



# RS232 Command List

TX-32P/TX-42P

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# 1. Introduction

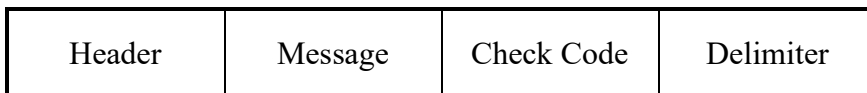
Generic RS232 Spec.

## Connector - DB9 Male

Pin No.	Name
1	NC
2	TXD (out)
3	RX (in)
4	NC
5	GND
6	NC
7	NC
8	NC
9	NC

COMMUNICATION SYSTEM	ASYNCHRONOUS
PROTOCOL	RS-232C
BAUD RATE	9600 (bps)
DATA LENGTH	8 (bits)
PARITY BIT	NONE
STOP BIT	1 (bit)
FLOW CONTROL	NONE
COMMUNICATION CODE	ASCII

## 2. Control Command Diagram (Format)



### 2.1 Header Block Format

SOH	Reserved "0"	Destination	Source	Message Type	Message 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>

SOH: Start of header → 1<sup>st</sup> = 01

Reserved "0": Reserved for future extensions, → 2<sup>nd</sup> = 30h

Destination: Equipment ID (Receiver)

"Monitor ID" to "Destination Address" conversion table is as follows

Monitor ID	Destination Address	Monitor ID	Destination Address
1	'A'(41h)	14	'N'(4Eh)
2	'B'(42h)	15	'O'(4Fh)
3	'C'(43h)	16	'P'(50h)
4	'D'(44h)	17	'Q'(51h)
5	'E'(45h)	18	'R'(52h)
6	'F'(46h)	19	'S'(53h)
7	'G'(47h)	20	'T'(54h)
8	'H'(48h)	21	'U'(55h)
9	'I'(49h)	22	'V'(56h)
10	'J'(4Ah)	23	'W'(57h)
11	'K'(4Bh)	24	'X'(58h)
12	'L'(4Ch)	25	'Y'(59h)
13	'M'(4Dh)	26	'Z'(5Ah)
<b>ALL</b>	<b>'@'(40h)</b>	<b>27~60</b>	<b>5Bh~7Ch</b>

Exp: If you want to control a monitor that has the "ID No." as '1', specify a destination address 'A'(3<sup>rd</sup> = 41h). If you want to control all of the monitors which are connected by a daisy chain, specify a destination address "\*(2Ah).

Source: Source equipment ID (Sender)

Specify a sender address, the controller must be "0" (4<sup>th</sup> = 30h)

Message Type: Case sensitive

Refer to "Message block format" for more details, 5<sup>th</sup> =

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

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.

Exp:

The byte data 3Ah must be encoded to ASCII characters '3' (6<sup>th</sup> = 33h)  
and 'A' (7<sup>th</sup> = 41h).

The byte data 0Bh must be encoded to ASCII characters '0' (6<sup>th</sup> = 30h)  
and 'B' (7<sup>th</sup> = 42h).

## 2.2 Message Block Format

### 2.2.1 Get current parameter

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>

STX: Start of Message, ASCII STX (1<sup>st</sup> = 02h)

OP code page: Operation code page.

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

Refer to Operation code table for each item.

OP code page data must be encoded to ASCII characters.

Exp:

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' (2<sup>nd</sup> = 30h)

OP code page (Lo) = ASCII '2' (3<sup>rd</sup> = 32h)

OP code: Operation code.

OP code data must be encoded to ASCII characters.

Exp:

The byte data 1Fh must be encoded to ASCII characters '1' and 'F' (31h and 46h),

OP code page 1Fh → OP code (Hi) = ASCII '1' (4<sup>th</sup> = 31h)

OP code (Lo) = ASCII 'F' (5<sup>th</sup> = 46h)

ETX: End of Message, ASCII ETX (6<sup>th</sup> = 03h)

### 2.2.2 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>

STX: Start of Message, ASCII STX (1<sup>st</sup> = 02h)

Result: Result code.

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

00h: No Error.

01h: Unsupported operation with this monitor /

Unsupported operation under current condition.

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

Exp:

The byte data 01h is encoded to ASCII character '0' and '1' (2<sup>nd</sup> = 30h and 3<sup>rd</sup> = 31h)

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.

Exp:

The byte data 02h is encoded to ASCII character '0' and '2' (4<sup>th</sup> = 30h and 5<sup>th</sup> = 32h).

Refer to the operation codes table.

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.

Exp:

The byte data 1Fh is encoded to ASCII character '1' and 'F' (6<sup>th</sup> = 31h and 7<sup>th</sup> = 46h).

Type: Operation type code

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

Exp:

The byte data 01h is encoded to ASCII character '0' and '1' (8<sup>th</sup> = 30h and 9<sup>th</sup> = 31h)

00h: Set parameter

01h: Momentary

Like the Auto Setup function which automatically changes the parameter.

Max. Value: Maximum value which monitor can accept. (16 bits)

This returned value from the monitor is encoded to ASCII characters

Exp:

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

10<sup>th</sup> = 30h, 11<sup>th</sup> = 31h, 12<sup>th</sup> = 32h and 13<sup>th</sup> = 33h.

Current Value: Current Value: (16 bits)

This returned value from the monitor is encoded to ASCII characters

Exp:

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

14<sup>th</sup> = 30h, 15<sup>th</sup> = 31h, 16<sup>th</sup> = 32h and 17<sup>th</sup> = 33h.

ETX: End of Message, ASCII ETX (18<sup>th</sup> = 03h)

### 2.2.3 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>

STX: Start of Message, ASCII STX (1<sup>st</sup> = 02h)

OP code page: Operation code page.

OP code page data must be encoded to ASCII characters.

Exp:

OP code page: 02h → OP code (Hi) = ASCII '0' (2<sup>nd</sup> = 30h)

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

Refer to the Operation code table.

OP code: Operation code.

OP code data must be encoded to ASCII characters.

Exp:

OP code: 1Fh → OP code (Hi) = ASCII '1' (4<sup>th</sup> = 31h)

OP code (Lo) = ASCII 'F' (5<sup>th</sup> = 46h)

Refer to the Operation code table

Set Value: 16 bit

This data must be encoded to ASCII characters.

Exp:

0123h → 6<sup>th</sup> (MSB) = ASCII '0' (30h)

7<sup>th</sup> = ASCII '1' (31h)

8<sup>th</sup> = ASCII '2' (32h)

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

ETX: End of Message, ASCII ETX (10<sup>th</sup> = 03h)

## 2.2.4 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>

STX: Start of Message, ASCII STX (1<sup>st</sup> = 02h)

Result: Result code.

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

00h: No Error.

01h: Unsupported operation with this monitor /

Unsupported operation under current condition.

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

Exp:

The byte data 01h is encoded to ASCII character '0' and '1' (2<sup>nd</sup> = 30h and 3<sup>rd</sup> = 31h)

OP code page: Operation code page.

Echoes back the Operation code page for confirmation.

Reply data from the monitor is encoded to ASCII characters.

Exp:

The byte data 02h is encoded to ASCII character '0' and '2' (4<sup>th</sup> = 30h and 5<sup>th</sup> = 32h).

Refer to the operation codes table.

OP code: Operation code.

Echoes back the Operation code for confirmation.

Reply data from the monitor is encoded to ASCII characters.

Refer to the operation code table.

Exp:

The byte data 1Fh is encoded to ASCII character '1' and 'F' (6<sup>th</sup> = 31h and 7<sup>th</sup> = 46h).

Type: Operation type code

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

Exp:

The byte data 01h is encoded to ASCII character '0' and '1' (8<sup>th</sup> = 30h and 9<sup>th</sup> = 31h)

00h (8<sup>th</sup> = 30h and 9<sup>th</sup> = 30h): Set parameter

01h (8<sup>th</sup> = 30h and 9<sup>th</sup> = 31h): Momentary

Like the Auto Setup function which automatically changes the parameter.

Max. Value: Maximum value which monitor can accept. (16 bits)

Reply data from the monitor is encoded to ASCII characters

Exp:

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

10<sup>th</sup> = 30h, 11<sup>th</sup> = 31h, 12<sup>th</sup> = 32h and 13<sup>th</sup> = 33h.

Requested setting Value: Echoes back the parameter for confirmation (16 bits).

Reply data from the monitor is encoded to ASCII characters.

Exp:

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

14<sup>th</sup> = 30h, 15<sup>th</sup> = 31h, 16<sup>th</sup> = 32h and 17<sup>th</sup> = 33h.

ETX: End of Message, ASCII ETX (18<sup>th</sup> = 03h)

## 2.3 Check Code (XOR)

### 2.3.1 Set Parameter:

Header						Message					
SOH	Reserved '0'	Destination	Source	Message Type	Message Length		STX	OP Code page		OP Code	
D0	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11

Message				
Set Value				ETX
D12	D13	D14	D15	D16

**Check code** = D1 xor D2 xor D3 xor D4 xor D5 xor D6 xor D7 xor D8 xor D9 xor D10 xor D11 xor D12  
xor D13 xor D14 xor D15 xor D16

### 2.3.2 Set Parameter reply:

Header						Message					
SOH	Reserved '0'	Destination	Source	Message Type	Message Length		STX	Result		OP Code Page	
D0	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11

Message												
OP Code		Type		Max. Value				Requested Setting Value				ETX
D12	D13	D14	D15	D16	D17	D18	D19	D20	D21	D22	D23	D24

**Check code** = D1 xor D2 xor D3 xor D4 xor D5 xor D6 xor D7 xor D8 xor D9 xor D10 xor D11 xor D12  
xor D13 xor D14 xor D15 xor D16 xor D17 xor D18 xor D19 xor D20 xor D21 xor D22  
xor D23 xor D24

### 2.3.3 Get Parameter:

Header						Message						
SOH	Reserved '0'	Destination	Source	Message Type	Message Length		STX	OP Code page		OP Code		ETX
D0	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12

**Check code** = D1 xor D2 xor D3 xor D4 xor D5 xor D6 xor D7 xor D8 xor D9 xor D10 xor D11 xor D12

### 2.3.4 Get Parameter reply:

Header						Message					
SOH	Reserved '0'	Destination	Source	Message Type	Message Length		STX	Result		OP Code Page	
D0	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11

Message												
OP Code		Type		Max. Value				Current Value				ETX
D12	D13	D14	D15	D16	D17	D18	D19	D20	D21	D22	D23	D24

**Check code** = D1 xor D2 xor D3 xor D4 xor D5 xor D6 xor D7 xor D8 xor D9 xor D10 xor D11 xor D12  
xor D13 xor D14 xor D15 xor D16 xor D17 xor D18 xor D19 xor D20 xor D21 xor D22  
xor D23 xor D24

### 2.4 Delimiter

Delimiter = 0D



### 3. Operation Code Table

#### 3.1 Contrast

##### 3.1.1 Message - Set

OP Code Page	OP Code	Message Type	Parameter Set Value
00h	12h	45h	0000h ~ 0064h (max.)

Example: Set 0000h – Monitor ID = 1 (41h)

Header						Message					
SOH	Reserved '0'	Destination	Source	Message Type	Message Length		STX	OP Code Page		OP Code	
01	30	41	30	45	30	41	02	30	30	31	32

Message					Check Code	Delimiter
Set value				ETX		
30	30	30	30	03	77	0D

##### 3.1.2 Message - Get

OP Code Page	OP Code	Message Type	Parameter Get Value
00h	12h	43h	0000h ~ 0064h (max.)

Header						Message				
SOH	Reserved '0'	Destination	Source	Message Type	Message Length		STX	OP Code page		
01	30	41	30	43	30	36	02	30	30	

Message			Check Code	Delimiter
OP Code		ETX		
31	32	03	06	0D

##### 3.1.3 Message – Get 0064h Reply

Header						Message					
SOH	Reserved '0'	Destination	Source	Message Type	Message Length		STX	Result		OP Code Page	
01	30	30	41	44	31	32	02	30	30	30	30

Message													Check Code	Delimiter
OP Code		Type		Max. Value				Current Value				ETX		
31	32	30	30	30	30	36	34	30	30	36	34	03	04	0D

### 3.2 Brightness

#### 3.2.1 Message - Set

OP Code Page	OP Code	Message Type	Parameter Set Value
00h	10h	45h	0000h ~ 0064h (max.)

Example: Set 0064h – Monitor ID = 1 (41h)

Header						Message					
SOH	Reserved '0'	Destination	Source	Message Type	Message Length		STX	OP Code Page		OP Code	
01	30	41	30	45	30	41	02	30	30	31	30

Message					Check Code	Delimiter
Set value				ETX		
30	30	36	34	03	77	0D

#### 3.2.2 Message - Get

OP Code Page	OP Code	Message Type	Parameter Get Value
00h	10h	43h	0000h ~ 0064h (max.)

Header						Message				
SOH	Reserved '0'	Destination	Source	Message Type	Message Length		STX	OP Code page		
01	30	41	30	43	30	36	02	30	30	

Message				Check Code	Delimiter
OP Code		ETX			
31	30	03	04	04	0D

#### 3.2.3 Message – Get 0064h Reply

Header						Message					
SOH	Reserved '0'	Destination	Source	Message Type	Message Length		STX	Result		OP Code Page	
01	30	30	41	44	31	32	02	30	30	30	30

Message												Check Code	Delimiter	
OP Code		Type		Max. Value				Current Value						ETX
31	30	30	30	30	30	36	34	30	30	36	34	03	06	0D

### 3.3 Color Temp.

#### 3.3.1 Message - Set

OP Code Page	OP Code	Message Type	Parameter Set Value
00h	54h	45h	0047h: 6500 0054h: 9300 0069h: 11500 006Ah: sRGB 006Bh: User 1 00FFh: Max.

Example: Set User 1 – Monitor ID = 1 (41h)

Header						Message				
SOH	Reserved '0'	Destination	Source	Message Type	Message Length	STX	OP Code Page		OP Code	
01	30	41	30	45	30 41	02	30	30	35	34

Message					Check Code	Delimiter
Set value				ETX		
30	30	36	42	03	01	0D

#### 3.3.2 Message - Get

OP Code Page	OP Code	Message Type	Parameter Get Value
00h	54h	43h	0047h: 6500 0054h: 9300 0069h: 11500 006Ah: sRGB 006Bh: User 1 00FFh: Max.

Header						Message					
SOH	Reserved '0'	Destination	Source	Message Type	Message Length	STX	OP Code page				
01	30	41	30	43	30 36	02	30	30			

Message			Check Code	Delimiter
OP Code		ETX		
35	34	03	04	0D

#### 3.3.3 Message – Get User 1 Reply

Header						Message					
SOH	Reserved '0'	Destination	Source	Message Type	Message Length	STX	Result		OP Code Page		
01	30	30	41	44	31 32	02	30	30	30	30	

Message												Check Code	Delimiter	
OP Code		Type		Max. Value				Current Value						ETX
35	34	30	30	30	30	46	46	30	30	36	42	03	72	0D

### 3.4 Power Switch

#### 3.4.1 Message - Set

OP Code Page	OP Code	Message Type	Parameter Set Value
00h	20h	45h	0000h: OFF 0001h: ON - (Max.)

Example: Set OFF – Monitor ID = 1 (41h)

Header						Message					
SOH	Reserved '0'	Destination	Source	Message Type	Message Length		STX	OP Code Page		OP Code	
01	30	41	30	45	30	41	02	30	30	32	30

Message					Check Code	Delimiter
Set value				ETX		
30	30	30	30	03	76	0D

#### 3.4.2 Message - Get

OP Code Page	OP Code	Message Type	Parameter Get Value
00h	20h	43h	0000h: OFF 0001h: ON - (Max.)

Header						Message			
SOH	Reserved '0'	Destination	Source	Message Type	Message Length		STX	OP Code page	
01	30	41	30	43	30	36	02	30	30

Message			Check Code	Delimiter
OP Code		ETX		
32	30	03	07	0D

#### 3.4.3 Message – Get OFF Reply

Header						Message					
SOH	Reserved '0'	Destination	Source	Message Type	Message Length		STX	Result		OP Code Page	
01	30	30	41	44	31	32	02	30	30	30	30

Message											Check Code	Delimiter		
OP Code		Type		Max. Value			Current Value			ETX				
32	30	30	30	30	30	30	31	30	30	30	30	03	04	0D

### 3.5 Volume Control

#### 3.5.1 Message - Set

OP Code Page	OP Code	Message Type	Parameter Set Value
00h	62h	45h	0000h~0014h

Example: Set 0000h – Monitor ID = 1 (41h)

Header							Message				
SOH	Reserved '0'	Destination	Source	Message Type	Message Length		STX	OP Code Page		OP Code	
01	30	41	30	45	30	41	02	30	30	36	32

Message					Check Code	Delimiter
Set value				ETX		
30	30	30	30	03	70	0D

#### 3.5.2 Message - Get

OP Code Page	OP Code	Message Type	Parameter Get Value
00h	62h	43h	0000h~0014h

Header						Message			
SOH	Reserved '0'	Destination	Source	Message Type	Message Length		STX	OP Code page	
01	30	41	30	43	30	36	02	30	30

Message			Check Code	Delimiter
OP Code		ETX		
36	32	03	01	0D

#### 3.5.3 Message – Get 0000h Reply

Header						Message					
SOH	Reserved '0'	Destination	Source	Message Type	Message Length		STX	Result		OP Code Page	
01	30	30	41	44	31	32	02	30	30	30	30

Message											Check Code	Delimiter		
OP Code		Type		Max. Value				Current Value					ETX	
36	32	30	30	30	30	31	34	30	30	30	30	03	06	0D

### 3.6 Clock

#### 3.6.1 Message - Set

OP Code Page	OP Code	Message Type	Parameter Set Value
00h	0Eh	45h	0000h ~ 0064h (Max.)

Example: Set 0000h – Monitor ID = 1 (41h)

Header						Message					
SOH	Reserved '0'	Destination	Source	Message Type	Message Length		STX	OP Code Page		OP Code	
01	30	41	30	45	30	41	02	30	30	30	45

Message					Check Code	Delimiter
Set value				ETX		
30	30	30	30	03	01	0D

#### 3.6.2 Message - Get

OP Code Page	OP Code	Message Type	Parameter Get Value
00h	0Eh	43h	0000h ~ 0064h (Max.)

Header						Message			
SOH	Reserved '0'	Destination	Source	Message Type	Message Length		STX	OP Code page	
01	30	41	30	43	30	36	02	30	30

Message			Check Code	Delimiter
OP Code		ETX		
30	45	03	70	0D

#### 3.6.3 Message – Get 0000h Reply

Header						Message					
SOH	Reserved '0'	Destination	Source	Message Type	Message Length		STX	Result		OP Code Page	
01	30	30	41	44	31	32	02	30	30	30	30

Message											Check Code	Delimiter		
OP Code		Type		Max. Value			Current Value			ETX				
30	45	30	30	30	30	36	34	30	30	30	30	03	70	0D

### 3.7 Phase

#### 3.7.1 Message - Set

OP Code Page	OP Code	Message Type	Parameter Set Value
00h	3Eh	45h	0000h ~ 0064h (Max.)

Example: Set 0000h – Monitor ID = 1 (41h)

Header						Message					
SOH	Reserved '0'	Destination	Source	Message Type	Message Length		STX	OP Code Page		OP Code	
01	30	41	30	45	30	41	02	30	30	33	45

Message					Check Code	Delimiter
Set value				ETX		
30	30	30	30	03	02	0D

#### 3.7.2 Message - Get

OP Code Page	OP Code	Message Type	Parameter Get Value
00h	3Eh	43h	0000h ~ 0064h (Max.)

Header						Message			
SOH	Reserved '0'	Destination	Source	Message Type	Message Length		STX	OP Code page	
01	30	41	30	43	30	36	02	30	30

Message			Check Code	Delimiter
OP Code		ETX		
33	45	03	73	0D

#### 3.7.3 Message – Get 0000h Reply

Header						Message					
SOH	Reserved '0'	Destination	Source	Message Type	Message Length		STX	Result		OP Code Page	
01	30	30	41	44	31	32	02	30	30	30	30

Message											Check Code	Delimiter		
OP Code		Type		Max. Value			Current Value			ETX				
33	45	30	30	30	30	36	34	30	30	30	30	03	73	0D

### 3.8 Audio mute

#### 3.8.1 Message - Set

OP Code Page	OP Code	Message Type	Parameter Set Value
00h	8Dh	45h	0000h: OFF 0001h: ON – (Max.)

Example: Set OFF – Monitor ID = 1 (41h)

Header						Message					
SOH	Reserved '0'	Destination	Source	Message Type	Message Length		STX	OP Code Page		OP Code	
01	30	41	30	45	30	41	02	30	30	38	44

Message					Check Code	Delimiter
Set value				ETX		
30	30	30	30	03	08	0D

#### 3.8.2 Message - Get

OP Code Page	OP Code	Message Type	Parameter Get Value
00h	8D h	43h	0000h: OFF 0001h: ON – (Max.)

Header						Message			
SOH	Reserved '0'	Destination	Source	Message Type	Message Length		STX	OP Code page	
01	30	41	30	43	30	36	02	30	30

Message			Check Code	Delimiter
OP Code		ETX		
38	44	03	79	0D

#### 3.8.3 Message – Get OFF Reply

Header						Message					
SOH	Reserved '0'	Destination	Source	Message Type	Message Length		STX	Result		OP Code Page	
01	30	30	41	44	31	32	02	30	30	30	30

Message											Check Code	Delimiter		
OP Code		Type		Max. Value			Current Value			ETX				
38	44	30	30	30	30	30	31	30	30	30	30	03	7A	0D



### 3.9 Image size (Aspect Ratio)

#### 3.9.1 Message - Set

OP Code Page	OP Code	Message Type	Parameter Set Value
00h	21h	45h	0000h: OFF (Full) 0001h: ON (Original) – Max.

Example: Set OFF – Monitor ID = 1 (41h)

Header						Message				
SOH	Reserved '0'	Destination	Source	Message Type	Message Length	STX	OP Code Page		OP Code	
01	30	41	30	45	30   41	02	30	30	32	31

Message					Check Code	Delimiter
Set value				ETX		
30	30	30	30	03	77	0D

#### 3.9.2 Message - Get

OP Code Page	OP Code	Message Type	Parameter Get Value
00h	21h	43h	0000h: OFF (Full) 0001h: ON (Original) – Max.

Header						Message			
SOH	Reserved '0'	Destination	Source	Message Type	Message Length	STX	OP Code page		
01	30	41	30	43	30   36	02	30	30	

Message			Check Code	Delimiter
OP Code		ETX		
32	31	03	06	0D

#### 3.9.3 Message – Get OFF Reply

Header						Message				
SOH	Reserved '0'	Destination	Source	Message Type	Message Length	STX	Result		OP Code Page	
01	30	30	41	44	31   32	02	30	30	30	30

Message											Check Code	Delimiter		
OP Code		Type		Max. Value			Current Value			ETX				
32	31	30	30	30	30	30	31	30	30	30	30	03	05	0D

### 3.10 Red Gain

#### 3.10.1 Message - Set

OP Code Page	OP Code	Message Type	Parameter Set Value
00h	16h	45h	0000h ~ 0064h (Max.)

Example: Set 0020h – Monitor ID = 1 (41h)

Header						Message					
SOH	Reserved '0'	Destination	Source	Message Type	Message Length		STX	OP Code Page		OP Code	
01	30	41	30	45	30	41	02	30	30	31	36

Message					Check Code	Delimiter
Set value				ETX		
30	30	32	30	03	71	0D

#### 3.10.2 Message - Get

OP Code Page	OP Code	Message Type	Parameter Get Value
00h	16h	43h	0000h ~ 0064h (Max.)

Header						Message			
SOH	Reserved '0'	Destination	Source	Message Type	Message Length		STX	OP Code page	
01	30	41	30	43	30	36	02	30	30

Message			Check Code	Delimiter
OP Code		ETX		
31	36	03	02	0D

#### 3.10.3 Message – Get 0020h Reply

Header						Message					
SOH	Reserved '0'	Destination	Source	Message Type	Message Length		STX	Result		OP Code Page	
01	30	30	41	44	31	32	02	30	30	30	30

Message											Check Code	Delimiter		
OP Code		Type		Max. Value			Current Value			ETX				
31	36	30	30	30	30	36	34	30	30	32	30	03	00	0D

### 3.11 Green Gain

#### 3.11.1 Message - Set

OP Code Page	OP Code	Message Type	Parameter Set Value
00h	18h	45h	0000h ~ 0064h (Max.)

Example: Set 0020h – Monitor ID = 1 (41h)

Header							Message				
SOH	Reserved '0'	Destination	Source	Message Type	Message Length		STX	OP Code Page		OP Code	
01	30	41	30	45	30	41	02	30	30	31	38

Message					Check Code	Delimiter
Set value				ETX		
30	30	32	30	03	7F	0D

#### 3.11.2 Message - Get

OP Code Page	OP Code	Message Type	Parameter Get Value
00h	18h	43h	0000h ~ 0064h (Max.)

Header							Message			
SOH	Reserved '0'	Destination	Source	Message Type	Message Length		STX	OP Code page		
01	30	41	30	43	30	36	02	30	30	

Message			Check Code	Delimiter
OP Code		ETX		
31	38	03	0C	0D

#### 3.11.3 Message – Get 0020h Reply

Header							Message				
SOH	Reserved '0'	Destination	Source	Message Type	Message Length		STX	Result		OP Code Page	
01	30	30	41	44	31	32	02	30	30	30	30

Message												Check Code	Delimiter	
OP Code		Type		Max. Value				Current Value						ETX
31	38	30	30	30	30	36	34	30	30	32	30	03	0E	0D

### 3.12 Blue Gain

#### 3.12.1 Message - Set

OP Code Page	OP Code	Message Type	Parameter Set Value
00h	1Ah	45h	0000h ~ 0064h (Max.)

Example: Set 0020h – Monitor ID = 1 (41h)

Header							Message				
SOH	Reserved '0'	Destination	Source	Message Type	Message Length		STX	OP Code Page		OP Code	
01	30	41	30	45	30	41	02	30	30	31	41

Message					Check Code	Delimiter
Set value				ETX		
30	30	32	30	03	06	0D

#### 3.12.2 Message - Get

OP Code Page	OP Code	Message Type	Parameter Get Value
00h	1Ah	43h	0000h ~ 0064h (Max.)

Header							Message			
SOH	Reserved '0'	Destination	Source	Message Type	Message Length		STX	OP Code page		
01	30	41	30	43	30	36	02	30	30	

Message			Check Code	Delimiter
OP Code		ETX		
31	41	03	75	0D

#### 3.12.3 Message – Get 0020h Reply

Header							Message				
SOH	Reserved '0'	Destination	Source	Message Type	Message Length		STX	Result		OP Code Page	
01	30	30	41	44	31	32	02	30	30	30	30

Message												Check Code	Delimiter	
OP Code		Type		Max. Value				Current Value						ETX
31	41	30	30	30	30	36	34	30	30	32	30	03	77	0D

### 3.13 Auto Adjust

#### 3.13.1 Message - Set

OP Code Page	OP Code	Message Type	Parameter Set Value
00h	24h	45h	0001h (Max.)

Example: Set 0001h – Monitor ID = 1 (41h)

Header							Message				
SOH	Reserved '0'	Destination	Source	Message Type	Message Length		STX	OP Code Page		OP Code	
01	30	41	30	45	30	41	02	30	30	32	34

Message					Check Code	Delimiter
Set value				ETX		
30	30	30	31	03	73	0D

### 3.14 Reset

#### 3.14.1 Message - Set

OP Code Page	OP Code	Message Type	Parameter Set Value
00h	25h	45h	0001h (Max.)

Example: Set 0001h – Monitor ID = 1 (41h)

Header							Message				
SOH	Reserved '0'	Destination	Source	Message Type	Message Length		STX	OP Code Page		OP Code	
01	30	41	30	45	30	41	02	30	30	32	35

Message					Check Code	Delimiter
Set value				ETX		
30	30	30	31	03	72	0D

### 3.15 Audio Select

#### 3.15.1 Message - Set

OP Code Page	OP Code	Message Type	Parameter Set Value
02h	09h	45h	0001h: PC 0003h: HDMI 0004h: Max.

Example: Set 0001h – Monitor ID = 1 (41h)

Header						Message					
SOH	Reserved '0'	Destination	Source	Message Type	Message Length		STX	OP Code Page		OP Code	
01	30	41	30	45	30	41	02	30	32	30	39

Message					Check Code	Delimiter
Set value				ETX		
30	30	30	31	03	7E	0D

#### 3.15.2 Message - Get

OP Code Page	OP Code	Message Type	Parameter Get Value
02h	09h	43h	0001h: PC 0003h: HDMI 0004h: Max.

Header						Message			
SOH	Reserved '0'	Destination	Source	Message Type	Message Length		STX	OP Code page	
01	30	41	30	43	30	36	02	30	32

Message			Check Code	Delimiter
OP Code		ETX		
30	39	03	0E	0D

#### 3.15.3 Message – Get 0001h Reply

Header						Message					
SOH	Reserved '0'	Destination	Source	Message Type	Message Length		STX	Result		OP Code Page	
01	30	30	41	44	31	32	02	30	30	30	32

Message													Check Code	Delimiter
OP Code		Type		Max. Value				Current Value			ETX			
30	39	30	30	30	30	30	34	30	30	30	31	03	09	0D

### 3.16 Key Lock

#### 3.16.1 Message - Set

OP Code Page	OP Code	Message Type	Parameter Set Value
00h	FBh	45h	0000h: ON 0001h: OFF (Max.)

Example: Set 0000h – Monitor ID = 1 (41h)

Header							Message				
SOH	Reserved '0'	Destination	Source	Message Type	Message Length		STX	OP Code Page		OP Code	
01	30	41	30	45	30	41	02	30	30	46	42

Message					Check Code	Delimiter
Set value				ETX		
30	30	30	30	03	70	0D

#### 3.16.2 Message - Get

OP Code Page	OP Code	Message Type	Parameter Get Value
00h	FBh	43h	0000h: ON 0001h: OFF (Max.)

Header							Message			
SOH	Reserved '0'	Destination	Source	Message Type	Message Length		STX	OP Code page		
01	30	41	30	43	30	36	02	30	30	

Message			Check Code	Delimiter
OP Code		ETX		
46	42	03	01	0D

#### 3.16.3 Message – Get 0000h Reply

Header							Message				
SOH	Reserved '0'	Destination	Source	Message Type	Message Length		STX	Result		OP Code Page	
01	30	30	41	44	31	32	02	30	30	30	30

Message												Check Code	Delimiter	
OP Code		Type		Max. Value				Current Value						ETX
46	42	30	30	30	30	30	31	30	30	30	30	03	02	0D

## 4. Command Summary

Command Name	Set Command	Get Command	OP Code Page	OP Code	Type	Remark
Contrast set	V		00h	12h	45h	
Contrast get		V	00h	12h	43h	
Brightness set	V		00h	10h	45h	
Brightness get		V	00h	10h	43h	
Color Temp. set	V		00h	54h	45h	
Color Temp. get		V	00h	54h	43h	
Power Switch set	V		00h	20h	45h	
Power Switch get		V	00h	20h	43h	
Volume set	V		00h	62h	45h	
Volume get		V	00h	62h	43h	
Clock set	V		00h	0Eh	45h	
Clock get		V	00h	0Eh	43h	
Phase set	V		00h	3Eh	45h	
Phase get		V	00h	3Eh	43h	
Audio Mute set	V		00h	8Dh	45h	
Audio Mute get		V	00h	8Dh	43h	
Image size set	V		00h	21h	45h	
Image size get		V	00h	21h	43h	
Red Gain set	V		00h	16h	45h	
Red Gain get		V	00h	16h	43h	
Green Gain set	V		00h	18h	45h	
Green Gain get		V	00h	18h	43h	
Blue Gain set	V		00h	1Ah	45h	
Blue Gain get		V	00h	1Ah	43h	
Auto Adjust set	V		00h	24h	45h	
Reset set	V		00h	25h	45h	
Audio Select set	V		02h	09h	45h	
Audio Select get		V	02h	09h	43h	
Key Lock set	V		00h	FBh	45h	
Key Lock get		V	00h	FBh	43h	