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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 when using an external controller.

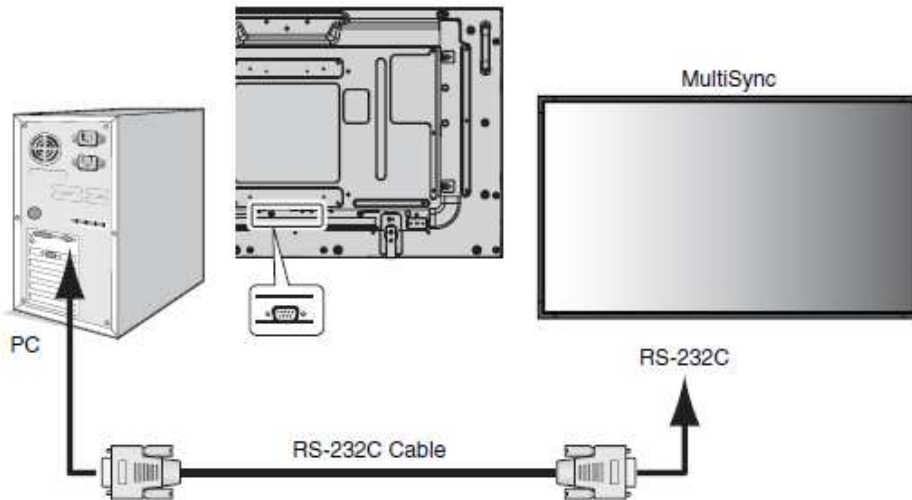
## II. Preparation

### 2. Connectors and wiring

#### 2.1 RS-232C Remote control

Connector: 9-pin D-Sub

Cable: Cross (reversed) cable or null modem cable

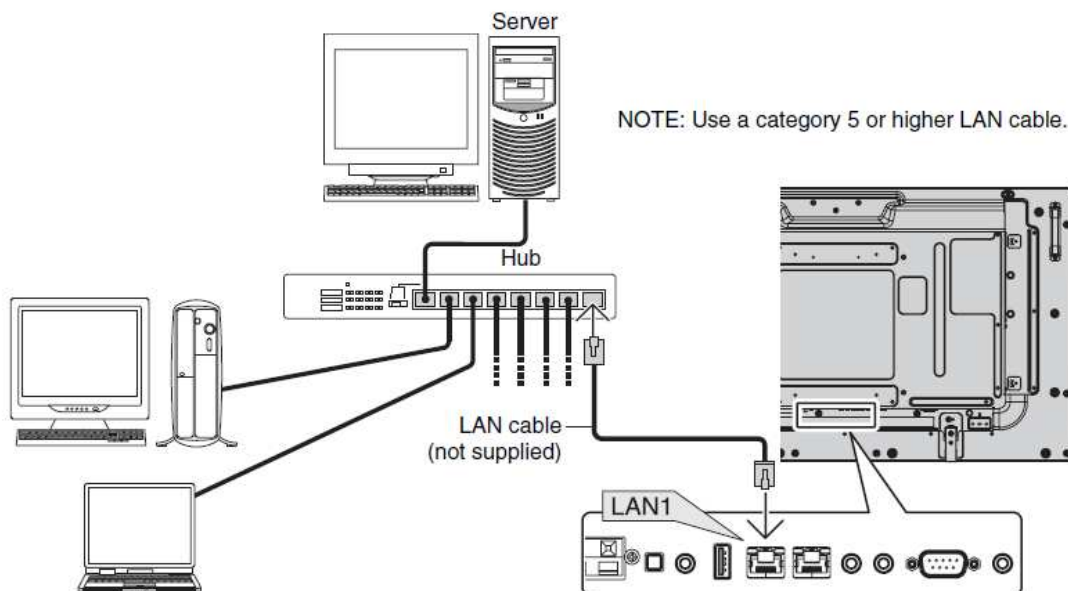


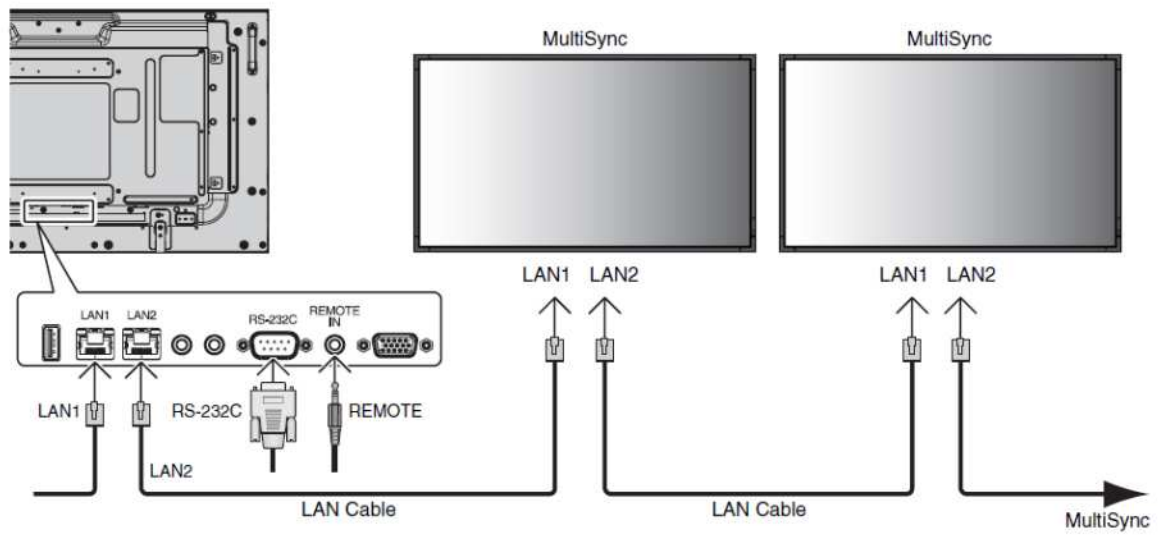
(Please refer "Controlling the LCD monitor via RS-232C Remote control" on User's manual.)

#### 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)<br>* Using the payload of TCP segment.   |
| (4) IP address           | (Default) Automatic setup<br>* If you need to change,<br>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 packet interval before next command is sent.  
The packet interval needs to be longer than 600msec for the LCD monitor.

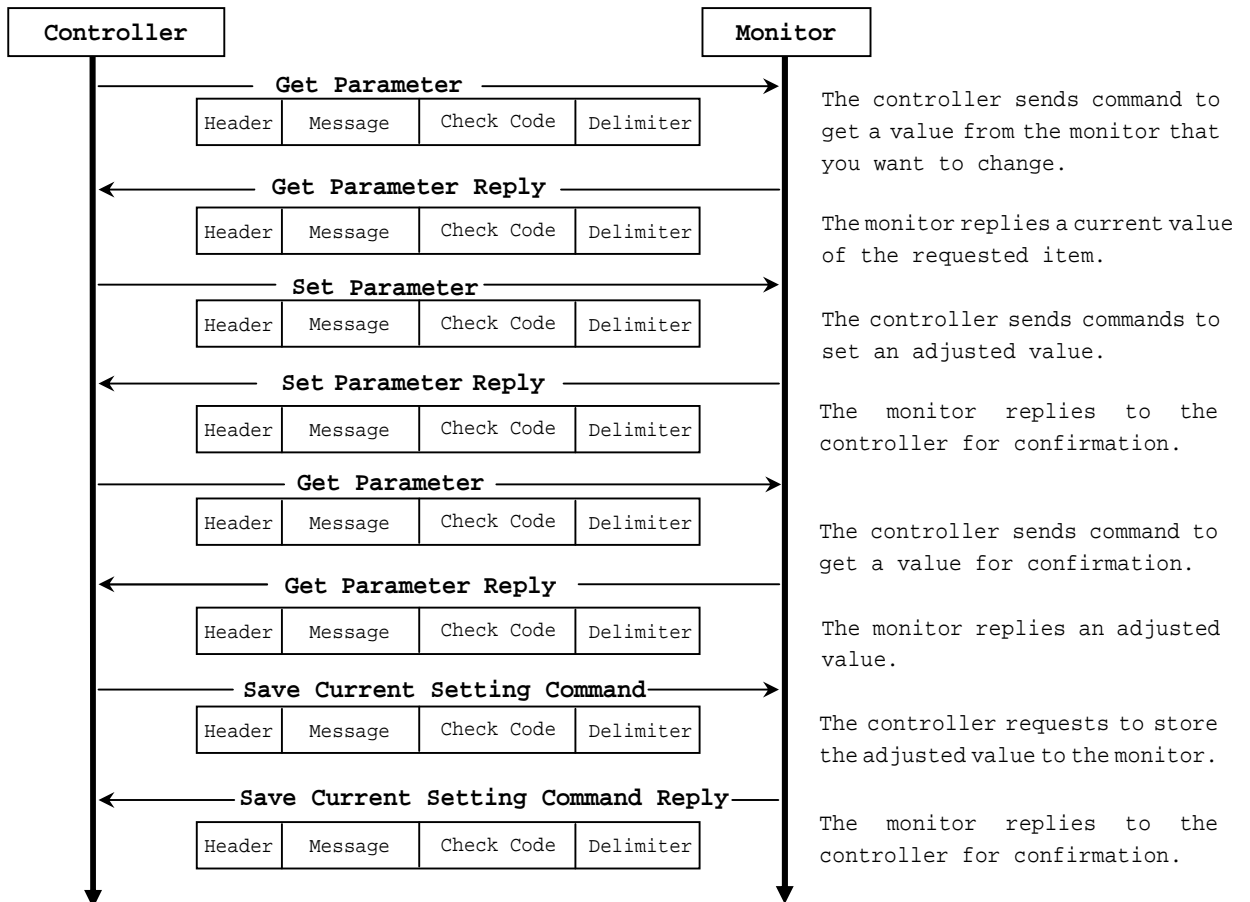
## 4. Communication Format

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

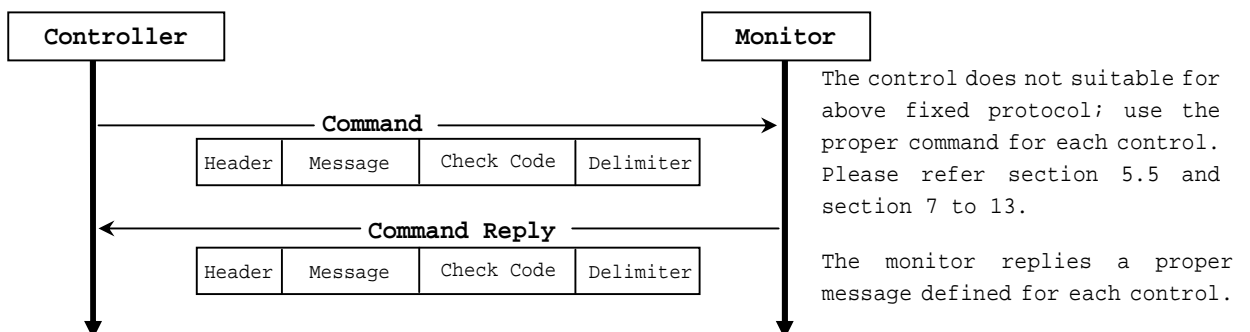
The command packet consists of four parts, Header, Message, Check code and Delimiter.

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 14. and 5.5.2)





#### 4.1 Header block format (fixed length)

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

|                 |                 |                 |                 |                 |                                   |
|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------------------------|
| SOH             | Reserved<br>'0' | Destination     | Source          | Message<br>Type | Message<br>Length                 |
| 1 <sup>st</sup> | 2 <sup>nd</sup> | 3 <sup>rd</sup> | 4 <sup>th</sup> | 5 <sup>th</sup> | 6 <sup>th</sup> - 7 <sup>th</sup> |

1<sup>st</sup> byte) SOH: Start of Header  
ASCII SOH (01h)

2<sup>nd</sup> byte) Reserved: Reserved for future extensions.

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

3<sup>rd</sup> byte) 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).

4<sup>th</sup>byte) 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.

5<sup>th</sup>byte) 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.

6<sup>th</sup> -7<sup>th</sup> 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 | <b>Message</b> | Check code | Delimiter |
|--------|----------------|------------|-----------|

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

Refer to the section 6 "Message 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.

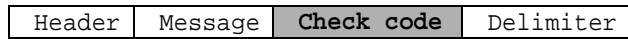
#### 6)Command reply

The monitor replies to a query from the controller.

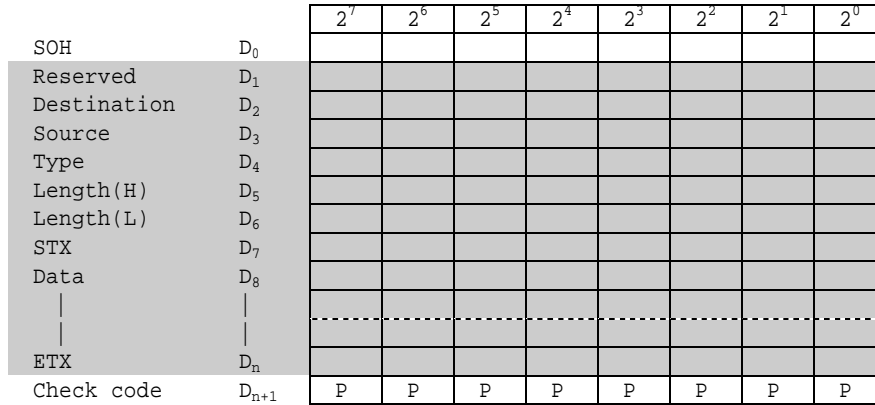
"Command reply message" format depends on each command.

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

### 4.3 Check code



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



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

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 | <b>Delimiter</b> |
|--------|---------|------------|------------------|

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 <sup>st</sup> | 2 <sup>nd</sup> -3 <sup>rd</sup> |    | 4 <sup>th</sup> -5 <sup>th</sup> |    | 6 <sup>th</sup> |

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".

1<sup>st</sup>byte) STX: Start of Message

ASCII STX (02h)

2<sup>nd</sup>-3<sup>rd</sup>bytes) 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)

4<sup>th</sup>-5<sup>th</sup>bytes) 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.

6<sup>th</sup>byte) 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 <sup>st</sup> | 2 <sup>nd</sup> -3 <sup>rd</sup> |    | 4 <sup>th</sup> -5 <sup>th</sup> |    | 6 <sup>th</sup> -7 <sup>th</sup> |    | 8 <sup>th</sup> -9 <sup>th</sup> |    | 10 <sup>th</sup> -13 <sup>th</sup> |  |     | 14 <sup>th</sup> -17 <sup>th</sup> |  |     | 18 <sup>th</sup> |

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

1<sup>st</sup>byte) STX: Start of Message

ASCII STX (02h)

2<sup>nd</sup>-3<sup>rd</sup>bytes) 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).

4<sup>th</sup>-5<sup>th</sup>bytes) 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.

6<sup>th</sup>-7<sup>th</sup>bytes) 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).

8<sup>th</sup>-9<sup>th</sup>bytes) 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).

10<sup>th</sup>-13<sup>th</sup>bytes) 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)

14<sup>th</sup>-17<sup>th</sup>bytes) Current Value: (16bits)

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

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



18<sup>th</sup> 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 <sup>st</sup> | 2 <sup>nd</sup> -3 <sup>rd</sup> |    | 4 <sup>th</sup> -5 <sup>th</sup> |    | 6 <sup>th</sup> -9 <sup>th</sup> |  |     | 10 <sup>th</sup> |

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

The controller requests a monitor to change value.

1<sup>st</sup>byte) STX: Start of Message

ASCII STX (02h)

2<sup>nd</sup>-3<sup>rd</sup>bytes) 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.

4<sup>th</sup>-5<sup>th</sup>bytes) 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.

6<sup>th</sup>-9<sup>th</sup>bytes) Set value: (16bit)

This data must be encoded to ASCII characters.

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

2<sup>nd</sup> = ASCII '1' (31h)

3<sup>rd</sup> = ASCII '2' (32h)

4<sup>th</sup>(LSB) = ASCII '3' (33h)

10<sup>th</sup>byte) 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 <sup>st</sup> | 2 <sup>nd</sup> -3 <sup>rd</sup> |    | 4 <sup>th</sup> -5 <sup>th</sup> |    | 6 <sup>th</sup> -7 <sup>th</sup> |    | 8 <sup>th</sup> -9 <sup>th</sup> |    | 10 <sup>th</sup> -13 <sup>th</sup> |  |  |     | 14 <sup>th</sup> -17 <sup>th</sup> |  |  |     | 18 <sup>th</sup> |

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

1<sup>st</sup>byte) STX: Start of Message

ASCII STX (02h)

2<sup>nd</sup>-3<sup>rd</sup>bytes) 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.

4<sup>th</sup>-5<sup>th</sup>bytes) 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.

6<sup>th</sup>-7<sup>th</sup>bytes) 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

8<sup>th</sup>-9<sup>th</sup>bytes) 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.

10<sup>th</sup>-13<sup>th</sup>bytes) 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)

14<sup>th</sup>-17<sup>th</sup>bytes) 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)

18<sup>th</sup>byte) 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)
- Following operations need a certain time for to execute, so the monitor will return this message when another message is received during execution.
  - ✧ Power ON, Power OFF, Auto Setup, Input, PIP Input, Auto Setup and Factory reset.
- 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 4.5 "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 4.5 "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 4.5 "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 4.5 "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 4.5 "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 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 4.5 "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 4.5 "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 4.5 "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 4.5 "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<br> <br>100(64h): bright  |   |                                      |
|         | CONTRAST                   | 00h               | 12h   | 0: low<br> <br>100(64h): high   |   |                                      |
|         | SHARPNESS                  | 00h               | 8Ch   | 0: dull<br> <br>24(18h): sharp  |   |                                      |
|         | BRIGHTNESS                 | 00h               | 92h   | 0: dark<br> <br>100(64h): bright  |   |                                      |
|         | HUE                        | 00h               | 90h   | 0: purplish<br> <br>100(64h): greenish  |   |                                      |
|         | COLOR                      | 02h               | 1Fh   | 0: pale<br> <br>100(64h): deep  |   |                                      |
|         | COLOR TEMPERATURE          | 00h               | 54h   | 0:2600K<br> <br>74(4Ah):10000K  | 100K/step                                 |                                      |
|         | COLOR TEMPERATURE (CUSTOM) | 00h               | 14h   | 9: 10000K<br>11(0Bh): CUSTOM  |   |                                      |
|         | R GAIN                     | 00h               | 16h   | 0: Dark<br> <br>255(FFh): Bright  |   |                                      |
|         | B GAIN                     | 00h               | 18h   | 0: Dark<br> <br>255(FFh): Bright  |   |                                      |
|         | G GAIN                     | 00h               | 1Ah   | 0: Dark<br> <br>255(FFh): Bright  |   |                                      |
|         | COLOR CONTROL              | 00h               | RED:<br>9Bh<br>YELLOW:<br>9Ch<br>GREEN:<br>9Dh<br>CYAN:<br>9Eh<br>BLUE:<br>9Fh<br>MAGENTA:<br>A0h | 0:<br> <br>100(64h):(center)<br> <br>200(C8h):  |   |                                      |
|         | GAMMA CORRECTION           | 02h               | 68h   | 0: No mean<br>1: NATIVE<br>4: 2.2<br>8: 2.4<br>7: S GAMMA<br>5: DICOM SIM.<br>6: PROGRAMABLE1<br>13(0Bh): PROGRAMABLE2<br>14(0Ch): PROGRAMABLE3 |   |                                      |
|         | MOVIE SETTINGS             | ADAPTIVE CONTRAST | 02h   | 8Dh   | 0: No mean<br>1: Off<br>2: LOW<br>4: High |                                      |
|         |                            | NOISE REDUCTION   | 02h   | 26h   | 0: Off<br> <br>5: High                    | Page02 OPcode20h also works as same. |

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

| Item             |        | OP code page | OP code | Parameter   | Remarks                           |
|------------------|--------|--------------|---------|---|-----------------------------------|
| INPUT RESOLUTION |        | 02h          | DAh     | Input Resolution select<br><br>0:No mean<br>1:Item 1(always Auto)<br>2:Item 2<br>3:Item 3<br>4:Item 4<br>5:Item 5<br><br>Ex)<br>Item 1= AUTO<br>Item 2= -- /<br>1024x768 /<br>1400x1050 /<br>800x600 /<br>1280x960<br>Item 3= -- /<br>1280x768 /<br>1680x1050 /<br>1024x576 /<br>1600x900 /<br>Item 4= -- /<br>1360x768 /<br>-- /<br>-- /<br>--<br>Item 5= -- /<br>1366x768<br>-- /<br>-- /<br>-- |                                   |
| ASPECT           |        | 02h          | 70h     | 0: No mean<br>1: NORMAL<br>2: FULL<br>3: WIDE<br>4: ZOOM<br>6: DYNAMIC<br>7: 1:1  | Wide:<br>Dynamic<br>A/V mode only |
| Zoom Control     | ZOOM   | 02h          | 6Fh     | 0: No mean<br>1: x1.00 (100%)<br>2: x1.01 (101%)<br> <br>201(C9h): x3.00 (300%)   |                                   |
|                  | H ZOOM | 02h          | 6Ch     | 0: No mean<br>1: x1.00 (100%)<br>2: x1.01 (101%)<br> <br>201(C9h): x3.00 (300%)   |                                   |
|                  | V ZOOM | 02h          | 6Dh     | 0: No mean<br>1: x1.00 (100%)<br>2: x1.01 (101%)<br> <br>201(C9h): x3.00 (300%)   |                                   |
|                  | H POS  | 02h          | CCh     | 0: Left side<br> <br>200(C8h): Right side   |                                   |
|                  | V POS  | 02h          | CDh     | 0: Down side<br> <br>200(C8h): Up side  |                                   |
| IMAGE FLIP       |        | 02h          | D7h     | 0: No mean<br>1: NONE<br>2: H FLIP<br>3: V FLIP<br>4: 180 ROTATE  |                                   |

|                 | Item              |         | OP code page              | OP code             | Parameter  | Remarks     |  |
|-----------------|-------------------|---------|---------------------------|---------------------|--|-------------|--|
|                 | OSD FLIP          |         | 10h                       | B8h                 | 0: No mean<br>1: OFF<br>2: ON  |             |  |
|                 | RESET (ADJUST)    |         | 02h                       | CBh                 | 0: No mean<br>3: Reset<br>Adjust category  | Momentary   |  |
| AUDIO           | VOLUME            |         | 00h                       | 62h                 | 0: whisper<br> <br>100(64h): loud  |             |  |
|                 | BALANCE           |         | 00h                       | 93h                 | 0: Left<br> <br>30(1Eh):(Center)<br> <br>60(3Ch): Right  |             |  |
|                 |                   |         | 00h                       | 94h                 | 0: No mean<br>1: MONAURAL<br>2: STEREO   |             |  |
|                 | TREBLE            |         | 00h                       | 8Fh                 | 0: Min.<br> <br>6:(Center)<br> <br>12(0Ch): Max.   |             |  |
|                 | BASS              |         | 00h                       | 91h                 | 0: Min.<br> <br>6:(Center)<br> <br>12(0Ch): Max.   |             |  |
|                 | PIP AUDIO         |         | 10h                       | 80h                 | 0: No mean<br>1: MAIN AUDIO<br>2: PIP AUDIO  |             |  |
|                 | LINE OUT          |         | 10h                       | 81h                 | 0: No mean<br>1: FIXED<br>2: VARIABLE  |             |  |
|                 | SURROUND          |         | 02h                       | 34h                 | 0: No mean<br>1: OFF<br>2: ON  |             |  |
|                 | AUDIO INPUT       |         | 02h                       | 2Eh                 | 0: No mean<br>1: IN1<br>2: IN2<br>3: IN3<br>4: HDMI<br>6: OPTION<br>7: DPORT<br>8: DPORT2<br>9: DPORT3<br>10(0Ah): HDMI2 |             |  |
|                 | RESET (AUDIO)     |         | 02h                       | CBh                 | 0: No mean<br>4: Reset<br>Audio category   | Momentary   |  |
| SCHEDULE        | OFF TIMER         |         | 02h                       | 2Bh                 | 0: Off<br>1: 1 hour<br> <br>24(18h): 24 hours  | 1 hour/step |  |
|                 | SCHEDULE          | ENABLE  | 02h                       | E5h                 | 0: No mean<br>1: No.1 Enable<br> <br>7: No.7 Enable  |             |  |
|                 |                   | DISABLE | 02h                       | E6h                 | 0: No mean<br>1: No.1 Disable<br> <br>7: No.7 Disable  |             |  |
|                 | SCHEDULE SETTINGS |         |                           | Refer to chapter 10 |  |             |  |
|                 | DATE & TIME       |         |                           | Refer to chapter 9  |  |             |  |
| DAYLIGHT SAVING |                   |         | Refer to chapter 9 and 15 |                     |  |             |  |



|     | Item             |          | OP code page | OP code | Parameter  | Remarks   |
|-----|------------------|----------|--------------|---------|--|-----------|
|     | RESET (SCHEDULE) |          | 02h          | CBh     | 0: No mean<br>5: Reset<br>Schedule category  | Momentary |
| PIP | KEEP PIP MODE    |          | 10h          | 82h     | 0: No mean<br>1: OFF<br>2: ON  |           |
|     | PIP MODE         |          | 02h          | 72h     | 0: No mean<br>1: OFF<br>2: PIP<br>3: POP<br>(4: STILL)<br>5: PICTURE BY PICTURE<br>- ASPECT<br>6: PICTURE BY PICTURE<br>- Full |           |
|     | PIP SIZE         |          | 10h          | B9h     | 0(small)<br> <br>80(large)   |           |
|     | PIP POSITION     | X        | 02h          | 74h     | 0: left<br> <br>100(64h): right  |           |
|     |                  | Y        | 02h          | 75h     | 0: top<br> <br>100(64h): bottom  |           |
|     | ASPECT           |          | 10h          | 83h     | 0: No mean<br>1: NORMAL<br>2: FULL<br>3: WIDE<br>4: ZOOM   |           |
|     | TEXT TICKER      | MODE     | 10h          | 08h     | 0: No mean<br>1: OFF<br>2: HORIZONTAL<br>3: VERTICAL   |           |
|     |                  | POSITION | 10h          | 09h     | 0: Top/Left<br> <br>100(64h): Bottom/Right   |           |
|     |                  | SIZE     | 10h          | 0Ah     | 0-1: Do not set.<br>2: Narrow(2/24)<br> <br>8: Wide(8/24)  |           |
|     |                  | BLEND    | 10h          | 0Bh     | 0: No mean<br>1: 10%<br> <br>10(0Ah): 100%   |           |
|     |                  | DETECT   | 10h          | 0Ch     | 0: No mean<br>1: AUTO<br>2: OFF  |           |
|     |                  | FADE IN  | 10h          | 0Dh     | 0: No mean<br>1: ON<br>2: OFF  |           |

|                  | Item                 | OP code page      | OP code                                  | Parameter   | Remarks   |           |
|------------------|----------------------|-------------------|--|---|---|-----------|
|                  | PIP INPUT(SUB INPUT) | 02h               | 73h                                      | 0: No mean<br>1: VGA<br>2: RGB/HV<br>3: DVI<br>4: HDMI (Set only)<br>5: VIDEO<br>7: S-VIDEO<br>12(0Ch): Y/Pb/Pr<br>13(0Dh): OPTION<br>14(0Eh): Y/Pb/Pr2<br>15(0Fh): DPORT<br>16(10h): DPORT2<br>17(11h): HDMI<br>18(12h): HDMI2<br>128(80h): DPORT3 | This operation has limitation of selection. Please refer to the monitor instruction manual. |           |
|                  | RESET (PIP)          | 02h               | CBh                                      | 0: No mean<br>6: Reset PIP Category   | Momentary   |           |
| OSD              | LANGUAGE             | 00h               | 68h                                      | 0: No mean<br>1: ENGLISH<br>2: GERMAN<br>3: FRENCH<br>4: SPANISH<br>5: JAPANESE<br>6: ITALIAN<br>7: SWEDISH<br>9: RUSSIAN<br>14(0Eh): CHINESE   | OSD Language  |           |
|                  | MENU DISPLAY TIME    | 00h               | FCh                                      | 0-1: Do not set.<br>2: 10s<br>3: 15s<br> <br>48(30h): 240s  | 5sec/step   |           |
|                  | OSD POSITION         | X                 | 02h                                      | 38h   | 0: Left<br> <br>255(FFh): Right   |           |
|                  |                      | Y                 | 02h                                      | 39h   | 0: Down<br> <br>255(FFh): Up  |           |
|                  | INFORMATION OSD      | 02h               | 3Dh                                      | 0:Disable information OSD<br>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)<br>0 - 65535(FFFFh)(kg)  | Read Only |
| CARBON USAGE     | 10h                  | 26h (g) /27h (kg) | 0 - 999(3E7h)(g)<br>0 - 65535(FFFFh)(kg) | Read Only   |   |           |
| OSD TRANSPARENCY | 02h                  | B8h               | 0: No mean<br>1: OFF<br>2: ON            |   |   |           |
| OSD ROTATION     | 02h                  | 41h               | 0: Landscape<br>1: Rotated               |   |   |           |

| Item                   | OP code page        | OP code | Parameter   | Remarks  |                      |
|------------------------|---------------------|---------|---|--|----------------------|
| INPUT NAME             | Refer to chapter 18 |         |   |  |                      |
| NAME RESET             |                     |         |   |  |                      |
| MEMO                   | 10h                 | BAh     | 0: No mean<br>1: Display a Memo<br>2: Undisplay a Memo  |  |                      |
| RESET (OSD)            | 02h                 | CBh     | 0: No mean<br>7: Reset<br>OSD category  | Momentary  |                      |
| MONITOR ID             | 02h                 | 3Eh     | 1-100:ID  |  |                      |
| GROUP ID               | 10h                 | 7Fh     | 0: No assignment<br>1: Group A<br>2: Group B<br>3: Group AB<br>4: Group C<br>5: Group AC<br> <br>1023(3FFh):Group<br>ABCDEFGHIJ | Bit0:Group A<br>Bit1:Group B<br>Bit2:Group C<br>Bit3:Group D<br>Bit4:Group E<br>Bit5:Group F<br>Bit6:Group G<br>Bit7:Group H<br>Bit8:Group I<br>Bit9:Group J |                      |
| AUTO ID                | Refer to chapter 17 |         |   |  |                      |
| AUTO ID RESET          | Refer to chapter 17 |         |   |  |                      |
| IR LOCK SETTING        | 02h                 | 3Fh     | 0: No mean<br>1: NORMAL<br>4: LOCK  |  |                      |
| TILE MATRIX            | H MONITOR           | 02h     | D0h   | 0: No mean<br>1<br> <br>10(0Ah)  | Number of H-division |
|                        | V MONITOR           | 02h     | D1h   | 0: No mean<br>1<br> <br>10(0Ah)  | Number of V-division |
|                        | POSITION            | 02h     | D2h   | 0: No mean<br>1<br> <br>100(64h)   |                      |
|                        | TILE COMP           | 02h     | D5h   | 0: No mean<br>1: NO<br>2: YES  |                      |
|                        | ENABLE              | 02h     | D3h   | 0: No mean<br>1: NO<br>2: YES  |                      |
| TILE MATRIX MEM        | 10h                 | 4Ah     | 0: No mean<br>1: COMMON<br>2: INPUT   |  |                      |
| AUTO TILE MATRIX SETIP | Refer to chapter 19 |         |   |  |                      |
| POWER ON DELAY         | 02h                 | D8h     | 0: Off (0sec)<br> <br>50(32h): 50sec  |  |                      |
| LINK TO ID             | 10h                 | BCh     | 0: No mean<br>1: OFF<br>2: ON   |  |                      |
| VIDEO OUT SETTING      | 10h                 | EAh     | 0: No mean<br>1: ON<br>2: OFF   |  |                      |
| POWER INDICATOR        | 02h                 | BEh     | 0: No mean<br>1: ON<br>2: OFF   |  |                      |
| SETTING COPY           | Refer to Chapter 21 |         |   |  |                      |

MULTI DISPLAY

|                    | Item                     | OP code page            | OP code  | Parameter   | Remarks   |  |   |          |
|--------------------|--------------------------|-------------------------|--|---|---|--|---|----------|
|                    | RESET<br>(MULTI DISPLAY) | 02h                     | CBh  | 0: No mean<br>8: Reset<br>Multi Display<br>Category | Momentary   |  |   |          |
| DISPLAY PROTECTION | POWER SAVE               | Refer to Chapter 20     |  |   |   |  |   |          |
|                    | HEAT STATUS              | FAN1/2/3                | 02h  | 7Ah<br>/7Bh   | Select target FAN. (7Ah)<br>0: No mean<br>1: FAN#1<br>2: FAN#2<br>3: FAN#3<br>Read status of target FAN. (7Bh)<br>0: OFF<br>1: ON<br>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.<br>(0.5°C step)   | Offset affects to a selected sensor.<br>Select sensor (Page02h OPcode78h)<br>1 : SENSOR #1<br>2 : SENSOR #2<br>3 : SENSOR #3 |   |          |
|                    |                          | COOLING FAN             | 02h  | 7Dh   | 0: No mean<br>1: AUTO<br>2: ON  |  |   |          |
|                    |                          | FAN SPEED               | 10h  | 3Fh   | 0: No mean<br>1: HIGH<br>2: LOW   |  |   |          |
|                    |                          | FAN CONTROL             | SENSOR1  | 10h   | E0h/E1h   | E0h: Set centigrade<br>0 - 65535(FFFFh)<br>E1h: Set offset frommax. value<br>0 - 10(0Ah)                                     |   |          |
|                    |                          |                         | SENSOR2  | 10h   | E2h/E3h   | E2h: Set centigrade<br>0 - 65535(FFFFh)<br>E3h: Set offset frommax. value<br>0 - 10(0Ah)                                     |   |          |
|                    |                          |                         | SENSOR3  | 10h   | E4h/E5h   | E4h: Set centigrade<br>0 - 65535(FFFFh)<br>E5h: Set offset frommax. value<br>0 - 10(0Ah)                                     |   |          |
|                    |                          | SCREEN SAVER            | GAMMA  |   | 02h   | DBh  | 0: No mean<br>1: OFF<br>2: ON                   |          |
|                    |                          |                         | BACKLIGHT  |   | 02h   | DCh  | 0: No mean<br>1: OFF<br>2: ON                   |          |
|                    |                          |                         | MOTION   | INTER VAL   | 02h   | DDh  | 0: OFF(0s)<br> <br>90(5Ah): 900s                | 10s/step |
|                    |                          |                         |  | ZOOM  | 10h   | 35h  | 0 : 95%<br> <br>5 : 100%<br> <br>10(0Ah) : 105% |          |
|                    |                          | SIDE BORDER COLOR       |  | 02h   | DFh   | 0: Black<br> <br>100(64h): White   |   |          |

|                  | Item                       | OP code page        | OP code | Parameter   | Remarks  |   |
|------------------|----------------------------|---------------------|---------|---|--|---|
|                  | CHANGE PASSWORD            |                     |         | N/A   |  |   |
|                  | SECURITY                   | Refer to Chapter 22 |         |   |  |   |
|                  | RESET (DISPLAY PROTECTION) | 02h                 | CBh     | 0: No mean<br>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<br>1: OFF<br>2: ON   |  |   |
|                  | DDC/CI                     | 10h                 | BEh     | 0: No mean<br>1: OFF<br>2: ON   |  |   |
|                  | PING                       |                     |         | N/A   |  |   |
|                  | IP ADDRESS RESET           |                     |         | N/A   |  |   |
|                  | RESET (EXTERNAL CONTROL)   | 02h                 | CBh     | 0: No mean<br>12(0Ch): Reset External Control Category                              | Momentary  |   |
| ADVANCED OPTION1 | INPUT DETECT               | 02h                 | 40h     | 0: FIRST DETECT<br>1: LAST DETECT<br>2: NONE<br>3: VIDEO DETECT<br>4: CUSTOM DETECT |  |   |
|                  | CUSTOM DETECT              | PRIORITY1           | 10h     | 2Eh   | 0: No mean<br>1: VGA<br>2: RGB/HV<br>3: DVI<br>4: HDMI (Set only)<br>5: VIDEO<br>7: S-VIDEO<br>12(0Ch): Y/Pb/Pr<br>13(0Dh): OPTION<br>14(0Eh): Y/Pb/Pr2<br>15(0Fh): DPORT<br>16(10h): DPORT2<br>17(11h): HDMI<br>18(12h): HDMI2<br>128(80h): DPORT3: |   |
|                  |                            | PRIORITY2           | 10h     | 2Fh   |  |   |
|                  |                            | PRIORITY3           | 10h     | 30h   |  |   |
|                  | LONG CABLE COMP            | ON/OFF              | 10h     | 3Dh   | 0: No mean<br>1: OFF<br>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  |   |
|                  |                            | SYNC TERMINATION    | 02h     | E1h   | 0: No mean<br>1: HIGH<br>2: LOW  |   |
|                  | INPUT CHANGE               | INPUT CHANGE        | 10h     | 86h   | 0: No mean<br>1: NORMAL<br>2: QUICK<br>3: SUPER  | When you set up "SUPER", please set up INPUT1 and INPUT2 first. |
|                  |                            | INPUT1              | 10h     | CEh   | 0: No mean<br>1: VGA<br>2: RGB/HV<br>3: DVI<br>4: HDMI (Set only)<br>5: VIDEO<br>7: S-VIDEO  |   |

| Item             |              | OP code page    | OP code | Parameter  | Remarks                               |  |
|------------------|--------------|-----------------|---------|--|---------------------------------------|--|
|                  | INPUT2       | 10h             | CFh     | 12(0Ch): Y/Pb/Pr<br>13(0Dh): OPTION<br>14(0Eh): Y/Pb/Pr2<br>15(0Fh): DPORT<br>16(10h): DPORT2<br>17(11h): HDMI<br>18(12h): HDMI2<br>128(80h): DPORT3                 |                                       |  |
| TERMINAL SETTING | DVI MODE     | 02h             | CFh     | 0: No mean<br>1: DVI-PC<br>2: DVI-HD   |                                       |  |
|                  | BNC MODE     | 10h             | 7Eh     | 0: No mean<br>1: RGB<br>2: COMPONENT   |                                       |  |
|                  | D-SUB MODE   | 10h             | 8Eh     | 0: No mean<br>1: RGB<br>2: COMPONENT   |                                       |  |
|                  | SCART MODE   | 02h             | 9Eh     | 0: OFF<br>1: ON  |                                       |  |
|                  | DisplayPort  | 10h             | F1h/F2h | Select target DPORT.<br>(F1h)<br>0: No mean<br>1: DPORT<br>2: DPORT2<br>3: DPORT3<br>Read / Write status of<br>target DPORT.(F2h)<br>0: No mean<br>1: 1.1a<br>2: 1.2 |                                       |  |
|                  | HDMI SIGNAL  | 10h             | 40h     | 0: No mean<br>1: EXPAND<br>2: RAW  |                                       |  |
| DEINTERLACE      |              | 02h             | 25h     | 0: No mean<br>1: Off<br>2: ON  |                                       |  |
| COLOR SYSTEM     |              | 02h             | 21h     | 0: No mean<br>1: NTSC<br>2: PAL<br>3: SECAM<br>4: AUTO<br>5: 4.43NTSC<br>6: PAL-60   |                                       |  |
| OVER SCAN        |              | 02h             | E3h     | 0: No mean<br>1: OFF<br>2: ON  |                                       |  |
| OPTION SETTING   | OPTION POWER |                 | 10h     | 41h  | 0: OFF<br>1: ON                       |  |
|                  | AUDIO        |                 | 10h     | B0h  | 0: No mean<br>1: ANALOG<br>2: DIGITAL |  |
|                  | INTERNAL PC  | OFF WARNIN<br>G | 10h     | C0h  | 0: No mean<br>1: OFF<br>2: ON         |  |
|                  |              | AUTO OFF        | 10h     | C1h  | 0: No mean<br>1: OFF<br>2: ON         |  |
|                  |              | START UP PC     | 10h     | C2h  | 0: No mean<br>1: Execute              |  |
|                  |              | FORCE QUIT      | 10h     | C3h  | 0: No mean<br>1: Execute              |  |
| 120Hz            |              | 10h             | 87h     | 0: No mean<br>1: ON<br>2: OFF  |                                       |  |

| Item                     |                    | OP code page | OP code | Parameter  | Remarks   |           |
|--------------------------|--------------------|--------------|---------|--|---|-----------|
| TOUCH PANEL              | STANDBY            | 10h          | C4h     | 0: No mean<br>1: OFF<br>2: ON                          |   |           |
|                          | PC SOURCE          | 10h          | C5h     | 0: No mean<br>1: AUTO<br>2: EXTERNAL PC                |   |           |
| RESET (ADVANCED OPTION1) |                    | 02h          | CBh     | 0: No mean<br>10(0Ah): Reset Advanced option1 category | Momentary   |           |
| AUTO DIMMING             | AUTO BRIGHTNESS    |              | 02h     | 2Dh  | 0: OFF<br>1: ON   |           |
|                          | ROOM LIGHT SENSING |              | 10h     | C8h  | 0: No mean<br>1: OFF<br>2: MODE1<br>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<br>1: DISABLE<br>2: AUTO OFF<br>4: CUSTOM  |           |
|                          | BACKLIGHT          | ON/OFF       | 10h     | DDh  | 0: No mean<br>1: Off<br>2: On   |           |
|                          |                    | BACKLIGHT    | 10h     | C6h  | 0: dark<br> <br>100(64h): light   |           |
|                          | VOLUME             | ON/OFF       | 10h     | DEh  | 0: No mean<br>1: Off<br>2: On   |           |
|                          |                    | VOLUME       | 10h     | C7h  | 0: whisper<br> <br>100(64h): loud   |           |
|                          | INPUT SELECT       | ON/OFF       | 10h     | DFh/D0h  | 0: No mean<br>1: Off<br>2: On   |           |
|                          |                    | INPUT        | 10h     | D0h  | 0: No mean<br>1: VGA<br>2: RGB/HV<br>3: DVI<br>4: HDMI (Set only)<br>5: VIDEO<br>7: S-VIDEO<br>12(0Ch): Y/Pb/Pr<br>13(0Dh): OPTION<br>14(0Eh): Y/Pb/Pr2<br>15(0Fh): DPORT<br>16(10h): DPORT2<br>17(11h): HDMI<br>18(12h): HDMI2<br>128(80h): DPORT3 |           |
|                          | WAITING TIME       |              | 10h     | 78h  | 30(1Eh): short<br> <br>600(258h): long<br>*1step: 1sec.   |           |

ADVANCED OPTION2

| Item                        | OP code page | OP code | Parameter   | Remarks  |
|-----------------------------|--------------|---------|---|--|
| INTELLI WIRELESS DATA       | 10h          | ECh     | 0: No mean<br>1: OFF<br>2: ON   |  |
| RESET<br>(ADVANCED OPTION2) | 02h          | CBh     | 0: No mean<br>11(0Bh): Reset Advanced option category   | Momentary  |
| FACTORY RESET               | 02h          | CBh     | 0: No mean<br>1: Factory Reset  | Momentary  |
| INPUT                       | 00h          | 60h     | 0: No mean<br>1: VGA<br>2: RGB/HV<br>3: DVI<br>4: HDMI (Set only)<br>5: VIDEO<br>7: S-VIDEO<br>12(0Ch): Y/Pb/Pr<br>13(0Dh): OPTION<br>14(0Eh): Y/Pb/Pr2<br>15(0Fh): DPORT<br>16(10h): DPORT2<br>17(11h): HDMI<br>18(12h): HDMI2<br>128(80h): DPORT3 |  |
| AUDIO INPUT                 | 02h          | 2Eh     | 0: No mean<br>1: IN1<br>2: IN2<br>3: IN3<br>4: HDMI<br>6: OPTION<br>7: DPORT<br>8: DPORT2<br>9: DPORT3<br>10(0Ah): HDMI2  |  |
| VOLUME UP/DOWN              | 00h          | 62h     | 0: whisper<br> <br>100(64h): loud   |  |
| MUTE                        | 00h          | 8Dh     | 0: UNMUTE(Set only)<br>1: MUTE<br>2: UNMUTE   |  |
| SCREEN MUTE                 | 10h          | B6h     | 0: No mean<br>1: SCREEN MUTE ON<br>2: SCREEN MUTE OFF   |  |
| MTS                         | 02h          | 2Ch     | 0: No mean<br>1: Main<br>2: Sub<br>3: Main + Sub  | This operation requires supported option TV tuner. |
| SOUND                       | 02h          | 34h     | 0: No mean<br>1: Off<br>2: ON   | Same as 'SURROUND'                                 |
| PICTURE MODE                | 02h          | 1Ah     | 0: No mean<br>1: sRGB<br>3: HIGHBRIGHT<br>4: STANDARD<br>5: CINEMA<br>8: CUSTOM1<br>9: CUSTOM2  | sRGB:<br>PC mode only<br>CINEMA:<br>A/V mode only  |
| ASPECT                      | 02h          | 70h     | 0: No mean<br>1: NORMAL<br>2: FULL<br>3: WIDE<br>4: ZOOM<br>6: DYNAMIC<br>7: 1:1 (Off/dot by dot)   | WIDE:<br>A/V mode only                             |



|                    | Item                          | OP code page | OP code | Parameter   | Remarks   |
|--------------------|-------------------------------|--------------|---------|---|---|
|                    | PIP ON/OFF<br>STILL ON/OFF    | 02h          | 72h     | 0: No mean<br>1: Off<br>2: PIP<br>3: POP<br>4: STILL<br>5: PICTUR BY PICTURE<br>- ASPECT<br>6: PICTURE BY PICTURE<br>- FULL   |   |
|                    | PIP INPUT                     | 02h          | 73h     | 0: No mean<br>1: VGA<br>2: RGB/HV<br>3: DVI<br>4: HDMI (Set only)<br>5: VIDEO<br>7: S-VIDEO<br>12(0Ch): Y/Pb/Pr<br>13(0Dh): OPTION<br>14(0Eh): Y/Pb/Pr2<br>15(0Fh): DPORT<br>16(10h): DPORT2<br>17(11h): HDMI<br>18(12h): HDMI2<br>128(80h): DPORT3 | This operation has limitation of selection. Please refer to the monitor instruction manual. |
|                    | STILL CAPTURE                 | 02h          | 76h     | 0: OFF<br>1: CAPTURE  | Momentary   |
|                    | SIGNAL INFORMATION            | 02h          | EAh     | 0: No mean<br>1: OFF<br>2: ON   |   |
|                    | AUTO SETUP                    | 00h          | 1Eh     | 0: No mean<br>1: Execute  | Momentary   |
|                    | TV-CHANNEL UP/DOWN            | 00h          | 8Bh     | 0: No mean<br>1: UP<br>2: DOWN  | This operation requires supported option TV tuner.  |
| TEMPERATURE SENSOR | SELECT TEMPERATURE SENSOR     | 02h          | 78h     | 0: No mean<br>1: SENSOR #1<br>2: SENSOR #2<br>3: SENSOR #3  |   |
|                    | READOUT A TEMPERATURE         | 02h          | 79h     | Returned value is 2's complement.<br>Refer to section 6.2   | Read only   |
| CARBON FOOTPRINT   | READOUT CARBON FOOTPRINT (g)  | 10h          | 10h     | 0:<br> <br>999(3E7h):   | Read only   |
|                    | READOUT CARBON FOOTPRINT (kg) | 10h          | 11h     | 0:<br> <br>65535(FFFFh):  | Read only   |
|                    | READOUT CARBON USAGE (g)      | 10h          | 26h     | 0:<br> <br>999(3E7h):   | Read only   |
|                    | READOUT CARBON USAGE (kg)     | 10h          | 27h     | 0:<br> <br>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 4.5 "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 4.5 "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 4.5 "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 4.5 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet



Check code

BCC: Block Check Code

Refer to the section 4.5 "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 4.5 "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 4.5 "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 4.5 "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'-<br>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 4.5 "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'-<br>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 4.5 "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 4.5 "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 4.5 "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
'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 4.5 "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 4.5 "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 4.5 "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  
'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: 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 4.5 "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  
'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 4.5 "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 4.5 "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 4.5 "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 4.5 "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 4.5 "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 4.5 "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-<br>'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 4.5 "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 4.5 "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 4.5 "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 4.5 "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 4.5 "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 4.5 "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 4.5 "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'-<br>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 4.5 "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-<br>'B'-'0'-'A' | STX-'C'-'3'-'1'-'D'-<br>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): Enable

ETX (03h): End of Message

#### Check code

BCC: Block Check Code  
    Refer to the section 4.5 "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-<br>'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 4.5 "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-<br>'B'-'1'-'2' | STX-'C'-'3'-'2'-'C'-<br>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 (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 4.5 "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 4.5 "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 4.5 "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 4.5 "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 4.5 "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 4.5 "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-<br>'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 4.5 "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)  
ETX (03h): End of Message

#### Check code

BCC: Block Check Code  
Refer to the section 4.5 "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 4.5 "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 4.5 "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 4.5 "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 4.5 "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 4.5 "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 4.5 "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 4.5 "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 4.5 "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 4.5 "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 4.5 "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 4.5 "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 4.5 "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 4.5 "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 4.5 "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 4.5 "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 4.5 "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 4.5 "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 4.5 "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 4.5 "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 4.5 "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 4.5 "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 4.5 "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 4.5 "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 4.5 "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 4.5 "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 4.5 "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 4.5 "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 4.5 "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 4.5 "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 4.5 "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 4.5 "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 4.5 "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 4.5 "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'-<br>'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 4.5 "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-<br>'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 4.5 "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 4.5 "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 4.5 "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 4.5 "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-<br>'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 4.5 "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 4.5 "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 4.5 "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 4.5 "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 4.5 "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'-'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 4.5 "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 4.5 "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 4.5 "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 4.5 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet



## 24. Proof of Play

### 24.1 Start Proof of Play

This command is used in order to read Proof of Play log data.

- 1) The controller requests the monitor to start Proof of Play.

| Header                             | Message                         | Check code | Delimiter |
|------------------------------------|---------------------------------|------------|-----------|
| SOH-'0'-Monitor ID-'0'-'A'-'0'-'8' | STX-'C'-'A'-'0'-'6'-'0'-'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 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'-'0'-'6': Proof of Play command  
'0'-'0' (30h,30h): Start Proof of Play command  
ETX (03h): End of Message

#### Check code

BCC: Block Check Code  
Refer to the section 4.5 "Check code" for a BCC calculation.

#### Delimiter

CR (0Dh): End of packet

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

| Header                             | Message   | Check code | Delimiter |
|------------------------------------|---|------------|-----------|
| SOH-'0'-Monitor ID-'0'-'B'-'2'-'2' | STX-'C'-'B'-'0'-'6'-'0'-'0'-Data(0)-Data(1)-Data(2) --- Data(12) -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".  
'2'-'2' (32h, 32h) : Message length is 34 bytes.

#### Message

STX (02h): Start of Message  
'C'-'B'-'0'-'6': Proof of Play reply command  
'0'-'0' (30h,30h): Start Proof of Play command  
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 4.5 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

## 24.2 Stop Proof of Play

This command is used in order to stop Proof of Play log data.

- 1) The controller requests the monitor to stop Proof of Play.

| Header                             | Message                         | Check code | Delimiter |
|------------------------------------|---------------------------------|------------|-----------|
| SOH-'0'-Monitor ID-'0'-'A'-'0'-'8' | STX-'C'-'A'-'0'-'6'-'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'-'0'-'6': Proof of Play command  
 '0'-'1' (30h,31h): Stop Proof of Play command  
 ETX (03h): End of Message

### Check code

BCC: Block Check Code  
 Refer to the section 4.5 "Check code" for a BCC calculation.

### Delimiter

CR (0Dh): End of packet

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

| Header                             | Message   | Check code | Delimiter |
|------------------------------------|---|------------|-----------|
| SOH-'0'-Monitor ID-'0'-'B'-'2'-'2' | STX-'C'-'B'-'0'-'6'-'0'-'1'-Data(0)-Data(1)-Data(2) --- Data(12) -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".  
 '2'-'2' (32h, 32h) : Message length is 34 bytes.

### Message

STX (02h): Start of Message  
 'C'-'B'-'0'-'6': Proof of Play reply command  
 '0'-'1' (30h,31h): Stop Proof of Play command  
 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 4.5 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet

### 24.3 Get Proof of Play Current

This command is used in order to get Proof of Play current log.

- 1) The controller requests the monitor to get current log of Proof of Play.

| Header                             | Message                         | Check code | Delimiter |
|------------------------------------|---------------------------------|------------|-----------|
| SOH-'0'-Monitor ID-'0'-'A'-'0'-'8' | STX-'C'-'A'-'0'-'6'-'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'-'0'-'6': Proof of Play command  
 '0'-'2' (30h,32h): Get Proof of Play current log command  
 ETX (03h): End of Message

#### Check code

BCC: Block Check Code  
 Refer to the section 4.5 "Check code" for a BCC calculation.

#### Delimiter

CR (0Dh): End of packet

- 2) The monitor replies the current log of Proof of Play to the controller.

| Header                             | Message   | Check code | Delimiter |
|------------------------------------|---|------------|-----------|
| SOH-'0'-Monitor ID-'0'-'B'-'2'-'2' | STX-'C'-'B'-'0'-'6'-'0'-'2'-Data(0)-Data(1)-Data(2) --- Data(12) -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".  
 '2'-'2' (32h, 32h) : Message length is 34 bytes.

#### Message

STX (02h): Start of Message  
 'C'-'B'-'0'-'6': Proof of Play reply command  
 '0'-'2' (30h,32h): Get Proof of Play current log command  
 Data(0)-Data(12): Log Data of Proof of Play of STOP (26byte) : Same as "Get Proof of Play Current"  
 -----  
 \*Log Data of Proof of Play : Data(0)-Data(12)  
 Data(0): Check INPUT PICTURE  
 '0'-'0': No mean  
 '0'-'1': VGA  
 '0'-'2': RGB/HV  
 '0'-'3': DVI  
 '0'-'4': HDMI (Set only)

```

'0'-'5': VIDEO
'0'-'7': S-VIDEO
'0'-'C': Y/Pb/Pr
'0'-'D': OPTION
'0'-'E': Y/Pb/Pr2
'0'-'F': DPORT
'1'-'0': DPORT2
'1'-'1': HDMI
'1'-'2': HDMI2
'8'-'0': DPORT3
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 1) 1920 x 1080
      '0'-'7'-'8'-'0'-'0'-'4'-'3'-'8' : 1920(0780h) x 1080(0438h)
Data(5) : Check INPUT AUDIO
'0'-'0': No mean
'0'-'1': IN1
'0'-'2': IN2
'0'-'3': IN3
'0'-'4': HDMI
'0'-'6': OPTION
'0'-'7': DPORT
'0'-'8': DPORT2
'0'-'9': DPORT3
'0'-'A': HDMI2
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) : hour
'*'-'*'-'*'-'*' (**h,**h,**h,**h):0~65535(0000h~FFFFh)
Data(11) : min
'*'-'*' (**h,**h):0~59(00h~3Bh)
Data(12) : sec
'*'-'*' (**h,**h):0~59(00h~3Bh)
-----
ETX (03h): End of Message

```

#### Check code

BCC: Block Check Code  
Refer to the section 4.5 "Check code" for a BCC calculation.

#### Delimiter

CR (0Dh): End of packet

## 24.4 Get Proof of Play Total Number

This command is used in order to get Proof of Play total number.

- 1) The controller requests the monitor to get the total number of Proof of Play data.

| Header                             | Message                         | Check code | Delimiter |
|------------------------------------|---------------------------------|------------|-----------|
| SOH-'0'-Monitor ID-'0'-'A'-'0'-'8' | STX-'C'-'A'-'0'-'6'-'0'-'3'-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'-'0'-'6': Proof of Play command  
 '0'-'3' (30h,31h): Get Proof of Play Total Number command  
 ETX (03h): End of Message

### Check code

BCC: Block Check Code  
 Refer to the section 4.5 "Check code" for a BCC calculation.

### Delimiter

CR (0Dh): End of packet

- 2) The monitor replies the result the total number of Proof of Play data.

| Header                             | Message                                     | Check code | Delimiter |
|------------------------------------|---|------------|-----------|
| SOH-'0'-Monitor ID-'0'-'B'-'0'-'C' | STX-'C'-'B'-'0'-'6'-'0'-'3'-TN(H)-TH(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".  
 '0'-'C' (30h, 43h) : Message length is 12 bytes.

### Message

STX (02h): Start of Message  
 'C'-'B'-'0'-'6': Proof of Play reply command  
 '0'-'3' (30h,31h): Get Proof of Play Total Number command  
 TN(H): Total Number (High byte)  
 TN(L): Total Number (Low byte)  
 ETX (03h): End of Message

### Check code

BCC: Block Check Code  
 Refer to the section 4.5 "Check code" for a BCC calculation.

Delimiter

CR (0Dh): End of packet



## 24.5 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'-'0'-'6'-'0'-'4'-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'-'0'-'6': Proof of Play command  
 '0'-'4' (30h,34h): 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 4.5 "Check code" for a BCC calculation.

### Delimiter

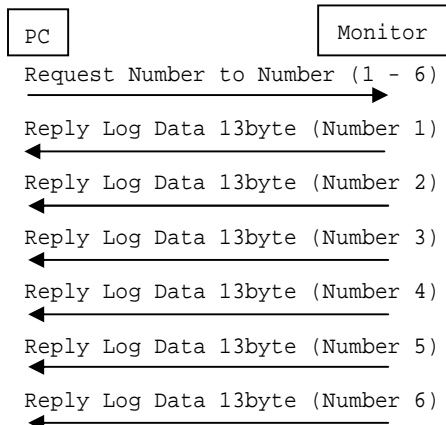
CR (0Dh): End of packet

- 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'-'2'-'6' | STX-'C'-'B'-'0'-'6'-'0'-'4'- BN(H)-BN(L)-Data(0)-Data(1)-Data(2) ---Data(12) -ETX | BCC        | CR        |

\* A reply returns 13 bytes of 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".  
'2'-'6' (32h, 36h) : Message length is 38 bytes.

#### Message

STX (02h): Start of Message  
'C'-'B'-'0'-'6': Proof of Play reply command  
'0'-'4' (30h,34h): Get Proof of Play Number to Number log command  
BN(H): Block Number (High byte)  
BN(L): Block Number (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 4.5 "Check code" for a BCC calculation.

#### Delimiter

CR (0Dh): End of packet

All data are subject to change without notice.

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