT5: Extension 5
'0'-'0'(30h,30h): (On this monitor, it is always '00')

EXT6: Extension 6
'0'-'0'(30h,30h): (On this monitor, it is always '00')

EXT7: Extension 7
'0'-'0'(30h,30h): (On this monitor, it is always '00')

ETX (03h): End of Message

Check code

BCC: Block Check Code

Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

3) The controller requests the monitor to write Enable/Disable Schedule.

Header	Message	Check code	Delimiter
SOH-'0'-Monitor ID-'0'-'A'-'0'-'A'	STX-'C'-'2'-'1'-'5'-PG-EN-ETX	BCC	CR

Header

SOH (01h): Start of Header

'0' (30h): Reserved

Monitor ID: Specify the Monitor ID of which you want to change a setting.
Ex.) If Monitor ID is '1', specify 'A'.

'0' (30h): Message sender is the controller.

'A' (41h): Message type is "Command".

'0'-'A'(30h, 41h): Message length

Message

STX (02h): Start of Message

'C'-'2'-'1'-'5' (43h, 32h, 31h, 35h): Enable/Disable Schedule writes command

PG-EN: Enable/Disable Schedule data

PG: Program No.

'0'-'0'(30h, 30h): Program No.1

|

'0'-'6'(30h, 36h): Program No.7

EN: Enable /Disable

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

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

ETX (03h): End of Message

Check code

BCC: Block Check Code

Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

4) The monitor replies a data for confirmation.

Header	Message	Check code	Delimiter
SOH-'0'-'0'-Monitor ID-'B'-'0'-'C'	STX-'C'-'3'-'1'-'5'-ST-PG-EN-ETX	BCC	CR

Header

SOH (01h): Start of Header

'0' (30h): Reserved

'0' (30h): Message receiver is the controller.

Monitor ID: Indicate a replying Monitor ID.

Ex.) When this byte is set to 'A', the replying Monitor ID is '1'.

'B' (42h): Message type is "Command reply".

'0'-'C' (30h, 43h): Message length

Message

STX (02h): Start of Message

'C'-'3'-'1'-'5' (43h, 33h, 31h, 35h): Enable/Disable Schedule writes reply command

ST: Enable/Disable Schedule Status command

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

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

PG-EN: Enable/Disable Schedule data

PG: Program No.

'0'-'0'(30h, 30h): Program No.1

|

'0'-'6'(30h, 36h): Program No.7

EN: Enable /Disable

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

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

ETX (03h): End of Message

Check code

BCC: Block Check Code

Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

***Following command also can be used for to keep backward compatibility, in order to write the setting of the Schedule.

1) The controller requests the monitor to write Schedule.

Header	Message	Check code	Delimiter
SOH-'0'-Monitor ID-'0'-'A'-'1'-'6'	STX-'C'-'2'-'1'-'4'-PG-ON HOUR-ON MIN-OFF HOUR-OFF MIN-INPUT-WD-FL-ETX	BCC	CR

Header

SOH (01h): Start of Header
 '0' (30h): Reserved
 Monitor ID: Specify the Monitor ID of which you want to change a setting.
 Ex.) If Monitor ID is '1', specify 'A'.
 '0' (30h): Message sender is the controller.
 'A' (41h): Message type is "Command".
 '1'-'6'(31h, 36h): Message length.

Message

STX (02h): Start of Message
 'C'-'2'-'1'-'4' (43h, 32h, 31h, 34h): Schedule writes command
 PG-ON HOURS-ON MIN-OFF HOURS-OFF MIN-INPUT-WD-FL: Schedule data
 PG: Program No.
 '0'-'0'(30h, 30h): Program No.1
 |
 '0'-'6'(30h, 36h): Program No.7

ON_HOUR: Turn on time (hour)
 '0'-'0'(30h, 30h): 00
 |
 '1'-'7'(31h, 37h): 23 (=17h)
 '1'-'8'(31h, 38h): ON timer isn't set.

ON_MIN: Turn on time (minute)
 '0'-'0'(30h, 30h): 0
 |
 '3'-'B'(33h, 42h): 59
 '3'-'C'(33h, 43h): On timer isn't set.

OFF_HOUR: Turn off time (hour)
 '0'-'0'(30h, 30h): 00
 |
 '1'-'7'(31h, 37h): 23 (=17h)
 '1'-'8'(31h, 38h): Off timer isn't set.

OFF_MIN: Turn off time (minute)
 '0'-'0'(30h, 30h): 0
 |
 '3'-'B'(33h, 42h): 59 (=3Bh)
 '3'-'C'(33h, 43h): Off timer isn't set.

INPUT: Timer input
 '0'-'0'(30h, 30h): DVI
 '0'-'1'(30h, 31h): VGA
 '0'-'2'(30h, 32h): RGB/HV
 '0'-'3'(30h, 33h): Y/Pb/Pr
 '0'-'4'(30h, 34h): VIDEO
 '0'-'5'(30h, 35h): S-VIDEO
 '0'-'7'(30h, 37h): (Works on last memory)
 * Please select active input on your system (setting).
 * If you select inactive input here, the input change execution will be ignored.

WD: Week setting
 bit 0: MONDAY
 bit 1: TUESDAY

bit 2: WEDNESDAY
bit 3: THURSDAY
bit 4: FRIDAY
bit 5: SATURDAY
bit 6: SUNDAY

EX.

'0'-'1'(30h, 31h): MONDAY
'0'-'4'(30h, 34h): TUESDAY
'0'-'F'(30h, 46h): MONDAY, TUESDAY, WEDNESDAY and THURSDAY
'7'-'F'(37h, 46h): MONDAY to SUNDAY

FL: Option

bit 0: 0:once 1:Everyday
bit 1: 0:once 1:Every week
bit 2: 0:Disable 1:Enable
* When bit 0 and bit 1 are '1', it behaves as Everyday.

EX.

'0'-'1'(30h, 31h): Disable, Everyday
'0'-'4'(30h, 34h): Enable, once

ETX (03h): End of Message

Check code

BCC: Block Check Code
Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

2) The monitor replies a data for confirmation.

Header	Message	Check code	Delimiter
SOH-'0'-'0'-Monitor ID-'B'-'1'-'8'	STX-'C'-'3'-'1'-'4'-ST-PG-ON HOUR-ON MIN-OFF HOUR-OFF MIN-INPUT-WD-FL-ETX	BCC	CR

Header

SOH (01h): Start of Header
'0' (30h): Reserved
'0' (30h): Message receiver is the controller.
Monitor ID: Indicate a replying Monitor ID.
Ex.) When this byte is set to 'A', the replying Monitor ID is '1'.
'B' (42h): Message type is "Command reply".
'1'-'8'(31h, 38h): Message length

Message

STX (02h): Start of Message
'C'-'3'-'1'-'4' (43h, 33h, 31h, 34h): Schedule writes reply command
ST: Schedule Status command
'0'-'0'(30h, 30h): No error
'0'-'1'(30h, 31h): Error
PG-ON HOURS-ON MIN-OFF HOURS-OFF MIN-INPUT-WD-FL: Schedule data
PG: Program No.
'0'-'0'(30h, 30h): Program No.1
|
'0'-'6'(30h, 36h): Program No.7

ON_HOUR: Turn on time (hour)
'0'-'0'(30h, 30h): 00
|
'1'-'7'(31h, 37h): 23 (=17h)
'1'-'8'(31h, 38h): ON timer isn't set.

ON_MIN: Turn on time (minute)
'0'-'0'(30h, 30h): 0
|
'3'-'B'(33h, 42h): 59

'3'-'C'(33h, 43h): On timer isn't set.

OFF_HOUR: Turn off time (hour)

'0'-'0'(30h, 30h): 00

|

'1'-'7'(31h, 37h): 23 (=17h)

'1'-'8'(31h, 38h): Off timer isn't set.

OFF_MIN: Turn off time (minute)

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

|

'3'-'B'(33h, 42h): 59 (=3Bh)

'3'-'C'(33h, 43h): Off timer isn't set.

INPUT: Timer input

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

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

'0'-'2'(30h, 32h): RGB/HV

'0'-'3'(30h, 33h): Y/Pb/Pr

'0'-'4'(30h, 34h): VIDEO

'0'-'5'(30h, 35h): S-VIDEO

'0'-'7'(30h,30h): No mean (Works on last memory)

WD: Week setting

bit 0: MONDAY

bit 1: TUESDAY

bit 2: WEDNESDAY

bit 3: THURSDAY

bit 4: FRIDAY

bit 5: SATURDAY

bit 6: SUNDAY

EX.

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

'0'-'4'(30h, 34h): TUESDAY

'0'-'F'(30h, 46h): MONDAY, TUESDAY, WEDNESDAY and THURSDAY

'7'-'F'(37h, 46h): MONDAY to SUNDAY

FL: Option

bit 0: 0:once 1:Everyday

bit 1: 0:once 1:Every week

bit 2: 0:Disable 1:Enable

* When bit 0 and bit 1 are '1', it behaves as Everyday.

EX.

'0'-'1'(30h, 31h): Disable, Everyday

'0'-'4'(30h, 34h): Enable, once

ETX (03h): End of Message

Check code

BCC: Block Check Code

Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

3) The controller requests the monitor to write Enable/Disable Schedule.

Header	Message	Check code	Delimiter
SOH-'0'-Monitor ID-'0'-'A'-'0'-'A'	STX-'C'-'2'-'1'-'5'-PG-EN-ETX	BCC	CR

Header

SOH (01h): Start of Header

'0' (30h): Reserved

Monitor ID: Specify the Monitor ID of which you want to change a setting.

Ex.) If Monitor ID is '1', specify 'A'.

'0' (30h): Message sender is the controller.

'A' (41h): Message type is "Command".
'0'-'A'(30h, 41h): Message length

Message

STX (02h): Start of Message
'C'-'2'-'1'-'5' (43h, 32h, 31h, 35h): Enable/Disable Schedule writes command
PG-EN: Enable/Disable Schedule data
PG: Program No.
 '0'-'0'(30h, 30h): Program No.1
 |
 '0'-'6'(30h, 36h): Program No.7

EN: Enable /Disable
 '0'-'0'(30h, 30h): Disable
 '0'-'1'(30h, 31h): Enable

ETX (03h): End of Message

Check code

BCC: Block Check Code
Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

4) The monitor replies a data for confirmation.

Header	Message	Check code	Delimiter
SOH-'0'-'0'-Monitor ID- 'B'-'0'-'C'	STX-'C'-'3'-'1'-'5'-ST-PG-EN-ETX	BCC	CR

Header

SOH (01h): Start of Header
'0' (30h): Reserved
'0' (30h): Message receiver is the controller.
Monitor ID: Indicate a replying Monitor ID.
 Ex.) When this byte is set to 'A', the replying Monitor ID is '1'.
'B' (42h): Message type is "Command reply".
'0'-'C' (30h, 43h): Message length

Message

STX (02h): Start of Message
'C'-'3'-'1'-'5' (43h, 33h, 31h, 35h): Enable/Disable Schedule writes reply command
ST: Enable/Disable Schedule Status command
 '0'-'0'(30h, 30h): No error
 '0'-'1'(30h, 31h): Error
PG-EN: Enable/Disable Schedule data
PG: Program No.
 '0'-'0'(30h, 30h): Program No.1
 |
 '0'-'6'(30h, 36h): Program No.7

EN: Enable /Disable
 '0'-'0'(30h, 30h): Disable
 '0'-'1'(30h, 31h): Enable

ETX (03h): End of Message

Check code

BCC: Block Check Code
Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

11. Self diagnosis

11.1 Self-diagnosis status read

This command is used in order to read the Self-diagnosis status.

1) The controller requests the monitor to read Self-diagnosis status.

Header	Message	Check code	Delimiter
SOH-'0'-Monitor ID-'0'-'A'-'0'-'4'	STX-'B'-'1'-ETX	BCC	CR

Header

SOH (01h): Start of Header
 '0' (30h): Reserved
 Monitor ID: Specify the Monitor ID which you want to get status.
 Ex.) If Monitor ID is '1', specify 'A'.
 '0' (30h): Message sender is the controller.
 'A' (41h): Message type is "Command".
 '0'-'4'(30h, 34h): Message length

Message

STX (02h): Start of Message
 'B'-'1' (42h, 31h): Self-diagnosis command
 ETX (03h): End of Message

Check code

BCC: Block Check Code
 Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

2) The monitor replies a result of the self-diagnosis.

Header	Message	Check code	Delimiter
SOH-'0'-'0'-Monitor ID-'B'-N-N	STX-'A'-'1'-ST(0)-ST(1) -----ST(n)-ETX	BCC	CR

Header

SOH (01h): Start of Header
 '0' (30h): Reserved
 '0' (30h): Message receiver is the controller.
 Monitor ID: Indicate a replying Monitor ID.
 Ex.) When this byte is set to 'A', the replying Monitor ID is '1'.
 'B' (42h): Message type is "Command reply".
 N-N: Message length
 Note.) The maximum data length that can be written to the monitor at a time is 32bytes.
 Ex.) The byte data 20h is encoded as ASCII characters '2' and '0' (34h and 30h).

Message

STX (02h): Start of Message
 'A'-'1' (41h, 31h): Application Test Report reply command
 ST: Result of self-tests
 '0'-'0'(30h, 30h):00: Normal
 '7'-'0'(37h, 30h):70: Standby-power +3.3V abnormality
 '7'-'1'(37h, 31h):71: Standby-power +5V abnormality
 '7'-'2'(37h, 32h):72: Panel-power +12V abnormality
 '7'-'8'(37h, 38h):78: Inverter power/Option slot2 power +24V Abnormality
 '8'-'0'(38h, 30h):80: Cooling fan-1 abnormality
 '8'-'1'(38h, 31h):81: Cooling fan-2 abnormality
 ('8'-'2'(38h, 32h):82: Cooling fan-3 abnormality)
 '9'-'1'(39h, 31h):91: LED Backlight abnormality
 'A'-'0'(41h, 30h):A0: Temperature abnormality - shutdown
 'A'-'1'(41h, 31h):A1: Temperature abnormality - half brightness
 'A'-'2'(41h, 32h):A2: SENSOR reached at the temperature that the user had specified.

'B'-'0'(42h, 30h):B0: No signal
'D'-'0'(44h, 30h):D0: PROOF OF PLAY buffer reduction
'E'-'0'(45h, 30h):E0: System error

ETX (03h): End of Message

Check code

BCC: Block Check Code

Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

12. Serial No. & Model Name Read

12.1 Serial No. Read

This command is used in order to read a serial number.

- 1) The controller requests the monitor to read a serial number.

Header	Message	Check code	Delimiter
SOH-'0'-Monitor ID-'0'-'A'-'0'-'6'	STX-'C'-'2'-'1'-'6'-ETX	BCC	CR

Header

SOH (01h): Start of Header
 '0' (30h): Reserved
 Monitor ID: Specify the Monitor ID which you want to get serial number.
 Ex.) If Monitor ID is '1', specify 'A'.
 '0' (30h): Message sender is the controller.
 'A' (41h): Message type is "Command".
 '0'-'6'(30h, 36h): Message length

Message

STX (02h): Start of Message
 'C'-'2'-'1'-'6' (43h, 32h, 31h, 36h): Serial No. command
 ETX (03h): End of Message

Check code

BCC: Block Check Code
 Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

- 2) The monitor replies the serial No. data to the controller.

Header	Message	Check code	Delimiter
SOH-'0'-'0'-Monitor ID-'B'-'N'-N	STX-'C'-'3'-'1'-'6'-Data(0)-Data(1)---Data(n)-ETX	BCC	CR

Header

SOH (01h): Start of Header
 '0' (30h): Reserved
 '0' (30h): Message receiver is the controller.
 Monitor ID: Indicate a replying Monitor ID.
 Ex.) When this byte is set to 'A', the replying Monitor ID is '1'.
 'B' (42h): Message type is "Command reply".
 N-N: Message length
 Note.) The maximum data length that can be returned from the monitor at a time is 32bytes.
 Ex.) The byte data 20h is encoded as ASCII characters '2' and '0' (32h and 30h).

Message

STX (02h): Start of Message
 'C'-'3'-'1'-'6' (41h, 33h, 31h, 36h): Serial No. reply command
 Data(0)-Data(1)---Data(n):Serial Number
 ➤ The byte data 20h is encoded as ASCII characters '2' and '0' (32h and 30h).
 Ex.) For example when receiving Serial Number data 33h 31h 33h 32h 33h 33h 33h 34h
 Step1: Serial Number data is encoded as character string.
 Example:
 33h 31h 33h 32h 33h 33h 33h 34h -> '3','1','3','2','3','3','3','4'
 Step2: Decode pairs of ASCII characters to hexadecimal values.
 Example:
 '3','1','3','2','3','3','3','4' -> 31h 32h 33h 34h
 Step3: Byte data represents the ASCII string data.
 Example:
 31h 32h 33h 34h -> "1234"
 Result: Serial Number is "1234".

Note: No null termination character is sent.

ETX (03h): End of Message

Check code

BCC: Block Check Code

Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

12.2 Model Name Read

This command is used in order to read the Model Name.

- 1) The controller requests the monitor to read Model Name.

Header	Message	Check code	Delimiter
SOH-'0'-Monitor ID-'0'-'A'-'0'-'6'	STX-'C'-'2'-'1'-'7'-ETX	BCC	CR

Header

SOH (01h): Start of Header
 '0' (30h): Reserved
 Monitor ID: Specify the Monitor ID which you want to get Model Name.
 Ex.) If Monitor ID is '1', specify 'A'.
 '0' (30h): Message sender is the controller.
 'A' (41h): Message type is "Command".
 '0'-'6'(30h, 36h): Message length

Message

STX (02h): Start of Message
 'C'-'2'-'1'-'7' (43h, 32h, 31h, 37h): Model Name command
 ETX (03h): End of Message

Check code

BCC: Block Check Code
 Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

- 2) The monitor replies the model name data to the controller.

Header	Message	Check code	Delimiter
SOH-'0'-'0'-Monitor ID-'B'-'N'-N	STX-'C'-'3'-'1'-'7'-Data(0) -Data(1)----Data(n)-ETX	BCC	CR

Header

SOH (01h): Start of Header
 '0' (30h): Reserved
 '0' (30h): Message receiver is the controller.
 Monitor ID: Indicate a replying Monitor ID.
 Ex.) When this byte is set to 'A', the replying Monitor ID is '1'.
 'B' (42h): Message type is "Command reply".
 N-N: Message length
 Note.) The maximum data length that can be returned from the monitor at a time is 32bytes.
 Ex.) The byte data 20h is encoded as ASCII characters '2' and '0' (32h and 30h).

Message

STX (02h): Start of Message
 'C'-'3'-'1'-'7' (43h, 33h, 31h, 37h): Model Name reply Command
 Data(0) -Data(1)----Data(n):Model name
 ➤ The byte data 20h is encoded as ASCII characters '2' and '0' (32h and 30h).
 Ex.) For example when receiving Model Name data 35h 30h 33h 34h 33h 30h 33h 33h
 Step1: Model Name data is encoded character string.
 Example:
 35h 30h 33h 34h 33h 30h 33h 33h -> '5','0','3','4','3','0','3','3'
 Step2: Decode pairs of ASCII characters to hexadecimal values.
 Example:
 '5','0','3','4','3','0','3','3' -> 50h 34h 30h 33h
 Step3: Byte data represents the ASCII string data.
 Example:
 50h 34h 30h 33h -> "P403"
 Result: Model Name is "P403".
 Note: No null termination character is sent.
 ETX (03h): End of Message

Check code

BCC: Block Check Code

Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

13. Security Lock

13.1 Security Lock Control

This command sets the condition of security lock function to "LOCK" or "UNLOCK".

If security pass codes 1st to 4th are matched with monitor resisted pass codes, then this command is executed, and reply no error status and a new condition.

If codes aren't matched with them then setting isn't changed, and reply error status and a current condition.

If the monitor receives this command while waiting for Pass codes inputs, then it only checks Pass cords (and releases image muting if Pass codes are OK) and doesn't apply "EN" parameter.

1) The controller requests the monitor to set the condition of security lock.

Header	Message	Check code	Delimiter
SOH-'0'-MonitorID-'0'-'A'-'1'-'0'	STX-'C'-'2'-'1'-'D'-EN-P1-P2-P3-P4-ETX	BCC	CR

Header

SOH (01h): Start of Header

'0' (30h): Reserved

Monitor ID: Specify the Monitor ID of which you want to change a setting.

Ex.) If Monitor ID is '1', specify 'A'.

'0' (30h): Message sender is the controller.

'A' (41h): Message type is "Command".

'1'-'0'(31h, 30h): Message length

Message

STX (02h): Start of Message

'C'-'2'-'1'-'D' (43h, 32h, 31h, 44h): Security Lock Control command

EN-P1-P2-P3-P4: Lock condition control data

EN: Enable /Disable

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

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

P1: Security Pass code 1st

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

|

'0'-'9'(30h, 39h): "9"

P2: Security Pass code 2nd

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

|

'0'-'9'(30h, 39h): "9"

P3: Security Pass code 3rd

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

|

'0'-'9'(30h, 39h): "9"

P4: Security Pass code 4th

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

|

'0'-'9'(30h, 39h): "9"

ETX (03h): End of Message

Check code

BCC: Block Check Code

Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

2) The monitor replies the result to the controller.

Header	Message	Check code	Delimiter
SOH-'0'-'0'-Monitor ID- 'B'-'0'-'A'	STX-'C'-'3'-'1'-'D'- ST-EN-ETX	BCC	CR

Header

SOH (01h): Start of Header
 '0' (30h): Reserved
 '0' (30h): Message receiver is the controller.
 Monitor ID: Indicate a replying Monitor ID.
 Ex.) When this byte is set to 'A', the replying Monitor ID is '1'.
 'B' (42h): Message type is "Command reply".
 '0'-'A'(30h, 41h): Message length

Message

STX (02h): Start of Message
 'C'-'3'-'1'-'D' (43h, 33h, 31h, 44h): Security Lock Control reply command
 ST-EN: Lock condition result data
 ST: Status
 '0'-'0'(30h, 30h): No error
 '0'-'1'(30h, 31h): Error

 EN: Enable /Disable (Current condition)
 '0'-'0'(30h, 30h): Disable
 '0'-'1'(30h, 31h): START-UP LOCK (Enable)
 '0'-'2'(30h, 32h): CONTROL LOCK
 '0'-'3'(30h, 33h): BOTH LOCK

 ETX (03h): End of Message

Check code

BCC: Block Check Code
 Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

14. Direct TV Chanel Read & Write

When DTV unit (Option unit) is installed, channel settings is read and write directly.

14.1 Direct TV Chanel Read & Reply

- 1) The controller requests the monitor to read channel information.

Header	Message	Check code	Delimiter
SOH-'0'-Monitor ID-'0'-'A'-'0'-'6'	STX-'C'-'2'-'2'-'C'-ETX	BCC	CR

Header

SOH (01h): Start of Header
 '0' (30h): Reserved
 Monitor ID: Specify the Monitor ID which you want to get Model Name.
 Ex.) If Monitor ID is '1', specify 'A'.
 '0' (30h): Message sender is the controller.
 'A' (41h): Message type is "Command".
 '0'-'6'(30h, 36h): Message length

Message

STX (02h): Start of Message
 'C'-'2'-'2'-'C' (43h, 32h, 32h, 43h): Direct TV Channel Read command
 ETX (03h): End of Message

Check code

BCC: Block Check Code
 Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

- 2) The monitor replies the result to the controller.

Header	Message	Check code	Delimiter
SOH-'0'-'0'-Monitor ID-'B'-'1'-'2'	STX-'C'-'3'-'2'-'C'-MajorCH-MinorCH-ETX	BCC	CR

Header

SOH (01h): Start of Header
 '0' (30h): Reserved
 '0' (30h): Message receiver is the controller.
 Monitor ID: Indicate a replying Monitor ID.
 Ex.) When this byte is set to 'A', the replying Monitor ID is '1'.
 'B' (42h): Message type is "Command reply".
 '1'-'2'(31h, 32h): Message length = 18bytes

Message

STX (02h): Start of Message
 'C'-'3'-'2'-'C' (43h, 33h, 32h, 43h): Direct TV Channel read reply command
 MajorCH: Major Channel (0000000h - FFFFFFFh),
 '0'-'0'-'0'-'0'-'0'-'0'-'0'-'0' - 'F'-'F'-'F'-'F'-'F'-'F'-'F'-'F'
 MinorCH: Minor Channel (0000h - FFFFh),
 '0'-'0'-'0'-'0' - 'F'-'F'-'F'-'F'
 ETX (03h): End of Message

Check code

BCC: Block Check Code
 Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

14.2 Direct TV Chanel Write & Reply

1) The controller requests the monitor to write channel information.

Header	Message	Check code	Delimiter
SOH-'0'-Monitor ID-'0'-'A'-'1'-'2'	STX-'C'-'2'-'2'-'D'-MajorCH-MinorCH-ETX	BCC	CR

Header

SOH (01h): Start of Header
 '0' (30h): Reserved
 Monitor ID: Specify the Monitor ID which you want to get Model Name.
 Ex.) If Monitor ID is '1', specify 'A'.
 '0' (30h): Message sender is the controller.
 'A' (41h): Message type is "Command".
 '1'-'2'(31h, 32h): Message length = 18bytes

Message

STX (02h): Start of Message
 'C'-'2'-'2'-'D' (43h, 32h, 32h, 44h): Direct TV Channel write command
 MajorCH: Major Channel (00000000h - FFFFFFFFh),
 '0'-'0'-'0'-'0'-'0'-'0'-'0'-'0' - 'F'-'F'-'F'-'F'-'F'-'F'-'F'-'F'
 MinorCH: Minor Channel (0000h - FFFFh),
 '0'-'0'-'0'-'0' - 'F'-'F'-'F'-'F'
 ETX (03h): End of Message

Check code

BCC: Block Check Code
 Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

2) The monitor replies the result to the controller.

Header	Message	Check code	Delimiter
SOH-'0'-'0'-Monitor ID-'B'-'1'-'2'	STX-'C'-'3'-'2'-'D'-MajorCH-MinorCH-ETX	BCC	CR

Header

SOH (01h): Start of Header
 '0' (30h): Reserved
 '0' (30h): Message receiver is the controller.
 Monitor ID: Indicate a replying Monitor ID.
 Ex.) When this byte is set to 'A', the replying Monitor ID is '1'.
 'B' (42h): Message type is "Command reply".
 '1'-'2'(31h, 32h): Message length = 18bytes

Message

STX (02h): Start of Message
 'C'-'3'-'2'-'D' (43h, 33h, 32h, 43h): Direct TV Channel write reply command
 MajorCH: Major Channel (00000000h - FFFFFFFFh),
 '0'-'0'-'0'-'0'-'0'-'0'-'0'-'0' - 'F'-'F'-'F'-'F'-'F'-'F'-'F'-'F'
 MinorCH: Minor Channel (0000h - FFFFh),
 '0'-'0'-'0'-'0' - 'F'-'F'-'F'-'F'
 ETX (03h): End of Message

Check code

BCC: Block Check Code
 Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

15. Daylight Saving read & write

15.1 Daylight Saving Read

This command is used in order to read the setting of Daylight Saving.

- 1) The controller requests the monitor to reply a Daylight Saving setting.

Header	Message	Check code	Delimiter
SOH-'0'-Monitor ID-'0'-'A'-'0'-'8'	STX-'C'-'A'-'0'-'1'-'0'-'0'-ETX	BCC	CR

Header

SOH (01h): Start of Header
'0' (30h): Reserved
Monitor ID: Specify the Monitor ID of which you want to change a setting.
Ex.) If Monitor ID is '1', specify 'A'.
'0' (30h): Message sender is the controller.
'A' (41h): Message type is "Command".
'0'-'8'(30h, 38h): Message length (8bytes)

Message

STX (02h): Start of Message
'C'-'A'-'0'-'1' (43h, 41h, 30h, 31h): Daylight Saving Command
'0'-'0' (30h, 30h): Read
ETX (03h): End of Message

Check code

BCC: Block Check Code
Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

- 2) The monitor replies Date & Time to the controller.

Header	Message	Check code	Delimiter
SOH-'0'-'0'-Monitor ID-'B'-'2'-'0'	STX-'C'-'B'-'0'-'1'-'0'-'0'-ST-BM-BD1-BD-BT1-BT2-EM-ED1-ED2-ET1-ET2-TD-ETX	BCC	CR

Header

SOH (01h): Start of Header
'0' (30h): Reserved
'0' (30h): Message receiver is the controller.
Monitor ID: Indicate a replying Monitor ID.
Ex.) When this byte is set to 'A', replying monitor's ID is '1'.
'B' (42h): Message type is "Command reply".
'2'-'0'(32h, 30h): Message length (32bytes)

Message

STX (02h): Start of Message
'C'-'B'-'0'-'1' (43h, 42h, 30h, 31h): Daylight Saving Setting reply command
'0'-'0' (30h, 30h): Read
ST: Error Status
No Error : 00h (30h, 30h)
Error : 01h (30h, 31h)
BM: BEGIN MONTH
JANUARY - DECEMBER: 01h (30h, 31h) - 12h (31h, 32h)
BD1: BEGIN DAY1
FIRST : 01h (30h, 31h)
SECOND : 02h (30h, 32h)
THIRD : 03h (30h, 33h)
FOUR : 04h (30h, 34h)

LAST : 05h (30h, 35h)
BD2: BEGIN DAY2 (Day of the week)
SUNDAY : 01h (30h, 31h)
MONDAY : 02h (30h, 32h)
TUESDAY : 03h (30h, 33h)
WEDNESDAY : 04h (30h, 34h)
THURSDAY : 05h (30h, 35h)
FRIDAY : 06h (30h, 36h)
SATURDAY : 07h (30h, 37h)
BT1: BEGIN TIME1 (Hour)
00h (30h, 30h) - 23 (32h, 33h)
BT2: BEGIN TIME2 (Minute)
00h (30h, 30h) - 59 (35h, 39h)
EM: END MONTH
JANUARY - DECEMBER: 01h (30h, 31h) - 12h (31h, 32h)
ED1: END DAY1
FIRST : 01h (30h, 31h)
SECOND : 02h (30h, 32h)
THIRD : 03h (30h, 33h)
FOUR : 04h (30h, 34h)
LAST : 05h (30h, 35h)
ED2: END DAY2 (Day of the week)
SUNDAY : 01h (30h, 31h)
MONDAY : 02h (30h, 32h)
TUESDAY : 03h (30h, 33h)
WEDNESDAY : 04h (30h, 34h)
THURSDAY : 05h (30h, 35h)
FRIDAY : 06h (30h, 36h)
SATURDAY : 07h (30h, 37h)
ET1: END TIME1 (Hour)
00h (30h, 30h) - 23 (32h, 33h)
ET2: END TIME2 (Minute)
00h (30h, 30h) - 59 (35h, 39h)
TD: TIME DIFFERENCE
+01:00 : 00h (30h, 30h)
+00:30 : 01h (30h, 31h)
-00:30 : 02h (30h, 32h)
-01:00 : 03h (30h, 33h)
ETX (03h): End of Message

Check code

BCC: Block Check Code
Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

15.2 Daylight Saving Write

This command is used in order to write the setting of the Daylight Saving.

- 1) The controller requests the monitor to write Daylight Saving.

Header	Message	Check code	Delimiter
SOH-'0'-Monitor ID-'0'-'A'-'1'-'E'	STX-'C'-'A'-'0'-'1'-'0'-'1'-BM-BD1-BD2-BT1-BT2-EM-ED1-ED2-ET1-ET2-TD-ETX	BCC	CR

Header

SOH (01h): Start of Header
 '0' (30h): Reserved
 Monitor ID: Specify the Monitor ID of which you want to change a setting.
 Ex.) If Monitor ID is '1', specify 'A'.
 '0' (30h): Message sender is the controller.
 'A' (41h): Message type is "Command".
 '1'-'E'(31h, 45h): Message length (30bytes)

Message

STX (02h): Start of Message
 'C'-'A'-'0'-'1' (43h, 41h, 30h, 31h): Daylight Saving Setting Command
 '0'-'1' (30h, 31h): Write
 BM: BEGIN MONTH
 JANUARY - DECEMBER: 01h (30h, 31h) - 12h (31h, 32h)
 BD1: BEGIN DAY1
 FIRST : 01h (30h, 31h)
 SECOND : 02h (30h, 32h)
 THIRD : 03h (30h, 33h)
 FOUR : 04h (30h, 34h)
 LAST : 05h (30h, 35h)
 BD2: BEGIN DAY2 (Day of the week)
 SUNDAY : 01h (30h, 31h)
 MONDAY : 02h (30h, 32h)
 TUESDAY : 03h (30h, 33h)
 WEDNESDAY : 04h (30h, 34h)
 THURSDAY : 05h (30h, 35h)
 FRIDAY : 06h (30h, 36h)
 SATURDAY : 07h (30h, 37h)
 BT1: BEGIN TIME1 (Hour)
 00h (30h, 30h) - 23 (32h, 33h)
 BT2: BEGIN TIME2 (Minute)
 00h (30h, 30h) - 59 (35h, 39h)
 EM: END MONTH
 JANUARY - DECEMBER: 01h (30h, 31h) - 12h (31h, 32h)
 ED1: END DAY1
 FIRST : 01h (30h, 31h)
 SECOND : 02h (30h, 32h)
 THIRD : 03h (30h, 33h)
 FOUR : 04h (30h, 34h)
 LAST : 05h (30h, 35h)
 ED2: END DAY2 (Day of the week)
 SUNDAY : 01h (30h, 31h)
 MONDAY : 02h (30h, 32h)
 TUESDAY : 03h (30h, 33h)
 WEDNESDAY : 04h (30h, 34h)
 THURSDAY : 05h (30h, 35h)
 FRIDAY : 06h (30h, 36h)
 SATURDAY : 07h (30h, 37h)
 ET1: END TIME1 (Hour)
 00h (30h, 30h) - 23 (32h, 33h)
 ET2: END TIME2 (Minute)
 00h (30h, 30h) - 59 (35h, 39h)
 TD: TIME DIFFERENCE

+01:00 : 00h (30h, 30h)
 +00:30 : 01h (30h, 31h)
 -00:30 : 02h (30h, 32h)
 -01:00 : 03h (30h, 33h)
 ETX (03h): End of Message

Check code

BCC: Block Check Code

Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

2) The monitor replies a written in result.

Header	Message	Check code	Delimiter
SOH-'0'-'0'-Monitor ID- 'B'-'0'-'A'	STX-'C'-'B'-'0'-'1'-'0'-'1'-ST-ETX	BCC	CR

Header

SOH (01h): Start of Header

'0' (30h): Reserved

'0' (30h): Message receiver is the controller.

Monitor ID: Indicate a replying Monitor ID.

Ex.) When this byte is set to 'A', replying monitor's ID is '1'.

'B' (42h): Message type is "Command reply".

'0'-'A'(30h, 41h): Message length (10bytes)

Message

STX (02h): Start of Message

'C'-'B'-'0'-'1' (43h, 42h, 30h, 31h): Daylight Saving Setting Command

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

ST: Error Status

No Error : 00h (30h, 30h)

Error : 01h (30h, 31h)

ETX (03h): End of Message

Check code

BCC: Block Check Code

Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

16. Firmware Version

16.1 Firmware Version Read

This command is used in order to read a firmware version.

- 1) The controller requests the monitor to reply a firmware version.

Header	Message	Check code	Delimiter
SOH-'0'-Monitor ID-'0'-'A'-'0'-'8'	STX-'C'-'A'-'0'-'2'-TY-ETX	BCC	CR

Header

SOH (01h): Start of Header
 '0' (30h): Reserved
 Monitor ID: Specify the Monitor ID of which you want to change a setting.
 Ex.) If Monitor ID is '1', specify 'A'.
 '0' (30h): Message sender is the controller.
 'A' (41h): Message type is "Command".
 '0'-'8'(30h, 38h): Message length (8bytes)

Message

STX (02h): Start of Message
 'C'-'A'-'0'-'2' (43h, 41h, 30h, 32h): Firmware Version Command
 TY: Firmware Type
 Firmware1: 00h (30h, 30h)
 Firmware2: 01h (30h, 31h)
 Firmware3: 02h (30h, 32h)
 Firmware4: 03h (30h, 33h)
 ETX (03h): End of Message

Check code

BCC: Block Check Code
 Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

- 2) The monitor replies a firmware version to the controller.

Header	Message	Check code	Delimiter
SOH-'0'-Monitor ID-'0'-'B'-'1'-'1'	STX-'C'-'B'-'0'-'2'-ST-TY-MV-PP-BV1-BV2-BV3-BR1-BR2-ETX	BCC	CR

Header

SOH (01h): Start of Header
 '0' (30h): Reserved
 '0' (30h): Message receiver is the controller.
 Monitor ID: Indicate a replying Monitor ID.
 Ex.) When this byte is set to 'A', replying monitor's ID is '1'.
 'B' (42h): Message type is "Command reply".
 '1'-'1'(31h, 31h): Message length (17bytes)

Message

STX (02h): Start of Message
 'C'-'B'-'0'-'2' (43h, 42h, 30h, 32h): Firmware Version Read reply
 ST: Error Status
 No Error : 00h (30h, 30h)
 Error : 01h (30h, 31h)
 TY: Firmware Type
 Firmware1: 00h (30h, 30h)
 Firmware2: 01h (30h, 31h)
 MV: Major Version:

00h (30h, 30h) - 09h (30h, 39h)
PP: Period:
2Eh (32h, 45h) (fixed)
BV1: Minor (Basic) Version1:
00h (30h, 30h) - 09h (30h, 39h)
BV2: Minor (Basic) Version2:
00h (30h, 30h) - 09h (30h, 39h)
BV3: Minor (Basic) Version3:
00h (30h, 30h) - 09h (30h, 39h)
BR1: Branch Version1:
A:41h (34h, 31h) - Z:5Ah (35h, 41h)
BR2: Branch Version1:
A:41h (34h, 31h) - Z:5Ah (35h, 41h)

Check code

BCC: Block Check Code
Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

17. Auto ID

17.1 Auto ID Execute

This command is used in order to execute Auto ID function.

- 1) The controller requests the monitor to execute Auto ID function.

Header	Message	Check code	Delimiter
SOH-'0'-Monitor ID-'0'-'A'-'0'-'8'	STX-'C'-'A'-'0'-'A'-'0'-'1'-ETX	BCC	CR

Header

SOH (01h): Start of Header
'0' (30h): Reserved
Monitor ID: Specify the Monitor ID of which you want to change a setting.
Ex.) If Monitor ID is '1', specify 'A'.
'0' (30h): Message sender is the controller.
'A' (41h): Message type is "Command".
'0'-'8'(30h, 38h): Message length (8byte)

Message

STX (02h): Start of Message
'C'-'A'-'0'-'A' (43h, 41h, 30h, 41h, 30h, 31h): Auto ID Command
'0'-'1' (30h, 30h): Execute
ETX (03h): End of Message

Check code

BCC: Block Check Code
Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

- 2) The monitor replies receipt result.

Header	Message	Check code	Delimiter
SOH-'0'-'0'-Monitor ID-'B'-'0'-'A'	STX-'C'-'B'-'0'-'A'-'0'-'1'-ST-ETX	BCC	CR

Header

SOH (01h): Start of Header
'0' (30h): Reserved
'0' (30h): Message receiver is the controller.
Monitor ID: Indicate a replying Monitor ID.
Ex.) When this byte is set to 'A', replying monitor's ID is '1'.
'B' (42h): Message type is "Command reply".
'0'-'A'(30h,41h): Message length (10byte)

Message

STX (02h): Start of Message
'C'-'B'-'0'-'A' (43h, 42h, 30h, 41h, 30h, 31h): Auto ID Reply Command
'0'-'1' (30h, 30h): Execute
ST: Error Status
No Error : 00h (30h, 30h)
Error : 01h (30h, 31h)
ETX (03h): End of Message

Check code

BCC: Block Check Code
Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

17.2 Auto ID Complete

This command is used in order to notify complete status of Auto ID.

- 1) The monitor sends the controller to complete status of Auto ID.

Header	Message	Check code	Delimiter
SOH-'0'-Monitor ID-'0'-'A'-'0'-'C'	STX-'C'-'A'-'0'-'A'-'0'-'2'-ST-MON-ETX	BCC	CR

Header

SOH (01h): Start of Header
 '0' (30h): Reserved
 Monitor ID: Specify the Monitor ID of which you want to change a setting.
 Ex.) If Monitor ID is '1', specify 'A'.
 '0' (30h): Message sender is the controller.
 'A' (41h): Message type is "Command".
 '0'-'C'(30h,43h): Message length (12byte)

Message

STX (02h): Start of Message
 'C'-'A'-'0'-'A'-'0'-'2' (43h, 41h, 30h, 41h, 30h, 32h): Auto ID
 '0'-'2' (30h,32h): Complete
 ST: Error Status
 No Error : 00h (30h, 30h)
 Error : 01h (30h, 31h)
 MON: DETECTED MONITORS
 01h (30h, 31h) - 64h (36h, 34h)
 ETX (03h): End of Message

Check code

BCC: Block Check Code
 Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

- 2) The controller replies to the monitor.

Header	Message	Check code	Delimiter
SOH-'0'-'0'-Monitor ID-'B'-'0'-'A'	STX-'C'-'B'-'0'-'A'-'0'-'2'-ST-ETX	BCC	CR

Header

SOH (01h): Start of Header
 '0' (30h): Reserved
 '0' (30h): Message receiver is the controller.
 Monitor ID: Indicate a replying Monitor ID.
 Ex.) When this byte is set to 'A', replying monitor's ID is '1'.
 'B' (42h): Message type is "Command reply".
 '0'-'A'(30h,41h): Message length (10byte)

Message

STX (02h): Start of Message
 'C'-'B'-'0'-'A' (43h, 42h, 30h, 41h): Auto ID Reply Command
 '0'-'2' (30h,32h): Complete
 ST : Error Status
 No Error : 00h (30h, 30h) *Fixed
 ETX (03h): End of Message

Check code

BCC: Block Check Code

Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

17.3 Auto ID Reset

This command is used in order to reset Auto ID.

- 1) The controller requests the monitor to reset Auto ID.

Header	Message	Check code	Delimiter
SOH-'0'-Monitor ID-'0'-'A'-'0'-'8'	STX-'C'-'A'-'0'-'A'-'0'-'3'-ETX	BCC	CR

Header

SOH (01h): Start of Header
 '0' (30h): Reserved
 Monitor ID: Specify the Monitor ID of which you want to change a setting.
 Ex.) If Monitor ID is '1', specify 'A'.
 '0' (30h): Message sender is the controller.
 'A' (41h): Message type is "Command".
 '0'-'8'(30h, 38h): Message length (8byte)

Message

STX (02h): Start of Message
 'C'-'A'-'0'-'A' (43h, 41h, 30h, 41h): Auto ID Command
 '0'-'3' (30h, 33h): Reset
 ETX (03h): End of Message

Check code

BCC: Block Check Code
 Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

- 2) The monitor replies to the controller.

Header	Message	Check code	Delimiter
SOH-'0'-'0'-Monitor ID-'B'-'0'-'A'	STX-'C'-'B'-'0'-'A'-'0'-'3'-ST-ETX	BCC	CR

Header

SOH (01h): Start of Header
 '0' (30h): Reserved
 '0' (30h): Message receiver is the controller.
 Monitor ID: Indicate a replying Monitor ID.
 Ex.) When this byte is set to 'A', replying monitor's ID is '1'.
 'B' (42h): Message type is "Command reply".
 '0'-'A'(30h,41h): Message length (10byte)

Message

STX (02h): Start of Message
 'C'-'B'-'0'-'A' (43h, 42h, 30h, 41h): Auto ID Reply
 '0'-'3' (30h, 33h): Reset
 ST: Error Status
 No Error : 00h (30h, 30h)
 Error : 01h (30h, 31h)
 ETX (03h): End of Message

Check code

BCC: Block Check Code
 Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

18. Input Name

18.1 Input Name Read

This command is used in order to read the setting of Input Name.

- 1) The controller requests the monitor to reply Input Name setting.

Header	Message	Check code	Delimiter
SOH-'0'-Monitor ID-'0'-'A'-'0'-'8'	STX-'C'-'A'-'0'-'4'-'0'-'0'-ETX	BCC	CR

Header

SOH (01h): Start of Header
 '0' (30h): Reserved
 Monitor ID: Specify the Monitor ID of which you want to change a setting.
 Ex.) If Monitor ID is '1', specify 'A'.
 '0' (30h): Message sender is the controller.
 'A' (41h): Message type is "Command".
 '0'-'8'(30h, 38h): Message length (8bytes)

Message

STX (02h): Start of Message
 'C'-'A'-'0'-'4' (43h, 41h, 30h, 34h): Input Name Command
 '0'-'0' (30h, 30h): Read
 ETX (03h): End of Message

Check code

BCC: Block Check Code
 Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

- 2) The monitor replies Input Name to the controller.

Header	Message	Check code	Delimiter
SOH-'0'-'0'-Monitor ID-'B'-LN(H)-LN(L)	STX-'C'-'B'-'0'-'4'-'0'-'0'-Data(0)-Data(1)-Data(2)- --- -Data(n)-ETX	BCC	CR

Header

SOH (01h): Start of Header
 '0' (30h): Reserved
 '0' (30h): Message receiver is the controller.
 Monitor ID: Indicate a replying Monitor ID.
 Ex.) When this byte is set to 'A', replying monitor's ID is '1'.
 'B' (42h): Message type is "Command reply".
 LN(H)-LN(L): Message length (byte length), from STX to ETX
 Ex.) The byte data 20h is encoded as ASCII characters '2' and '0' (32h and 30h).

Message

STX (02h): Start of Message
 'C'-'B'-'0'-'4' (43h, 42h, 30h, 34h): Input Name command reply
 '0'-'0' (30h, 30h): Read
 Data(n) : Input name *n = Max 14
 ➤ The byte data 20h is encoded as ASCII characters '2' and '0' (32h and 30h).
 Ex.) For example when receiving Data(n) of 35h 36h 34h 37h 34h 31h
 Step1: Input Name data is encoded as character code.
 Example:
 35h 36h 34h 37h 34h 31h -> '5'-'6'-'4'-'7'-'4'-'1'
 Step2: Decode pairs of ASCII characters to hexadecimal values.
 Example:
 '5'-'6'-'4'-'7'-'4'-'1' -> 56h 47h 41h
 Step3: Byte data represents the ASCII string data.

Example:
56h 47h 41h -> "VGA"
Result: Input Name is "VGA".
Note: No null termination character is sent.
ETX (03h): End of Message

Check code

BCC: Block Check Code
Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

18.2 Input Name Write

This command is used in order to write the setting of Input Name.

- 1) The controller requests the monitor to write Input Name.

Header	Message	Check code	Delimiter
SOH-'0'-Monitor ID-'0'-'A'- LN(H)-LN(L)	STX-'C'-'A'-'0'-'4'-'0'-'1'-Data(0)-Data(1)-Data(2)- --- -Data(n)-ETX	BCC	CR

Header

SOH (01h): Start of Header

'0' (30h): Reserved

Monitor ID: Specify the Monitor ID of which you want to change a setting.

Ex.) If Monitor ID is '1', specify 'A'.

'0' (30h): Message sender is the controller.

'A' (41h): Message type is "Command".

LN(H)-LN(L): Message length (byte length), from STX to ETX

Ex.) The byte data 20h is encoded as ASCII characters '2' and '0' (32h and 30h).

Message

STX (02h): Start of Message

'C'-'A'-'0'-'4' (43h, 41h, 30h, 34h): Input name Command

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

Data(n) : Input name *n = Max 14

- The byte data 20h is encoded as ASCII characters '2' and '0' (32h and 30h).

Ex.) In the case of Input Name "VGA"

Step1: Input Name data is handled as character code.

Example:

"VGA" -> 56h 47h 41h (ASCII)

Step2: The hexadecimal value of each original character is encoded as two ASCII characters representing the value.

Example:

56h 47h 41h -> '5'-'6'-'4'-'7'-'4'-'1'

Result: The following data is assigned to Data(n).

35h 36h 34h 37h 34h 31h

ETX (03h): End of Message

Check code

BCC: Block Check Code

Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

- 2) The monitor replies a written in result.

Header	Message	Check code	Delimiter
SOH-'0'-'0'-Monitor ID-'B'-'0'-'A'	STX-'C'-'B'-'0'-'0'-'0'-'1'-ST-ETX	BCC	CR

Header

SOH (01h): Start of Header

'0' (30h): Reserved

'0' (30h): Message receiver is the controller.

Monitor ID: Indicate a replying Monitor ID.

Ex.) When this byte is set to 'A', replying monitor's ID is '1'.

'B' (42h): Message type is "Command reply".

'0'-'A'(30h, 41h): Message length (10bytes)

Message

STX (02h): Start of Message

'C'-'B'-'0'-'4' (43h, 42h, 30h, 34h): Input name Command

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

ST: Status
 00h (30h, 30h): No Error
 01h (30h, 31h): Error
ETX (03h): End of Message

Check code

BCC: Block Check Code
 Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

18.3 Input Name Reset

This command is used in order to reset the Input Name.

- 1) The controller requests the monitor to reset Input Name.

Header	Message	Check code	Delimiter
SOH-'0'-Monitor ID-'0'-'A'-'0'-'8'	STX-'C'-'A'-'0'-'4'-'0'-'2'-ETX	BCC	CR

Header

SOH (01h): Start of Header
 '0' (30h): Reserved
 Monitor ID: Specify the Monitor ID of which you want to change a setting.
 Ex.) If Monitor ID is '1', specify 'A'.
 '0' (30h): Message sender is the controller.
 'A' (41h): Message type is "Command".
 '0'-'8'(30h, 38h): Message length (8bytes)

Message

STX (02h): Start of Message
 'C'-'A'-'0'-'4' (43h, 41h, 30h, 34h): Input Name Command
 '0'-'2' (30h, 32h): Reset
 ETX (03h): End of Message

Check code

BCC: Block Check Code
 Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

- 2) The monitor replies result.

Header	Message	Check code	Delimiter
SOH-'0'-'0'-Monitor ID-'B'-'0'-'A'	STX-'C'-'B'-'0'-'0'-'0'-'2'-ST-ETX	BCC	CR

Header

SOH (01h): Start of Header
 '0' (30h): Reserved
 '0' (30h): Message receiver is the controller.
 Monitor ID: Indicate a replying Monitor ID.
 Ex.) When this byte is set to 'A', replying monitor's ID is '1'.
 'B' (42h): Message type is "Command reply".
 '0'-'A'(30h, 41h): Message length (10bytes)

Message

STX (02h): Start of Message
 'C'-'B'-'0'-'4' (43h, 42h, 30h, 34h): Input name Command
 '0'-'2' (30h, 32h): Reset
 ST: Status
 00h (30h, 30h): No Error
 01h (30h, 31h): Error
 ETX (03h): End of Message

Check code

BCC: Block Check Code
 Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

19. Auto Tile Matrix

19.1 Auto Tile Matrix Execute

This command is used in order to activate the Auto Tile Matrix Setup.

- 1) The controller requests the monitor to execute Auto Tile Matrix

Header	Message	Check code	Delimiter
SOH-'0'-Monitor ID-'0'-'A'-'1'-'2'	STX-'C'-'A'-'0'-'3'-'0'-'1'-HM-VM-PID-SEL-TMEM-ETX	BCC	CR

Header

SOH (01h): Start of Header
 '0' (30h): Reserved
 Monitor ID: Specify the Monitor ID of which you want to change a setting.
 Ex.) If Monitor ID is '1', specify 'A'.
 '0' (30h): Message sender is the controller.
 'A' (41h): Message type is "Command".
 '1'-'2'(31h, 32h): Message length (18bytes)

Message

STX (02h): Start of Message
 'C'-'A'-'0'-'3' (43h, 41h, 30h, 33h): Auto Tile Matrix Command
 '0'-'1' (30h, 31h): Execution
 HM: HORIZONTAL MONITORS
 01h (30h, 31h) - 10h (31h, 30h)
 VM: VERTICAL MONITORS
 01h (30h, 31h) - 10h (31h, 30h)
 PID: PATTERN ID
 01h (30h, 31h) *Fixed
 SEL: CURRENT INPUT SELECT
 VGA : 01h (30h, 31h)
 DVI : 03h (30h, 33h)
 VIDEO : 05h (30h, 35h)
 S-VIDEO : 07h (30h, 37h)
 Y/Pb/Pr : 0Ch (30h, 43h)
 OPTION : 0Dh (30h, 44h)
 Y/Pb/Pr2 : 0Eh (30h, 45h)
 DPORT : 0Fh (30h, 46h)
 DPORT2 : 10h (31h, 30h)
 HDMI : 11h (31h, 31h)
 HDMI2 : 12h (31h, 32h)
 DPORT3 : 80h (38h, 30h)
 TMEM: TILE MATRIX MEM
 COMMON : 00h (30h, 30h)
 INPUT : 01h (30h, 31h)
 ETX (03h): End of Message

Check code

BCC: Block Check Code
 Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

- 2) The monitor replies receipt result.

Header	Message	Check code	Delimiter
SOH-'0'-'0'-Monitor ID-'B'-'0'-'A'	STX-'C'-'B'-'0'-'3'-'0'-'1'-ST-ETX	BCC	CR

Header

SOH (01h): Start of Header
 '0' (30h): Reserved

'0' (30h): Message receiver is the controller.
Monitor ID: Indicate a replying Monitor ID.
Ex.) When this byte is set to 'A', replying monitor's ID is '1'.
'B' (42h): Message type is "Command reply".
'0'-'A'(30h, 41h): Message length (10bytes)

Message

STX (02h): Start of Message
'C'-'B'-'0'-'3' (43h, 42h, 30h, 33h): Auto Tile Matrix Command
'0'-'1' (30h, 31h): Execution
ST: Error Status
 No Error : 00h (30h, 30h)
 Error : 01h (30h, 31h)
ETX (03h): End of Message

Check code

BCC: Block Check Code
 Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

19.2 Auto Tile Matrix Complete

This command is used in order to notify complete status of Auto Tile Matrix Setup.

- 1) The monitor notifies that Auto Tile Matrix completed to controller.

Header	Message	Check code	Delimiter
SOH-'0'-Monitor ID-'0'-'A'-'0'-'A'	STX-'C'-'A'-'0'-'3'-'0'-'2'-ST-ETX	BCC	CR

Header

SOH (01h): Start of Header
 '0' (30h): Reserved
 Monitor ID: Specify the Monitor ID of which you want to change a setting.
 Ex.) If Monitor ID is '1', specify 'A'.
 '0' (30h): Message sender is the controller.
 'A' (41h): Message type is "Command".
 '0'-'A'(30h, 41h): Message length (10bytes)

Message

STX (02h): Start of Message
 'C'-'A'-'0'-'3'-'0'-'2' (43h, 41h, 30h, 33h, 30h, 32h): Auto Tile Matrix Complete
 '0'-'2' (30h, 32h): Notify
 ST: Error Status
 No Error : 00h (30h, 30h)
 Error : 01h (30h, 31h)
 ETX (03h): End of Message

Check code

BCC: Block Check Code
 Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

- 2) The controller replies to the monitor.

Header	Message	Check code	Delimiter
SOH-'0'-'0'-Monitor ID-'B'-'0'-'A'	STX-'C'-'B'-'0'-'3'-'0'-'2'-ST-ETX	BCC	CR

Header

SOH (01h): Start of Header
 '0' (30h): Reserved
 '0' (30h): Message receiver is the controller.
 Monitor ID: Indicate a replying Monitor ID.
 Ex.) When this byte is set to 'A', replying monitor's ID is '1'.
 'B' (42h): Message type is "Command reply".
 '0'-'A'(30h, 41h): Message length (10bytes)

Message

STX (02h): Start of Message
 'C'-'B'-'0'-'3' (43h, 42h, 30h, 33h): Auto Tile Matrix Command
 '0'-'2' (30h, 32h): Notify
 ST: Error Status
 No Error : 00h (30h, 30h) *Fixed
 ETX (03h): End of Message

Check code

BCC: Block Check Code
 Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

19.3 Auto Tile Matrix Monitors Read

This command is used in order to read the setting of H/V Monitors.

- 1) The controller requests the monitor to reply H/V Monitors setting.

Header	Message	Check code	Delimiter
SOH-'0'-Monitor ID-'0'-'A'-'0'-'8'	STX-'C'-'A'-'0'-'3'-'0'-'4'-ETX	BCC	CR

Header

SOH (01h): Start of Header
 '0' (30h): Reserved
 Monitor ID: Specify the Monitor ID of which you want to change a setting.
 Ex.) If Monitor ID is '1', specify 'A'.
 '0' (30h): Message sender is the controller.
 'A' (41h): Message type is "Command".
 '0'-'8'(30h, 38h): Message length (8bytes)

Message

STX (02h): Start of Message
 'C'-'A'-'0'-'3' (43h, 41h, 30h, 33h): Auto Tile Matrix Command
 '0'-'4' (30h, 34h): Monitors Read
 ETX (03h): End of Message

Check code

BCC: Block Check Code
 Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

- 2) The monitor replies H/V Monitors to the controller.

Header	Message	Check code	Delimiter
SOH-'0'-'0'-Monitor ID-'B'-'0'-'E'	STX-'C'-'B'-'0'-'3'-'0'-'4'-ST-HM-VM-ETX	BCC	CR

Header

SOH (01h): Start of Header
 '0' (30h): Reserved
 '0' (30h): Message receiver is the controller.
 Monitor ID: Indicate a replying Monitor ID.
 Ex.) When this byte is set to 'A', replying monitor's ID is '1'.
 'B' (42h): Message type is "Command reply".
 '0'-'E'(30h, 45h): Message length (14bytes)

Message

STX (02h): Start of Message
 'C'-'B'-'0'-'3' (43h, 42h, 30h, 33h): Auto Tile Matrix reply
 '0'-'4' (30h, 34h): Monitors Read
 ST: Error Status
 No Error : 00h (30h, 30h)
 Error : 01h (30h, 31h)
 HM: H MONITORS
 00h - 0Ah (30h, 30h - 30h, 41h)
 VM: V MONITORS
 00h - 0Ah (30h, 30h - 30h, 41h)
 ETX (03h): End of Message

Check code

BCC: Block Check Code

Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

19.4 Auto Tile Matrix Monitors Write

This command is used in order to write the setting of H/V Monitors.

- 1) The controller requests the monitor to write H/V Monitors.

Header	Message	Check code	Delimiter
SOH-'0'-Monitor ID-'0'-'A'-'0'-'C'	STX-'C'-'A'-'0'-'3'-'0'-'5'-HM-VM-ETX	BCC	CR

Header

SOH (01h): Start of Header
 '0' (30h): Reserved
 Monitor ID: Specify the Monitor ID of which you want to change a setting.
 Ex.) If Monitor ID is '1', specify 'A'.
 '0' (30h): Message sender is the controller.
 'A' (41h): Message type is "Command".
 '0'-'C'(30h, 43h): Message length (12bytes)

Message

STX (02h): Start of Message
 'C'-'A'-'0'-'3' (43h, 41h, 30h, 33h): Auto Tile Matrix Command
 '0'-'5' (30h, 34h): Monitors Write
 HM: H MONITORS
 00h - 0Ah (30h, 30h - 30h, 41h)
 VM: V MONITORS
 00h - 0Ah (30h, 30h - 30h, 41h)
 ETX (03h): End of Message

Check code

BCC: Block Check Code
 Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

- 2) The monitor replies a written in result.

Header	Message	Check code	Delimiter
SOH-'0'-'0'-Monitor ID-'B'-'0'-'A'	STX-'C'-'B'-'0'-'3'-'0'-'5'-ST-ETX	BCC	CR

Header

SOH (01h): Start of Header
 '0' (30h): Reserved
 '0' (30h): Message receiver is the controller.
 Monitor ID: Indicate a replying Monitor ID.
 Ex.) When this byte is set to 'A', replying monitor's ID is '1'.
 'B' (42h): Message type is "Command reply".
 '0'-'A'(30h, 41h): Message length (14bytes)

Message

STX (02h): Start of Message
 'C'-'B'-'0'-'3' (43h, 42h, 30h, 33h): Auto Tile Matrix reply
 '0'-'5' (30h, 34h): Monitors Write
 ST: Error Status
 No Error : 00h (30h, 30h)
 Error : 01h (30h, 31h)
 ETX (03h): End of Message

Check code

BCC: Block Check Code
 Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

19.5 Auto Tile Matrix Reset

This command is used in order to deactivate the Auto Tile Matrix Setup.

- 1) The controller requests the monitor to reset Auto Tile Matrix

Header	Message	Check code	Delimiter
SOH-'0'-Monitor ID-'0'-'A'-'0'-'8'	STX-'C'-'A'-'0'-'3'-'0'-'6'-ETX	BCC	CR

Header

SOH (01h): Start of Header
 '0' (30h): Reserved
 Monitor ID: Specify the Monitor ID of which you want to change a setting.
 Ex.) If Monitor ID is '1', specify 'A'.
 '0' (30h): Message sender is the controller.
 'A' (41h): Message type is "Command".
 '0'-'8'(30h, 38h): Message length (8bytes)

Message

STX (02h): Start of Message
 'C'-'A'-'0'-'3' (43h, 41h, 30h, 33h, 30h, 33h): Auto Tile Matrix
 '0'-'6' (30h, 36h): Off
 ETX (03h): End of Message

Check code

BCC: Block Check Code
 Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

- 2) The monitor replies receipt result.

Header	Message	Check code	Delimiter
SOH-'0'-'0'-Monitor ID-'B'-'0'-'A'	STX-'C'-'B'-'0'-'3'-'0'-'6'-ST-ETX	BCC	CR

Header

SOH (01h): Start of Header
 '0' (30h): Reserved
 '0' (30h): Message receiver is the controller.
 Monitor ID: Indicate a replying Monitor ID.
 Ex.) When this byte is set to 'A', replying monitor's ID is '1'.
 'B' (42h): Message type is "Command reply".
 '0'-'A'(30h, 41h): Message length (10bytes)

Message

STX (02h): Start of Message
 'C'-'B'-'0'-'3' (43h, 42h, 30h, 33h) : Auto Tile Matrix
 '0'-'6' (30h, 36h): Off
 ST: Error Status
 No Error : 00h (30h, 30h)
 Error : 01h (30h, 31h)
 ETX (03h): End of Message

Check code

BCC: Block Check Code
 Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

20. Power Save Mode

20.1 Power Save Mode Read

This command is used in order to read the Power Save Mode.

- 1) The controller requests the monitor to read Power Save Mode

Header	Message	Check code	Delimiter
SOH-'0'-Monitor ID-'0'-'A'-'0'-'8'	STX-'C'-'A'-'0'-'B'-'0'-'0'-ETX	BCC	CR

Header

SOH (01h): Start of Header
'0' (30h): Reserved
Monitor ID: Specify the Monitor ID of which you want to change a setting.
Ex.) If Monitor ID is '1', specify 'A'.
'0' (30h): Message sender is the controller.
'A' (41h): Message type is "Command".
'0'-'8'(30h,38h): Message length (8byte)

Message

STX (02h): Start of Message
'C'-'A'-'0'-'B' (43h, 41h, 30h, 42h): Power Save Mode command
'0'-'0' (30h, 30h): Read
ETX (03h): End of Message

Check code

BCC: Block Check Code
Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

- 2) The monitor replies Power Save Mode to the controller.

Header	Message	Check code	Delimiter
SOH-'0'-'0'-Monitor ID-'B'-'0'-'A'	STX-'C'-'B'-'0'-'B'-'0'-'0'-MODE-ETX	BCC	CR

Header

SOH (01h): Start of Header
'0' (30h): Reserved
'0' (30h): Message receiver is the controller.
Monitor ID: Indicate a replying Monitor ID.
Ex.) When this byte is set to 'A', replying monitor's ID is '1'.
'B' (42h): Message type is "Command reply".
'0'-'A'(30h,41h): Message length (10byte)

Message

STX (02h): Start of Message
'C'-'B'-'0'-'B' (43h, 42h, 30h, 42h): Power Save Mode Reply
'0'-'0' (30h, 30h): Read
MODE: POWER SAVE MODE
00h (30h, 30h): AUTO POWER SAVE
01h (30h, 31h): AUTO STANDBY
02h (30h, 32h): POWER SAVE OFF
ETX (03h): End of Message

Check code

BCC: Block Check Code
Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

20.2 Power Save Mode Write

This command is used in order to write the setting of Power Save Mode.

- 1) The controller requests the monitor to write Power Save Mode.

Header	Message	Check code	Delimiter
SOH-'0'-Monitor ID-'0'-'A'-'0'-'A'	STX-'C'-'A'-'0'-'B'-'0'-'1'-MODE-ETX	BCC	CR

Header

SOH (01h): Start of Header
 '0' (30h): Reserved
 Monitor ID: Specify the Monitor ID of which you want to change a setting.
 Ex.) If Monitor ID is '1', specify 'A'.
 '0' (30h): Message sender is the controller.
 'A' (41h): Message type is "Command".
 '0'-'A' (30h, 41h): Message length (10byte)

Message

STX (02h): Start of Message
 'C'-'A'-'0'-'B' (43h, 41h, 30h, 42h): Power Save Mode command
 '0'-'1' (30h, 31h): Write
 MODE: POWER SAVE MODE
 00h (30h, 30h): AUTO POWER SAVE
 01h (30h, 31h): AUTO STANDBY
 02h (30h, 32h): POWER SAVE OFF
 ETX (03h): End of Message

Check code

BCC: Block Check Code
 Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

- 2) The monitor replies a written in result.

Header	Message	Check code	Delimiter
SOH-'0'-'0'-Monitor ID-'B'-'0'-'A'	STX-'C'-'B'-'0'-'B'-'0'-'1'-ST-ETX	BCC	CR

Header

SOH (01h): Start of Header
 '0' (30h): Reserved
 '0' (30h): Message receiver is the controller.
 Monitor ID: Indicate a replying Monitor ID.
 Ex.) When this byte is set to 'A', replying monitor's ID is '1'.
 'B' (42h): Message type is "Command reply".
 '0'-'A' (30h,41h): Message length (10byte)

Message

STX (02h): Start of Message
 'C'-'B'-'0'-'B' (43h, 42h, 30h, 42h): Power Save Mode Reply
 '0'-'1' (30h, 31h): Write
 ST: Error Status
 No Error : 00h (30h, 30h)
 Error : 01h (30h, 31h)
 ETX (03h): End of Message

Check code

BCC: Block Check Code
 Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

20.3 Auto Power Save Time Read

This command is used in order to read the setting of Auto Power Save Time.

- 1) The controller requests the monitor to reply Time setting.

Header	Message	Check code	Delimiter
SOH-'0'-Monitor ID-'0'-'A'-'0'-'8'	STX-'C'-'A'-'0'-'B'-'0'-'2'-ETX	BCC	CR

Header

SOH (01h): Start of Header
 '0' (30h): Reserved
 Monitor ID: Specify the Monitor ID of which you want to change a setting.
 Ex.) If Monitor ID is '1', specify 'A'.
 '0' (30h): Message sender is the controller.
 'A' (41h): Message type is "Command".
 '0'-'8'(30h,38h): Message length (8byte)

Message

STX (02h): Start of Message
 'C'-'A'-'0'-'B' (43h, 41h, 30h, 42h): Power Save Mode command
 '0'-'2' (30h, 30h): Auto Power Save Read
 ETX (03h): End of Message

Check code

BCC: Block Check Code
 Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

- 2) The monitor replies Time to the controller.

Header	Message	Check code	Delimiter
SOH-'0'-'0'-Monitor ID-'B'-'0'-'A'	STX-'C'-'B'-'0'-'B'-'0'-'2'-TIME-ETX	BCC	CR

Header

SOH (01h): Start of Header
 '0' (30h): Reserved
 '0' (30h): Message receiver is the controller.
 Monitor ID: Indicate a replying Monitor ID.
 Ex.) When this byte is set to 'A', replying monitor's ID is '1'.
 'B' (42h): Message type is "Command reply".
 '0'-'A'(30h,41h): Message length (10byte)

Message

STX (02h): Start of Message
 'C'-'B'-'0'-'B' (43h, 42h, 30h, 42h): Power Save Mode Reply
 '0'-'2' (30h, 32h): Auto Power Save Time Read
 TIME: AUTO POWER SAVE TIME (sec.)
 00h (30h, 30h) - 78h (37h, 38h): 1 (5dec.) - 120 (600sec.)
 ETX (03h): End of Message

Check code

BCC: Block Check Code
 Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

20.4 Auto Power Save Time Write

This command is used in order to write the setting of Auto Power Save Time.

- 1) The controller requests the monitor to write Time.

Header	Message	Check code	Delimiter
SOH-'0'-Monitor ID-'0'-'A'-'0'-'A'	STX-'C'-'A'-'0'-'B'-'0'-'3'-TIME-ETX	BCC	CR

Header

SOH (01h): Start of Header
 '0' (30h): Reserved
 Monitor ID: Specify the Monitor ID of which you want to change a setting.
 Ex.) If Monitor ID is '1', specify 'A'.
 '0' (30h): Message sender is the controller.
 'A' (41h): Message type is "Command".
 '0'-'A' (30h,41h): Message length (10byte)

Message

STX (02h): Start of Message
 'C'-'A'-'0'-'B' (43h, 41h, 30h, 42h): Power Save Mode command
 '0'-'3' (30h, 33h): Auto Power Save Time Write
 TIME: AUTO POWER SAVE TIME (sec.)
 00h (30h, 30h) - 78h (37h, 38h): 1 (5dec.) - 120 (600sec.)
 ETX (03h): End of Message

Check code

BCC: Block Check Code
 Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

- 2) The monitor replies a written in result.

Header	Message	Check code	Delimiter
SOH-'0'-'0'-Monitor ID-'B'-'0'-'8'	STX-'C'-'B'-'0'-'B'-'0'-'3'-ST-ETX	BCC	CR

Header

SOH (01h): Start of Header
 '0' (30h): Reserved
 '0' (30h): Message receiver is the controller.
 Monitor ID: Indicate a replying Monitor ID.
 Ex.) When this byte is set to 'A', replying monitor's ID is '1'.
 'B' (42h): Message type is "Command reply".
 '0'-'8' (30h,38h): Message length (8byte)

Message

STX (02h): Start of Message
 'C'-'B'-'0'-'B' (43h, 42h, 30h, 42h): Power Save Mode Reply
 '0'-'3' (30h, 33h): Auto Power Save Time Write
 ST: Error Status
 No Error : 00h (30h, 30h)
 Error : 01h (30h, 31h)
 ETX (03h): End of Message

Check code

BCC: Block Check Code
 Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

20.5 Auto Standby Time Read

This command is used in order to read the setting of Auto Standby Time.

- 1) The controller requests the monitor to reply Time setting.

Header	Message	Check code	Delimiter
SOH-'0'-Monitor ID-'0'-'A'-'0'-'8'	STX-'C'-'A'-'0'-'B'-'0'-'4'-ETX	BCC	CR

Header

SOH (01h): Start of Header
 '0' (30h): Reserved
 Monitor ID: Specify the Monitor ID of which you want to change a setting.
 Ex.) If Monitor ID is '1', specify 'A'.
 '0' (30h): Message sender is the controller.
 'A' (41h): Message type is "Command".
 '0'-'8'(30h,38h): Message length (8byte)

Message

STX (02h): Start of Message
 'C'-'A'-'0'-'B' (43h, 41h, 30h, 42h): Power Save Mode command
 '0'-'4' (30h, 30h): Auto Standby Time Read
 ETX (03h): End of Message

Check code

BCC: Block Check Code
 Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

- 2) The monitor replies Time to the controller.

Header	Message	Check code	Delimiter
SOH-'0'-'0'-Monitor ID-'B'-'0'-'A'	STX-'C'-'B'-'0'-'B'-'0'-'4'-TIME-ETX	BCC	CR

Header

SOH (01h): Start of Header
 '0' (30h): Reserved
 '0' (30h): Message receiver is the controller.
 Monitor ID: Indicate a replying Monitor ID.
 Ex.) When this byte is set to 'A', replying monitor's ID is '1'.
 'B' (42h): Message type is "Command reply".
 '0'-'A'(30h,41h): Message length (10byte)

Message

STX (02h): Start of Message
 'C'-'B'-'0'-'B' (43h, 42h, 30h, 42h): Power Save Mode Reply
 '0'-'4' (30h, 34h): Auto Standby Time Read
 TIME: AUTO STANDBY TIME (sec.)
 00h (30h, 30h) - 78h (37h, 38h): 1 (5dec.) - 120 (600sec.)
 ETX (03h): End of Message

Check code

BCC: Block Check Code
 Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

20.6 Auto Standby Time Write

This command is used in order to write the setting of Auto Standby Time.

- 1) The controller requests the monitor to write Time.

Header	Message	Check code	Delimiter
SOH-'0'-Monitor ID-'0'- 'A'-'0'-'A'	STX-'C'-'A'-'0'-'B'-'0'-'5'-TIME-ETX	BCC	CR

Header

SOH (01h): Start of Header
 '0' (30h): Reserved
 Monitor ID: Specify the Monitor ID of which you want to change a setting.
 Ex.) If Monitor ID is '1', specify 'A'.
 '0' (30h): Message sender is the controller.
 'A' (41h): Message type is "Command".
 '0'-'A'(30h,41h): Message length (10byte)

Message

STX (02h): Start of Message
 'C'-'A'-'0'-'B' (43h, 41h, 30h, 42h): Power Save Mode command
 '0'-'5' (30h, 35h): Auto Standby Time Write
 TIME: AUTO STANDBY TIME (sec.)
 00h (30h, 30h) - 78h (37h, 38h): 1 (5dec.) - 120 (600sec.)
 ETX (03h): End of Message

Check code

BCC: Block Check Code
 Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

- 2) The monitor replies a written in result.

Header	Message	Check code	Delimiter
SOH-'0'-'0'-Monitor ID- 'B'-'0'-'A'	STX-'C'-'B'-'0'-'B'-'0'-'5'-ST-ETX	BCC	CR

Header

SOH (01h): Start of Header
 '0' (30h): Reserved
 '0' (30h): Message receiver is the controller.
 Monitor ID: Indicate a replying Monitor ID.
 Ex.) When this byte is set to 'A', replying monitor's ID is '1'.
 'B' (42h): Message type is "Command reply".
 '0'-'A'(30h,41h): Message length (10byte)

Message

STX (02h): Start of Message
 'C'-'B'-'0'-'B' (43h, 42h, 30h, 42h): Power Save Mode Reply
 '0'-'5' (30h, 35h): Auto Standby Time Write
 ST: Error Status
 No Error : 00h (30h, 30h)
 Error : 01h (30h, 31h)
 ETX (03h): End of Message

Check code

BCC: Block Check Code
 Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

21. Setting Copy

21.1 Setting Copy Read

This command is used in order to read the Setting Copy.

- 1) The controller requests the monitor to read Setting Copy

Header	Message	Check code	Delimiter
SOH-'0'-Monitor ID-'0'-'A'-'0'-'8'	STX-'C'-'A'-'0'-'9'-'0'-'0'-ETX	BCC	CR

Header

SOH (01h): Start of Header
'0' (30h): Reserved
Monitor ID: Specify the Monitor ID of which you want to change a setting.
 Ex.) If Monitor ID is '1', specify 'A'.
'0' (30h): Message sender is the controller.
'A' (41h): Message type is "Command".
'0'-'8' (30h, 38h): Message length (8byte)

Message

STX (02h): Start of Message
'C'-'A'-'0'-'9' (43h,41h,30h,39h): Setting Copy command
'0'-'0' (30h,30h): Target Read
ETX (03h): End of Message

Check code

BCC: Block Check Code
 Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

- 2) The monitor replies Setting Copy to the controller.

Header	Message	Check code	Delimiter
SOH-'0'-'0'-Monitor ID-'B'-'1'-'0'	STX-'C'-'B'-'0'-'9'-'0'-'0'-T4-T3-T2-T1-ETX	BCC	CR

Header

SOH (01h): Start of Header
'0' (30h): Reserved
'0' (30h): Message receiver is the controller.
Monitor ID: Indicate a replying Monitor ID.
 Ex.) When this byte is set to 'A', replying monitor's ID is '1'.
'B' (42h): Message type is "Command reply".
'1'-'0' (31h,30h): Message length (16byte)

Message

STX (02h): Start of Message
'C'-'B'-'0'-'9' (43h, 42h, 30h, 39h): Setting Copy Reply
'0'-'0' (30h, 30h): Target Read
T1 - T4 : 00h (30h, 30h) - FFh (46h, 46h)
 T1 : Setting Copy Target 4 (Bit12-Bit15)
 T2 : Setting Copy Target 3 (Bit8-Bit11)
 T3 : Setting Copy Target 2 (Bit4-Bit7)
 T4 : Setting Copy Target 1 (Bit0-Bit3)
 Bit0: ALL INPUT
 Bit1: PICTURE
 Bit2: ADJUST
 Bit3: AUDIO
 Bit4: SCHEDULE
 Bit5: PIP

Bit6: OSD
Bit7: MULTI DISP
Bit8: PROTECT
Bit9: EXT-CTRL
Bit10: ADVANCED
Bit11: ADVANCED2
Bit12: HTTP
Bit13: Reserve
Bit14: Reserve
Bit15: Reserve

Ex.) Setting the following value for T4

Bit0: ALL INPUT is OFF (0).

Bit1: PICTURE is OFF (0).

Bit2: ADJUST is ON (1).

Bit3: AUDIO is ON (1).

Step 1: Put above bit in following order.

Bit3-Bit2-Bit1-Bit0

Value: 1100

Step 2: Write the value of Step 1 by a hexadecimal number.

Value: 0Ch

Step 3: Encode the value of Step 2 to ASCII characters.

Value: '0' and 'C' (30h and 43h)

ETX (03h): End of Message

Check code

BCC: Block Check Code

Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

21.2 Setting Copy Write

This command is used in order to write the setting of Setting Copy.

1) The controller requests the monitor to write Setting Copy.

Header	Message	Check code	Delimiter
SOH-'0'-Monitor ID-'0'-'A'-'1'-'0'	STX-'C'-'A'-'0'-'9'-'0'-'1'-'T4-T3-T2-T1-ETX	BCC	CR

Header

SOH (01h): Start of Header
 '0' (30h): Reserved
 Monitor ID: Specify the Monitor ID of which you want to change a setting.
 Ex.) If Monitor ID is '1', specify 'A'.
 '0' (30h): Message sender is the controller.
 'A' (41h): Message type is "Command".
 '1'-'0' (31h,30h): Message length

Message

STX (02h): Start of Message
 'C'-'A'-'0'-'9' (43h,41h,30h,39h): Setting Copy command
 '0'-'1' (30h,31h): Target Write
 T1 - T4 : 00h (30h, 30h) - FFh (46h, 46h)
 T1 : Setting Copy Target 4 (Bit12-Bit15)
 T2 : Setting Copy Target 3 (Bit8-Bit11)
 T3 : Setting Copy Target 2 (Bit4-Bit7)
 T4 : Setting Copy Target 1 (Bit0-Bit3)
 Bit0: ALL INPUT
 Bit1: PICTURE
 Bit2: ADJUST
 Bit3: AUDIO
 Bit4: SCHEDULE
 Bit5: PIP
 Bit6: OSD
 Bit7: MULTI DISP
 Bit8: PROTECT
 Bit9: EXT-CTRL
 Bit10: ADVANCED
 Bit11: ADVANCED2
 Bit12: HTTP
 Bit13: Reserve
 Bit14: Reserve
 Bit15: Reserve
 Ex.) Setting the following value for T4
 Bit0: ALL INPUT is OFF (0).
 Bit1: PICTURE is OFF (0).
 Bit2: ADJUST is ON (1).
 Bit3: AUDIO is ON (1).
 Step 1: Put above bit in following order.
 Bit3-Bit2-Bit1-Bit0
 Value: 1100
 Step 2: Write the value of Step 1 by a hexadecimal number.
 Value: 0Ch
 Step 3: Encode the value of Step 2 to ASCII characters.
 Value: '0' and 'C' (30h and 43h)
 ETX (03h): End of Message

Check code

BCC: Block Check Code
 Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

2) The monitor replies a written in result.

Header	Message	Check code	Delimiter
SOH-'0'-'0'-Monitor ID- 'B'-'0'-'A'	STX-'C'-'B'-'0'-'9'-'0'-'1'-ST-ETX	BCC	CR

Header

SOH (01h): Start of Header
 '0' (30h): Reserved
 '0' (30h): Message receiver is the controller.
 Monitor ID: Indicate a replying Monitor ID.
 Ex.) When this byte is set to 'A', replying monitor's ID is '1'.
 'B' (42h): Message type is "Command reply".
 '0'-'A'(30h,41h): Message length (10byte)

Message

STX (02h): Start of Message
 'C'-'B'-'0'-'9' (43h, 42h, 30h, 39h): Setting Copy Reply
 '0'-'1' (30h, 30h): Target Write
 ST: Status
 No Error : 00h (30h, 30h)
 Error : 01h (30h, 31h)
 ETX (03h): End of Message

Check code

BCC: Block Check Code
 Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

21.3 Setting Copy Start

This command is used in order to start Setting Copy.

- 1) The controller requests the monitor to write Setting Copy Start.

Header	Message	Check code	Delimiter
SOH-'0'-Monitor ID- '0'-'A'-'0'-'8'	STX-'C'-'A'-'0'-'9'-'0'-'2'-ETX	BCC	CR

Header

SOH (01h): Start of Header
 '0' (30h): Reserved
 Monitor ID: Specify the Monitor ID of which you want to change a setting.
 Ex.) If Monitor ID is '1', specify 'A'.
 '0' (30h): Message sender is the controller.
 'A' (41h): Message type is "Command".
 '0'-'8'(30h, 38h): Message length (8byte)

Message

STX (02h): Start of Message
 'C'-'A'-'0'-'9' (43h,41h,30h,39h): Setting Copy command
 '0'-'2' (30h,32h): Start
 ETX (03h): End of Message

Check code

BCC: Block Check Code
 Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

- 2) The monitor replies to the controller.

Header	Message	Check code	Delimiter
SOH-'0'-'0'-Monitor ID- 'B'-'0'-'A'	STX-'C'-'B'-'0'-'9'-'0'-'2'-ST-ETX	BCC	CR

Header

SOH (01h): Start of Header
 '0' (30h): Reserved
 '0' (30h): Message receiver is the controller.
 Monitor ID: Indicate a replying Monitor ID.
 Ex.) When this byte is set to 'A', replying monitor's ID is '1'.
 'B' (42h): Message type is "Command reply".
 '0'-'A'(30h,41h): Message length (10byte)

Message

STX (02h): Start of Message
 'C'-'B'-'0'-'9' (43h, 42h, 30h, 39h): Setting Copy Reply
 '0'-'2' (30h, 30h): Start
 ST: Status
 No Error : 00h (30h, 30h)
 Error : 01h (30h, 31h)
 ETX (03h): End of Message

Check code

BCC: Block Check Code
 Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

22. Security Enable

22.1 Security Enable Read

This command is used in order to read the Security Enable.

- 1) The controller requests the monitor to read Security Enable

Header	Message	Check code	Delimiter
SOH-'0'-Monitor ID-'0'-'A'-'0'-'8'	STX-'C'-'A'-'0'-'C'-'0'-'2'-ETX	BCC	CR

Header

SOH (01h): Start of Header
'0' (30h): Reserved
Monitor ID: Specify the Monitor ID of which you want to change a setting.
Ex.) If Monitor ID is '1', specify 'A'.
'0' (30h): Message sender is the controller.
'A' (41h): Message type is "Command".
'0'-'8'(30h, 38h): Message length (8byte)

Message

STX (02h): Start of Message
'C'-'A'-'0'-'C' (43h, 41h, 30h, 43h): Security password Command
'0'-'2' (30h, 32h): Enable Read
ETX (03h): End of Message

Check code

BCC: Block Check Code
Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

- 2) The monitor replies Security Enable to the controller.

Header	Message	Check code	Delimiter
SOH-'0'-'0'-Monitor ID-'B'-'0'-'A'	STX-'C'-'B'-'0'-'C'-'0'-'2'-EN-ETX	BCC	CR

Header

SOH (01h): Start of Header
'0' (30h): Reserved
'0' (30h): Message receiver is the controller.
Monitor ID: Indicate a replying Monitor ID.
Ex.) When this byte is set to 'A', replying monitor's ID is '1'.
'B' (42h): Message type is "Command reply".
'0'-'A'(30h,41h): Message length (10byte)

Message

STX (02h): Start of Message
'C'-'B'-'0'-'C'-'0'-'2' (43h, 42h, 30h, 41h, 30h, 32h): Get Security Enable Disable Reply
EN: Status
00h: Disable
01h: Enable
ETX (03h): End of Message

Check code

BCC: Block Check Code
Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

22.2 Security Enable Write

This command is used in order to write the setting of Security Enable.

- 1) The controller requests the monitor to set Security password.

Header	Message	Check code	Delimiter
SOH-'0'-Monitor ID-'0'-'A'-'1'-'C'	STX-'C'-'A'-'0'-'C'-'0'-'1'-'ENA-'0'-'0'-PWD1-...-PWD16-ETX	BCC	CR

Header

SOH (01h): Start of Header
 '0' (30h): Reserved
 Monitor ID: Specify the Monitor ID of which you want to change a setting.
 Ex.) If Monitor ID is '1', specify 'A'.
 '0' (30h): Message sender is the controller.
 'A' (41h): Message type is "Command".
 '1'-'C'(31h,43h): Message length (28byte)

Message

STX (02h): Start of Message
 'C'-'A'-'0'-'C' (43h, 41h, 30h, 43h): Security Password Command
 '0'-'1' (30h, 31h): Enable Write
 ENA: Enable/Disable
 00h (30h, 30h): Disable
 01h (30h, 31h): Enable
 '0'-'0' (30h, 30h): Reserved
 PWD1 - PWD16: Password data
 > The password data is encoded as the following procedure.
 Ex.) In the case of password data "1234"
 Step1: Password data is handled as character code.
 Example:
 "1234" -> 31h 32h 33h 34h (ASCII)
 Step2: The hexadecimal value of each original character is encoded as two ASCII characters representing the hex value.
 Example:
 31h 32h 33h 34h -> '3'-'1'-'3'-'2'-'3'-'3'-'3'-'4'
 Step3: Password data is handled as character code once again.
 Example:
 '3'-'1'-'3'-'2'-'3'-'3'-'3'-'4' -> 33h 31h 33h 32h 33h 33h 33h 34h (ASCII)
 Step4: The hexadecimal value of each original character is encoded as two ASCII characters representing the value.
 Example:
 33h 31h 33h 32h 33h 33h 33h 34h
 -> '3'-'3'-'3'-'1'-'3'-'3'-'3'-'2'-'3'-'3'-'3'-'3'-'3'-'3'-'3'-'3'-'3'-'4'
 Result: The following data is assigned to PWD1-PWD16.
 33h 33h 33h 31h 33h 33h 33h 32h 33h 33h 33h 33h 33h 33h 33h 34h
 ETX (03h): End of Message

Check code

BCC: Block Check Code
 Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

- 2) The monitor replies a written in result.

Header	Message	Check code	Delimiter
SOH-'0'-'0'-Monitor ID-'B'-'0'-'A'	STX-'C'-'B'-'0'-'C'-'0'-'1'-ST-ETX	BCC	CR

Header

SOH (01h): Start of Header
'0' (30h): Reserved
'0' (30h): Message receiver is the controller.
Monitor ID: Indicate a replying Monitor ID.
 Ex.) When this byte is set to 'A', replying monitor's ID is '1'.
'B' (42h): Message type is "Command reply".
'0'-'A'(30h,41h): Message length (10byte)

Message

STX (02h): Start of Message
'C'-'B'-'0'-'C' (43h, 42h, 30h, 43h): Security password Reply Command
'0'-'1' (30h, 31h): Enable Write
ST: Error Status
 00h: No Error
 01h: Error
ETX (03h): End of Message

Check code

BCC: Block Check Code
 Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

23. LAN MAC Address

23.1 LAN MAC Address Read

This command is used in order to read the MAC Address.

- 1) The controller requests the monitor to read MAC Address

Header	Message	Check code	Delimiter
SOH-'0'-Monitor ID-'0'-'A'-'0'-'8'	STX-'C'-'2'-'2'-'A'-'0'-'2'-ETX	BCC	CR

Header

SOH (01h) : Start of Header
'0' (30h) : Reserved
Monitor ID : Specify the Monitor ID from which you want to get status.
Ex.) If Monitor ID is '1', specify 'A'.
'0' (30h) : Message sender is the controller.
'A' (41h) : Message Type is "Command".
'0'-'8' (30h, 38h) : Message length is 8 bytes.

Message

STX (02h): Start of Message
'C'-'2'-'2'-'A': LAN read command.
'0'-'2': MAC Address
ETX (03h): End of Message

Check code

BCC: Block Check Code
Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

- 2) The monitor replies MAC Address to the controller.

Header	Message	Check code	Delimiter
SOH-'0'-'0'-Monitor ID-'B'-LN(H)-LN(L)	STX-'C'-'3'-'2'-'A'-RC-'0'-'2'-IPV-MAC(0)-...-MAC(n)-ETX	BCC	CR

Header

SOH (01h): Start of Header
'0' (30h): Reserved
'0' (30h): Message receiver is the controller.
Monitor ID: Indicate a replying Monitor ID.
Ex.) When this byte is set to 'A', the replying Monitor ID is '1'.
'B' (42h): Message Type is "Command reply".
LN(H)-LN(L): Message length (byte length), from STX to ETX

Message

STX(02h):Start of Message
'C'-'3'-'2'-'A': LAN read reply command.
RC: Reply result Code
'0'-'0' (30h, 30h): Normal
'F'-'F' (46h, 46h): Abnormal
'0'-'2': MAC Address
IPV: IPv4 or IPv6
'0'-'4' (30h, 34h): IPv4
'0'-'6' (30h, 36h): IPv6
MAC(0-n): MAC Address
In the case of IPv4 -> n = 4

In the case of IPv6 -> n = 7
ETX (03h): End of Message

Check code

BCC: Block Check Code

Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

24. Proof of Play

24.1 Set Proof of Play Operation Mode

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

- 1) The controller requests the monitor to set Operation mode of Proof of Play.

Header	Message	Check code	Delimiter
SOH-'0'-Monitor ID-'0'-'A'-'0'-'A'	STX-'C'-'A'-'1'-'5'-'0'-'0'-MD-ETX	BCC	CR

Header

SOH (01h) : Start of Header
'0' (30h) : Reserved
Monitor ID : Specify the Monitor ID from which you want to get status.
Ex.) If Monitor ID is '1', specify 'A'.
'0' (30h) : Message sender is the controller.
'A' (41h) : Message Type is "Command".
'0'-'A' (30h, 41h) : Message length is 10 bytes.

Message

STX (02h): Start of Message
'C'-'A'-'1'-'5': Proof of Play command
'0'-'0' (30h,30h): Set Proof of Play Operation Mode command
MD : Mode of Proof of Play.
'0'-'0'(30h, 30h): Stop
'0'-'1'(30h, 31h): Start
'0'-'2'(30h, 32h): Clear Log data
ETX (03h): End of Message

Check code

BCC: Block Check Code
Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

- 2) The monitor replies the result of set Operation mode to the controller.

Header	Message	Check code	Delimiter
SOH-'0'-Monitor ID-'0'-'B'-'0'-'A'	STX-'C'-'B'-'1'-'5'-'0'-'0'-ST-ETX	BCC	CR

Header

SOH (01h) : Start of Header
'0' (30h) : Reserved
Monitor ID : Specify the Monitor ID from which you want to get status.
Ex.) If Monitor ID is '1', specify 'A'.
'0' (30h) : Message sender is the controller.
'A' (41h) : Message Type is "Command".
'0'-'A' (30h, 41h) : Message length is 10 bytes.

Message

STX (02h): Start of Message
'C'-'B'-'1'-'5': Proof of Play reply command
'0'-'0' (30h,30h): Set Proof of Play Operation Mode command
ST: Status
'0'-'0'(30h, 30h): No Error
'0'-'1'(30h, 31h): Error
'0'-'2'(30h, 32h): Already Start/Stop/Clear

ETX (03h): End of Message

Check code

BCC: Block Check Code

Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

24.2 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 OFF state. 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 OFF state.

- 1) The controller requests the monitor to get Current log data of Proof of Play.

Header	Message	Check code	Delimiter
SOH-'0'-Monitor ID- '0'-'A'-'0'-'8'	STX-'C'-'A'-'1'-'5'-'0'-'1'-ETX	BCC	CR

Header

SOH (01h) : Start of Header
 '0' (30h) : Reserved
 Monitor ID : Specify the Monitor ID from which you want to get status.
 Ex.) If Monitor ID is '1', specify 'A'.
 '0' (30h) : Message sender is the controller.
 'A' (41h) : Message Type is "Command".
 '0'-'8' (30h, 38h) : Message length is 8 bytes.

Message

STX (02h): Start of Message
 'C'-'A'-'1'-'5': Proof of Play command
 '0'-'1' (30h,31h): Get Current log of Proof of Play command
 ETX (03h): End of Message

Check code

BCC: Block Check Code
 Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

- 2) The monitor replies the result of Current log data to the controller.

Header	Message	Check code	Delimiter
SOH-'0'-Monitor ID- '0'-'B'-'3'-'4'	STX-'C'-'B'-'1'-'5'-'0'-'1'-ST-CNH- CNL-Data(0)-Data(1)-Data(2)--- Data(18)-ETX	BCC	CR

Header

SOH (01h) : Start of Header
 '0' (30h) : Reserved
 Monitor ID : Specify the Monitor ID from which you want to get status.
 Ex.) If Monitor ID is '1', specify 'A'.
 '0' (30h) : Message sender is the controller.
 'A' (41h) : Message Type is "Command".
 '3'-'4' (33h, 34h) : Message length is 52 bytes.

Message

STX (02h): Start of Message
 'C'-'B'-'1'-'5': Proof of Play reply command
 '0'-'1' (30h,31h): Get Current log of Proof of Play command
 ST: Status
 No Error : 00h (30h, 30h)
 Error: 01h (30h, 31h)
 CNH: Current log data Number (High byte)

CNL: Current log data Number (Low byte)
'0','0','0','1' -'F','F','F','F' (30h, 30h, 30h, 31h - 46h, 46h, 46h, 46h) :1 - 65535
Data(0)-Data(18): Data of Proof of Play

Log Data of Proof of Play : Data(0)-Data(18)
Data(0): Check INPUT PICTURE
Same as VCP(Page11 06H Input source) reply parameter.
Refer to Item "INPUT" on page 41.
Data(1)-Data(4) : Check Input Signal
'0'-'0'-'0'-'0'-'0'-'0'-'0'-'0' (30h,30h,30h,30h,30h,30h,30h,30h):No signal
'F'-'F'-'F'-'F'-'F'-'F'-'F'-'F' (46h,46h,46h,46h,46h,46h,46h,46h):Invalid signal
'*'-'*'-*' (**h,**h,**h,**h,**h,**h,**h,**h):Input signal
Ex) 1920 x 1080
'0'-'7'-'8'-'0'-'0'-'4'-'3'-'8' : 1920(0768h) x 1080(0438h)
Data(5) : Check INPUT AUDIO
Same as VCP(Page2 2EH Select Sound Input) reply parameter.
Refer to Item "AUDIO INPUT" on page 33.
Data(6) : Check with or without Audio
'0'-'0'(30h,30h): Audio in
'0'-'1'(30h,31h): No Audio in
'0'-'2'(30h,32h): N/A
Data(7) : Check status (Picture)
'0'-'0'(30h,30h): Normal Picture
'0'-'1'(30h,31h): No Picture
Data(8) : Check status (Audio)
'0'-'0'(30h,30h): Normal Audio
'0'-'1'(30h,31h): No Audio
Data(9)-Data(10) : Year
'*'-'*'-*' (**h,**h,**h,**h):0~65535(0000h~FFFFh)
Ex) 2014
'0'-'7'-'D'-'E' : 2014(07DEh)
Data(11) : month
'0'-'1' (30h,31h): January
'0'-'2' (30h,31h): February
|
'0'-'B' (30h,31h): November
'0'-'C' (30h,31h): December
Data(12) : day
'*'-*' (**h,**h):1~31(01h~1Fh)
Date(13) : hour
'*'-*' (**h,**h):0~23(00h~17h)
Date(14) :min
'*'-*' (**h,**h):0~59(00h~3Bh)
Data(15) : sec
'*'-*' (**h,**h):0~59(00h~3Bh)
Data(16)-Data(18) : Reserve(future use : always '0'-0'-0'-0'-0'-0')

ETX (03h): End of Message

Check code

BCC: Block Check Code
Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

24.3 Get Proof of Play Status

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

- 1) The controller requests the monitor to get status of Proof of Play.

Header	Message	Check code	Delimiter
SOH-'0'-Monitor ID-'0'-'A'-'0'-'8'	STX-'C'-'A'-'1'-'5'-'0'-'2'-ETX	BCC	CR

Header

SOH (01h) : Start of Header
 '0' (30h) : Reserved
 Monitor ID : Specify the Monitor ID from which you want to get status.
 Ex.) If Monitor ID is '1', specify 'A'.
 '0' (30h) : Message sender is the controller.
 'A' (41h) : Message Type is "Command".
 '0'-'8' (30h, 38h) : Message length is 8 bytes.

Message

STX (02h): Start of Message
 'C'-'A'-'1'-'5'
 6': Proof of Play command
 '0'-'2' (30h,32h): Get Proof of Play Status command
 ETX (03h): End of Message

Check code

BCC: Block Check Code
 Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

- 2) The monitor replies the status of Proof of Play to the controller.

Header	Message	Check code	Delimiter
SOH-'0'-Monitor ID-'0'-'B'-'1'-'4'	STX-'C'-'B'-'1'-'5'-'0'-'2'-ST1-ST2-ST3-ST4-ST5-ST6-ETX	BCC	CR

Header

SOH (01h) : Start of Header
 '0' (30h) : Reserved
 Monitor ID : Specify the Monitor ID from which you want to get status.
 Ex.) If Monitor ID is '1', specify 'A'.
 '0' (30h) : Message sender is the controller.
 'A' (41h) : Message Type is "Command".
 '1'-'4' (31h, 34h) : Message length is 20 bytes.

Message

STX (02h): Start of Message
 'C'-'B'-'1'-'5': Proof of Play reply command
 '0'-'2' (30h,32h): Get Proof of Play status command
 ST1: Error status
 00h (30h, 30h): No Error
 01h (30h, 30h): Memory full (some date has been lost)
 02h (30h, 30h): other error (other error has priority ver 01h error)
 ST2: Total Number-High byte (How many log data items are currently used.)
 ST3: Total Number-Low byte (How many log data items are currently used.)
 '0','0','0','0' - 'F','F','F','F' (30h,30h,30h,30h - 46h,46h,46h,46h): 0-65535

ST4: Maximum Number-High byte (Maximum possible number of log data items)
ST5: Maximum Number-Low byte (Maximum possible number of log data items)
 '0','0','0','0' - 'F','F','F','F' (30h,30h,30h,30h - 46h,46h,46h,46h): 0 - 65535
ST6: Current Proof of Play status.
 Stop: 00h (30h, 30h)
 Start: 01h (30h, 31h)
ETX (03h): End of Message

Check code

BCC: Block Check Code
Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

24.4 Get Proof of Play Number to Number

This command is used in order to get Proof of Play number to number log.

- 1) The controller requests the monitor to get Number to Number log of Proof of Play.

Header	Message	Check code	Delimiter
SOH-'0'-Monitor ID-'0'-'A'-'1'-'0'	STX-'C'-'A'-'1'-'5'-'0'-'3'-BNS(H)-BNS(L)-BNE(H)-BNE(L)-ETX	BCC	CR

Header

SOH (01h) : Start of Header
 '0' (30h) : Reserved
 Monitor ID : Specify the Monitor ID from which you want to get status.
 Ex.) If Monitor ID is '1', specify 'A'.
 '0' (30h) : Message sender is the controller.
 'A' (41h) : Message Type is "Command".
 '1'-'0' (31h, 30h) : Message length is 16 bytes.

Message

STX (02h): Start of Message
 'C'-'A'-'1'-'5': Proof of Play command
 '0'-'3' (30h,33h): Get Proof of Play Number to Number log command
 BNS(H): Block Number of Start (High byte)
 BNS(L): Block Number of Start (Low byte)
 BNE(H): Block Number of Stop (High byte)
 BNE(L): Block Number of Stop (Low byte)
 ETX (03h): End of Message

Check code

BCC: Block Check Code
 Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

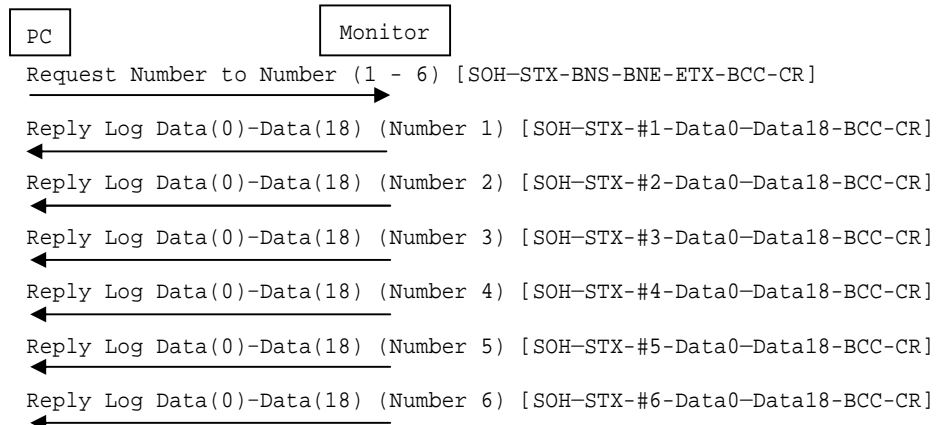
CR (0Dh): End of packet

- 2) The monitor replies the number to number log of Proof of Play to the controller.

Header	Message	Check code	Delimiter
SOH-'0'-Monitor ID-'0'-'B'-'3'-'4'	STX-'C'-'B'-'1'-'5'-'0'-'3'- LNR(H)-LNR(L)-Data(0)-Data(1)-Data(2) ---Data(18) -ETX	BCC	CR

* A reply returns data in order from specified Number to specified Number.

Ex) Number to Number: 1 to 6



Header

SOH (01h) : Start of Header

'0' (30h) : Reserved
Monitor ID : Specify the Monitor ID from which you want to get status.
 Ex.) If Monitor ID is '1', specify 'A'.
'0' (30h) : Message sender is the controller.
'A' (41h) : Message Type is "Command".
'3'-'4' (33h, 36h) : Message length is 38 bytes.

Message

STX (02h): Start of Message
'C'-'B'-'1'-'5': Proof of Play reply command
'0'-'3' (30h,33h): Get Proof of Play Number to Number log command
LNR (H): log number being returned (High byte)
LNR (L): log number being returned (Low byte)
Data(0)-Data(12): Log Data of Proof of Play of STOP (26byte) : Same as "Get Proof of Play Current"
* Refer to "Get Proof of Play Current"
ETX (03h): End of Message

Check code

BCC: Block Check Code
Refer to the section 4.3 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

All data are subject to change without notice.

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