

RS232 Command List

DR-17G / DR-22G / DR-24G / HX-24G /
RX-22G / RX-24G / SX-15G / SX-17G /
SX-19G/RX-2202/RX-2402/HX-2402

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 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

- Baud Rate : 9600
- Data bits: 8
- Parity : None
- Stop Bit : 1
- Flow Control : None
- The Pin Assignments for DB9 Female connector:



2.2 2.5mm Phone jack pin assignment

P1-Pin #	Signal	P2-Pin #	Remark
1	NC	-	-
2	RXD	2	Input to LCD Monitor
3	TXD	1	Output from LCD Monitor
4	NC	-	-
5	GND	4	-
6	NC	-	-
7	NC	-	-
8	NC	-	-
9	NC	3	-
frame	GND	-	-

3. Monitor Setting

MONITOR ID Set 1~255

4. 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" - requested info. If the command is a valid "Set" - operation.

Figure1 and Figure2 explain the mechanism of the Get and Set commands.

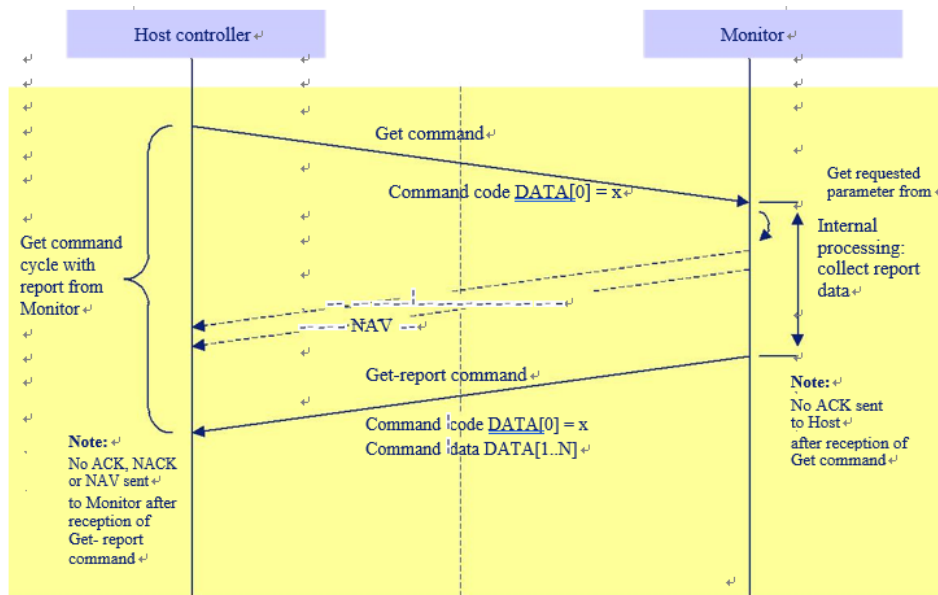


Figure 1: Explanation of mechanism of Get Command.

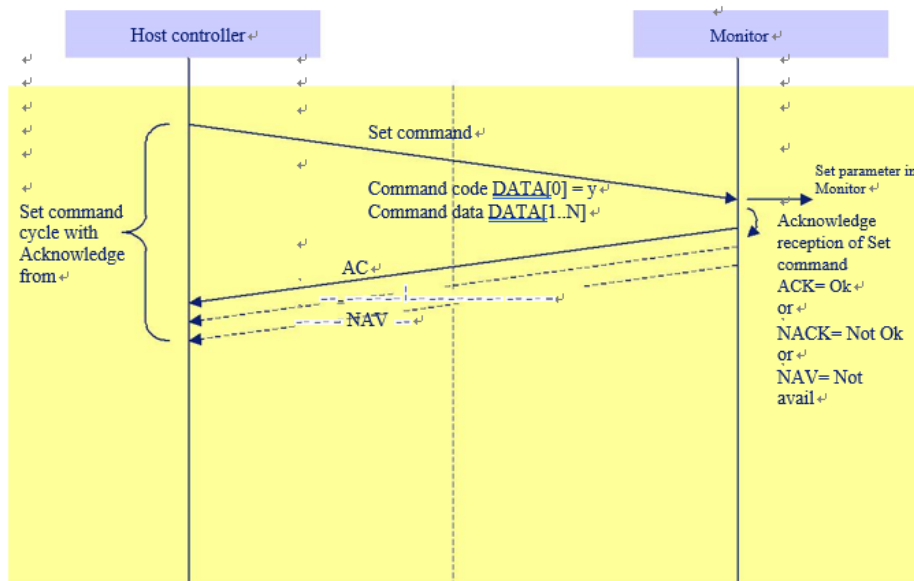


Figure 2: Explanation of mechanism of Set Command.

5. Command Format

The RS232 packet format:

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	-----	Data[N]	Checksum
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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.
Byte 3	Category	Category = 0x00 (fixed)
Byte 4	Code0 (Page)	Reserved
Byte 5	Code1 (Function)	Reserved
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 DATA[0] ... XOR DATA[N]

Monitor ID=0, Broadcast, (Host 送出 ID=0 時, 每一台 Monitor 會收到命令, 並執行命令, 但不會回應 ACK)

6. MESSAGES - SYSTEM

6.1 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(0x00)**, **NACK(0x03)** or **NAV(0x04)**.

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

6.2 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. (Cmd)
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"

7. MESSAGES - GENERAL

7.1 Platform and Version Labels

This command provides the model name of platform and the display Software version to the host controller.

7.1.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA [0]	0xA2 = Platform and Version Labels - Get		Request the label version.
DATA [1]	Label		0x00 = Get the FW version 0x01 = Get model name of the platform.

Example: Get version (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	0x00	0x00

7.1.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA [0]	0xA2 = Platform and Version Label – report		Request the internal label version.
DATA [1] to DATA [N]	Character [0] to Character [N-1]		36 (0x24) characters maximum. No. of characters, N = 1 to 36 (0x24). The actual size determines the value of the message size byte.

Example: Firmware Version 007 (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	0xA2	0x30	0x30	0x37	0xB2

Example: Brand Name” AGNEOVO” & Model Name “SX-19G” (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	0x11	0x01	0xA2	0x41	0x47	0x4E	0x45	0x4F	0x56	0x4F

Data [8]	Data [9]	Data [10]	Data [11]	Data [12]	Data [13]	Data [14]	Checksum
0x20	0x53	0x58	0x2D	0x31	0x39	0x47	0x80

7.2 Power state

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

7.2.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA [0]	0x19 = Power state – Get		Command requests the display to report its current power state.

Example: Get power state (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data control	Data [0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0x19	0xBC

7.2.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA [0]	0x19 = Power State - Report		Command reports Power state
DATA [1]	Power State		0x01 = Power 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	0x19	0x02	0x3E

7.2.3 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 = On

Example: Power State off (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

7.2.4 Monitor ACK reply:

Display address 01-ACK

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

Power On command, Monitor with initial, when monitor ready after will reply message.

7.3 User Input Control (Keypad) Control

The following commands are used to lock/unlock the Remote Control and the Local Keyboard functionality corresponding.

7.3.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA [0]	0x1D = User Input Control –Get		Get the lock/unlock state

Example: Get user input control (Display address 01)

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

7.3.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA [0]	0x1D = User Input Control – Report		Report from display of lock/unlock state
DATA [1]	Bit meaning: 0 = locked 1 = unlocked	Bit 7..3	Not used
		Bit 2	Power Key Locked
		Bit 1	Local Keyboard
		Bit 0	Remote Control / unused="1"

Example: Lock Keyboard and unlocked Remote Control (Display address 01)

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

0x00 lock Keyboard (ALL)and IR Remote, 0x03 unlock keyboard and IR Remote (bit 2 invalid)

7.3.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA [0]	0x1C = User Input Control – Set		Set the lock/unlock state
DATA [1]	Bit meaning: 0 = locked 1 = unlocked	Bit 7..2	Not used.
		Bit 2	Power Key Lock
		Bit 1	Local Keyboard
		Bit 0	Remote Control / unused="1"

Example: Unlock local Keyboard and 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

*Current model no support: Only Power Key lock.

Data [1] = 0x01 = Key lock all

Data [1] = 0x03 = Reserved (Power Key lock (Except Local key))

Data [1] = 0x05 = Local Key lock (Except Power key)

Data [1] = 0x07 = Key Unlock all

7.3.4 Monitor ACK reply:

Display address 01 - ACK

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

7.4 Input source

This command is used to change the current input source.

7.4.1 Message – Set

Bytes	Bytes Description	Bits	Description
DATA [0]	0xAC = Input Source – Set		Command requests the display to set the current input source
DATA [1]	Input Source Type		0x20= VGA 0x21= DVI 0x22= HDMI 0x23= DP 0x24= CVBS1 0x25= CVBS2 0x26= S-VIDEO (Except for HX-24G, HX-2402 models) 0x27= SDI (HX-24G, HX-2402 model only)

Example: Set Input Source: HDMI (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	0x22	0x2C

7.4.2 Monitor ACK reply:

Display address 01 - ACK

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

7.5 Current Input Source

Command requests the display to report the current input source in using.

7.5.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA [0]	0xAD = Current Input Source – Get		Command requests the display to report the current input source in use.

Example: Get current input source (Display address 01)

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

7.5.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA [0]	0xAD = Current Input Source – Report		Command reports to the host controller the current input source in use by the display.
DATA [1]	Input Source Type		0xFD = Input Source (normal state) 0xFE = Reserved
DATA [2]	Input Source Number		0x20= VGA 0x21= DVI 0x22= HDMI 0x23= DP 0x24= CVBS1 0x25= CVBS2 0x26= S-VIDEO (HX-24G, HX-2402 models only) 0x27= SDI (Except for HX-24G, HX-2402 models)

Example: Current Input Source: HDMI (Display address 01)

Header	Monitor ID	Category	Page	Length	Control	Data [0]	Data [1]	Data [2]	Checksum
0x21	0x01	0x00	0x00	0x05	0x01	0xAD	0xFD	0x22	0x56

7.6 Auto Signal Detecting

This command is used to set/get the input source detect auto / manual.

7.6.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA [0]	0xAF = Auto Signal Source Detecting – Get		Command requests the display to report its current Auto Signal Detecting status

Example: Get auto signal detecting (Display address 01)

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

7.6.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA [0]	0xAF = Auto Signal Detecting – Report		Command reports Auto Signal Detecting Setting
DATA [1]	MANUAL / AUTO		0x00 = MANUAL 0x01 = AUTO

Example: Current Display settings: Auto Signal Detect is AUTO (Display address 01)

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

7.6.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA [0]	0xAE = Auto Signal Detecting – Set		Command to change the Auto Signal Detecting setting of the display
DATA [1]	MANUAL / AUTO		0x00 = MANUAL 0x01 = AUTO

Example: Set the Display to the following: Auto Signal Detecting 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	0xAE	0x01	0x0D

7.6.4 Monitor ACK reply:

Display address 01 - ACK

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

7.7 Picture Format

This command is used to control the display screen format. (**ASPECT**)

7.7.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA [0]	0x3B = Picture Format – Get		Command requests the display to report its current picture format

Example: Get picture format (Display address 01)

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

7.7.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA [0]	0x3B = Picture Format – Report		Command report to the host controller the current picture format of the display.
DATA [1]	Picture Format (ASPECT RATIO)		Picture Format. 0x30= FULL 0x31= REAL 0x32= ZOOM 0x33 = NATIVE

Example: Current Picture Format is Widescreen on Full Display (Display address 01)

Header	Monitor ID	Category	Page	Length	Control	Data [0]	Data [1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0x3B	0x30	0x2E

7.7.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA [0]	0x3A = Picture Format – Set		Command requests the display to set the specified picture format
DATA [1]	Picture Format (ASPECT RATIO)		Picture Format. 0x30= FULL 0x31= REAL 0x32= ZOOM 0x33 = NATIVE

The display shall respond with NAV if it receives a Picture Format that is not relevant to its Display Aspect Ratio.

The display shall ignore the [Picture Format - Set] if it receives a Picture Format that it cannot execute.

Example: Set Picture Format to Widescreen on Full Display (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	0x30	0xA8

7.7.4 Monitor ACK reply:

Display address 01 - ACK

Header	Monitor ID	Category	Page	Length	Control	Data [0]	Data [1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0x3A	0x00	0x1F

7.8 Color Temperature

The following commands are used to get/set the color temperature.

7.8.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA [0]	0x35 = Color Temperature – Get		Command requests the display to report its current color temperature.

Example: Get color temperature (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data [0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0x35	0x90

7.8.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA [0]	0x35 = Color Temperature – Report		Command reports to the host controller the current color temperature of the display.
DATA [1]	Color Temperature		0x20= WARM 0x21= COOL 0x23= USER 0x24= NEUTRAL

Example: The current color temperature is set to COOL (Display address 01)

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

7.8.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA [0]	0x34 = Color Temperature – Set		Command to change the current color parameters
DATA [1]	Color Temperature		0x20= WARM 0x21= COOL 0x23= USER 0x24 = NEUTRAL

Example: The current color temperature is set to WARM (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data [0]	Data [1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0x34	0x20	0xB6

7.8.4 Monitor ACK reply:

Display address 01 - ACK

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

7.9 Volume

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

7.9.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA [0]	0x45 = 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: Get volume (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data [0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0x45	0xE0

7.9.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA [0]	0x45 = Volume – Report		Command reports current Volume level
DATA [1]	Volume.		0 to 100 (0x00~0x64) of the user selectable range of the display.

Example: Current Display settings: Volume: 50 (0x32) (Display address 01)

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

7.9.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	0x44 = Volume – Set		
DATA[1]	Volume.		0 to 100 (0x00~0x64) of the user selectable range of the display.

Example: Set the Display Volume to 20 (0x14) (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data [0]	Data [1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0x44	0x14	0xF2

7.9.4 Monitor ACK reply:

Display address 01 - ACK

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

7.10 Miscellaneous info.

The command is used to record the working hours of the display and Input main Source Status.

7.10.1 Message-Get

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

Example: Get Operating Hours (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data [0]	Data [1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0x0F	0x02	0xAF

7.10.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA [0]	0x0F = Misc Info – Report		Command reports current Operating Hours
DATA [1] to DATA [2]	Operating Hours / Current source status.		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 - 10hrs - 0x0A (Display address 01)

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

7.11 Auto Adjust

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

7.11.1 Message-Set

Bytes	Bytes Description	Bits	Description
DATA [0]	0x70 = Video Alignment – Set		Command requests the display to make auto adjustment on VGA Input source.
DATA [1]	Sub command		0x40 = Auto Adjust (* All other values are reserved *)
DATA [2]	Reserved		(reserved, fixed 0)

Example: Get auto adjust (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	0x70	0x40	0x00	0x93

7.11.2 Monitor ACK reply:

Display address 01 - ACK

Header	Monitor ID	Category	Page	Length	Control	Data [0]	Data [1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0x70	0x00	0x55

7.12 Backlight Level

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

7.12.1 Message-Get

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

Example: Get backlight level (Display address 01)

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

7.12.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA [0]	0x31 = Backlight level – Report		Command reports current Backlight level
DATA [1]	Backlight value		0 to 100 (0x00~0x64) of the user selectable range of the display.

Example: Backlight:90 (0x5A) (Display address 01)

Header	Monitor ID	Category	Page	Length	Control	Data [0]	Data [1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0x31	0x5A	0x4E

7.12.3 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 value		0 to 100 (0x00~0x64) of the user selectable range of the display.

Example: Set Backlight:90 (0x5A) (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data [0]	Data [1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0x30	0x5A	0xC8

7.12.4 Monitor ACK reply:

Display address 01 - ACK

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

7.13 Factory Reset

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

7.13.1 Message-Set

Bytes	Bytes Description	Bits	Description
DATA [0]	0xFE = Factory Reset		Command to do the Factory Reset of the display

Example: Set Factory Settings (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data [0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0xFE	0x5B

7.13.2 Monitor ACK reply:

Display address 01 - ACK

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

7.14 BRIGHTNESS

The following commands are used to get/set video **BRIGHTNESS** parameters.

7.14.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA [0]	0xC1 = BRIGHTNESS – Get		Command requests the display to report its current BRIGHTNESS level

Example: (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data [0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0xC1	0x64

7.14.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA [0]	0xC1 = BRIGHTNESS – Report		Command reports current BRIGHTNESS level
DATA [1]	BRIGHTNESS.		0 to 100 (0x00~0x64) of the user selectable range of the display.

Example: Current Display settings: BRIGHTNESS:50 (0x32) (Display address 01)

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

7.14.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA [0]	0xC0 = BRIGHTNESS – Set		Command requests the display to report its current BRIGHTNESS level
DATA [1]	BRIGHTNESS.		0 to 100 (0x00~0x64) of the user selectable range of the display.

Example: Set the Display BRIGHTNESS to 50 (0x32) (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data [0]	Data [1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0xC0	0x32	0x50

7.14.4 Monitor ACK reply:

Display address 01 - ACK

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

7.15 CONTRAST

The following commands are used to get/set video **CONTRAST** parameters.

7.15.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA[0]	0xC3 = CONTRAST – Get		Command requests the display to report its current CONTRAST level

Example: (Display address 01)

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

7.15.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA[0]	0xC3 = CONTRAST – Report		Command reports current CONTRAST level
DATA[1]	CONTRAST.		0 to 100 (0x00~0x64) of the user selectable range of the display.

Example: Current Display settings: CONTRAST:50 (0x32) (Display address 01)

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

7.15.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	0xC2 = CONTRAST – Set		Command reports current CONTRAST level
DATA[1]	CONTRAST.		0 to 100 (0x00~0x64) of the user selectable range of the display.

Example: Set the Display CONTRAST to 50 (0x32) (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Data[1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0xC2	0x32	0x52

7.15.4 Monitor ACK reply:

Display address 01 - ACK

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

7.16 BLACKLEVEL

The following commands are used to get/set video **BLACKLEVEL** parameters.

7.16.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA[0]	0xC5 = BLACKLEVEL – Get		Command requests the display to report its current BLACKLEVEL level

Example: (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0xC5	0x60

7.16.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA[0]	0xC5 = BLACKLEVEL – Report		Command reports current BLACKLEVEL
DATA[1]	BLACKLEVEL.		0 to 100 (0x00~0x64) of the user selectable range of the display.

Example: Current Display settings: BLACKLEVEL:50 (0x32) (Display address 01)

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

7.16.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	0xC4 = BLACKLEVEL – Set		Command reports current BLACKLEVEL
DATA[1]	BLACKLEVEL.		0 to 100 (0x00~0x64) of the user selectable range of the display.

Example: Set the Display BLACKLEVEL to 20 (0x14) (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Data[1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0xC4	0x14	0x72

7.16.4 Monitor ACK reply:

Display address 01 - ACK

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

7.17 SHARPNESS

The following commands are used to get/set video **Sharpness** parameters.

7.17.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA[0]	0xC7 = Sharpness –Get		Command requests the display to report its current Sharpness level

Example: (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0xC7	0x62

7.17.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA[0]	0xC7 = Sharpness –Report		Command reports current Sharpness level
DATA[1]	Sharpness.		0 to 100 of the user selectable range of the display. OSD:0, 10, 20, 30, 40, 50, 60, 70, 80, 90, 100

Example: Current Display settings: Sharpness 50 (0x32) (Display address 01)

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

7.17.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	0xC6 = Sharpness –Set		Command reports current Sharpness level
DATA[1]	Sharpness		0(0), 10(1), 20(2), 30(3), 40(4), 50(5) to 100 (0A)of the user selectable range of the display.

Example: Set the Display Sharpness to 50 (0x05) (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	0x05	0x61

7.17.4 Monitor ACK reply:

Display address 01 - ACK

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

7.18 HUE

The following commands are used to get/set video **Hue** parameters.

7.18.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA[0]	0xC9 = Hue –Get		Command requests the display to report its current Hue level

Example: (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0xC9	0x6C

7.18.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA[0]	0xC9 = Hue –Report		Command reports current Hue level
DATA[1]	Hue.		0 to 100 (0x00~0x64) of the user selectable range of the display.

Example: Current Display settings: Hue:50 (0x32) (Display address 01)

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

7.18.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	0xC8 = Hue –Set		Command reports current Hue level
DATA[1]	Hue.		0 to 100 (0x00~0x64) of the user selectable range of the display.

Example: Set the Display Hue to 50 (0x32) (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Data[1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0xC8	0x32	0x58

7.18.4 Monitor ACK reply:

Display address 01 - ACK

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

7.19 SATURATION

The following commands are used to get/set video **Saturation** parameters.

7.19.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA[0]	0xCB = Saturation –Get		Command requests the display to report its current Saturation level

Example: (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0xCB	0x6E

7.19.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA[0]	0xCB = Saturation –Report		Command reports current Saturation level
DATA[1]	Saturation.		0 to 100 (0x00~0x64) of the user selectable range of the display.

Example: Current Display settings: Saturation:50 (0x32) (Display address 01)

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

7.19.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	0xCA = Saturation –Set		Command reports current Saturation level
DATA[1]	Saturation.		0 to 100 (0x00~0x64) of the user selectable range of the display.

Example: Set the Display Saturation to 50 (0x32) (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Data[1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0xCA	0x32	0x5A

7.19.4 Monitor ACK reply:

Display address 01 - ACK

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

7.20 PICTURE MODE

The following commands are used to get/set the Picture Mode.

7.20.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA[0]	0xD1 = Picture Mode –Get		Command requests the display to report its current Setting.

Example: (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0xD1	0x74

7.20.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA [0]	0xD1 = Picture Mode –Report		Command reports to the host controller the current Picture Mode of the display.
DATA [1]	Picture Mode		0x30 = STANDARD, 0x31 = VIVID (Reserved), 0x32 = VIDEO, 0x33 = CCTV, 0x34 = sRGB (Reserved).

Example: The current Picture Mode is set to Standard (Display address 01)

Header	Monitor ID	Category	Page	Length	Control	Data[0]	Data[1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0xD1	0x30	0xC4

7.20.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA [0]	0xD0 = Picture Mode – Set		Command to change the current Picture Mode parameters
DATA [1]	Picture Mode		0x30 = STANDARD, 0x31 = VIVID (Reserved), 0x32 = VIDEO, 0x33 = CCTV, 0x34 = sRGB (Reserved).

Example: The current Picture Mode is set to Standard (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Data[1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0xD0	0x30	0x42

7.20.4 Monitor ACK reply:

Display address 01 - ACK

Header	Monitor ID	Category	Page	Length	Control	Data [0]	Data [1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0xD0	0x00	0xF5

7.21 DCR

The following commands are used to get/set the DCR.

7.21.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA[0]	0xD3 = DCR –Get		Command requests the display to report its current Setting .

Example: (Display address 01)

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

7.21.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA[0]	0xD3 = DCR –Report		Command reports to the host controller the current Setting of the display.
DATA[1]	DCR		0x00= OFF 0x01 = ON

Example: Report the current DCR is set to ON (Display address 01)

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

7.21.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	0xD2 = DCR –Set		Command to change the current DCR Setting
DATA[1]	DCR		0x00= OFF 0x01= ON

Example: The current DCR is set 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	0xD2	0x01	0x71

7.21.4 Monitor ACK reply:

Display address 01 - ACK

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

7.22 GAMMA

The following commands are used to get/set the **GAMMA**.

7.22.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA[0]	0xDD = GAMMA –Get		Command requests the display to report its current Setting .

Example: (Display address 01)

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

7.22.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA[0]	0xDD = GAMMA –Report		Command reports to the host controller the current Set of the display.
DATA [1]	GAMMA		0x00= 2.2 0x01= 2.4 0x04= 2.0 0x05= S Curve

Example: Report the current GAMMA is set to 2.2 (Display address 01)

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

7.22.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	0xDC = GAMMA – Set		Command to change the current GAMMA Set.
DATA [1]	GAMMA		0x00= 2.2 0x01= 2.4 0x04= 2.0 0x05= S Curve

Example: The current GAMMA is set to 2.4 (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Data[1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0xDC	0x01	0x7F

7.22.4 Monitor ACK reply:

Display address 01 - ACK

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

7.23 NOISE REDUCTION

The following commands are used to get/set the **Noise Reduction**.

7.23.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA [0]	0xDF = Noise Reduction – Get		Command requests the display to report its current Setting .

Example: (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0xDF	0x7A

7.23.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA [0]	0xDF = Noise Reduction – Report		Command reports to the host controller the current Set of the display.
DATA [1]	Noise Reduction		0x00= OFF 0x01= LOW 0x02= MEDIUM 0x03= HIGH

Example: Report the current Noise Reduction is set to LOW (Display address 01)

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

7.23.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	0xDE = Noise Reduction – Set		Command to change the current Noise Reduction Set.
DATA[1]	Noise Reduction		0x00= OFF 0x01= LOW 0x02= MEDIUM 0x03= HIGH

Example: The current Noise Reduction is set to LOW (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Data[1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0xDE	0x01	0x7D

7.23.4 Monitor ACK reply:

Display address 01 - ACK

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

7.24 COLOR Auto Adjust

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

7.24.1 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	0xEC = Color auto adjust Alignment – Set		Command requests the display to make auto Color adjustment on VGA Input source.
DATA[1]	Sub command		0x40 = Auto Color Adjust (* All other values are reserved *)
DATA[2]	Reserved		(reserved, fixed 0)

Example: (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	0xEC	0x40	0x00	0x0F

7.24.2 Monitor ACK reply:

Display address 01 - ACK

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

7.25 AUDIO MUTE

The following commands are used to get/set the **Audio Mute**.

7.25.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA[0]	0xE1 = audio mute – Get		Command requests the display to report its current Setting.

Example: (Display address 01)

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

7.25.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA[0]	0xE1 = audio mute – Report		Command reports to the host controller the current Set of the display.
DATA[1]	Audio mute		0x00= OFF 0x01= ON

Example: Report the current mute is set to OFF (Display address 01)

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

7.25.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	0xE0 = audio mute – Set		Command to change the current mute Set.
DATA[1]	Audio mute		0x00= OFF 0x01= ON

Example: The current mute is set 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	0xE0	0x01	0x43

7.25.4 Monitor ACK reply:

Display address 01 - ACK

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

7.26 Power Saving

The following commands are used to get/set the **Power Saving function**.

7.26.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA[0]	0xE3= Power Saving – Get		Command requests the display to report its current Setting.

Example: (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0xE3	0x46

7.26.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA[0]	0xE3 = Power Saving – Report		Command reports to the host controller the current Set of the display.
DATA[1]	Power Saving		0x00= OFF 0x01= ON

Example: Report the current Power Saving is set to OFF (Display address 01)

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

7.26.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	0xE2 = Power Saving – Set		Command to change the current mute Set.
DATA[1]	Power Saving		0x00= OFF 0x01= ON

Example: The current Power Saving is set 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	0xE2	0x01	0x41

7.26.4 Monitor ACK reply:

Display address 01 - ACK

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

7.27 ANTI BURN IN TYPE

The following commands are used to get/set the **Anti Burn In**.

7.27.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA[0]	0xE5 = Anti Burn in – Get		Command requests the display to report its current Setting .

Example: (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data [0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0xE5	0x40

7.27.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA [0]	0xE5 = Anti Burn in – Report		Command reports to the host controller the current Set 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: Report the current Anti Burn in is set to ON / 4 Hours / Type A (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	0xE5	0x01	0x01	0x01	0xC3

7.27.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA [0]	0xE4 = Anti Burn In – Set		Command to change the current Anti Burn In Set.
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: The current Anti Burn In is set to ON / 5 Hours / Type C (Display address 01)

Header	Monitor ID	Category	Code 0	Code 1	Length	Data Control	Data [0]	Data [1]	Data [2]	Data [3]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x06	0x01	0xE4	0x01	0x02	0x03	0x44

7.27.4 Monitor ACK reply:

Display address 01 - ACK

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

7.28 ECOSMART

The following commands are used to get/set the **ECOSMART**.

7.28.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA[0]	0x5D = ECOSMART – Get		Command requests the display to report its current Setting.

Example: (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0x5D	0xF8

7.28.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA[0]	0x5D = ECOSMART – Report		Command reports to the host controller the current Setting of the display.
DATA[1]	ECOSMART		0x00= OFF 0x01 = ON
DATA[2]	Mode		0x01= Auto ,0x02=User
DATA[3]	Level		0 to 100 (0x00~0x64) of the user selectable range

Example: Report the current ECOSMART is set to ON / Auto / 50 - 0x32 (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	0x5D	0x01	0x01	0x32	0x48

7.28.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	0x5C = ECOSMART – Set		Command to change the current setting
DATA[1]	ECOSMART		0x00= OFF 0x01= ON
DATA[2]	Mode		0x01=Auto ,0x02=User
DATA[3]	Level		0 to 100 (0x00~0x64) of the user selectable range

Example: The current ECOSMART is set to ON/Auto/Level 100 (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	0x5C	0x01	0x01	0x64	0x98

7.28.4 Monitor ACK reply:

Display address 01 - ACK

Header	Monitor ID	Category	Page	Length	Control	Data [0]	Data [1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0x5C	0x00	0x79

7.29 COLOR RANGE

The following commands are used to get/set the COLOR RANGE.

7.29.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA[0]	0x51 = Color Range – Get		Command requests the display to report its current Setting .

Example: (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0x51	0xF4

7.29.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA[0]	0x51 = Color Range – Report		Command reports to the host controller the current Setting of the display.
DATA[1]	Color Range		0x00= FULL 0x01 = LIMITED, 0x02 = AUTO

Example: Report the current Color Range is set to LIMITED (Display address 01)

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

7.29.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	0x50 = Color Range –Set		Command to change the current Setting
DATA[1]	Color Range		0x00= FULL 0x01= LIMITED 0x02 = AUTO

Example: The current Color Range is set to FULL (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Data[1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0x50	0x00	0xF2

7.29.4 Monitor ACK reply:

Display address 01 - ACK

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

7.30 LED LIGHT ON / OFF

The following commands are used to get/set the **LED LIGHT ON/OFF**.

7.30.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA[0]	0x53 = LED Light – Get		Command requests the display to report its current Setting.

Example: (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0x53	0xF6

7.30.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA[0]	0x53 = LED LIGHT – Report		Command reports to the host controller the current Setting of the display.
DATA[1]	LED LIGHT		0x00= OFF 0x01 = ON

Example: Report the current LED LIGHT is set to ON (Display address 01)

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

7.30.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	0x52 = LED LIGHT – Set		Command to change the current Setting
DATA[1]	LED LIGHT		0x00= OFF 0x01= ON

Example: The current LED LIGHT is set 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	0x52	0x00	0xF0

7.30.4 Monitor ACK reply:

Display address 01 - ACK

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

7.31 SIGNAL Info

The following commands are used to get/set the SIGNAL Information.

7.31.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA[0]	0x55 = Signal Info – Get		Command requests the display to report its current Setting .

Example: (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0x55	0xF0

7.31.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA[0]	0x55 = Signal Info – Report		Command reports to the host controller the current Setting of the display.
DATA[1]	Signal Info		0x00= OFF 0x01 = ON

Example: Report the current Signal Info is set to ON (Display address 01)

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

7.31.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	0x54 = Signal Info – Set		Command to change the current Setting
DATA[1]	Signal Info		0x00= OFF 0x01= ON

Example: The current Signal Info is set 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	0x54	0x00	0xF6

7.31.4 Monitor ACK reply:

Display address 01 - ACK

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

7.32 BLUE SCREEN

The following commands are used to get/set the BLUE SCREEN.

7.32.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA[0]	0x57 = BLUE SCREEN - Get		Command requests the display to report its current Setting .

Example: (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0x57	0xF2

7.32.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA[0]	0x57 = BLUE SCREEN – Report		Command reports to the host controller the current Setting of the display.
DATA[1]	BLUE SCREEN		0x00= OFF 0x01 = ON

Example: Report the current BLUE SCREEN is set to ON (Display address 01)

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

7.32.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	0x56 = BLUE SCREEN - Set		Command to change the current Setting
DATA[1]	BLUE SCREEN		0x00= OFF 0x01= ON

Example: The current BLUE SCREEN is set 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	0x56	0x00	0xF4

7.32.4 Monitor ACK reply:

Display address 01 - ACK

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

7.33 LOGO ON/OFF

The following commands are used to get/set the **LOGO ON/OFF**.

7.33.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA [0]	0x59 = LOGO – Get		Command requests the display to report its current Setting .

Example: (Display address 01)

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

7.33.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA[0]	0x59 = LOGO – Report		Command reports to the host controller the current Setting of the display.
DATA[1]	LOGO		0x00= OFF 0x01 = ON

Example: Report the current LOGO is set to ON (Display address 01)

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

7.33.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	0x58 = LOGO – Set		Command to change the current Setting
DATA[1]	LOGO		0x00= OFF 0x01= ON

Example: The current LOGO is set 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	0x58	0x00	0xFA

7.33.4 Monitor ACK reply:

Display address 01 - ACK

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

7.34 HDMI CEC

The following commands are used to get/set the **HDMI CEC**.

7.34.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA [0]	0x5B = HDMI-CEC - Get		Command requests the display to report its current Setting .

Example: (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0x5B	0xFE

7.34.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA[0]	0x5B = HDMI-CEC – Report		Command reports to the host controller the current Setting of the display.
DATA[1]	HDMI-CEC		0x00= OFF 0x01 = ON

Example: Report the current HDMI-CEC is set to ON (Display address 01)

Header	Monitor ID	Category	Page	Length	Control	Data[0]	Data[1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0x5B	0x01	0x7F

7.34.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	0x5A = HDMI-CEC –Set		Command to change the current Setting
DATA[1]	HDMI-CEC		0x00= OFF 0x01= ON

Example: The current HDMI-CEC is set 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	0x5A	0x00	0xF8

7.34.4 Monitor ACK reply:

Display address 01 - ACK

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

7.35 AUDIO SOURCE

The following commands are used to get/set the AUDIO SOURCE.

7.35.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA[0]	0x5F = AUDIO SOURCE - Get		Command requests the display to report its current Setting.

Example: (Display address 01)

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

7.35.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA[0]	0x5F = AUDIO SOURCE -Report		Command reports to the host controller the current Setting of the display.
DATA[1]	AUDIO SOURCE		0x00= PC 0x01 = VIDEO

Example: Report the current AUDIO SOURCE is set to VIDEO (Display address 01)

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

7.35.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	0x5E = AUDIO SOURCE -Set		Command to change the current Setting
DATA[1]	AUDIO SOURCE		0x00= PC 0x01= VIDEO

Example: The current AUDIO SOURCE is set to PC (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Data[1]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x04	0x01	0x5E	0x00	0xFC

7.35.4 Monitor ACK reply:

Display address 01 - ACK

Header	Monitor ID	Category	Page	Length	Control	Data [0]	Data [1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0x5E	0x00	0x7B

7.36 OVER SCAN

The following commands are used to get/set the OVERSCAN.

7.36.1 Message-Get

Bytes	Bytes Description	Bits	Description
DATA[0]	0x65 = Over Scan – Get		Command requests the display to report its current Setting.

Example: Get over scan (Display address 01)

Header	Monitor ID	Category	Code0	Code1	Length	Data Control	Data[0]	Checksum
0xA6	0x01	0x00	0x00	0x00	0x03	0x01	0x65	0xC0

7.36.2 Message-Report

Bytes	Bytes Description	Bits	Description
DATA[0]	0x65 = Over Scan –Report		Command reports to the host controller the current Setting of the display.
DATA[1]	Over Scan		0 to 15 of the user selectable range of the display. OSD Step:0,7,13,20,27,33,40~100

Example: Report the current Over Scan (OSD is set to 53 - 0x35) - (Display address 01)

Header	Monitor ID	Category	Page	Length	Control	Data[0]	Data[1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0x65	0x35	0x75

7.36.3 Message-Set

Bytes	Bytes Description	Bits	Description
DATA[0]	0x64 = Over Scan – Set		Command to change the current Setting
DATA[1]	Over Scan		0 to 15 of the user selectable range of the display. OSD Step: 0, 7(1), 13(2), 20(3), 27(4), 33(5), 40(6), 47(7), 53(8), 60(9),...,100

Example: The current Over Scan is set 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	0x64	0x00	0xC6

7.36.4 Monitor ACK reply:

Display address 01 - ACK

Header	Monitor ID	Category	Page	Length	Control	Data [0]	Data [1]	Checksum
0x21	0x01	0x00	0x00	0x04	0x01	0x64	0x00	0x41

8 Command summary

Command name	Set Command	Get Command	Command Code	Remarks
Platform and version labels		V	0xA2	
Power state get		V	0x19	
Power state set	V		0x18	
User Input Control (Keypad) get		V	0x1D	
User Input Control (Keypad) set	V		0x1C	
Current Input Source Get		V	0xAD	
Input Source Set	V		0xAC	
Auto Signal Detecting Get		V	0xAF	
Auto Signal Detecting Set	V		0xAE	
Color Temperature Get		V	0x35	
Color Temperature Set	V		0x34	
Picture Format get		V	0x3B	
Picture Format set	V		0x3A	
Volume get		V	0x45	
Volume set	V		0x44	
Miscellaneous info		V	0x0F	Signal status
				Operating hours
Auto Adjust	V		0x70	0x40 / VGA only
Backlight Level Get		V	0x31	
Backlight Level Set	V		0x30	
Brightness Get		V	0xC1	
Brightness Set	V		0xC0	
Contrast Get		V	0xC3	
Contrast Set	V		0xC2	
Black Level Get		V	0xC5	
Black Level Set	V		0xC4	
Sharpness Get		V	0xC7	
Sharpness Set	V		0xC6	
HUE Get		V	0xC9	
HUE Set	V		0xC8	
Saturation Get		V	0xCB	
Saturation Set	V		0xCA	
Picture Mode Get		V	0xD1	
Picture Mode Set	V		0xD0	
DCR Get		V	0xD3	
DCR Set	V		0xD2	
Gamma Get		V	0xDD	
Gamma Set	V		0xDC	
Noise Reduction Get		V	0xDF	
Noise Reduction Set	V		0xDE	
Color Auto Adjust Set	V		0xEC	Set 0x40
Audio Mute Get		V	0xE1	
Audio Mute Set	V		0xE0	
Power Saving Get		V	0xE3	
Power Saving Set	V		0xE2	
ANTI-BURN-IN Get		V	0xE5	
ANTI-BURN-IN Set	V		0xE4	
COLOR RANGE Get		V	0x51	
COLOR RANGE Set	V		0x50	
LED ON/OFF Get		V	0x53	
LED ON/OFF Set	V		0x52	

Command name	Set Command	Get Command	Command Code	Remarks
Signal Info Get		V	0x55	
Signal Info Set	V		0x54	
Blue Screen On/Off Get		V	0x57	
Blue Screen On/Off Set	V		0x56	
Logo ON / OFF Get		V	0x59	
Logo ON / OFF Set	V		0x58	
HDMI CEC On/Off Get		V	0x5B	
HDMI CEC On/Off Set	V		0x5A	
ECOSMART Get		V	0x5D	
ECOSMART Set	V		0x5C	
AUDIO Source Get		V	0x5F	
AUDIO Source Set	V		0x5E	
Over Scan Get		V	0x65	
Over Scan Set	V		0x64	
Factory Reset Set	V		0xFE	