PLANAR

Planar® RA-Series™

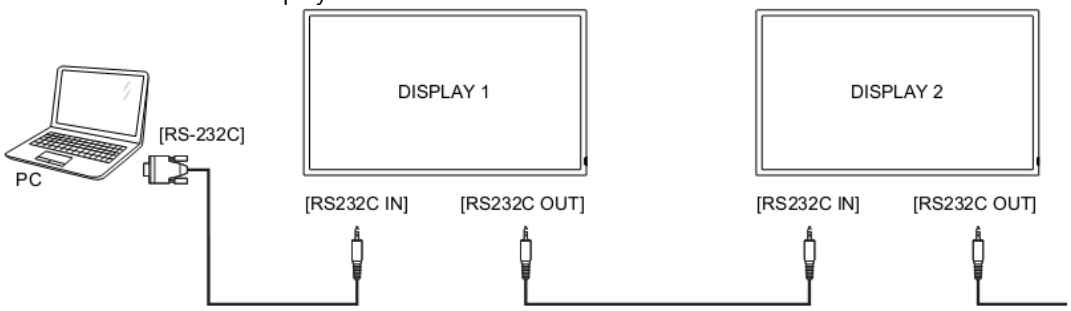
RS232 PROTOCOL

Document 020-1282-00

1. INTRODUCTION

1.1 Purpose

The purpose of this document is to explain in detail the commands and steps that can be used to control a Planar RA-Series display via RS232C.



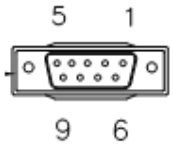
1.2 Definitions, Abbreviations and Acronyms

PBS	Professional Business Solutions
RC	Remote Control
ACK	Acknowledge
NACK	Not Acknowledge
NAV	Not Available
ID	Identification
0xXX	Hexadecimal notation

2. COMMAND PACKET FORMAT

2.1 Physical Specifications

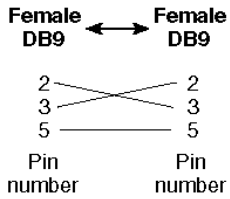
1. Baud Rate : 9600
2. Data bits: 8
3. Parity : None
4. Stop Bit : 1
5. Flow Control : None
6. The Pin Assignments for DB9 male connector:
   Male D-Sub 9-Pin (outside view)



Pin #	Signal	Remark
1	NC	
2	RXD	Input to LCD Monitor
3	TXD	Output from LCD Monitor
4	NC	
5	GND	
6	NC	
7	NC	
8	NC	
9	NC	

frame	GND	

Note: A provided crossover cable (null modem) is needed for connection to the host controller:



Digital Signage displays use RXD, TXD and GND pins for RS-232C control. For RS-232C cable, the reverse type cable should be used.

2.2 Communication Procedure

Control commands can be sent from a host controller via the RS232 connection. A new command should not be sent until the previous command is acknowledged. However, if a response is not received within 500 milliseconds a retry may be triggered. Every valid command receives an ACK. A command that is valid but not supported in the current implementation will be responded to with a NAV (Not Available). If the command buffer is corrupt (transmission errors) the command will be responded to with a NACK. The display operates according to the received command. If the command is a valid "Get" command, the display responds with the requested info. If the command is a valid "Set" command allowed, the display performs the requested operation.

Note: For LAN control, the port number is 5000.

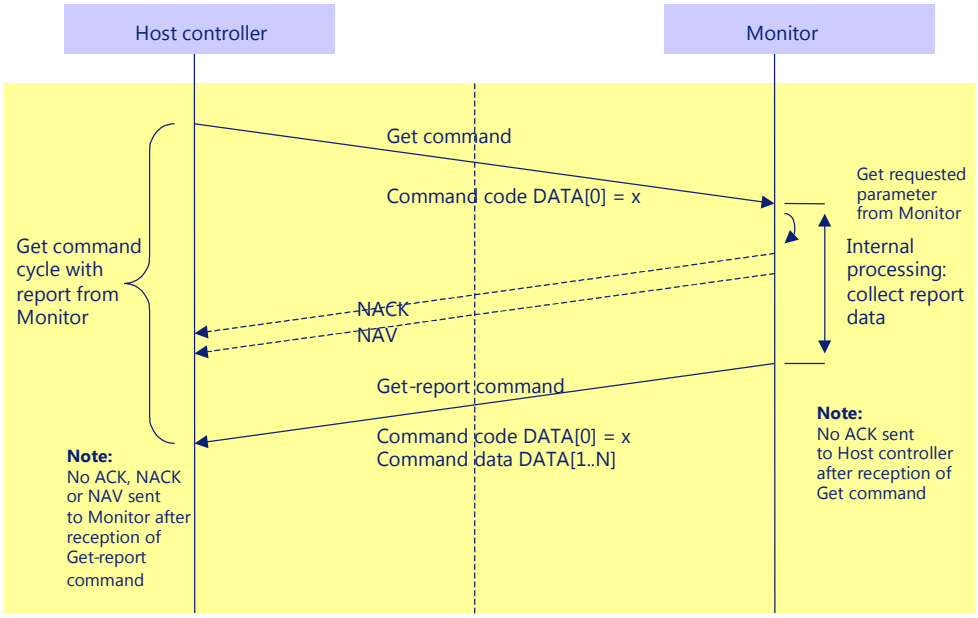


Figure 1: Explanation of mechanism of Get Command.

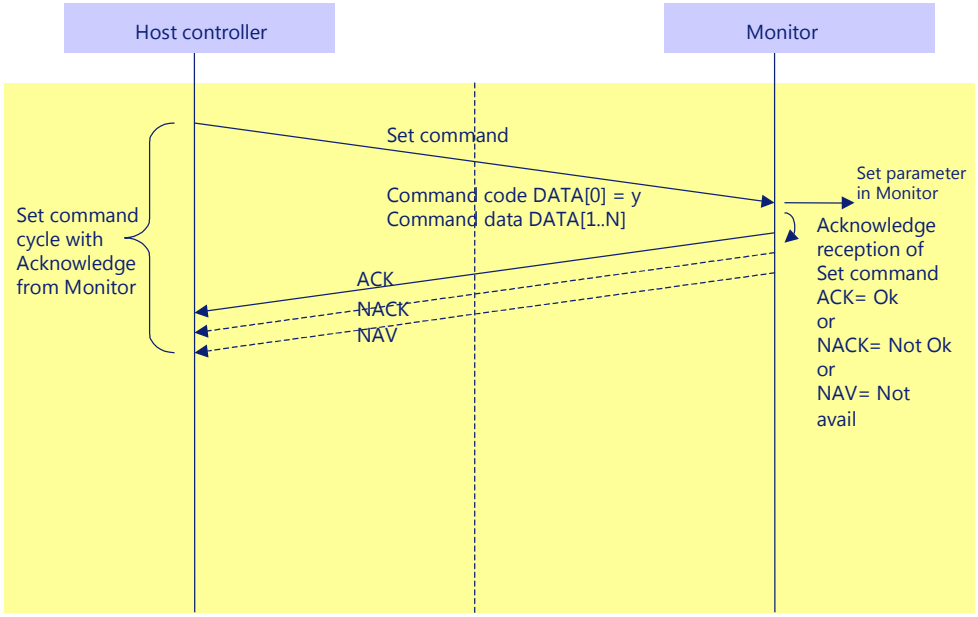


Figure 2: Explanation of mechanism of Set Command.

*2.3 **Command Format***

The RS232 packet format:

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	...	Data[N]	Checksum

In detail:

Number of Field	Name of Field	Description
Byte 1	Header	Header = 0xA6
Byte 2	Monitor ID	Monitor ID Range : 1 ~ 255
Byte 3	Category	Category = 0x00 (fixed)
Byte 4	Code0 (Page)	
Byte 5	Code1 (Function)	
Byte 6	Length	Length has to be calculated in the fallowing way: Length = N + 3
Byte 7	Data Control	Data Control = 0x01 (fixed)
Last Byte	Checksum	Checksum. Range = 0 to 255 (0xFF). Algorithm: The EXCLUSIVE-OR (XOR) of all bytes in the message except the checksum itself. Checksum = [Header] XOR [Monitor ID] XOR ... DATA[0] ... XOR DATA[N]

MESSAGES - SYSTEM

2.4 Communication Control

This defines the feedback command from monitor to host controller when it receives the display command from the host controller, depending on the commands availability, the command reported back to host controller can be one of the ACK, NACK or NAV.

Note: there is no reply message when the wrong ID address is being used.

2.4.1 Message-Report

Number of Field	Name of Field	Description
Byte 1	Header	Header = 0x21
Byte 2	Monitor ID	Monitor ID Range : 1 ~ 255
Byte3	Category	0x00
Byte4	Page	0x00
Byte5	MsgLen	Length of message plus checksum code. Calculate the length from Control byte to Checksum byte.
Byte6	Control	0x01
Byte7	Data[0]	Copy the received Command code.
Byte8~Byte8+(N-1)	Data[1]~Data[N]	Returned data associated with command code.
Byte 8+N	Checksum	XOR of all byte in reply/report packet (except checksum itself).

Example ACK reply: (Display address 01)

Header	Monitor ID	Category	Page	Length	Control	Data[0]	Data[1]	Checksum	Description
0x21	0x01	0x00	0x00	0x04	0x01	0x00	0x00	0x25	Command is well executed.

Example NACK reply: (Display address 01)

Header	Monitor ID	Category	Page	Length	Control	Data[0]	Data[1]	Checksum	Description
0x21	0x01	0x00	0x00	0x04	0x01	0x00	0x03	0x26	No this command code-Data(0), the system will reply "NACK".

Example NAV reply: (Display address 01)

Header	Monitor ID	Category	Page	Length	Control	Data[0]	Data[1]	Checksum	Description
0x21	0x01	0x00	0x00	0x04	0x01	0x00	0x04	0x21	1.Checksum error, the system will reply "NAV". 2.No this parameter-Data(1), the system will reply "NAV".

3. MESSAGES – OSD - PICTURE

3.1 Picture Style

Command is used to set/get a predefined picture setting, the Picture Style are updated and stored by this command.

3.1.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x02 = Picture Style - Get**		Command requests the display to report its current picture style

Example: Get picture style (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0x02	0XA7

3.1.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x02 = Picture Style - Get**		Command requests the display to report its current picture style
DATA[1]	Picture Style.		0x00: Personal 0x01: Vivid 0x02: Natural 0x03: Standard 0x04: Movie 0x05: Photo 0x06: Energy Saving

Example: Picture Style: Vivid(Display address 01)

Header	Monitor ID	Category	Page	Length	Control	Data[0]	Data[1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0x02	0x01	0x26

3.1.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x01 = Picture Style - Set**		Command to change the Picture Style of the display
DATA[1]	Picture Style		0x00: Personal 0x01: Vivid 0x02: Natural 0x03: Standard 0x04: Movie 0x05: Photo 0x06: Energy Saving

Example: Set Picture Style to Vivid (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Data[1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0x01	0x01	0xA2

3.2 Backlight

This command is used to set/get the brightness of this display's backlight as it is defined as below.

3.2.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x04 = Backlight state - Get**		Command requests the display to report its current backlight value

Example: (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0x04	0xA1

3.2.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x04 = Backlight State - Report**		Command reports backlight value
DATA[1]	Backlight State		0x00 – 0x64 = 0 – 100

Example: Backlight 100 (Display address 01)

Header	Monitor ID	Category	Page	Length	Control	Data[0]	Data[1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0x04	0x64	0x45

3.2.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x03 = Backlight State - Set**		Command to change the backlight value of the display
DATA[1]	Backlight State		0x00 – 0x64 = 0 – 100

Example: Set Backlight to 90 (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Data[1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0x03	0x5A	0xFB

3.3 Color state

This command is used to set/get the color saturation of the picture as it is defined as below.

3.3.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x06 = Color state - Get**		Command requests the display to report its current color saturation of the picture

Example: (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0x06	0xA3

3.3.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x06 = Color State - Report**		Command reports color saturation of the picture.
DATA[1]	Color State		0x00 – 0x64 = 0 – 100

Example: Color state 60 (Display address 01)

Header	Monitor ID	Category	Page	Length	Control	Data[0]	Data[1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0x06	0x3C	0x1F

3.3.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x05 = Color State - Set**		Command to change the color saturation of the picture.
DATA[1]	Color state		0x00 – 0x64 = 0 – 100

Example: Set Color to 50 (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Data[1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0x05	0x32	0x95

3.4 Sharpness state

This command is used to set/get the sharpness of the picture as it is defined as below.

3.4.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x08 = Sharpness state - Get**		Command requests the display to report its current sharpness state

Example: (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0x08	0xAD

3.4.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x08 = Sharpness State - Report**		Command reports Sharpness of the display
DATA[1]	Sharpness State		0x00 – 0x14 = 0 – 20

Example: Sharpness 10 (Display address 01)

Header	Monitor ID	Category	Page	Length	Control	Data[0]	Data[1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0x08	0x0A	0x27

3.4.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x07 = Sharpness state - Set**		Command to change the Sharpness state of the display
DATA[1]	Sharpness state		0x00 – 0x14 = 0 – 20

Example: Set Sharpness to 10 (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Data[1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0x07	0x0A	0xAF

3.5 Noise Reduction

This command is used to set/get the amount of noise reduction for the picture as it is defined as below.

3.5.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x0B = Noise Reduction state - Get**		Command requests the display to report its amount of noise reduction for the picture.

Example: (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0x0B	0xAE

3.5.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x0B = Noise Reduction State - Report**		Command reports Noise Reduction state
DATA[1]	Noise Reduction State		0x00 = Off 0x01 = Minimum 0x02 = Medium 0x03 = Maximum

Example: Noise Reduction Medium (Display address 01)

Header	Monitor ID	Category	Page	Length	Control	Data[0]	Data[1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0x0B	0x02	0x2C

3.5.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x0A = Noise Reduction state - Set**		Command to change the Noise Reduction state of the display
DATA[1]	Noise Reduction State		0x00 = Off 0x01 = Minimum 0x02 = Medium 0x03 = Maximum

Example: Set Noise Reduction to Medium (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Data[1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0x0A	0x02	0xAA

3.3 MPEG Artifact Reduction

This command is used to set/get the MPEG Artifact reduction state as it is defined as below.

3.3.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x0D = MPEG Artifact Reduction state - Get**		Command requests the display to report its current MPEG Artifact reduction state

Example: (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0x0D	0xA8

3.3.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x0D = MPEG Artifact Reduction State - Report**		Command reports Noise Reduction state
DATA[1]	MPEG Artifact reduction State		0x00 = Off 0x01 = On

Example: Noise Reduction Medium (Display address 01)

Header	Monitor ID	Category	Page	Length	Control	Data[0]	Data[1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0x0D	0x00	0x28

3.3.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x0C= MPEG Artifact Reduction State - Set**		Command to change the Noise Reduction state of the display
DATA[1]	MPEG Artifact reduction State		0x00 = Off 0x01 = On

Example: Set MPEG Artifact reduction *to On (Display address 01)*

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Data[1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0x0C	0x01	0xAF

3.4 Advanced Sharpness

This command is used to set/get the Advanced Sharpness state as it is defined as below.

3.4.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x0F = Advanced Sharpness state - Get**		Command requests the display to report its current Advanced Sharpness state

Example: (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0x0F	0xAA

3.4.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x0F = Advanced Sharpness - Report**		Command reports Advanced Sharpness state
DATA[1]	Advanced Sharpness State		0x00 = Off 0x01 = On

Example: Advanced Sharpness: Off(Display address 01)

Header	Monitor ID	Category	Page	Length	Control	Data[0]	Data[1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0x0F	0x00	0x2A

3.4.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x0E= Advanced Sharpness State - Set**		Command to change the Advanced Sharpness state of the display
DATA[1]	Advanced Sharpness State		0x00 = Off 0x01 = On

Example: Set Advanced Sharpness to On (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Data[1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0x0E	0x01	0xAD

3.5 Dynamic Contrast

This command is used to set/get the Dynamic Contrast state as it is defined as below.

3.5.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x12 = Dynamic Contrast state - Get**		Command requests the display to report its current Dynamic Contrast state

Example: (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0x12	0xB7

3.5.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x12 = Dynamic Contrast - Report**		Command reports Dynamic Contrast state
DATA[1]	Dynamic Contrast State		0x00 = Off 0x01 = Minimum 0x02 = Medium 0x03 = Maximum

Example: Dynamic Contrast: Medium (Display address 01)

Header	Monitor ID	Category	Page	Length	Control	Data[0]	Data[1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0x12	0x02	0x35

3.5.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x11= Dynamic Contrast State - Set**		Command to change the Dynamic Contrast state of the display
DATA[1]	Dynamic Contrast State		0x00 = Off 0x01 = Minimum 0x02 = Medium 0x03 = Maximum

Example: Set Dynamic Contrast to Medium (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Data[1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0x11	0x02	0xB1

3.6 Color Enhancement

This command is used to set/get the Color Enhancement state as it is defined as below.

3.6.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x14 = Color Enhancement state - Get**		Command requests the display to report its current color enhancement state

Example: (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0x14	0xB1

3.6.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x14 = Color Enhancement state - Report**		Command reports color enhancement state
DATA[1]	Color enhancement State		0x00 = Off 0x01 = Minimum 0x02 = Medium 0x03 = Maximum

Example: Color Enhancement: Medium (Display address 01)

Header	Monitor ID	Category	Page	Length	Control	Data[0]	Data[1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0x14	0x02	0x33

3.6.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x13= Color Enhancement state - Set**		Command to change the color enhancement state of the display
DATA[1]	Color enhancement State		0x00 = Off 0x01 = Minimum 0x02 = Medium 0x03 = Maximum

Example: Set Color Enhancement to Medium (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Data[1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0x13	0x02	0xB3

3.7 Gamma

This command is used to set/get the Gamma state as it is defined as below.

3.7.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x16 = Gamma state - Get**		Command requests the display to report its current Gamma state

Example: (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0x16	0xB3

3.7.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x16 = Gamma state - Report**		Command reports Gamma state of the display
DATA[1]	Gamma State		0x00 = 1.8 0x01 = 1.9 0x02 = 2.0 0x03 = 2.1 0x04 = 2.2 0x05 = 2.3 0x06 = 2.4 0x07 = 2.5

Example: Gamma 2.2 (Display address 01)

Header	Monitor ID	Category	Page	Length	Control	Data[0]	Data[1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0x16	0x04	0x37

3.7.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x15= Gamma state - Set**		Command to change the Gamma state of the display
DATA[1]	Gamma State		0x00 = 1.8 0x01 = 1.9 0x02 = 2.0 0x03 = 2.1 0x04 = 2.2 0x05 = 2.3 0x06 = 2.4 0x07 = 2.5

Example: Set Gamma to 2.2 (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Data[1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0x15	0x04	0xB3

3.8 Color Temperature (Tint)

This command is used to set/get the Color Temperature (Tint) state as it is defined as below.

3.8.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x18 = Color temperature - Get**		Command requests the display to report its current Color Temperature

Example: (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0x18	0xBD

3.8.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x18 = Color temperature - Report**		Command reports the color temperature state
DATA[1]	Color Temperature		0x00 = 10000K 0x01 = 9300K 0x02 = 6500K 0x03 = 3200K 0x04 = Custom

Example: Color Temperature: 9300K (Display address 01)

Header	Monitor ID	Category	Page	Length	Control	Data[0]	Data[1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0x18	0x01	0x3C

3.8.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x17= Color temperature - Set**		Command to change the color temperature state

DATA[1]	Color Temperature		0x00 = 10000K 0x01 = 9300K 0x02 = 6500K 0x03 = 3200K 0x04 = Custom

Example: Set Color Temperature to 9300K (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Data[1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0x17	0x01	0xB4

3.9 Custom Color Temperature (Tint)

This command is used to set/get the Custom Color Temperature setting. Only available when custom of Color Temperature is chosen.

3.9.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x1B = Custom Color Temperature - Get**		Command requests the display to report custom color temperature.

Example: (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0x1B	0xBE

3.9.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x1B = Custom Color Temperature - Report**		Command reports custom color temperature.
DATA[1]	Red Gain		0x00 – 0xFF = 0 – 255
DATA[2]	Green Gain		0x00 – 0xFF = 0 – 255
DATA[3]	Blue Gain		0x00 – 0xFF = 0 – 255
DATA[4]	Red Offset		0x00 – 0xFF = 0 – 255
DATA[5]	Green Offset		0x00 – 0xFF = 0 – 255
DATA[6]	Blue Offset		0x00 – 0xFF = 0 – 255

Example: Custom Color Temperature: (128, 128, 128, 128, 128, 128,) (Display address 01)

Header	Monitor ID	Category	Page	Length	Control	Data[0]	Data[1]	Data[2]	Data[3]	Data[4]	Data[5]	Data[6]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0x1B	0x80	0x80	0x80	0x80	0x80	0x80	0x??

3.9.3 Message-Set

Bytes	Bytes Description	Bits	Description

DATA[0]	**0x1A= Custom Color Temperature - Set**		Command to set custom color temperature.
DATA[1]	**Red Gain**		0x00 – 0xFF = 0 – 255
DATA[2]	**Green Gain**		0x00 – 0xFF = 0 – 255
DATA[3]	**Blue Gain**		0x00 – 0xFF = 0 – 255
DATA[4]	**Red Offset**		0x00 – 0xFF = 0 – 255
DATA[5]	**Green Offset**		0x00 – 0xFF = 0 – 255
DATA[6]	**Blue Offset**		0x00 – 0xFF = 0 – 255

Example: Set Custom Color Temperature to (128, 128, 128, 128, 128, 128,) (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Data[1]	Data[2]	Data[3]	Data[4]	Data[5]	Data[6]
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0x1A	0x80	0x80	0x80	0x80	0x80	0x80

Checksum
0xB5

3.10 Video Contrast

This command is used to set/get the Video Contrast state as it is defined as below.

3.10.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x1D = Video Contrast - Get**		Command requests the display to report its Video Contrast state

Example: (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0x1D	0xB8

3.10.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x1D = Video Contrast - Report**		Command reports Video Contrast state
DATA[1]	Video Contrast State		0x00 – 0x64 = 0 - 100

Example: Video Contrast: 100 (Display address 01)

Header	Monitor ID	Category	Page	Length	Control	Data[0]	Data[1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0x1D	0x64	0x5C

3.10.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x1C= Video Contrast State - Set**		Command to change the Video Contrast state of the display
DATA[1]	Video Contrast State		0x00 – 0x64 = 0 - 100

Example: Set Video Contrast to 80 (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Data[1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0x1C	0x50	0xEE

3.11 Brightness

This command is used to set/get the Brightness state as it is defined as below.

3.11.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x1F = Brightness - Get**		Command requests the display to report its screen brightness

Example: (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0x1F	0xBA

3.11.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x1F = Brightness - Report**		Command reports screen brightness
DATA[1]	Video Contrast State		0x00 – 0x64 = 0 - 100

Example: Brightness: 50 (Display address 01)

Header	Monitor ID	Category	Page	Length	Control	Data[0]	Data[1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0x1F	0x32	0x08

3.11.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x1E= Brightness State - Set**		Command to change the screen brightness state
DATA[1]	Video Contrast State		0x00 – 0x64 = 0 - 100

Example: Set Brightness to 50 (Display address 01)

Header	Monitor	Category	Code0	Code1	Length	Data	Data[0]	Data[1]	Checksum

	ID					Control			
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0x1E	0x32	0x8E

3.12 Hue

This command is used to set/get the Hue state as it is defined as below.

3.12.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x22 = Hue - Get**		Command requests the display to report its screen Hue state

Example: (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0x22	0x87

3.12.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x22 = Hue - Report**		Command reports screen Hue state
DATA[1]	Hue State		0x00 – 0x64 = -50 - 50

Example: Hue: 0 (Display address 01)

Header	Monitor ID	Category	Page	Length	Control	Data[0]	Data[1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0x22	0x32	0x36

3.12.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x21= Hue State - Set**		Command to change the screen Hue state
DATA[1]	Hue State		0x00 – 0x64 = -50 - 50

Example: Set Hue to 50 (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Data[1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0x21	0x64	0xE7

3.13 Color Space

This command is used to set/get the Color Space state as it is defined as below.

3.13.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x24 = Color Space - Get**		Command requests the display to report its Color Space state

Example: (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0x24	0x81

3.13.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x24 = Color Space - Report**		Command reports Color Space state
DATA[1]	Color Space State		0x00: Auto 0x01: RGB-Video 0x02: RGB-PC 0x03: YUV

Example: Color Space: Auto (Display address 01)

Header	Monitor ID	Category	Page	Length	Control	Data[0]	Data[1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0x24	0x00	0x01

3.13.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x23= Color Space State - Set**		Command to change the Color Space state of the display
DATA[1]	Color Space State		0x00: Auto 0x01: RGB-Video 0x02: RGB-PC 0x03: YUV

Example: Set Color Space to Auto (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Data[1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0x23	0x00	0x81

3.14 Picture Format

This command is used to set/get the Picture Format state as it is defined as below.

3.14.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x26 = Picture Format - Get**		Command requests the display to report its Picture Format state

Example: (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0x26	0x83

3.14.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x26 = Picture Format - Report**		Command reports Picture Format state
DATA[1]	Picture Format State		0x00: Auto Zoom 0x01: 16:9 0x02: Wide 0x03: Un-scaled 0x04: 4:3

Example: Picture Format 4:3 (Display address 01)

Header	Monitor ID	Category	Page	Length	Control	Data[0]	Data[1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0x26	0x04	0x07

3.14.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x25= Picture Format State - Set**		Command to change the Picture Format state of the display
DATA[1]	Picture Format State		0x00: Auto Zoom 0x01: 16:9 0x02: Wide 0x03: Unscaled 0x04: 4:3

Example: Set Picture Format to Auto Zoom (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Data[1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0x25	0x00	0x87

3.15 Picture Shift

This command is used to set/get the Picture Shift state as it is defined as below.

3.15.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x28 = Picture Shift Position - Get**		Command requests the display to report its Picture Shift state

Example: (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0x28	0x8D

3.15.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x26 = Picture Shift Position - Report**		Command reports Picture Shift Position
DATA[1]	H Position		Analog: 0x00 ~ 0x64 = 0 ~ 100 Digital: 0x00 ~ 0x20 = -16 ~ 16
DATA[2]	V Position		Analog: 0x00 ~ 0x64 = 0 ~ 100 Digital: 0x00 ~ 0x20 = -16 ~ 16

Example: Picture Shift(HDMI 1): (H Position, P Position) = (0, 0) (Display address 01)

Header	Monitor ID	Category	Page	Length	Control	Data[0]	Data[1]	Data[1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0x28	0x10	0x10	0x0C

3.15.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x25= Picture Shift Position - Set**		Command to change the Picture Position
DATA[1]	Picture Shift direction		0x01: Up 0x02: Down 0x03: Left 0x04: Right

Example: Shift up picture position (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Data[1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0x25	0x01	0x84

3.16 Input Resolution

This command is used to set/get the Input Resolution state. Only available if current resolution is specific resolution (VGA Only).

3.16.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x2B = Input Resolution state - Get**		Command requests to report Input Resolution state

Example: (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0x2B	0x8E

3.16.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x2B = Input Resolution - Report**		Command reports Input Resolution state
DATA[1]	Input Resolution State		0x00: Not Supported 0x01: 1366x768@60 1360x768@60 1280x768@60 1024x768@60 0x02: 1680x1050@60 1440x1050@60
DATA[2]	Input Resolution State		DATA[1] = 0x01: 0x00: 1366x768@60 0x01: 1360x768@60 0x02: 1280x768@60 0x03: 1024x768@60 DATA[1] = 0x02: 0x00: 1680x1050@60 0x01: 1440x1050@60

Example: Input Resolution: 1366x768@60 (Display address 01)

Header	Monitor ID	Category	Page	Length	Control	Data[0]	Data[1]	Data[2]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0x2B	0x01	0x00	0x0E

3.16.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x2A= Input**		Command to change the input resolution of the display

	Resolution - Set		
DATA[1]	Picture Format State		(1) 0x00: 1366x768@60 0x01: 1360x768@60 0x02: 1280x768@60 0x03: 1024x768@60 (2) 0x00: 1680x1050@60 0x01: 1440x1050@60

Example: Set Input resolution to 1366x768@60 (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Data[1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0x2A	0x00	0x88

3.17 Picture Style Restore

This command is used to restore the last-selected predefined picture setting.

3.17.1 Message-Get

Bytes	**Bytes Description**	**Bits**	**Description**
DATA[0]	**0xFA = Picture Style Restore**		Command requests the display to Restore Picture Style

Example : Picture Style restore(Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0xFA	0x5F

MESSAGES – OSD - Sound

4.1 Sound Style

This command is used to set/get predefined sound setting as it is defined as below.

4.1.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x32 = Sound Style - Get**		Command requests the display to report its Sound Style state

Example: (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0x32	0x97

4.1.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x32 = Sound Style - Report**		Command reports Sound Style state
DATA[1]	Sound Style State		0x00: Personal 0x01: Original 0x02: Movie 0x03: Music 0x04: Game 0x05: News

Example: Sound Style: Personal (Display address 01)

Header	Monitor ID	Category	Page	Length	Control	Data[0]	Data[1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0x32	0x00	0x17

4.1.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x31= Sound Style State - Set**		Command to change the Picture Format state of the display
DATA[1]	Sound Style State		0x00: Personal 0x01: Original 0x02: Movie 0x03: Music 0x04: Game 0x05: News

Example: Set Sound Style to Personal (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Data[1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0x31	0x00	0x93

4.2 Bass

This command is used to set/get the Bass state as it is defined as below.

4.2.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x34 = Bass state - Get**		Command requests the display to report its Bass state

Example: (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0x34	0x91

4.2.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x34 = Bass state - Report**		Command reports Bass state
DATA[1]	Bass State		0x00 – 0x10 = -8 - 8

Example: Bass: 0 (Display address 01)

Header	Monitor ID	Category	Page	Length	Control	Data[0]	Data[1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0x34	0x08	0x19

4.2.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x33= Bass state - Set**		Command to change the Bass state of the display
DATA[1]	Bass State		0x00 – 0x10 = -8 - 8

Example: Set Bass to 0 (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Data[1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0x33	0x08	0x99

4.3 Treble

This command is used to set/get the Treble state as it is defined as below.

4.3.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x36 = Treble state - Get**		Command requests the display to report its Treble state

Example: (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0x36	0x93

4.3.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x36 = Treble state - Report**		Command reports Treble state
DATA[1]	Treble State		0x00 – 0x10 = -8 - 8

Example: Treble: 0 (Display address 01)

Header	Monitor ID	Category	Page	Length	Control	Data[0]	Data[1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0x36	0x08	0x1B

4.3.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x35= Treble state - Set**		Command to change the Treble state of the display
DATA[1]	Treble State		0x00 – 0x10 = -8 - 8

Example: Set Treble to 0 (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Data[1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0x35	0x08	0x9F

4.4 Balance

This command is used to set/get the Balance state as it is defined as below.

4.4.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x38 = Balance state - Get**		Command requests the display to report its Balance state

Example: (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0x38	0x9D

4.4.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x38 = Balance state - Report**		Command reports Balance state
DATA[1]	Balance State		0x00 – 0x10 = -8 - 8

Example: Balance: 0 (Display address 01)

Header	Monitor ID	Category	Page	Length	Control	Data[0]	Data[1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0x38	0x08	0x15

4.4.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x37= Balance state - Set**		Command to change the Balance state of the display
DATA[1]	Balance State		0x00 – 0x10 = -8 - 8

Example: Set Balance to 0 (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Data[1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0x37	0x08	0x9D

4.5 Surround Mode

This command is used to set/get the Surround Mode state as it is defined as below.

4.5.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x3B = Surround Mode state - Get**		Command requests the display to report its Surround Mode state

Example: (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0x3B	0x9E

4.5.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x3B = Surround Mode state - Report**		Command reports Surround Mode state
DATA[1]	Surround Mode State		0x00: Off 0x01: On

Example: Surround mode: Off (Display address 01)

Header	Monitor ID	Category	Page	Length	Control	Data[0]	Data[1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0x3B	0x00	0x1E

4.5.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x3A= Surround Mode state - Set**		Command to change the Surround Mode state of the display
DATA[1]	Surround Mode State		0x00: Off 0x01: On

Example: Set Surround mode to On (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Data[1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0x3A	0x01	0x99

4.6 Audio Out

This command is used to set/get the Audio output volume as it is defined as below.

4.6.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x3D = Audio Out state - Get**		Command requests the display to report its Audio out state

Example: (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0x3D	0x98

4.6.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x3D = Audio Out state - Report**		Command reports Audio Out state
DATA[1]	Audio Out State		0x00 – 0x3C = 0 - 60

Example: Audio Out: 60(Display address 01)

Header	Monitor ID	Category	Page	Length	Control	Data[0]	Data[1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0x3D	0x3C	0x24

4.6.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x3C= Audio Out state - Set**		Command to change the Audio Out state of the display
DATA[1]	Audio Out State		0x00 – 0x3C = 0 - 60

Example: Set Audio Out to 30 (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Data[1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0x3C	0x1E	0x80

4.7 Auto Volume Leveling

This command is used to set/get the Auto Volume Leveling state as it is defined as below.

4.7.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x3F = Auto Volume Leveling state - Get**		Command requests the display to report its Auto Volume Leveling state

Example: (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0x3F	0x9A

4.7.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x3F = Auto Volume Leveling state - Report**		Command reports Auto Volume Leveling state
DATA[1]	Auto Volume Leveling State		0x00: Off 0x01: On

Example: Auto Volume Leveling: Off (Display address 01)

Header	Monitor ID	Category	Page	Length	Control	Data[0]	Data[1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0x3F	0x00	0x1A

4.7.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x3E= Audio Out state - Set**		Command to change the Auto Volume Leveling state of the display
DATA[1]	Auto Volume Leveling State		0x00: Off 0x01: On

Example: Set Auto Volume Leveling to On (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Data[1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0x3E	0x01	0x9D

4.8 Speaker Setting

This command is used to set/get the internal speaker setting as it is defined as below.

4.8.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x42 = Speaker Setting state - Get**		Command requests the display to report its Speaker Setting state

Example: (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0x42	0xE7

4.8.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x42 = Speaker Setting state - Report**		Command reports Speaker Setting state
DATA[1]	Speaker Setting State		0x00: Off 0x01: On

Example: Speaker Setting: On (Display address 01)

Header	Monitor ID	Category	Page	Length	Control	Data[0]	Data[1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0x42	0x01	0x66

4.8.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x41= Speaker Setting state - Set**		Command to change the Speaker Setting state of the display
DATA[1]	Speaker Setting State		0x00: Off 0x01: On

Example: Set Speaker Setting to On (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Data[1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0x41	0x01	0xE2

4.9 Clear Sound

This command is used to set/get the Clear Sound state as it is defined as below.

4.9.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x44 = Clear Sound state - Get**		Command requests the display to report its Clear Sound state

Example: (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0x44	0xE1

4.9.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x44 = Clear Sound state - Report**		Command reports Clear Sound state
DATA[1]	Clear Sound State		0x00: Off 0x01: On

Example: Clear Sound: Off (Display address 01)

Header	Monitor ID	Category	Page	Length	Control	Data[0]	Data[1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0x44	0x00	0x61

4.9.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x43= Clear Sound state - Set**		Command to change the Clear Sound state of the display
DATA[1]	Clear Sound State		0x00: Off 0x01: On

Example: Set Clear Sound to Off (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Data[1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0x43	0x00	0xE1

4.10 Sound Style Restore

This command is used to set Sound Style Restore as it is defined as below.

4.10.1 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	**0xFB= Sound Style Restore - Set**		Command to Restore Sound Style of the display

Example: Sound Style Restore (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0xFB	0x5E

5. MESSAGES – OSD - Tiling

5.1 Tiling Parameters

This command is used to set/get the Tiling Parameters as it is defined as below.

5.1.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x52 = Tiling parameters state - Get**		Command requests the display to report its Tiling parameters state

Example: (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0x52	0xE7

5.1.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x52 = Tiling Parameters state - Report**		Command reports Tiling Parameters state
DATA[1]	Enable State		0x00: Off 0x01: On
DATA[2]	H monitors		0x01 – 0x0A = 1 - 10
DATA[3]	V monitors		0x01 – 0x0A = 1 - 10
DATA[4]	Position		0x00 – 0x64 = 1 - 100
DATA[5]	Frame Comp.		0x00 : Off 0x01: On
DATA[6]	Frame Comp. H		DATA[6]: 0x00 – 0xFF = 0 - 255 DATA[7]: 0x00 – 0xFF = 0 - 255 Frame Comp. H: 0 – 800 256 = 0x0100: DATA[6] = 0x01, DATA[7] = 0x00 800 = 0x0320: DATA[6] = 0x03, DATA[7] = 0x20
DATA[7]			
DATA[8]	Frame Comp. V		DATA[8]: 0x00 – 0xFF = 0 - 255 DATA[9]: 0x00 – 0xFF = 0 - 255 Frame Comp. V: 0 – 800 256 = 0x0100: DATA[8] = 0x01, DATA[9] = 0x00 800 = 0x0320: DATA[8] = 0x03, DATA[9] = 0x20
DATA[9]			

Example: Tiling parameters: Enable = On, H monitor = 2, V monitor = 2, Position = 2, Frame Comp = On,

Frame Comp. H = 800, Frame Comp. V = 256(Display address 01)

Header	Monitor ID	Category	Page	Length	Control	Data[0]	Data[1]	Data[2]	Data[3]	Data[4]	Data[5]	Data[6]	Data[7]

0x21	0x01	0x00	0x00	0x0A	0x01	0x52	0x01	0x02	0x02	0x02	0x01	0x03	0x20

Data[8]	Data[9]	Checksum
0x01	0x00	0x5F

5.1.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x51 = Tiling Parameters state - Set**		Command reports Tiling Parameters state
DATA[1]	Enable State		0x00: Off 0x01: On
DATA[2]	H monitors		0x01 – 0x0A = 1 - 10
DATA[3]	V monitors		0x01 – 0x0A = 1 - 10
DATA[4]	Position		0x00 – 0x64 = 1 - 100 See Note 1
DATA[5]	Frame Comp.		0x00 : Off 0x01: On See Note 2
DATA[6] DATA[7]	Frame Comp. H		Frame Comp. H: 0 – 800 DATA[6]: 0x00 – 0xFF = 0 - 255 DATA[7]: 0x00 – 0xFF = 0 - 255 256 = 0x0100: DATA[6] = 0x01, DATA[7] = 0x00 800 = 0x0320: DATA[6] = 0x03, DATA[7] = 0x20
DATA[8] DATA[9]	Frame Comp. V		Frame Comp. V: 0 – 800 DATA[8]: 0x00 – 0xFF = 0 - 255 DATA[9]: 0x00 – 0xFF = 0 - 255 256 = 0x0100: DATA[8] = 0x01, DATA[9] = 0x00 800 = 0x0320: DATA[8] = 0x03, DATA[9] = 0x20 See Note 3

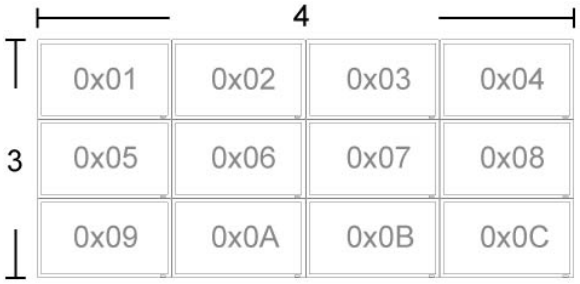
Example: Tiling parameters: Enable = On, H monitor = 4, V monitor = 3, Position = 5, Frame Comp = On

Frame Comp. H = 100, Frame Comp. V = 100(Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Data[1]	Data[2]	Data[3]	Data[4]	Data[5]
0xA6	0x01	0x00	0x00	0x00	0x0A	0x01	0x51	0x01	0x04	0x03	0x05	0x01

Data[6]	Data[7]	Data[8]	Data[9]	Checksum
0x00	0x64	0x00	0x64	0xF9

Note 1:
Adjust the position of the display in the screen matrix.
Example: The hexadecimal Position value in a 4x3 (H Monitors x V Monitors) Tiling Wall.



Note 2:
Choose to turn the frame compensation function on or off. If selected “On”, the display will adjust the image to compensate for the width of the display bezels in order to accurately display the image.

Note 3:
Adjust the width of display bezels for horizontal side and vertical side, respectively.

6. MESSAGES – OSD – General Setting

6.1 ECO Mode

This command is used to set/get the ECO Mode as it is defined as below.

6.1.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x66 = ECO Mode state - Get**		Command requests the display to report its ECO Mode state

Example: (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0x66	0xC3

6.1.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x66 = ECO Mode state - Report**		Command reports ECO Mode state
DATA[1]	ECO Mode State		0x00: Normal 0x01: Low Power Standby

Example: ECO Mode: Normal (Display address 01)

Header	Monitor ID	Category	Page	Length	Control	Data[0]	Data[1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0x66	0x00	0x43

6.1.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x65= ECO Mode state - Set**		Command to change the ECO Mode state of the display
DATA[1]	ECO Mode State		0x00: Normal 0x01: Low Power Standby

Example: Set ECO Mode to Normal (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Data[1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0x65	0x00	0xC7

6.2 Auto Search

This command is used to set/get the Auto Search as it is defined as below.

6.2.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x68 = Auto Search state - Get**		Command requests the display to report its Auto Search state

Example: (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0x68	0xCD

6.2.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x68 = Auto Search state - Report**		Command reports Auto Search state
DATA[1]	Auto Search State		0x00: Off 0x01: On 0x02: Failover

Example: Auto Search: Off *(Display address 01)*

Header	Monitor ID	Category	Page	Length	Control	Data[0]	Data[1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0x68	0x00	0x4D

6.2.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x67= Auto Search state - Set**		Command to change the Auto Search state of the display
DATA[1]	Auto Search State		0x00: Off 0x01: On 0x02: Failover

Example: Set Auto Search to Off *(Display address 01)*

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Data[1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0x67	0x00	0xC5

6.3 Failover

This command is used to set/get the Auto Search as it is defined as below.

6.3.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x6B = Failover state - Get**		Command requests the display to report its Failover state

Example: (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0x6B	0xCE

6.3.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x6B = Auto Search state - Report**		Command reports Auto Search state
DATA[1]	**HDMI 1/HDMI 2/Display Port/OPS/DVI-D/YPbPr/AV/VGA**		1st priority: 0x00 = Reserved 0x01 = HDMI 1 0x02 = HDMI 2 0x03 = DisplayPort 0x04 = OPS 0x05 = DVI-D 0x06 = YPbPr 0x07 = AV 0x08 = VGA
DATA[2]	**HDMI 1/HDMI 2/Display Port/OPS/DVI-D/YPbPr/AV/VGA**		2st priority: 0x00 = Reserved 0x01 = HDMI 1 0x02 = HDMI 2 0x03 = DisplayPort 0x04 = OPS 0x05 = DVI-D 0x06 = YPbPr 0x07 = AV 0x08 = VGA
DATA[3]	**HDMI 1/HDMI 2/Display Port/OPS/DVI-D/YPbPr/AV/VGA**		3st priority: 0x00 = Reserved 0x01 = HDMI 1 0x02 = HDMI 2 0x03 = DisplayPort 0x04 = OPS 0x05 = DVI-D 0x06 = YPbPr 0x07 = AV 0x08 = VGA

DATA[4]	**HDMI 1/HDMI 2/Display Port/OPS/DVI-D/YPbPr/AV/VGA**		4st priority: 0x00 = Reserved 0x01 = HDMI 1 0x02 = HDMI 2 0x03 = DisplayPort 0x04 = OPS 0x05 = DVI-D 0x06 = YPbPr 0x07 = AV 0x08 = VGA
DATA[5]	**HDMI 1/HDMI 2/Display Port/OPS/DVI-D/YPbPr/AV/VGA**		5st priority: 0x00 = Reserved 0x01 = HDMI 1 0x02 = HDMI 2 0x03 = DisplayPort 0x04 = OPS 0x05 = DVI-D 0x06 = YPbPr 0x07 = AV 0x08 = VGA
DATA[6]	**HDMI 1/HDMI 2/Display Port/OPS/DVI-D/YPbPr/AV/VGA**		6st priority: 0x00 = Reserved 0x01 = HDMI 1 0x02 = HDMI 2 0x03 = DisplayPort 0x04 = OPS 0x05 = DVI-D 0x06 = YPbPr 0x07 = AV 0x08 = VGA
DATA[7]	**HDMI 1/HDMI 2/Display Port/OPS/DVI-D/YPbPr/AV/VGA**		7st priority: 0x00 = Reserved 0x01 = HDMI 1 0x02 = HDMI 2 0x03 = DisplayPort 0x04 = OPS 0x05 = DVI-D 0x06 = YPbPr 0x07 = AV 0x08 = VGA

Example: Failover priority: HDMI 1, HDMI 2, DP, OPS, DVI-D, YPbPr, AV (Display address 01)

Header	Monitor ID	Category	Page	Length	Control	Data[0]	Data[1]	Data[2]	Data[3]	Data[4]	Data[5]	Data[6]	Data[7]
0x21	0x01	0x00	0x00	0x10	0x01	0x6B	0x01	0x02	0x03	0x04	0x05	0x06	0x07

Checksum
0x40

6.3.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x6A= Failover state - Set**		Command to change the failover state of the display
DATA[1]	**HDMI 1/HDMI 2/Display Port/OPS/DVI-D/YPbPr/AV/VGA**		1st priority: 0x00 = Reserved 0x01 = HDMI 1 0x02 = HDMI 2 0x03 = DisplayPort 0x04 = OPS 0x05 = DVI-D 0x06 = YPbPr 0x07 = AV 0x08 = VGA
DATA[2]	**HDMI 1/HDMI 2/Display Port/OPS/DVI-D/YPbPr/AV/VGA**		2st priority: 0x00 = Reserved 0x01 = HDMI 1 0x02 = HDMI 2 0x03 = DisplayPort 0x04 = OPS 0x05 = DVI-D 0x06 = YPbPr 0x07 = AV 0x08 = VGA
DATA[3]	**HDMI 1/HDMI 2/Display Port/OPS/DVI-D/YPbPr/AV/VGA**		3st priority: 0x00 = Reserved 0x01 = HDMI 1 0x02 = HDMI 2 0x03 = DisplayPort 0x04 = OPS 0x05 = DVI-D 0x06 = YPbPr 0x07 = AV 0x08 = VGA
DATA[4]	**HDMI 1/HDMI 2/Display Port/OPS/DVI-D/YPbPr/AV/VGA**		4st priority: 0x00 = Reserved 0x01 = HDMI 1 0x02 = HDMI 2 0x03 = DisplayPort 0x04 = OPS 0x05 = DVI-D 0x06 = YPbPr 0x07 = AV 0x08 = VGA
DATA[5]	**HDMI 1/HDMI 2/Display Port/OPS/DVI-D/YPbPr/AV/VGA**		5st priority: 0x00 = Reserved 0x01 = HDMI 1 0x02 = HDMI 2 0x03 = DisplayPort 0x04 = OPS 0x05 = DVI-D 0x06 = YPbPr 0x07 = AV 0x08 = VGA

DATA[6]	**HDMI 1/HDMI 2/Display Port/OPS/DVI-D/YPbPr/AV/VGA**		6st priority: 0x00 = Reserved 0x01 = HDMI 1 0x02 = HDMI 2 0x03 = DisplayPort 0x04 = OPS 0x05 = DVI-D 0x06 = YPbPr 0x07 = AV 0x08 = VGA
DATA[7]	**HDMI 1/HDMI 2/Display Port/OPS/DVI-D/YPbPr/AV/VGA**		7st priority: 0x00 = Reserved 0x01 = HDMI 1 0x02 = HDMI 2 0x03 = DisplayPort 0x04 = OPS 0x05 = DVI-D 0x06 = YPbPr 0x07 = AV 0x08 = VGA

Example: Set Failover priority to HDMI 1, HDMI 2, DP, OPS, DVI-D, YPbPr, AV (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Data[1]	Data[2]	Data[3]	Data[4]	Data[5]
0xA6	0x01	0x00	0x00	0x00	0x0A	0x01	0x6A	0x01	0x02	0x03	0x04	0x05

Data[6]	Data[7]	Checksum
0x06	0x07	0xC6

6.4 Daylight Saving

This command is used to set/get the Daylight Saving as it is defined as below.

6.4.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x6D = Daylight Saving state - Get**		Command requests the display to report its Daylight Saving state

Example: (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0x6D	0xCD

6.4.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x6D = Daylight Saving state - Report**		Command reports Daylight Saving state
DATA[1]	Daylight Saving State		0x00: Daylight saving time 0x01: Standard time

Example: Daylight Saving Standard time (Display address 01)

Header	Monitor ID	Category	Page	Length	Control	Data[0]	Data[1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0x6D	0x01	0x49

6.4.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x6C= Daylight Saving state - Set**		Command to change the Daylight Saving state of the display
DATA[1]	Daylight Saving State		0x00: Daylight saving time 0x01: Standard time

Example: Daylight Saving Standard time (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Data[1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0x6C	0x01	0xCF

6.5 Date State

This command is used to set/get the Date as it is defined as below.

6.5.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x6F = Date state - Get**		Command requests the display to report its Date

Example: (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0x6F	0xCA

6.5.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x6F = Date state - Report**		Command reports Date state
DATA[1]	Year		0x0E - 0x63 = 2014 - 2099
DATA[2]	Month		0x01 – 0x0C = JAN – DEC
DATA[3]	Day		DATA[2] = JAN, MAR, MAY, JUL, AUG, OCT, DEC: 0x01 – 0x1F = 1 – 31 DATA[2] = APR, JUN, SETP, NOV: 0x01 – 0x1E = 1 – 30 DATA[2] = FEB: 0x01 – 0x1C = 1 - 28

Example: Date: 2014/10/10 (Display address 01)

Header	Monitor ID	Category	Page	Length	Control	Data[0]	Data[1]	Data[2]	Data[3]	Checksum
0x21	0x01	0x00	0x00	0x06	0x01	0x6F	0x0E	0x0A	0x0A	0x46

6.5.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x6E= Date state - Set**		Command to change the Date state of the display
DATA[1]	**Year**		0x0E - 0x63 = 2014 - 2099
DATA[2]	**Month**		0x01 – 0x0C = JAN – DEC
DATA[3]	**Day**		DATA[2] = JAN, MAR, MAY, JUL, AUG, OCT, DEC: 0x01 – 0x1F = 1 – 31 DATA[2] = APR, JUN, SETP, NOV: 0x01 – 0x1E = 1 – 30 DATA[2] = FEB: 0x01 – 0x1C = 1 - 28

Example: Set Date to 2014/01/01(Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Data[1]	Data[0]	Data[1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x06	0x01	0x6E	0x0E	0x01	0x01	0xC0

6.6 Time State

This command is used to set/get the Time as it is defined as below.

6.6.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x72 = Time state - Get**		Command requests the display to report its Time state

Example: (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0x72	0xD7

6.6.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x72 = Time state - Report**		Command reports Time state
DATA[1]	Hour		0x00 – 0x17 = 0 -23
DATA[2]	Minute		0x00 – 0x3B = 0 - 59

Example: Time: 11:28 (Display address 01)

Header	Monitor ID	Category	Page	Length	Control	Data[0]	Data[1]	Data[2]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0x72	0x0B	0x1C	0x41

6.6.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x71= Time state - Set**		Command to change the Time state of the display
DATA[1]	**Hour**		0x00 – 0x17 = 0 -23
DATA[2]	**Minute**		0x00 – 0x3B = 0 - 59

Example: Set Time to 00:00 (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Data[1]	Data[1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x05	0x01	0x71	0x00	0x00	0xD2

6.7 Scheduling Parameters

This command is used to set/get the Scheduling Parameters as it is defined as below.

6.7.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x74 = Scheduling Parameters state - Get**		Command requests the display to report its current Scheduling parameters.

Example: Scheduling Parameters of Page 1 (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Data[0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0x74	0x01	0xD7

6.7.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x74 = Scheduling Parameters - Report**		Command reports to the host controller the current Scheduling parameters of the display.
DATA[1]	**Schedule Page State**		0x00: Disable 0x01: Enable
DATA[2]	**Start time hour**		0x00 - 0x17 =0 - 23 of the start time hour 24: NULL
DATA[3]	**Start time minute**		0x00 - 0x3B = 0 - 59 of the start time minute 60: NULL
DATA[4]	**End time hour**		0x00 - 0x17 =0 - 23 of the start time hour 24: NULL
DATA[5]	**End time minute**		0x00 - 0x3B = 0 - 59 of the start time minute 60: NULL
DATA[6]	**Video source**		Video Source: 0x00 = NULL 0x01 = Reserved. 0x02 = Reserved. 0x03 = HDMI 1 0x04 = HDMI 2 0x05 = Display Port 0x06 = OPS 0x07 = DVI-D 0x08 = YPbPr 0x09 = AV 0x0A= VGA
DATA[7]	**Working day(s)**		To set the scheduling working days. Bit0 = 1: every week Bit1 = Monday Bit2 = Tuesday Bit3 = Wednesday Bit4 = Thursday Bit5 = Friday Bit6 = Saturday Bit7 = Sunday

Example: Scheduling Parameters of Page1: Page State: On, Start Time 7:30, End Time: 22:00, Input Source: HDMI 1, Working Day: Every Sunday, Every Saturday (Display address 01)

Header	Monitor ID	Category	Page	Length	Control	Data[0]	Data[1]	Data[2]	Data[3]	Data[4]	Data[5]	Data[6]	Data[7]
0x21	0x01	0x00	0x00	0x0A	0x01	0x74	0x01	0x07	0x1E	0x16	0x00	0x03	0xC1

Checksum
0x93

6.7.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x73= Scheduling Parameters - Set**		Command to change the current Scheduling parameters
DATA[1]	**Page**		BIT 7-BIT4: 1 to 7 of the scheduling pages BIT 3-BIT0: 0: Page disable 1: Page enable
DATA[2]	**Start time hour**		0x00 - 0x17 =0 - 23 of the start time hour 24: NULL
DATA[3]	**Start time minute**		0x00 - 0x3B = 0 - 59 of the start time minute 60: NULL
DATA[4]	**End time hour**		0x00 - 0x17 =0 - 23 of the start time hour 24: NULL
DATA[5]	**End time minute**		0x00 - 0x3B = 0 - 59 of the start time minute 60: NULL
DATA[6]	**Video source**		Video Source: 0x00 = NULL 0x01 = Reserved. 0x02 = Reserved. 0x03 = HDMI 1 0x04 = HDMI 2 0x05 = Display Port 0x06 = OPS 0x07 = DVI-D 0x08 = YPbPr 0x09 = AV 0x0A= VGA
DATA[7]	**Working day(s)**		To set the scheduling working days. Bit0 = 1: every week Bit1 = Monday Bit2 = Tuesday Bit3 = Wednesday Bit4 = Thursday Bit5 = Friday Bit6 = Saturday Bit7 = Sunday

Example: Set Scheduling Parameters of Page1 to Page State: On, Start Time 02:03, End Time: 04:05, Input Source: OPS, Working Day: No Repeat (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Data[1]	Data[2]	Data[3]	Data[4]	Data[5]	Data[6]
0xA6	0x01	0x00	0x00	0x00	0x0A	0x01	0x73	0x11	0x02	0x03	0x04	0x05	0x06

Data[7]	Checksum
0x00	0xC8

6.8 Sleep Timer

This command is used to set/get the Sleep Timer as it is defined as below.

6.8.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x76 = Sleep Timer state - Get**		Command requests the display to report its Sleep Timer state

Example: (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0x76	0xD3

6.8.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x76 = Sleep Timer state - Report**		Command reports Sleep Timer state
DATA[1]	Sleep Timer State		0x00 – 0xF0 = 0 - 240

Example: Sleep Timer: 240 (Display address 01)

Header	Monitor ID	Category	Page	Length	Control	Data[0]	Data[1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0x76	0xF0	0xA3

6.8.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x75= Sleep Timer state - Set**		Command to change the Sleep Timer state of the display
DATA[1]	Sleep Timer		0x00 – 0xF0 = 0 - 240

Example: Set Sleep Timer to 0 (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Data[1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0x75	0x00	0xD7

6.9 CEC

This command is used to set/get the CEC as it is defined as below.

6.9.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x78 = CEC state - Get**		Command requests the display to report its CEC state

Example: (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0x78	0xDD

6.9.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x78 = CEC state - Report**		Command reports CEC state
DATA[1]	CEC State		0x00: Off 0x01: On

Example: CEC: On (Display address 01)

Header	Monitor ID	Category	Page	Length	Control	Data[0]	Data[1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0x78	0x01	0x5C

6.9.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x77= CEC state - Set**		Command to change the CEC state of the display
DATA[1]	CEC State		0x00: Off 0x01: On

Example: Set CEC to Off (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Data[1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0x77	0x00	0xD5

6.10 Local KB Lock

This command is used to set/get the Local KB Lock as it is defined as below.

6.10.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x7B = Local KB Lock state - Get**		Command requests the display to report its Local KB Lock state

Example: (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0x7B	0xDE

6.10.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x7B = Local KB Lock state - Report**		Command reports Local KB Lock state
DATA[1]	Local KB Lock State		0x00: Unlock 0x01: Lock All

Example: Local KB Lock: Lock all (Display address 01)

Header	Monitor ID	Category	Page	Length	Control	Data[0]	Data[1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0x7B	0x01	0x5F

6.10.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x7A= Local KB Lock state - Set**		Command to change the Local KB Lock state of the display
DATA[1]	Local KB Lock State		0x00: Unlock 0x01: Lock All

Example: Set Local KB Lock to Unlock (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Data[1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0x7A	0x00	0xD8

6.11 RC Lock

This command is used to set/get the RC Lock as it is defined as below.

6.11.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x7D = RC Lock state - Get**		Command requests the display to report its RC Lock state

Example: (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0x7D	0xD8

6.11.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x7D= RC Lock state - Report**		Command reports RC Lock state
DATA[1]	RC Lock State		0x00: Unlock 0x01: Lock All

Example: RC Lock: Lock All (Display address 01)

Header	Monitor ID	Category	Page	Length	Control	Data[0]	Data[1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0x7D	0x01	0x59

6.11.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x7C= RC Lock state - Set**		Command to change the RC Lock state of the display
DATA[1]	Local KB Lock State		0x00: Unlock 0x01: Lock All

Example: Set RC Lock to Unlock (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Data[1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0x7C	0x00	0xDE

6.12 Pixel Shift

This command is used to set/get the Pixel Shift as it is defined as below.

6.12.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x7F = Pixel Shift state - Get**		Command requests the display to report its Pixel Shift state

Example: (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0x7F	0xDA

6.12.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x7F = Pixel Shift state - Report**		Command reports Pixel Shift state
DATA[1]	Pixel Shift State		0x00: Off 0x01: On

Example: Pixel Shift: Off (Display address 01)

Header	Monitor ID	Category	Page	Length	Control	Data[0]	Data[1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0x7F	0x00	0x5A

6.12.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x7E= Pixel Shift state - Set**		Command to change the Pixel Shift state of the display
DATA[1]	Pixel Shift State		0x00: Off 0x01: On

Example: Pixel Shift Off (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Data[1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0x7E	0x00	0xDC

6.13 Smart Power

This command is used to set/get the Smart Power as it is defined as below.

6.13.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x82 = Smart Power state - Get**		Command requests the display to report its Smart Power state

Example: (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0x82	0x27

6.13.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x82 = Smart Power state - Report**		Command reports Smart Power state
DATA[1]	Smart Power State		0x00: Off 0x01: On

Example: Smart Power: Off (Display address 01)

Header	Monitor ID	Category	Page	Length	Control	Data[0]	Data[1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0x82	0x00	0xA7

6.13.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x81= Smart Power state - Set**		Command to change the Smart Power state of the display
DATA[1]	Smart Power State		0x00: Off 0x01: On

Example: Set Pixel Shift to Off (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Data[1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0x81	0x00	0x23

6.14 Wake On Lan

This command is used to set/get the Smart Power as it is defined as below.

6.14.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x84 = Wake On Lan state - Get**		Command requests the display to report its Wake On Lan state

Example: (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0x84	0x21

6.14.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x84 = Wake On Lan state - Report**		Command reports Wake On Lan state
DATA[1]	Wake On Lan State		0x00: Off 0x01: On

Example: Wake On Lan: Off (Display address 01)

Header	Monitor ID	Category	Page	Length	Control	Data[0]	Data[1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0x84	0x00	0xA1

6.14.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x83= Wake On Lan state - Set**		Command to change the Wake On Lan state of the display
DATA[1]	Wake On Lan State		0x00: Off 0x01: On

Example: Set Wake On Lan to Off (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Data[1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0x83	0x00	0x21

6.15 Switch On State

This command is used to set/get the Switch On State as it is defined as below.

6.15.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x86 = Switch On State state - Get**		Command requests the display to report its Switch On State state

Example: (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0x86	0x23

6.15.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x86 = Switch On State state - Report**		Command reports Switch On State state
DATA[1]	Switch On State		0x00: On 0x01: Standby 0x02: Last Status

Example: Switch On State: Last Status (Display address 01)

Header	Monitor ID	Category	Page	Length	Control	Data[0]	Data[1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0x86	0x02	0xA1

6.15.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x85= Switch On State state - Set**		Command to change the Switch On State state of the display
DATA[1]	Switch On State State		0x00: On 0x01: Standby 0x02: Last Status

Example: Set Switch On State to Last Status (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Data[1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0x85	0x02	0x25

6.16 LED

This command is used to set/get the LED as it is defined as below.

6.16.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x88 = LED State state - Get**		Command requests the display to report its LED state

Example: (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0x88	0x2D

6.16.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x88 = LED state - Report**		Command reports LED state
DATA[1]	LED State		0x00: Off 0x01: On

Example: LED State: On(Display address 01)

Header	Monitor ID	Category	Page	Length	Control	Data[0]	Data[1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0x88	0x01	0xAC

6.16.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x87=LED state - Set**		Command to change the LED state of the display
DATA[1]	LED State		0x00: Off 0x01: On

Example: Set LED State to On (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Data[1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0x87	0x01	0x24

6.17 Switch On Delay

This command is used to set/get the Switch On Delay as it is defined as below.

6.17.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x8B = Switch On Delay state - Get**		Command requests the display to report its Switch On Delay state

Example: (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0x8B	0x2E

6.17.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x8B = Switch On Delay state - Report**		Command reports Switch On Delay state
DATA[1]	Switch On Delay State		0x00 – 0x3C = 0 - 60

Example: Switch On Delay: 60 (Display address 01)

Header	Monitor ID	Category	Page	Length	Control	Data[0]	Data[1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0x8B	0x3C	0x92

6.17.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x8A= Switch On Delay state - Set**		Command to change the Switch On Delay state of the display
DATA[1]	Switch On Delay State		0x00 – 0x3C = 0 - 60

Example: Set Switch On Delay to 0 (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Data[1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0x8A	0x00	0x28

6.18 Logo

This command is used to set/get the Logo state as it is defined as below.

6.18.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x8D = Logo state - Get**		Command requests the display to report its current Power On logo status

Example: (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0x8D	0x28

6.18.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x8D = Logo state - Report**		Command reports the Power On logo enabled or disabled
DATA[1]	Logo State		0x00: Off 0x01: On

Example: Logo state: Off (Display address 01)

Header	Monitor ID	Category	Page	Length	Control	Data[0]	Data[1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0x8B	0x00	0x

6.18.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x8C= Switch On Delay state - Set**		Command to set the Power On logo of the display enabled or disabled
DATA[1]	Switch On Delay State		0x00 – 0x3C = 0 - 60

Example: Set Logo State to Off (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Data[1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0x8C	0x00	0x2E

6.19 Advanced Power Management

This command is used to set/get the APM as it is defined as below.

6.19.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x8F = APM state - Get**		Command requests the display to report its APM state

Example: (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0x8F	0x2A

6.19.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x8F = APM state - Report**		Command reports APM state
DATA[1]	APM State		0x00 ~ 0x3C: Off ~ 60 minutes

Example: APM: 1 minutes (Display address 01)

Header	Monitor ID	Category	Page	Length	Control	Data[0]	Data[1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0x8F	0x01	0xAB

6.19.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x8E= APM state - Set**		Command to change the APM state of the display
DATA[1]	APM State		0x00 ~ 0x3C: Off ~ 60 minutes

Example: Set APM to 1 minutes (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Data[1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0x8E	0x01	0x2D

6.20 Information OSD

This command is used to set/get the Information OSD as it is defined as below.

6.20.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x92 = Information OSD state - Get**		Command requests the display to report its Information OSD state

Example: (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0x92	0x37

6.20.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x92 = Information OSD state - Report**		Command reports Information OSD state
DATA[1]	Information OSD State		0x00: Off 0x01: On

Example: Information OSD: On (Display address 01)

Header	Monitor ID	Category	Page	Length	Control	Data[0]	Data[1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0x92	0x01	0xB6

6.20.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x91= Information OSD state - Set**		Command to change the Information OSD state of the display
DATA[1]	Information OSD State		0x00: Off 0x01: On

Example: Set Information OSD to On (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Data[1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0x91	0x01	0x32

6.21 Display Port Ver.

This command is used to set/get the Display Port Ver. as it is defined as below.

6.21.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x94 = Display Port Ver. state- Get**		Command requests the display to report its Display Port Ver. state

Example: (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0x94	0x31

6.21.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x94 = Display Port Ver. state - Report**		Command reports Display Port Ver. state
DATA[1]	Display Port Ver. State		0x00: 1.1a 0x01: 1.2

Example: Display Port Ver.: 1.2 (Display address 01)

Header	Monitor ID	Category	Page	Length	Control	Data[0]	Data[1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0x94	0x01	0xB0

6.21.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x93= Display Port Ver. state - Set**		Command to change the Display Port Ver. state of the display
DATA[1]	Display Port Ver. State		0x00: 1.1a 0x01: 1.2

Example: Set Display Port Ver. to 1.1a (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Data[1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0x93	0x00	0x31

6.22 Cooling Fan

This command is used to set/get the Cooling Fan as it is defined as below.

6.22.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x96 = Cooling Fan state- Get**		Command requests the display to report its Cooling Fan state

Example: (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0x96	0x33

6.22.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x96 = Cooling Fan state - Report**		Command reports Cooling Fan state
DATA[1]	Cooling Fan state		0x00: Off 0x01: On 0x02: Auto

Example: Cooling Fan: Auto (Display address 01)

Header	Monitor ID	Category	Page	Length	Control	Data[0]	Data[1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0x96	0x02	0xB1

6.22.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x95= Cooling Fan state - Set**		Command to change the Cooling Fan state of the display
DATA[1]	Cooling Fan state		0x00: Off 0x01: On 0x02: Auto

Example: Set Cooling Fan to Auto (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Data[1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0x95	0x02	0x35

6.23 RS232 Control Port

This command is used to set/get the Network Control Port as it is defined as below.

6.23.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x98 = RS232 Control port- Get**		Command requests the display to report its Network Control Port

Example: (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0x98	0x3D

6.23.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x98 = RS232 Control port state - Report**		Command reports Network Control Port state
DATA[1]	Network Control Port		0x00: RS232 0x01: LAN(RJ-45)

Example: Network Control Port: RS232 (Display address 01)

Header	Monitor ID	Category	Page	Length	Control	Data[0]	Data[1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0x98	0x00	0xBD

6.23.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x97= RS232 Control port state - Set**		Command to change the Network Control Port state of the display
DATA[1]	Network Control Port		0x00: RS232 0x01: LAN(RJ-45)

Example: Set Network Control Port to RS232 (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Data[1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0x97	0x00	0x35

6.24 OSD Time Out

This command is used to set/get the OSD Time Out as it is defined as below.

6.24.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x9B = OSD Time Out-Get**		Command requests the display to report its OSD Time Out

Example: (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0x9B	0x3E

6.24.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x9B = OSD Time Out state - Report**		Command reports OSD Time Out state
DATA[1]	OSD Time Out		0x00 – 0x3C = 0 - 60

Example: OSD Time Out: 10 (Display address 01)

Header	Monitor ID	Category	Page	Length	Control	Data[0]	Data[1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0x9B	0x0A	0x

6.24.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	**0x9A= OSD Time Out - Set**		Command to change the OSD Time Out state of the display
DATA[1]	OSD Time Out		0x00 – 0x3C = 0 - 60

Example: Set OSD Time Out to 10 (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Data[1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0x9A	0x0A	0x32

6.25 Auto Adjust

This command works for VGA (host controller) video auto adjust.

6.25.1 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	**0xFC = Auto Adjust - Set**		Command requests the display to make auto adjustment on VGA Input source.

Example: Set OSD Time Out to 10 (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0xFC	0x59

6.26 Factory Settings

The command is used to reset all you customized settings to the factory defaults.

6.26.1 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	**0xFD = Factory Settings - Set**		Command to do the Factory Reset of the display

Example: Factory Settings (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0xFD	0x58

7. MESSAGES – General Setting

7.1 Power State

This command is used to set/get the Light Sensor as it is defined as below.

7.1.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA[0]	**0xA4= Power state-Get**		Command requests the display to report its Power state

Example: (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0xA4	0x01

7.1.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA[0]	**0xA4 = Power state - Report**		Command reports Power state
DATA[1]	Power state		0x01: Off 0x02: On

Example: Power State: On (Display address 01)

Header	Monitor ID	Category	Page	Length	Control	Data[0]	Data[1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0xA4	0x02	0x83

7.1.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	**0xA3= Power state - Set**		Command to change the Power state of the display
DATA[1]	Power state		0x01: Off 0x02: On

Example: Set Power Off (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Data[1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0xA3	0x01	0x00

7.2 Input Source

This command is used to set/get input source as it is defined as below.

7.2.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA[0]	**0xA6= Input Source - Get**		Command requests the display to report the current input source in use.

Example: (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0xA6	0x03

7.2.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA[0]	**0xA6 = Input Source – Report**		Command reports to the host controller the current input source in use by the display.
DATA[1]	Input Source Number		0x01: Reserved 0x02: Reserved 0x03: HDMI 1 0x04: HDMI 2 0x05: Display Port 0x06: Card OPS 0x07: DVI-D: 0x08: YPbPr 0x09: AV 0x0A: VGA

Example: Input Source: VGA (Display address 01)

Header	Monitor ID	Category	Page	Length	Control	Data[0]	Data[1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0xA4	0x0A	0x89

7.2.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	**0xA5= Input Source - Set**		Command requests the display to set the current input source
DATA[1]	Input Source Number		0x01: Reserved 0x02: Reserved 0x03: HDMI 1 0x04: HDMI 2 0x05: Display Port 0x06: Card OPS 0x07: DVI-D: 0x08: YPbPr 0x09: AV 0x0A: VGA

Example: Set input source to HDMI 1 (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Data[1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0xA5	0x03	0x04

7.3 Video Parameters

The following commands are used to get/set video parameters as it is defined below.

7.3.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA[0]	**0xAB= Video Parameters - Get**		Command requests the display to report its current video parameters.

Example: (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0xAB	0x0E

7.3.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA[0]	**0xAB = Video Parameters - Report**		Command reports to the host controller the current video parameters of the display.
DATA[1]	**Brightness.**		0x00 – 0x64 = 0 to 100 (%) of the user selectable range of the display.
DATA[2]	**Color.**		0x00 – 0x64 = 0 to 100 (%) of the user selectable range of the display.
DATA[3]	**Contrast.**		0x00 – 0x64 = 0 to 100 (%) of the user selectable range of the display.
DATA[4]	**Sharpness.**		0x00 – 0x64 = 0 to 100 (%) of the user selectable range of the display.
DATA[5]	**Hue**		0x00 – 0x64 = -50 to 50 (%) of the user selectable range of the display.
DATA[6]	**Backlight**		0x00 – 0x64 = 0 to 100 (%) of the user selectable range of the display.
DATA[7]	**Gamma Selection**		0x00 = 1.8 0x01 = 1.9 0x02 = 2.0 0x03 = 2.1 0x04 = 2.2 0x05 = 2.3 0x06 = 2.4 0x07 = 2.5

Example: Current Video Parameters: Brightness: 50, Color: 50, Contrast: 90, Sharpness: 0, Hue: 0, Black Level: 90, Gamma: 1.8 (Display address 01)

Header	Monitor ID	Category	Page	Length	Control	Data[0]	Data[1]	Data[2]	Data[3]	Data[4]	Data[5]
0x21	0x01	0x00	0x00	0x0A	0x01	0xAB	0x32	0x32	0x5A	0x00	0x32
Data[6]	Data[7]	Checksum									
0x5A	0x00	0xB2									

7.3.3 Message-Set

Bytes	**Bytes Description**	**Bits**	**Description**
DATA[0]	**0xAA= Video Parameters - Set**		Command to change the current video parameters
DATA[1]	**Brightness.**		0x00 – 0x64 = 0 to 100 (%) of the user selectable range of the display.
DATA[2]	**Color.**		0x00 – 0x64 = 0 to 100 (%) of the user selectable range of the display.
DATA[3]	**Contrast.**		0x00 – 0x64 = 0 to 100 (%) of the user selectable range of the display.
DATA[4]	**Sharpness.**		0x00 – 0x64 = 0 to 100 (%) of the user selectable range of the display.
DATA[5]	**Hue**		0x00 – 0x64 = -50 to 50 (%) of the user selectable range of the display.
DATA[6]	**Black Level**		0x00 – 0x64 = 0 to 100 (%) of the user selectable range of the display.
DATA[7]	**Gamma Selection**		0x00 = 1.8 0x01 = 1.9 0x02 = 2.0 0x03 = 2.1 0x04 = 2.2 0x05 = 2.3 0x06 = 2.4 0x07 = 2.5

Example: Set Video Parameters to Brightness: 50, Color: 50, Contrast: 90, Sharpness: 0, Hue: 0, Black Level: 90, Gamma: 1.8 (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Data[1]	Data[2]	Data[3]	Data[4]	Data[5]
0xA6	0x01	0x00	0x00	0x00	0x0A	0x01	0xAA	0x32	0x32	0x5A	0x00	0x32
Data[6]	Data[7]	Checksum										
0x5A	0x00	0x34										

7.4 Volume

This command is used to set/get the Volume as it is defined as below.

7.4.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA[0]	**0xAD= Volume - Get**		Command requests the display to report its current Volume level

The interface to set Software must be such that they also modify the variables representing these current parameters.
To mute the display, send Volume = 0. This command does not overwrite the system mute status of the display.

Example: (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0xAD	0x08

7.4.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA[0]	**0xAD = Volume – Report**		Command reports current Volume level
DATA[1]	Volume.		0x00 – 0x3C = 0 – 60 of the user selectable range of the display

Example: Current Volume: 25 (Display address 01)

Header	Monitor ID	Category	Page	Length	Control	Data[0]	Data[1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0xAD	0x19	0x91

7.4.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	**0xAC= Volume - Set**		Command requests the display to set the Volume level
DATA[1]	Volume.		0x00 – 0x3C = 0 – 60 of the user selectable range of the display

Example: Set Volume to 30 (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Data[1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0xAC	0x1E	0x10

7.5 Audio Parameters

This command is used to set/get the Audio Parameters as it is defined as below.

7.5.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA[0]	**0xAF= Audio Parameters - Get**		Command requests the display to report its current audio parameters

Example: (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0xAF	0x0A

7.5.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA[0]	**0xAF = Audio Parameters – Report**		Command reports Audio Parameters
DATA[1]	**Treble.**		0x00 – 0x10 = -8 to 8 (%) of the user selectable range of the display.
DATA[2]	**Bass.**		0x00 – 0x10 = -8 to 8 (%) of the user selectable range of the display.

Example: Current Audio Parameters: Treble: 0, Bass: 0 (Display address 01)

Header	Monitor ID	Category	Page	Length	Control	Data[0]	Data[1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0xAF	0x08	0x8B

7.5.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	**0xAE= Audio Parameters - Set**		Command to change the Audio Parameters of the display
DATA[1]	**Treble.**		0x00 – 0x10 = -8 to 8 (%) of the user selectable range of the display.
DATA[2]	**Bass.**		0x00 – 0x10 = -8 to 8 (%) of the user selectable range of the display.

Example: Set Audio Parameters to Treble: 0, Bass: 0 (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Data[1]	Data[2]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x05	0x01	0xAE	0x08	0x08	0x0D

7.6 Volume Increase & Decrease

This command is used to set Volume Increase & Decrease as it is defined as below.

7.6.1 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	**0xB1= Volume Increase & Decrease - Set**		Command to increase or decrease the volume by step 1
DATA[1]	**Increase & Decrease**		0x00: Decrease volume value by step 1. 0x01: Increase volume value by step 1.

Example: Volume Increase (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Data[1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0xB1	0x01	0x12

Example: Volume Decrease (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Data[1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0xB1	0x00	0x13

7.7 Volume Limits

This command is used to set the volume limit (minimum, maximum and switch on volume).

7.7.1 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	**0xB3 = Volume Limits– Set**		The 3 values must conform to the rule : Min <= Switch On <= Max
DATA[1]	Minimum Volume		0x00 – 0x3C = 0 to 60 (%) of the user selectable range of the display.
DATA[2]	Maximum Volume		0x00 – 0x3C = 0 to 60 (%) of the user selectable range of the display.
DATA[3]	Switch On Volume		0x00 – 0x3C = 0 to 60 (%) of the user selectable range of the display.

Example: Set Volume Limits to Min:0, Max: 40, Switch On: 30 (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Data[1]	Data[2]	Data[3]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x06	0x01	0xB3	0x00	0x28	0x1E	0x25

7.8 Operating Hours

The command is used to record the working hours of the display.

7.8.1 Message-Get

Bytes	**Bytes Description**	**Bits**	**Description**
DATA[0]	**0xC2 = Misc Info - Get**		Command requests the display to report from miscellaneous information parameters

Example: (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0xC2	0x67

7.8.2 Message-Report

Bytes	**Bytes Description**	**Bits**	**Description**
DATA[0]	**0xC2 = Misc Info – Report**		Command reports current Operating Hours
DATA[1] to DATA[2]	Operating Hours		DATA[1] and DATA[2] form the MSByte and LSByte, respectively, of the 16-bit-wide Operational Hours value.

Example: Current Display Operation Hours counter value (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Data[1]	Data[1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x05	0x01	0xC2	0x00	0x08	0xEE

7.9 Temperature Sensors

The command is used to record the working hours of the display.

7.9.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA[0]	**0xC6 = Temperature Sensor – Get**		Command requests the display to report its value of the temperature sensors (±3°C).

Example: (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0xC6	0x63

7.9.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA[0]	**0xC6 = Temperature Sensor – Report**		Command reports Temperature sensor value
DATA[1]	Temperature Sensor 1		0-100 in Celsius degrees represented in hex.

Example: Current Temp Sensor read out: Sensor 1 = 28°C (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Data[1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0xC6	0x1C	0x78

7.10 Model Name

The command is used to get Model Name of the display.

7.10.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA[0]	**0xC8 = Model Name – Get**		Command requests the display to report its Model Name

Example: (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Data[1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0xC6	0x01	0x63

7.10.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA[0]	**0xC6 = Model Name – Report**		Command reports Temperature sensor value
DATA[1]	**Model name**		0x00: SICP Version 0x01: SW Version

Example: Current SW Version: V1.00 (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Data[1]	Data[2]	Data[3]
0xA6	0x01	0x00	0x00	0x00	0x08	0x01	0xC8	0x56	0x31	0x2E

Data[4]	Data[5]	Checksum
0x30	0x30	0xA8

8. MESSAGES – IR Remote Command

8.1 IR Remote Command

The command is used to send IR Key to Control display.

8.1.1 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	**0xDB = IR Remote Command – Set**		Command to simulate the IR Remote to send IR Key to display
DATA[1]	IR KEY		0xA0: Power 0xA1: Menu 0xA2: Input 0xA3: Vol_Up 0xA4: Vol_Down 0xA5: Mute 0xA6: Cursor_Up 0xA7: Cursor_Down 0xA8: Cursor_Left 0xA9: Cursor_Right 0xB1: OK 0xB2: Return 0xC1: Red 0xC2: Green 0xC3: Yellow 0xC4: Blue 0xD1: Format 0xD2: Info 0x00: Btn_0 0x01: Btn_1 0x02: Btn_2 0x03: Btn_3 0x04: Btn_4 0x05: Btn_5 0x06: Btn_6 0x07: Btn_7 0x08: Btn_8 0x09: Btn_9

Example: Send Power Key (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Data[1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0xDB	0xA0	0xD9

Command summary

Command name	Set Command	Get Command	Command Code	Remarks
Picture Style Set	✔		0x01	
Picture Style Get		✔	0x02	
Picture Style Restore	✔		0xFA	
Backlight State Set	✔		0x03	
Backlight State Get		✔	0x04	
Color State Set	✔		0x05	
Color State Get		✔	0x06	
Sharpness State Set	✔		0x07	
Sharpness State Get		✔	0x08	
Noise Reduction State Set	✔		0x0A	
Noise Reduction State Get		✔	0x0B	
MPEG Artifact Reduction Set	✔		0x0C	
MPEG Artifact Reduction Get		✔	0x0D	
Advanced Sharpness State Set	✔		0x0E	
Advanced Sharpness State Get		✔	0x0F	
Dynamic Contrast State Set	✔		0x11	
Dynamic Contrast State Get		✔	0x12	
Color Enhancement State Set	✔		0x13	
Color Enhancement State Get		✔	0x14	
Gamma State Set	✔		0x15	
Gamma State Get		✔	0x16	
Color Temp. State Set	✔		0x17	
Color Temp. Get		✔	0x18	
Custom Color temp. State Set	✔		0x1A	
Custom Color temp. State Get		✔	0x1B	
Video Contrast State Set	✔		0x1C	
Video Contrast State Get		✔	0x1D	
Brightness State Set	✔		0x1E	
Brightness State Get		✔	0x1F	
Hue State Set	✔		0x21	
Hue State Get		✔	0x22	
Color Space State Set	✔		0x23	
Color Space State Get		✔	0x24	
Picture Format Set	✔		0x25	
Picture Format Get		✔	0x26	
Picture Shift State Set	✔		0x27	
Picture Shift State Get		✔	0x28	
Input Resolution State Set	✔		0x2A	
Input Resolution State Get		✔	0x2B	

Command name	Set Command	Get Command	Command Code	Remarks
Sound Style Set	✓		0x31	
Sound Style Get		✓	0x32	
Sound Style Restore	✓		0xFB	
Bass State Set	✓		0x33	
Bass State Get		✓	0x34	
Treble State Set	✓		0x35	
Treble State Get		✓	0x36	
Balance State Set	✓		0x37	
Balance State Get		✓	0x38	
Surround Mode Set	✓		0x3A	
Surround Mode Get		✓	0x3B	
Audio out State Set	✓		0x3C	
Audio out State Get		✓	0x3D	
Auto Volume Leveling Set	✓		0x3E	
Auto Volume Leveling Get		✓	0x3F	
Speaker Settings State Set	✓		0x41	
Speaker Settings State Get		✓	0x42	
Clear Sound State Set	✓		0x43	
Clear Sound State Get		✓	0x44	
Tiling Parameters Set	✓		0x51	
Tiling Parameters Get		✓	0x52	
ECO Mode Set	✓		0x65	
ECO Mode Get		✓	0x66	
Auto Search Set	✓		0x67	
Auto Search Get		✓	0x68	
Failover Status State Set	✓		0x6A	
Failover Status State Get		✓	0x6B	
Daylight Saving State Set	✓		0x6C	
Daylight Saving State Get		✓	0x6D	
Date Set	✓		0x6E	
Date Get		✓	0x6F	
Time Set	✓		0x71	
Time Get		✓	0x72	
Scheduling Parameters Set	✓		0x73	
Scheduling Parameters Get		✓	0x74	
Sleep Timer State Set	✓		0x75	
Sleep Timer State Get		✓	0x76	
CEC Set	✓		0x77	
CEC Get		✓	0x78	
Auto Adjust	✓		0xFC	

Command name	Set Command	Get Command	Command Code	Remarks
Local KB Lock State Set	✔		0x7A	
Local KB Lock State Get		✔	0x7B	
RC Lock State Set	✔		0x7C	
RC Lock State Get		✔	0x7D	
Pixel Shift State Set	✔		0x7E	
Pixel Shift State Get		✔	0x7F	
Smart Power State Set	✔		0x81	
Smart Power State Get		✔	0x82	
Wake On Lan State Set	✔		0x83	
Wake On Lan State Get		✔	0x84	
Switch On State State Set	✔		0x85	
Switch On State State Get		✔	0x86	
LED State Set	✔		0x87	
LED State Get		✔	0x88	
Switch On Delay State Set	✔		0x8A	
Switch On Delay State Get		✔	0x8B	
Logo State Set	✔		0x8C	
Logo State Get		✔	0x8D	
APM State Set	✔		0x8E	
APM State Get		✔	0x8F	
Information OSD State Set	✔		0x91	
Information OSD State Get		✔	0x92	
DisplayPort Ver. State Set	✔		0x93	
DisplayPort Ver. State Get		✔	0x94	
Cooling Fan Set	✔		0x95	
Cooling Fan Get		✔	0x96	
RS232 Control Port State Set	✔		0x97	
RS232 Control Port State Get		✔	0x98	
OSD Time Out Set	✔		0x9A	
OSD Time Out Get		✔	0x9B	
Factory Setting	✔		0xFD	

Command name	Set Command	Get Command	Command Code	Remarks
Power State Set	✔		0xA3	
Power State Get		✔	0xA4	
Input Source State Set	✔		0xA5	
Input Source State Get		✔	0xA6	
Video Parameters Set	✔		0xAA	
Video Parameters Get		✔	0xAB	
Volume Set	✔		0xAC	
Volume Get		✔	0xAD	

Command name	Set Command	Get Command	Command Code	Remarks
Audio Parameters Set	✓		0xAE	
Audio Parameters Get		✓	0xAF	
Volume Increase & Decrease Set	✓		0xB1	
Volume Limits Set	✓		0xB3	
Operating Hours Get		✓	0xC2	
Serial Number Get		✓	0xC4	
Temperature Get		✓	0xC6	
Model Name Get		✓	0xC8	
IR Remote	✓		0xDB	