

RS232 Command List

TBX-2201

1. INTRODUCTION

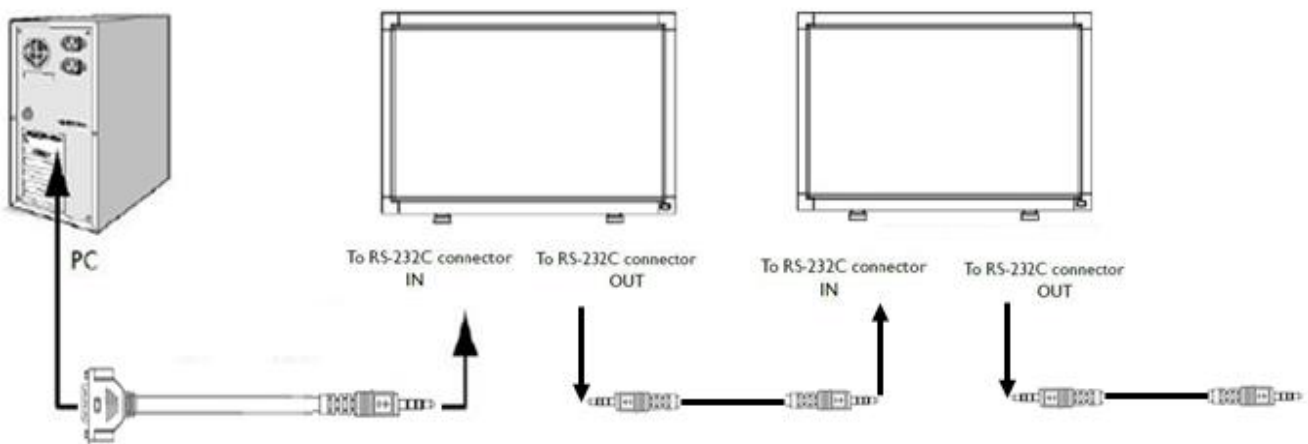
1.1 Purpose

The purpose of this document is to explain in detail the commands and steps that can be used to control a display via serial RS232C / Ethernet LAN.

1.2 Serial RS232 Physical Specification

- a. Baud Rate: 9600 bps
- b. Data bits: 8 bits
- c. Parity: None
- d. Stop Bit: 1 bit
- e. Flow Control: None

Example:



1.3 Ethernet LAN Configure the IP address and Port number

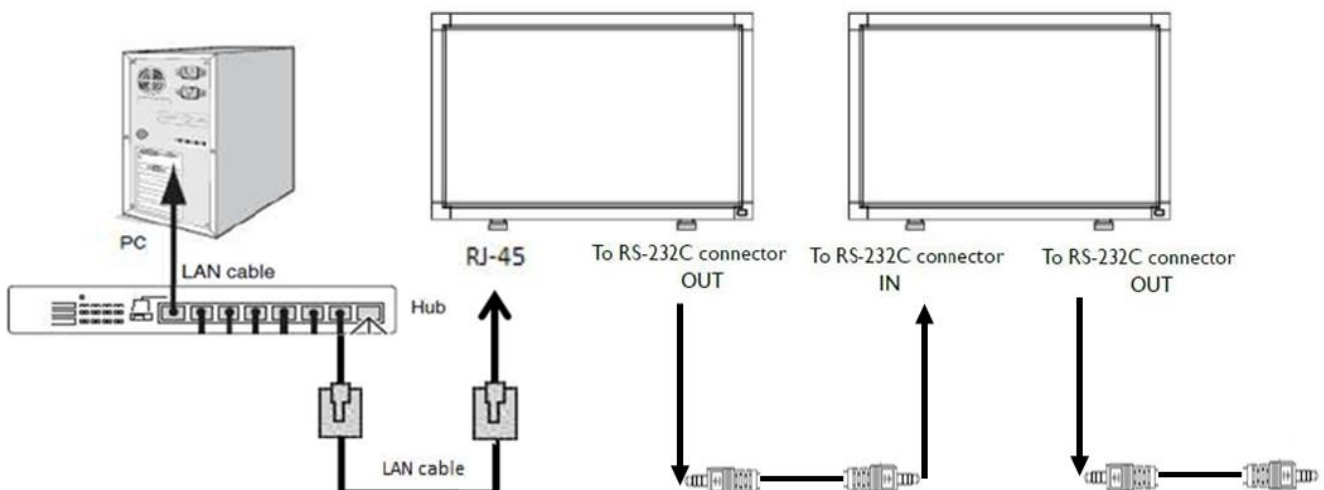
Communication system: TCP/IP

Interface: Ethernet - RJ45 connector (10/100 BASE-T)

IP Address: Refer on user manual.

Ethernet LAN port number: 5000.

Example:



1.4 Communication Procedure

Control commands can be sent from a host controller via the RS232/Ethernet (port 5000) 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.

Figure 1 and 2 explain the mechanism of the Get and Set commands.

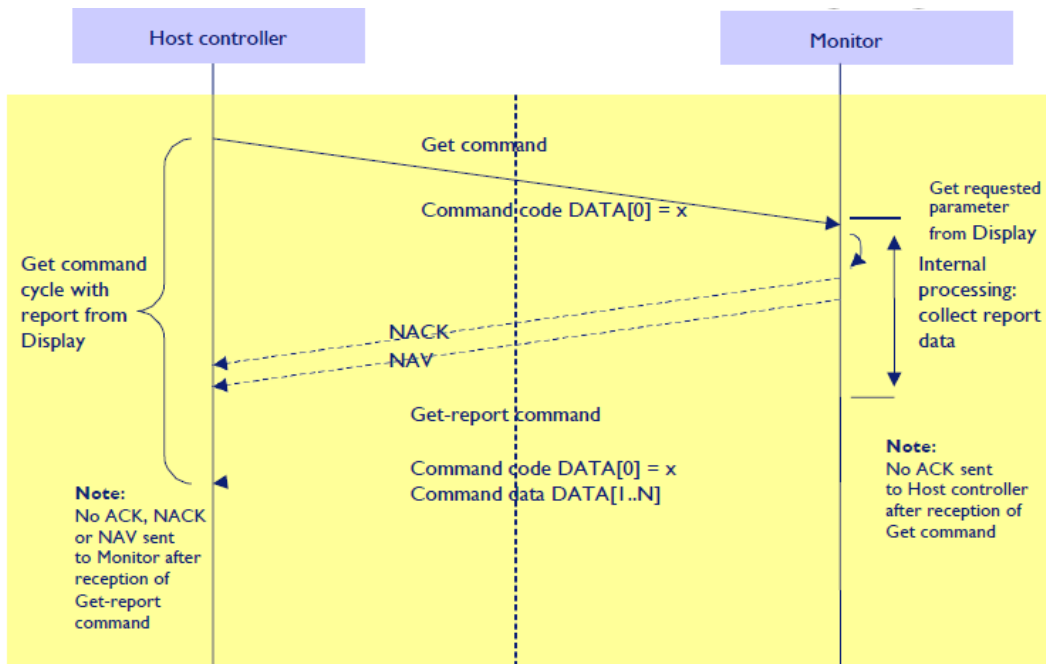


Figure 1: Explanation of mechanism of Get Command.

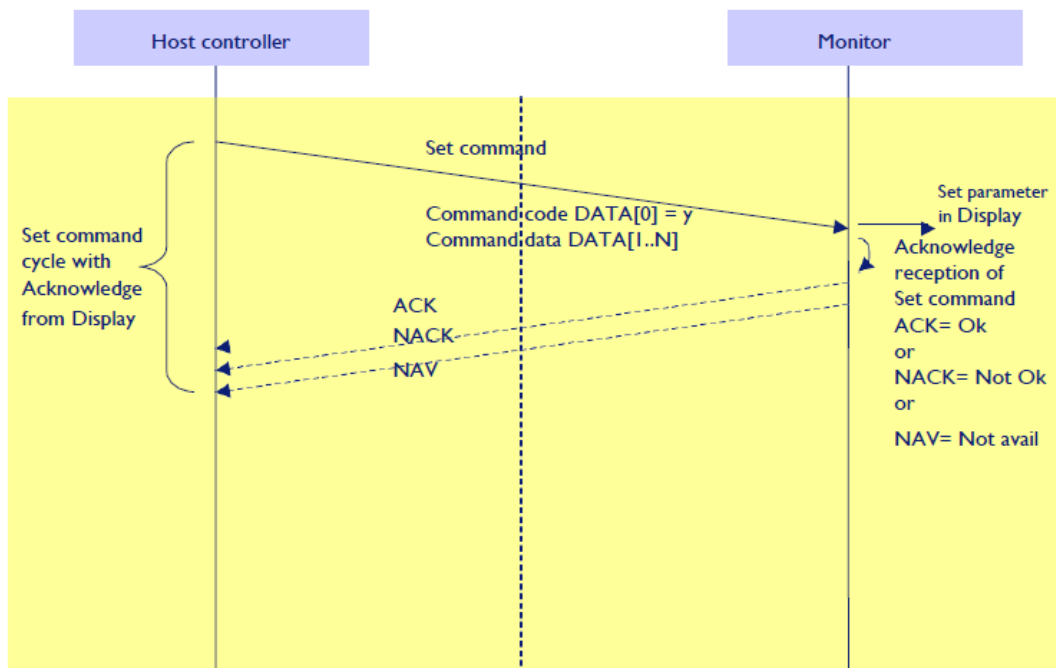


Figure 2: Explanation of mechanism of Set Command.

2. Command Format

The Serial RS232 / Ethernet LAN command packet format:

Header	Monitor ID	Category	Code 0	Code 1	Length	Data Control	Data [0]	...	Data [N]	Checksum
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Set / Get in detail:

Number of Field	Name of Field	Description
Byte 1	Header	Header = 0xA6
Byte 2	Monitor ID	Monitor ID Range: 1 ~ 255. 0 = broadcast , all Display no ACK or report is expected.
Byte 3	Category	Category = 0x00 (fixed)
Byte 4	Code0 (Page)	Reserve
Byte 5	Code1 (Function)	Reserve
Byte 6	Length	Length of message plus checksum code. Calculate the length from Control byte to Checksum byte.
Byte 7	Data Control	Data Control = 0x01 (fixed)
Byte 8	Data[0]	Command code.
Byte 9~Byte9+(N-1)	Data[1]~Data[N]	Data. This field can be also empty.
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]

3. Message System

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(0x00), ACK(0x03) or NAV(0x04).

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

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	0xA2	0x00	0x87	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	0xA2	0x03	0x84	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	0xA2	0x04	0x83	1. Checksum error, the system will reply “NAV”. 2. No this parameter – Data (1), the system will reply “NAV”.

Data [1]:

0x00: Completed, normal response.

0x03: Command canceled, the packet is received normally but either the value of data is incorrect or request is not permitted for the current host value.

0x04: Parse Error, received not defined format data or check sum error.

4. Message General

4.1 Network Configuration

This command is used to set/get the Network Configuration setting as it is defined as below.

4.1.1 Message – Set

Bytes	Bytes Description	Bits	Description
Data [0]	0x05 = Network Configuration - Set		Command to change the Network Configuration setting of the display.
Data [1]	Network Mode		0x01 = DHCP 0x02 = Static IP
Data [2]	Address Function		When Network Mode = DHCP: 0x00 = Disable address writing. When Network Mode = Static IP: 0x00 = Disable address writing. 0x01 = IP Address 0x02 = Netmask 0x03 = Ethernet MAC Address 0x04 = Gateway 0x05 = DNS 1 0x06 = DNS 2
Data [3] To Data [N]	Address Setting		When Network Mode = DHCP: 0x00 = Disable address writing, N = 3 (1 byte). When Network Mode = Static IP: 1. 0x00 = Disable address writing, N = 3 (1 byte). 2. Ethernet MAC Address: N = 8 (6 bytes). Data [3] to Data [8]: 0x00 ~ 0xFF 3. The others Address: N = 6 (4 bytes). Data [3] to Data [6]: 0 ~ 255 (0x00 ~ 0xFF)

Example: Network Configuration – Set Static IP / MAC-12:34:56:78:9A:FF (Display address 01)

Header	Monitor ID	Category	Code [0]	Code [1]	Length	Data Control	Data [0]	Data [1]	Data [2]
0xA6	0x01	0x00	0x00	0x00	0x0B	0x01	0x05	0x02	0x03
Data [3]	Data [4]	Data [5]	Data [6]	Data [7]	Data [8]	Checksum			
0x12	0x34	0x56	0x78	0x9A	0xFF	0xC4			

Example: Network Configuration – Set Static IP / IP Address: 192.168.0.1 (Display address 01)

Header	Monitor ID	Category	Code [0]	Code [1]	Length	Data Control	Data [0]	Data [1]	Data [2]
0xA6	0x01	0x00	0x00	0x00	0x09	0x01	0x05	0x02	0x01
Data [3]	Data [4]	Data [5]	Data [6]	Checksum					
0xC0	0xA8	0x00	0x01	0xC0					

Example: Network Configuration – Set DHCP & Disable all address (Display address 01)

Header	Monitor ID	Category	Code [0]	Code [1]	Length	Data Control	Data [0]	Data [1]	Data [2]
0xA6	0x01	0x00	0x00	0x00	0x06	0x01	0x05	0x01	0x00
Data [3]	Checksum								
0x00	0xA4								

Example: Network Configuration – Set Static IP & all IP no change (Display address 01)

Header	Monitor ID	Category	Code [0]	Code [1]	Length	Data Control	Data [0]	Data [1]	Data [2]
0xA6	0x01	0x00	0x00	0x00	0x06	0x01	0x05	0x02	0x00
Data [3]	Checksum								
0x00	0xA7								

4.1.2 Message - Set - ACK Reply

Display address 01

Header	Monitor ID	Category	Page	Length	Data Control	Data [0]	Data [1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0x05	0x00	0x20

4.1.3 Message – Get

Bytes	Bytes Description	Bits	Description
Data [0]	0x06 = Network Configuration - Get		Command requests the display to report its current setting.
Data [1]	Address Function		0x01 = IP Address 0x02 = Netmask 0x03 = Ethernet MAC Address 0x04 = Gateway 0x05 = DNS 1 0x06 = DNS 2

Example: Network Configuration - Get IP Address – 0x01 (Display address 01)

Header	Monitor ID	Category	Code [0]	Code [1]	Length	Data Control	Data [0]	Data [1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0x06	0x01	0xA5

4.1.4 Message - Get Report

Bytes	Bytes Description	Bits	Description
Data [0]	0x06 = Network Configuration - Get		Command reports Network Configuration setting.
Data [1]	Network Mode		0x01 = DHCP 0x02 = Static IP
Data [2]	Address Function		0x01 = IP Address 0x02 = Netmask 0x03 = Ethernet MAC Address 0x04 = Gateway 0x05 = DNS 1 0x06 = DNS 2
Data [3] To Data [N]	Address Setting		1. Ethernet MAC Address: N = 8 (6 bytes). Data [3] to Data [8]: 0x00 ~ 0xFF 2. The others Address: N = 6 (4 bytes). Data [3] to Data [6]: 0 ~ 255 (0x00 ~ 0xFF)

Example: Network Configuration - Get Static IP / MAC-12:34:56:78:9A:FF (Display address 01)

Header	Monitor ID	Category	Page	Length	Data Control	Data [0]	Data [1]	Data [2]	Data [3]
0x21	0x01	0x00	0x00	0x0B	0x01	0x06	0x02	0x03	0x12

Data [4]	Data [5]	Data [6]	Data [7]	Data [8]	Checksum
0x34	0x56	0x78	0x9A	0xFF	0x40

Example: Network Configuration - Get DHCP / Net Mask: 255.255.255.0 (Display address 01)

Header	Monitor ID	Category	Page	Length	Data Control	Data [0]	Data [1]	Data [2]	Data [3]
0x21	0x01	0x00	0x00	0x09	0x01	0x06	0x01	0x02	0xFF

Data [4]	Data [5]	Data [6]	Checksum
0xFF	0xFF	0x00	0xD2

4.2 Network Name

This command is used to set/get the Network Name setting as it is defined as below.

4.2.1 Message – Set

Bytes	Bytes Description	Bits	Description
Data [0]	0x09 = Network Name - Set		Command to change the Network Name setting of the display.
Data [1] To Data [N]	Network Name		Character (0~9, A~Z, Space, +, -, /, :) acc. ASCII character map (hex) for N-digit Network Name setting. N is no. of character maximum: 16 (0x10). The actual size determines the value of the message size byte.

Example: Network Name – Set “AGN TBX-2201 ” – 0x01 (Display address 01)

Header	Monitor ID	Category	Code [0]	Code [1]	Length	Data Control	Data [0]	Data [1]	Data [2]
0xA6	0x01	0x00	0x00	0x00	0x13	0x01	0x09	0x41	0x47

Data [3]	Data [4]	Data [5]	Data [6]	Data [7]	Data [8]	Data [9]	Data [10]	Data [11]	Data [12]	Data [13]
0x4E	0x20	0x54	0x42	0x58	0x2D	0x32	0x32	0x30	0x31	0x20

Data [14]	Data [15]	Data [16]	Checksum
0x20	0x20	0x20	0xB6

4.2.2 Message - Set - ACK Reply

Display address 01

Header	Monitor ID	Category	Page	Length	Data Control	Data [0]	Data [1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0x09	0x00	0x2C

4.2.3 Message – Get

Bytes	Bytes Description	Bits	Description
Data [0]	0x0A = Network Name - Get		Command requests the display to report its current setting.

Example: Network Name - Get (Display address 01)

Header	Monitor ID	Category	Code [0]	Code [1]	Length	Data Control	Data [0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0x0A	0xAF

4.2.4 Message – Get Report

Bytes	Bytes Description	Bits	Description
Data [0]	0x0A = Network Name - Report		Command reports Network Name setting. N is no. of character (0~9, A~Z, Space, +, -, /, :) maximum: 16 (0x10). The actual size determines the value of the message size byte.

Example: Network Name - Get “AGN TBX-2201 ” - Display address 01

Header	Monitor ID	Category	Page	Length	Data Control	Data [0]	Data [1]	Data [2]
0x21	0x01	0x00	0x00	0x13	0x01	0x0A	0x41	0x47

Data [3]	Data [4]	Data [5]	Data [6]	Data [7]	Data [8]	Data [9]	Data [10]	Data [11]	Data [12]	Data [13]
0x4E	0x20	0x54	0x42	0x58	0x2D	0x32	0x32	0x30	0x31	0x20

Data [14]	Data [15]	Data [16]	Checksum
0x20	0x20	0x20	0x32

4.3 MISCELLANEOUS

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

4.3.1 Message – Get

Bytes	Bytes Description	Bits	Description
Data [0]	0x0F = Miscellaneous Info. - Get		Command requests the display to report from miscellaneous information.
Data [1]	Sub command		0x02 = Operating Hours (All other values are reserved)

Example: Miscellaneous - Get (Display address 01)

Header	Monitor ID	Category	Code [0]	Code [1]	Length	Data Control	Data [0]	Data [1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0x0F	0x02	0xAF

4.3.2 Message – Report

Bytes	Bytes Description	Bits	Description
Data [0]	0x0F = Miscellaneous Info. - Get		Command reports current information.
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: Miscellaneous-Get current display operation hours value -10 hrs (Display address 01)

Header	Monitor ID	Category	Page	Length	Data Control	Data [0]	Data [1]	Data [2]	Checksum
0x21	0x01	0x00	0x00	0x05	0x01	0x0F	0x00	0x0A	0x21

4.4 Power State

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

It's also support power state command when now the status is power off (saving) mode.

4.4.1 Message – Set

Bytes	Bytes Description	Bits	Description
Data [0]	0x18 = Power state - Set		Command to change the Power state of the display.
Data [1]	Power state		0x01 = Power OFF 0x02 = Power ON

Example: Power State - Set OFF – 0x01 (Display address 01)

Header	Monitor ID	Category	Code [0]	Code [1]	Length	Data Control	Data [0]	Data [1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0x18	0x01	0xBB

4.4.2 Message - Set - ACK Reply

Display address 01

Header	Monitor ID	Category	Page	Length	Data Control	Data [0]	Data [1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0x18	0x00	0x3D

4.4.3 Message – Get

Bytes	Bytes Description	Bits	Description
Data [0]	0x19 = Power state - Get		Command requests the display to report its current setting.

Example: Power State - Get (Display address 01)

Header	Monitor ID	Category	Code [0]	Code [1]	Length	Data Control	Data [0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0x19	0xBC

4.4.4 Message – Get Report

Bytes	Bytes Description	Bits	Description
Data [0]	0x19 = Power state - Report		Command reports Power state.
Data [1]	Power state		0x01 = Power OFF 0x02 = Power ON

Example: Power State - Get ON - 0x02 (Display address 01)

Header	Monitor ID	Category	Page	Length	Data Control	Data [0]	Data [1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0x19	0x02	0x3E

4.5 User Input Control

This command is used to set/get the lock/unlock the remote control and local keypad functionality corresponding setting as it is defined as below. It's also support User Input Control command when now the status is power off (saving) mode.

4.5.1 Message – Set

Bytes	Bytes Description	Bits	Description
Data [0]	0x1C = User Input Control - Set		Command to change the lock/unlock setting of the display.
Data [1]	Lock: 0 Unlock: 1	7 - 3	No using.
		2	Power key lock.
		1	Local keyboard.
		0	Remote control / Unused = “1” (N/A)

Example: Unlock all key / Unlock Remote control – 0x07 (Display address 01)

Header	Monitor ID	Category	Code [0]	Code [1]	Length	Data Control	Data [0]	Data [1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0x1C	0x07	0xB9

4.5.2 Message - Set - ACK Reply

Display address 01

Header	Monitor ID	Category	Page	Length	Data Control	Data [0]	Data [1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0x1C	0x00	0x39

*Current model not support: Only power key lock

Data [1] = 0x01 = Key lock all (except power key when Power OFF mode no support)

Data [1] = 0x03 = No support

Data [1] = 0x05 = Key lock all (except power key)

Data [1] = 0x07 = Key unlock all

4.5.3 Message – Get

Bytes	Bytes Description	Bits	Description
Data [0]	0x1D = User Input Control - Get		Command requests the display to report its current setting.

Example: Lock/Unlock Control - Get (Display address 01)

Header	Monitor ID	Category	Code [0]	Code [1]	Length	Data Control	Data [0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0x1D	0xB8

4.5.4 Message – Get Report

Bytes	Bytes Description	Bits	Description
Data [0]	0x1D = User Input Control - Report		Command reports lock/unlock setting.
Data [1]	Lock: 0 Unlock: 1	7 - 3	No using.
		2	Power key lock.
		1	Local keyboard.
		0	Remote control / Unused = “1” (N/A)

Example: Get Lock all key / Unlock Remote control – 0x01 (Display address 01)

Header	Monitor ID	Category	Page	Length	Data Control	Data [0]	Data [1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0x1D	0x01	0x39

*Current model not support: Only power key lock

Data [1] = 0x01 = Key lock all

Data [1] = 0x03 = No support

Data [1] = 0x05 = Key lock all (except power key)

Data [1] = 0x07 = Key unlock

4.6 Backlight Level

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

It's also support Backlight command when now the status is power off (saving) mode.

4.6.1 Message – Set

Bytes	Bytes Description	Bits	Description
Data [0]	0x30 = Backlight level - Set		Command to change the backlight level of the display.
Data [1]	Backlight level		0x00 ~ 0x64 (0 ~ 100) of the user selectable range of the backlight level. OSD: 0 (0x00); OSD: 50 (0x32); OSD: 100 (0x64)

Example: Backlight level – Set OSD 50 – 0x32 (Display address 01)

Header	Monitor ID	Category	Code [0]	Code [1]	Length	Data Control	Data [0]	Data [1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0x30	0x32	0xA0

4.6.2 Message - Set - ACK Reply

Display address 01

Header	Monitor ID	Category	Page	Length	Data Control	Data [0]	Data [1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0x30	0x00	0x15

4.6.3 Message – Get

Bytes	Bytes Description	Bits	Description
Data [0]	0x31 = Backlight level - Get		Command requests the display to report its current backlight level.

Example: Backlight level - Get (Display address 01)

Header	Monitor ID	Category	Code [0]	Code [1]	Length	Data Control	Data [0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0x31	0x94

4.6.4 Message – Get Report

Bytes	Bytes Description	Bits	Description
Data [0]	0x31 = Backlight level - Report		Command reports backlight level.
Data [1]	Backlight level		0x00 ~ 0x64 (0 ~ 100) of the user selectable range of the backlight level. OSD: 0 (0x00); OSD: 50 (0x32); OSD: 100 (0x64)

Example: Backlight level – Get OSD 50 – 0x32 (Display address 01)

Header	Monitor ID	Category	Page	Length	Data Control	Data [0]	Data [1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0x31	0x32	0x26

4.7 Color Temperature

This command is used to set/get the color temperature setting as it is defined as below.

4.7.1 Message – Set

Bytes	Bytes Description	Bits	Description
Data [0]	0x34 = Color temperature - Set		Command to change the color temperature setting of the display.
Data [1]	Color temperature		0x20 = WARM 0x21 = COOL 0x23 = USER 0x24 = NEUTRAL

Example: Color temperature – Set WARM – 0x20 (Display address 01)

Header	Monitor ID	Category	Code [0]	Code [1]	Length	Data Control	Data [0]	Data [1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0x34	0x20	0xB6

4.7.2 Message - Set - ACK Reply

Display address 01

Header	Monitor ID	Category	Page	Length	Data Control	Data [0]	Data [1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0x34	0x00	0x11

4.7.3 Message – Get

Bytes	Bytes Description	Bits	Description
Data [0]	0x35 = Color temperature - Get		Command requests the display to report its current setting.

Example: Color temperature - Get (Display address 01)

Header	Monitor ID	Category	Code [0]	Code [1]	Length	Data Control	Data [0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0x35	0x90

4.7.4 Message – Get Report

Bytes	Bytes Description	Bits	Description
Data [0]	0x35 = Color temperature - Report		Command reports color temperature setting.
Data [1]	Color temperature		0x20 = WARM 0x21 = COOL 0x23 = USER 0x24 = NEUTRAL

Example: Color temperature – Get COOL – 0x21 (Display address 01)

Header	Monitor ID	Category	Page	Length	Data Control	Data [0]	Data [1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0x35	0x21	0x31

4.8 Volume

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

It's also support Volume command when now the status is power off (saving) mode.

4.8.1 Message – Set

Bytes	Bytes Description	Bits	Description
Data [0]	0x44 = Volume level - Set		Command to change the Volume level of the display.
Data [1]	Volume Level		0x00 ~ 0x64 (0 ~ 100) of the user selectable range of the volume level. OSD: 0 (0x00), OSD: 100 (0x64)

Example: Volume level – Set Volume 50 (0x32) - (Display address 01)

Header	Monitor ID	Category	Code [0]	Code [1]	Length	Data Control	Data [0]	Data [1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0x44	0x32	0xD4

4.8.2 Message - Set - ACK Reply

Display address 01

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

4.8.3 Message – Get

Bytes	Bytes Description	Bits	Description
Data [0]	0x45 = Volume level - Get		Command requests the display to report its current Volume level.

Example: Volume level - Get (Display address 01)

Header	Monitor ID	Category	Code [0]	Code [1]	Length	Data Control	Data [0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0x45	0xE0

4.8.4 Message – Get Report

Bytes	Bytes Description	Bits	Description
Data [0]	0x45 = Volume level - Report		Command reports Volume level.
Data [1]	Volume level		0x00 ~ 0x64 (0 ~ 100) of the user selectable range of the volume level. OSD: 0 (0x00), OSD: 100 (0x64)

Example: Volume level – Get Volume 50 (0x32) - (Display address 01)

Header	Monitor ID	Category	Page	Length	Data Control	Data [0]	Data [1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0x45	0x32	0x52

4.9 COLOR RANGE

This command is used to set/get the Color Range setting as it is defined as below.

4.9.1 Message – Set

Bytes	Bytes Description	Bits	Description
Data [0]	0x50 = Color Range - Set		Command to change the Color Range setting of the display.
Data [1]	Color Range		0x00 = FULL 0x01 = LIMITED

Example: Color Range – Set FULL – 0x00 (Display address 01)

Header	Monitor ID	Category	Code [0]	Code [1]	Length	Data Control	Data [0]	Data [1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0x50	0x00	0xF2

4.9.2 Message - Set - ACK Reply

Display address 01

Header	Monitor ID	Category	Page	Length	Data Control	Data [0]	Data [1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0x50	0x00	0x75

4.9.3 Message – Get

Bytes	Bytes Description	Bits	Description
Data [0]	0x51 = Color Range - Get		Command requests the display to report its current setting.

Example: Color Range - Get (Display address 01)

Header	Monitor ID	Category	Code [0]	Code [1]	Length	Data Control	Data [0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0x51	0xF4

4.9.4 Message – Get Report

Bytes	Bytes Description	Bits	Description
Data [0]	0x51 = Color Range - Report		Command reports Color Range setting.
Data [1]	Color Range		0x00 = FULL 0x01 = LIMITED

Example: Color Range – Get LIMITED – 0x01 (Display address 01)

Header	Monitor ID	Category	Page	Length	Data Control	Data [0]	Data [1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0x51	0x01	0x75

4.10 LED ON/OFF

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

4.10.1 Message – Set

Bytes	Bytes Description	Bits	Description
Data [0]	0x52 = LED ON/OFF - Set		Command to change the LED ON/OFF setting of the display.
Data [1]	LED ON/OFF		0x00 = OFF 0x01 = ON

Example: LED ON/OFF – Set ON – 0x01 (Display address 01)

Header	Monitor ID	Category	Code [0]	Code [1]	Length	Data Control	Data [0]	Data [1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0x52	0x01	0xF1

4.10.2 Message - Set - ACK Reply

Display address 01

Header	Monitor ID	Category	Page	Length	Data Control	Data [0]	Data [1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0x52	0x00	0x77

4.10.3 Message – Get

Bytes	Bytes Description	Bits	Description
Data [0]	0x53 = LED ON/OFF - Get		Command requests the display to report its current setting.

Example: LED ON/OFF - Get (Display address 01)

Header	Monitor ID	Category	Code [0]	Code [1]	Length	Data Control	Data [0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0x53	0xF6

4.10.4 Message – Get Report

Bytes	Bytes Description	Bits	Description
Data [0]	0x53 = LED ON/OFF - Report		Command reports LED ON/OFF setting.
Data [1]	LED ON/OFF		0x00 = OFF 0x01 = ON

Example: LED ON/OFF – Get ON – 0x01 (Display address 01)

Header	Monitor ID	Category	Page	Length	Data Control	Data [0]	Data [1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0x53	0x01	0x77

4.11 Signal Info

This command is used to set/get the Signal Info. setting as it is defined as below.

4.11.1 Message – Set

Bytes	Bytes Description	Bits	Description
Data [0]	0x54 = Signal Info. - Set		Command to change the Signal Info. setting of the display.
Data [1]	Signal Info.		0x00 = OFF 0x01 = ON

Example: Signal Info. – Set ON – 0x01 (Display address 01)

Header	Monitor ID	Category	Code [0]	Code [1]	Length	Data Control	Data [0]	Data [1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0x54	0x01	0xF7

4.11.2 Message - Set - ACK Reply

Display address 01

Header	Monitor ID	Category	Page	Length	Data Control	Data [0]	Data [1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0x54	0x00	0x71

4.11.3 Message – Get

Bytes	Bytes Description	Bits	Description
Data [0]	0x55 = Signal Info. - Get		Command requests the display to report its current setting.

Example: Signal Info. - Get (Display address 01)

Header	Monitor ID	Category	Code [0]	Code [1]	Length	Data Control	Data [0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0x55	0xF0

4.11.4 Message – Get Report

Bytes	Bytes Description	Bits	Description
Data [0]	0x55 = Signal Info. - Report		Command reports Signal Info setting.
Data [1]	Signal Info.		0x00 = OFF 0x01 = ON

Example: Signal Info. – Get ON – 0x01 (Display address 01)

Header	Monitor ID	Category	Page	Length	Data Control	Data [0]	Data [1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0x55	0x01	0x71

4.12 BLUE SCREEN

This command is used to set/get the Blue Screen setting as it is defined as below.

4.12.1 Message – Set

Bytes	Bytes Description	Bits	Description
Data [0]	0x56 = Blue Screen - Set		Command to change the Blue Screen setting of the display.
Data [1]	Blue Screen		0x00 = OFF 0x01 = ON

Example: Blue Screen – Set ON – 0x01 (Display address 01)

Header	Monitor ID	Category	Code [0]	Code [1]	Length	Data Control	Data [0]	Data [1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0x56	0x01	0xF5

4.12.2 Message - Set - ACK Reply

Display address 01

Header	Monitor ID	Category	Page	Length	Data Control	Data [0]	Data [1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0x56	0x00	0x73

4.12.3 Message – Get

Bytes	Bytes Description	Bits	Description
Data [0]	0x57 = Blue Screen - Get		Command requests the display to report its current setting.

Example: Blue Screen - Get (Display address 01)

Header	Monitor ID	Category	Code [0]	Code [1]	Length	Data Control	Data [0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0x57	0xF2

4.12.4 Message – Get Report

Bytes	Bytes Description	Bits	Description
Data [0]	0x57 = Blue Screen - Report		Command reports Blue Screen setting.
Data [1]	Blue Screen		0x00 = OFF 0x01 = ON

Example: Blue Screen – Get ON – 0x01 (Display address 01)

Header	Monitor ID	Category	Page	Length	Data Control	Data [0]	Data [1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0x57	0x01	0x73

4.13 LOGO

This command is used to set/get the LOGO ON/OFF setting as it is defined as below.

4.13.1 Message – Set

Bytes	Bytes Description	Bits	Description
Data [0]	0x58 = LOGO - Set		Command to change the LOGO setting of the display.
Data [1]	LOGO		0x00 = OFF 0x01 = ON

Example: LOGO – Set ON – 0x01 (Display address 01)

Header	Monitor ID	Category	Code [0]	Code [1]	Length	Data Control	Data [0]	Data [1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0x58	0x01	0xFB

4.13.2 Message - Set - ACK Reply

Display address 01

Header	Monitor ID	Category	Page	Length	Data Control	Data [0]	Data [1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0x58	0x00	0x7D

4.13.3 Message – Get

Bytes	Bytes Description	Bits	Description
Data [0]	0x59 = LOGO - Get		Command requests the display to report its current setting.

Example: LOGO - Get (Display address 01)

Header	Monitor ID	Category	Code [0]	Code [1]	Length	Data Control	Data [0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0x59	0xFC

4.13.4 Message – Get Report

Bytes	Bytes Description	Bits	Description
Data [0]	0x59 = LOGO - Report		Command reports LOGO setting.
Data [1]	LOGO		0x00 = OFF 0x01 = ON

Example: LOGO – Get ON – 0x01 (Display address 01)

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

4.14 Color RGB

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

4.14.1 Message – Set

Bytes	Bytes Description	Bits	Description
Data [0]	0x66 = Color RGB - Set		Command to change the Color RGB setting of the display.
Data [1]	Red color gain value		0 ~ 255 (0x00 ~ 0xFF) of the user selectable range of the Color RGB.
Data [2]	Green color gain value		0 ~ 255 (0x00 ~ 0xFF) of the user selectable range of the Color RGB.
Data [3]	Blue color gain value		0 ~ 255 (0x00 ~ 0xFF) of the user selectable range of the Color RGB.

Example: Color RGB – Set all to 255 (0xFF) (Display address 01)

Header	Monitor ID	Category	Code [0]	Code [1]	Length	Data Control	Data [0]	Data [1]	Data [2]
0xA6	0x01	0x00	0x00	0x00	0x06	0x01	0x66	0xFF	0xFF

Data [3]	Checksum
0xFF	0x39

4.14.2 Message - Set - ACK Reply

Display address 01

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

4.14.3 Message – Get

Bytes	Bytes Description	Bits	Description
Data [0]	0x67 = Color RGB - Get		Command requests the display to report its current setting.

Example: Color RGB - Get (Display address 01)

Header	Monitor ID	Category	Code [0]	Code [1]	Length	Data Control	Data [0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0x67	0xC2

4.14.4 Message – Get Report

Bytes	Bytes Description	Bits	Description
Data [0]	0x67 = Color RGB - Report		Command reports Color RGB setting.
Data [1]	Red color gain value		0 ~ 255 (0x00 ~ 0xFF) of the user selectable range of the color temperature.
Data [2]	Green color gain value		0 ~ 255 (0x00 ~ 0xFF) of the user selectable range of the color temperature.
Data [3]	Blue color gain value		0 ~ 255 (0x00 ~ 0xFF) of the user selectable range of the color temperature.

Example: Color RGB – Get all 0xFF (Display address 01)

Header	Monitor ID	Category	Page	Length	Data Control	Data [0]	Data [1]	Data [2]
0x21	0x01	0x00	0x00	0x06	0x01	0x67	0xFF	0xFF

Data [3]	Checksum
0xFF	0xBF

4.15 Platform/Version Label

This command is used to get the platform/version label as it is defined as below.

It's also support Platform/Version command when now the status is power off (saving) mode.

4.15.1 Message – Get

Bytes	Bytes Description	Bits	Description
Data [0]	0xA2 = Platform / Version Label - Get		Command requests the display to report its current platform / version label.
Data [1]	Platform / Version Label		0x00 = F/W version 0x01 = Model Name

Example: Platform/Version Label - Get Model Name (0x01) - (Display address 01)

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

4.15.2 Message – Get Report

Bytes	Bytes Description	Bits	Description
Data [0]	0xA2 = Platform / Version Label - Report		Command reports platform/version label.
Data [1] To Data [N]	Character [1] to [N]		Character acc. ASCII character map (hex) for N-digit serial code. N is no. of character maximum: 36 (0x24). The actual size determines the value of the message size byte.

Example: Platform & Version Label Data - Get Model Name “AGN TBX-2201” –
Display address 01

Header	Monitor ID	Category	Page	Length	Data Control	Data [0]	Data [1]	Data [2]
0x21	0x01	0x00	0x00	0x0D	0x01	0xA2	0x41	0x47

Data [3]	Data [4]	Data [5]	Data [6]	Data [7]	Data [8]	Data [9]	Data [10]	Data [11]	Data [12]	Checksum
0x4E	0x20	0x54	0x42	0x58	0x2D	0x32	0x32	0x30	0x31	0x84

4.16 BRIGHTNESS

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

It's also support Brightness command when now the status is power off (saving) mode.

4.16.1 Message – Set

Bytes	Bytes Description	Bits	Description
Data [0]	0xC0 = Brightness level - Set		Command to change the Brightness level of the display.
Data [1]	Brightness level		0x00 ~ 0x64 (0 ~ 100) of the user selectable range of the Brightness. OSD: 0 (0x00); OSD: 50 (0x32); OSD: 100 (0x64)

Example: Brightness level – Set OSD 50 – 0x32 (Display address 01)

Header	Monitor ID	Category	Code [0]	Code [1]	Length	Data Control	Data [0]	Data [1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0xC0	0x32	0x50

4.16.2 Message - Set - ACK Reply

Display address 01

Header	Monitor ID	Category	Page	Length	Data Control	Data [0]	Data [1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0xC0	0x00	0xE5

4.16.3 Message – Get

Bytes	Bytes Description	Bits	Description
Data [0]	0xC1 = Brightness level - Get		Command requests the display to report its current Brightness level.

Example: Brightness level - Get (Display address 01)

Header	Monitor ID	Category	Code [0]	Code [1]	Length	Data Control	Data [0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0xC1	0x64

4.16.4 Message – Get Report

Bytes	Bytes Description	Bits	Description
Data [0]	0xC1 = Brightness level - Report		Command reports Brightness level.
Data [1]	Brightness level		0x00 ~ 0x64 (0 ~ 100) of the user selectable range of the Brightness. OSD: 0 (0x00); OSD: 50 (0x32); OSD: 100 (0x64)

Example: Brightness level – Get OSD 50 – 0x32 (Display address 01)

Header	Monitor ID	Category	Page	Length	Data Control	Data [0]	Data [1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0xC1	0x32	0xD6

4.17 CONTRAST

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

4.17.1 Message – Set

Bytes	Bytes Description	Bits	Description
Data [0]	0xC2 = Contrast level - Set		Command to change the Contrast level of the display.
Data [1]	Contrast level		0x00 ~ 0x64 (0 ~ 100) of the user selectable range of the Contrast. OSD: 0 (0x00); OSD: 50 (0x32); OSD: 100 (0x64)

Example: Contrast level – Set OSD 50 – 0x32 (Display address 01)

Header	Monitor ID	Category	Code [0]	Code [1]	Length	Data Control	Data [0]	Data [1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0xC2	0x32	0x52

4.17.2 Message - Set - ACK Reply

Display address 01

Header	Monitor ID	Category	Page	Length	Data Control	Data [0]	Data [1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0xC2	0x00	0xE7

4.17.3 Message – Get

Bytes	Bytes Description	Bits	Description
Data [0]	0xC3 = Contrast level - Get		Command requests the display to report its current Contrast level.

Example: Contrast level - Get (Display address 01)

Header	Monitor ID	Category	Code [0]	Code [1]	Length	Data Control	Data [0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0xC3	0x66

4.17.4 Message – Get Report

Bytes	Bytes Description	Bits	Description
Data [0]	0xC3 = Contrast level - Report		Command reports Contrast level.
Data [1]	Contrast level		0x00 ~ 0x64 (0 ~ 100) of the user selectable range of the Contrast. OSD: 0 (0x00); OSD: 50 (0x32); OSD: 100 (0x64)

Example: Contrast level – Get OSD 50 – 0x32 (Display address 01)

Header	Monitor ID	Category	Page	Length	Data Control	Data [0]	Data [1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0xC3	0x32	0xD4

4.18 Black Level

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

4.18.1 Message – Set

Bytes	Bytes Description	Bits	Description
Data [0]	0xC4 = Black level - Set		Command to change the Black level of the display.
Data [1]	Black level		0x00 ~ 0x64 (0 ~ 100) of the user selectable range of the Black level. OSD: 0 (0x00); OSD: 50 (0x32); OSD: 100 (0x64)

Example: Black level – Set OSD 50 – 0x32 (Display address 01)

Header	Monitor ID	Category	Code [0]	Code [1]	Length	Data Control	Data [0]	Data [1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0xC4	0x32	0x54

4.18.2 Message - Set - ACK Reply

Display address 01

Header	Monitor ID	Category	Page	Length	Data Control	Data [0]	Data [1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0xC4	0x00	0xE1

4.18.3 Message – Get

Bytes	Bytes Description	Bits	Description
Data [0]	0xC5 = Black level - Get		Command requests the display to report its current Black level.

Example: Black level - Get (Display address 01)

Header	Monitor ID	Category	Code [0]	Code [1]	Length	Data Control	Data [0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0xC5	0x60

4.18.4 Message – Get Report

Bytes	Bytes Description	Bits	Description
Data [0]	0xC5 = Black level - Report		Command reports Black level.
Data [1]	Black level		0x00 ~ 0x64 (0 ~ 100) of the user selectable range of the Black level. OSD: 0 (0x00); OSD: 50 (0x32); OSD: 100 (0x64)

Example: Black level – Get OSD 50 – 0x32 (Display address 01)

Header	Monitor ID	Category	Page	Length	Data Control	Data [0]	Data [1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0xC5	0x32	0xD2

4.19 Sharpness

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

4.19.1 Message – Set

Bytes	Bytes Description	Bits	Description
Data [0]	0xC6 = Sharpness level - Set		Command to change the Sharpness level of the display.
Data [1]	Sharpness level		0x00 ~ 0x64 (0 ~ 100) of the user selectable range of the Sharpness. OSD: 0 (0x00); OSD: 50 (0x32); OSD: 100 (0x64)

Example: Sharpness level – Set OSD 50 – 0x32 (Display address 01)

Header	Monitor ID	Category	Code [0]	Code [1]	Length	Data Control	Data [0]	Data [1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0xC6	0x32	0x56

4.19.2 Message - Set - ACK Reply

Display address 01

Header	Monitor ID	Category	Page	Length	Data Control	Data [0]	Data [1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0xC6	0x00	0xE3

4.19.3 Message – Get

Bytes	Bytes Description	Bits	Description
Data [0]	0xC7 = Sharpness level - Get		Command requests the display to report its current Sharpness level.

Example: Sharpness level - Get (Display address 01)

Header	Monitor ID	Category	Code [0]	Code [1]	Length	Data Control	Data [0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0xC7	0x62

4.19.4 Message – Get Report

Bytes	Bytes Description	Bits	Description
Data [0]	0xC7 = Sharpness level - Report		Command reports Sharpness level.
Data [1]	Sharpness level		0x00 ~ 0x64 (0 ~ 100) of the user selectable range of the Sharpness. OSD: 0 (0x00); OSD: 50 (0x32); OSD: 100 (0x64)

Example: Sharpness level – Get OSD 50 – 0x32 (Display address 01)

Header	Monitor ID	Category	Page	Length	Data Control	Data [0]	Data [1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0xC7	0x32	0xD0

4.20 HUE (TINT)

This command is used to set/get the HUE (TINT) level as it is defined as below.

4.20.1 Message – Set

Bytes	Bytes Description	Bits	Description
Data [0]	0xC8 = HUE (TINT) level - Set		Command to change the HUE (TINT) level of the display.
Data [1]	HUE (TINT) level		0x00 ~ 0x64 (0 ~ 100) of the user selectable range of the HUE (TINT) level. OSD: 0 (0x00); OSD: 50 (0x32); OSD: 100 (0x64)

Example: HUE (TINT) level – Set OSD 50 – 0x32 (Display address 01)

Header	Monitor ID	Category	Code [0]	Code [1]	Length	Data Control	Data [0]	Data [1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0xC8	0x32	0x58

4.20.2 Message - Set - ACK Reply

Display address 01

Header	Monitor ID	Category	Page	Length	Data Control	Data [0]	Data [1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0xC8	0x00	0xED

4.20.3 Message – Get

Bytes	Bytes Description	Bits	Description
Data [0]	0xC9 = HUE (TINT) level - Get		Command requests the display to report its current HUE (TINT) level.

Example: HUE (TINT) level - Get (Display address 01)

Header	Monitor ID	Category	Code [0]	Code [1]	Length	Data Control	Data [0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0xC9	0x6C

4.20.4 Message – Get Report

Bytes	Bytes Description	Bits	Description
Data [0]	0xC9 = HUE (TINT) level - Report		Command reports HUE (TINT) level.
Data [1]	HUE (TINT) level		0x00 ~ 0x64 (0 ~ 100) of the user selectable range of the HUE (TINT) level. OSD: 0 (0x00); OSD: 50 (0x32); OSD: 100 (0x64)

Example: HUE (TINT) level – Get OSD 50 – 0x32 (Display address 01)

Header	Monitor ID	Category	Page	Length	Data Control	Data [0]	Data [1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0xC9	0x32	0xDE

4.21 SATURATION

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

4.21.1 Message – Set

Bytes	Bytes Description	Bits	Description
Data [0]	0xCA = Saturation level - Set		Command to change the Saturation level of the display.
Data [1]	Saturation level		0x00 ~ 0x64 (0 ~ 100) of the user selectable range of the Saturation. OSD: 0 (0x00); OSD: 50 (0x32); OSD: 100 (0x64)

Example: Saturation level – Set OSD 50 – 0x32 (Display address 01)

Header	Monitor ID	Category	Code [0]	Code [1]	Length	Data Control	Data [0]	Data [1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0xCA	0x32	0x5A

4.21.2 Message - Set - ACK Reply

Display address 01

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

4.21.3 Message – Get

Bytes	Bytes Description	Bits	Description
Data [0]	0xCB = Saturation level - Get		Command requests the display to report its current Saturation level.

Example: Saturation level - Get (Display address 01)

Header	Monitor ID	Category	Code [0]	Code [1]	Length	Data Control	Data [0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0xCB	0x6E

4.21.4 Message – Get Report

Bytes	Bytes Description	Bits	Description
Data [0]	0xCB = Saturation level - Report		Command reports Saturation level.
Data [1]	Saturation level		0x00 ~ 0x64 (0 ~ 100) of the user selectable range of the Saturation. OSD: 0 (0x00); OSD: 50 (0x32); OSD: 100 (0x64)

Example: Saturation level – Get OSD 50 – 0x32 (Display address 01)

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

4.22 DCR

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

4.22.1 Message – Set

Bytes	Bytes Description	Bits	Description
Data [0]	0xD2 = DCR - Set		Command to change the DCR setting of the display.
Data [1]	DCR		0x00 = OFF 0x01 = ON

Example: DCR – Set ON – 0x01 (Display address 01)

Header	Monitor ID	Category	Code [0]	Code [1]	Length	Data Control	Data [0]	Data [1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0xD2	0x01	0x71

4.22.2 Message - Set - ACK Reply

Display address 01

Header	Monitor ID	Category	Page	Length	Data Control	Data [0]	Data [1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0xD2	0x00	0xF7

4.22.3 Message – Get

Bytes	Bytes Description	Bits	Description
Data [0]	0xD3 = DCR - Get		Command requests the display to report its current setting.

Example: DCR - Get (Display address 01)

Header	Monitor ID	Category	Code [0]	Code [1]	Length	Data Control	Data [0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0xD3	0x76

4.22.4 Message – Get Report

Bytes	Bytes Description	Bits	Description
Data [0]	0xD3 = DCR - Report		Command reports DCR setting.
Data [1]	DCR		0x00 = OFF 0x01 = ON

Example: DCR – Get ON – 0x01 (Display address 01)

Header	Monitor ID	Category	Page	Length	Data Control	Data [0]	Data [1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0xD3	0x01	0xF7

4.23 Gamma

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

4.23.1 Message – Set

Bytes	Bytes Description	Bits	Description
Data [0]	0xDC = Gamma - Set		Command to change the Gamma setting of the display.
Data [1]	Gamma		0x00 = 2.2 0x01 = 2.4 0x04 = 2.0 0x05 = S-Curve

Example: Gamma – Set 2.4 – 0x01 (Display address 01)

Header	Monitor ID	Category	Code [0]	Code [1]	Length	Data Control	Data [0]	Data [1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0xDC	0x01	0x7F

4.23.2 Message - Set - ACK Reply

Display address 01

Header	Monitor ID	Category	Page	Length	Data Control	Data [0]	Data [1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0xDC	0x00	0xF9

4.23.3 Message – Get

Bytes	Bytes Description	Bits	Description
Data [0]	0xDD = Gamma - Get		Command requests the display to report its current setting.

Example: Gamma - Get (Display address 01)

Header	Monitor ID	Category	Code [0]	Code [1]	Length	Data Control	Data [0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0xDD	0x78

4.23.4 Message – Get Report

Bytes	Bytes Description	Bits	Description
Data [0]	0xDD = Gamma - Report		Command reports Gamma setting.
Data [1]	Gamma		0x00 = 2.2 0x01 = 2.4 0x04 = 2.0 0x05 = S-Curve

Example: Gamma – Get 2.2 – 0x00 (Display address 01)

Header	Monitor ID	Category	Page	Length	Data Control	Data [0]	Data [1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0xDD	0x00	0xF8

4.24 Noise Reduction

This command is used to set/get the Noise Reduction setting as it is defined as below.

4.24.1 Message – Set

Bytes	Bytes Description	Bits	Description
Data [0]	0xDE = Noise Reduction - Set		Command to change the Noise Reduction setting of the display.
Data [1]	Noise Reduction		0x00 = OFF 0x01 = LOW 0x02 = MEDIUM 0x03 = HIGH

Example: Noise Reduction – Set LOW – 0x01 (Display address 01)

Header	Monitor ID	Category	Code [0]	Code [1]	Length	Data Control	Data [0]	Data [1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0xDE	0x01	0x7D

4.24.2 Message - Set - ACK Reply

Display address 01

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

4.24.3 Message – Get

Bytes	Bytes Description	Bits	Description
Data [0]	0xDF = Noise Reduction - Get		Command requests the display to report its current setting.

Example: Noise Reduction - Get (Display address 01)

Header	Monitor ID	Category	Code [0]	Code [1]	Length	Data Control	Data [0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0xDF	0x7A

4.24.4 Message – Get Report

Bytes	Bytes Description	Bits	Description
Data [0]	0xDF = Noise Reduction - Report		Command reports Noise Reduction setting.
Data [1]	Noise Reduction		0x00 = OFF 0x01 = LOW 0x02 = MEDIUM 0x03 = HIGH

Example: Noise Reduction – Get LOW – 0x01 (Display address 01)

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

4.25 Audio Mute

This command is used to set/get the audio mute setting as it is defined as below.

4.25.1 Message – Set

Bytes	Bytes Description	Bits	Description
Data [0]	0xE0 = Audio Mute - Set		Command to change the audio mute setting of the display.
Data [1]	Audio Mute		0x00 = OFF 0x01 = ON

Example: Audio Mute – Set OFF – 0x00 (Display address 01)

Header	Monitor ID	Category	Code [0]	Code [1]	Length	Data Control	Data [0]	Data [1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0xE0	0x00	0x42

4.25.2 Message - Set - ACK Reply

Display address 01

Header	Monitor ID	Category	Page	Length	Data Control	Data [0]	Data [1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0xE0	0x00	0xC5

4.25.3 Message – Get

Bytes	Bytes Description	Bits	Description
Data [0]	0xE1 = Audio Mute - Get		Command requests the display to report its current setting.

Example: Audio Mute - Get (Display address 01)

Header	Monitor ID	Category	Code [0]	Code [1]	Length	Data Control	Data [0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0xE1	0x44

4.25.4 Message – Get Report

Bytes	Bytes Description	Bits	Description
Data [0]	0xE1 = Audio Mute - Report		Command reports audio mute setting.
Data [1]	Audio Mute		0x00 = OFF 0x01 = ON

Example: Audio Mute – Get OFF – 0x00 (Display address 01)

Header	Monitor ID	Category	Page	Length	Data Control	Data [0]	Data [1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0xE1	0x00	0xC4

4.26 Power Saving

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

4.26.1 Message – Set

Bytes	Bytes Description	Bits	Description
Data [0]	0xE2 = Power Saving - Set		Command to change the Power Saving setting of the display.
Data [1]	Power Saving		0x00 = OFF 0x01 = ON

Example: Power Saving – Set ON – 0x01 (Display address 01)

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

4.26.2 Message - Set - ACK Reply

Display address 01

Header	Monitor ID	Category	Page	Length	Data Control	Data [0]	Data [1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0xE2	0x00	0xC7

4.26.3 Message – Get

Bytes	Bytes Description	Bits	Description
Data [0]	0xE3 = Power Saving - Get		Command requests the display to report its current setting.

Example: Power Saving - Get (Display address 01)

Header	Monitor ID	Category	Code [0]	Code [1]	Length	Data Control	Data [0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0xE3	0x46

4.26.4 Message – Get Report

Bytes	Bytes Description	Bits	Description
Data [0]	0xE3 = Power Saving - Report		Command reports Power Saving setting.
Data [1]	Power Saving		0x00 = OFF 0x01 = ON

Example: Power Saving – Get OFF – 0x00 (Display address 01)

Header	Monitor ID	Category	Page	Length	Data Control	Data [0]	Data [1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0xE3	0x00	0xC6

4.27 ANTI-BURN-IN (Pixel Shift)

This command is used to set/get the Anti-Burn-in setting it is defined as below.

4.27.1 Message – Set

Bytes	Bytes Description	Bits	Description
Data [0]	0xE4 = Anti-Burn-in - Set		Command to change the Anti-Burn-in setting of the display.
Data [1]	Enable / Disable		0x00 = OFF 0x01 = ON
Data [2]	Anti-Burn-in Hours		0x01 = 4 (Hours) 0x02 = 5 0x03 = 6 0x04 = 8
Data [3]	Anti-Burn-in Type		0x01 = A 0x02 = B 0x03 = C

Example: Anti-Burn-in – Set ON / 4 Hours / Type A (Display address 01)

Header	Monitor ID	Category	Code [0]	Code [1]	Length	Data Control	Data [0]	Data [1]	Data [2]
0xA6	0x01	0x00	0x00	0x00	0x06	0x01	0xE4	0x01	0x01

Data [3]	Checksum
0x01	0x45

4.27.2 Message - Set - ACK Reply

Display address 01

Header	Monitor ID	Category	Page	Length	Data Control	Data [0]	Data [1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0xE4	0x00	0xC1

4.27.3 Message – Get

Bytes	Bytes Description	Bits	Description
Data [0]	0xE5 = Anti-Burn-in - Get		Command requests the display to report its current setting.

Example: Anti-Burn-in - Get (Display address 01)

Header	Monitor ID	Category	Code [0]	Code [1]	Length	Data Control	Data [0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0xE5	0x40

4.27.4 Message – Get Report

Bytes	Bytes Description	Bits	Description
Data [0]	0xE5 = Anti-Burn-in - Report		Command reports Anti-Burn-in setting.
Data [1]	Enable / Disable		0x00 = OFF 0x01 = ON
Data [2]	Anti-Burn-in Hours		0x01 = 4 (Hours) 0x02 = 5 0x03 = 6 0x04 = 8
Data [3]	Anti-Burn-in Type		0x01 = A 0x02 = B 0x03 = C

Example: Anti-Burn-in – Get ON / 4 Hours / Type A (Display address 01)

Header	Monitor ID	Category	Page	Length	Data Control	Data [0]	Data [1]	Data [2]
0x21	0x01	0x00	0x00	0x06	0x01	0xE5	0x01	0x01

Data [3]	Checksum
0x01	0xC3

4 Command Summary

Command Name	Set Command	Get Command	Command Code	Remark
Network Address Set	V		0x05	
Network Address Get		V	0x06	
Network Name Set	V		0x09	
Network Name Get		V	0x0A	
Miscellaneous info Get		V	0x0F	
Power State Set	V		0x18	
Power State Get		V	0x19	
Keypad control Set	V		0x1C	
Keypad control Get		V	0x1D	
Backlight Level Set	V		0x30	
Backlight Level Get		V	0x31	
Color Temp. Set	V		0x34	
Color Temp. Get		V	0x35	
Color RGB Set	V		0x66	
Color RGB Get		V	0x67	
Volume Set	V		0x44	
Volume Get		V	0x45	
COLOR RANGE Set	V		0x50	
COLOR RANGE Get		V	0x51	
LED ON/OFF Set	V		0x52	
LED ON/OFF Get		V	0x53	
Signal Info Set	V		0x54	
Signal Info Get		V	0x55	
BLUE SCREEN Set	V		0x56	
BLUE SCREEN Get		V	0x57	
LOGO Set	V		0x58	
LOGO Get		V	0x59	
Platform and version labels Get		V	0xA2	
Brightness Set	V		0xC0	
Brightness Get		V	0xC1	
Contrast Set	V		0xC2	
Contrast Get		V	0xC3	
Black Level Set	V		0xC4	
Black Level Get		V	0xC5	
Sharpness Set	V		0xC6	
Sharpness Get		V	0xC7	
HUE(TINT) Set	V		0xC8	
HUE(TINT) Get		V	0xC9	
Saturation Set	V		0xCA	
Saturation Get		V	0xCB	
DCR Set	V		0xD2	
DCR Get		V	0xD3	

Gamma Set	V		0xDC	
Gamma Get		V	0xDD	
Noise Reduction Set	V		0xDE	
Noise Reduction Get		V	0xDF	
Audio Mute Set	V		0xE0	
Audio Mute Get		V	0xE1	
Power Saving Set	V		0xE2	
Power Saving Get		V	0xE3	
ANTI-BURN-IN (Pixel Shift) Set	V		0xE4	
ANTI-BURN-IN (Pixel Shift) Get		V	0xE5	