OMNI-Monitor Series

OMNI-310M, OMNI-312M, OMNI-315M, OMNI-317M, OMNI-319M, OMNI-215M, OMNI-221M

Industrial Touch Display

User's Manual 3rd Ed

Last Updated: February 13, 2025

Copyright Notice

Acknowledgement

Packing List

Before setting up your product, please make sure the following items have been shipped:

Item	Quantity
● OMNI Monitor	1
● VGA Cable	1
● USB Cable for Touch	1
● Touch Driver CD	1
● Phoenix Power Connector	1

If any of these items are missing or damaged, please contact your distributor or sales representative immediately.

About this Document

This User's Manual contains all the essential information, such as detailed descriptions and explanations on the product's hardware and software features (if any), its specifications, dimensions, jumper/connector settings/definitions, and driver installation instructions (if any), to facilitate users in setting up their product.

Users may refer to the product page on AAEON.com for the latest version of this document.

Safety Precautions

Please read the following safety instructions carefully. It is advised that you keep this manual for future references

1. All cautions and warnings on the device should be noted.
2. Make sure the power source matches the power rating of the device.
3. Position the power cord so that people cannot step on it. Do not place anything over the power cord.
4. Always completely disconnect the power before working on the system's hardware.
5. No connections should be made when the system is powered as a sudden rush of power may damage sensitive electronic components.
6. If the device is not to be used for a long time, disconnect it from the power supply to avoid damage by transient over-voltage.
7. Always disconnect this device from any AC supply before cleaning.
8. While cleaning, use a damp cloth instead of liquid or spray detergents.
9. Make sure the device is installed near a power outlet and is easily accessible.
10. Keep this device away from humidity.
11. Place the device on a solid surface during installation to prevent falls
12. Do not cover the openings on the device to ensure optimal heat dissipation.
13. Watch out for high temperatures when the system is running.
14. Do not touch the heat sink or heat spreader when the system is running
15. Never pour any liquid into the openings. This could cause fire or electric shock.
16. As most electronic components are sensitive to static electrical charge, be sure to ground yourself to prevent static charge when installing the internal components. Use a grounding wrist strap and contain all electronic components in any static-shielded containers.

17. If any of the following situations arises, please the contact our service personnel:
    i. Damaged power cord or plug
    ii. Liquid intrusion to the device
    iii. Exposure to moisture
    iv. Device is not working as expected or in a manner as described in this manual
    v. The device is dropped or damaged
    vi. Any obvious signs of damage displayed on the device
18. DO NOT LEAVE THIS DEVICE IN AN UNCONTROLLED ENVIRONMENT WHERE THE STORAGE TEMPERATURE IS BELOW -20° C (-4°F) OR ABOVE 60°C (140°F) TO PREVENT DAMAGE.

FCC Statement

This device complies with Part 15 FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received including interference that may cause undesired operation.

Caution:

There is a danger of explosion if the battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions and your local government's recycling or disposal directives.

Attention:

Il y a un risque d'explosion si la batterie est remplacée de façon incorrecte.
Ne la remplacer qu'avec le même modèle ou équivalent recommandé par le constructeur. Recycler les batteries usées en accord avec les instructions du fabricant et les directives gouvernementales de recyclage.

China RoHS Requirements (CN)

产品中有毒有害物质或元素名称及含量

AAEON System QO4-381 Rev.A2

部件名称	有毒有害物质或元素					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
印刷电路板及其电子组件	×	○	○	○	○	○
外部信号连接器及线材	×	○	○	○	○	○
外壳	○	○	○	○	○	○
中央处理器与内存	×	○	○	○	○	○
硬盘	×	○	○	○	○	○
液晶模块	×	○	○	○	○	○
光驱	×	○	○	○	○	○
触控模块	×	○	○	○	○	○
电源	×	○	○	○	○	○
电池	×	○	○	○	○	○

本表格依据 SJ/T 11364 的规定编制。

○: 表示该有毒有害物质在该部件所有均质材料中的含量均在 GB/T 26572 标准规定的限量要求以下。

×: 表示该有害物质的某一均质材料超出了 GB/T 26572 的限量要求，然而该部件仍符合欧盟指令 2011/65/EU 的规范。

环保使用期限(EFUP (Environmental Friendly Use Period)) : 10 年

备注:

一、此产品所标示之环保使用期限，系指在一般正常使用状况下。

二、上述部件物质中央处理器、内存、硬盘、光驱、电源为选购品。

三、上述部件物质液晶模块、触控模块仅一体机产品适用。

China RoHS Requirement (EN)

Name and content of hazardous substances in product

AAEON System QO4-381 Rev.A2

Part Name	Hazardous Substances					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
PCB Assemblies	×	O	O	O	O	O
Connector and Cable	×	O	O	O	O	O
Chassis	O	O	O	O	O	O
CPU and Memory	×	O	O	O	O	O
Hard Disk	×	O	O	O	O	O
LCD Modules	×	O	O	O	O	O
CD-ROM/DVD-ROM	×	O	O	O	O	O
Touch Modules	×	O	O	O	O	O
Power	×	O	O	O	O	O
Battery	×	O	O	O	O	O

The table is prepared in accordance with the provisions of SJ/T 11364.

O：Indicates that said hazardous substance contained in all of the homogenous materials for this product is below the limit requirement of GB/T 26572.

×：Indicates that said hazardous substance contained in at least one of the homogenous materials used for this part is above the limit requirement of GB/T 26572. But this product still be compliance with 2011/65/EU Directive (allowed with 2011/65/EU Annex III of RoHS exemption with number 6(c),7(a),7(c)-1).

EFUP (Environment Friendly Use Period) value: 10 years.

Notes：

1. This product defined period of use is under normal condition.
2. In above part, CPU/Memory/ Hard Disk/CD-ROM/DVD-ROM/ Power are optional.
3. In above part, LCD Modules/ Touch Modules are for all-in-one product model.

Table of Contents

Chapter 1

Product Specifications

1.1 Specifications

These specifications apply to all models of the OMNI-Monitor Series. Specifications for individual models are listed separately.

System

Input Signal	VGA/HDMI
On Screen Display Control	5 keys OSD keypad (Up, Down, Menu, Auto, Power)
I/O Port	DB9 VGA x 1, HDMI x 1 USB x 1 (For Enable T/S Function) Line in x 1 (For optional internal Speaker) Power Input x 1(Terminal Block 3pin)
Os Support	Windows® 7 32/64 bit, Windows® 8 32/64 bit, Windows® 10 64 bit, Linux Ubuntu 16.04

Environmental

Operating Temperature	14°F ~ 131°F (-10°C ~ 55°C) With 0.5m/s Airflow
Storage Temperature	-4°F ~ 140°F (-20°C ~ 60°C)
Storage Humidity	10%~90% @104°F (40°C); non-condensing
Vibration	1 Grms / 5~500Hz/random Operation
Shock	—
EMC	CE/FCC, Class A

Power Supply

DC Input	DC 12~30V Power Input with 3 Pin Terminal Block

Touchscreen

Type	Projective Capacitive Multi Touch or 5 Wire Resistive Touch Screen (By Model)
Light Transmission	P-CAP (90% ± 3%) 5-wire Resistive (80% ± 3%)
Life Time	—

1.1.1 OMNI-310M

LCD	
Display Type	10.4" TFT-LCD
Max. Resolution	800 x 600
Max. Colors	16.2M
Luminance	230 cd/m2
Viewing Angle	160°(H), 130°(V)
Back Light	LED
Back Light MTBF (Hours)	30,000

Mechanical	
Construction	IP65 aluminum front bezel & SGCC chassis
Mounting	Panel Mount / VESA 100x100 / Stand
Dimension	11.0" x 9.4" x 2.33" (280mm x 239.3mm x 59.1mm)
Carton Dimension	16.3" x 15.4" x 7.04" (415mm x 391mm x 179mm)
Gross Weight	7.9 lbs. (3.6 kg)
Net Weight	1.1 lbs. (2.4 kg)

1.1.2 OMNI-312M

LCD	
Display Type	12.1" TFT-LCD
Max. Resolution	1024 x 768
Max. Colors	16.2M
Luminance	500 cd/m2
Viewing Angle	160°(H), 160°(V)
Back Light	LED
Back Light MTBF (Hours)	50,000

Mechanical	
Construction	IP65 aluminum front bezel & SGCC chassis
Mounting	Panel Mount / VESA 100x100 / Stand
Dimension	12.9" x 11.3" x 2.2" (328.5mm x 288.1mm x 55.9mm)
Carton Dimension	20.9" x 17.5" x 7.9" (530mm x 445mm x 200mm)
Gross Weight	10.4 lbs. (4.7 kg)
Net Weight	7.7 lbs. (3.5 kg)

1.1.3 OMNI-315M

LCD	
Display Type	15" TFT-LCD
Max. Resolution	1024 x 768
Max. Colors	16.2M (8bit/color)
Luminance	300 cd/m2
Viewing Angle	176° (H), 176° (V)
Back Light	LED
Back Light MTBF (Hours)	70,000

Mechanical	
Construction	IP65 aluminum front bezel & SGCC chassis
Mounting	Panel Mount / VESA 100x100 / Stand
Dimension	14.5" x 12.4" x 2.3" (369mm x 314mm x 58mm)
Carton Dimension	20.1" x 18.1" x 9.8" (510mm x 460mm x 250mm)
Gross Weight	14 lbs. (6.35 kg)
Net Weight	11.2 lbs. (5.1 kg)

1.1.4 OMNI-317M

LCD	
Display Type	17" TFT-LCD
Max. Resolution	1280 x 1024
Max. Colors	16.2M
Luminance	350 cd/m2
Viewing Angle	170°(H), 160°(V)
Back Light	LED
Back Light MTBF (Hours)	50,000

Mechanical	
Construction	IP65 aluminum front bezel & SGCC chassis
Mounting	Panel Mount / VESA 100x100 / Stand
Dimension	16.1" x 14.6" x 2.3" (410mm x 370mm x 59.1mm)
Carton Dimension	20.6" x 19.3" x 10.3" (522mm x 490mm x 262mm)
Gross Weight	14.8 lbs. (6.7 kg)
Net Weight	11.7 lbs. (5.3 kg)

1.1.5 OMNI-319M

LCD	
Display Type	19" TFT-LCD
Max. Resolution	1280 x 1024
Max. Colors	16.7M
Luminance	350 cd/m2
Viewing Angle	170°(H), 160°(V)
Back Light	LED
Back Light MTBF (Hours)	50,000

Mechanical	
Construction	IP65 aluminum front bezel & SGCC chassis
Mounting	Panel Mount / VESA 100x100 / Stand
Dimension	18.1" x 16.1" x 2.3" (460.8mm x 410mm x 59.1mm)
Carton Dimension	26.0" x 19.5" x 8.1 (661mm x 496mm x 206mm)
Gross Weight	18.1 lbs. (8.2 kg)
Net Weight	15.2 lbs. (6.9 kg)

1.1.6 OMNI-215M

LCD	
Display Type	15.6" TFT-LCD
Max. Resolution	1366 x 768
Max. Colors	16.7M
Luminance	400 cd/m2
Viewing Angle	170°(H), 160°(V)
Back Light	LED
Back Light MTBF (Hours)	50,000

Mechanical	
Construction	IP65 aluminum front bezel & SGCC chassis
Mounting	Panel Mount / VESA 100x100 / Stand
Dimension	16.5" x 10.4" x 2.4" (420.2mm x 264.5mm x 60.2mm)
Carton Dimension	20.9" x 17.5" x 7.9" (530mm x 445mm x 200mm)
Gross Weight	14.1 lbs. (6.4 kg)
Net Weight	11.2 lbs. (5.1 kg)

1.1.7 OMNI-221M

LCD	
Display Type	21.5" TFT-LCD
Max. Resolution	1920 x 1080
Max. Colors	16.7M
Luminance	250 cd/m2
Viewing Angle	178°(H), 178°(V)
Back Light	LED
Back Light MTBF (Hours)	50,000

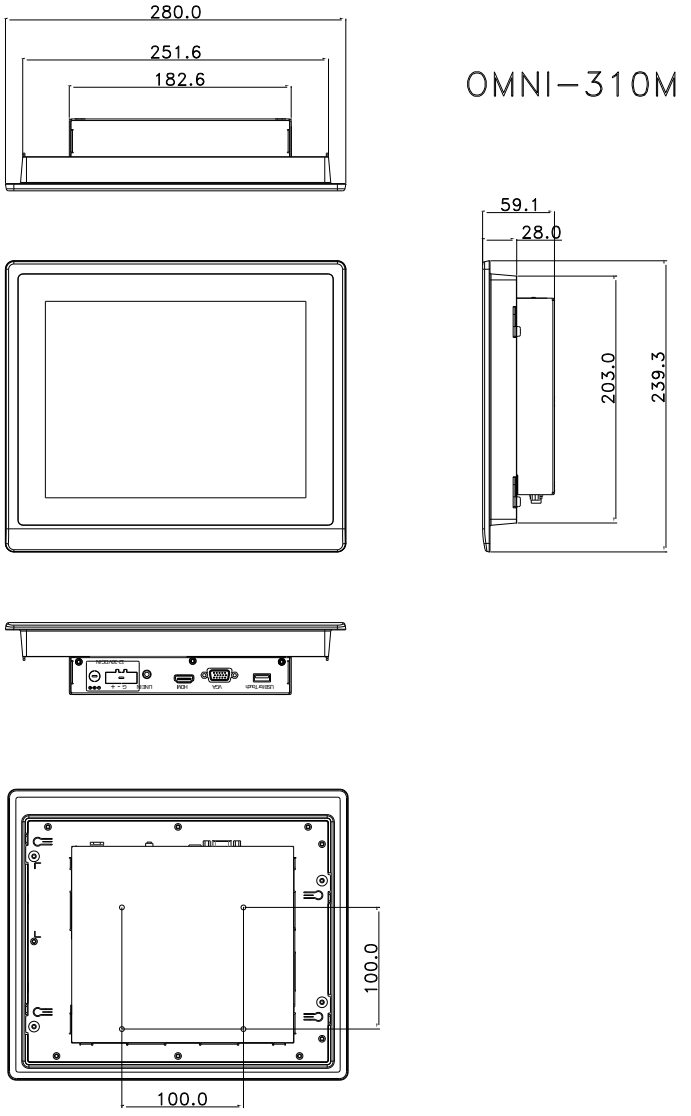
Mechanical	
Construction	IP65 aluminum front bezel & SGCC chassis
Mounting	Panel Mount / VESA 100x100 / Stand
Dimension	21.6" x 14.6" x 2.1" (549mm x 372mm x 53mm)
Carton Dimension	26.4" x 20.7" x 7.9" (670mm x 525mm x 200mm)
Gross Weight	18.5 lbs. (8.4 kg)
Net Weight	15.4 lbs. (7.0 kg)

Chapter 2

Hardware Information

2.1 Dimensions

2.1.1 OMNI-310M



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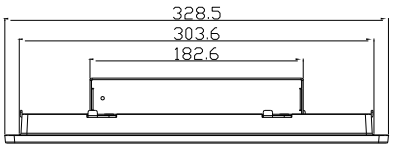
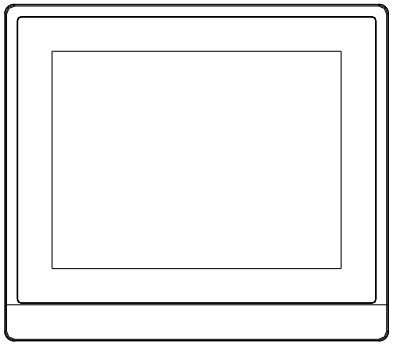
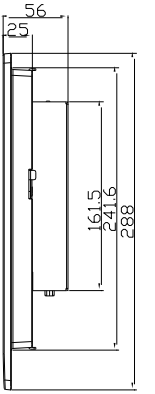
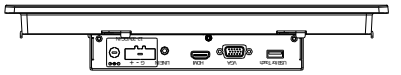
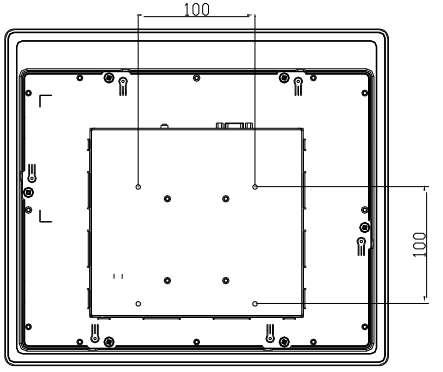


OMNI-312M









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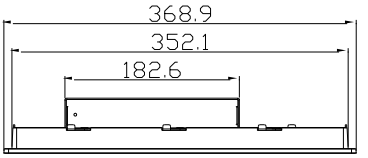

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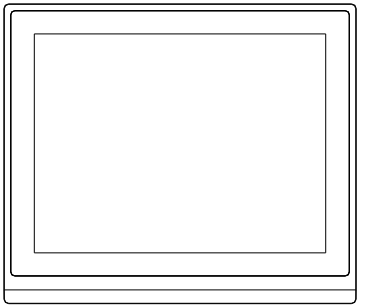

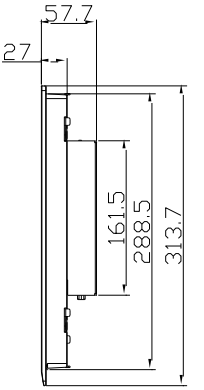

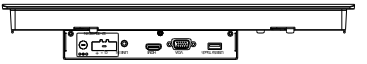

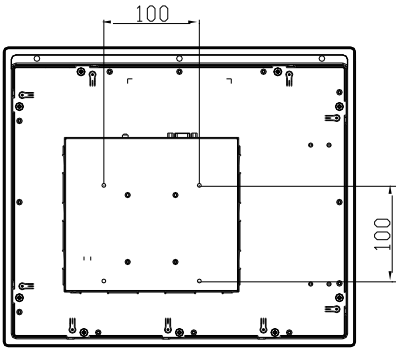

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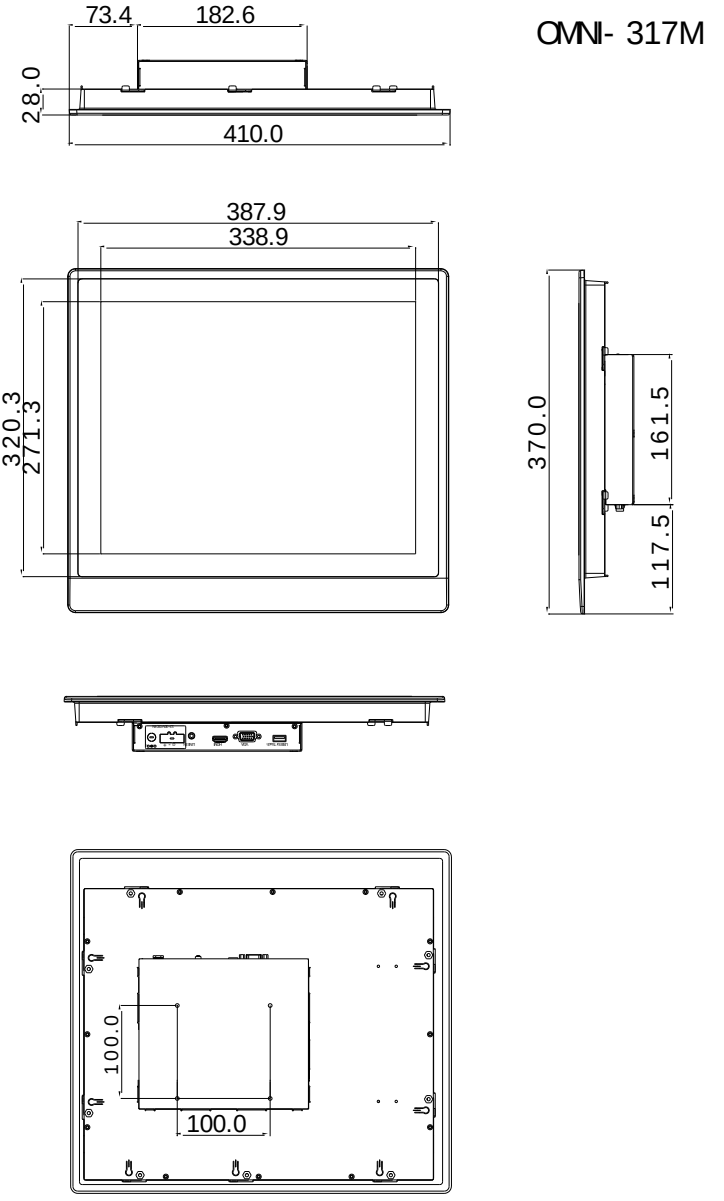

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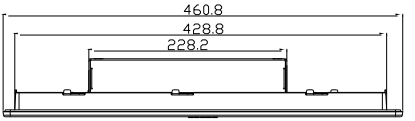

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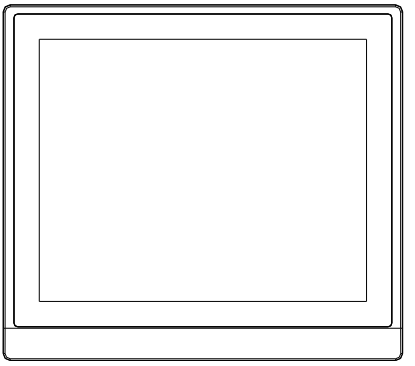

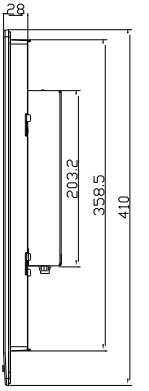

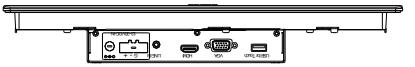

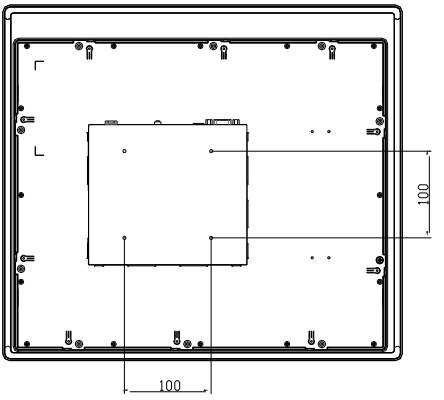

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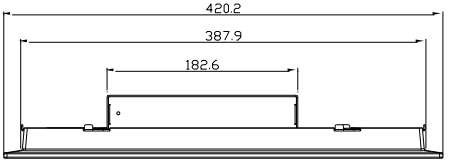
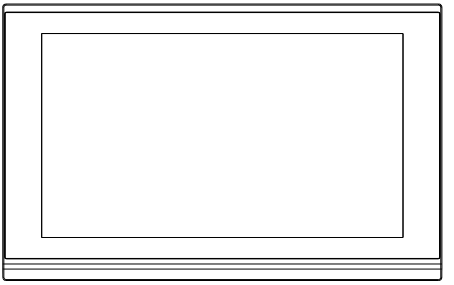
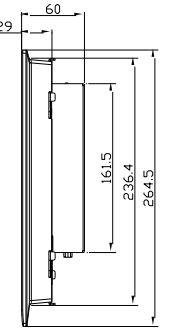


OMNI-215M





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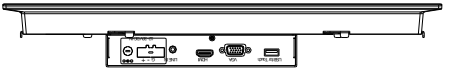

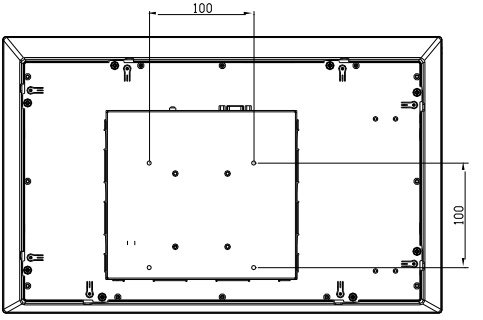

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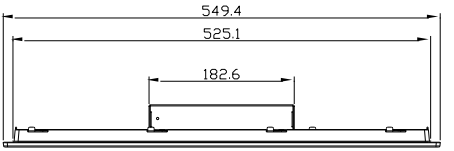

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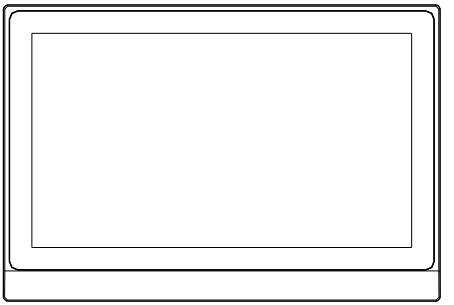
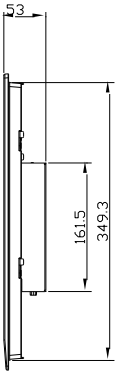
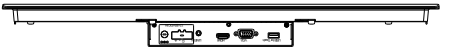
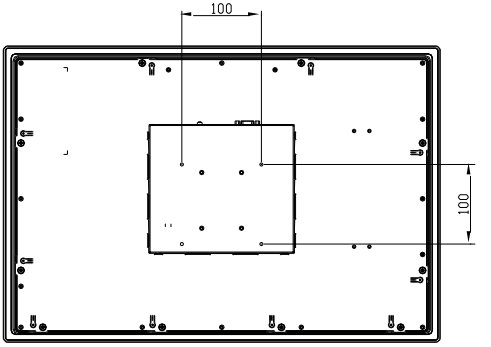
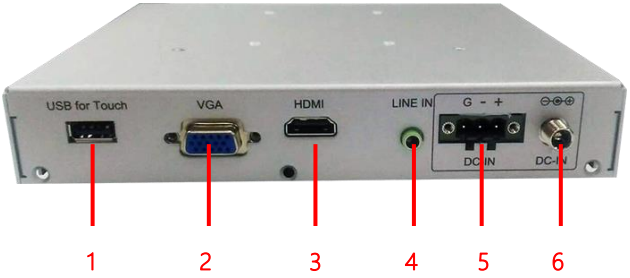








2.2 I/O Ports

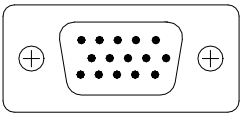


No.	I/O Description	Remark
1	USB A Type for Touch Screen	
2	VGA input	
3	HDMI input	
4	Audio in (Line in)	Optional Function
5	DC in (Terminal Bock 3pin)	Default Connector
6	DC in (Jack)	Optional Connector

2.3 Pin Definitions

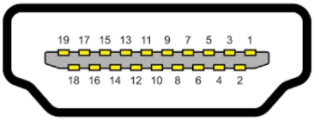
This section details all the pins definition of all the connectors associating with the OMNI-Monitor Series to aid your setup.

2.3.1 VGA Port Connector



Pin	Signal	Pin	Signal
1	Red	2	Green
3	Blue	4	GND
5	GND	6	R-GND
7	G-GND	8	B-GND
9	PC 5V	10	DET
11	GND	12	SDA DDC
13	SYNC.H	14	SYNC.V
15	SCL DDC		

2.3.2 HDMI Port Connector



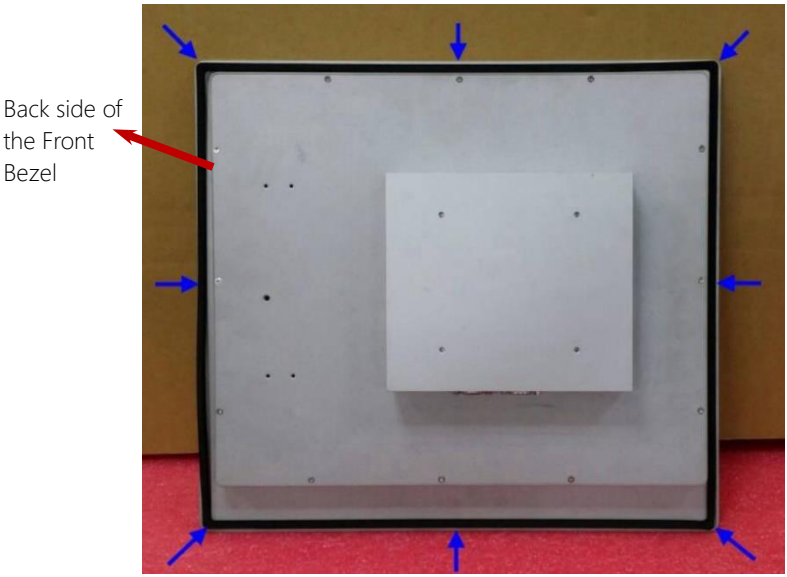
Pin	Signal	Pin	Signal
1	TMDS2+	2	GND
3	TMDS2-	4	TMDS1+
5	GND	6	TMDS1-
7	TMDS0+	8	GND
9	TMDS0-	10	TMDSC+
11	GND	12	TMDSC-
13	NC	14	NC
15	HDMI_SCL	16	HDMI_SDA
17	GND	18	HD_5V
19	H_HPD		

2.4 Waterproof Sponge

Inside sponge:

1 Tear off the protection paper on the self-adhesive side of the inside sponge.

2 Stick the sponge on the recessed area of the Aluminum bezel or customer's own bezel.



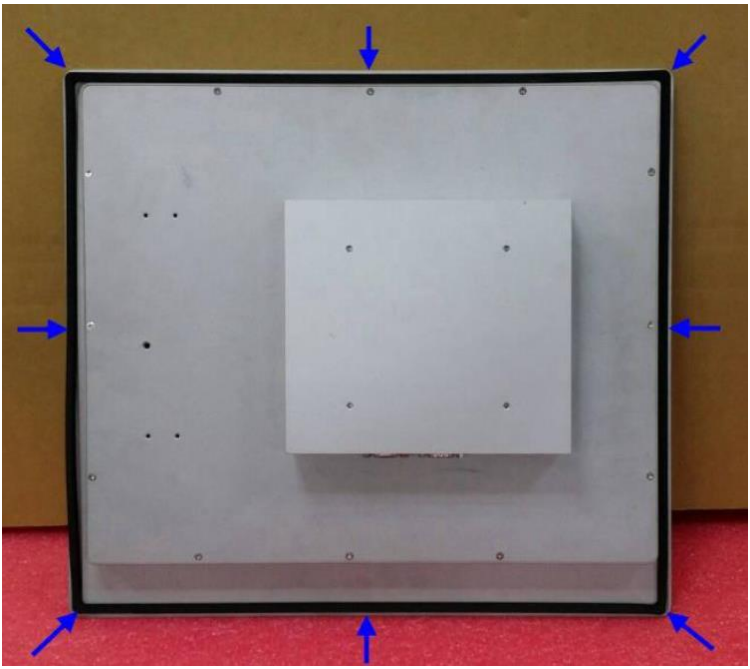
2.5 Mounting

This section details the steps you need to follow when fitting the various mounting brackets onto the OMNI-Monitor Series.

2.5.1 Panel Mounting

To mount this panel onto a wall, refer to the diagram below.

Step 1-Glue the waterproof rubber along the back side of the panel



Step 2-Pull out the panel mount brackets along the edge of frame

Step 3- Use screws to secure the panel onto the wall with the wallmount brackets

2.5.2 Stand Mounting

Use AAEON's optional Monitor Stand (Part Number: AP-OT9789LA1000)

Attach the stand to the monitor via the VESA holes (100x100mm) on the back of OMNI-Monitor.

AP-OT9789LA1000

2.5.2 VESA Mounting

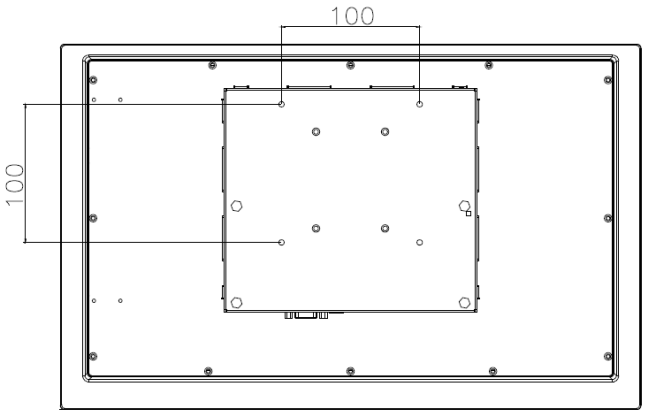
Mounting the OMNI-Monitor with UL Listed Wallmount Bracket only. The Monitor can be mounted on a monitor arm or wallmount plate.

Caution:

When mounting the monitor, take care to tighten the retention screws or bolts until fully secured, but do not over tighten. Overtightening the retention screws or bolts may cause them to become stripped, rendering them useless.

Monitor Arm or Wallmount Plate Installation

The Monitor has Video Electronics Standards Association (VESA) standard mounting holes tapped into the rear panel. The standard holes are M4 set at 100mm x 100mm apart.



VESA Mounting Holes

To mount the Monitor onto a monitor arm or wallmount plate, please follow the steps below.

Step 1: Line up the threaded holes on the monitor's rear panel with the screw holes on the monitor arm or wallmount plate.

Step 2: Secure the monitor to the arm or stand with the retention screws supplied with the monitor arm or stand.

Chapter 3

Onscreen Display Control

3.1 Functional Buttons

Button	Function (Outside Menu)	Function (Inside Menu)
	Turn the Monitor on or off	Turn the Monitor on or off
	Auto adjustment (VGA only)	Return to last menu
	Activate the OSD menu	Confirm the selected option.
	Increase backlight brightness (Default: 50, range: 0 ~ 100) 	Move up Increase the gauge value of the selected option.
	Decrease backlight brightness (Default: 50, range: 0 ~ 100) 	Move down Decrease the gauge value of the selected option.

3.2 OSD Menu - PICTURE

Item	Function
Brightness	Adjust the brightness (0-100)
Contrast	Adjust the contrast (0-100)
Sharpness	Adjust the image sharpness (0-4)
Exit	Exit the menu

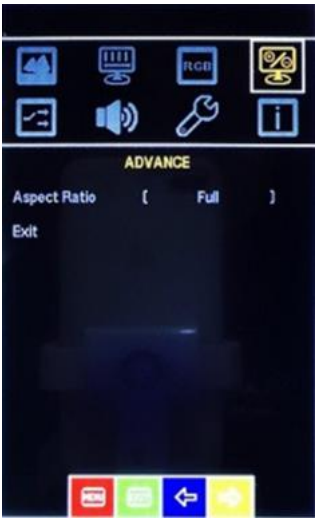
3.3 OSD Menu - DISPLAY

Item	Function
Auto Adjust	Perform the auto adjust (VGA Mode only)
H Position	Adjust the image to the left or right on the screen (0-100)
V Position	Adjust the image to the up or down on the screen (0-100)
Pixel Clock	Adjust the value of horizontal image (0-100)
Phase	Adjust the phase control (Phase adjustment may be required to optimize the display quality) (0-100)
Exit	Exit the menu

3.4 OSD Menu - COLOR

Item	Function
Gamma	Adjust the value of gamma (off/1.8/2.2/2.4)
Color Temp	Adjust the color temperature (5800K/6500K/7500K9300K/sRGB/User)
Auto Color	Perform auto color function
Exit	Exit the menu

3.5 OSD Menu - ADVANCE



Item	Functionas
Aspect Ratio	Change the aspect ratio mode (4:3/16:9/5:4/Full/Original)
Exit	Exit the menu

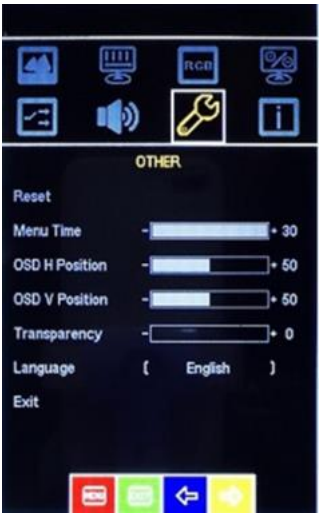
3.6 OSD Menu - INPUT

Item	Function
Auto Select	Auto detect the valid input image signal source
VGA	Set to VGA input mode
HDMI	Set to HDMI input mode
Exit	Exit the menu

3.7 OSD Menu - AUDIO (working with optional internal speaker)

Itam	Function
Volume	Adjust the level of audio volume (0-100)
Mute	Set the speaker work or mute (off/on)
Exit	Exit the menu

3.8 OSD Menu - OTHER



Item	Function
Reset	Reset all settings to the default
Menu Time	Adjust how long the OSD shown on the screen while active (1-30 sec)
OSD H Position	Adjust the OSD to the left or right on the screen (0-100)
OSD V Position	Adjust the OSD to the up or down on the screen (0-100)
Transparency	Adjust the transparency of OSD menu (0-7)
Language	Select the language of OSD menu (English/Deutsch/French/Spanish/Traditional Chinese/ Simplified Chinese/Japanese)
Exit	Exit the menu

3.9 OSD Menu - EXIT

Item	Function
Exit	Showing the information of current input image signal Perform to quit the OSD

Chapter 4

Touchscreen and Driver Installation

4.1 Introduction

The OMNI-Monitor Series touch monitor uses 5-wire resistive technology or Projected Capacitive technology to provide more accurate sensing capacity than other technologies. The touch screen is specially designed for tough industrial environments and has been approved by CE/FCC Class A standards.

Touch Screen

5-Wire Resistive

- USB interface
- Single touch point
- Light transparency 80±3%
- Surface Hardness ≧3H

Projected Capacitive

- USB interface
- Multi Touch (max. support to 10 points)
- Light Transparency ≧85%
- Surface Hardness ≧7H

4.2 Touchscreen Driver Installation (5-Wire Resistive)

Introduction

Please install the touch driver on your PC device after connecting the USB cable from the monitor to the PC device.

Note: There is no need to install a driver for Projected Capacitive touch; it's only necessary for 5-Wire Resistive touch. Please make sure what type of monitor you have.

4.3 Installing Driver for Windows® and Linux

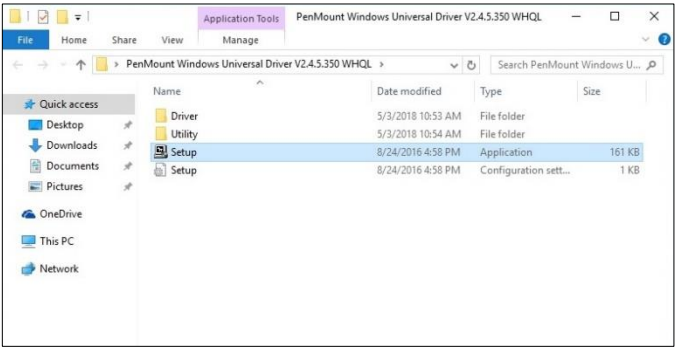
The touch screen has drivers for Windows® and Linux. You should read the instructions in this chapter carefully before installation.

Note 1: The following windows illustrations are examples only. You must follow the flow chart instructions and pay attention to the instructions which appear on your screen.

For Windows®,

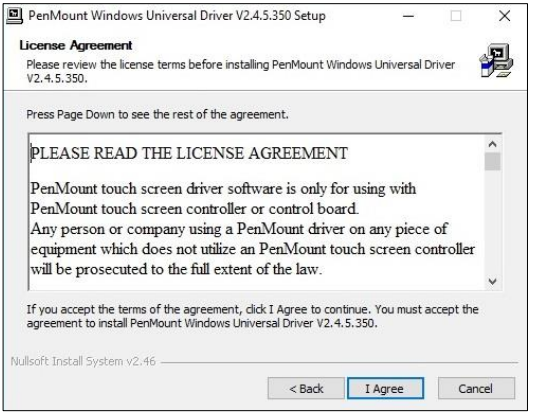
Find the folder "PenMount Windows Universal Driver V2.4.5.350 WHQL" inside of driver CD and open the folder to find "setup.exe" and execute it.

1. Find the folder "PenMount Windows Universal Driver V2.4.5.350 WHQL" inside of driver CD and open the folder to find "setup.exe" and execute it.

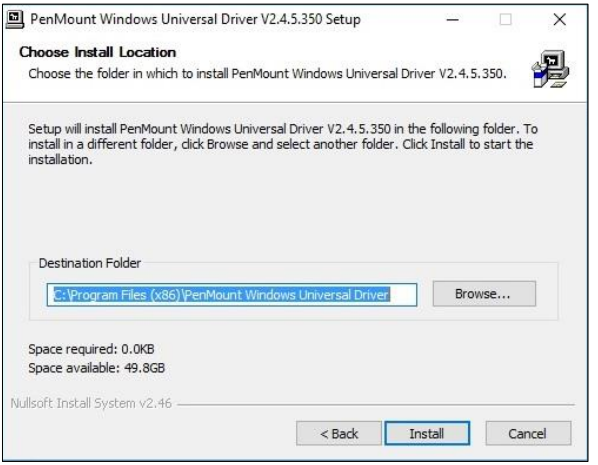


2. Click the "Next" button on the screen

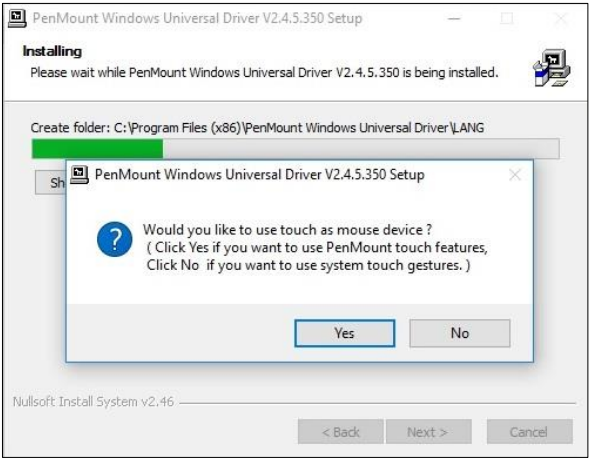
3. Click on the "I Agree" button and restart your system



4. Confirm the path for driver install and click "Install" button.



5. Click "Yes" button.

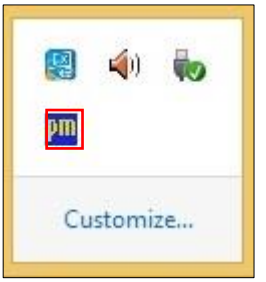


6. Installation finished.

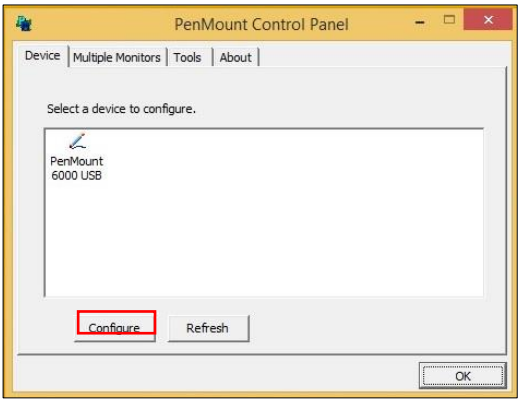
Touch Calibration

After the touch driver installed, you should run calibration immediately to make sure the touch accuracy.

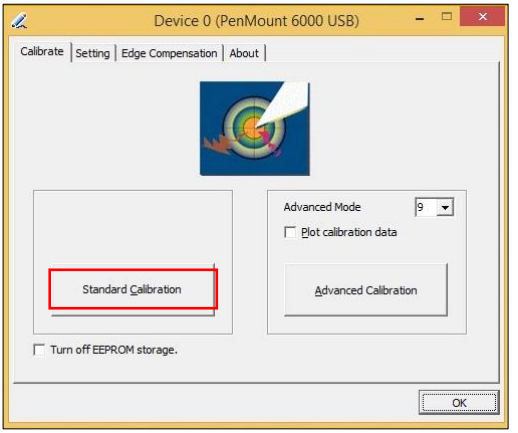
1. Find the icon  and execute it.



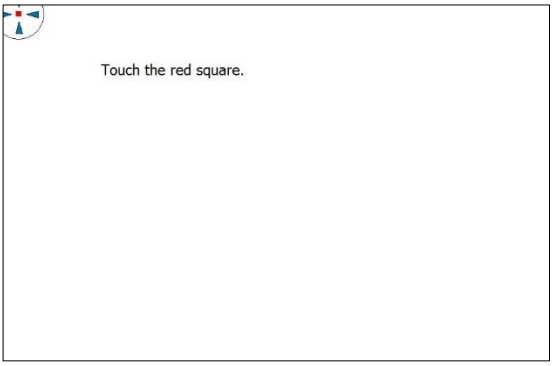
2. Click the "Configure" button.



3. Standard Calibration

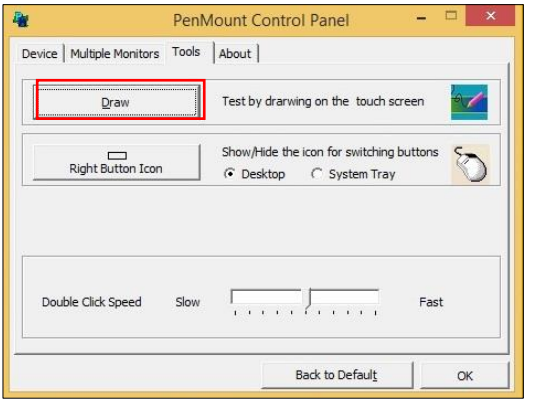


4. Follow the instruction on the screen to calibrate the touch.



Draw Test

1. Go to "Tools" tab and click "Draw" button



For Linux Ubuntu, please find the compressed file

"pmLinux-Ubuntu_12.04-18.04_32_64bit_Driver_V4.5.6.tar.bz2" in the Touch Driver CD.

Find the "README" file inside the compressed file and follow the instruction to install the touch driver

1). Login as user in Ubuntu login prompt

2). Open terminal [Dash Home] -> Applications -> Accessories -> Terminal

3). Change directory to where the device driver is extracted to $ cd pmlinux-Ubuntu

4). Change the settings in PenMount.ini or just use the default configurations.

5). Run install script with root permission $ sudo ./install.sh

6). Restart X window system to apply changes

Touch Calibration

1). Start the PenMount Utility.

In [Dash Home] -> Applications -> Customization -> PenMount Utility

The PenMount utility will be launched.

2). Select calibrate type and press the 'Calibrate' button.

3). Follow the instuctions on screen and finish calibration.

* gCal is the calibration utility can be run directly in terminal.

gCal [4|9|16|25] - advanced calibration (4 points, 9 points...)

Appendix A

Support Timing List

A.1 Support Timing List Table

Item	Description	Hz	3105	3125	3155	3175	3195	2155	2215
1	640 x 480	60	V	V	V	V	V	V	V
2	640 x 480	63	V						
3	640 x 480	67	V	V	V	V	V	V	
4	640 x 480	72	V	V	V	V	V	V	
5	640 x 480	75	V	V	V	V	V	V	
6	720 x 400	70	V	V	V	V	V	V	V
7	800 x 600	56	V	V	V	V	V	V	V
8	800 x 600	60	V	V	V	V	V	V	V
9	800 x 600	72	V	V	V	V	V	V	V
10	800 x 600	75	V	V	V	V	V	V	V
11	1024 x 768	60		V	V	V	V	V	V
12	1024 x 768	70		V	V	V	V	V	
13	1024 x 768	75		V	V	V	V	V	
14	1152 x 864	60				V	V	V	V
15	1152 x864	75				V	V		
16	1280 x 768	59				V	V	V	V
17	1280 x 800	60				V	V	V	V
18	1280 x 960	60				V	V	V	V
19	1280 x 1024	60				V	V	V	V
20	1280 x 1024	75				V	V	V	V
21	1360 x 765	60							V
22	1360 x 768	60						V	
23	1366 x 768	59						V	V
24	1600 x 900	60							V

25	1600 x 1200	60	V
26	1680 x 1050	60	V
27	1920 x 1080	60	V