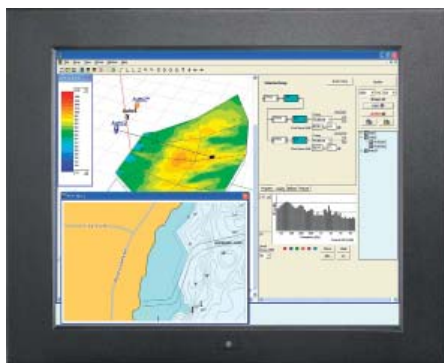# UltraView

dedicated LCD display solutions
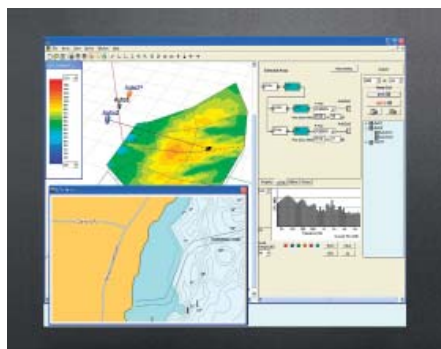
User Manual   17" LCD

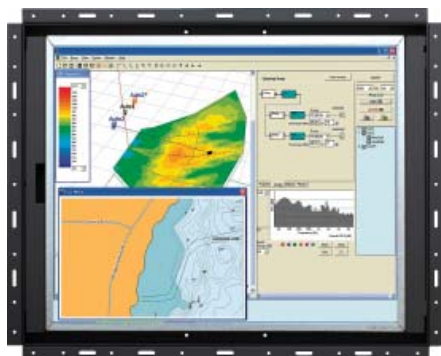**AP-17 / HAP-17**
Aluminum front bezel

NAP-17 / HNAP-17
Front NEMA4 / IP65

DP-17 / HDP-17
Universal Mounting Open Frame

OP-17 / HOP17
Universal Mounting Open Frame

FC   CE   RoHS   REACH

Designed and manufactured by Austin Hughes

Legal Information

Safety Instructions
Please read all of these instructions carefully before you use the device. Save this manual for future reference.

- Unplug equipment before cleaning. Don't use liquid or spray detergent; use a moist cloth.
- Keep equipment away from excessive humidity and heat. Preferably, keep it in an air-conditioned environment with temperatures not exceeding 40º Celsius (104º Fahrenheit).
- When installing, place the equipment on a sturdy, level surface to prevent it from accidentally falling and causing damage to other equipment or injury to persons nearby.
- When the equipment is in an open position, do not cover, block or in any way obstruct the gap between it and the power supply. Proper air convection is necessary to keep it from overheating.
- Arrange the equipment's power cord in such a way that others won't trip or fall over it.
- If you are using a power cord that didn't ship with the equipment, ensure that it is rated for the voltage and current labeled on the equipment's electrical ratings label. The voltage rating on the cord should be higher than the one listed on the equipment's ratings label.
- Observe all precautions and warnings attached to the equipment.
- If you don't intend on using the equipment for a long time, disconnect it from the power outlet to prevent being damaged by transient over-voltage.
- Keep all liquids away from the equipment to minimize the risk of accidental spillage. Liquid spilled on to the power supply or on other hardware may cause damage, fire or electrical shock.
- Only qualified service personnel should open the chassis. Opening it yourself could damage the equipment and invalidate its warranty.
- If any part of the equipment becomes damaged or stops functioning, have it checked by qualified service personnel.

What the warranty does not cover

- Any product, on which the serial number has been defaced, modified or removed.
- Damage, deterioration or malfunction resulting from:
  - ☐ Accident, misuse, neglect, fire, water, lightning, or other acts of nature, unauthorized product modification, or failure to follow instructions supplied with the product.
  - ☐ Repair or attempted repair by anyone not authorized by us.
  - ☐ Any damage of the product due to shipment.
  - ☐ Removal or installation of the product.
  - ☐ Causes external to the product, such as electric power fluctuation or failure.
  - ☐ Use of supplies or parts not meeting our specifications.
  - ☐ Normal wear and tear.
  - ☐ Any other causes which does not relate to a product defect.
- Removal, installation, and set-up service charges.

Regulatory Notices Federal Communications Commission (FCC)

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

Any changes or modifications made to this equipment may void the user's authority to operate this equipment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Re-position or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

Contents

Before Installation

■ It is very important to mount the equipment in a suitable cabinet or on a stable surface.

■ Make sure the place has a good ventilation, is out of direct sunlight, away from sources of excessive dust, dirt, heat, water, moisture and vibration.

Unpacking

The equipment comes with the standard parts shown in package content. Check and make sure they are included and in good condition. If anything is missing, or damaged, contact the supplier immediately.

How To Clean Your LCD Monitor

⚠ Caution :

■ To avoid the risk of electric shock, make sure your hands are dry before unplugging your monitor from or plugging your monitor into an electrical outlet.

■ When you clean your monitor, do not press down on the LCD screen. Pressing down on the screen can scratch or damage your display. Pressure damage is not covered under warranty.

■ Use only cleansers made specifically for cleaning monitors and monitor screens. Cleansers not made to clean monitors and monitor screens can scratch the LCD display or strip off the finish.

■ Do not spray any kind of liquid directly onto the screen or case of your monitor. Spraying liquids directly onto the screen or case can cause damage which is not covered under warranty.

■ Do not use paper towels or abrasive pads to clean your monitor. Using an abrasive pad or any wood based paper product such as paper towels can scratch your LCD screen.

Cleaning Your Monitor

To clean your LCD safely, please follow these steps :

① Disconnect the power cord.

② Gently wipe the surface using a clean, dry microfiber cloth. Use as little pressure as possible.

Cleaning Tough Marks and Smudges

To remove tough marks and smudges, please follow these steps :

① Disconnect the power cord.

② Spray a small amount of non-abrasive cleanser on a microfiber cloth.

⚠ **Caution : Do not spray or apply any liquids directly onto the monitor. Always apply the solution to your microfiber cloth first, not directly on the parts you are cleaning.**

③ Gently wipe the surface. Use as little pressure as possible.

④ Wait until your monitor is completely dry before plugging it in and powering it up.

AP-17 / NAP-17 /
HAP-17 / HNAP-17
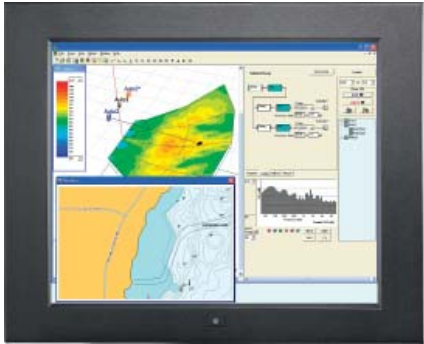
17" LCD display X 1
6ft VGA cable X 1
Power adapter X 1
Power cord X 1

Mounting hardware X 1 pack

- Mounting bracket x 4 pcs

- M4* 6mm screw x 8 pcs

- M4* 50mm screw x 8 pcs

Basic I/O
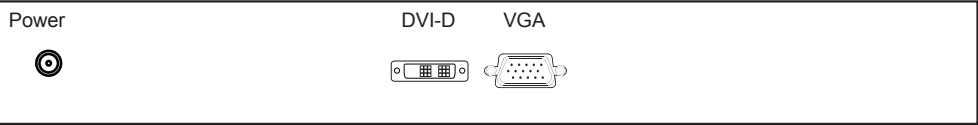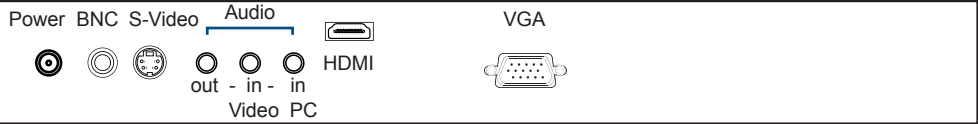
Power		DVI-D	VGA

AV2.2D upgrade I/O

Power BNC S-Video   Audio   DVI-D   VGA

out - in - in
Video PC

AV2.2H upgrade I/O

Power BNC S-Video   Audio   HDMI   VGA

out - in - in
Video PC

< 1.2 > Structure Diagram

1. Rear case
2. LCD panel
3. Protective 3mm glass
4. 6mm aluminum front bazel
5. Audio speaker (for HDMI, Audio or TV option)
6. LCD membrane
7. Remote sensor

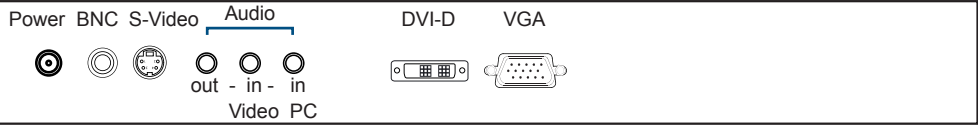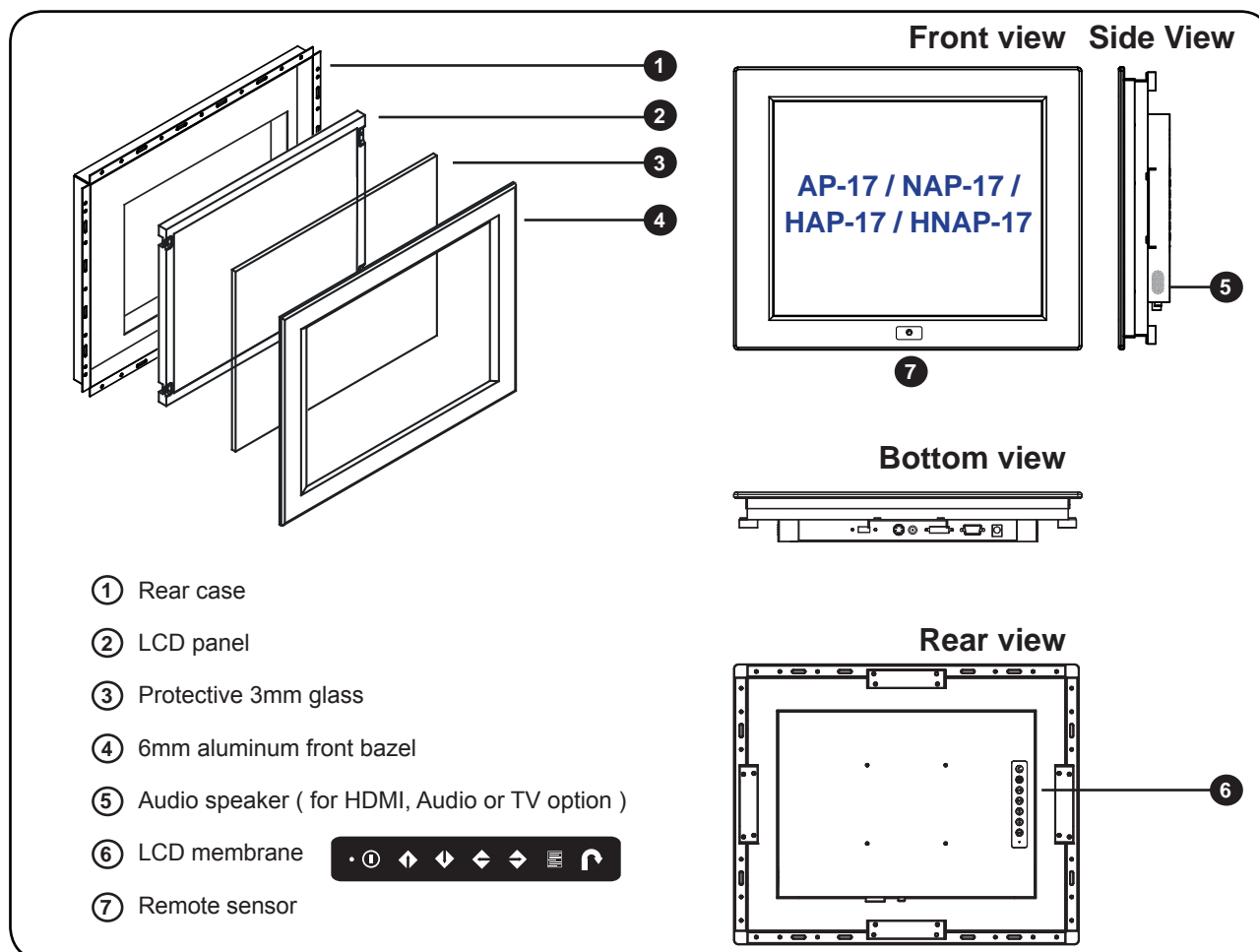| Model	Product Dimension (W x D x H)	Packing Dimension (W x D x H)	Net Weight	Gross Weight
AP-17 NAP-17 HAP-17 HNAP-17	439 x 64.2 x 356.6 mm 17.3 x 2.5 x 14 inch	615 x 113 x 523 mm 24.2 x 4.4 x 20.6 inch	6.6 kg 14.5 lb	9.2 kg 20.2 lb

Front View

Side View

AP-17 / NAP-17 /
HAP-17 / HNAP-17

272

356.6

42.3

340

49.5

439

237

322.6

27.6

58.2

64.2

Rear View

439

68.5

M4*4pcs

100

332.7

322.6

80

123.7

100

121.3

162.5

80

405
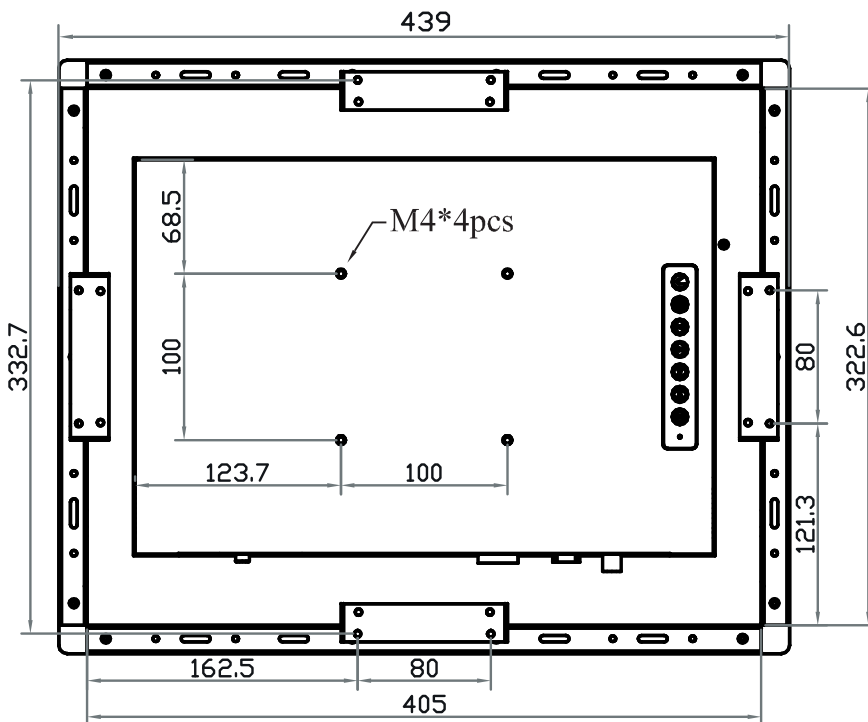
UNIT : mm
1mm = 0.03937 inch

Bottom View

439

62

56

28

39

327

405

< 1.3 > Installation
(I) Panel mount

1 Mounting bracket

x 4 pcs

2 M4*6mm screw

x 8 pcs

3 M4*50mm screw

x 8 pcs
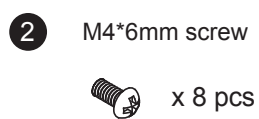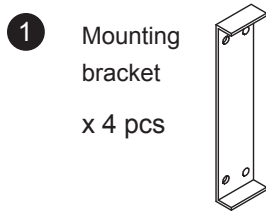
Hardware set part no. UV-BK#2

Steps

■ Install 4 mounting brackets with 8 x M4*6mm screws

■ Adjust the LCD panel with 8 x M4*50mm screws and fix it on the surface.

(II) VESA mount (100*100mm)

M4 screw

100

100

VESA mount (100*100mm)

■ Hardware and M4*4 pcs for VESA mount are not provided
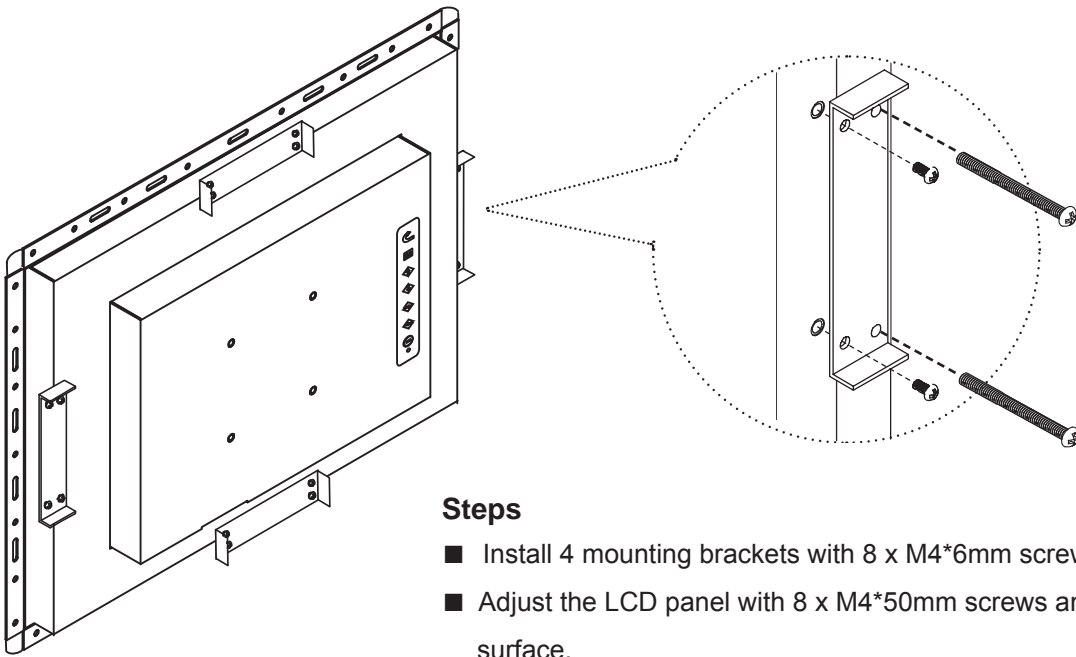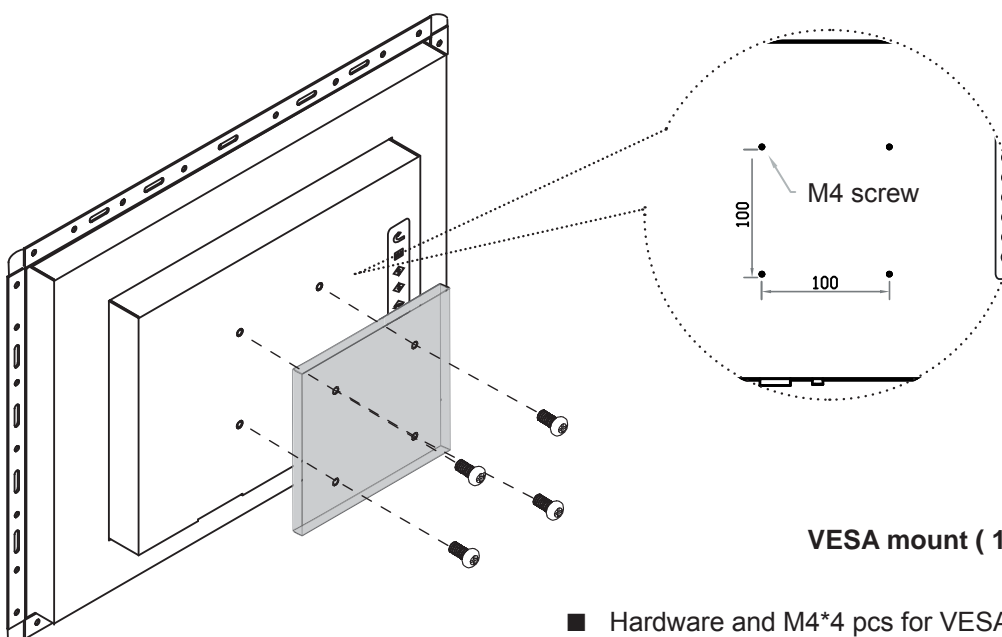
DP-17 / HDP-17

17" LCD display X 1
6ft VGA cable X 1
Power adapter X 1
Power cord X 1
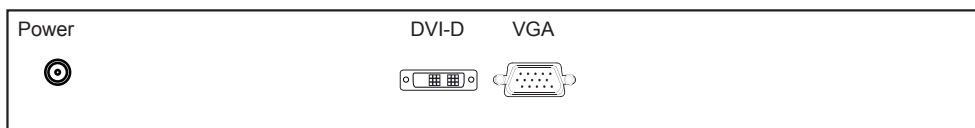
Basic I/O

Power		DVI-D	VGA

AV2.2D upgrade I/O

Power BNC S-Video Audio   DVI-D   VGA

out - in - in
Video PC

AV2.2H upgrade I/O

Power BNC S-Video Audio   VGA

HDMI

out - in - in
Video PC

< 2.2 > Structure Diagram

Front view   **Side View**

DP-17 / HDP-17

Bottom

Rear view

① Rear case

② LCD panel

③ 6mm aluminum front cover

④ Audio speaker, pair

⑤ LCD membrane
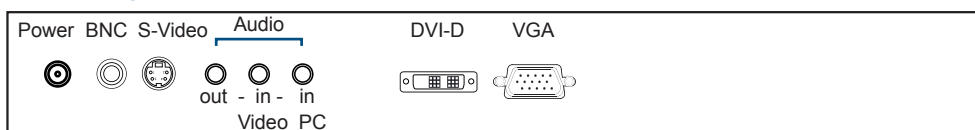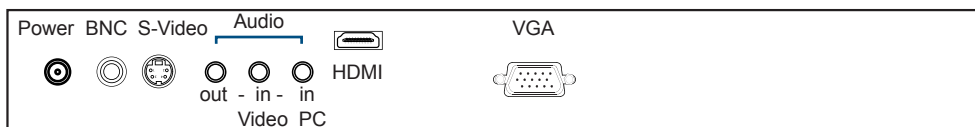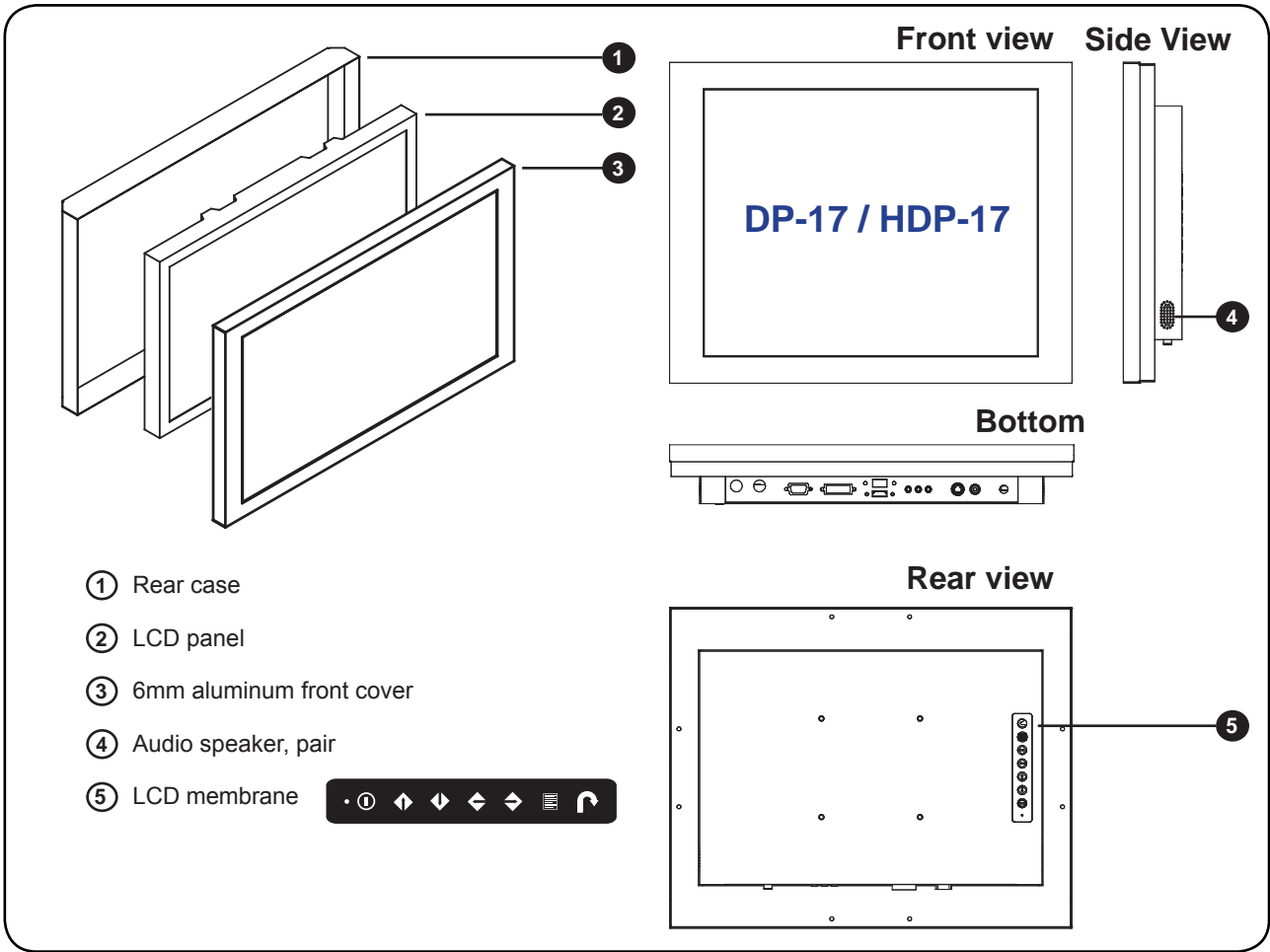
Model	Product Dimension (W x D x H)	Packing Dimension (W x D x H)	Net Weight	Gross Weight
DP-F17 **HDP-F17**	408 x 59.5 x 325.6 mm 16.1 x 2.3 x 12.8 inch	615 x 113 x 523 mm 24.2 x 4.4 x 20.6 inch	5.8 kg 12.8 lb	8.4 kg 18.5 lb

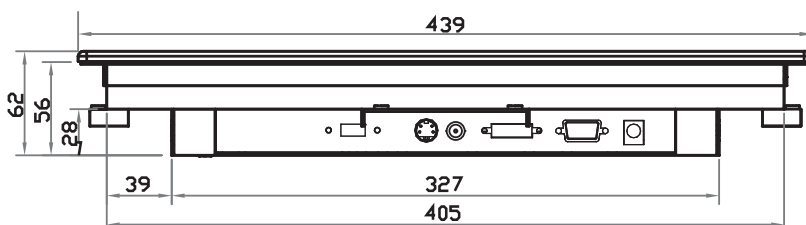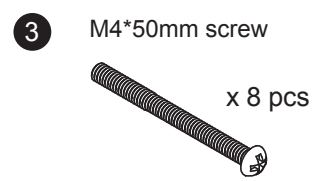**Front View**

Side View

DP-17 / HDP-17

272
325.6

339.6
34.2
408
26.8

27.6
59.5
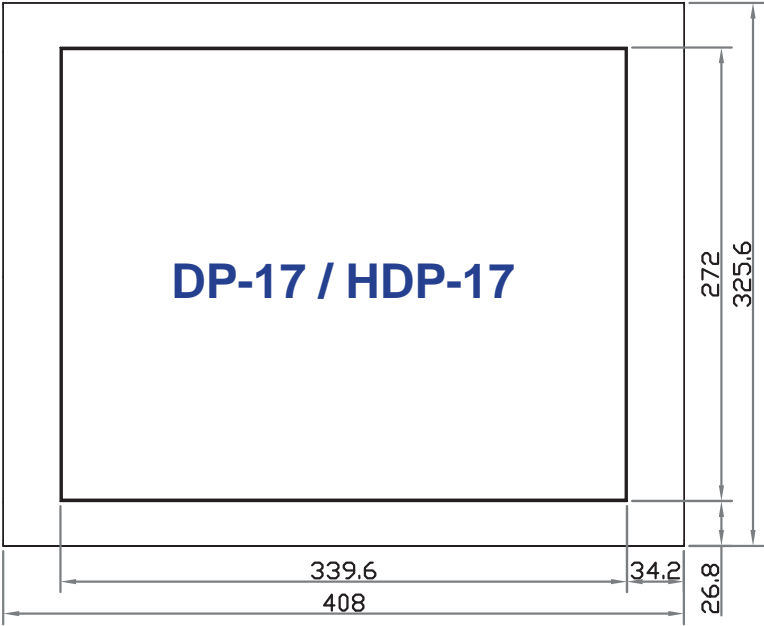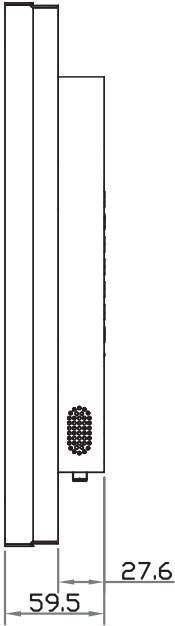
Rear View

UNIT : mm
1mm = 0.03937 inch

M4*4pcs

M4*4pcs

79

100

100

79

389

Bottom View

408

59.5

27.6

347.4

< 2.3 > VESA mount Installation
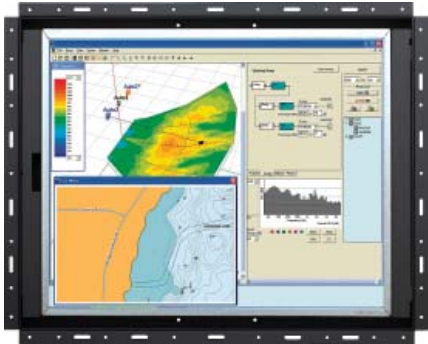
M4 screw

100

100

VESA mount (100*100mm)

■ Hardware and M4*4 pcs for VESA mount are not provided

OP-17 / HOP-17

17" LCD display X 1
6ft VGA cable X 1
Power adapter X 1
Power cord X 1
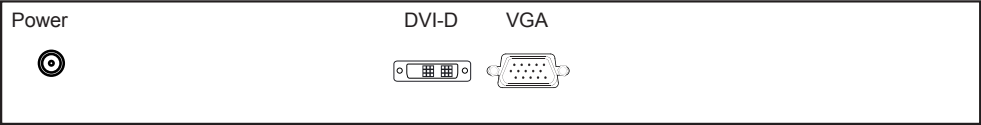
Basic I/O

Power		DVI-D	VGA

AV2.2D upgrade I/O

Power BNC S-Video   Audio   DVI-D   VGA

out - in - in
Video PC

AV2.2H upgrade I/O

Power BNC S-Video   Audio   HDMI   VGA

out - in - in
Video PC

< 3.2 > Structure Diagram

Front view **Side View**

OP-17 / HOP-17

Bottom view

Rear view

① Rear case

② LCD panel

③ Audio speaker (for HDMI, Audio or TV option)

④ Universal open frame mounting

⑤ LCD membrane

⑥ Extended remote sensor membrane cable
(66cm from AD board to sensor end)
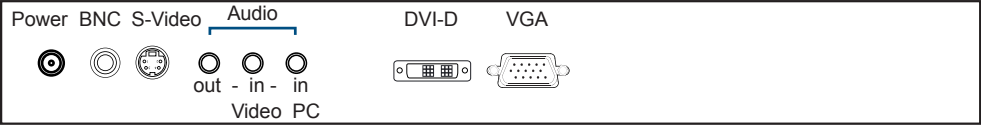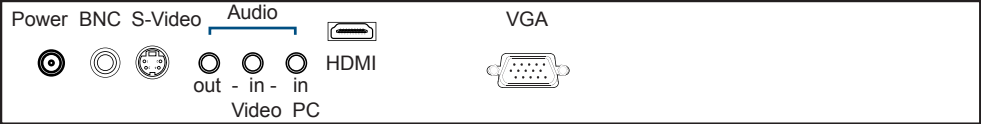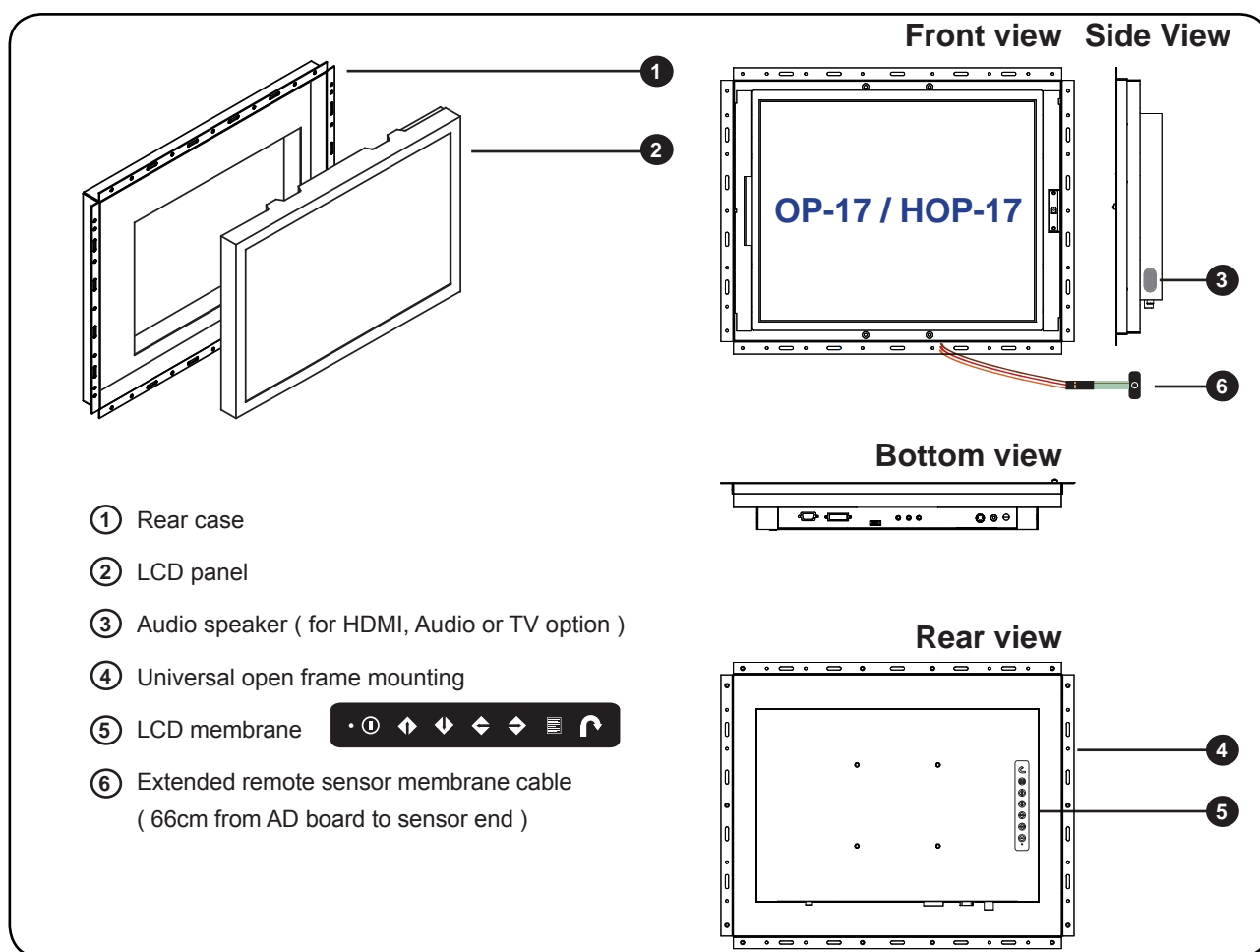
Model	Product Dimension (W x D x H)	Packing Dimension (W x D x H)	Net Weight	Gross Weight
OP-17 HOP-17	436 x 58.2 x 353.6 mm 17.2 x 2.3 x 13.9 inch	615 x 113 x 523 mm 24.2 x 4.4 x 20.6 inch	4.9 kg 10.8 lb	7.5 kg 16.5 lb
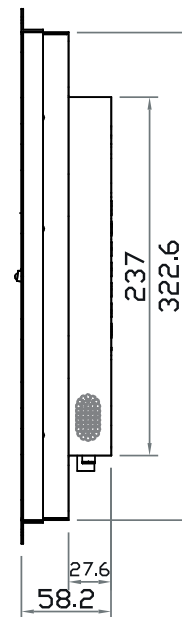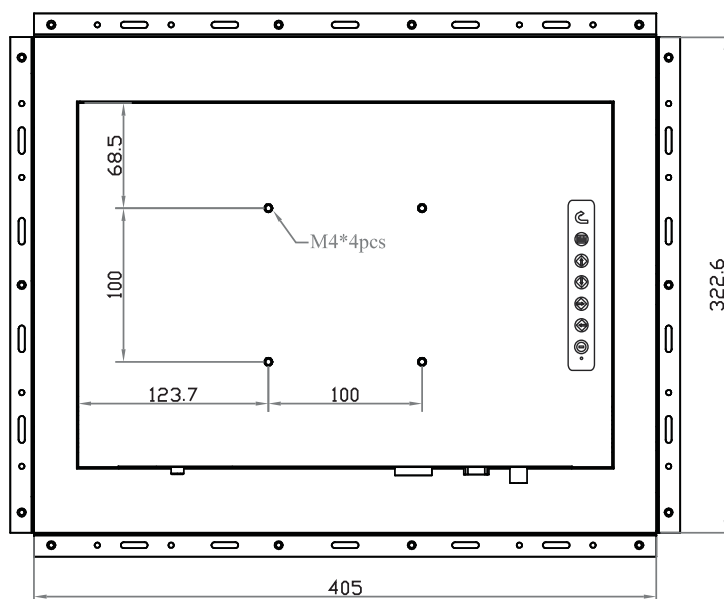
Front View

Side View

OP-17 / HOP-17

UNIT : mm
1mm = 0.03937 inch

Rear View

M4*4pcs

Bottom View

< 3.3 > Installation

(I) Universal mount

(II) VESA mount (100*100mm)

M4 screw
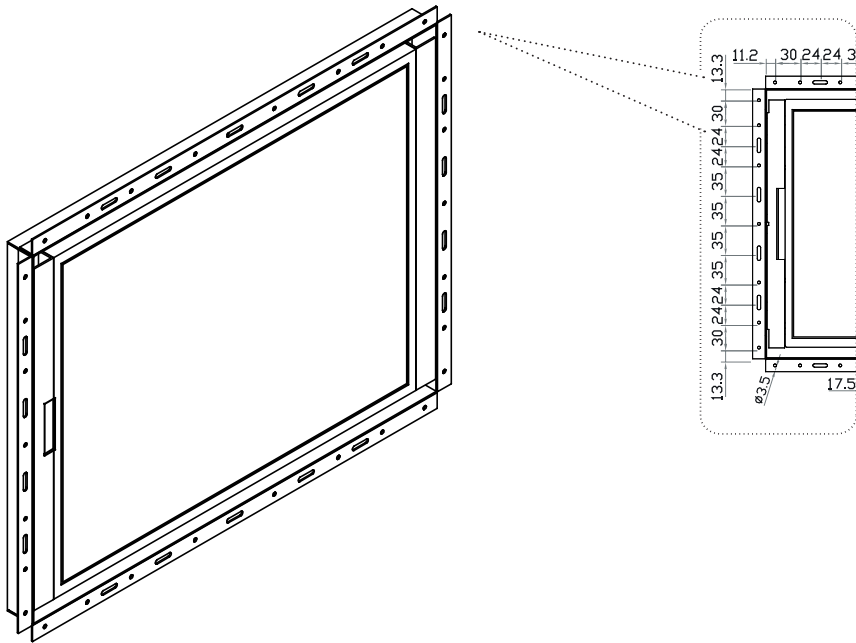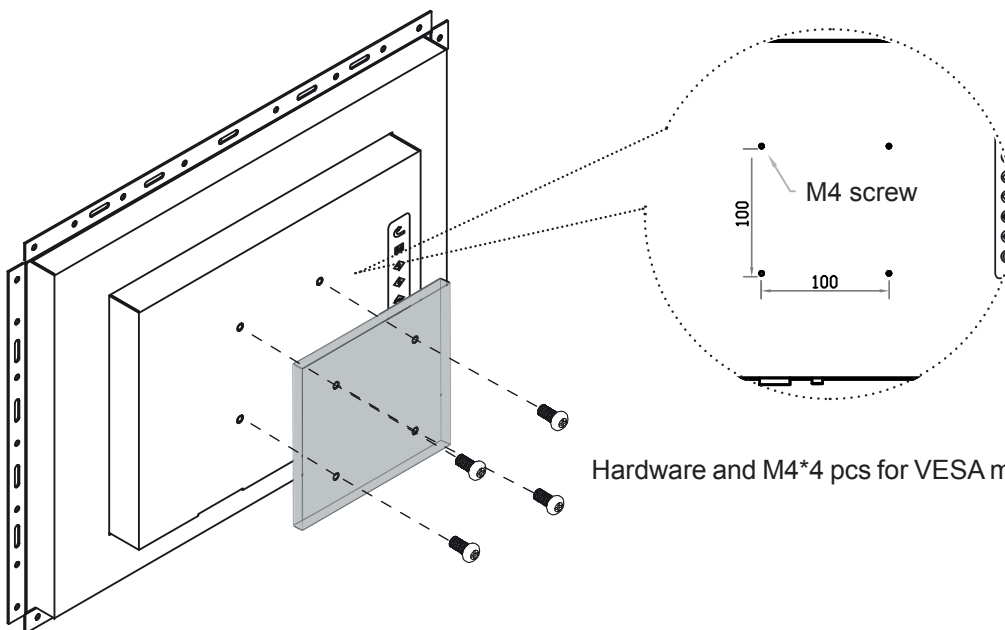
Hardware and M4*4 pcs for VESA mounting are not provided

Mechanical Design	AP-17 / HAP-17	NAP-17 / HNAP-17	DP-17 / HDP-17	OP-17 / HOP-17
Protection	6mm front bezel	NEMA 4 / IP65	front cover	open frame
Front Panel	Black, RAL 9005			-
Rear Casing	Black, RAL 9005			
VESA mount	100 x 100 mm			
Universal mount	-		-	ready
Desktop stand	option		option	-
Panel mount	bundled		-	-

LCD Panel	Standard	Sunlight Readable
Brightness (cd/m²)	250	1000
Surface treatment	Haze 25%, Hard-coating	Anti-glare
MTBF (hrs)	30,000	50,000
Panel Size (diagonal)	17-inch TFT color LCD	
Native resolution	1280 x 1024	
Contrast Ratio (typ.)	1000 : 1	
Colors	16.7 M	
Viewing Angle (L/R/U/D)	85/85/80/80	
Response Time (ms)	5	
Dot pitch (mm)	0.264	
Display Area (mm)	337.92H x 270.33V	
Surface hardness	3H	
Backlight Type	LED	

Video	
VGA	Analog 0.7Vp-p
DVI	DVI-D single link
Option HDMI	HDMI 1.2 / HDCP 1.1
Composite (BNC)	NTSC & PAL
S-Video (4-pin)	NTSC & PAL

Audio Option	
Input Connector Impedance / Power level	3.5mm stereo jack 30kΩ / 750mV
Output Connector Resistance / Power level	3.5mm stereo jack 30kΩ / 2.8V
Speaker: Dual Stereo	2W x 2

*When the audio output is connected, speaker output is OFF

Power	Standard	Sunlight Readable
Input	Auto-sensing 100 to 240VAC, 50 / 60Hz	
Consumption:		
Screen ON	Max. 25W	Max. 35W
Power saving mode	Max. 4W	Max. 4W
Power button OFF	Max. 1W	Max. 1W

Compliance	
EMC	FCC & CE certified
Safety	CE / LVD certified
Environment	RoHS2 & REACH compliant

< 4.1 > Product Specifications

Environmental Conditions		
Operating	Temperature	0 to 55°C degree
	Humidity	20~90%, non-condensing
	Altitude	16,000 ft
Storage / Non-operating	Temperature	-20 to 60°C degree
	Humidity	5~90%, non-condensing
	Altitude	40,000 ft
	Shock	10G acceleration (11ms duration)
	Vibration	10~300Hz 0.5G RMS random vibration

Physical Specification	AP-17 / HAP-17	NAP-17 / HNAP-17	DP-17 / HDP-17	OP-17 / HOP-17
Product (W x D x H) mm	439 x 64.2 x 356.6		408 x 59.5 x 325.6	436 x 58.2 x 353.6
inch	17.3 x 2.5 x 14		16.1 x 2.3 x 12.8	17.2 x 2.3 x 13.9
Packing (W x D x H) mm	615 x 113 x 523		615 x 113 x 523	615 x 113 x 523
inch	24.2 x 4.4 x 20.6		24.2 x 4.4 x 20.6	24.2 x 4.4 x 20.6
Net Weight	6.6 kg / 14.5 lb	6.6 kgs / 14.5 lb	5.8 kg / 12.8 lb	4.9 kg / 10.8 lb
Gross Weight	9.2 kg / 20.2 lb	9.2 kgs / 20.2 lb	8.4 kg / 18.5 lb	7.5 kg / 16.5 lb
Chassis color	dark			
Chassis materials	Aluminum			

Applicable Format		
DVID / VGA Input	PC Signal	1280 x 1024 x 60 / 75Hz
		1280 x 960 x 60Hz
		1280 x 768 x 60 / 75Hz
		1152 x 864 x 75Hz
		1024 x 768 x 60 / 70 / 75Hz
		848 x 480 x 60Hz
		800 x 600 x 60 / 72 / 75Hz
		720 x 400 x 70Hz
		640 x 480 x 60 / 72 / 75Hz
		640 x 400 x 70Hz
		640 x 350 x 70Hz
	Audio Signal	2ch Linear PCM
HDMI Input	PC signal	Same as VGA
	HDMI 1.2	1280 x 720 x 50 / 60Hz (720p)
		720 x 480 x 50 / 60Hz (576p / 480p)
	Audio Signal	2ch Linear PCM

* In some circumstances, if the user connects the LCD to PC via HDMI port for video and audio signals, the LCD may display incorrectly on a full screen. If so, please adjust the display card setting on display size to fix the issue.

Power light
○ Power light
● Green = On
● Orange = Power saving

Membrane Switch	Function
⊖	Power on / off LCD
▤	Display the OSD menu
↕ ↕ ↔ ↔	Scrolls through menu options and adjusts the displayed control (To auto adjustment by pressing the button ↕ for 5 seconds)
↰	Exit the OSD screen Toggle analog, digital & video connection (DVI-D and video options only)

Ver: G56SN20SSTD701   1024 x 768 59.8Hz

Image

Brightness	50
Contrast	50
Color Temp	User
Red	255
Green	255
Blue	255

Adjust: ← →   Select: ↑ ↓   Set: ◉ / ▣   Exit: ↰
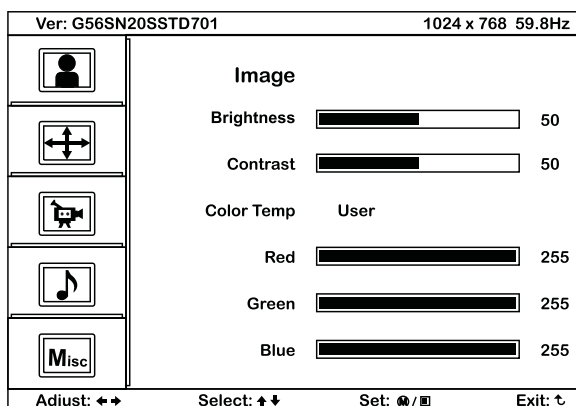
OSD Configuration Page

[Image icon]	**Image:** for the brightness, contrast, color temp, red, green, and blue
[Geometry icon]	**Geometry:** for the auto adjust, H position, V position, phase and clock
[Video icon]	**Video:** for the colour, tint, sharpness, noise reduction, DCDi and TV Setup
[Audio icon]	**Audio:** for volume, bass, treble, balance, AVL and mute
Misc	**Misc:** for the language, OSD position, graphic mode, ratio, reset and timer

< Part 5 > Option
< 5.1 > Option Table

Options	AP / NAP	HAP / HNAP	DP	HDP	OP	HOP
HDMI * or DVI-D	✓	✓	✓	✓	✓	✓
S-Video * + Composite (BNC)	✓	✓	✓	✓	✓	✓
Audio	✓	✓	✓	✓	✓	✓
Touchscreen	✓	✓	✓	✓	✓	✓
MCS multi-display control	✓	✓	✓	✓	✓	✓
DC Power	✓	✓	✓	✓	✓	✓
MIL-type / lockable connector	✓	✓	✓	✓	✓	✓
Quad display	✓	✓	✓	✓	✓	✓
TV (Analog) *	✓	✓	✓	✓	✓	✓
Auto / switch dimming		✓		✓		✓

*   About HDMI and DVI-D

(1) For AV2.2 upgrade, either HDMI or DVI-D is provided.

(2) In some circumstances, if the user connects the LCD to PC via HDMI port for video and audio signals, the LCD may display incorrectly on a full screen. If so, please adjust the display card setting on display size to fix the issue.

*   Remote Controller

(1) AV2.2 upgrade comes with RC-2 remote controller.

(2) TV option comes with RC-2 remote controller.

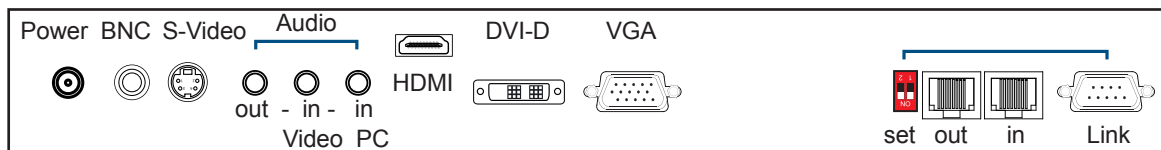## < 5.2 > Options : MCS (Multi-display Control)

More control is always good. Especially when it is necessary and easy. Austin Hughes provides MCS solution to control the **OSD** of various UltraView LCD display up to 64 units.

The RS-232C is used for the communication between the PC and the first display via a 15 feet serial cable while the CAN bus is used for the various LCD displays cascade together via CAT 5/6 cable, and daisy chain up to 1,000 meters.

Designed for use with UltraView LCD displays, Austin Hughes provides a MCS input module without using additional space or power and it comes standard with a 2-year warranty.

MCS

| Power | BNC | S-Video | Audio | | | HDMI | DVI-D | VGA | | set | out | in | Link |

*** Please download the protocol of MCS control at :
http://www.austin-hughes.com/support/usermanual/ultraview/UM-UV-MCS.pdf

⚠️

Set switch

ON
1 2
For the 1st and last display, push the set switch upward

ON
1 2
For other daisy chain displays, push the set switch downward.

RS-232C

15 feet serial cable
(over 15 feet, extender required)

LINK   OUT   IN   OUT   IN   OUT   IN   OUT

RJ-45 jack

Cat5 / 6 cable
max. 300 meters

Cat5 / 6 cable
max. 300 meters

Cat5 / 6 cable
max. 300 meters

Daisy chain up to 1,000 meters and 64 displays

up to 64 displays

< 5.3 > Options :

AV2.2D Upgrade Options

- **DVI-D** (DVI-D TMDS single link   )
- **AV**   (S-Video + Composite, BNC)
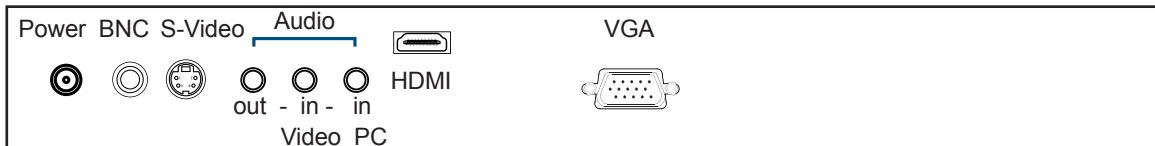- **Audio** (Built-in Dual Stereo Speakers, 2W x 2)
              (3.5mm audio jacks for audio in & out   )

Power BNC S-Video _Audio_   DVI-D   VGA

out - in - in
Video PC
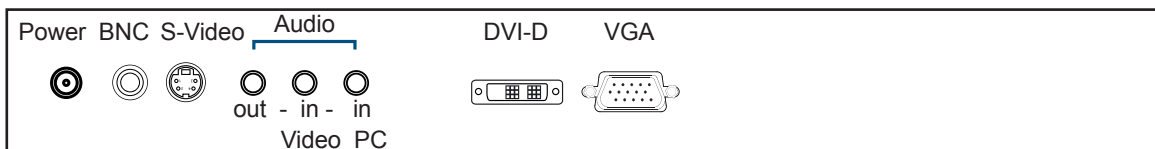
AV2.2H Upgrade Options

- **HDMI** (HDMI 1.2, CEA-861-D   )
- **AV**   (S-Video + Composite, BNC)
- **Audio** (Built-in Dual Stereo Speakers, 2W x 2)
              (3.5mm audio jacks for audio in & out   )

Power BNC S-Video _Audio_   VGA

                    HDMI
out - in - in
Video PC

***
(1) In some circumstances, if the user connects the LCD to PC via HDMI port for video and audio signals, the LCD may display incorrectly on a full screen. If so, please adjust the display card setting on display size to fix the issue.

**(2) AV2.2 upgrade option comes with RC-2 remote controller x 1** (please refer to P.25)

17" USB Touchscreen Specification

Model	17TPC-10 Multi-touch	TRB e-Resistive	TCB e-Capacitive
Technology	Projected Capacitive	5-Wire Resistive	Capacitive
Touch Point	10	Single	Single
Input Type	Finger or Capacitive Stylus	Finger or Stylus	Finger
Resolution	2048 x 2048	2048 x 2048	2048 x 2048
Touch Point Accuracy	± 10 mm offset	-	-
Response Speed	Max. 20 ms	15 ms	20 ms
Activation Force	≤ 10 g	≤ 50 g	≤ 50 g
Surface Hardness	7H	3H	9H
Light Transmission	≥ 88%	80% ± 3%	92% ± 2%
Haze	≤ 2%	8% ± 3%	7%
Durability	> 100 million touches	10 million touches	300 million touches
Top Layer	1.8 mm Tempered Glass	ITO Film	Glass
Bottom Layer	Film	ITO Glass	
Thickness	2.2 mm	2.2 ± 0.2 mm	2.8 mm ± 10%
Connector	USB Type A	USB Type A	USB Type A
Compatibility	Windows 7	Windows 7 / XP / Vista, Linux	

- Dimension will be changed if Multi-touch required
- USB touchscreen package includes 1 x 6ft USB cable, quick reference guideline and CD disc
- For detailed information, please refer to the attached CD disc
- As the touchscreen unit is not made of toughened glass, please handle it carefully

USB Touchscreen

Power   DVI-D   VGA
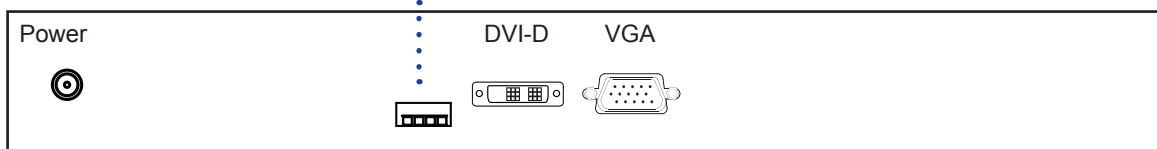
< 5.4 > Options : Touchscreen & driver

17TPC-10 Driver

⚠ Connect the USB cable from the USB port on the LCD to a computer. The touch screen supports easy Plug-and-Play operations. There is no need to install additional drivers on the computer.

TRB / TCB Driver

Please follow the below steps to setup the touch screen:-

Step 1. Run the bundled CD disc or download the driver from the link below :
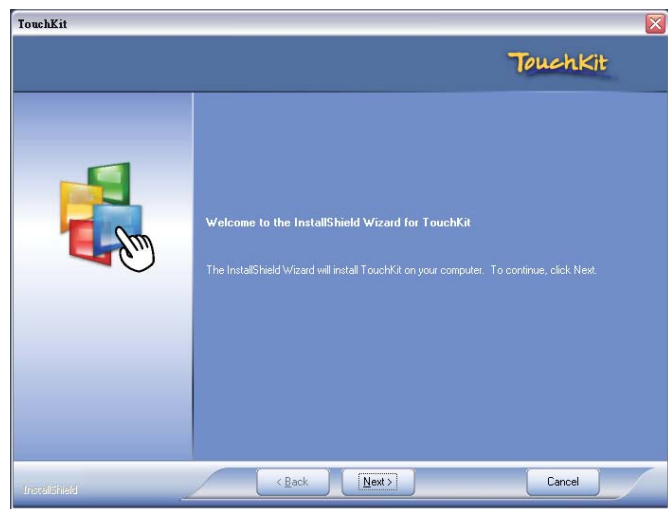http://www.austin-hughes.com/resources/driver/ultraview

Step 2. Double click the Setup.exe

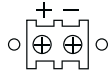**Step 3.** Follow the installation instruction to finish the setup

Step 4. After installation, run the TouchKit program & the "4 point calibration"

⚠ Please do the initial calibration after the first setup

Model	12V	24V	48V	125V
Input rating				
Input voltage:	12-Volt	24-Volt	48-Volt	110-Volt
Input range:	9 ~ 18V	18 ~ 36V	36 ~ 75V	66 ~ 160V
Input current				
- No load	50 mA	50 mA	50 mA	35 mA
- Full load	4950 mA	2450 mA	1220 mA	749 mA
Output rating				
Output voltage:	12-Volt	12-Volt	12-Volt	12-Volt
Output current:	4.16A	4.16A	4.16A	6.25A
Efficiency	84%	85%	85%	91%

***   For DC power option :

   (1) If the unit with LCD, earthing **may be required** ⚠

< 5.6 > Options : MIL-type or Lockable Connector

	Input	Part no.		MIL Standard
MIL - type Connector	DC Power *** (Male)	MS3470W8-33P		MIL - DTL - 26482
	VGA *** (Male)	MS3470W14-15P		MIL - DTL - 26482

*** There are several additional MIL DC and VGA connector types with varying design characteristics to meet cost considerations and to provide users with the most design flexibility possible. For more information, please contact us.

	Input	Part no.		Standard
Lockable Connector	DC Power (Male)	YM-Ext-461CP001		D-type 3W3
	USB	LUSB - A111 - 00		-

*** MIL - type or Lockable connectors above can be integrated with our LCD displays. Sale service just for connectors not provided.

Video IN
1 ~ 4

RS-232   VCR in

Alarm I/O   VCR out   Video Loop   S-Video   VGA   Power
1 ~ 4
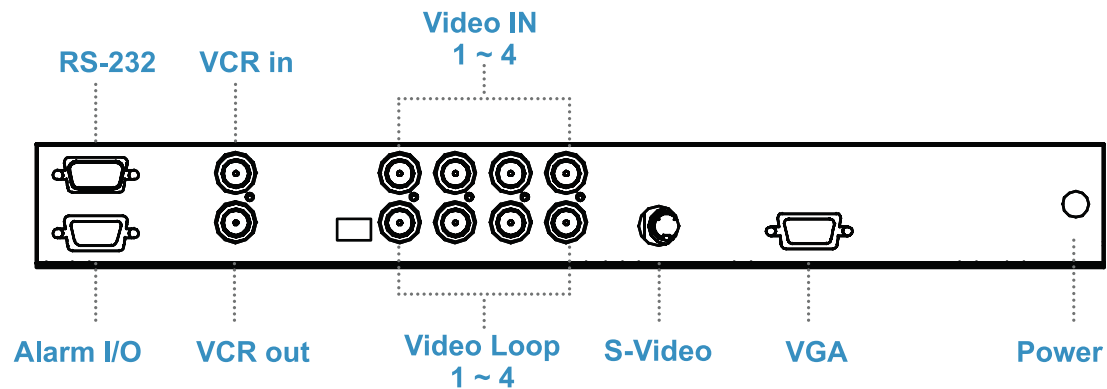
QD Specification

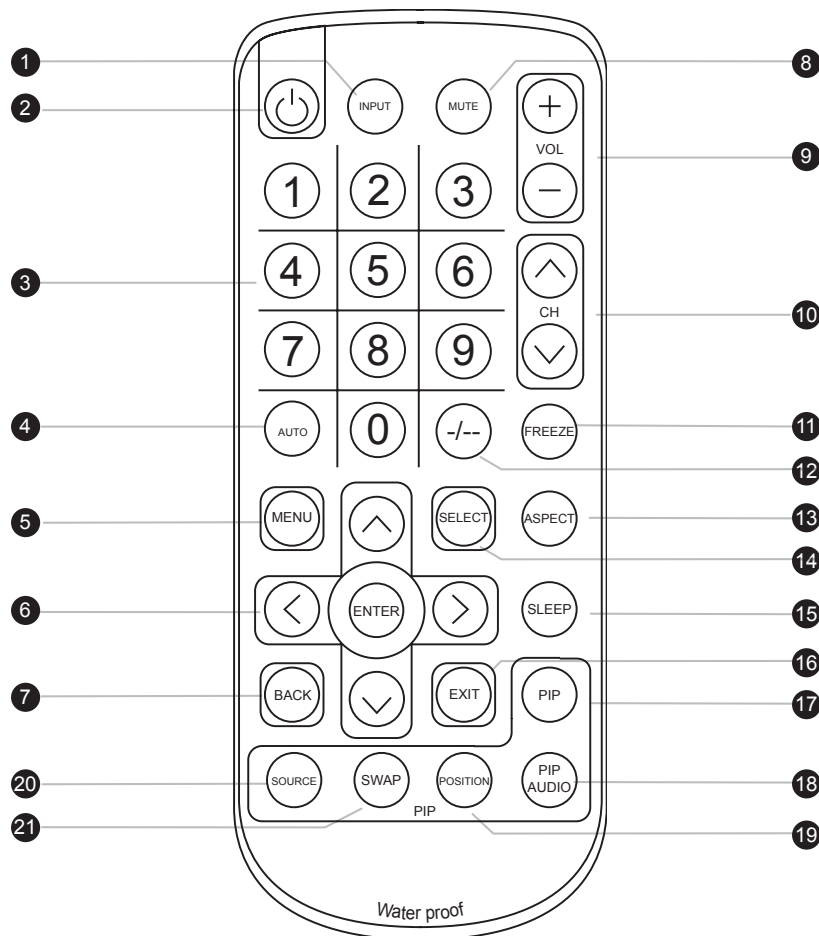| Item		Description	
Model Number		QD (NTSC)	QD (PAL)
Number of Color		16.7 M	16.7 M
Imaging System		NTSC	PAL
Resolution		1024 x 525	1024 x 625
Refresh Rate		60	50
Video Input	Camera Input	1.0 Vpp, 75 Ohm x 4	
	VCR Input	1.0 Vpp, 75 Ohm x 1	
Video Output	Live Monitor	1.0 Vpp, 75 Ohm x 1	
	Loop Through Out	1.0 Vpp, 75 Ohm x 4	
	VCR Output	1.0 Vpp, 75 Ohm x 1	
Auto Gain Control		Yes	
Time / Date		Yes	
On Screen Display		Yes	
Camera Title		8 Character Title	
Display Format	2 x Zoom On Playback	Yes	
	QUAD	Yes	
	FULL	Yes	
	SEQUENCY	Yes	
Dwell Time		0 to 99 Sec Adjustable	
Alarm Inputs		Selectable NO/NC Contacts x 4	
Relay Outputs		NO/NC contacts x 1: 1A @DC24V Max.	
Alarm Hold Time		1 Sec to Non-stop	
Built-in Buzzer		Yes	
Key Lock		Yes	

*** For QD option, casing dimensions will be changed.

# < 5.8 > Options : TV (Analog)
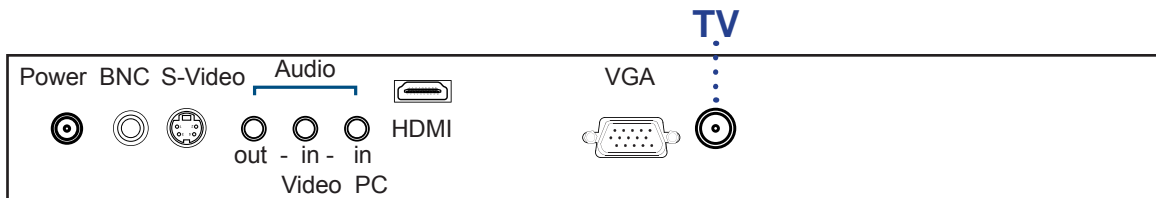
***   **For TV option :**

     (1) The AD board comes standard with HDMI, VGA, S-Video, BNC, audio inputs and RC-2 remote controller.

     (2) Casing dimensions will be changed.

①	**INPUT**	Select the source
②	⏻	Switches on or off the TV
③	**0 - 9**	Only use in TV mode. Select channels. For channel numbers 10 and above, enter the second digit within two seconds.
④	**AUTO**	Auto adjust
⑤	**MENU**	Display the menu on the screen or go to the previous menu
⑥	**▲ / ▼ / ◄ / ► / ENTER**	Go to the upper menu or select the previous value / Go to the next menu or select the next value / Decrease the setting value / Increase the setting value or enter to the select item setting Enter to the select item settings or excude the setting
⑦	**BACK**	Back to previous value
⑧	**MUTE**	Turn on or off the speaker
⑨	**Vol + / -**	Increase or decrease the speaker volume
⑩	**CH + / -**	For TV model only, increase or decrease the channel number
⑪	**FREEZE**	Reserve for OEM model
⑫	**- / --**	For setting input single or double digits
⑬	**ASPECT**	Adjust the screen size
⑭	**SELECT**	To select the existing item
⑮	**SLEEP**	Select the sleeping time
⑯	**EXIT**	Exit the menu or cancel
	PIP functions	
⑰	**PIP**	Picture in picture
⑱	**PIP AUDIO**	To set the audio of in PIP mode
⑲	**POSITION**	To set the screen position in PIP mode
⑳	**SOURCE**	PIP Source
㉑	**SWAP**	Swap screen in PIP mode

< 5.9 > Options for Sunlight Readable : Auto Dimming
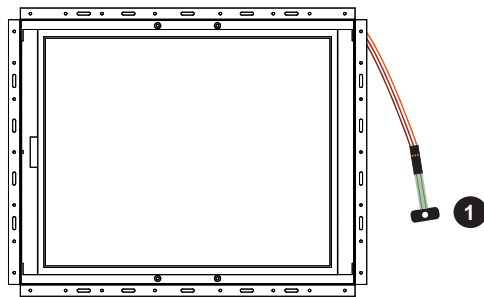
① **DA-01** Light sensor on **OP** model
(66cm from AD board to sensor end)
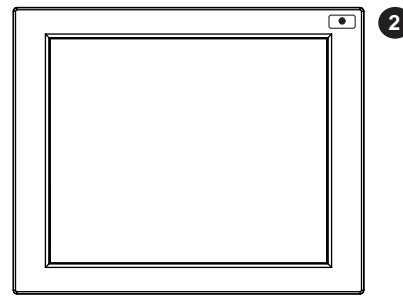
② **DA-01** Light sensor on **AP** model

DA-01 light sensor installed on the display front panel. Users can set auto dimming ON or OFF from OSD menu. Then display brightness changes according to its ambient brightness. Each change causes 10% increase or decrease on display brightness.

Once the auto dimming is ON, users cannot adjust brightness from OSD menu.

Steps : OSD Menu > Picture > Auto Dimming > ON

Light Sensor Operation Range
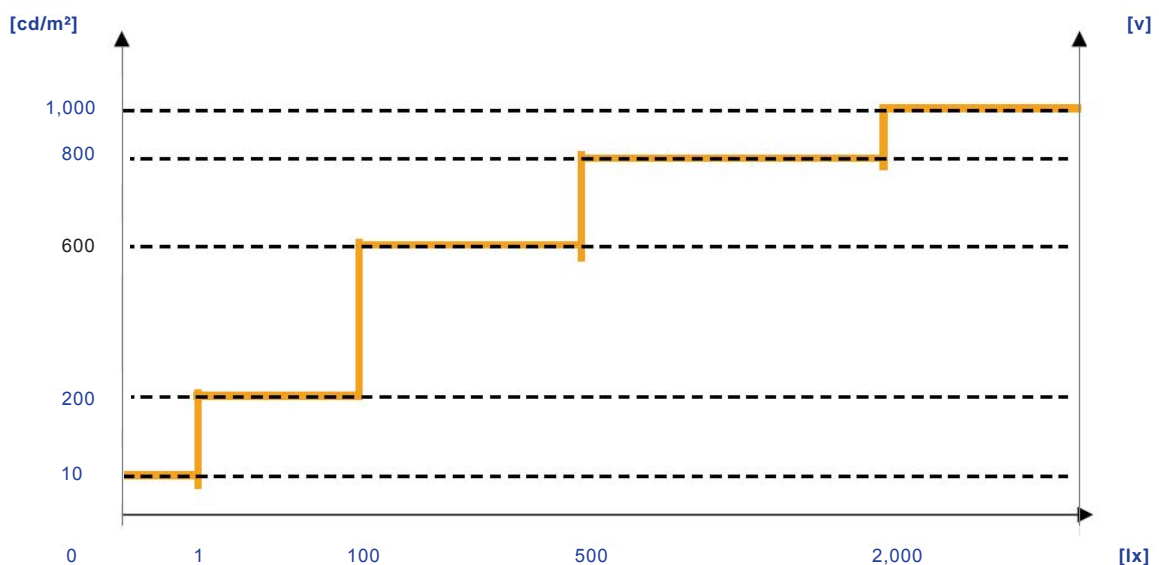
Options : Switch Dimming

DS-01 is a IP54 dimming knob installed on the bottom right side of the front panel. The display can support hyper dimming function to adjust brightness from nearly 0% to 100% via the easy-to-use knob. One click on dimming knob causes 2% increase or decrease on display brightness.
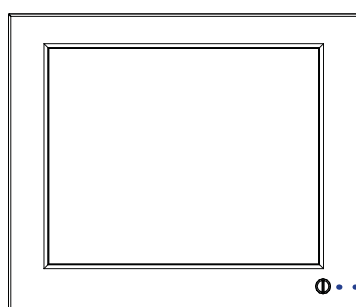
DS-01 dimming knob
Dimensions (W x H) : 15.5 x 14.2 mm

***
- For this option, front panel and casing dimensions may be changed.
- For HAP series, if DS-01 dimming knob applied, IP protection will be downgraded from IP65 to IP54.

< 6 > Ultraview 17" Family

17" LCD Display

250 cd/m² Brightness	**1000 cd/m² Sunlight Readable Brightness**

6mm aluminum front bezel

AP-17

6mm aluminum front bezel

HAP-17

6mm aluminum front bezel
NEMA 4 / IP65 front protection

NAP-17

6mm aluminum front bezel
NEMA 4 / IP65 front protection

HNAP-17

Aluminum front cover

DP-17

Aluminum front cover

HDP-17

Universal open frame

OP-17

Universal open frame

HOP-17

MP-17

Industrial Display Kit
- 4:3 17" LED
- LCD controller
- AC power

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