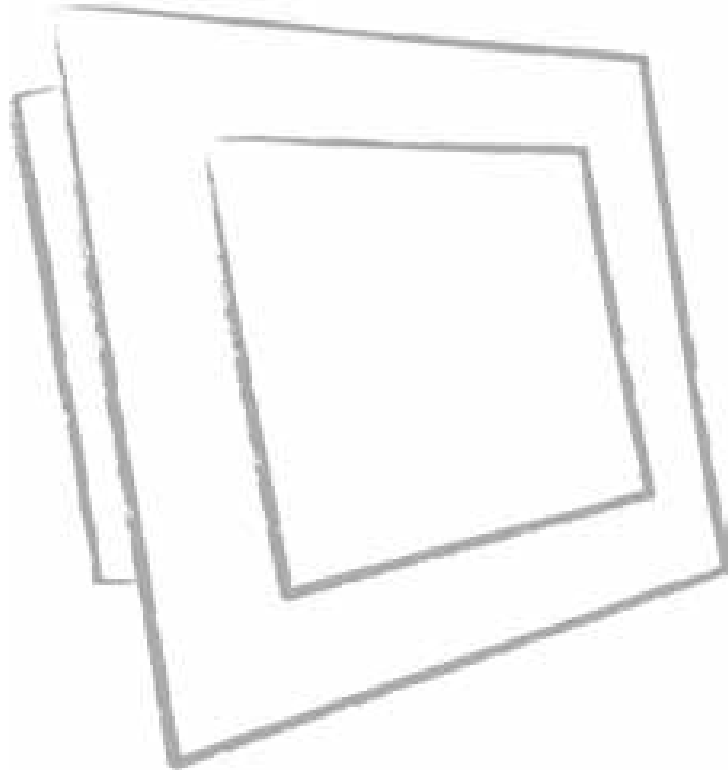


ECDIS OSD User Manual

Issue 0

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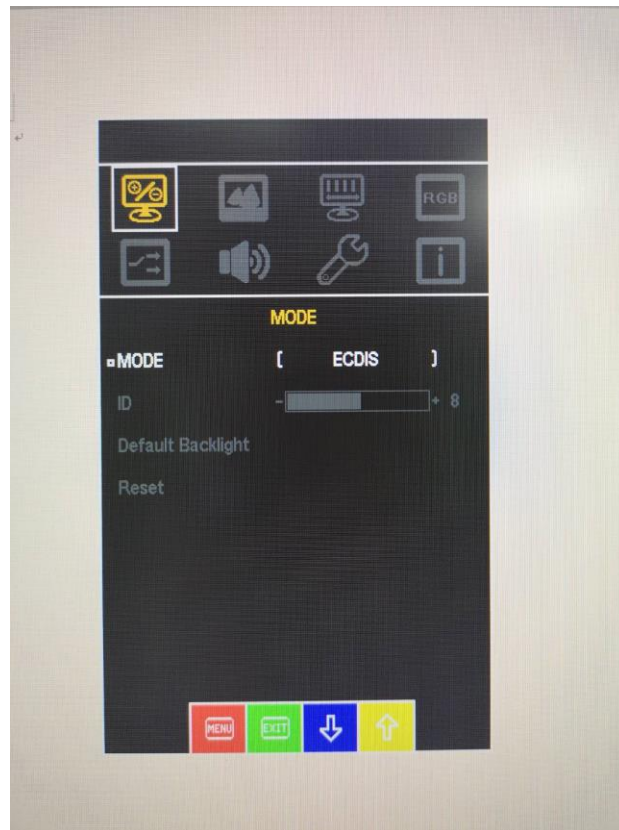
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Website: www.ewinsonic.com

7.1 ECDIS mode/ Normal Mode Selection

Press Menu key and use ▽ & Δ key get into selection ECDIS or Normal Mode



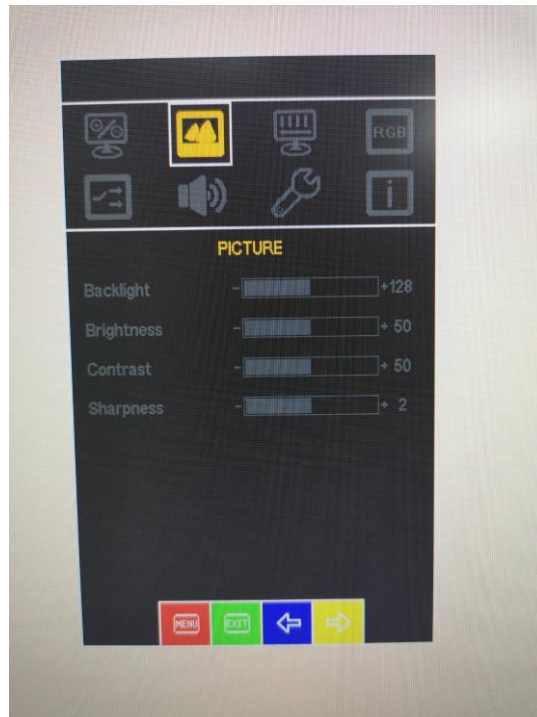
7.2 At ECDIS mode allow ▽ & Δ key to adjust Backlight

7.3 At ECDIS mode all control by RS-232 remote control, compliance IEC 61162-1

8. Normal Mode: Available to set up PCITURE / DISPLAY / COLOR / INPUT / AUDIO / OTHER

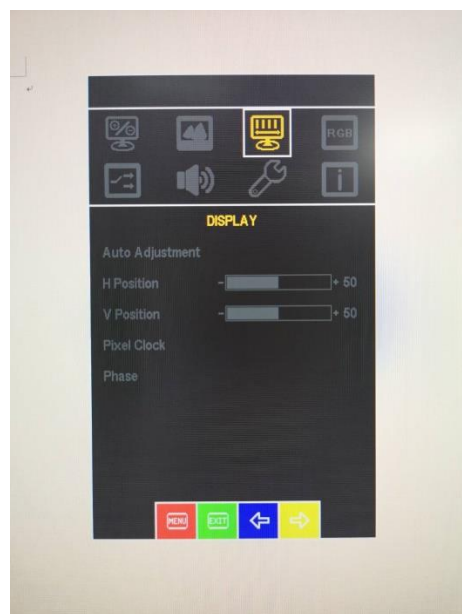
8.1 Press Menu key and use ▾ & ▲ key get into selection PICTURE

8.2 Press Menu key and use ▾ & ▲ key to adjust backlight / brightness / contrast / sharpness



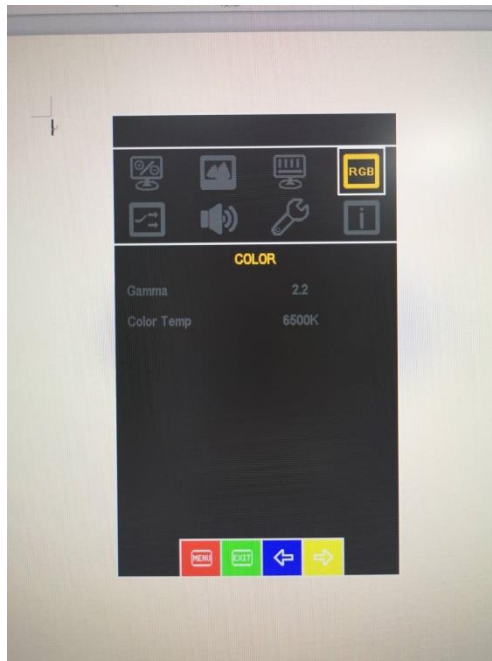
8.3 Press Menu key and use ▾ & ▲ key get into selection DISPLAY

8.4 Press Menu key and use ▾ & ▲ key to adjust Auto Adjustment / H.Position / V.Position / Pixel Clock / Phase



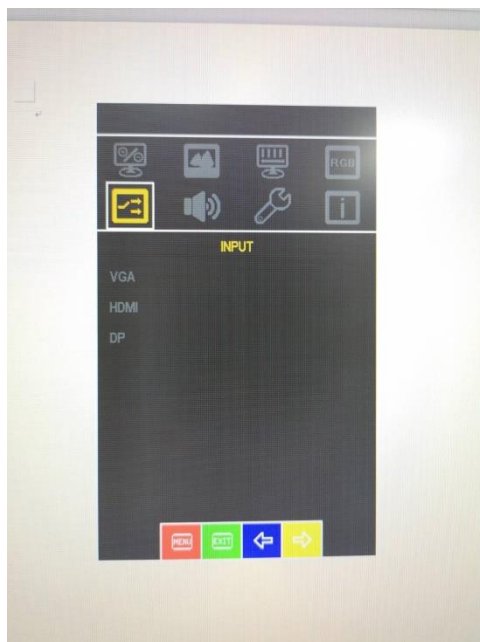
8.5 Press Menu key and use ▾ & ▲ key get into selection COLOR

8.6 Press Menu key and use ▾ & ▲ key to adjust Gamma / Color Temp



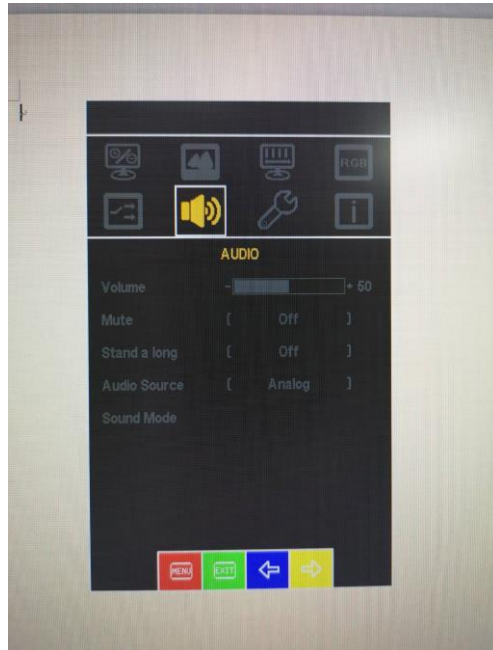
8.7 Press Menu key and use ▾ & ▲ key get into selection INPUT

8.8 Press Menu key and use ▾ & ▲ key to adjust VGA / HDMI /DP



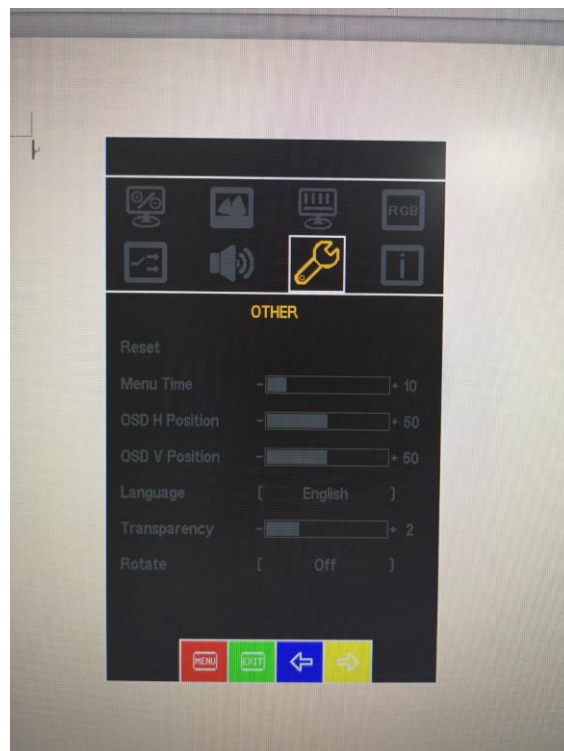
8.7 Press Menu key and use ▾ & ▲ key get into selection AUDIO

8.8 Press Menu key and use ▾ & ▲ key to adjust Volume / Mute / Stand along / Audio Source / Sound Mode



8.7 Press Menu key and use ▾ & ▲ key get into selection OTHER

8.8 Press Menu key and use ▾ & ▲ key to adjust Menu Time / OSD H.Position / V.Position / Language / Transparency / Rotate



1.1.1. ECDIS LED

Select OSD Normal Mode, ECDIS LED OFF

Select ECDIS mode, ECDIS LED ON .

1.1.2. Backlight LED

Select OSD Normal Mode Backlight LED OFF,

Select ECDIS mode while using ▽ & Δ key, Backlight LED ON.

1.1.3. Backlight default

DDC Command list Backlight (Reset) ECDIS Backlight back to default value [100nits](#)

1.1.4. RS232 communication format

RS232 Follow ICE 61162-1 communication protocol format

UART Software Configuration

Date Rate

The date rate has been set at 9600 bits/second for data transmission and receive.

Data Format

Data shall be transmitted with no parity, 8 data bits, 1 start bit, and 1 stop bit.

UART Command Format

The basic message format is listed below:

Byte #	0	1	2	3	4	5	6	7, etc	6
	ATTN	ADDR	CMD0	CMD1	CMD2	LEN	IHCHK	DATA	IDCHK

The minimal message size is 7 bytes, and the maximal message size is 82 bytes, consistent with 61162-1.

Command Format Description

ATTN (Attention)

This byte is used to identify a start of message, and it can be one of three values:

ATTN	Description
0x07	Command, also known as ASCII BELL
0x06	Acknowledge, also known as ASCII ACK
0x15	Negative Acknowledge, also known as ASCII NAK

A device shall send a command using the 0x07 Attention Code.

The unit will respond to the command with either an ACK if the command completed successfully, or a NAK if the command failed.

ADDR (Address)

This byte is used to specify a particular unit to receive a Command and to identify the unit responding (ACK or NAK) to a Command.

All units will support the broadcast address. The factory default address is 0.

The Address field shall have the following values:

ADDR	Description
0xFF	Broadcast - Addressed to all units
0x00 to 0x0F	Address of a specific unit ,0 to 15 (max of 16 units OSD ID)

CMD (Message Commands and Queries)

The command can be one of the following values:

Byte 2	Byte 3	Byte 4	ASCII	Description	I/O	
0x42	0x52	0x49	"BRI"	User Backlight Control	W	
0x42	0x52	0x54	"BRT"	User Brightness Control	W	
0x44	0x53	0x54	"DST"	Display State	W	
0x4D	0x43	0x43	"MCC"	OSD Control Functionality (*1) with key global commands: "?" = Query OSD value "R" = Reset OSD value "r" = Reset OSD value "+" = Increase OSD value "-" = Decrease OSD value	R/W	
0x4D	0x41	0x4E	"MAN"	Manufacturer ID Code	R	
0x53	0x4E	0x42	"SNB"	Serial Number Query	R	
0x54	0x59	0x50	"TYP"	Type/Model Number Query	R	
0x56	0x45	0x52	"VER"	Unit ID Model/Version Number	R	

(*1) "MCC" = The "MCC" command also features a Query "?" mode, "R" or "r" reset mode to factory

default, increase +1 from current value "+" and decrease -1 from current value "-". Details and usage of these commands are available later in this manual.

LEN (Data Length)

This single byte defines the length of DATA in the message in bytes.

The maximal value for this field is 74 bytes, and the minimal value is 0 byte.

IHCHK (Inverse Header Checksum)

This is a simple 8-bit checksum of the header data, message bytes 0 to 5 on which a bit-wise inversion has been performed. The checksum should be initialized to 0. The 8-bit sum (without carry) of bytes 0, 1, 2, 3, 4, 5, and 6 shall be 0xFF.

$IHCHK = 0xFF - (ATT + ADD + CMD0 + COM1 + COM2 + LEN)$, where only 8 bits are used.

If a message checksum fails the controller will reply with the attention byte 0x15 and no

data bytes.

If a message is received with an incorrect checksum, the display will replay with the attention code set to NAK and no data field. This does not apply to Broadcast messages in RS-485 mode, in which case there will be no reply.

DATA (Data Field)

The data bytes will only be send if data length (LEN) is greater than 0.

The data bytes are designated DAT0, DAT1, DAT2, etc.

IDCHK (Inverse Data Checksum)

This byte will only be send if data length (LEN) is greater than 0. It is an 8 bit checksum of the

data bytes (bytes 7 to LEN+6) where a bit-wise inversion has been performed. The checksum

is initialised to 0. The 8 bit sum (without carry) of bytes 7 to LEN+7 is be 0xFF.

$IDCHK = 0xFF - (DAT0+DAT1+DAT2+....)$, where only 8 bits are used

If a message checksum fails the controller will reply with the attention byte 0x15.

MESSAGE EXAMPLES

The following examples are the typical messages used:

“BRI” (Backlight command)

This command is used to change the Backlight of the Monitor.

Change Backlight from 40% to 60% on all controllers (default address setting):

ATTN	ADDR	CMD0	CMD1	CMD2	LEN	IHCHK	DATA	IDCHK
0x07	0xFF	0x42	0x52	0x59	0x01	0x0B	0x99	0x66

The Backlight data is one byte where 0x00 is min and 0xFF is max.

Acknowledge (OK):

ATTN	ADDR	CMD0	CMD1	CMD2	LEN	IHCHK	DATA	IDCHK
0x06	0xFF	0x42	0x52	0x59	0x01	0x0C	0x99	0x66

The controller returns the new Backlight data – in this case 0x99 = 60%.

Acknowledge (error):

ATTN	ADDR	CMD0	CMD1	CMD2	LEN	IHCHK	DATA	IDCHK
0x15	0xFF	0x42	0x52	0x59	0x01	0xFD	0x66	0x99

The controller returns the new Backlight data – in this case 0x66 = 40%.

“BRT” (Brightness command)

This command is used to change the brightness of the Monitor.

Change brightness from 40% to 60% on all controllers (default address setting):

ATTN	ADDR	CMD0	CMD1	CMD2	LEN	IHCHK	DATA	IDCHK
0x07	0xFF	0x42	0x52	0x54	0x01	0x10	0x99	0x66

The brightness data is one byte where 0x00 is min and 0xFF is max.

Acknowledge (OK):

ATTN	ADDR	CMD0	CMD1	CMD2	LEN	IHCHK	DATA	IDCHK
0x06	0xFF	0x42	0x52	0x54	0x01	0x11	0x99	0x66

The controller returns the new brightness data – in this case 0x99 = 60%.

Acknowledge (error):

ATTN	ADDR	CMD0	CMD1	CMD2	LEN	IHCHK	DATA	IDCHK
0x15	0xFF	0x42	0x52	0x54	0x01	0x12	0x66	0x99

The controller returns the new brightness data – in this case 0x66 = 40%.

“DST” (Display State)

This command is sent to the unit to control the unit on/off or query the on/off state of the unit.
LEN = one data byte.

0x00	Turn the unit off
0xFF	Turn the unit on
0x3F	“?” - Query the state of the unit. The returned DATA field will indicate the state. 0x00 = Unit is off. 0xFF = Unit is on.

If the data checksum is valid, the unit will reply to this command with an ACK attention code.
The DATA field will indicate the unit state.

If an invalid data checksum was received and the message was not broadcast and RS-485, the unit will reply with a NAK attention code and the current state.

This command is used to Query Display State.

ATTN	ADDR	CMD0	CMD1	CMD2	LEN	IHCHK	DATA	IDCHK
0x07	0xFF	0x44	0x53	0x54	0x01	0x0D	0x3F	0xC0

Acknowledge (OK):

ATTN	ADDR	CMD0	CMD1	CMD2	LEN	IHCHK	DATA	IDCHK
0x06	0xFF	0x44	0x53	0x54	0x01	0x0E	0xFF	0x00

The controller returns the Query Display State– in this case 0xFF = unit is on

Acknowledge (OK):

ATTN	ADDR	CMD0	CMD1	CMD2	LEN	IHCHK	DATA	IDCHK
0x06	0xFF	0x44	0x53	0x54	0x01	0x0E	0x00	0xFF

The controller returns the Query Display State– in this case 0xFF = unit is off

“MCC” (OSD Control Functionality)

This command gives remote access to the display OSD menu settings. The commands are transmitted in the DATA field. See the appendix for a complete list of OSD commands. For future products, it can not be guaranteed that all commands will still be available.

If the checksum is valid, the unit will reply to this command with an ACK attention code, where the data field contains the original command followed by acknowledge from the controller, as described in the appendix. If the checksum is invalid and the message was not broadcast and RS-485, the unit will reply to this command with a NAK attention code, where the data field contains the original command.

Examples:

Command: 50% contrast

Contrast Control : 0x82

“a” / “A” definition is by default : 0x61/0x41

50% = 0x32 : 0x33 0x32 (50% = 0x32. In ASCII 32 will be: 0x33 0x32)

IDCHK : 0xFF – (0x82+0x41+0x33+0x32) = 0xD7

ATTN	ADDR	CMD0	CMD1	CMD2	LEN	IHCHK	DATA				IDCHK
0x07	0xFF	0x4D	0x43	0x43	0x04	0x22	0x82	0x41	0x33	0x32	0xD7

Acknowledge (OK):

ATTN	ADDR	CMD0	CMD1	CMD2	LEN	IHCHK	DATA				IDCHK		
0x06	0xFF	0x4D	0x43	0x43	0x04	0x22	0x82	0x41	0x33	0x32	0x33	0x32	0x72

The controller returns the new Contrast data – in this case 0x32 = 50%.

MCC Command	Syntax and Functionality		ACK Details and Values
Brightness Control	Syntax:	07 FF 4D 43 43 03 23 81 xx yy zz	Where xx = "0" to "6"
	Examples:	-----	Where yy = "0" to "F"
	Example "50"	07 FF 4D 43 43 03 23 81 35 30 19	Where zz = Calculated
	Query "?"	07 FF 4D 43 43 02 24 81 3F 3F	Checksum
	Reset "R"	07 FF 4D 43 43 02 24 81 52 2C	Max Range: "0" "0" to
	Reset "r"	07 FF 4D 43 43 02 24 81 72 0C	"6" "4"
Increase "+"	07 FF 4D 43 43 02 24 81 2B 53	Default: "3" "2"	
Decrease "-"	07 FF 4D 43 43 02 24 81 2D 51	Note: If Value > 100	

			then Value=100
Contrast Control	<p>Syntax:</p> <p>Examples:</p> <p>Example "A50"</p> <p>Example "a50" Query "?"</p> <p>Reset "R"</p> <p>Reset "r"</p> <p>Increase "+"</p> <p>Decrease "-"</p>	<p>07 FF 4D 43 43 04 22 82 ww xx yy zz</p> <p>-----</p> <p>07 FF 4D 43 43 04 22 82 41 35 30 D7</p> <p>07 FF 4D 43 43 04 22 82 61 35 30 B7</p> <p>07 FF 4D 43 43 02 24 82 3F 3E</p> <p>07 FF 4D 43 43 02 24 82 52 2B</p> <p>07 FF 4D 43 43 02 24 82 72 0B</p> <p>07 FF 4D 43 43 02 24 82 2B 52</p> <p>07 FF 4D 43 43 02 24 82 2D 50</p>	<p>Where ww = "a" or "A"</p> <p>Where xx = "0" to "6"</p> <p>Where yy = "0" to "F"</p> <p>Where zz = Calculated Checksum</p> <p>Max Range: "0" "0" to "6" "4"</p> <p>Default: "3" "2"</p> <p>"a" / "A" definition is by default applicable to all signal inputs, not only the one currently active.</p> <p>Note: If Value > 100 then Value=100</p>
Image - H_POSITION	<p>Syntax:</p> <p>Examples:</p> <p>Example "50"</p> <p>Query "?"</p> <p>Reset "R"</p> <p>Reset "r"</p> <p>Increase "+"</p> <p>Decrease "-"</p>	<p>07 FF 4D 43 43 03 23 86 xx yy zz</p> <p>-----</p> <p>07 FF 4D 43 43 03 23 86 35 30 14</p> <p>07 FF 4D 43 43 02 24 86 3F 3A</p> <p>07 FF 4D 43 43 02 24 86 52 27</p> <p>07 FF 4D 43 43 02 24 86 72 07</p> <p>07 FF 4D 43 43 02 24 86 2B 4E</p> <p>07 FF 4D 43 43 02 24 86 2D 4C</p>	<p>Where xx = "0" to "6"</p> <p>Where yy = "0" to "F"</p> <p>Where zz = Calculated Checksum</p> <p>Max Range: "0" "0" to "6" "4"</p> <p>Default: "3" "2"</p> <p>If DVI mode: "?"</p> <p>Note: If Value > 100 then Value=100</p>
Image - V_POSITION	<p>Syntax:</p> <p>Examples:</p> <p>Example "50"</p> <p>Query "?"</p> <p>Reset "R"</p> <p>Reset "r"</p> <p>Increase "+"</p>	<p>07 FF 4D 43 43 03 23 87 xx yy zz</p> <p>-----</p> <p>07 FF 4D 43 43 03 23 87 35 30 13</p> <p>07 FF 4D 43 43 02 24 87 3F 39</p> <p>07 FF 4D 43 43 02 24 87 52 26</p> <p>07 FF 4D 43 43 02 24 87 72 06</p> <p>07 FF 4D 43 43 02 24 87 2B 4D</p>	<p>Where xx = "0" to "6"</p> <p>Where yy = "0" to "F"</p> <p>Where zz = Calculated Checksum</p> <p>Max Range: "0" "0" to "4" "4" (68)</p> <p>Default: "2" "2"(34)</p>

	Decrease "-"	07 FF 4D 43 43 02 24 87 2D 4B	If DVI mode: "?" Note: If Value > 100 then Value=100
OSD-H.Position	Syntax: Examples: Example "50" Query "?" Reset "R" Reset "r" Increase "+" Decrease "-"	07 FF 4D 43 43 03 23 90 xx yy zz ----- 07 FF 4D 43 43 03 23 90 35 30 0A 07 FF 4D 43 43 02 24 90 3F 30 07 FF 4D 43 43 02 24 90 52 1D 07 FF 4D 43 43 02 24 90 72 FD 07 FF 4D 43 43 02 24 90 2B 44 07 FF 4D 43 43 02 24 90 2D 42	Where xx = "0" to "6" Where yy = "0" to "F" Where zz = Calculated Checksum Max Range: "0" "0" to "6" "4" Default: "6" "4" Note: If Value > 100 then Value=100. If Value is not multiple by ten, it change to less nearest multiple value.
OSD-V.Position	Syntax: Examples: Example "50" Query "?" Reset "R" Reset "r" Increase "+" Decrease "-"	07 FF 4D 43 43 03 23 91 xx yy zz ----- 07 FF 4D 43 43 03 23 91 35 30 09 07 FF 4D 43 43 02 24 91 3F 2F 07 FF 4D 43 43 02 24 91 52 1C 07 FF 4D 43 43 02 24 91 72 FC 07 FF 4D 43 43 02 24 91 2B 43 07 FF 4D 43 43 02 24 91 2D 41	Where xx = "0" to "6" Where yy = "0" to "F" Where zz = Calculated Checksum Max Range: "0" "0" to "6" "4" Default: "6" "4" Note: If Value > 100 then Value=100. If Value is not multiple by ten, it change to less nearest multiple value.
Gamma Value Select	Syntax: Examples: Example "1" Query "?" Reset "R" Reset "r"	07 FF 4D 43 43 02 24 9D xx zz ----- 07 FF 4D 43 43 02 24 9D 31 31 07 FF 4D 43 43 02 24 9D 3F 23 07 FF 4D 43 43 02 24 9D 52 10 07 FF 4D 43 43 02 24 9D 72 F0	Where xx = "0" to "2" Where zz = Calculated Checksum Available functions (MMD): "0" = OFF "1" = 1.8 "2" = 2.2 (Default)

Color Temperature Select	Syntax: Examples: Example "2" Query "?" Reset "R" Reset "r"	07 FF 4D 43 43 02 24 B3 xx zz ----- 07 FF 4D 43 43 02 24 B3 32 1A 07 FF 4D 43 43 02 24 B3 3F 0D 07 FF 4D 43 43 02 24 B3 52 FA 07 FF 4D 43 43 02 24 B3 72 DA	Where xx = "0" to "3" Where zz = Calculated Checksum Available functions: "0" = 5800K "1" = 6500K (default) "2" = 9300K "3" = OFF Examples on Response: "8" "0" "0" "0" (8000k) "U" "S" "E" "R" (USER)
Source (Main Input Select)	Syntax: Examples: Example "B3" Query "?" Reset "R" Reset "r" Increase "+" Decrease "-"	07 FF 4D 43 43 03 23 98 xx yy zz ----- 07 FF 4D 43 43 03 23 98 35 30 09 07 FF 4D 43 43 02 24 98 3F 2F 07 FF 4D 43 43 02 24 98 52 1C 07 FF 4D 43 43 02 24 98 72 FC 07 FF 4D 43 43 02 24 98 2B 43 07 FF 4D 43 43 02 24 98 2D 41	Where xx = "A" to "F" Where yy = "1" to "3" Where zz = Calculated Checksum Available functions: "D1" = HDMI (default) "D2" = DP
Phase (VGA)			

“MAN” (Manufacturer ID Code)

This command is sent to the unit to request Manufacturer ID. No data shall be sent with this command. The unit will reply to this command with an ACK attention code. The DATA field indentify the manufacturer in a text string. (maximum 17 characters)

It will decrease or increase in length depending on actual Serial Number stored in the unit.

DDC Command 增加 Manufacturer ID Code 工廠出廠設定值 17byte.(註 1)

Examples:

Query Manufacturer ID:

ATTN	ADDR	CMD0	CMD1	CMD2	LEN	IHCHK
0x07	0xFF	0x4D	0x41	0x4E	0x00	0x1D

Acknowledge Manufacturer ID:

ATTN	ADDR	CMD0	CMD1	CMD2	LEN	IHCHK	DATA	IDCHK
0x06	0xFF	0x4D	0x41	0x4E	0x01	0x1C	0x99	0x66

“SNB” (Serial Number Query)

This query is sent to the unit in order to identify the unit serial number. No data shall be sent with this query.

The unit will reply to this command with an ACK attention code. The DATA field will be set to an ASCII text string to

indicate the specified Serial Number, e.g: “12345”. Note that the length of Serial Number is not limited to 5 characters. (maximum 17 characters)

It will decrease or increase in length depending on actual Serial Number stored in the unit.

DDC Command 增加 **Serial Number** 工廠出廠設定值 17byte. (註 1)

Examples:

Command Display Serial Number:

ATTN	ADDR	CMD0	CMD1	CMD2	LEN	IHCHK
0x07	0xFF	0x53	0x4E	0x42	0x00	0x16

Acknowledge Serial Number “12345”

ATTN	ADDR	CMD0	CMD1	CMD2	LEN	IHCHK	DAT1	DAT2	DAT3	DAT4	DAT5	IDCHK
N	R	0	1	2		K	1	2	3	4	5	K
0x06	0xFF	0x53	0x4E	0x42	0x05	0x12	0x31	0x32	0x33	0x34	0x35	0x66

“TYP” (Type/Model Number Query)

This query is sent to the unit in order to identify the unit type by its model number / part number. No data shall be sent with this query.

The unit will reply to this command with an ACK attention code. The DATA field will be set to an text string to indicate the specified Type/Model Number, e.g: “JH20T03”. Note that the length of Serial Number is not limited to 7 characters. (maximum 17 characters)

It will decrease or increase in length depending on actual Serial Number stored in the unit.

Examples:

Command Type/Model Number:

ATTN	ADDR	CMD0	CMD1	CMD2	LEN	IHCHK
0x07	0xFF	0x54	0x59	0x50	0x00	0xFC

Acknowledge Type/Model Number “JH20T03”

ATTN	ADDR	CMD0	CMD1	CMD2	LEN	IHCHK	DAT1	DAT2	DAT3	DAT4	DAT5	DAT6	DAT7	IDCHK
0x06	0xFF	0x54	0x59	0x50	0x07	0x1A	0x4A	0x48	0x32	0x30	0x54	0x30	0x33	0x66

“VER” (Unit ID Model/Version Number)

This query is sent to the unit in order to identify unit type by a preassigned code and establish the version of the serial communications interface software. No data shall be sent with this query.

Any future revisions, such as additions or changes to the commands or data fields, shall increment the unit Version Number. The unit will reply to this command with an ACK attention code. The DATA field has a unique 1-byte unit model code. The next 2 bytes shall contain major and minor version of the serial communication protocol in use.

Examples:

Command Unit ID Model/Version Number:

ATTN	ADDR	CMD0	CMD1	CMD2	LEN	IHCHK
0x07	0xFF	0x56	0x45	0x52	0x00	0x0C

Acknowledge Unit ID Model “0x01”(1) , Version Number “0x01,0x00” (1.0)

ATTN	ADDR	CMD0	CMD1	CMD2	LEN	IHCHK	DAT1	DAT2	DAT3	IDCHK
0x06	0xFF	0x56	0x45	0x52	0x03	0x04	0x01	0x01	0x00	0xFD